

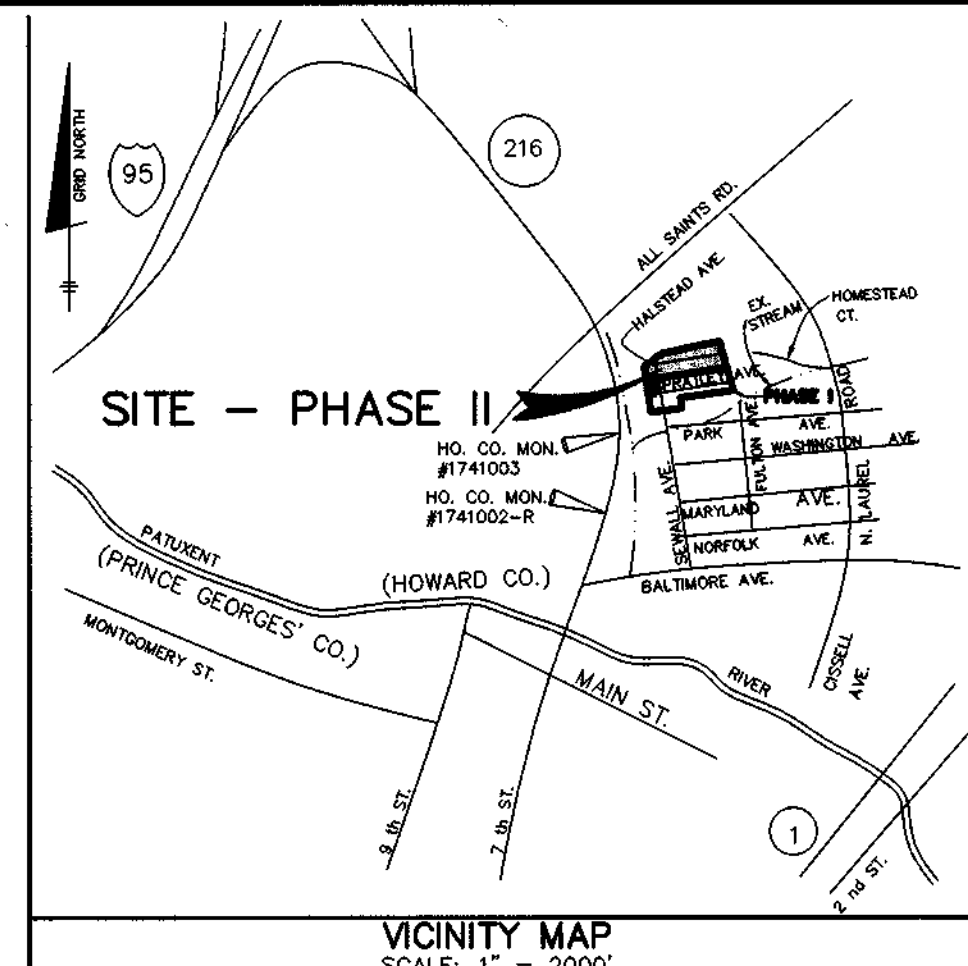
**GENERAL NOTES:**

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
- PROJECTS BACKGROUND:  
LOCATION: TAX MAP 50 - GRID 3 - P/O PARCEL 426  
ZONING: R-3C  
TOTAL AREA OF PHASE II: 7.12 ± AC.  
NUMBER OF PROPOSED DWELLINGS: 32  
NUMBER OF EXISTING LOTS: 32  
RECORD PLAT SIGNED: APPROXIMATELY 1898
- THE TOPOGRAPHY SHOWN WAS GENERATED FROM AERIAL TOPOGRAPHY SURVEY PROVIDED BY WINGS, INC., DATED MARCH 1995, AND CONSISTS OF 2 FOOT CONTOUR INTERVALS AND MASS GRADING UNDER F-98-05.
- THE COORDINATES SHOWN HEREON ARE BASED ON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON MARYLAND GRID SYSTEM NAD 27 - HOWARD COUNTY MONUMENTS NO. 1741003 AND 1741002-R.
- THE BOUNDARY SURVEY OF SUBJECT PROPERTY WAS PERFORMED BY FISHER, COLLINS & CARTER, INC., DATED DEC. 1995.
- ANY DAMAGE TO THE COUNTY OWNED RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THE CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES AND EASEMENTS PRIOR TO CONSTRUCTION.
- PLAT REFERENCE FOR THE SUBJECT PROPERTY IS PLAT NO. 61/470, DATED APPROXIMATELY 1898.
- WATER AND SEWER CONNECTIONS ARE PER WATER/SEWER CONTRACT NO. 24-3704-D.
- DRAINAGE AREA IS THE PATUXENT BASIN.
- ALL ROADS ARE PUBLIC EXCEPT THE PRIVATE DRIVE (STREAM VIEW LANE) FOR BLOCK "A"; LOTS 2-5, 13 & 14.
- ALL EASEMENTS ARE PUBLIC UNLESS NOTED AS "PRIVATE".
- STORMWATER MANAGEMENT, QUANTITY AND QUALITY CONTROL, SHALL BE PROVIDED BY THE EXISTING REGIONAL STORMWATER MANAGEMENT SYSTEM (F-98-05). THIS SYSTEM IS PUBLICLY OWNED AND MAINTAINED BY HOWARD COUNTY. ADDITIONAL WATER QUALITY SHALL BE PROVIDED BY A WATER QUALITY FACILITY LOCATED IN THE UPLANDS OF THE SUBDIVISION AT THE STORM DRAIN OUTFALL. THIS FACILITY SHALL BE PUBLICLY OWNED AND MAINTAINED.
- STORM DRAIN SYSTEM WILL BE PUBLICLY OWNED AND MAINTAINED BY THE HOWARD COUNTY.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- FOREST CONSERVATION IS NOT REQUIRED FOR THIS SUBDIVISION SINCE THE PROPERTY WAS RECORDED PRIOR TO THE FOREST CONSERVATION BILL AND NO ADDITIONAL LOTS ARE BEING CREATED.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- EXISTING UTILITIES ARE FROM HOWARD COUNTY APPROVED DRAWINGS. CONTRACTOR SHALL VERIFY ALL LOCATIONS PRIOR TO CONSTRUCTION.
- A FLOODPLAIN STUDY HAS BEEN PREPARED & APPROVED BY FISHER, COLLINS, AND CARTER DATED NOV., 1994. A REVISED STUDY HAS BEEN PREPARED BY TSA GROUP, INC. DATED OCT., 1996 TO ACCOUNT FOR THE PROPOSED REGIONAL SWMF.
- THE WETLANDS DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO SCIENCE PROFESSIONALS, DATED SEPT. 1996.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- LANDSCAPING IS NOT REQUIRED FOR THIS PROJECT SINCE THIS SITE WAS SUBDIVIDED PRIOR TO ANY LANDSCAPING REQUIREMENTS ALTHOUGH STREET TREES WILL BE PROVIDED.
- GEOTECHNICAL REPORT COMPILED BY HILLIS CARNES ENGINEERING ASSOCIATES DATED OCT. 3, 1996.
- GRADING CONSTRUCTION AND THE REMOVAL OF VEGETATION ARE PROHIBITED WITHIN THE WETLANDS AND THEIR 25 FOOT BUFFER UNLESS PREVIOUSLY APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- MAINTENANCE AGREEMENT FOR THE USE-IN-COMMON DRIVEWAY ACCESS FOR BLOCK "A" LOTS 2-5, 13 & 14 WILL BE RECORDED BY THE OWNER/DEVELOPER.
- 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.

# NORTH LAUREL PARK PHASE II

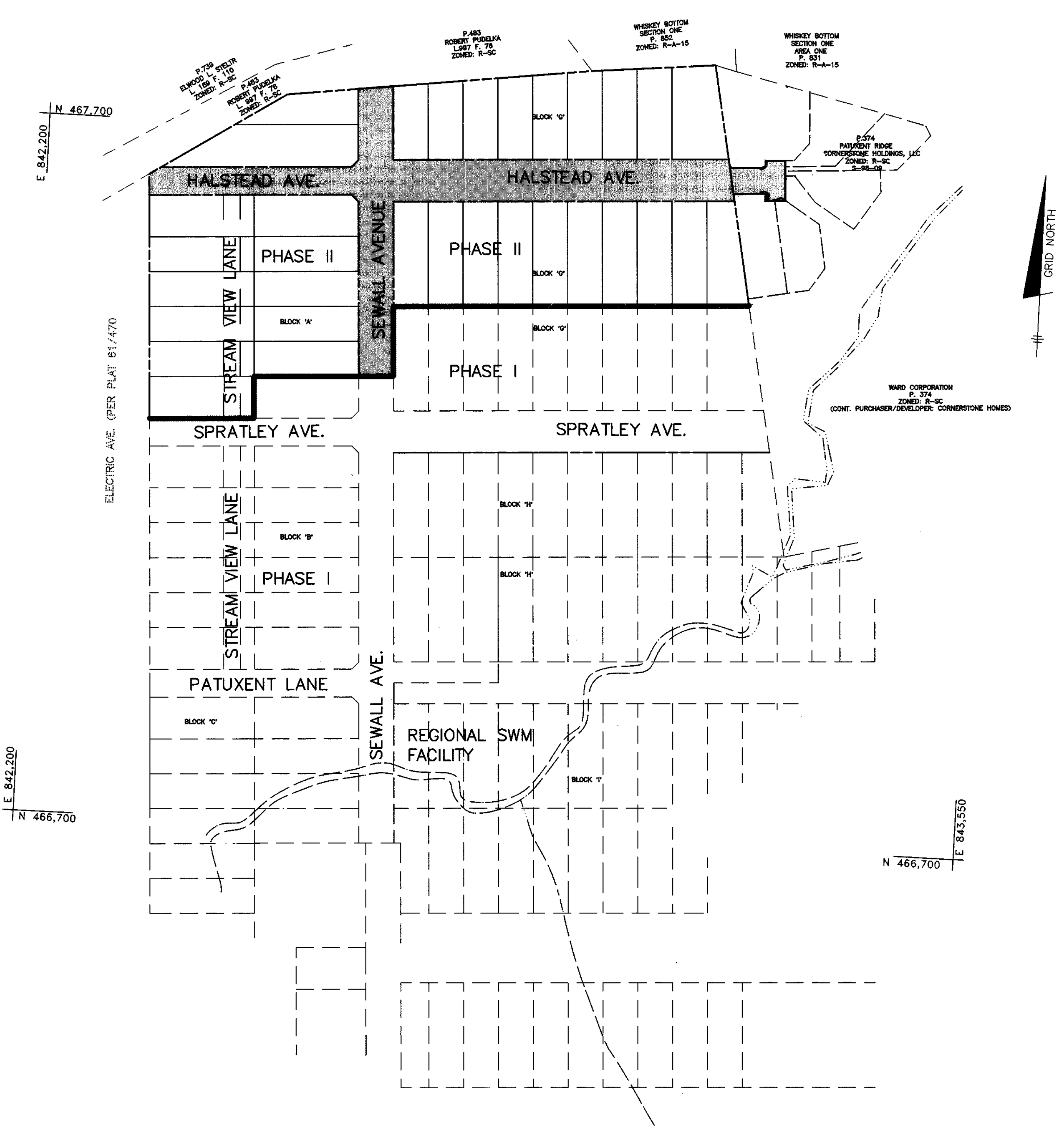
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

## ROADS, STORM DRAIN AND WATER QUALITY MANAGEMENT CONSTRUCTION PLANS



**BENCH MARK DATA**  
HOWARD COUNTY MON. # 1741003 CONC. MON. ON WEST SIDE OF RTE. 216 AND 0.2' BELOW SURFACE. ELEV. = 198.395  
HOWARD COUNTY MON. # 1741002-R CONC. MON. ON TOP OF BANK EAST OF EAST EDGE MAC. OF RTE. 216 FLUSH WITH SURFACE. ELEV. = 197.368

SHEET INDEX	
SHEET NO.	TITLE
1	COVER SHEET
2	ROAD, STORM DRAIN AND LANDSCAPE PLAN
3	ROAD PROFILE PLAN
4	STORM DRAIN PROFILES
5	DRAINAGE AREA MAP FOR PUBLIC STORM DRAIN SYSTEM
6	GRADING, SWM, AND SEDIMENT & EROSION CONTROL PLAN
7	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS



**SHANABERGER & LANE**  
8726 TOWN & COUNTRY BLVD.  
SUITE 201  
ELLICOTT CITY, MARYLAND 21043

AS-BUILT

*G. Scott Shanabarger*  
G. SCOTT SHANABERGER  
PROF. U.S. # 10049

NO.	DATE	REVISION
1	3-9-99	REVISE HALSTEAD AVE. FROM CUL-DE-SAC TO TEE-TURNAROUND

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

*Donald Mason*

OWNER/DEVELOPER:  
CORNERSTONE HOLDINGS, LLC  
9691 NORFOLK AVENUE  
LAUREL, MARYLAND 20723  
410-792-2565

PROJECT:  
**NORTH LAUREL PARK - PHASE II**  
LOTS 2-5, 8-11, 13 & 14 BLOCK "A", AND LOTS 1-10, 21-29, 31 & 32 BLOCK "B"

LOCATION:  
TAX MAP 50 - BLOCK 3 - PARCEL 426  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE:  
**COVER SHEET**  
F-98-05

