

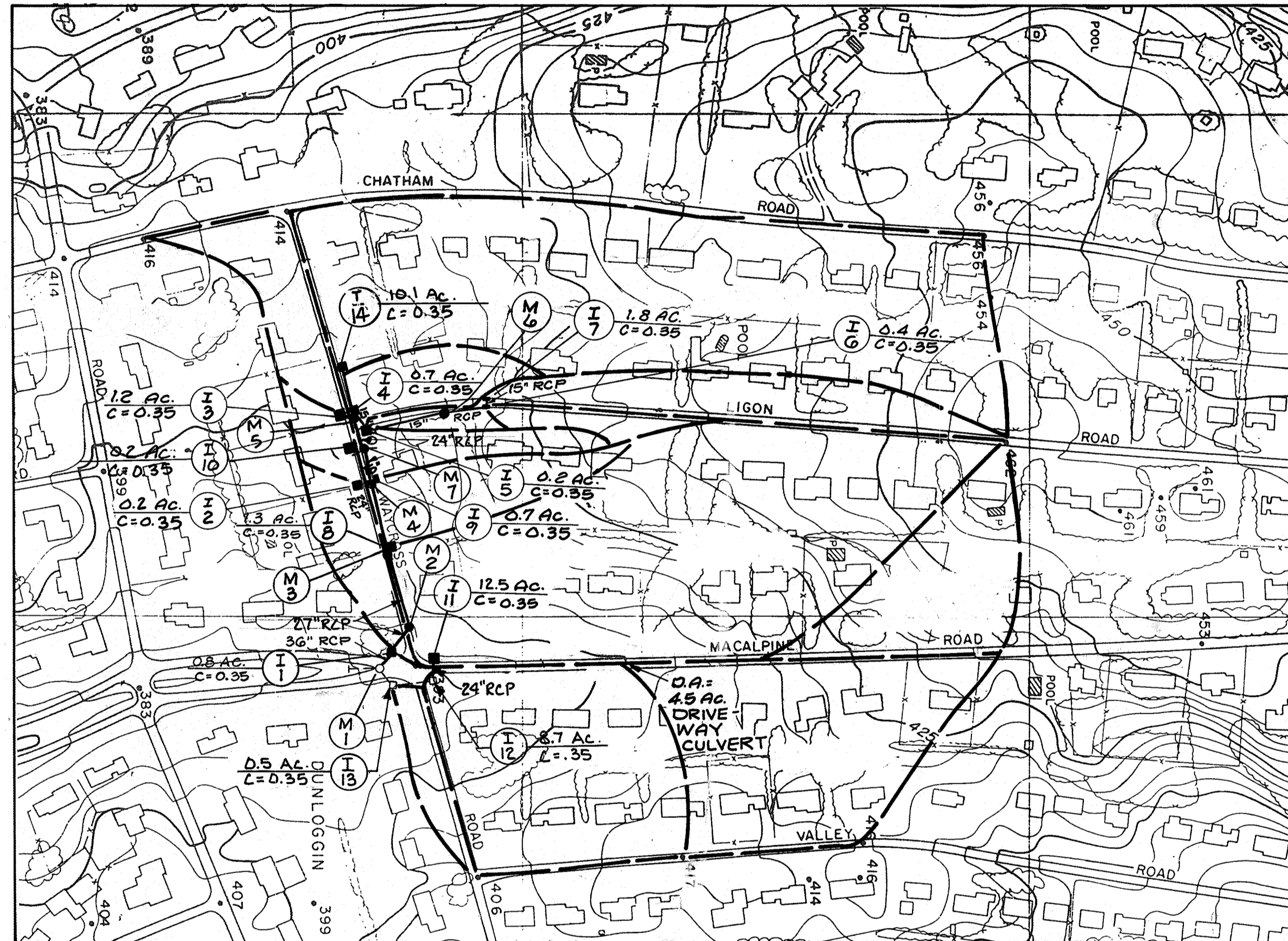
HOWARD COUNTY MARYLAND

DEPARTMENT OF PUBLIC WORKS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN
3	PLAN
4	STORM DRAIN PROFILES
5	WATER & SEWER RELOCATION

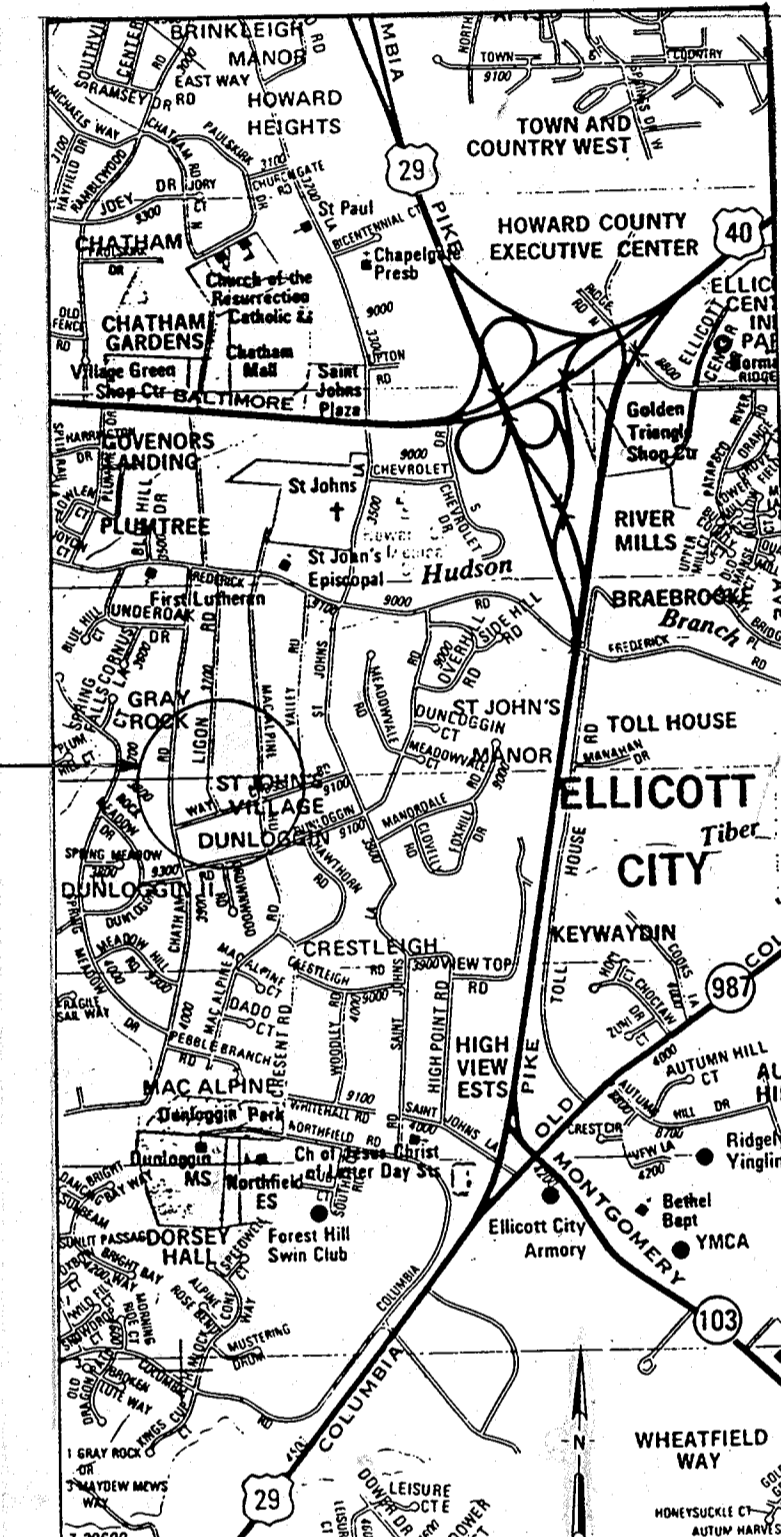
NOTE: PROPOSED WATER AND SEWER ONLY ON SHEET 5.



