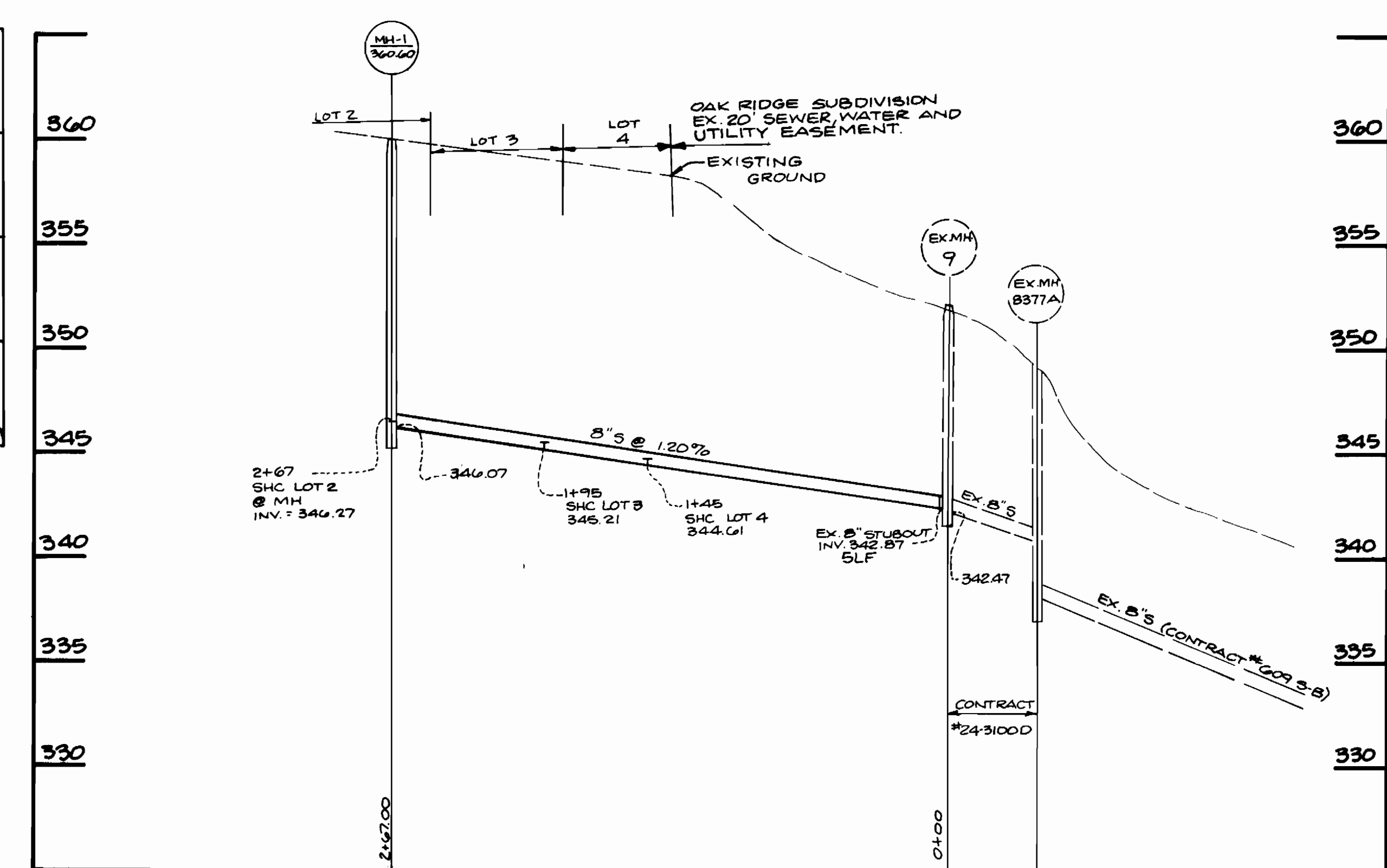
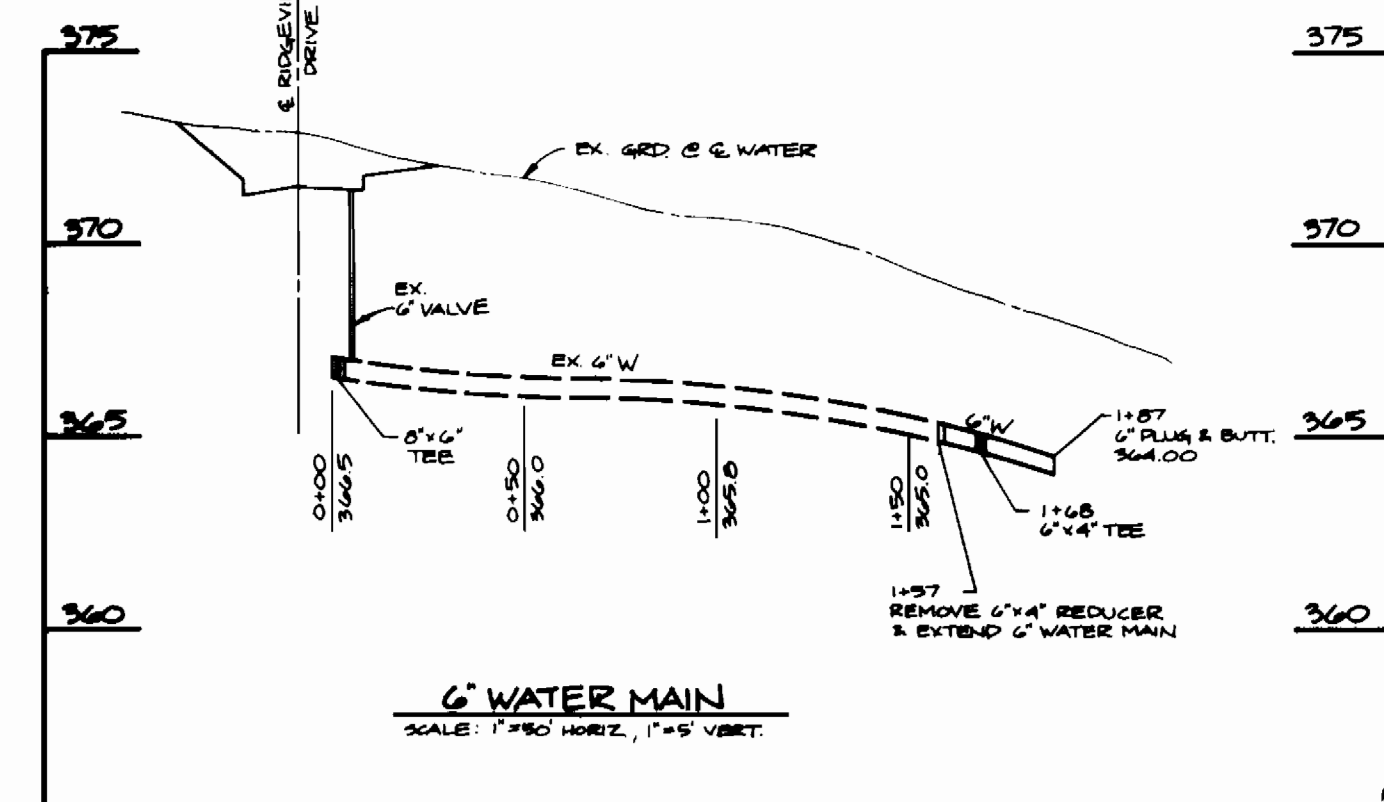
