
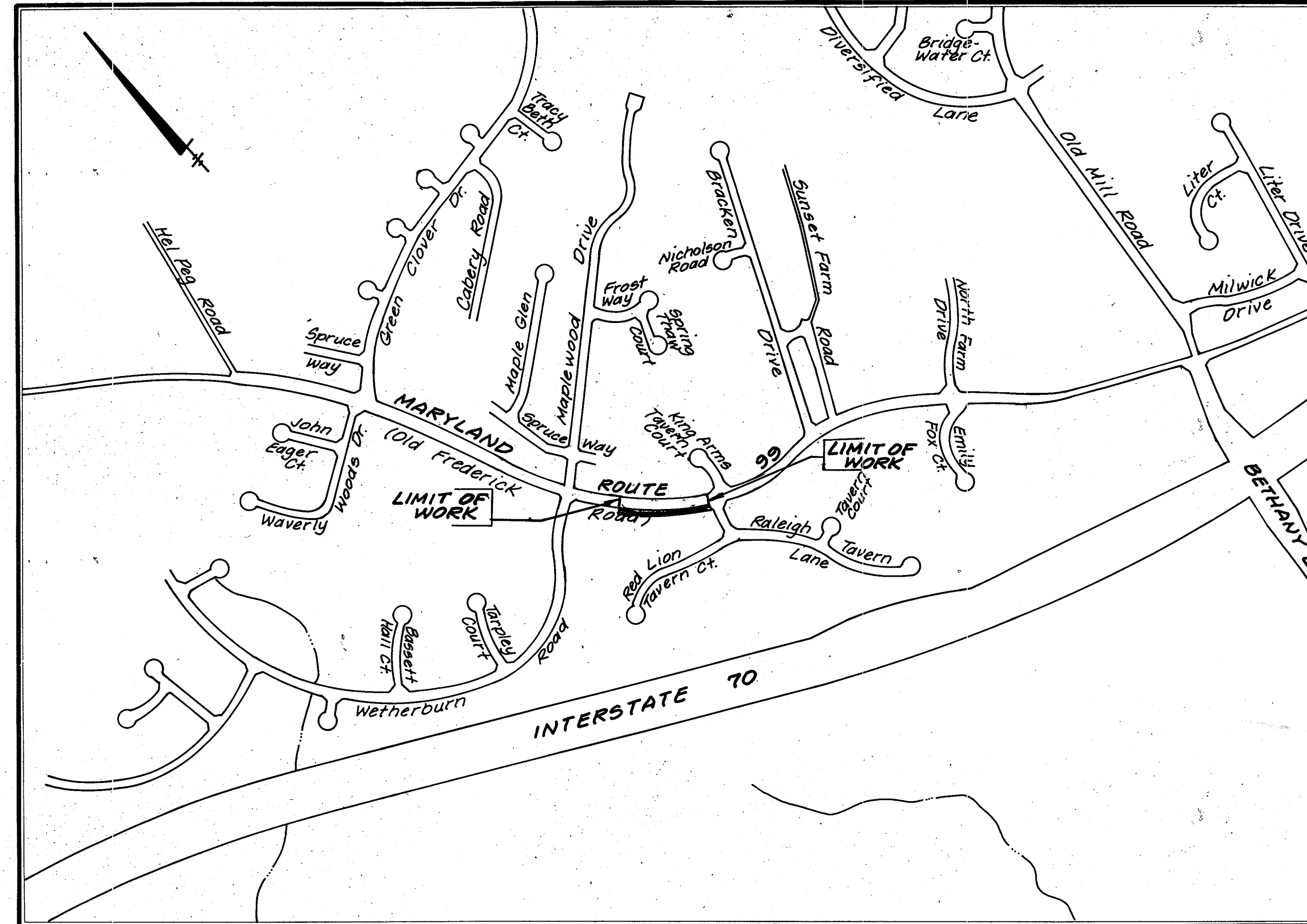


INDEX OF SHEETS	
No.	TITLE
1	TITLE SHEET
2	PLAN AND PROFILE
3	SEDIMENT CONTROL PLAN

GENERAL NOTES:

- All construction shall be in accordance with the latest Standards and Specifications of Howard County plus MSHA Standards and Specifications, if applicable.
- The contractor shall notify the Department of Public Works / Bureau of Construction Inspection at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- Any damage to public rights-of-ways, existing paving, existing curb and gutter, existing utilities etc. shall be corrected at the contractor's expense.
- The existing utilities shown hereon are located from field surveys and construction drawings of record. The approximate location of existing utilities are shown for the contractor's information and convenience. The contractor shall locate all existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
- The topography shown hereon is compiled from field run data prepared by Land Design Engineering, Inc. (11/92)
- Horizontal and vertical datums are related to the Maryland State Plane Coordinate System as projected from Howard County Control Stations.
- Geotechnical Study and Structural Retaining Wall Design prepared by Hillis-Carnes Engineering Associates, Inc. dated December 1993.
- Where test pits have been made on existing utilities, they are noted by the symbol  at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the Contractor two weeks in advance of construction operations at his own expense.



LOCATION MAP
SCALE: 1"=600'

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

SIGNATURE _____ DATE _____
U.S. SOIL CONSERVATION SERVICE

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

HOWARD SOIL CONSERVATION DISTRICT _____ DATE _____

DEVELOPER'S CERTIFICATE

"I/we certify that all development and/or construction will be done according to this plan, and that any 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."

Robert J. Seaman 8/28/97
Signature of Developer Date

ENGINEER'S CERTIFICATE

"I 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."

Bruce D. Bupton 8/27/97
Signature of Engineer Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. Lee 8/29/97
DIRECTOR OF PUBLIC WORKS DATE

Robert J. Seaman 8/28/97
CHIEF BUREAU OF ENGINEERING DATE

William J. McLaughlin 8/29/97
CHIEF TRANSPORTATION PROJECTS DATE

William J. McLaughlin
CHIEF STORMWATER MANAGEMENT

Land Design Engineering, Inc.
8835 Columbia 100 Parkway
Unit N
Columbia, Maryland
21045
Phone: (410) 715-1070 (301) 596-3424