DRAINAGE AREA MAP

SCALE: 1" = 200'

PROJECT LOCATION



VICINITY MAP

SCALE: 1" = 2000'

- GENERAL NOTES**
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 FOR UNDERGROUND UTILITY LOCATIONS, AT LEAST FIVE DAYS PRIOR TO COMMENCING WORK ON THE PLANS.
 - ALL THE REQUIREMENTS FOR THE PROPOSED INLETS AND MANHOLES ARE APPROXIMATE, AND ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND THE ENGINEER.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ALL EXISTING DRIVEWAYS DAMAGED DURING CONSTRUCTION. SEE MEASUREMENT AND PAYMENT IN SPECIAL PROVISIONS. EXISTING BITUMINOUS CONCRETE DRIVEWAYS SHALL BE RESTORED AS FOLLOWS:
 - 4-INCH DEPTH OF BITUMINOUS CONCRETE BASE COURSE
 - 2-INCH DEPTH OF BITUMINOUS CONCRETE SURFACE COURSE
 - THES ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. THOSE LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - CONTRACTOR TO GRADE AROUND THE TOP OF THE PROPOSED INLETS IN ORDER TO PROVIDE POSITIVE DRAINAGE TO THE INLETS. LINDING SHALL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
 - COORDINATES ARE BASED ON THE MARYLAND STATE GRID SYSTEM.
 - THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION BEFORE STARTING CONSTRUCTION. NEITHER THE ENGINEER NOR THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS WARRANT OR GUARANTEE THE COMPLETENESS OR CORRECTNESS OF THE INFORMATION SHOWN.
 - THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES. ANY DAMAGE TO THE CONTRACTOR'S RESPONSIBILITY SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. CLEAR ALL UTILITIES BY A MINIMUM OF 6-INCHES.
 - TEST PITS SHALL BE DUG AT ALL UTILITY CROSSINGS TO DETERMINE EXISTING HORIZONTAL AND VERTICAL ALIGNMENT OF UTILITIES. TEST PITS SHALL BE DUG A SUFFICIENT AMOUNT OF TIME IN ADVANCE OF THE CONSTRUCTION OR TRENCHING OPERATION, IN ORDER TO ALLOW FOR NECESSARY ADJUSTMENTS.
 - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AND THE RESULTS OF TEST PITS ARE INCLUDED ON THE STORM DRAIN PROFILES.
 - ALL UTILITY POLES MUST BE CLEARED BY 2-FOOT, OR THE PROPOSED STORM DRAIN SHALL BE PLACED BY TUNNELING. ALL CURBS FOR TUNNELING ARE TO BE INCLUDED IN THE UNIT PRICE BID FOR FURNISHING AND LAYING THE STORM DRAIN PIPE.
 - ALL VERTICAL CURVES ARE BASED ON U.S.G.S. SYSTEM OF 1929.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT (V) ELEVATIONS.
 - CONTRACTOR SHALL REMOVE TREES, SHRUBS AND BUSHES ALONG LINE OF EXCAVATION AS DIRECTED BY THE ENGINEER. PAYMENT FOR EACH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR FURNISHING AND LAYING STORM DRAIN PIPE.
 - PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
 - EXISTING WATER SERVICE SERVICES, THAT ARE IN COMPLIANCE WITH THE PROPOSED STORM DRAINAGE FACILITIES, SHALL BE ADJUSTED BY THE CONTRACTOR.
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, THE CONTRACTOR SHALL REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" AND THE SPECIAL PROVISIONS. IN THE EVENT OF ANY DISCREPANCY BETWEEN THESE TWO SOURCES, THE SPECIAL PROVISIONS SHALL GOVERN.
 - EXISTING FENCES, WALLS, SIGNS AND SIGNS DISTURBED BY THE WORK SHALL BE RECONSTRUCTED OR REPLACED IN KIND.
 - ALL SLOPES AND/OR DISTURBED AREAS SHALL RECEIVE 2-INCH DEPTH OF TOPSOIL, AND SOILING EXCEPT, WHERE OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
 - LOCATION POINTS FOR INLETS, MANHOLES AND STRUCTURES:

ITEM	HORIZONTAL LOC.	VERTICAL LOC.
CURB TYPE INLETS	CENTER FACE OF CURB	TOP OF CURB
GRATE TYPE INLETS	CENTER OF GRATE	TOP OF GRATE
MANHOLES	CENTER OF COVER	TOP OF COVER
BRICKLIES	CENTER OF WALL	TOP OF WALL
 - THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO FEET IN ADVANCE OF CONSTRUCTION OPERATIONS IN VICINITY OF UTILITIES. COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR STORM DRAIN WORK.
 - STANDARD DETAILS FOR THIS CONTRACT SHALL BE THE HOWARD COUNTY STANDARD DETAILS AS SUPPLEMENTED BY THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS.
 - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SEVEN HOURS: MISS UTILITY 1-800-257-7777; BALTIMORE GAS & ELECTRIC CO., UNDERGROUND GAS DISTRIBUTION ENGINEERING SERVICE CENTER 234-5691; BALTIMORE GAS & ELECTRIC CO., UNDERGROUND GAS DISTRIBUTION ENGINEERING 234-5691; CHESAPEAKE AND POTOMAC TELEPHONE CO. 725-9976; COLONIAL PIPING COMPANY 781-4641; HOWARD COUNTY BUREAU OF UTILITIES 213-4900; CONSTRUCTION INSPECTOR/SURVEY DIVISION 792-7272; HOWARD COUNTY TRAFFIC DIVISION 890-3450.
 - ALL STORM DRAIN INVERTS ARE TO BE FULLY DEVELOPED.

Reviewed for Howard County S.C.D. and met technical requirements.

John M. Kelly 2/19/92
U.S. SOIL CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.

Approved: *Jeffrey W. Hill* 2/19/92
HOWARD COUNTY S.C.D. DATE

ENGINEER'S CERTIFICATION

I certify that this plan for erosion & 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 County Soil Conservation District.

William E. Riley Date: 9-19-91
GREENMAN-PEDERSEN, INC.
14504 Greenview Drive
Laurel, MD 20708

DEVELOPER'S CERTIFICATION
"I/We certify that all development and 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."

William E. Riley 4-9-92
WILLIAM E. RILEY, CHIEF DATE
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

LEGEND

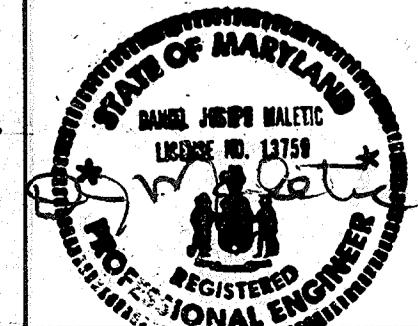
PROPOSED SWALE	———
PROPOSED BITUMINOUS CURB	=====
DRIVEWAYS TO BE ADJUSTED	///////

STORM DRAINAGE IMPROVEMENTS DUNLOGGIN AREA CAPITAL PROJECT NO. D-1077

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

William E. Riley 2/19/92
DIRECTOR OF PUBLIC WORKS DATE
Jeffrey W. Hill 2/19/92
CHIEF, BUREAU OF ENGINEERING DATE
William E. Riley 2/19/92
CHIEF, BUREAU OF HIGHWAYS DATE

gpi GREENMAN • PEDERSEN, INC.
CONSULTING ENGINEERS
14504 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
(301) 470-6772, (301) 980-0025, (301) 289-0833