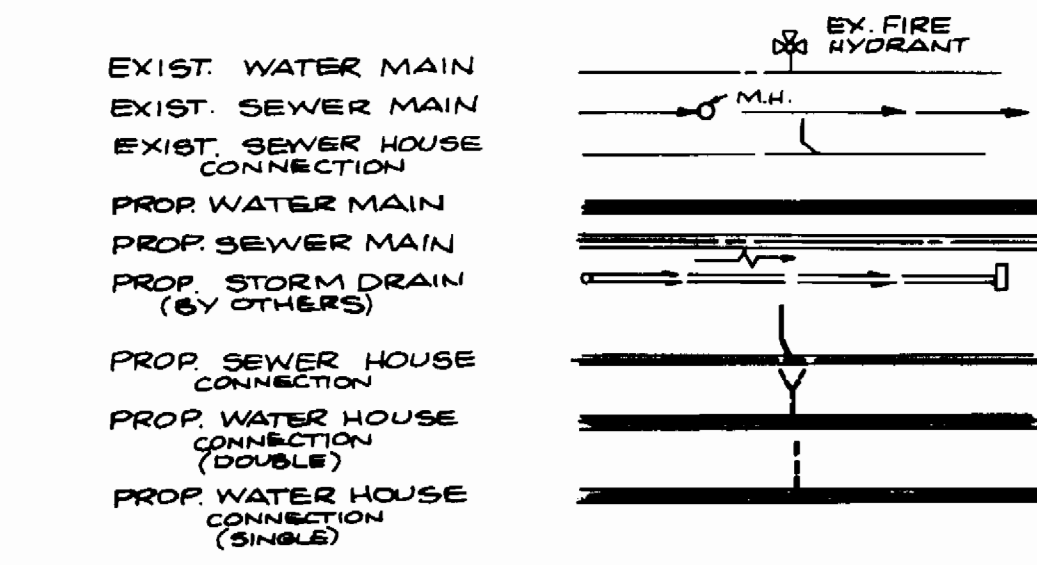