Designed: BOB
Drawn: KBW
Checked: BOB
Date: Oct. 1992

BY	No.	REVISION	DATE

ALTERNATE STUDY
TITLE SHEET

600 SCALE MAP No. 17 BLOCK No. 7

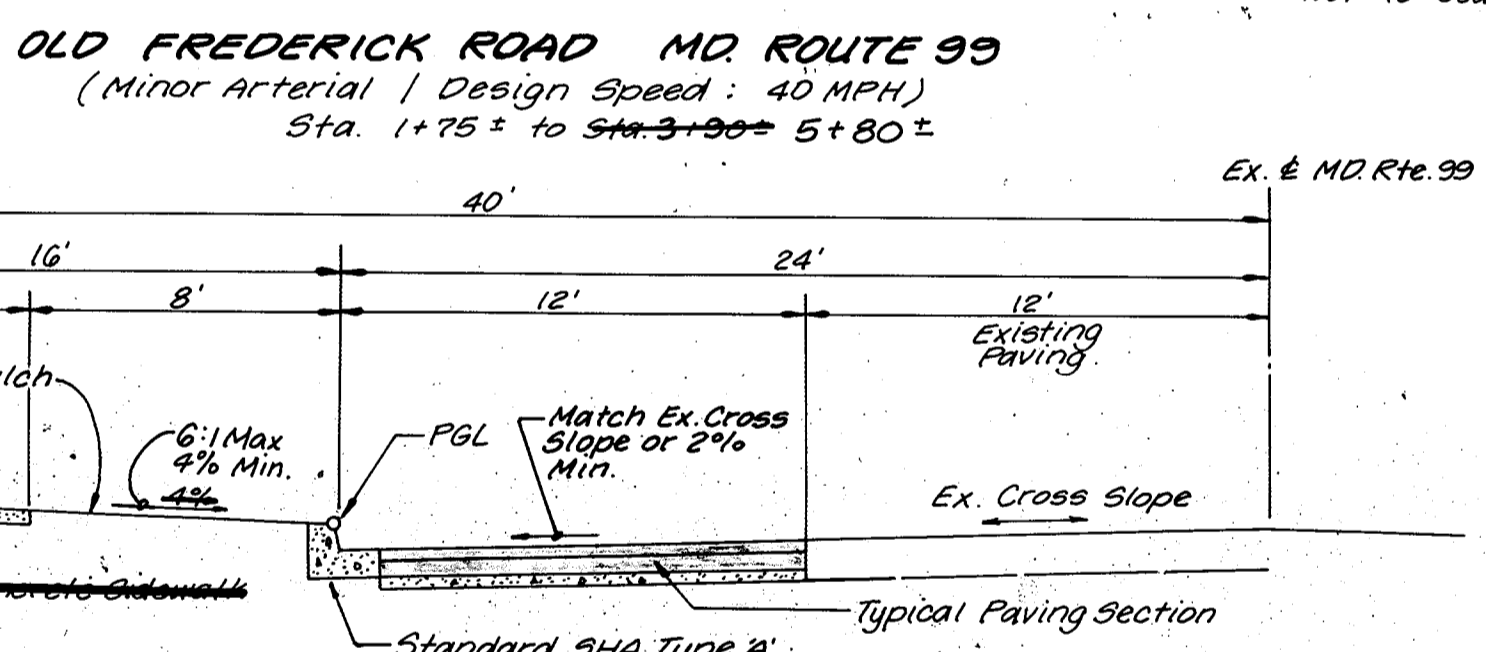
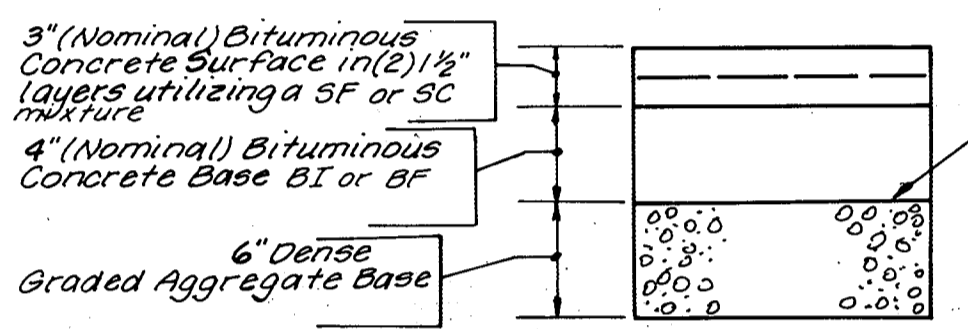
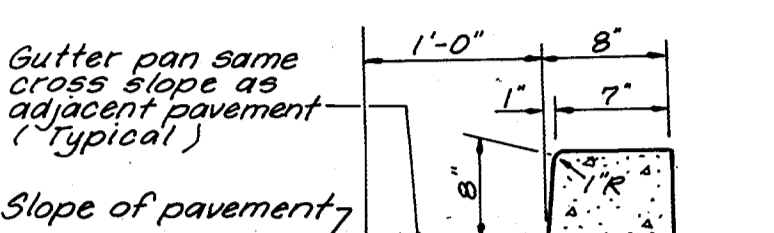
SCHOOL ROUTE PATHWAYS / SIDEWALKS
OLD FREDERICK ROAD
Capital Project No. R-5022-M
Contract No. 92-49
2nd Election District Howard County, Maryland

SCALE AS SHOWN
SHEET 1 OF 3

CΦ9AZΦ1

COORDINATE TABLE		
NO.	NORTH	EAST
65	181,560.2205	411,627.7340
66	181,581.9324	411,603.8863
84	181,641.8951	411,546.8407
1550	181,680.4218	411,514.8625
1525	181,706.3548	411,497.8594
1527	181,707.9416	411,496.6381
102	181,677.5676	411,521.6046
103	181,933.6615	411,685.0158

NOTE: The coordinates shown are related to the Maryland State Plane Coordinate System as projected from Howard County Control Stations (NAD 83) 1012 and 1023.



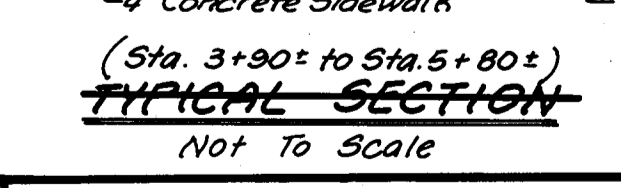
- NOTES:
- Sidewalk to be scribed in 5' Maximum Squares.
 - Expansion joints across the sidewalk not to be more than 15' apart.
 - 1/2" Preformed bituminous expansion material in expansion joints to be kept 1/4" below surface of sidewalk.
 - Concrete to be No. 2 Mix.
 - Sidewalk located 2' or more from curb may be 4'-0" in width with 4'x5' paved section placed 200' apart.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