DES: PAH				
DRN: SMC				
CHK: KJB				
DATE: 12/6/91	BY	NO.	REVISION	DATE

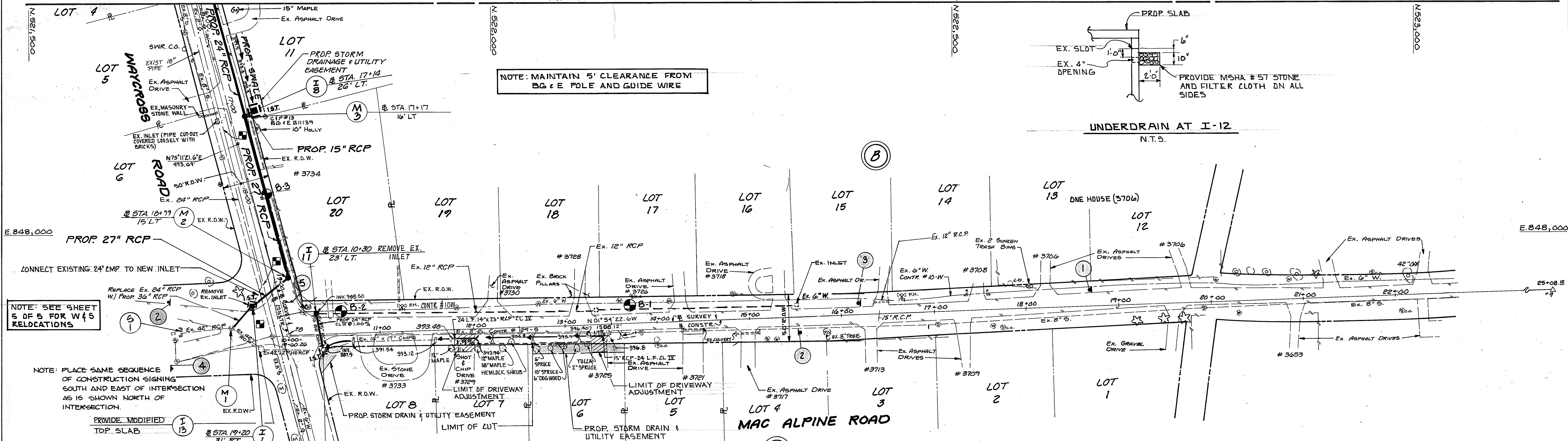
CAPITAL PROJECT D-1077

600' SCALE MAP NO. 24 BLOCK NO. 16, 17

STORM DRAINAGE IMPROVEMENTS
DUNLOGGIN AREA
ELECTION DISTRICT ELLICOTT CITY NO. 2

SCALE AS SHOWN
SHEET 1 OF 5

#46



NOTE: MAINTAIN 5' CLEARANCE FROM B.G. & E. POLE AND GUIDE WIRE

UNDERDRAIN AT I-12
N.T.S.

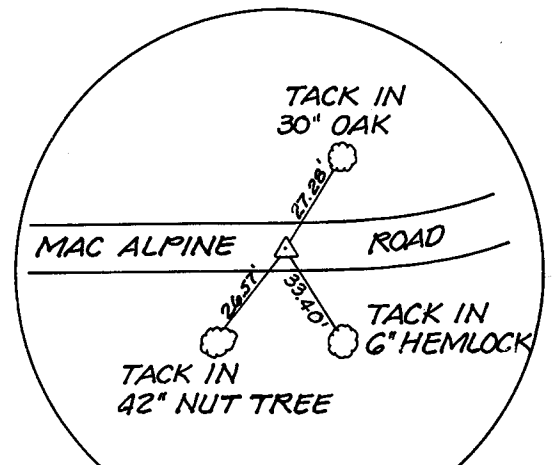
NOTE: SEE SHEET 5 OF 5 FOR W/S RELOCATIONS

NOTE: PLACE SAME SEQUENCE OF CONSTRUCTION SIGNING SOUTH AND EAST OF INTERSECTION AS IS SHOWN NORTH OF INTERSECTION.

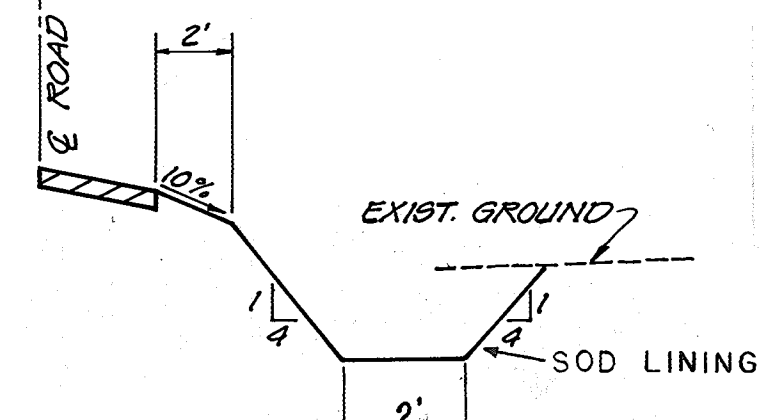
- NOTES FOR I-12
- REPAIR INLET AFTER REMOVING 15" RCP. POINT ENTIRE INLET AS NECESSARY.
 - EXCAVATE DOWN TO EXISTING 6" U.D. ON EAST SIDE OF INLET AND REPAIR THE CONNECTION AS DIRECTED BY THE ENGINEER.
 - PROVIDE BACKFILL, TOPSOIL AND SOD AROUND INLET AS DIRECTED BY THE ENGINEER.

- SEQUENCE OF CONSTRUCTION
- CONTACT THE BUREAU OF CONSTRUCTION AT 792-7272.
 - NOTIFY THE HOWARD COUNTY DEPARTMENT OF LICENSES AND PERMITS INSPECTOR 48 HOURS BEFORE BEGINNING WORK.
 - INSTALL TEMPORARY TRAFFIC SIGNS FOR MAINTENANCE OF TRAFFIC.
 - INSTALL TEMPORARY SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLANS.
 - INSTALL PROPOSED W & S ADJUSTMENTS AND STORM DRAIN SYSTEM.
 - STABILIZE ALL DISTURBED AREAS.
 - MAINTAIN DISTURBED AREAS WHICH HAVE BEEN STABILIZED TO ENSURE THAT EROSION DOES NOT OCCUR.

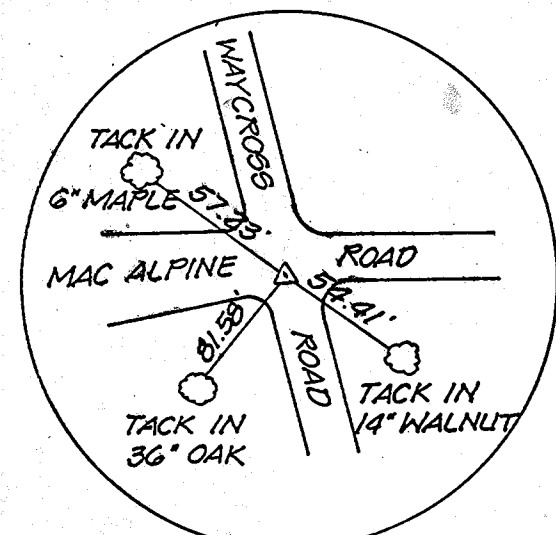
SCALE: 1" = 50'



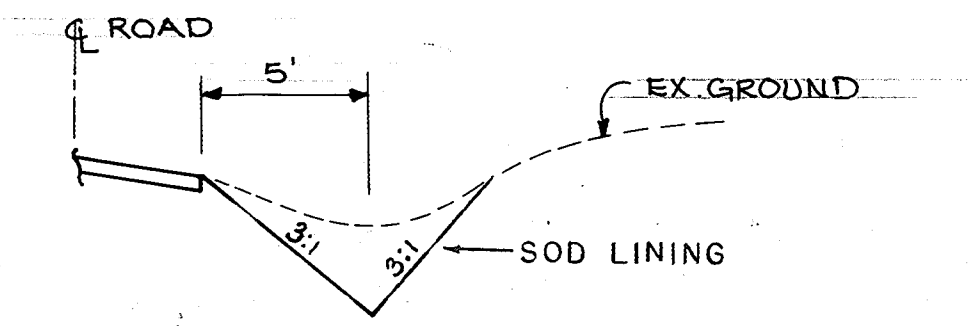
TRAVERSE POINT #9
ELEV. 451.50



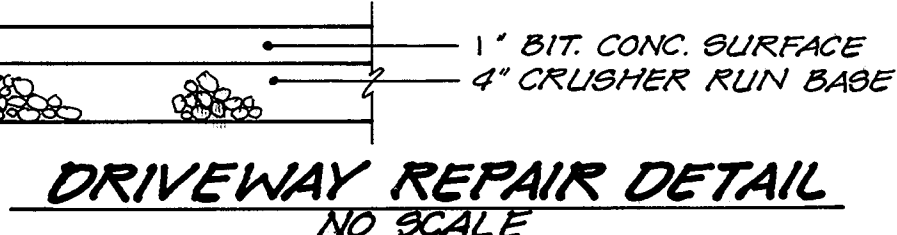
TYPICAL SECTION - WAYCROSS ROAD
SWALE - STA. 16+31 RT. TO STA. 17+11 RT.
NO SCALE (SEE PLAN FOR LOCATION)



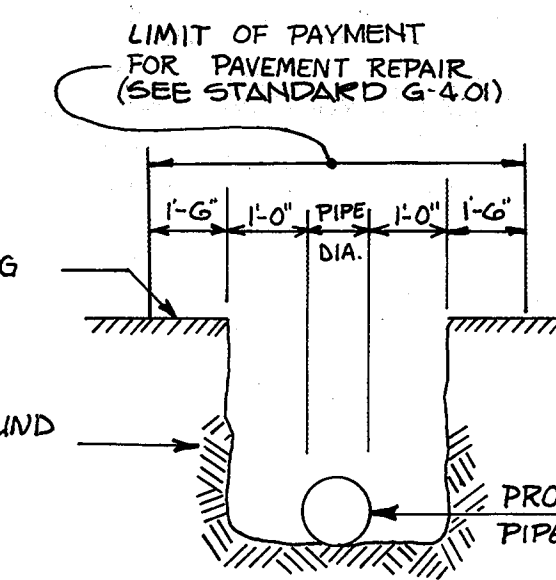
TRAVERSE POINT #8
ELEV. 392.75



TYPICAL SECTION - MAC ALPINE ROAD
SWALE - STA. 10+39 RT. TO STA. 13+77 RT.
NO SCALE (SEE PLAN FOR LOCATION)



DRIVEWAY REPAIR DETAIL
NO SCALE



TYPICAL TRENCH IN ROADWAY
N.T.S.