DATE: AUGUST, 1998 PROJECT NO. 1149

DESIGN: YSL DRAFT: JMC SCALE: 1" = 100' DRAWING 1 OF 7

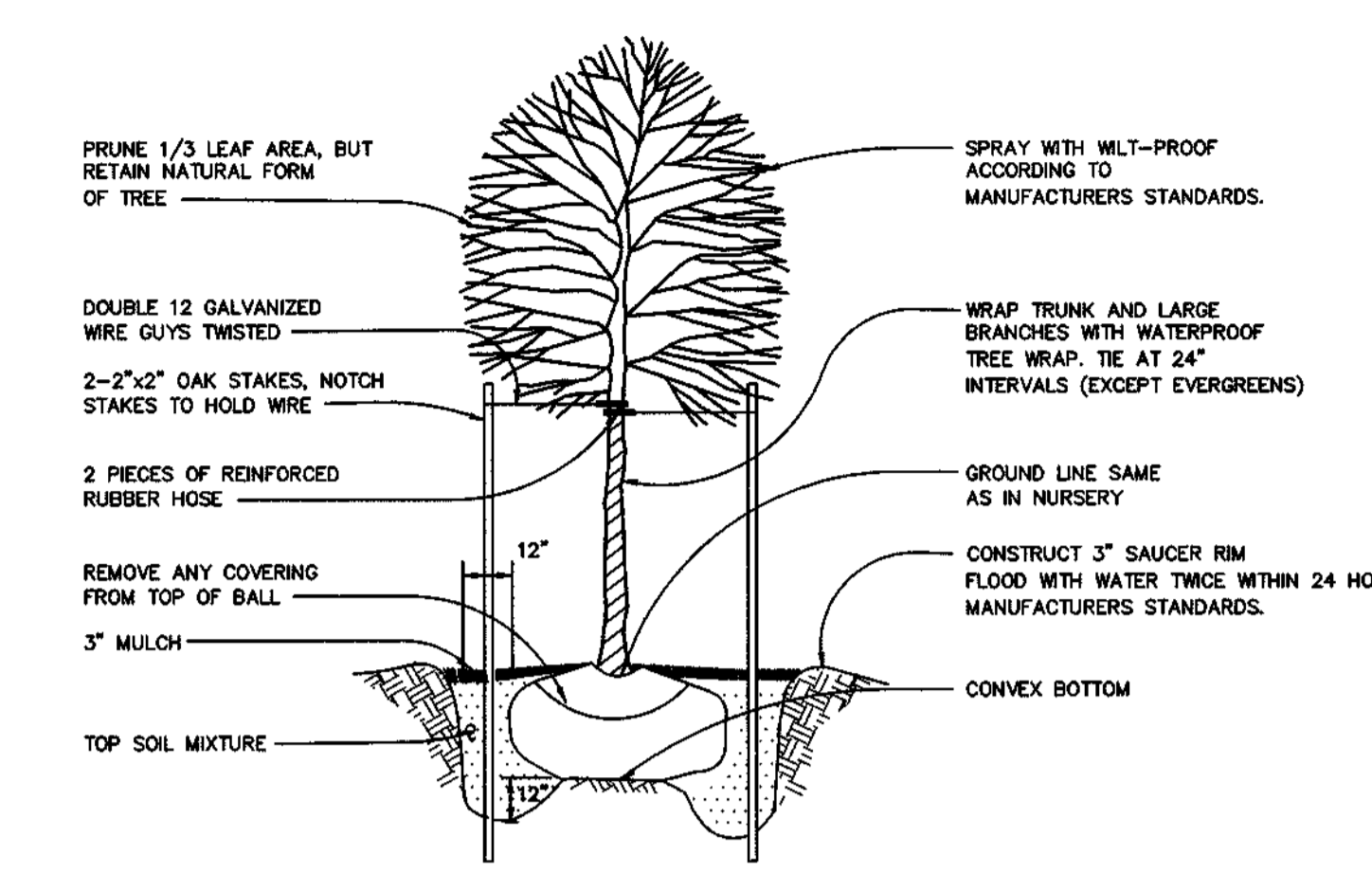
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Dancka* 10-26-98  
CHIEF, BUREAU OF HIGHWAYS HS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamilton* 10/20/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*William D. Williams* 10/20/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



- NOTES:**
1. ALL CURB & GUTTER ARE MODIFIED COMBINATION CURB & GUTTER PER HOWARD CO. STD. R-3.01 PROVIDE SIDEWALK RAMP AT ALL INTERSECTIONS WHERE SIDEWALKS ARE SHOWN.
  2. (SIDEWALK RAMP, TYPE A, PER HOWARD CO. STD. R-4.01)
  3. ALL DRIVEWAYS PER HOWARD CO. STD. R-6.03.
  4. SEE HOWARD CO. STD. R-3.06 FOR CURB TRANSITION DETAIL FOR ALL CURB INLETS.



**LEGEND**

- EXIST. WATER
- PROP. WATER
- EXIST. SEWER
- PROP. SEWER
- EXIST. STORM DRAIN
- PROP. STORM DRAIN
- EXIST. CURB & GUTTER
- PROP. CURB & GUTTER
- DRAINAGE FLOW DIRECTION
- EXISTING TREE LINE
- LIMIT OF DISTURBANCE
- USE-IN-COMMON ACCESS EASEMENT WHERE INDICATED
- PUBLIC STORM DRAIN & UTILITY EASEMENT
- STORM DRAIN INLET W/CURB TRANSITION
- TRAFFIC SIGN

**HALSTEAD AVENUE CENTERLINE DATA**

Desc.	Station	Tangent Data	Northing	Easting
BEGN	-2+46			
Length:	246.00	Course: N 86-55-05 E	467814.4946	842426.2103
INT	0+00			
Length:	5895.54	Course: N 88-55-05 E	467827.7214	842671.8545
END	5+54.54			

**SEWALL AVE. CENTERLINE DATA**

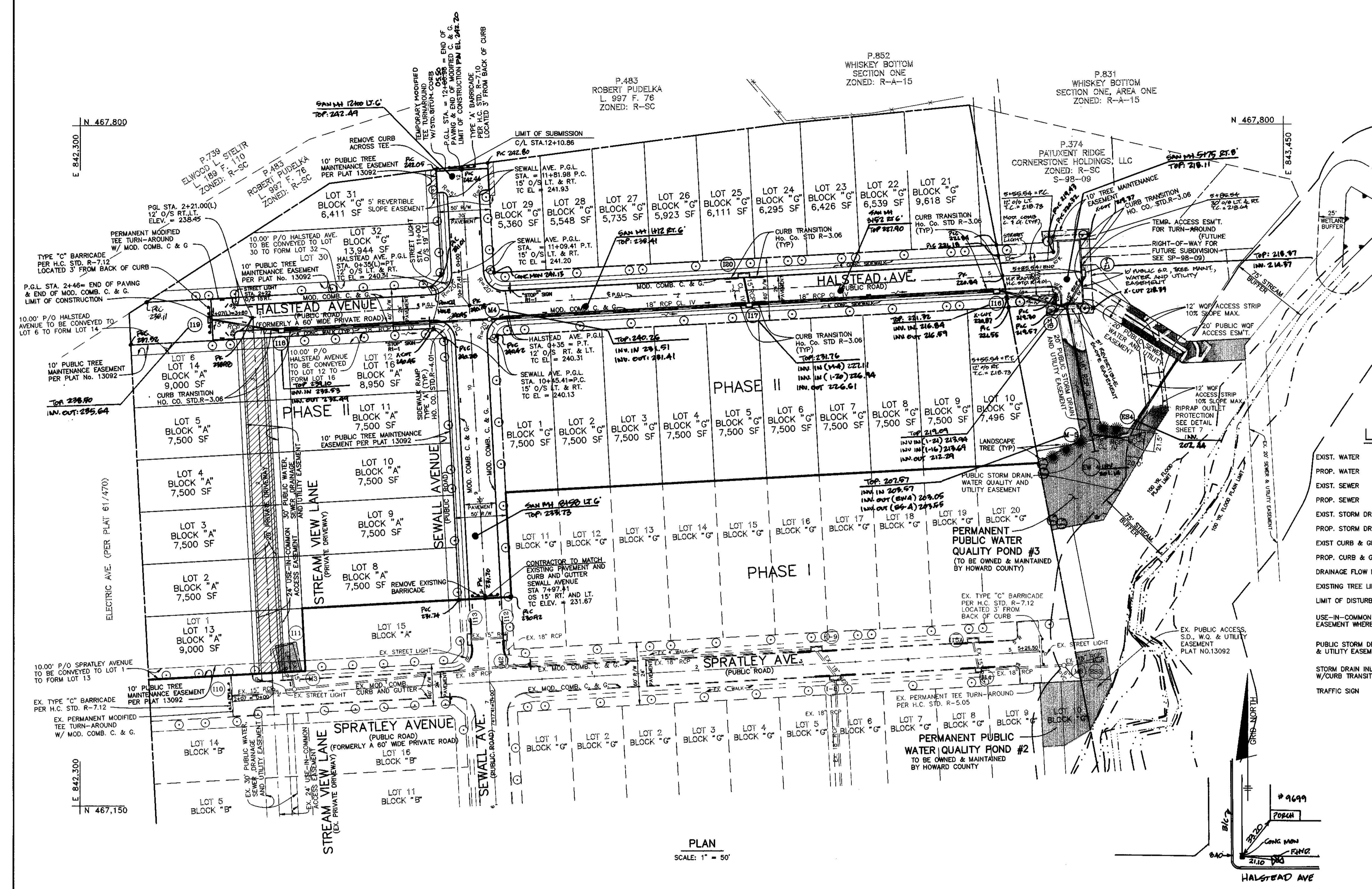
Desc.	Station	Tangent Data	Northing	Easting
BEGN	7+97.41			
Length:	409.57	Course: N 03-04-55 W	467348.1287	842886.9099
END	12+06.98			

**AS-BUILT**

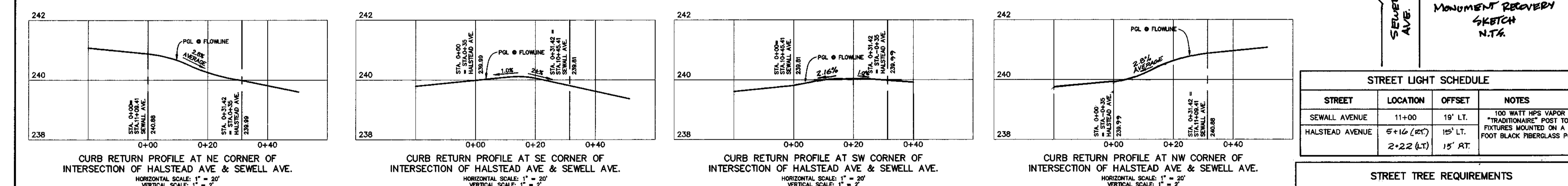
**SHANBERGER & LANE**  
 8726 TOWN & COUNTRY BLVD.  
 SUITE 201  
 ELLICOTT CITY, MARYLAND 21043

*G. Scott Shanberger*  
 G. SCOTT SHANBERGER DATE  
 PROF. L.S. # 10849

NOTE: ANY SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY.



**PLAN**  
SCALE: 1" = 50'



**STREET LIGHT SCHEDULE**

STREET	LOCATION	OFFSET	NOTES
SEWALL AVENUE	11+00	19' LT.	100 WATT HPS VAPOR "TRADITIONARE" POST TOP FIXTURES MOUNTED ON A 14' FOOT BLACK FIBERGLASS POLE
HALSTEAD AVENUE	5+16 (20')	15' LT.	
	2+22 (LT)	15' RT.	

**STREET TREE REQUIREMENTS**

REQUIRED	1 PER 40' O.C. (200.31 LF) = 65
NUMBER OF TREES PROVIDED	65

**SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	(D) 336'
NUMBER OF TREES REQUIRED	7
SHADE TREES	9
EVERGREEN TREES	7
CREDIT FOR EXISTING VEGETATION (NO. YES AND %)	YES 44%
CREDIT FOR OTHER LANDSCAPING (NO. YES AND %)	NO
NUMBER OF TREES PROVIDED	
SHADE TREES	4
EVERGREEN TREES	5
OTHER TREES (2:1 SUBSTITUTE)	

**PLANTING LIST**

SYMBOL	QUANT.	NAME	REMARKS
(Symbol)	4	SALIX BABYLONIA	2 1/2" MIN. CAL. B & B FULL HEAD
(Symbol)	5	PINUS STROBUS	6' - 8' HEIGHT
(Symbol)	66	ACER RUBRUM	2 1/2" MIN. CAL. B & B FULL HEAD
(Symbol)		OCTOBER GLORY (OCTOBER GLORY RED MAPLE)	

TREES TO BE PROVIDED BY DEVELOPER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Danner* 12-16-98 DATE  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamilton* 12/16/98 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*William Damman* 12/16/98 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION
2	3-9-99	REVISE HALSTEAD AVE. FROM CUL-DE-SAC TO TEE-TURNAROUND
1	12-29-98	REVISE CURB RETURN PROFILES (SW & NW), ELEV ON HALSTEAD (LT), ST. LIGHT SW

**BENCHMARK ENGINEERING, INC.**

ENGINEERS • LAND SURVEYORS • PLANNERS

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

*Donald Moon*

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, LLC  
 9691 NORFOLK AVENUE  
 LAUREL, MARYLAND 20723  
 410-792-2565

PROJECT: NORTH LAUREL PARK - PHASE II  
 LOTS 2-5, 8-11, 13, 14 & 16 BLOCK "A", AND LOTS 1-10, 21-29, 31 & 32 BLOCK "G"