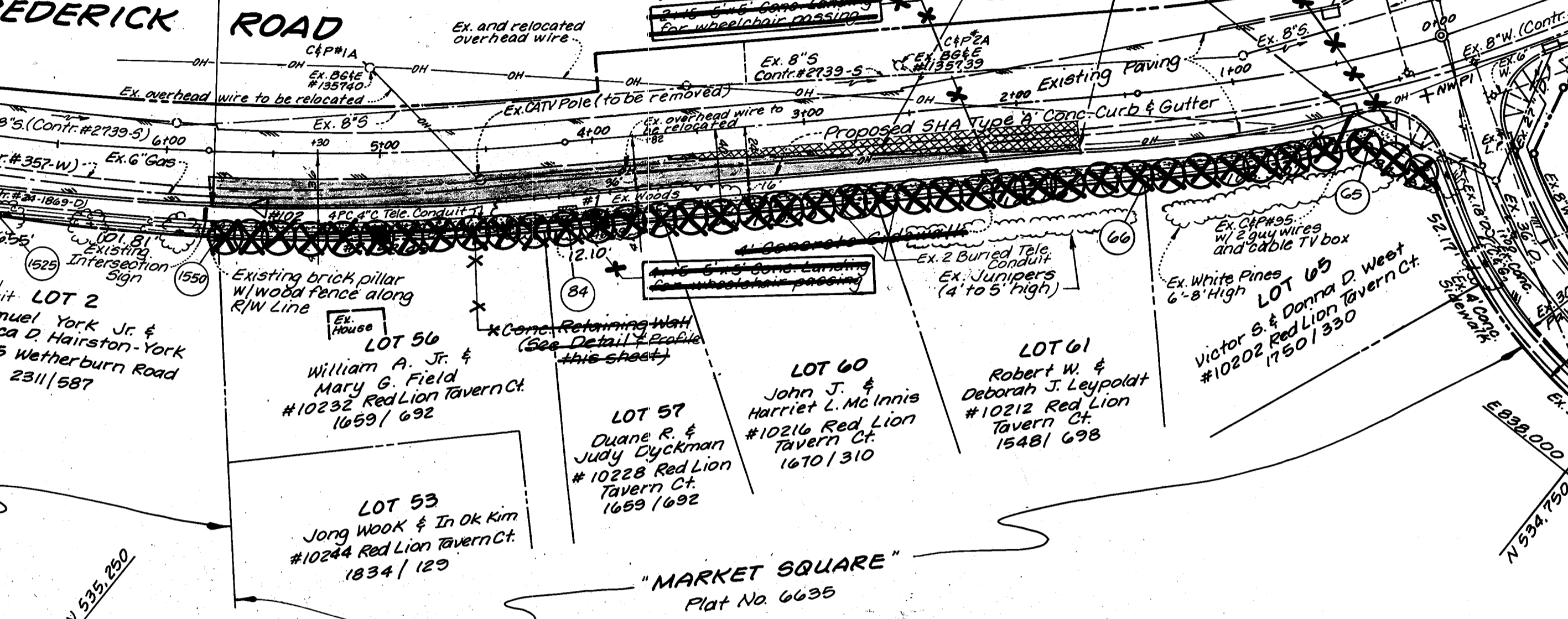
SIGNATURE _____ DATE _____
 U.S. SOIL CONSERVATION SERVICE

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

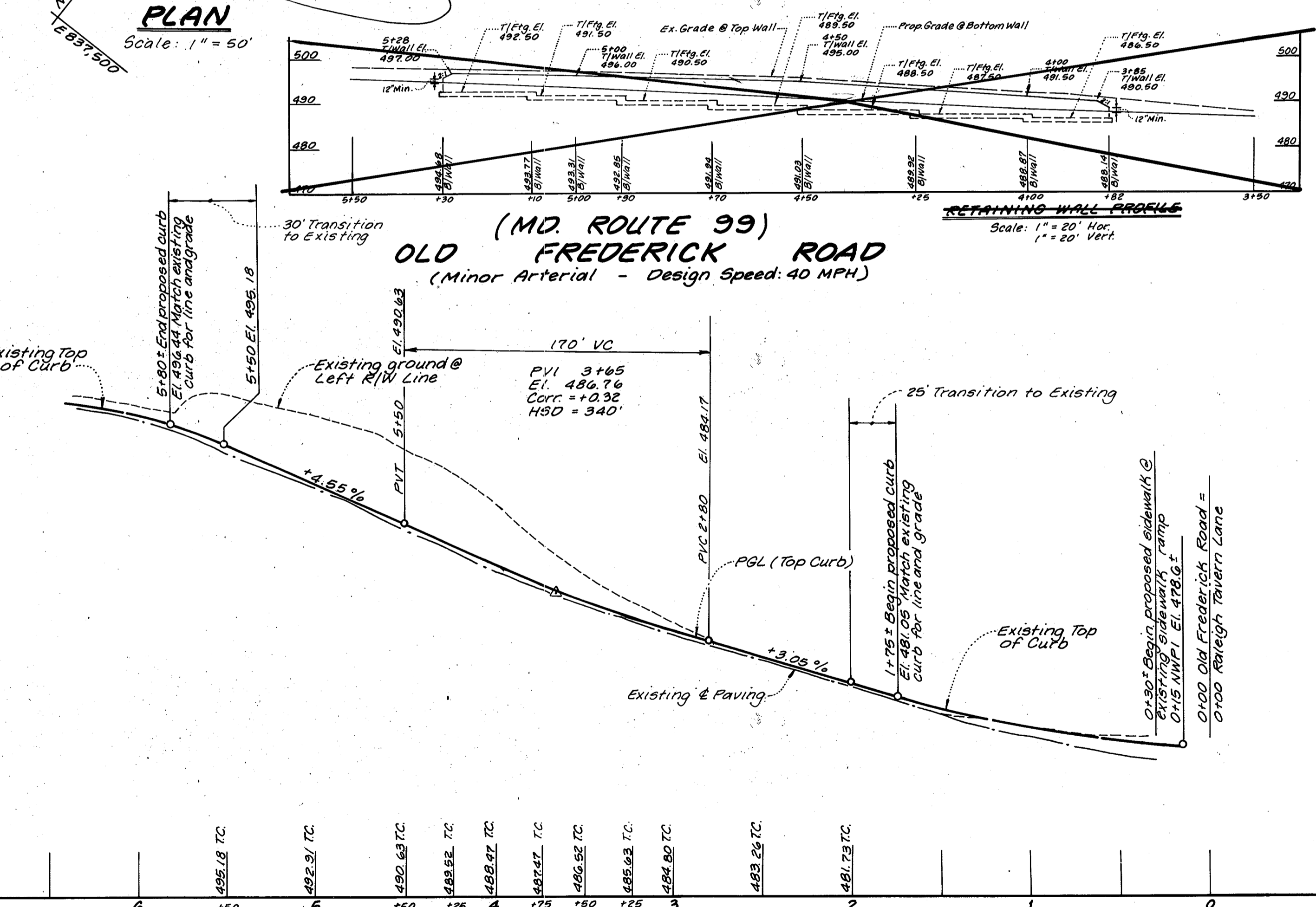
HOWARD SOIL CONSERVATION DISTRICT _____ DATE _____



- LEGEND
- Rebar Found
 - Reversible Slope/Grading Easement
 - Existing Street Trees
 - Proposed Street Trees
 - Concrete Retaining Wall
 - Overhead Wire
 - Ex. Paving to be removed
 - Prop. Paving
 - Test Pit



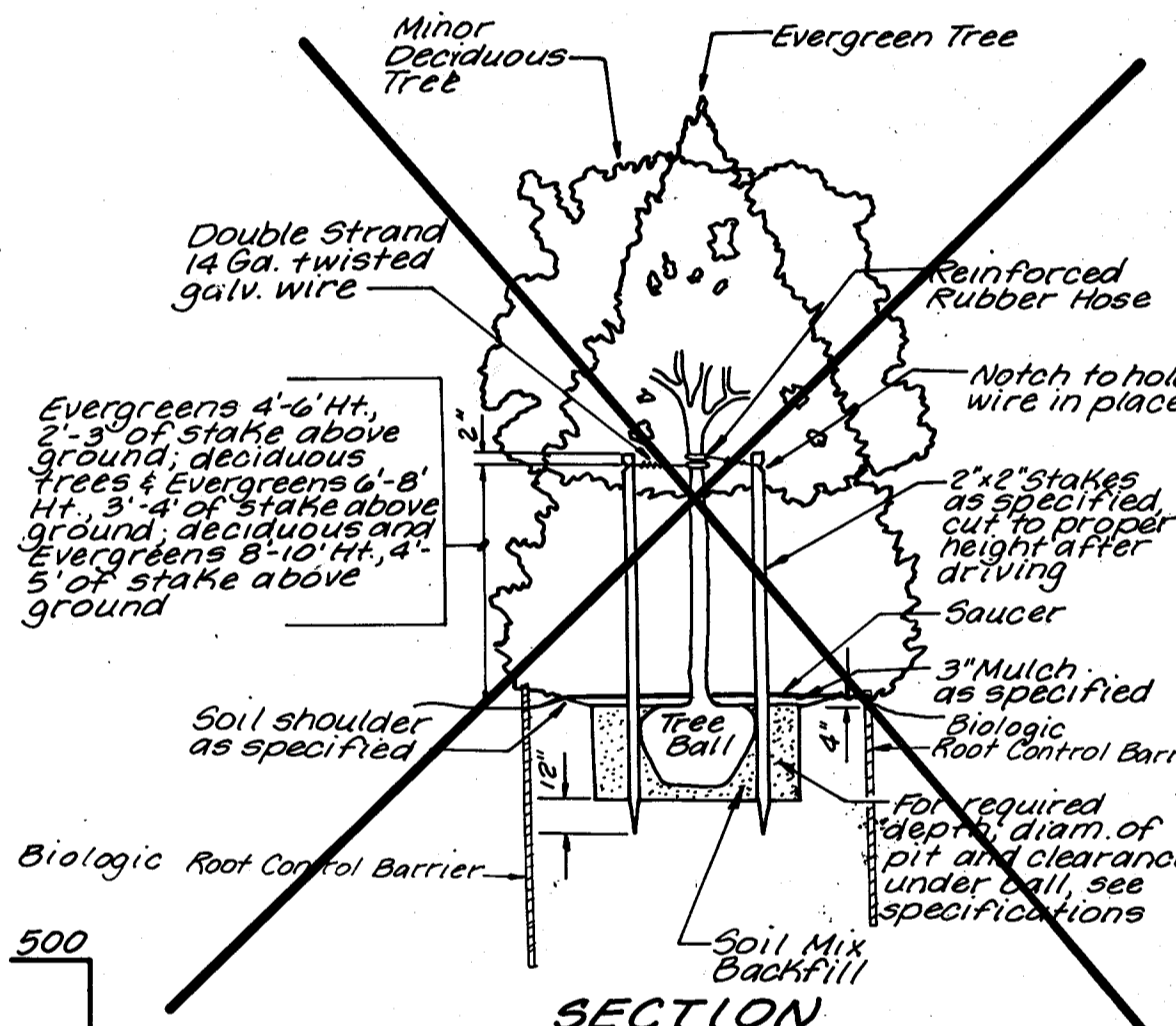
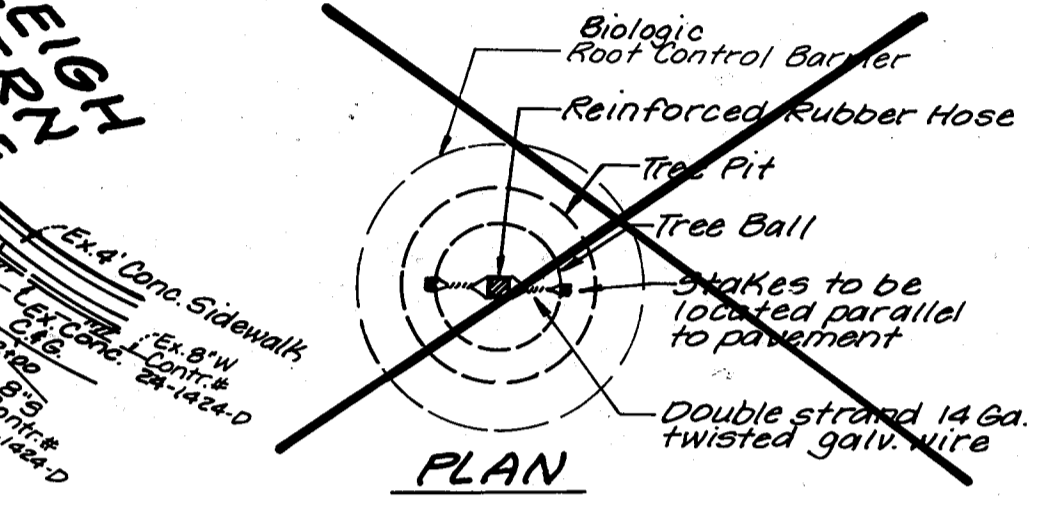
PLAN Scale: 1" = 50'