SEDIMENT CONTROL NOTES

- Minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction (992-2437).
- 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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (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	N/A	Acres
Area to be roofed	0.5	Acres
Area to be paved	0.2	Acres
Area to be vegetatively stabilized	0.2	Acres
Total Cut	230	Cu. yds
Total Fill	50	Cu. yds

 Off-site source/borrow area location, Must be Pre-Approved by the Sediment Control Inspector.
- 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 DEW 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.
- Trench work is to be limited to 3 pipe lengths or that which can be stabilized at the end of each working day, which ever is less.

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/1000 sq ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At 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 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of 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 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseedings.

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.

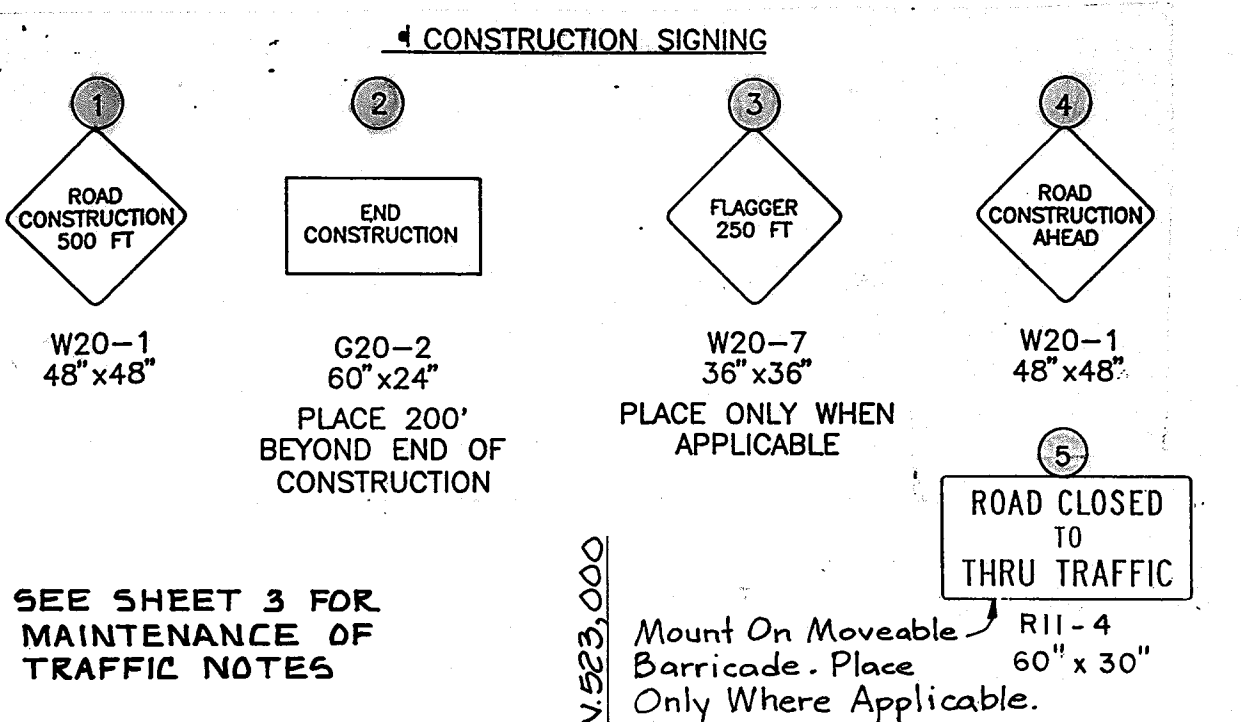
Soil Amendments: Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 24 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 (.07 lbs/1000 sq ft). For the period November 16 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 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

NOTE:
1. ROADWAYS AND DRIVEWAYS SHALL BE RESTORED AT ALL CROSSINGS IN ACCORDANCE WITH THE "REPAIR DETAILS" TRENCH WIDTHS SHALL NOT EXCEED THAT SHOWN IN THE "TRENCH DETAIL".



SEE SHEET 3 FOR MAINTENANCE OF TRAFFIC NOTES

Mount On Moveable R11-4 Barricade. Place 60" x 30" Only Where Applicable.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 2/10/92
 Chief, Bureau of Engineering: *[Signature]* DATE: 2/14/92
 Chief, Roads, Bridges & Storm Drainage Division: *[Signature]* DATE: 1/23/92
 Acting Chief, Bureau of Highways: *[Signature]* DATE: 2/16/92

gpi GREENMAN + PEDERSEN, INC.
CONSULTING ENGINEERS
14504 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
(301) 470-4774, (301) 260-3353, (301) 269-6933

STATE OF MARYLAND
CAMEL JOSEPH MALLICK
LICENSE NO. 12759
REGISTERED PROFESSIONAL ENGINEER

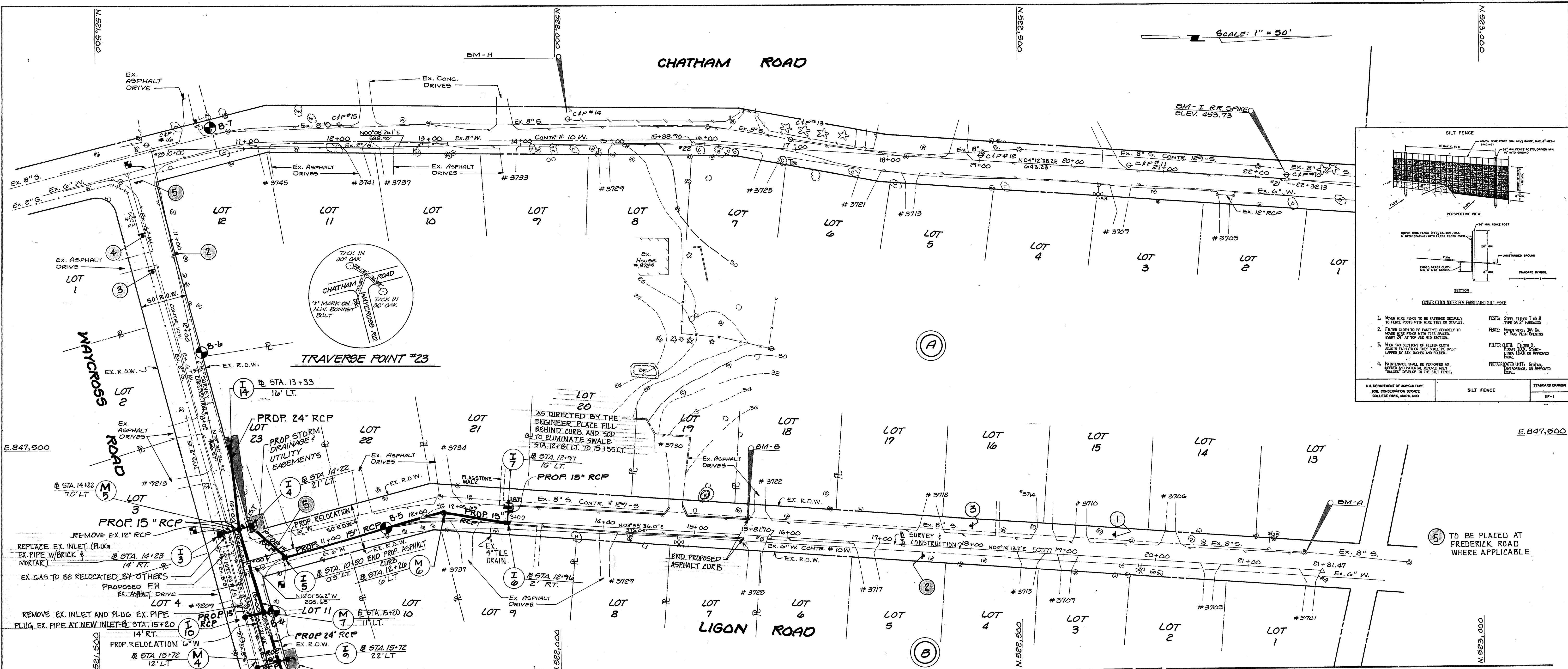
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DRN: SMC	
CHK: KJB	
DATE: 12/6/91	
BY: NO.	REVISION