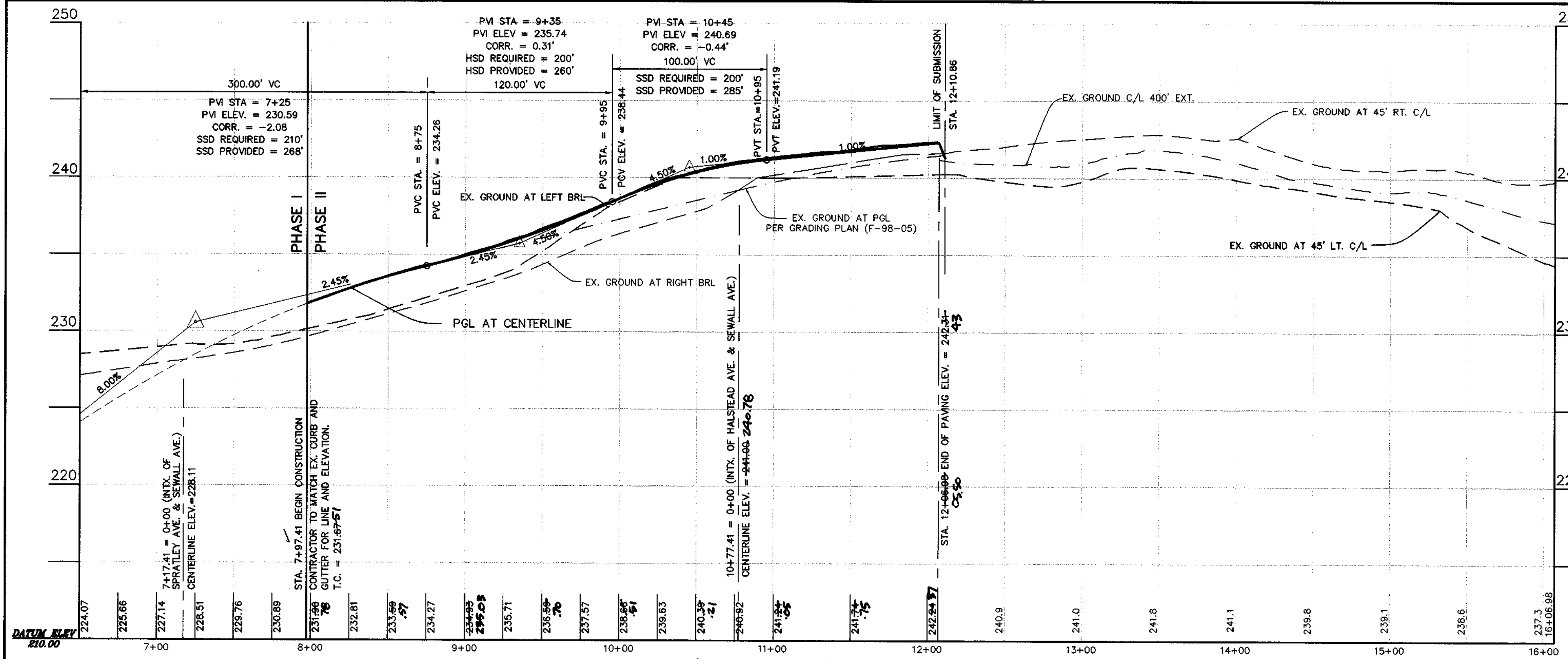
LOCATION: TAX MAP 50 - BLOCK 3 - PARCEL 426  
 SIXTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE: ROAD, STORM DRAIN AND LANDSCAPE PLAN  
 F-98-05

DATE: AUGUST, 1998 PROJECT NO. 1149

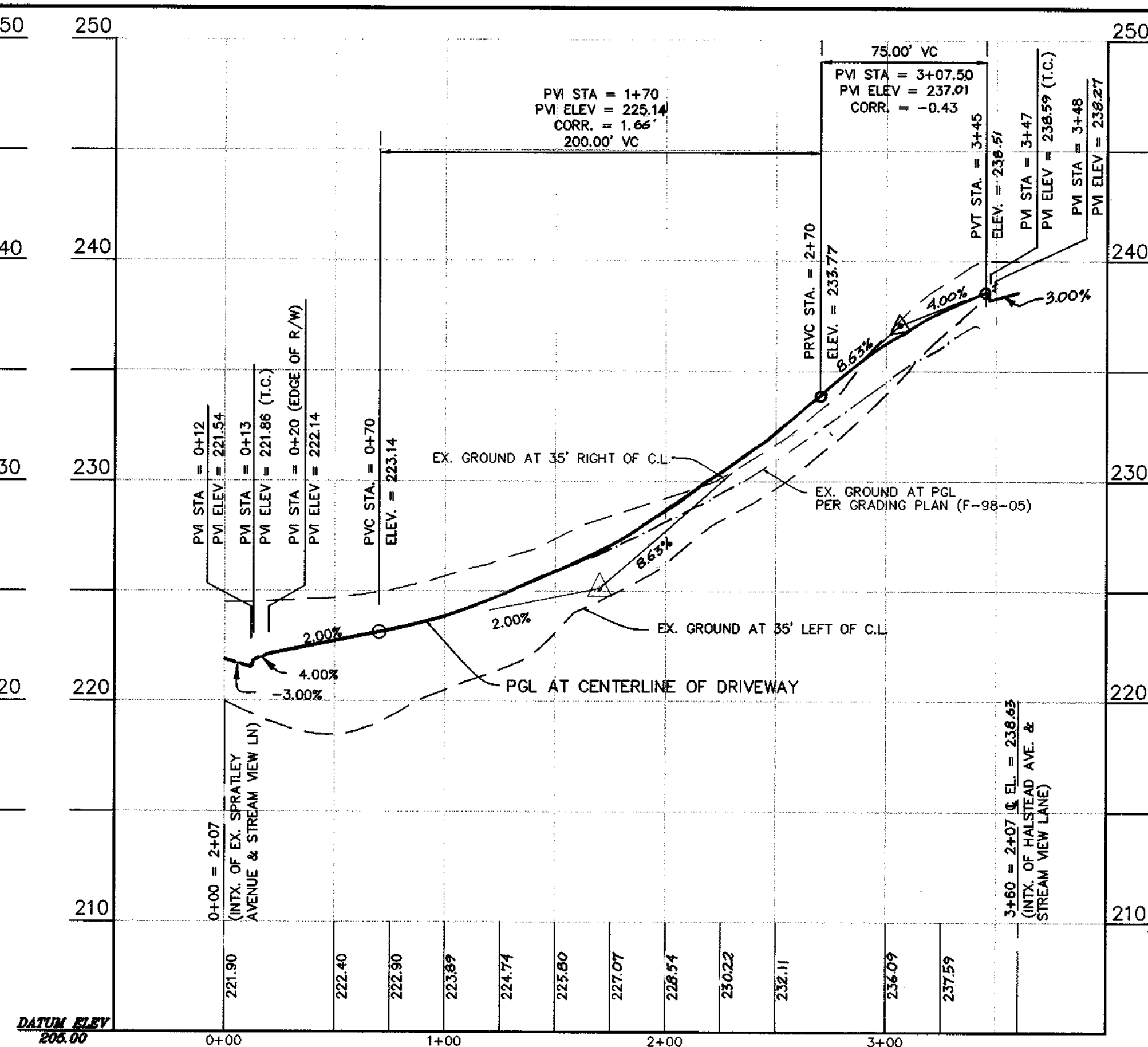
DESIGN: YSL DRAFT: JMC SCALE: AS SHOWN DRAWING 2 OF 7





SEWALL AVENUE (PUBLIC ROAD) -- 30 MPH DESIGN SPEED

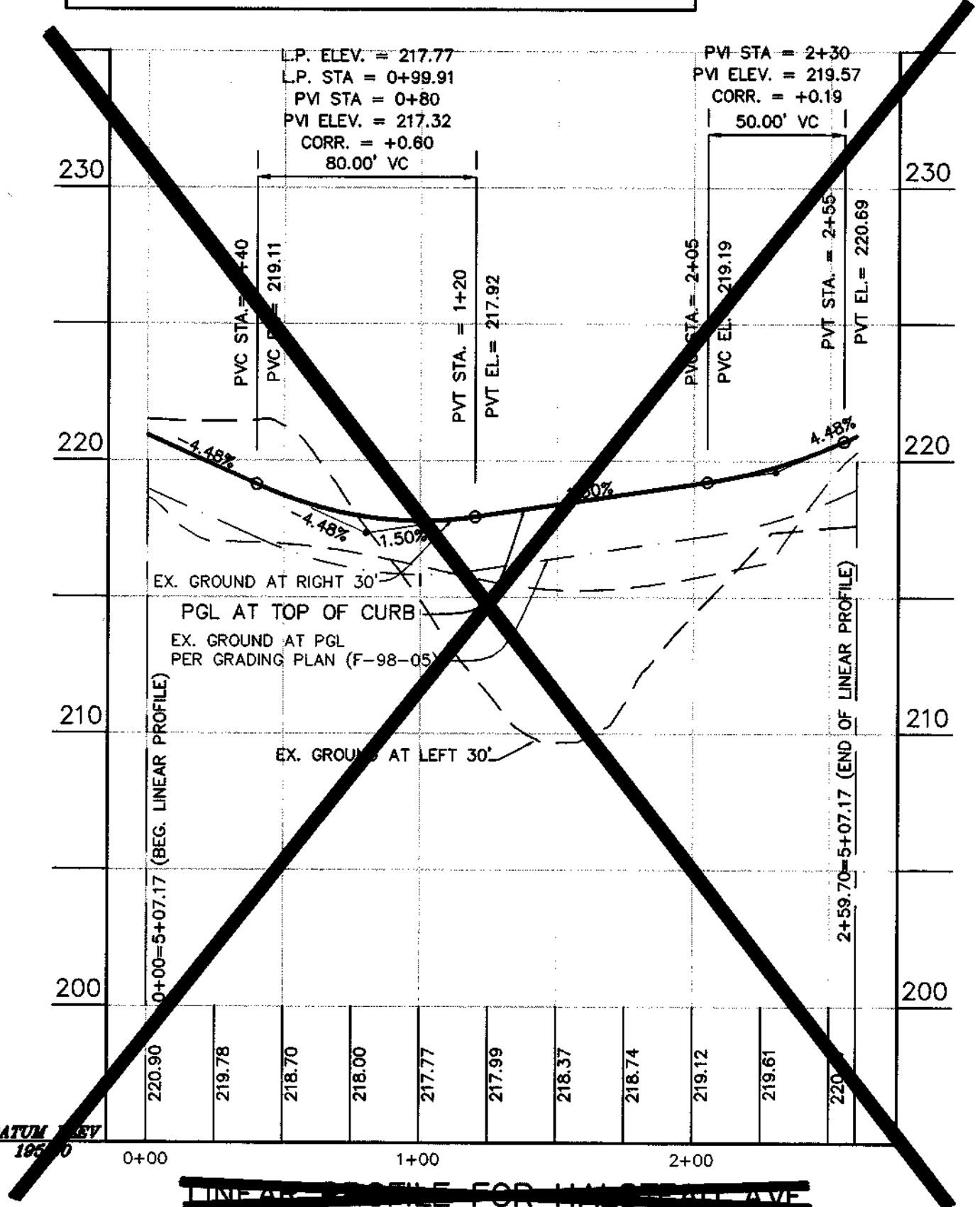
SCALE: H: 1"=50'  
V: 1"=5'



STREAM VIEW LANE PRIVATE 20' DRIVEWAY FOR BLOCK "A"

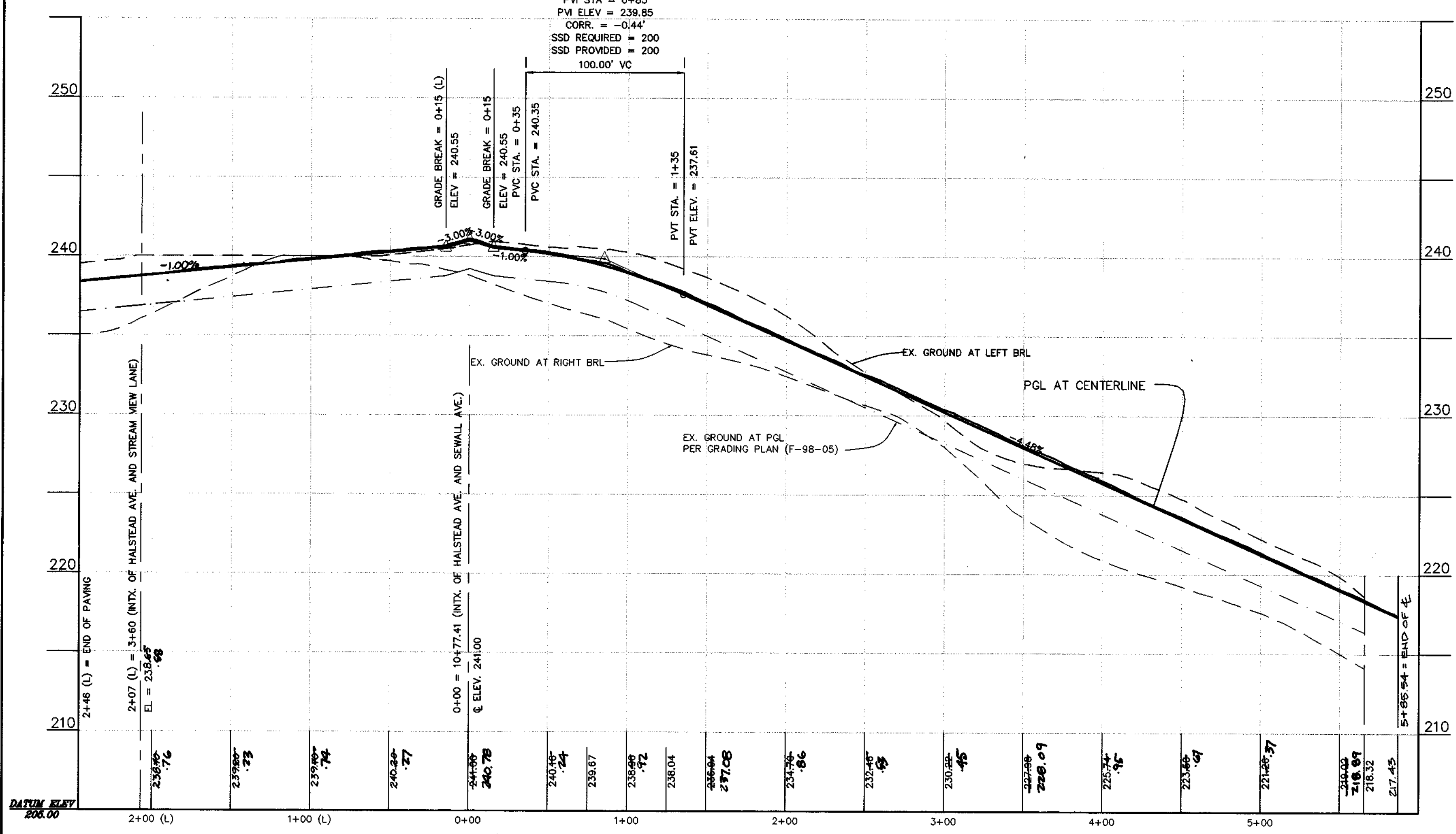
SCALE: H: 1"=50'  
V: 1"=5'

NOTE: EXISTING GROUND LINES SHOWN ON THE ROAD PROFILES REFLECT CONDITIONS PRIOR TO MASS GRADING WHICH OCCURRED UNDER PHASE 1 PLANS F-98-05.