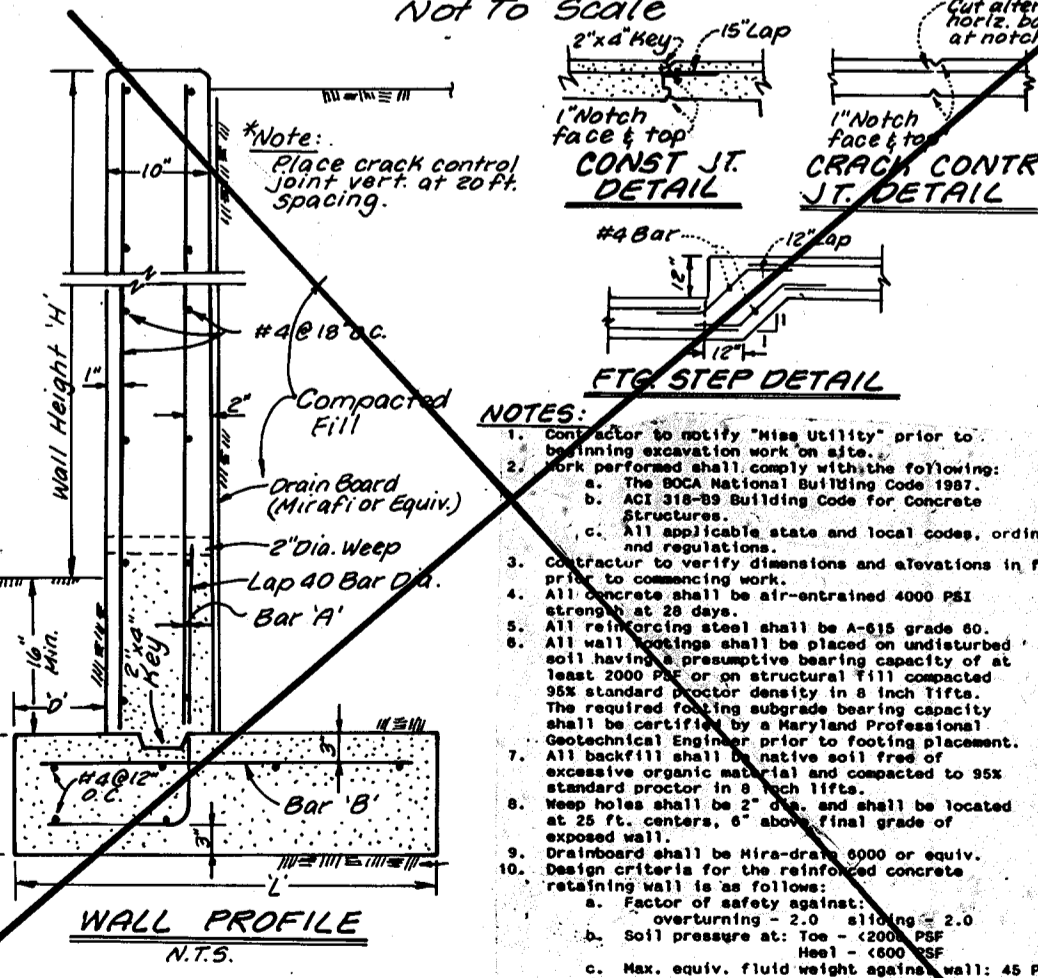
PROFILE Scale: 1" = 50' Horiz. 1" = 5' Vert.

LANDSCAPE LEGEND				
QTY.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
39	<i>Pyrus Calleryana</i>	Cleveland Select Pear	2'-2 1/2' Cal.	8'8" @ 40' O/C 15

NOTE: The specific location of telephone and other utilities shown on this plan are for reference only and are not guaranteed correct. The Contractor must verify locations to his own satisfaction before proceeding with any work.



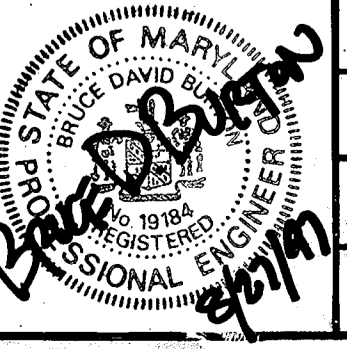
STAKING TREE DETAIL (Std. No. MD-713.03 To 10' Height) Not To Scale



RETAINING WALL DETAIL No To Scale

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works _____ DATE _____
 Chief Bureau of Engineering _____ DATE _____
 William J. Mahoney Jr. 8/29/97
 CIVIL ENGINEER TRANSPORTATION PROJECTS DATE 8/29/97
 & STORMWATER MANAGEMENT