PLAN
SCALE: 1"=50'



PROFILE
1"=50' HORIZ.
1"=5' VERT.

LEGEND



QUANTITIES

ITEM	QUANTITIES ESTIMATED	AS-BUILT	
		QUANTITIES	TYPE
6" WATER	30	22	
3" WATER	5	Blow off	
3/4" WMC	35	40	KUPFERLE
8" SEWER	267	267	HERKULE
4" SHC	30	40	J.M.
MANHOLE	1	1	TERRE HILL

GENERAL NOTES

- 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.C. 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 COMPANY AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES ADDITIONAL BRACING OF POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY 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 IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- 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 BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - C&P 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.....1-558-0100
 - COLONIAL PIPELINE CO.....795-1390
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.....313-4900
- TREES ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES 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 AS DIRECTED BY THE ENGINEER. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EXCAVATION AND BACKFILL.
- PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY MAINTENANCE OPERATIONS.
- ALL WATER MAINS TO BE D.I.P. UNLESS OTHERWISE NOTED.
- TOP OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- BLOCK ALL FITTINGS WITH CONCRETE.
- BURY LINE ELEVATIONS ON FIRE HYDRANTS SHALL BE SET TO THE ELEVATIONS ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT TO BE COMPACTED IN ACCORDANCE WITH SECTIONS 1000 AND 1005 OF THE GENERAL REQUIREMENTS FOR WATER AND SEWER.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR AN INSIDE METER SETTING.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH A.W.W.A. SPEC. C-153 DUCTILE IRON COMPACT FITTINGS 3"-12" FOR WATER AND OTHER LIQUIDS.
- THE SERVICE CLAMPS ARE TO HAVE STAINLESS STEEL STRAPS.
- ALL SEWER MAINS SHALL BE C.S.P.X., 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.
- MANHOLES SHOWN WITH 12" AND 18" WALLS ARE BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS. STANDARD DETAIL GS-52, VOLUME IV WHERE WATERTIGHT FRAME IS USED, SET TOP OF FRAME 1'-8" ABOVE FINISHED GRADE.
- HOUSE (S) WITH SYMBOL "C.N.S." INDICATES CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 12" ABOVE ALL SANITARY SEWER CROSSINGS.
- ALL SANITARY SEWER HOUSE CONNECTIONS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 12" BELOW ALL WATER MAIN CROSSINGS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- NO PIPE SHALL BE Laid UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT TO SUBGRADE.