CAPITAL PROJECT D-1077

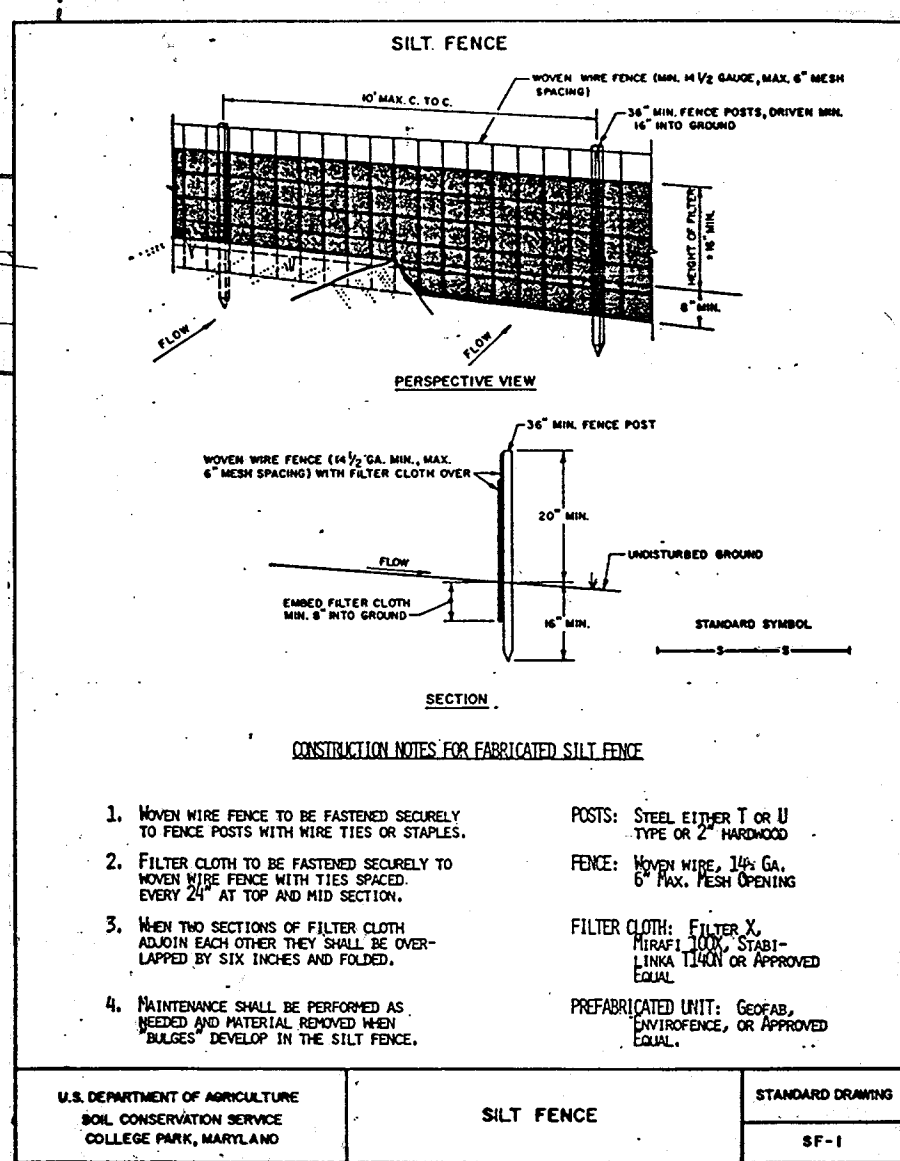
600' SCALE MAP NO. 24 BLOCK NO. 16, 17

STORM DRAINAGE IMPROVEMENTS
DUNLOGGIN
PLAN
ELECTION DISTRICT ELLICOTT CITY NO. 2

SCALE AS SHOWN
SHEET 2 OF 5



SCALE: 1" = 50'



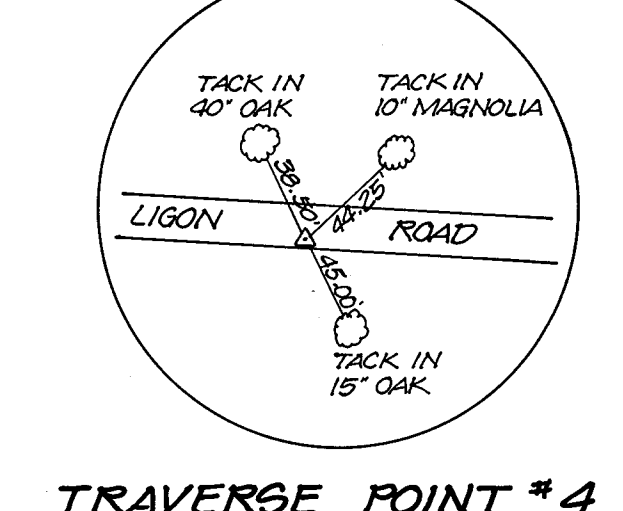
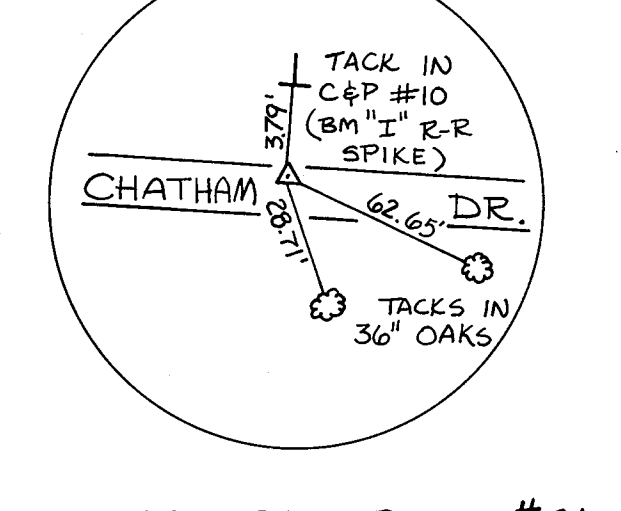
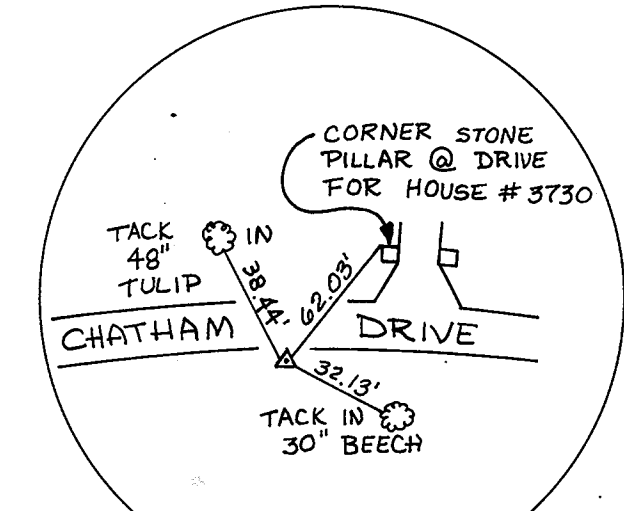
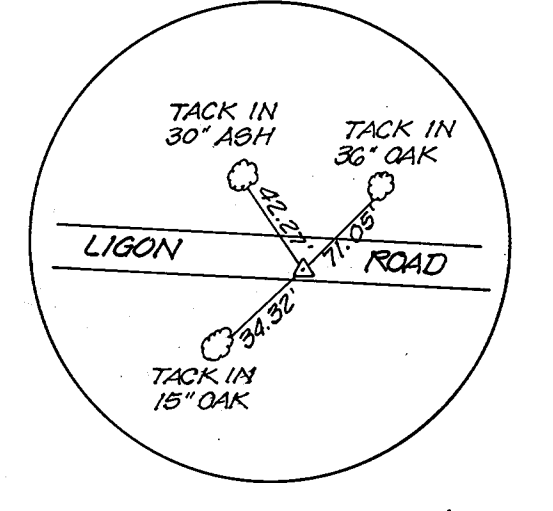
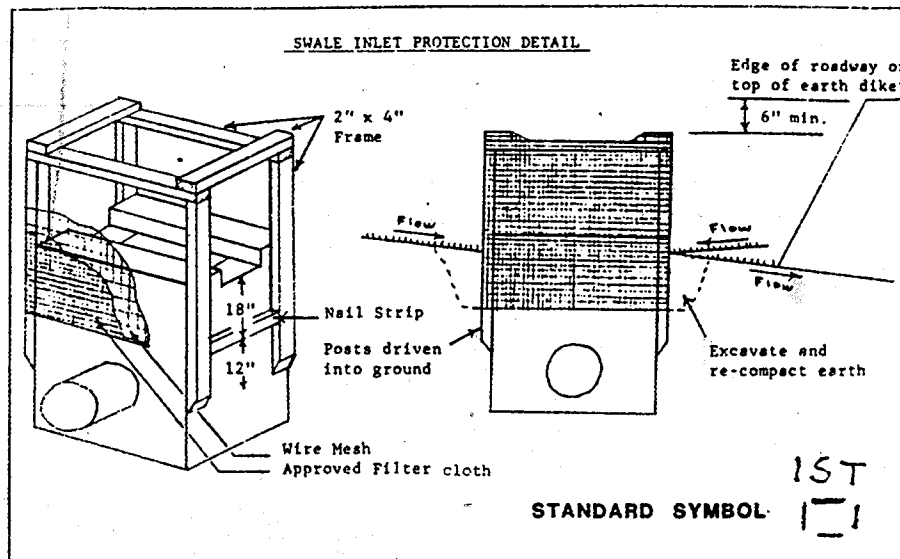
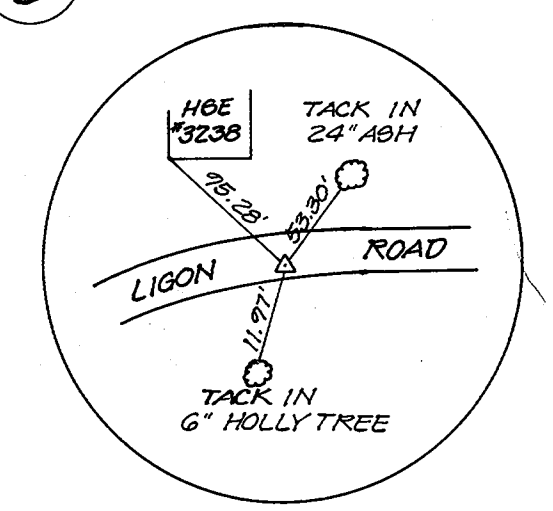
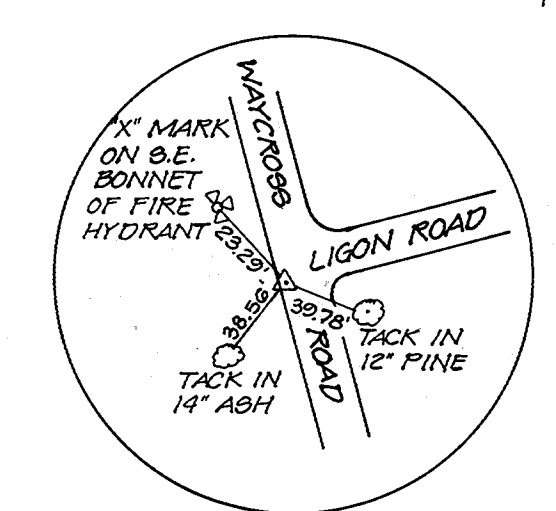
RCP PIPE CLASSES SHOWN ON PROFILES SHEET 4 OF 5