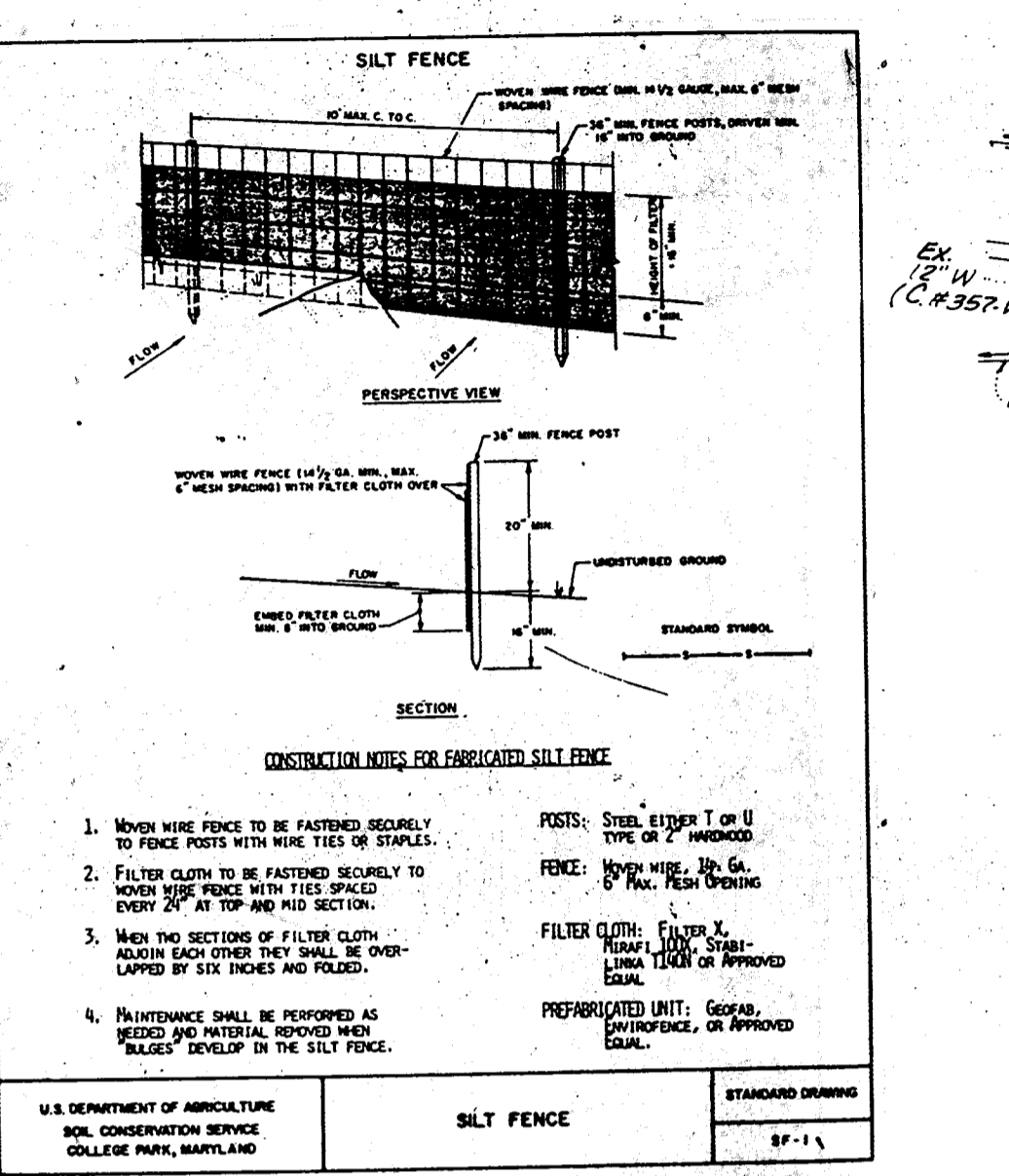
Land Design Engineering, Inc.
 8835 Columbia 100 Parkway
 Unit N
 Columbia, Maryland
 21045
 Phone (410) 715-1070 (301) 596-3424



DESIGNED	DRAWN	CHECKED	DATE	BY	NO.	REVISION	DATE
David S. Brown	David S. Brown	David S. Brown	Oct. 1992				

ALTERNATE STUDY
 PLAN AND PROFILE
 600 SCALE MAP No. 17 BLOCK No. 7

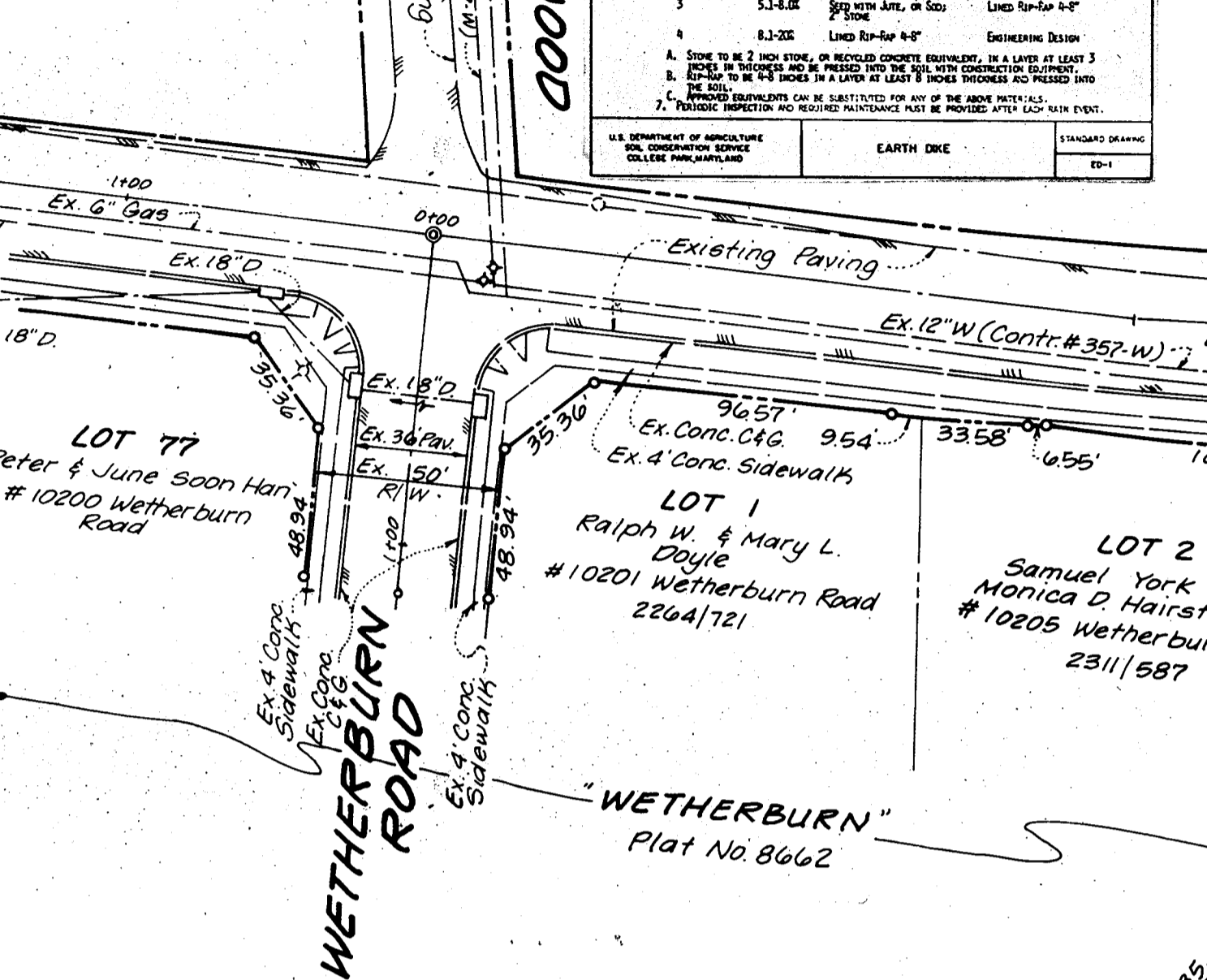
SCHOOL ROUTE PATHWAYS / SIDEWALKS
 OLD FREDERICK ROAD
 Capital Project No. 5-4164
 Contract No. 92-49
 2nd Election District Howard County, Maryland
 SCALE AS SHOWN
 SHEET 2 OF 3



CONSTRUCTION NOTES FOR IMPROVED SILT FENCE

1. Silt fence shall be installed in accordance with the specifications for silt fence in the Standard Specifications for Construction, Section 211-1.1.
2. Filter cloth shall be fastened securely to fence posts with wire ties or staples.
3. Silt fence shall be installed in a trench 6 inches deep.
4. Maintenance shall be performed as needed to maintain proper operation.

- STANDARD SPECIFICATIONS FOR CONSTRUCTION**
- SECTION 211-1.1 IMPROVED SILT FENCE**
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.
 2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "HARDLAND STABILIZATION AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
 3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization structures, dikes, perimeter slopes and all slopes greater than 1:1, 1:1.5 or 1:2 as to all other disturbed or graded areas on the project site.
 4. All sediment transport structures shall be installed and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY OFFICIAL CODE, Stone Highway.
 5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1993 HARDLAND STABILIZATION AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, for permanent seeding (Sec. 51), and (Sec. 52), temporary seeding (Sec. 50) and mulching (Sec. 53). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
 6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
 7. Site Analysis:
Total Area of Site: 0.322 Acres
Area to be graded or paved: 0.210 Acres
Area to be vegetatively stabilized: 0.112 Acres
Total Fill: 266 Cu. Yds.
Offsite water/borrow area location:
 8. Any sediment control structure which is disturbed by grading activity for placement of utilities shall be repaired on the same day of disturbance.
 9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
 10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be required upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Further 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 can be back filled and stabilized within one working day, whichever is shorter.