HOWARD SOIL CONSERVATION DISTRICT:
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT
AND MEETS TECHNICAL REQUIREMENTS

James M. Helms 3/31/92
U.S. SOIL CONSERVATION SERVICE DATE

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

John P. Roberts 3/31/92
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

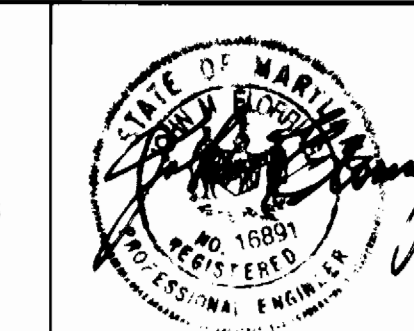
James M. Helms 3/23/92
DIRECTOR OF PUBLIC WORKS DATE

John P. Roberts 3/31/92
CHIEF, BUREAU OF ENGINEERING DATE

John P. Roberts 3/23/92
CHIEF, BUREAU OF UTILITIES DATE

John P. Roberts 3/31/92
CHIEF, LAND DEVELOPMENT DIVISION DATE

TSA GROUP, INC.
planning • engineering • surveying
8480 Baltimore National Pike • Suite 418
Ellicott City, Maryland 21043



DES: J.M.E.
DRN: DT
CHK: J.M.E.
DATE: 9-23-91

BY NO. REVISIONS DATE

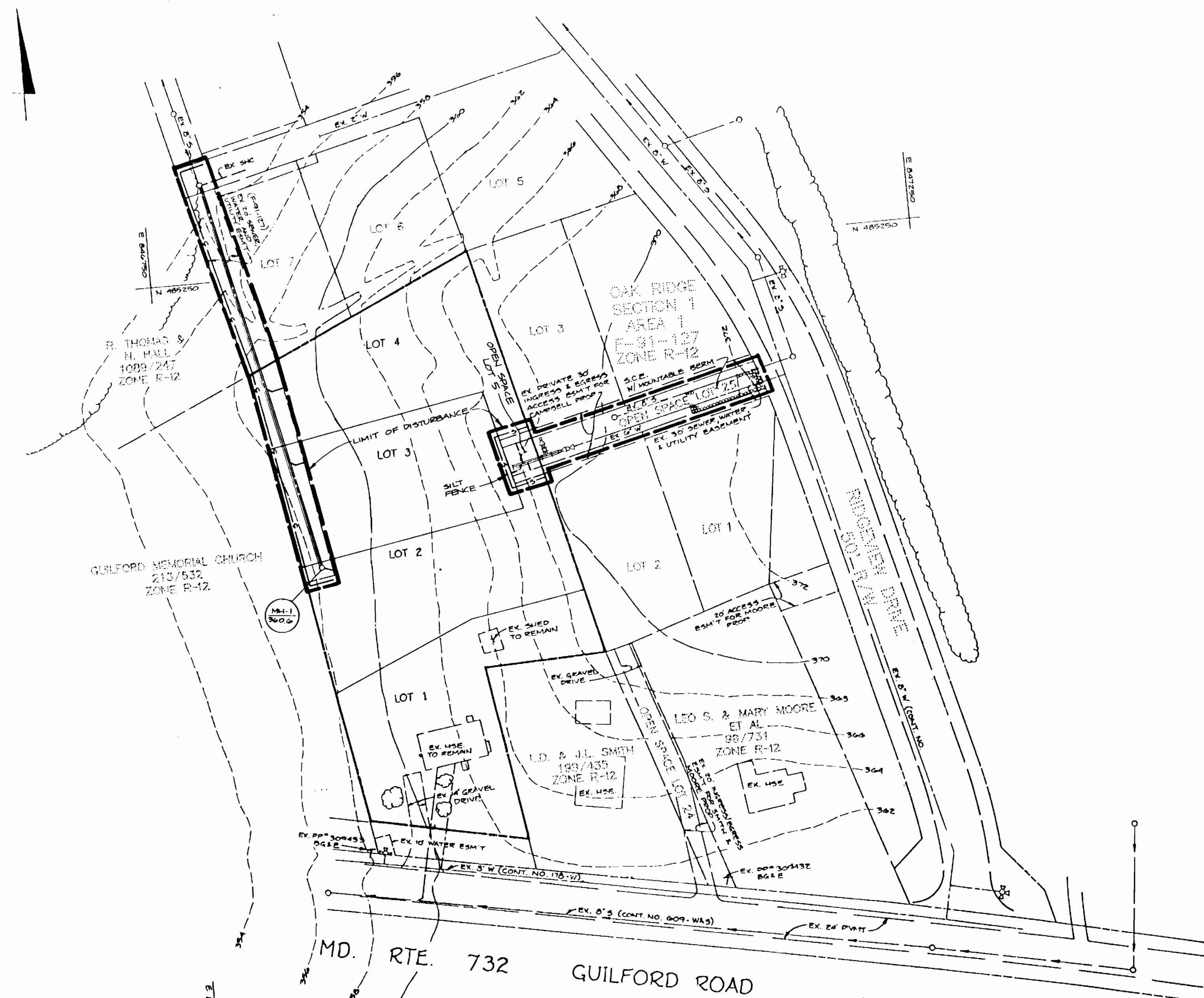
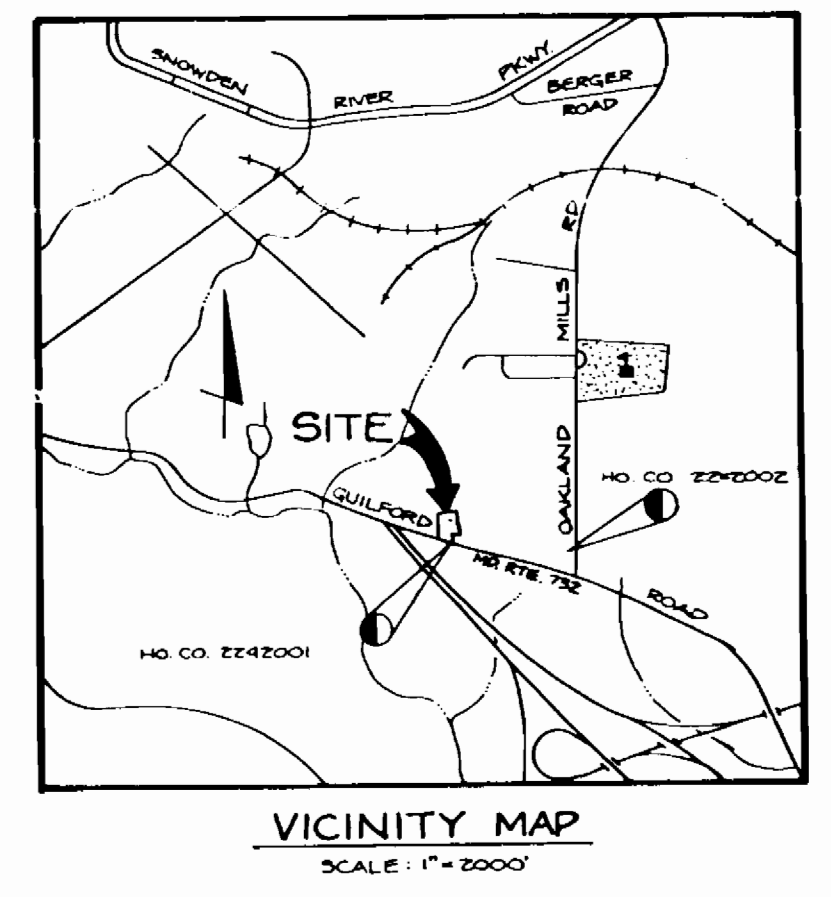
PLAN OF
WATER & SEWER MAINS