NOTE: SEE SHEET 5 OF 5 FOR W/S RELOCATION

BITUMINOUS CURB REMOVAL SCHEDULE - LIGON ROAD
 STA 12 + 65 TO STA 13 + 95
 STA 14 + 15 TO STA 15 + 55
 TOTAL LENGTH = 270'

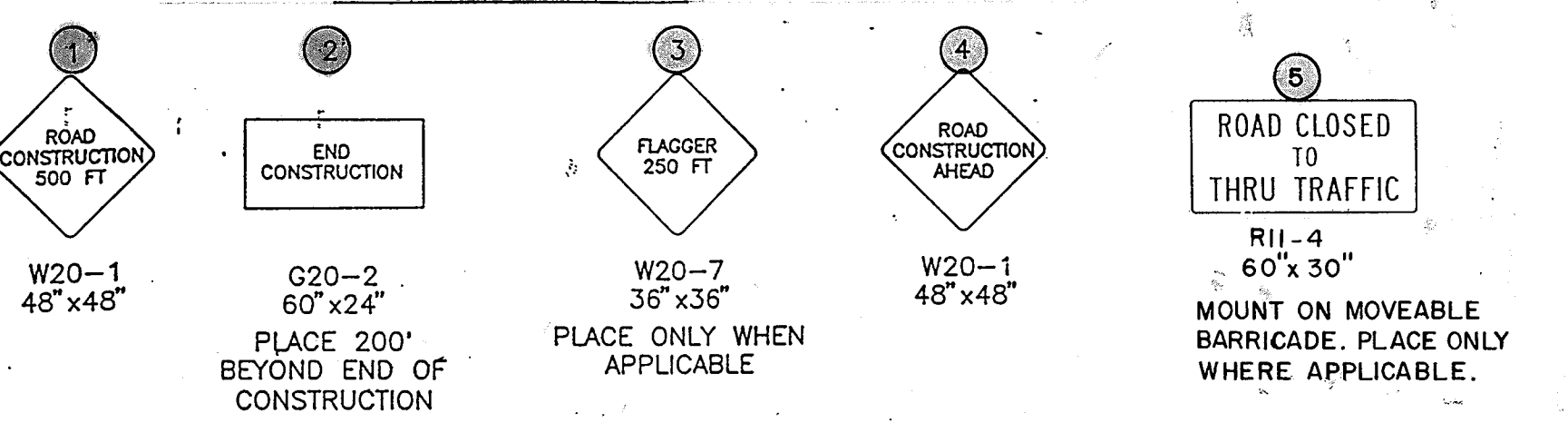
BITUMINOUS CURB INSTALLATION SCHEDULE - LIGON ROAD
 STA 12 + 69 TO STA 15 + 60
 STA 10 + 52 TO STA 15 + 55
 TOTAL LENGTH = 774'

NOTE: CONTRACTOR SHALL PROVIDE FILL, TOPSOIL AND SOD BEHIND ALL NEW CURBS TO PROVIDE POSITIVE DRAINAGE OVER THE CURBS AS DIRECTED BY THE ENGINEER.



MAINTENANCE OF TRAFFIC NOTES

1. NO LANE CLOSURES WILL BE ALLOWED OVERNIGHT.
2. ONE LANE OF TRAFFIC SHALL BE MAINTAINED ON MACALPINE ROAD AT ALL TIMES.
3. WHEN ROADS ARE TEMPORARILY CLOSED, PROVIDE TYPE 3 BARRICADES AT THE POINT OF CLOSURE IN ADDITION TO THE "ROAD CLOSED" SIGN AT THE NEAREST INTERSECTION.