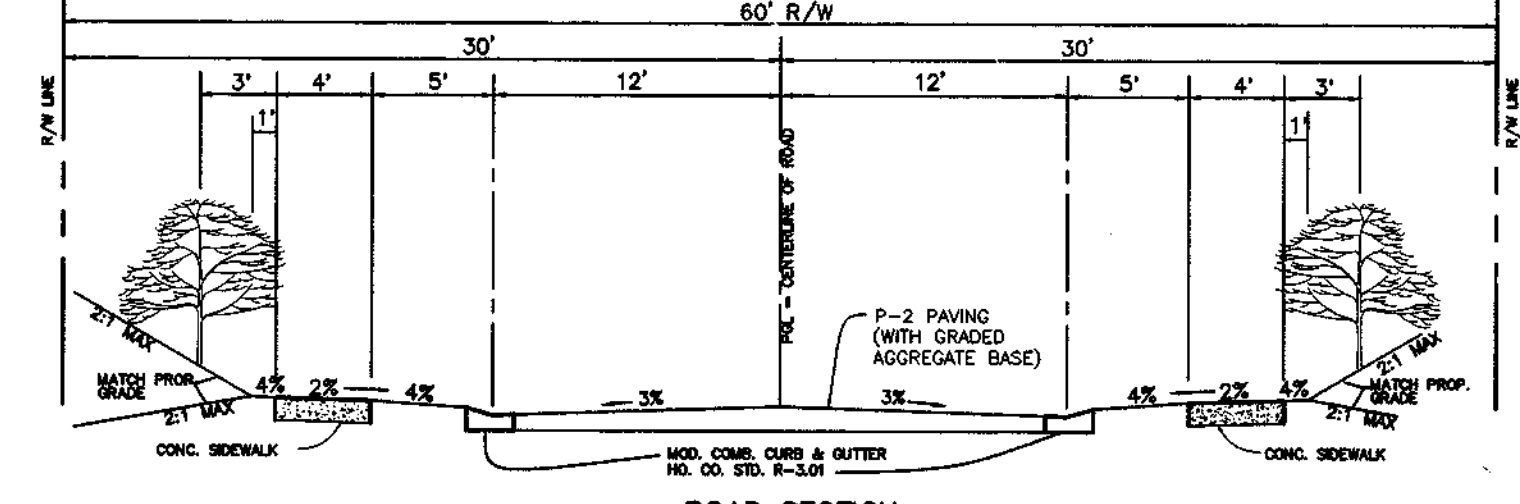
STREAM VIEW LANE PRIVATE 20' DRIVEWAY FOR BLOCK "A"

SCALE: H: 1"=50'  
V: 1"=5'



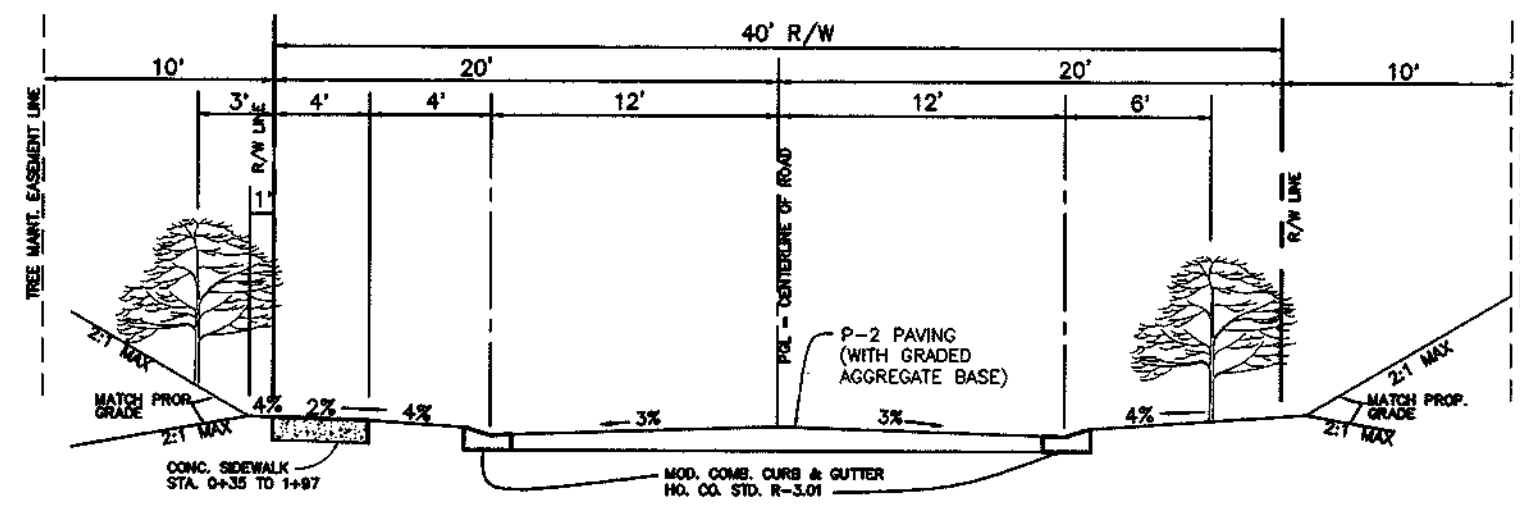
HALSTEAD AVENUE (PUBLIC ROAD) -- 30 MPH DESIGN SPEED

SCALE: H: 1"=50'  
V: 1"=5'



ROAD SECTION HALSTEAD AVENUE (STA. 0+35 TO 5+55.54)

CLASS: LOCAL - 30 MPH NOT TO SCALE



ROAD SECTION HALSTEAD AVENUE (STA. -0+35 TO -2+46)

CLASS: LOCAL - 30 MPH NOT TO SCALE

2	3-9-99	REVISE HALSTEAD AVE FROM LUL-DE-SAC TO TEE-TURNAROUND
1	12-29-98	REVISE PROFILES FOR STREAM VIEW LAKE, HALSTEAD AVE (LT.)
NO.	DATE	REVISION

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

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, LLC  
9691 NORFOLK AVENUE  
LAUREL, MARYLAND 20723  
410-792-2565

PROJECT: NORTH LAUREL PARK - PHASE II  
LOTS 2-5, 8-11, 13, 14 & 16 BLOCK "K" AND  
LOTS 1-10, 21-29, 31 & 32 BLOCK "G"

LOCATION: TAX MAP 50 - BLOCK 3 - PARCEL 426  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: ROAD PROFILE PLAN  
F-98-05

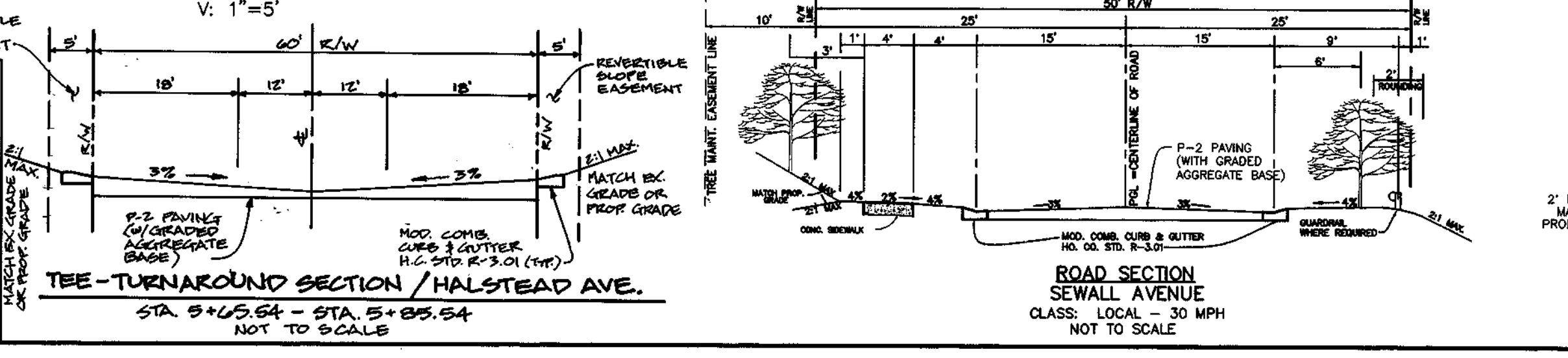
DATE: AUGUST, 1998 PROJECT NO. 1149

DESIGN: YSL DRAFT: JMC SCALE: AS SHOWN DRAWING 3 OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Danks* 10/21/98  
CHIEF, BUREAU OF HIGHWAYS

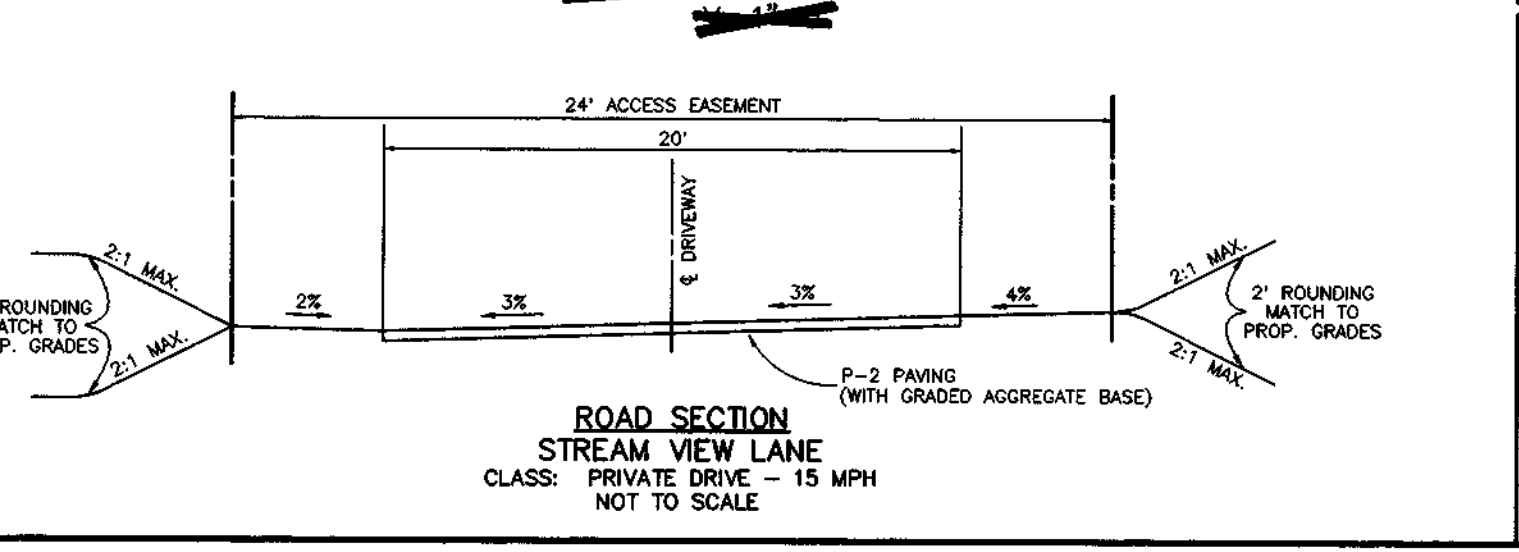
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hanotta* 10/29/98  
CHIEF, DIVISION OF LAND DEVELOPMENT

*William Wasserman* 10/29/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION



ROAD SECTION SEWALL AVENUE

CLASS: LOCAL - 30 MPH NOT TO SCALE



ROAD SECTION STREAM VIEW LANE

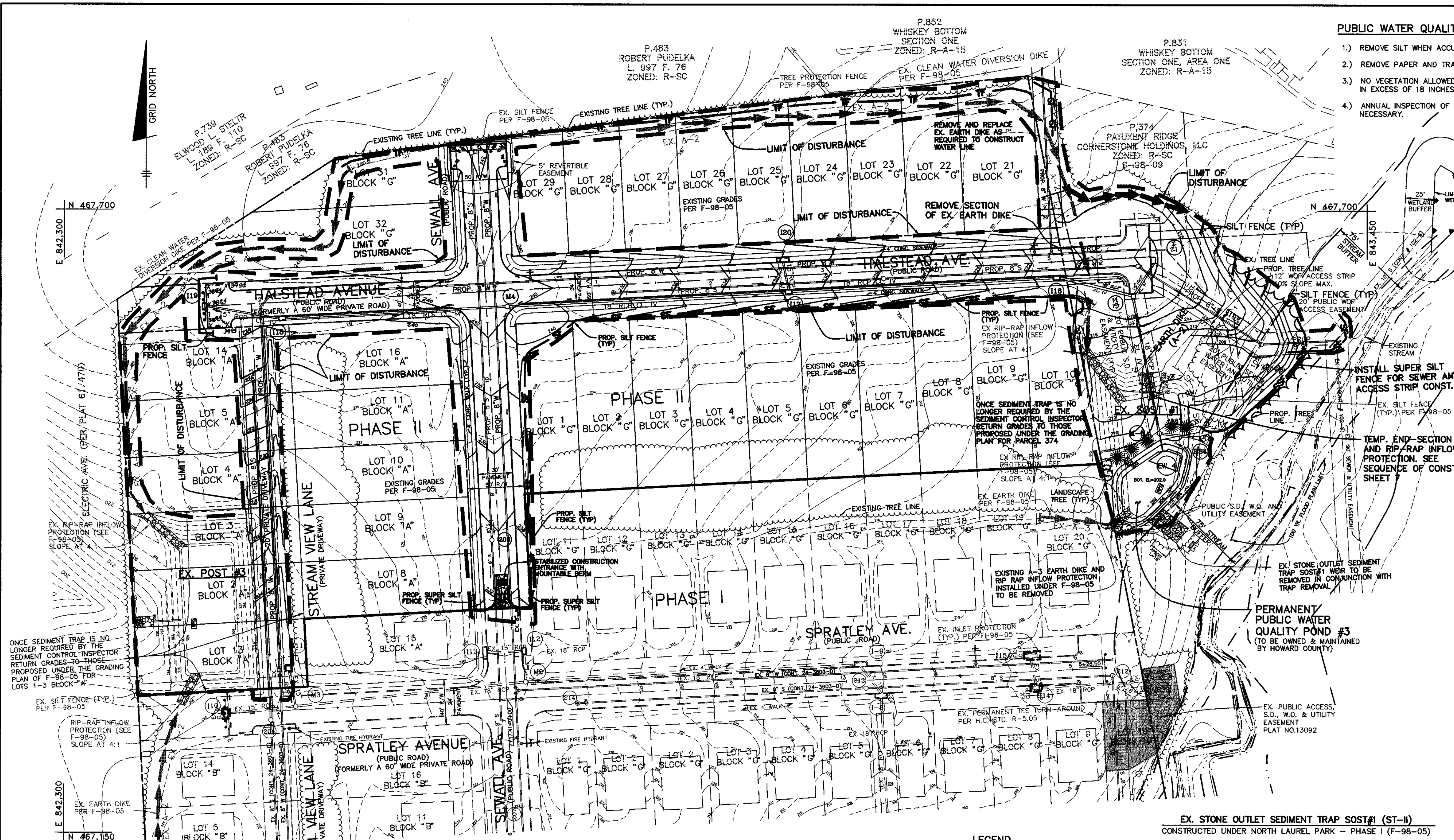
CLASS: PRIVATE DRIVE - 15 MPH NOT TO SCALE











**EX. TEMP. SWM/PIPE OUTLET SEDIMENT TRAP POST#3 (ST-1)**  
 CONSTRUCTED UNDER NORTH LAUREL PARK - PHASE I (F-98-05)  
 EXISTING D.A. = 4.10 AC.  
 DEVELOPED D.A. = 3.52 AC.  
 STORAGE REQUIRED (TOTAL) = 14,760 C.F.  
 WET STORAGE REQUIRED = 7,380 S.F.  
 DRY STORAGE REQUIRED = 7,380 C.F.

STORAGE PROVIDED (TO RISER CREST) = 23,147 C.F.  
 WET STORAGE PROVIDED = 7,380 C.F.  
 DRY STORAGE PROVIDED = 15,767 C.F.

BOTTOM DIMENSION = 112' x 44'  
 BOTTOM ELEVATION = 209.0  
 WET STORAGE LIMIT ELEVATION : FROM 209.0 TO 210.35  
 DRY STORAGE LIMIT ELEVATION : FROM 210.35 TO 211.52  
 CLEANOUT ELEVATION : 209.70

RISER CREST ELEV. = 212.70 (27" CMP)  
 BARREL SIZE = 21" CMP (24 LF)  
 EMBANKMENT ELEV. = 214.50  
 EXISTING GROUND @ EMBANKMENT = 211.0±

NOTE: ANY SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY.

APPROVED-HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Danziger* 10-26-98  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED-HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamilton* 10/29/98  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*Cheryl Simmons* 10/21/98  
 NATURAL RESOURCES CONSERVATION SERVICE

**PLAN VIEW**  
 SCALE: 1" = 50'

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

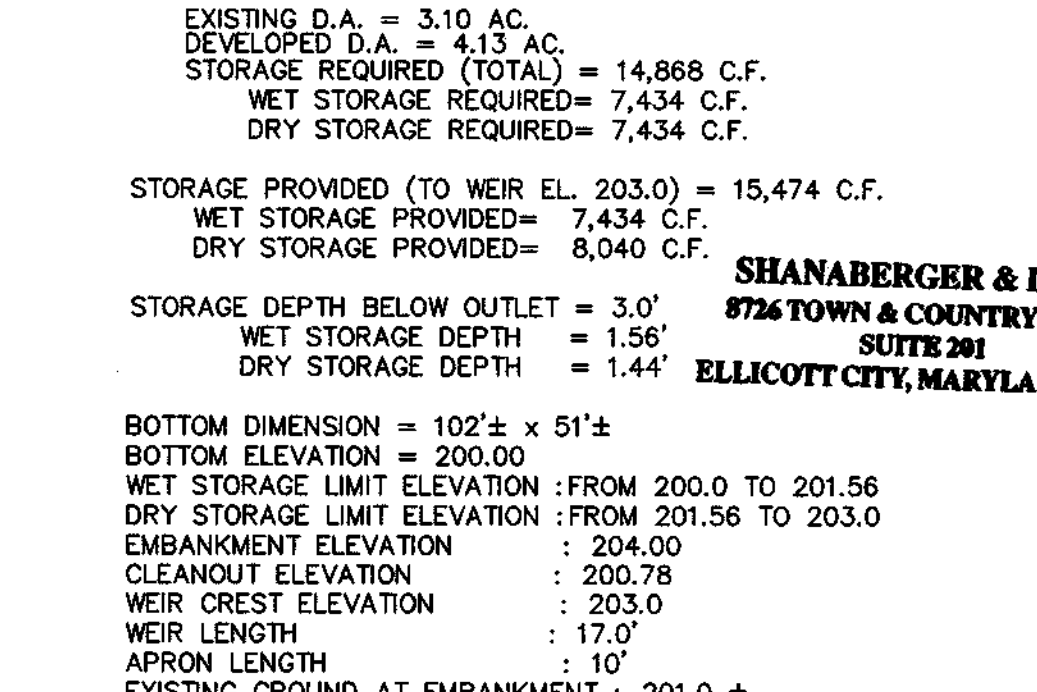
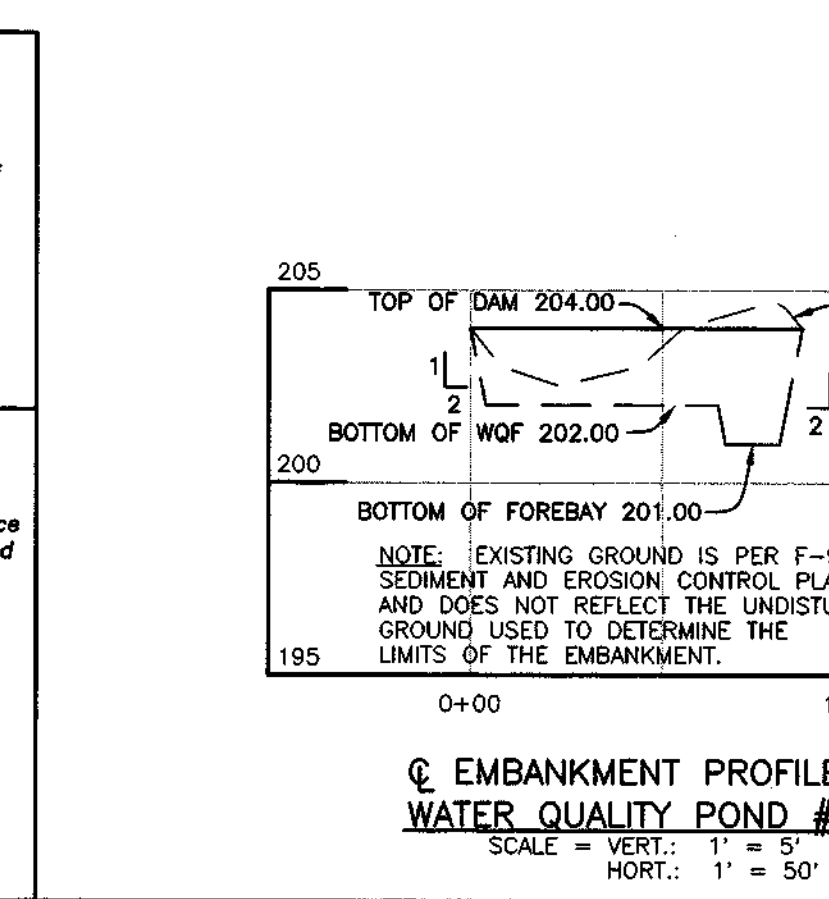
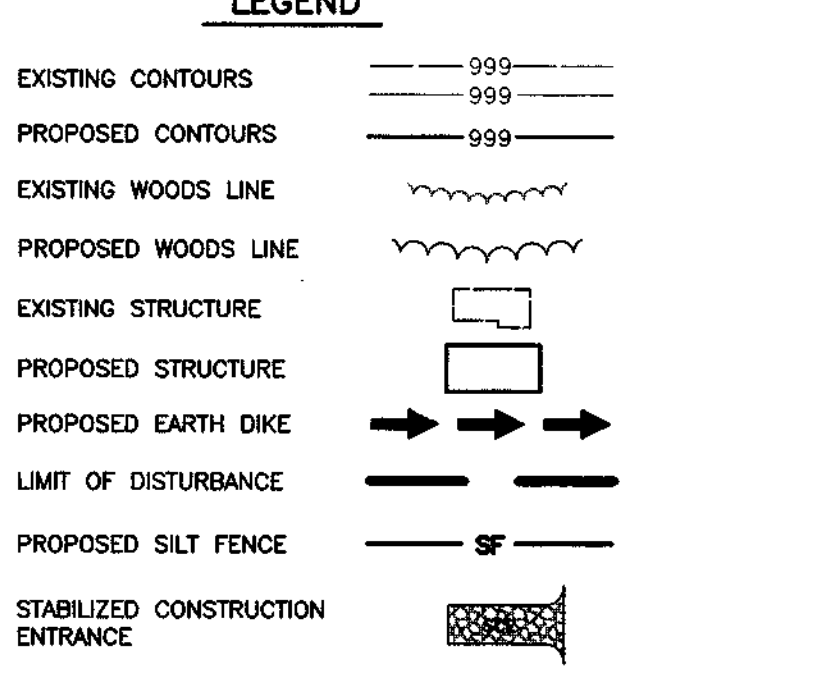
*Donald Mason* 10/9/98  
 Date