CONSTRUCTION SEQUENCE:

1. Clear and grub within limits of disturbance.
2. Install silt fence at locations shown. Clear and grub within limits of disturbance. Excavate to subgrade elevation.
3. Construct proposed concrete curb.
4. Remove sediment from roadways on a daily basis.
5. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control structures shown hereon after each rainfall and on a daily basis.
6. Construct concrete curb and gutter. Lay paving courses.
7. Finalize concrete sidewalk installation.
8. Fine grade site. Stabilize disturbed areas with permanent seeding mixture and straw mulch.
9. After permission has been given by the Sediment Control Inspector, remove silt fence and sediment trap. Stabilize with permanent seeding mixture and mulch.

PERMANENT SEEDING MIXTURE

Apply to gravel or cleared areas likely to be re-disturbed where a permanent long-lived vegetative cover is needed.

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

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:
1) Pre-fertilizer - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-10 urea fertilizer (9 lbs/1000 sq. ft.).
2) Accretive - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1800 lbs per acre 10-10-10 fertilizer (22 lbs/1000 sq. ft.) before seeding. Harrow or disk 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 (5 lbs/1000 sq. ft.) of annual ryegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre of well aerated straw mulch and seed as soon as possible in the spring; Option (2) - 600 lbs per acre of well aerated straw mulch and seed as soon as possible in the spring; or seed as soon as possible in the spring; or seed as soon as possible in the spring; or seed as soon as possible in the spring.

MULCHING: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of untreated small grain straw immediately after seeding. Mulch immediately after application using a mulch spreading tool or 210 gal per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 340 gal per acre (8 gal/1000 sq. ft.) for anchoring.

MAINTENANCE: Inspect all seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING MIXTURE

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

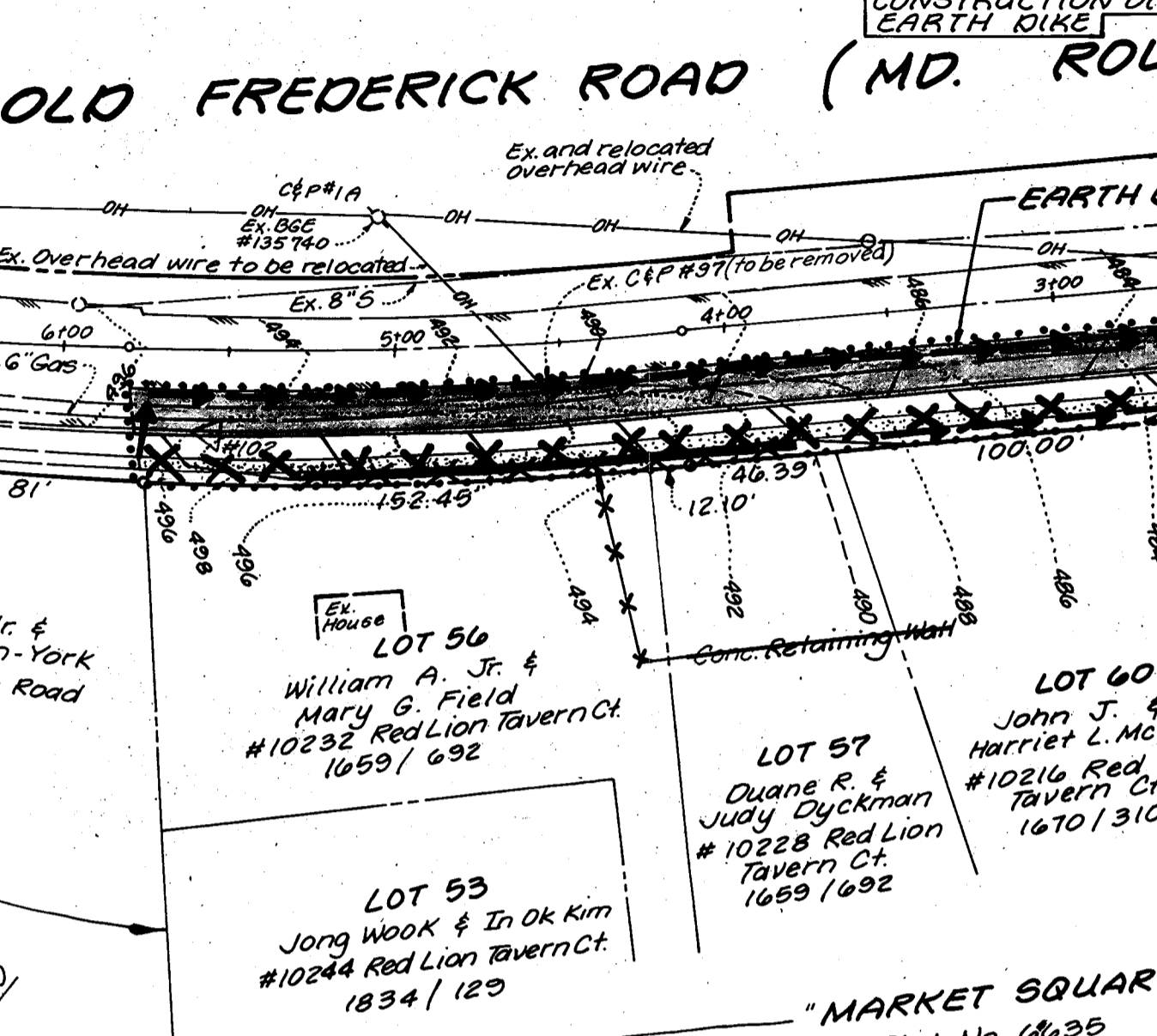
SOIL PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

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

SEEDING: - For periods March 1 thru April 30 and from August 15 thru October 15, seed with 3-1/2 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 annual ryegrass (2.7 lbs/1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well aerated straw mulch and seed as soon as possible in the spring, or seed.

MULCHING: - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of untreated small grain straw immediately after seeding. Mulch immediately after application using a mulch spreading tool or 210 gal per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 340 gal per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1993 HARDLAND STABILIZATION AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.



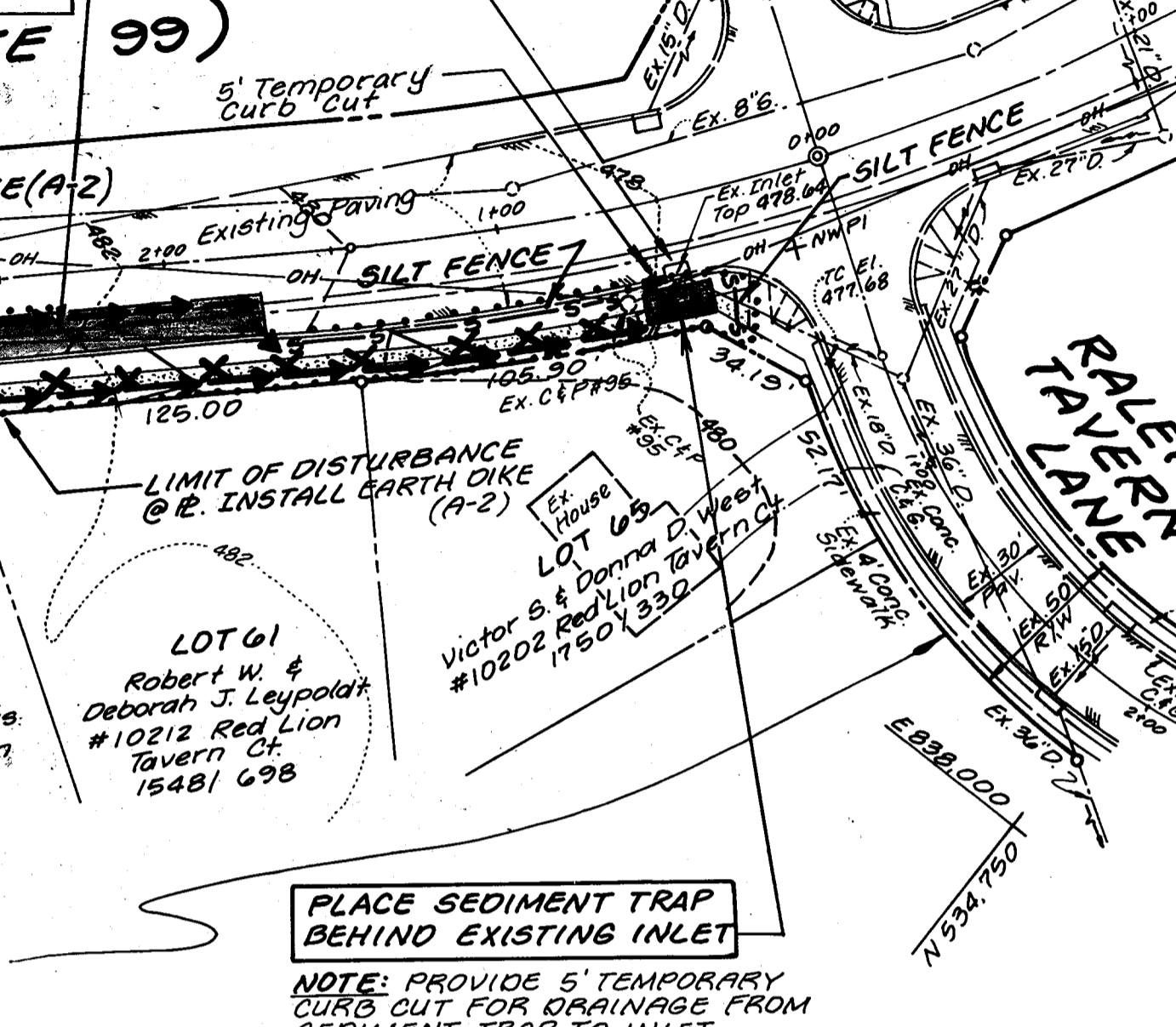
SEDIMENT TRAP DESIGN DATA:

1. Type of Trap: Swale Trap
2. Drainage Area to Trap: 0.322 Ac. ±
3. Storage Required: 22 Cu. Yds.
4. Storage Provided:
5. Size of Trap (Bottom):
6. Depth: 2 ft.
7. Bottom Elev. 476.64
8. Crest Elev. 478.64
9. Cleanout Elev. 477.64

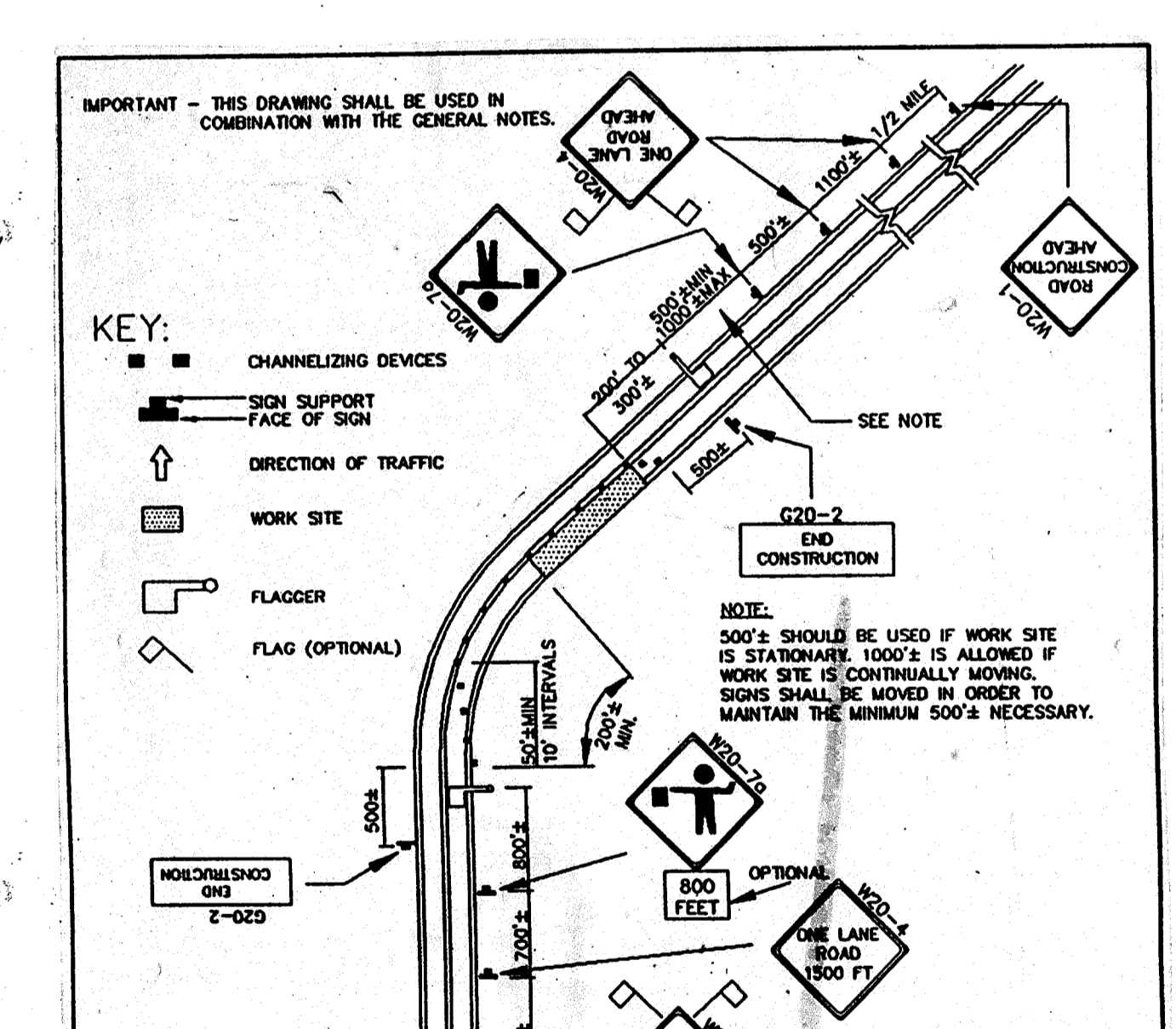
NOTE: The specific location of telephone and other utilities shown on this plan are for reference only and are not guaranteed correct. The Contractor must verify locations to his own satisfaction before proceeding with any work.

PLAN
Scale: 1" = 50'

- CONSTRUCTION SEQUENCE:**
1. Clear and grub within limits of disturbance.
 2. Install silt fence at locations shown. Clear and grub within limits of disturbance. Excavate to subgrade elevation.
 3. Construct proposed concrete curb.
 4. Remove sediment from roadways on a daily basis.
 5. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control structures shown hereon after each rainfall and on a daily basis.
 6. Construct concrete curb and gutter. Lay paving courses.
 7. Finalize concrete sidewalk installation.
 8. Fine grade site. Stabilize disturbed areas with permanent seeding mixture and straw mulch.
 9. After permission has been given by the Sediment Control Inspector, remove silt fence and sediment trap. Stabilize with permanent seeding mixture and mulch.



IMPORTANT - THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES.



APPROVED [Signature] 2-1-97
DEPUTY CHIEF ENGINEER - TRAFFIC DATE

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
WORK ZONE TRAFFIC CONTROL TYPICAL