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] DATE: 2-14-92
 Chief, Bureau of Engineering: [Signature] DATE: 2/14/92
 Chief, Bureau of Highways: [Signature] DATE: 2/14/92

gpi GREENMAN • PEDERSEN, INC.
 CONSULTING ENGINEERS
 14504 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
 (301) 470-8772, (301) 800-3053, (301) 289-6933

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 [Signature]

DES: PAH	RELOCATE 6" W AT LIGON ROAD WEST OF PROPOSED INLET 15	4/14/92
DRN: SMC		
CHK: KJB		
DATE: 12/6/91	BY NO.	REVISION

CAPITAL PROJECT D-1077

600' SCALE MAP NO. 24 BLOCK NO. 16, 17

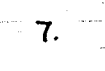
STORM DRAINAGE IMPROVEMENTS
 DUNLOGGIN
 PLAN
 ELECTION DISTRICT ELLICOTT CITY NO. 2

SCALE AS SHOWN
 SHEET 3 OF 5

#46

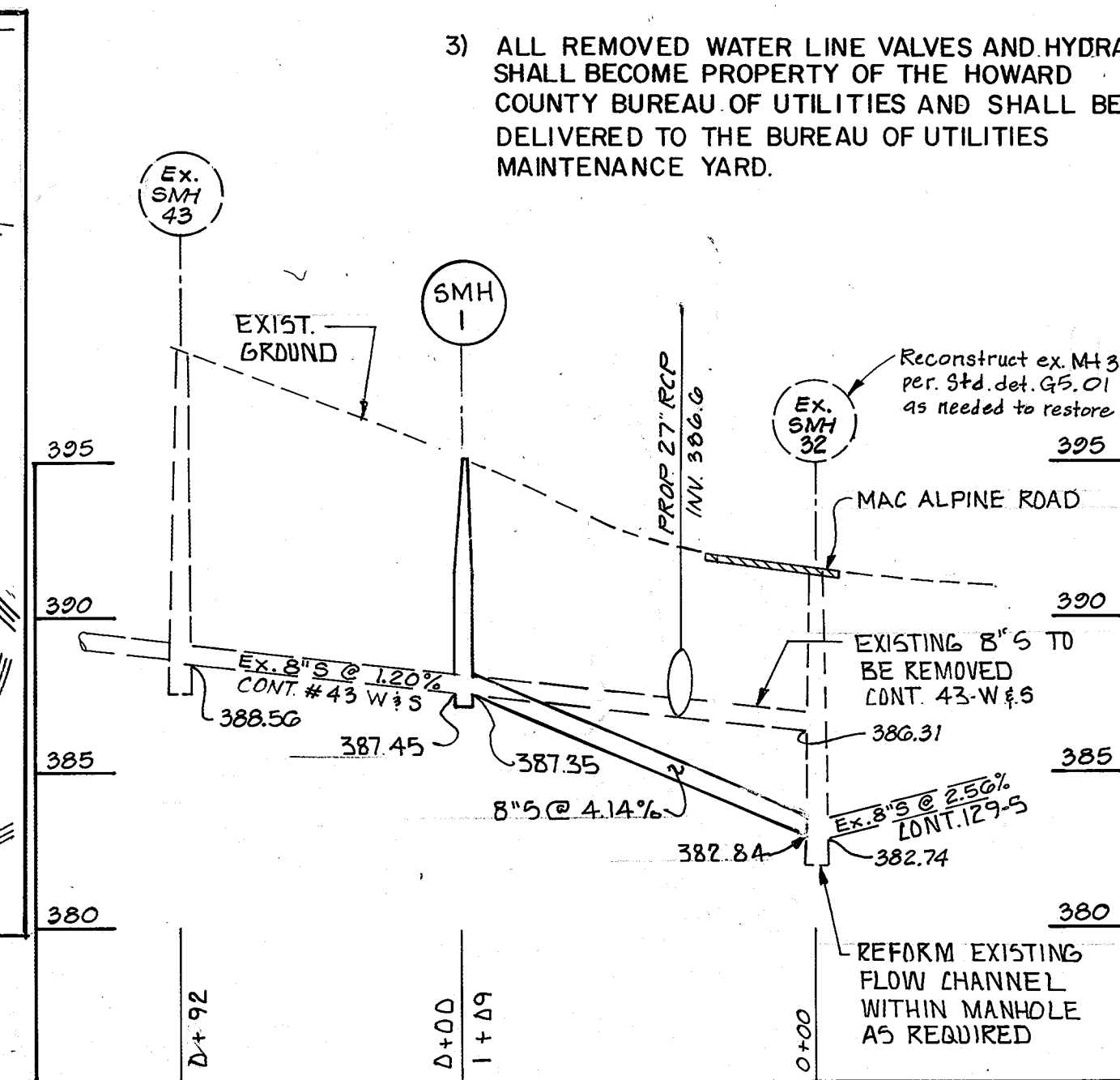
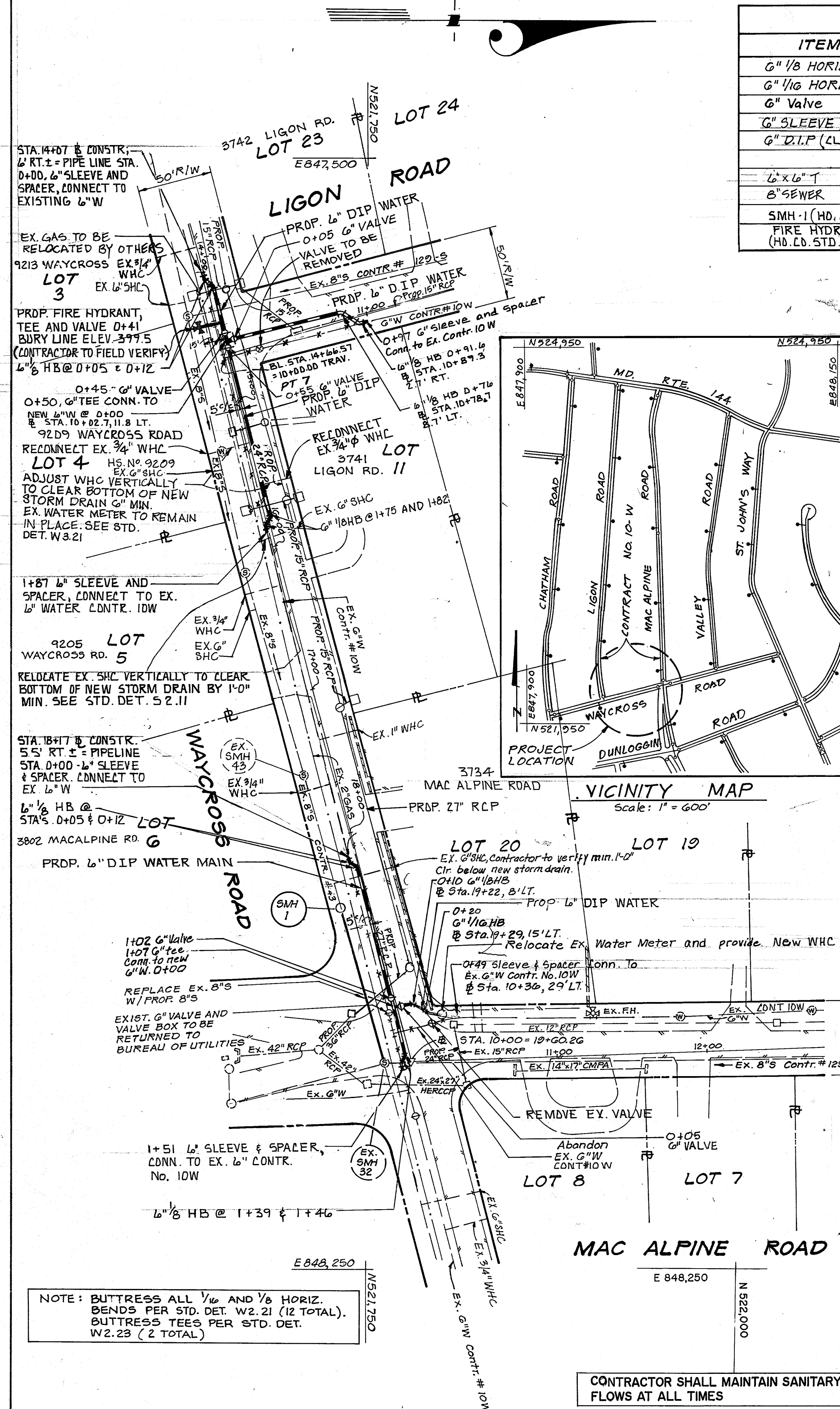
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GENERAL NOTES