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

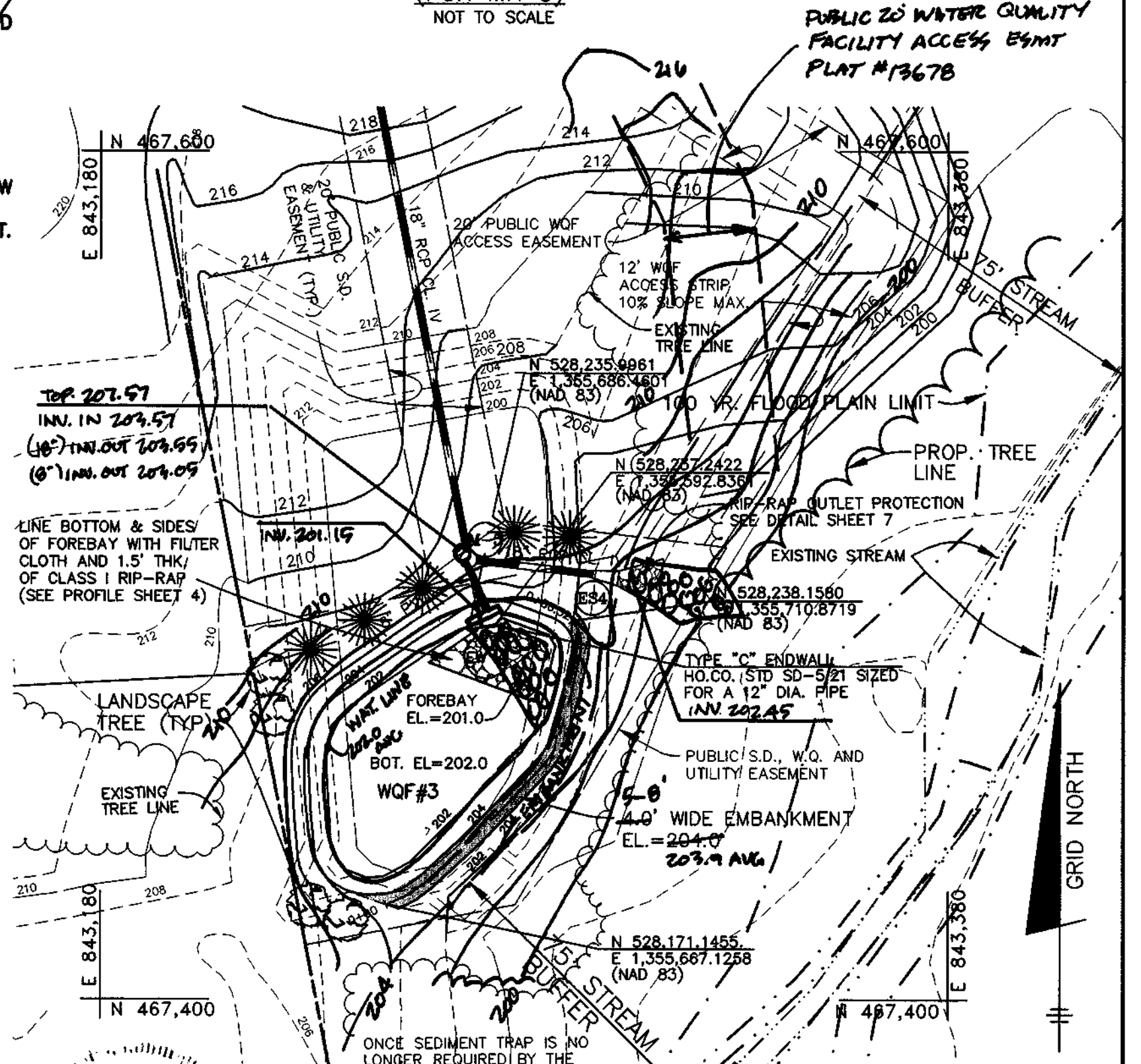
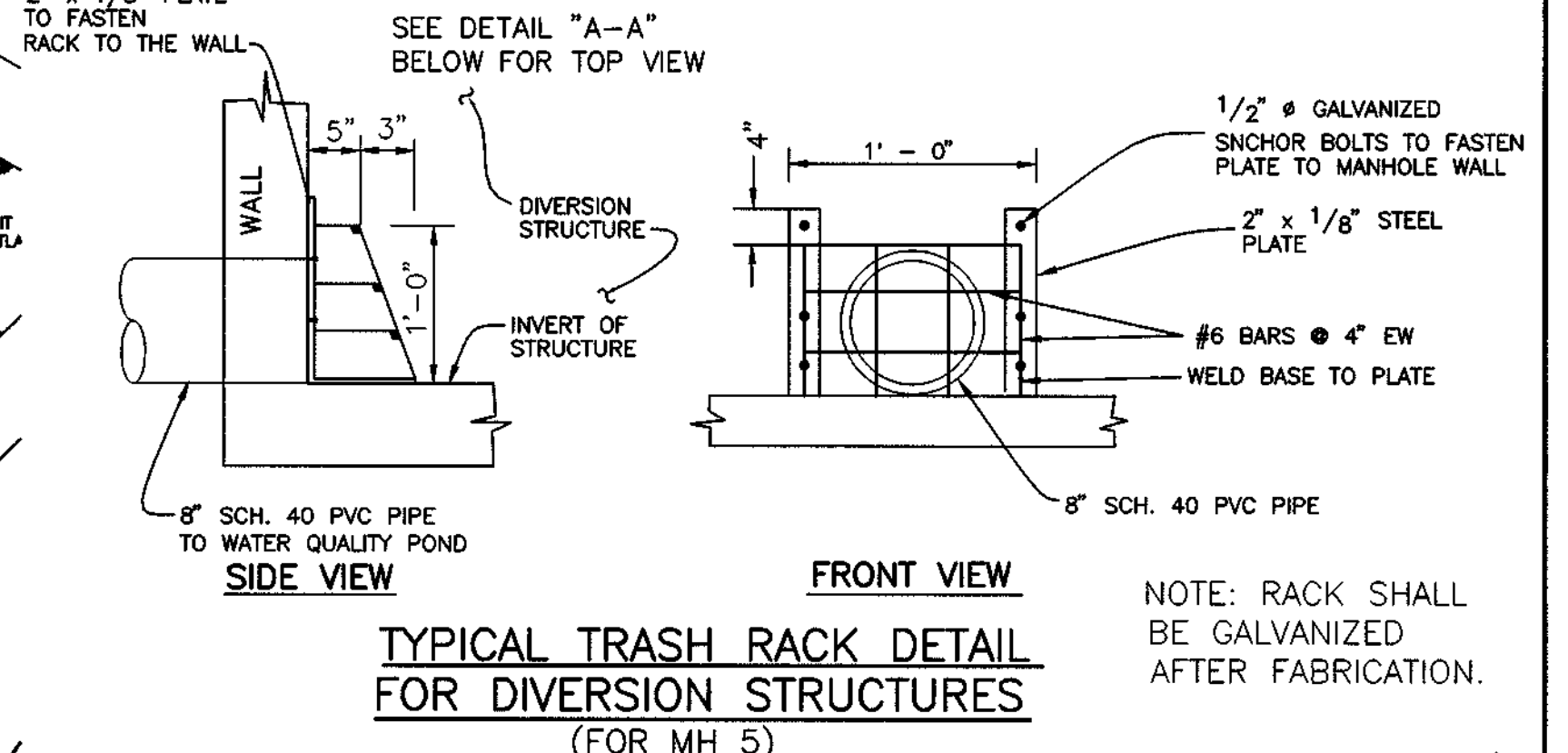
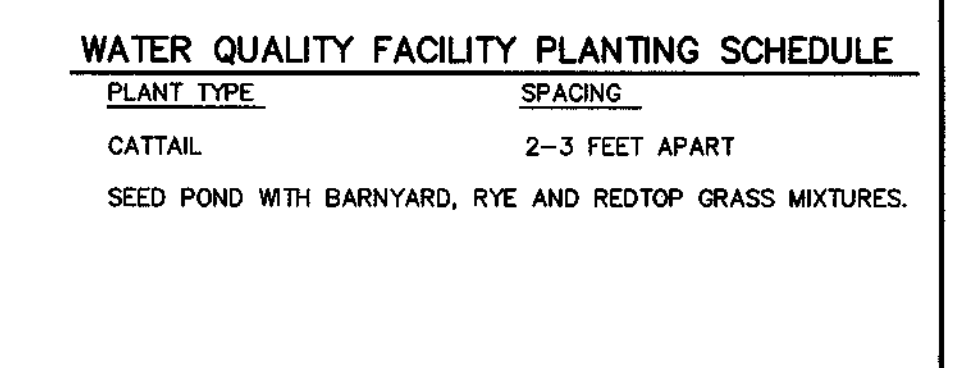
*R. O. Byg* 10/14/98  
 Signature of Developer Date

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

*John K. Robertson* 10/21/98  
 HOWARD SOIL CONSERVATION DISTRICT DATE



- PUBLIC WATER QUALITY FACILITY MAINTENANCE REQUIREMENTS**
1. REMOVE SILT WHEN ACCUMULATION EXCEEDS FOUR (4) INCHES IN THE FOREBAY.
  2. REMOVE PAPER AND TRASH ACCUMULATION AS NECESSARY.
  3. NO VEGETATION ALLOWED TO GROW ON THE EMBANKMENT FACE OR TOP IN EXCESS OF 18 INCHES IN HEIGHT.
  4. ANNUAL INSPECTION OF DIVERSION STRUCTURES IS REQUIRED. REPAIR AS NECESSARY.



**SHANBERGER & LANE**  
 8724 TOWN & COUNTRY BLVD.  
 SUITE 201  
 ELLICOTT CITY, MARYLAND 21043

*G. Scott Shanabarger*  
 DATE  
 PROF. L.G. #10849

NO.	DATE	REVISION
2	3-2-99	REVISE HALSTEAD AVE FROM CUL-DE-SAC TO TEE-TURNAROUND
1	12-29-98	REVISE ROAD GRADES, STREAM VIEW LN. + HALSTEAD AVE. (L7), SPOT EL. HALSTEAD AVE. (L7)

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

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

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, LLC  
 9691 NORFOLK AVENUE  
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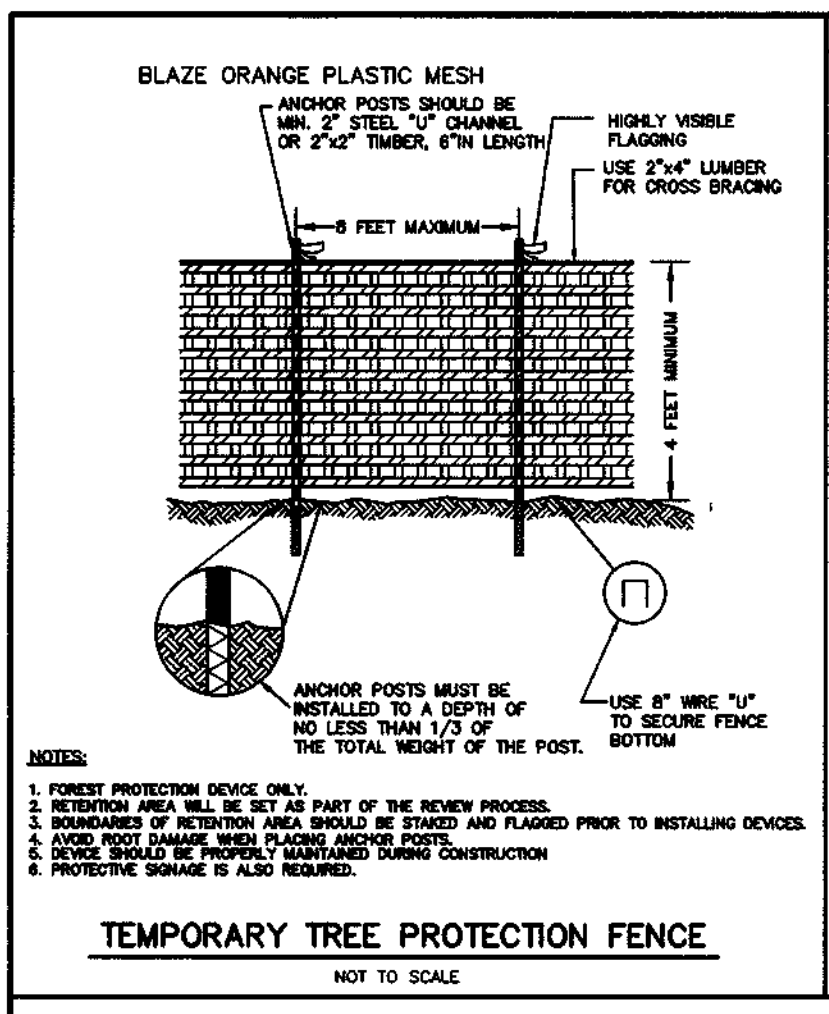
PROJECT: NORTH LAUREL PARK - PHASE II  
 LOTS 2-5, 8-11, 13, 14 & 16 BLOCK "A"  
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LOCATION: TAX MAP 50 - BLOCK 3 - PARCEL 426  
 SIXTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