FLAGGING OPERATION

OVER 24 HRS. ON ROAD GREATER THAN 40 MPH
2 LANES, 2 WAY STANDARD NO. MD-104.103

DEVELOPER'S CERTIFICATE

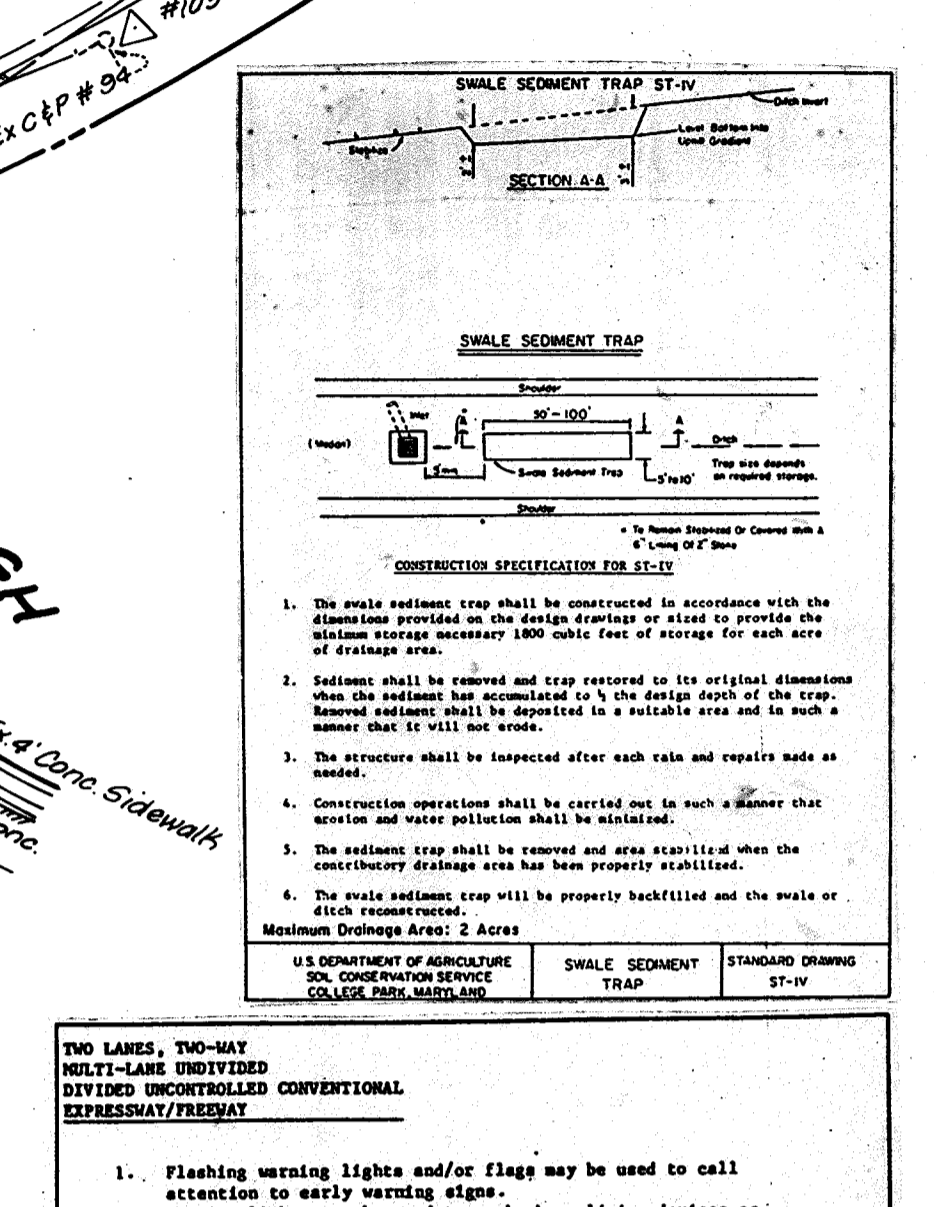
"I certify that all development and construction will be done according to this plan, and that any responsible agencies involved in the construction project will have a Certificate of Attendance at a Department of the Environment approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer: [Signature]
Date: 8/28/97

ENGINEER'S CERTIFICATE

"I 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."

Signature of Engineer: Bruce D. Burton
Date: 8/27/97



CONSTRUCTION SPECIFICATIONS FOR SILT FENCE

1. The silt fence shall be constructed in accordance with the dimensions provided on the design drawing or filed to provide the minimum storage necessary 1800 cubic feet of storage for each acre of drainage area.
2. Sediment shall be removed and trap restored to its original condition when the sediment level accumulated in the design depth of the trap-lane exceeds 1800 cubic feet of storage. The contractor shall be responsible for the removal of sediment and the maintenance of the trap-lane.
3. The structure shall be inspected each week and repairs made as needed.
4. Construction operations shall be carried out so as to reduce the amount of sediment and silt that enters the trap-lane.
5. The silt fence shall be maintained in accordance with the standard specifications for silt fence.
6. The silt fence shall be properly installed and the maintenance of the silt fence shall be the responsibility of the contractor.

TWO LANES, TWO-WAY MULTI-LANE DIVIDED BY ONE OR MORE CONVENTIONAL EXPRESSWAY/FREWAY

1. Flashing warning lights and/or flag may be used to call attention to early warning signs.
2. Warning lights may be used to mark channelizing devices as well as to mark the location of the work zone.
3. Channelizing devices are to be extended to a point where they are visible to approaching traffic. A full taper length (two lanes, two-way roadways) shall always be provided in advance of the work zone.
4. Taper formula: $L = \frac{SV^2}{15}$ for speeds greater than 50 mph; $L = \frac{SV^2}{10}$ for speeds equal to or less than 50 mph. Where: L = minimum length of taper; S = numerical value of vehicle speed; V = width of offset.
5. Maximum spacing between channelizing devices:
a. Taper - approximately equal in feet to the speed limit.
b. Taper - twice the above taper values.
6. Flood lights should be provided to mark flagger stations at night.
7. If flaggers are not able to see each other, two-way radio communication shall be used.
8. If entire work area is visible from one station, a single flagger may be used.
9. Personnel working no longer applicable shall be removed or sheltered as soon as practicable. Temporary markings shall be used as necessary.

Alternate traffic control plans may be presented to the SMA District Office for approval in accordance with section 810.02 of the HOWARD COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, January 1992 and any revisions thereto.

For emergency repair operations, a minimum number of traffic control devices (TCD's) may be used. This generally will consist of one sign per device, one flashing light on each device, a minimum number of channelizing devices, and flag or high level devices. Additional TCD's such as, arrow panels, work signs, etc., will be placed as soon as possible to present an array of devices which are consistent with the standard work zone traffic control typicals.

An arrow panel in the flashing arrow mode shall be used anytime there is a lane closure on a multi-lane highway. Arrow panels shall not be used along two lane two-way roadways unless they display the "four arrow" lamp array.

Vehicles should not occupy or be stopped in a lane beyond a horizontal curve or vertical curve (null). Instead vehicles stopping are to be pulled as far off the road as possible or otherwise parked in a manner as to inhibit the movement of traffic as little as possible. If accepted is necessary and no backup vehicle is available place channelizing devices in accordance with general note #3 along with the appropriate signing.

Warning signs mounted on wood posts for the over 10 hour operations shall be installed as shown in Figure 4-1, Part VI of the HOWARD COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, January 1992 and any revisions thereto.

In urban areas along streets where the prevailing speed is 35 MPH or less, and along secondary roads where the Average Daily Traffic (ADT) is less than 1000 vehicles, the minimum size of 36" x 36" may be used.

For utility operations, advance warning signs may utilize the word "AHEAD" in lieu of distance up to and including 1500 feet. At greater distances, such as 1/2 mile or 1 mile; however, the correct distance value is to be used on such warning signs. Also the TRAFFIC AHEAD sign may be used in lieu of ROAD CONSTRUCTION, ROAD WORK, or SLOWLY WORK signs only.

No work operations which interfere with the flow of traffic may take place during the peak hours 8 A.M. - 9 A.M. and 3 P.M. - 7 P.M.

All signs, channelizing devices, etc. shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

APPROVED [Signature] 2-1-97
DEPUTY CHIEF ENGINEER - TRAFFIC DATE

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
WORK ZONE TRAFFIC CONTROL TYPICAL

GENERAL NOTES MD-104.103
STANDARD NO. MD-104.103

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Signature: [Signature]
Date: 8/28/97

Land Design Engineering, Inc.
8835 Columbia 100 Parkway
Unit N
Columbia, Maryland
21045
Pho e: (410) 715-1070 (301) 536-3424

DESIGNED	DRAWN	CHECKED	DATE
B.B.B.	K.B.W.	B.B.B.	Oct 1992

BY NO. REVISION DATE

ALTERNATE STUDY
PLAN AND PROFILE

600 SCALE MAP No. 17 BLOCK No. 7

SEDIMENT AND EROSION CONTROL PLAN / TRAFFIC CONTROL PLAN
SCHOOL ROUTE PATHWAYS / SIDEWALKS

OLD FREDERICK ROAD
Capital Project No. 5-4164
Contract No. 92-49
2nd Election District
Howard County, Maryland

SCALE AS SHOWN
SHEET 3 OF 3