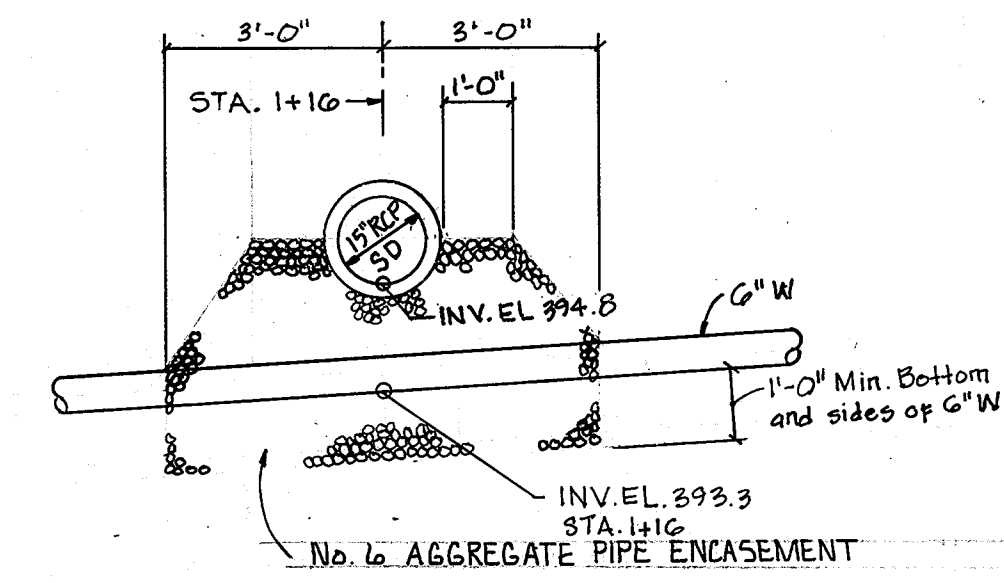
- PART I**
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2" COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
 - COORDINATE ABANDONMENT AND TIE IN WITH BUREAU OF UTILITIES FIVE WORKING DAYS PRIOR TO SCHEDULED WORK.
- PART II**
- ALL SEWER MAINS SHALL BE C.S.P.X., R.C.S.P., V.C.P.X., OR P.V.C. UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - FORCE MAINS SHALL BE D.I.P. ONLY.
 - MANHOLES SHOWN WITH "12" AND "16" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES DESIGNATED "W" IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAMES AND COVERS, STANDARD DETAIL G.S. 52. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED IN THE DRAWINGS.
 - COORDINATE ABANDONMENT AND TIE IN WITH BUREAU OF UTILITIES FIVE WORKING DAYS PRIOR TO SCHEDULED WORK.
- PART III**
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
 - ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
 - CLEAR ALL UTILITIES BY A MINIMUM OF 6" CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL VOLUME II, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME II ON THE JOB SITE.
 - WHERE TESTS 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.
 - STATE HIGHWAY ADMINISTRATION - 531-5533
BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
BALTIMORE GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL - 859-9004
BALTIMORE GAS & ELECTRIC CO. - TROUBLE SHOOTING - 298-9001
MISS UTILITY - 1-800-257-7777
COLONIAL PIPELINE CO. - 757-1370
BUREAU OF UTILITIES HOWARD COUNTY DEPT. OF PUBLIC WORKS - 313-4900
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.

QUANTITIES		
ITEM	ESTIMATED AS-BUILT	MATERIAL / SUPPLIER
6" 1/8 HORIZ. BEND	11	
6" 1/8 HORIZ. BEND	1	
6" Valve	5	
6" SLEEVE & SPACER	6	
6" D.I.P. (CLASS 52)	484 L.F.	
6"x6" T	2	
6" SEWER	109 L.F.	
SMH-1 (HD. CD. STD. 6-5.12)	1	
FIRE HYDRANT (HD. CD. STD. W.I.I)	1	

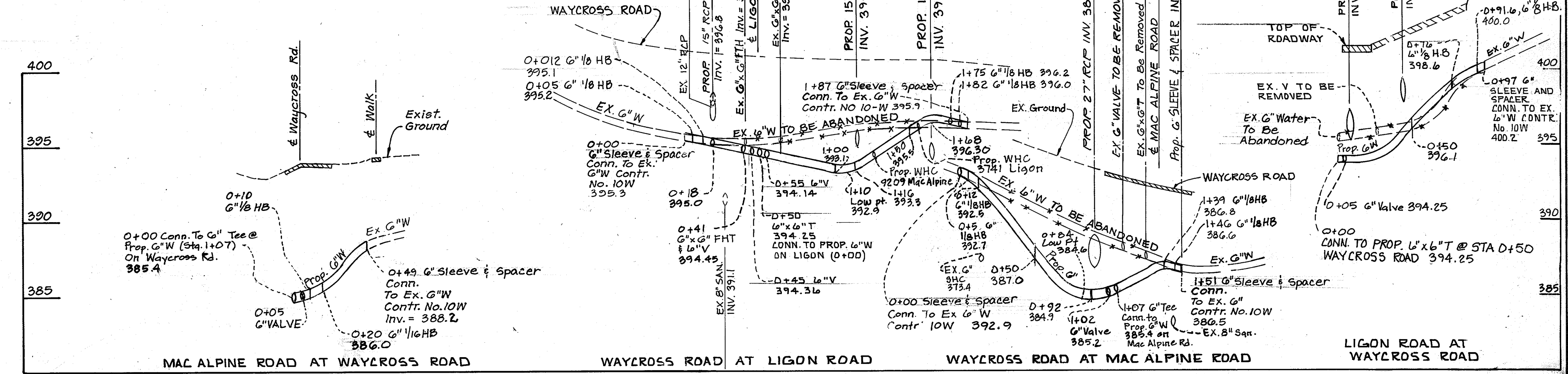
- NOTES:
- SEE SHEETS 28 & 3 FOR LOCATION OF TEST PITS AND BORINGS.
 - SEE SHEETS 2 & 3 FOR HORIZONTAL AND VERTICAL CONTROL.
 - ALL REMOVED WATER LINE VALVES AND HYDRANTS SHALL BECOME PROPERTY OF THE HOWARD COUNTY BUREAU OF UTILITIES AND SHALL BE DELIVERED TO THE BUREAU OF UTILITIES MAINTENANCE YARD.



8" SEWER PROFILE - WAYCROSS ROAD
Scale: Horiz. 1" = 50'
Vert. 1" = 5'



PIPE ENCASEMENT DETAIL
WAYCROSS ROAD AT LIGON ROAD
Scale: 3/8" = 1'-0"



6" WATER PROFILES
Scale: Horiz. 1" = 50'
Vert. 1" = 5'

CONTRACTOR NOTE:

CONTRACTOR SHALL TEST PIT ALL SEWER AND WATER HOUSE CONNECTIONS TO DETERMINE IF THEIR RELOCATION IS NECESSARY. IF RELOCATION IS NECESSARY, THE CONTRACTOR SHALL NOTIFY HOWARD CO. PRIOR TO RELOCATING PIPE.

NOTE:

THE CONTRACTOR SHALL TEST PIT THE EXISTING WATERMAIN TO DETERMINE ITS EXACT LOCATION. SEE PLAN FOR PROPOSED OFFSET DIMENSION FROM EXISTING WATERMAIN TO PROPOSED WATERMAIN.

WATER & SEWER IMPROVEMENTS
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 2/18/92
Date: 2-18-92

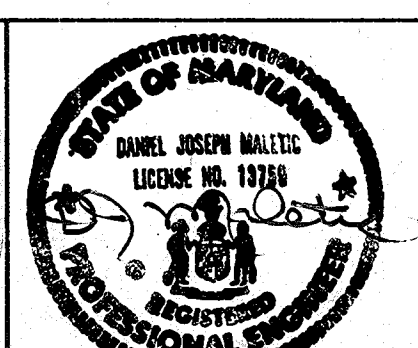
Chief, Bureau of Engineering: *[Signature]* 2/14/92
Date: 2-14-92

Chief, Bureau of Utilities: *[Signature]* 2-18-92
Date: 2-18-92

Chief, Utility Design Division: *[Signature]* 2-14-92
Date: 2-14-92

spi GREENMAN • PEDERSEN, INC.
CONSULTING ENGINEERS

14804 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 20708
(301) 470-8772, (301) 680-3555, (301) 835-6533



THIS IS PAGE 3A OF CONTRACT NO. 43 W+S		THIS IS PAGE 9A AND 21A CONTRACT NO. 10W	
DES: DMC	RELOCATE 6" W AT LIGON ROAD WEST OF PROPOSED INLET T5	DATE: 12/6/91	BY: NO.
DRN: DMC		REVISION	DATE
CHK: KJB			

"AMEND SHEET TO EXISTING CONTRACT 10-W
AMEND SHEET TO EXISTING CONTRACT 43- W & S,
CAPITAL PROJECT D-1077

600' SCALE MAP NO. 24 BLOCK NO. 17

STORM DRAINAGE IMPROVEMENTS
DUNLOGGIN
WATER & SEWER RELOCATION
ELECTION DISTRICT ELLICOTT CITY NO 2

SCALE AS SHOWN
SHEET 5 OF 5

XXDU-91-005