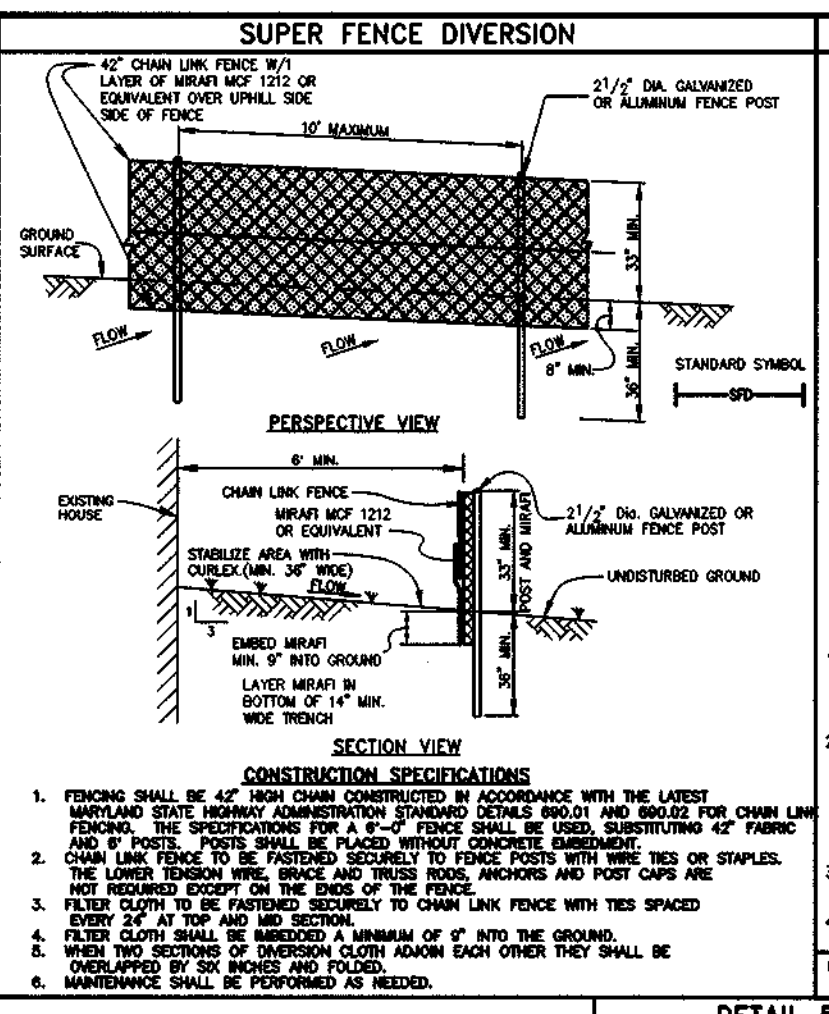
TITLE: GRADING, SWM AND SEDIMENT AND EROSION CONTROL PLAN  
 F-98-05

DATE: AUGUST, 1998 PROJECT NO. 1149  
 DESIGN: YSL DRAFT: JMC SCALE: AS SHOWN DRAWING 8 OF 7

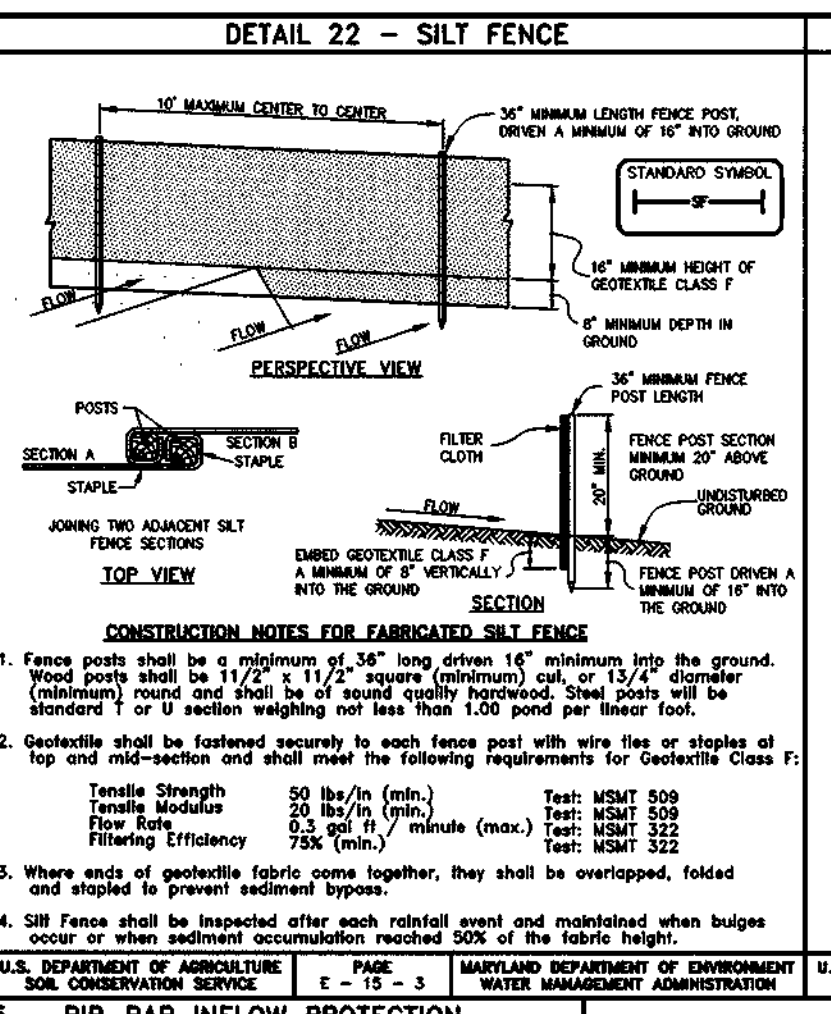




TEMPORARY TREE PROTECTION FENCE  
NOT TO SCALE



SUPER FENCE DIVERSION  
NOT TO SCALE



DETAIL 22 - SILT FENCE  
NOT TO SCALE

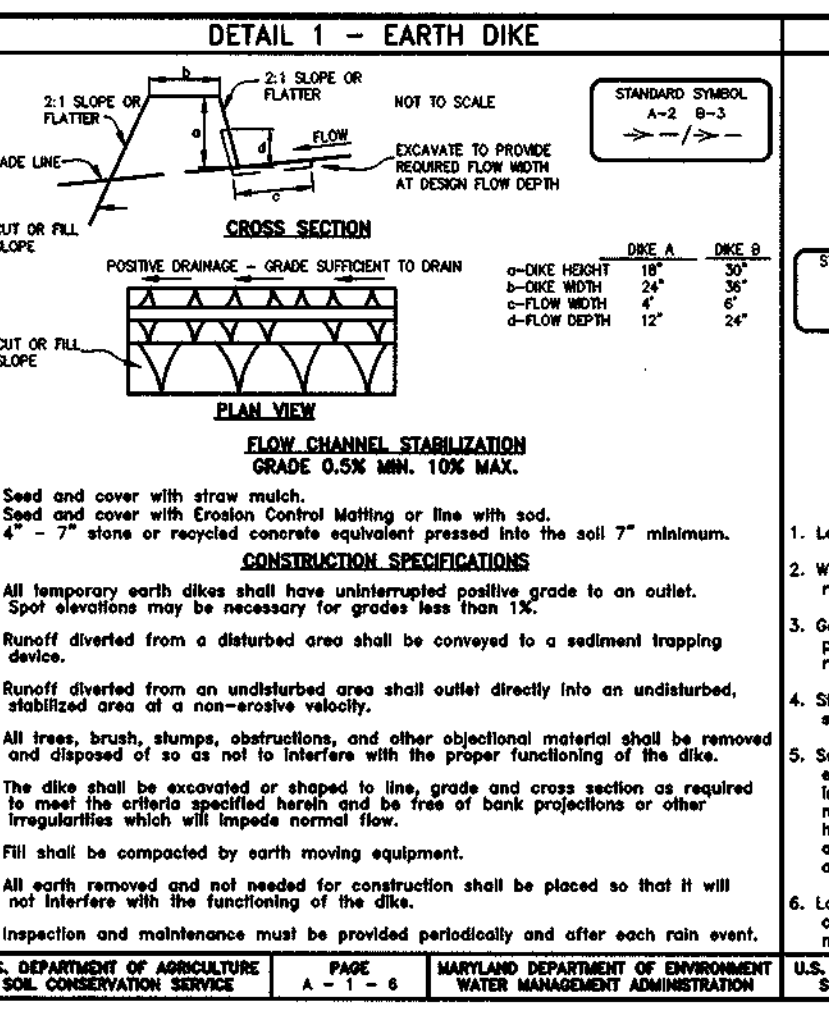
**SILT FENCE**

**SILT FENCE DESIGN CRITERIA**

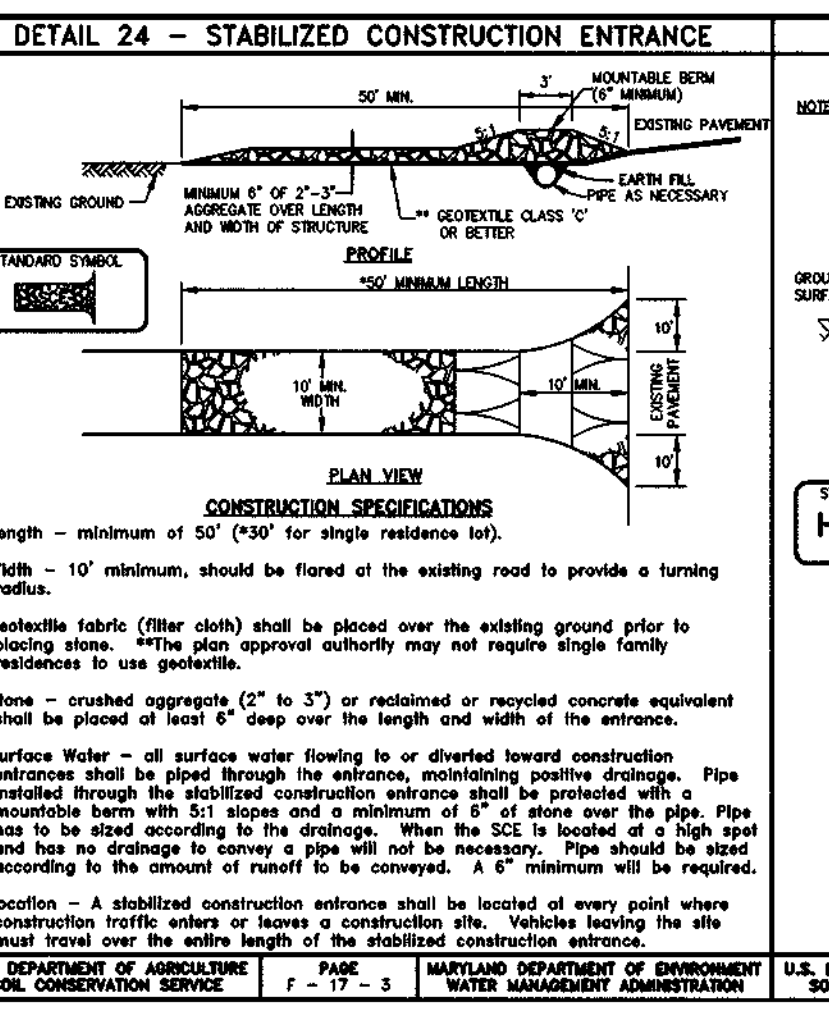
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
50:1 to 10:1	unlimited	unlimited
10:1 to 5:1	125 feet	1,000 feet
5:1 to 3:1	100 feet	750 feet
3:1 to 2:1	60 feet	500 feet
2:1 and steeper	40 feet	250 feet

Notes: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

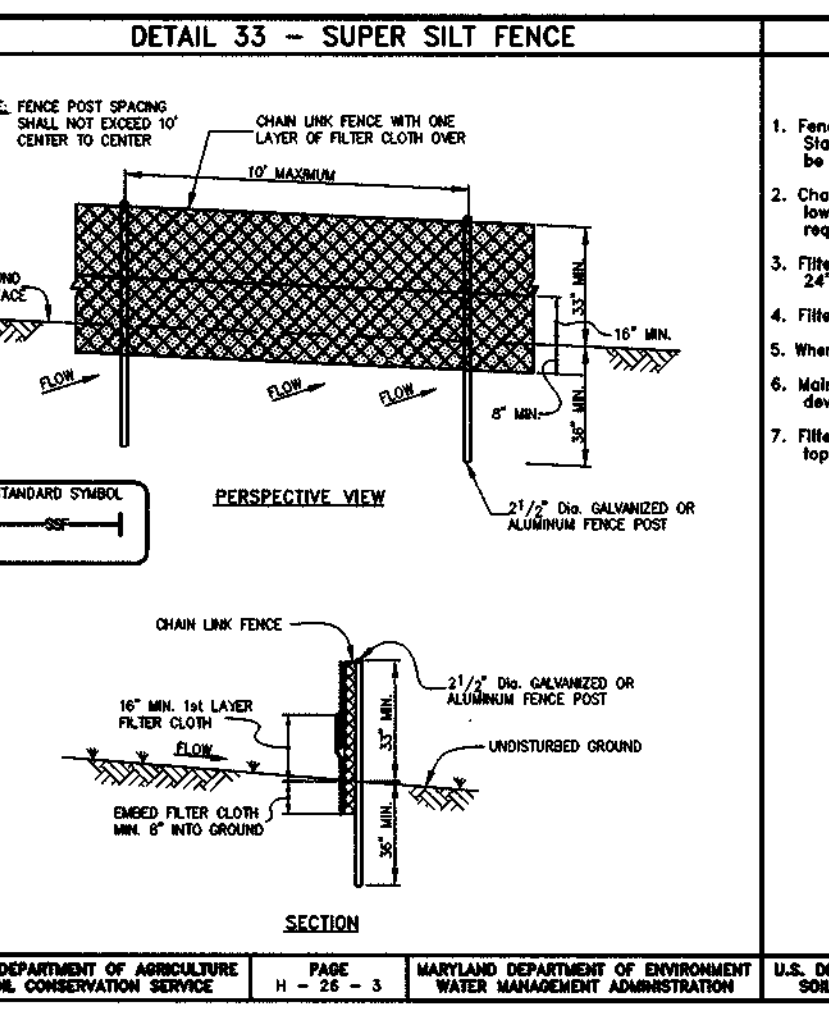
SILT FENCE  
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E-15-3A



DETAIL 1 - EARTH DIKE  
NOT TO SCALE



DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE  
NOT TO SCALE



DETAIL 33 - SUPER SILT FENCE  
NOT TO SCALE

**SUPER SILT FENCE**

**CONSTRUCTION SPECIFICATIONS**

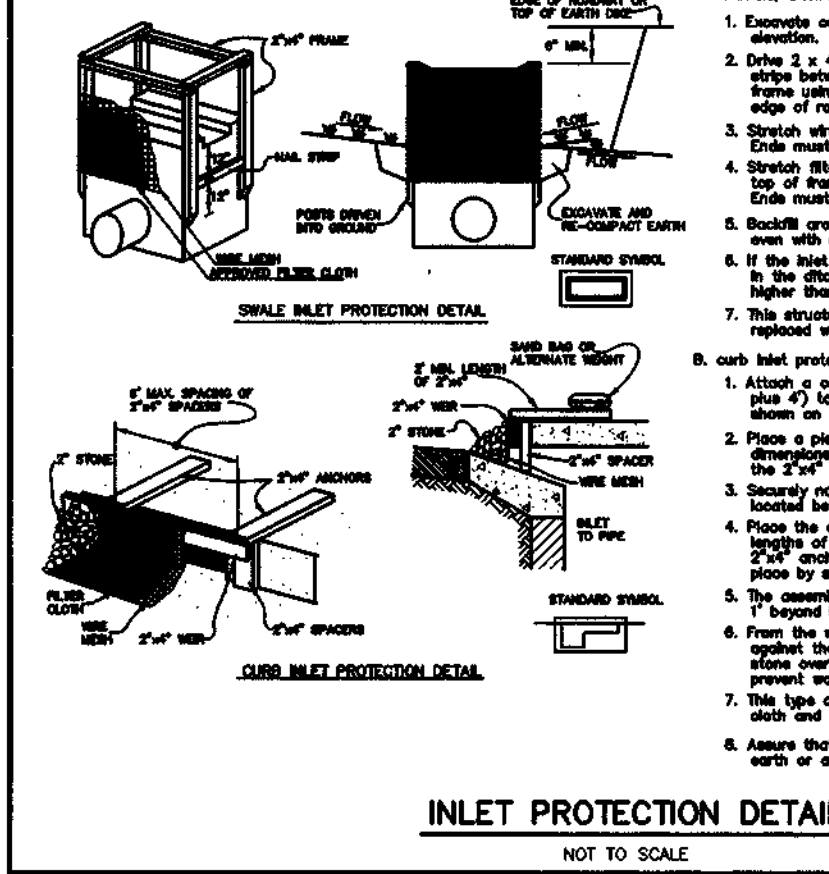
- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Detention for Chain Link Fencing. The specification for a 4" fence shall be used, substituting 42" fabric and 6" length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and three rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" of the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 8" and folded.
- Maintenance shall be performed as needed and all buildings removed when "bulges" develop in the fill fabric or when they reach 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/ft (min.)	Test: MSMT 509
Tensile Modulus <td>20 lbs/in (min.) <th>Test: MSMT 509</th> </td>	20 lbs/in (min.) <th>Test: MSMT 509</th>	Test: MSMT 509
Flow Rate <td>0.5 gal/ft<sup>2</sup>/minute (max.) <th>Test: MSMT 322</th> </td>	0.5 gal/ft <sup>2</sup> /minute (max.) <th>Test: MSMT 322</th>	Test: MSMT 322
Filtering Efficiency <td>75% (min.) <th>Test: MSMT 322</th> </td>	75% (min.) <th>Test: MSMT 322</th>	Test: MSMT 322

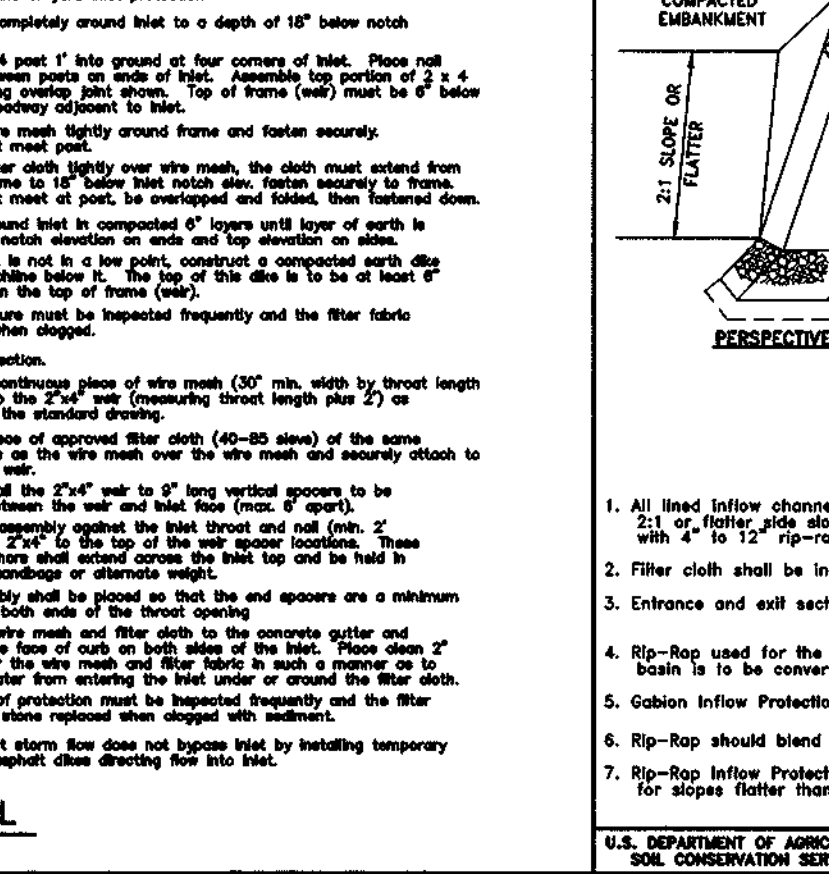
**SUPER SILT FENCE DESIGN CRITERIA**

Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 10:1	Unlimited
10 - 20%	10:1 - 5:1	1,500 feet
20 - 33%	5:1 - 3:1	1,000 feet
33 - 50%	3:1 - 2:1	100 feet
50% +	2:1 +	50 feet

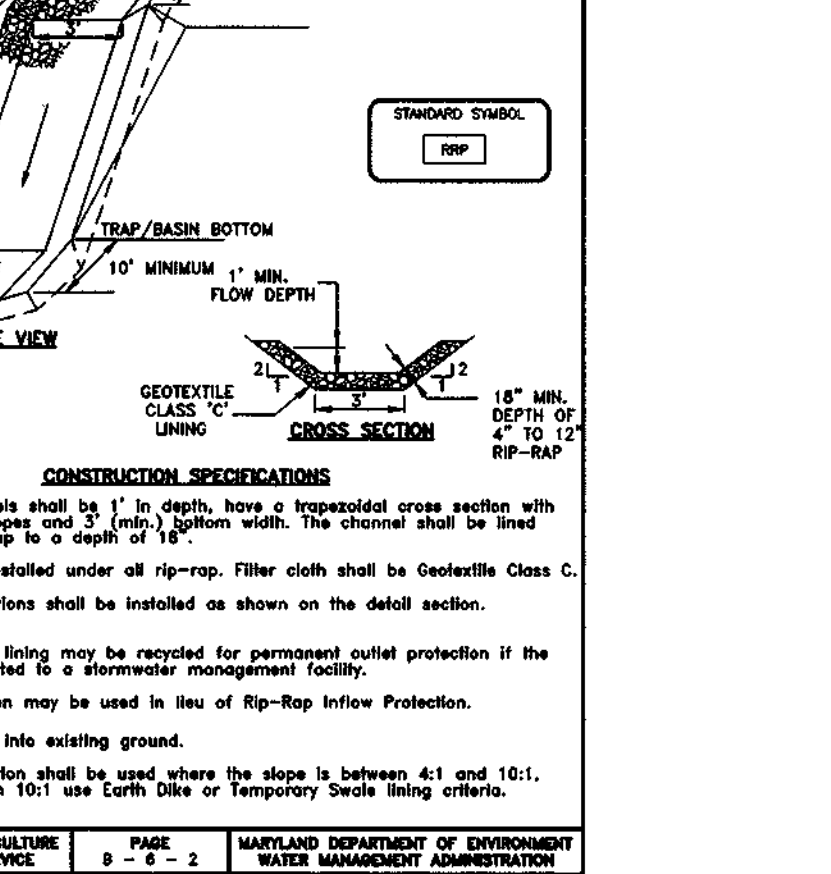
SUPER SILT FENCE  
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E-26-3A



INLET PROTECTION DETAIL  
NOT TO SCALE



DETAIL 5 - RIP-RAP INFLOW PROTECTION  
NOT TO SCALE



DETAIL 23 - RIP-RAP INFLOW PROTECTION  
NOT TO SCALE

**CONSTRUCTION AND MATERIAL SPECIFICATIONS**

- All lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 1.5:1 to 2:1 slopes on both sides. The channel shall be lined with 4" to 12" rip-rap to a depth of 12".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- 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.
- Gabion Inflow Protection may be used in lieu of Rip-Rap Inflow Protection.
- Rip-rap should blend into existing ground.

Notes: 1. Rip-rap inflow protection shall be used where the slope is between 4:1 and 10:1. For slopes flatter than 10:1 use Earth Dike or Temporary Silt Fence criteria.

CONSTRUCTION AND MATERIAL SPECIFICATIONS  
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E-15-3A

**21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**

**CONSTRUCTION AND MATERIAL SPECIFICATIONS**

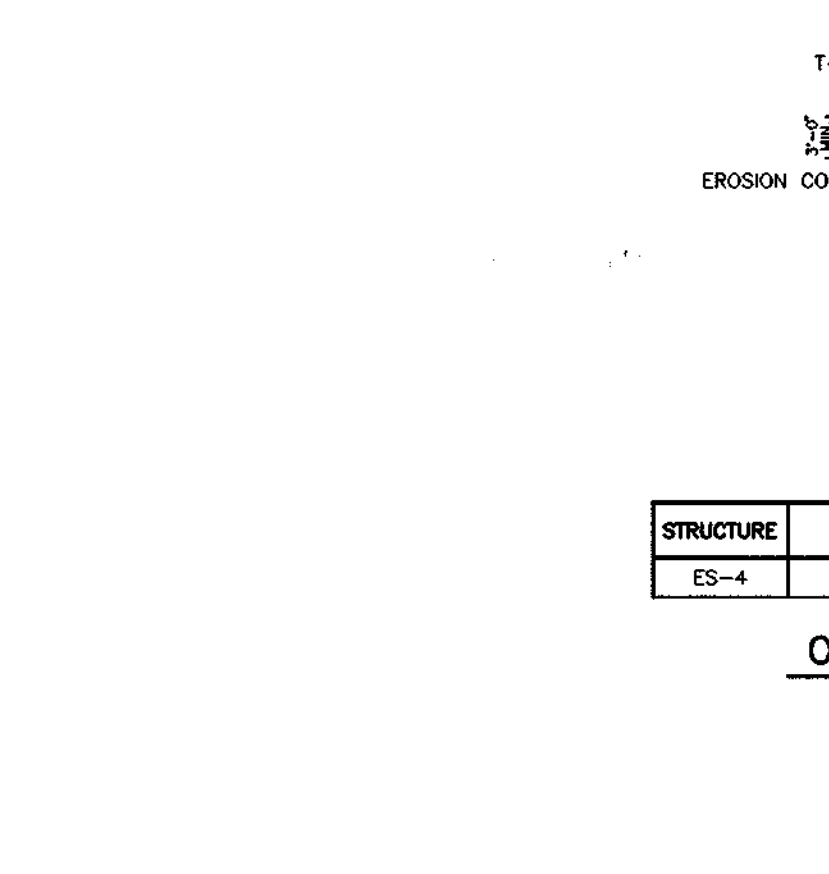
- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY AGRICULTURAL EXPERIMENTAL STATION.
- 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 CLAY, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
  - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
  - WHERE THE SUBSOIL IS EITHER ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE AND WORKED INTO THE SOIL IN CONNECTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES:
    - ON SITES HAVING DISTURBED AREAS OVER 5 ACRES:
      - TOPSOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
        - PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
        - ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
        - TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
        - NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STABILIZERS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
      - NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
    - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 21.0.02.01 AND 21.0.02.02. SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- TOPSOIL APPLICATION
  - WHEN TOP SOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIMENSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SALT FENCE AND SEDIMENT TRAPS AND BASINS.
  - GRADES ON THE AREAS TO BE TOP SOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" OR HIGHER IN ELEVATION.
  - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 2". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SOILING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOP SOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
  - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND ORGANIC FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
  - COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
    - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
    - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
    - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
    - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL  
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E-15-3A

**SEQUENCE OF CONSTRUCTION**

- Notify Sediment Control Division 48 hours prior to start of construction.
- Obtain Grading Permit. (Day 1)
- Install stabilized construction entrance and sediment control devices around the existing pavement adjacent to SSE. (Day 2 - 4)
- Inspect all existing sediment control devices installed under F-98-05 that are to remain. Repair as required in accordance with details (Day 5 - 9)
- With the permission of the Sediment Control Inspector, complete site and road grading, stock pile topsoil on site. Subgrade shall be stabilized in accordance with temporary seeding notes. (Day 10 - 20)
- Construct utilities and storm drain system. Note that under initial construct while the existing SOST#1 (constructed under F-98-05) is being utilized, construct 60 1.1" storm drain to top of sediment trap. Install temporary end section and rip-rap inflow protection from end-section into sediment trap bottom. (Day 21-30)
- Install temporary end section and in-flow protection. (Day 33 - 35)
- Install concrete curb and gutter as shown on the plan. (Day 36 - 42)
- Install paving. (Days 43 - 49)
- Remove existing POST#3 and convert SOST#1 to water quality POND#3 as shown on plans. Complete construction of storm drain system after SOP stage or as allowed by the County Inspector. (Day 49 - 52)
- Convert POST #3 to a water quality facility after SOP stage or as allowed by county inspector. During house construction phase facility per construction plans and excavate to final grade. Contractor must secure permission of Sediment Control Inspector before proceeding. POST #3 shall remain as needed for Phase II SDC construction. (Day 53-57)
- Flush the storm drain system prior to removal of the trap to remove any accumulated sediment. (Day 58)
- Install remaining storm drain structures, permanent concrete pipes, diversion structure and diversion pipe per the construction plans. Remove temporary end section and use as ES4. Install wetland plantings in WOF #3. (Day 59 - 63)
- Restore the area to grades shown on the plan. Plant and stabilize with permanent vegetative measures. (Day 64)

SEQUENCE OF CONSTRUCTION  
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E-15-3A



OUTLET PROTECTION DETAIL  
NOT TO SCALE

**PERMANENT SEEDING NOTES**

Apply to graded or cleared area 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 on the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 800 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper 3" of soil. At time of seeding, apply 2 tons per acre apply 400 lbs per acre 30-0-0 ureiform fertilizer (8 lbs/1000 sf).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

**Seeding:** For the periods March 1 through April 30 and August 1 through October 15, seed with 80 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 80 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 sf) 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 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

**Maintenance:** Inspect all seeded areas and make needed repairs, replacements and reseeding.

**TEMPORARY SEEDING NOTES**

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

**Seedbed Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

**Soil Amendments:** Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf).

**Seeding:** For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual Ryegrass (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period November 16 through 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 sf) 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 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

**SEDIMENT CONTROL NOTES**

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "Maryland Standards and Specifications for Soil Erosion and Sediment Control", and revisions thereto.
- Following initial soil disturbances or redisturbances, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 calendar days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the "Howard County Design Manual, Storm Drainage".
- All disturbed areas must be stabilized within the time period specified above in accordance with the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" for Permanent Seeding (Sec. 51) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 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:	7.12 ± AC.
Area to be Disturbed:	2.62 ± AC.
Area to be roofed or paved:	1.17 ± AC.
Area to be vegetatively stabilized:	1.45 ± AC.
Total Cut:	1,433 C.Y.
Total Fill:	5,960 C.Y.

 Offsite Waste/Borrow Area Location: \*SITE WITH AN ACTIVE GRADING PERMIT
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls 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.
- Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.
- Quantities and estimates shown are for sediment control purposes only. Contractor shall prepare his/her own quantity estimates to his/her satisfaction.
  - It is the responsibility of the contractor to identify the spot/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.

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

*John P. Robertson* 10/21/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

**ENGINEER'S CERTIFICATE**

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

*Donald Moon* 10/19/98  
Date

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

*R. O. By* 10/19/98  
Signature of Developer Date

**APPROVED:** REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Cheryl Simmons* 10/21/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Andrew M. Dancik* 10-26-98  
CHIEF, BUREAU OF HIGHWAYS DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cindy Hester* 10/29/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*W. D. ...* 10/26/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**NO. DATE REVISION**

**BENCHMARK ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-485-6105 FAX: 410-485-6644

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, LLC  
9691 NORFOLK AVENUE  
LAUREL, MARYLAND 20723  
410-792-2565

PROJECT: NORTH LAUREL PARK - PHASE II  
LOTS 2-5, 8-11, 13 & 14 BLOCK "A" AND  
LOTS 1-10, 21-29, 31 & 32 BLOCK "G"

LOCATION: TAX MAP 50 - BLOCK 3 - PARCEL 426  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT AND EROSION CONTROL NOTES AND DETAILS  
F-98-05

DATE: AUGUST, 1998 PROJECT NO. 1149

DESIGN: YSL DRAFT: JMC SCALE: AS SHOWN DRAWING 7 OF 7