600 SCALE MAP NO. 42 BLOCK 16

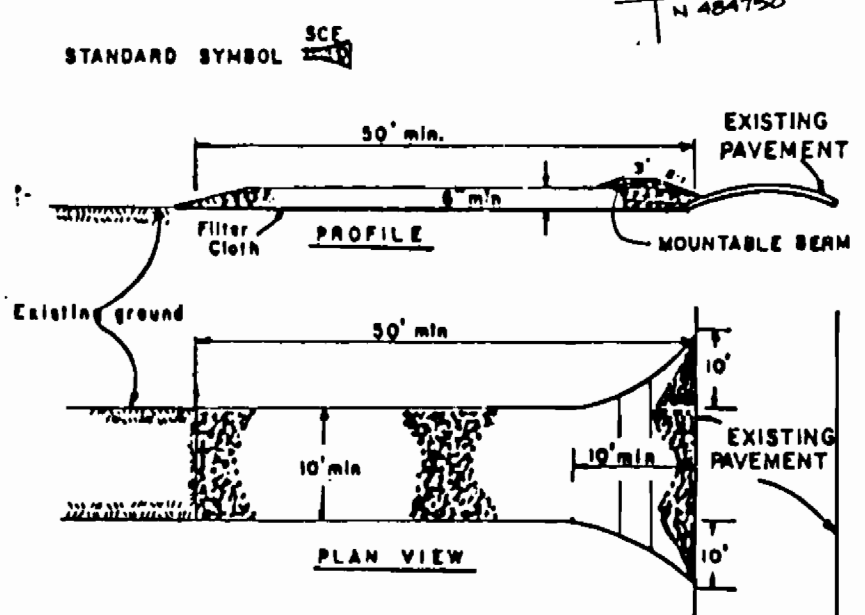
CAMPBELL
SECTION ONE
ELECTION DISTRICT NO. 6
CONTRACT NO. 24-3184-D

SCALE AS SHOWN
SHEET 1 OF 2

AS-BUILT

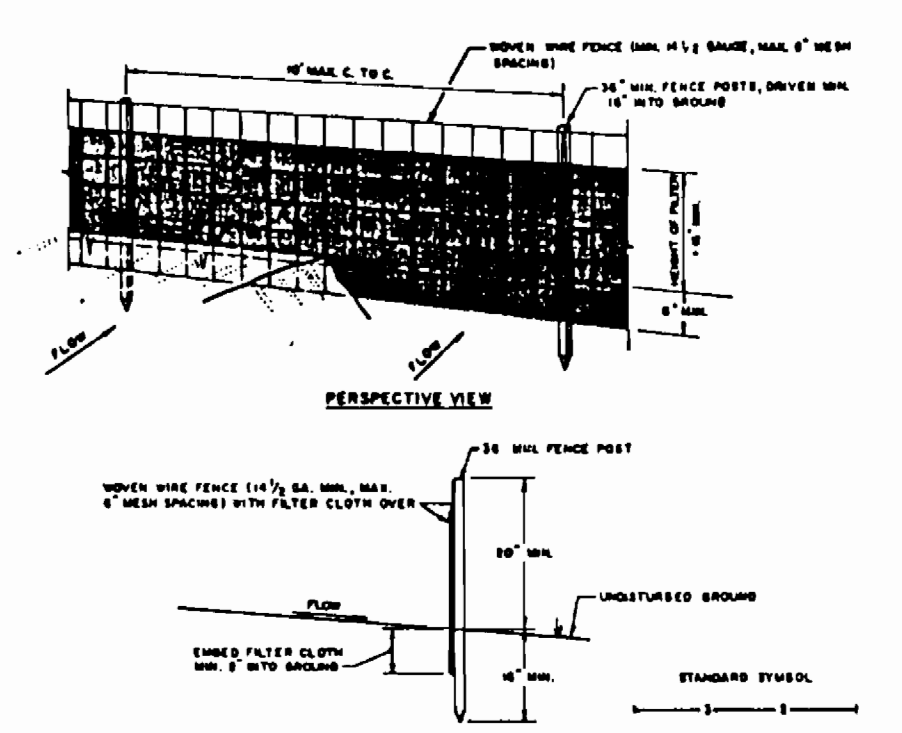


PLAN
SCALE: 1"=50'



- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 2" stone, or crushed or recycled concrete equivalent.
 - Length - As required, but not less than 30 feet (except on a single road where a 20 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
 - Filter Cloth - Will be placed over the entire area prior to placing of stone.
 - Surface Water - All surface water flowing or directed toward construction entrances shall be piped across the entrance. If piping is impractical, a moundside berm with 2:1 slopes will be constructed.
 - Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measure used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 - Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
 - Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE
NO SCALE



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
- When wire fence is to be fastened, securely to fence posts with wire, ties or staples.
 - Filter cloth to be fastened securely to stone with ties spaced every 2' at top and mid section.
 - When two sections of filter cloth abut, each other they shall be overlapped by six (6) inches.
 - Maintenance shall be performed as needed and material removed when needed in the silt fence.
- POSTS: Steel, either T or U type or 2" diameter
FENCE: Heavy wire, 1/2" dia. 6" max. mesh opening
FILTER CLOTH: Filter Cloth, 100% polypropylene, 100% virgin, 100% UV stabilized, 100% tear resistant, 100% approved equal.
PREFABRICATED UNIT: Geotextiles, polypropylene, or approved equal.

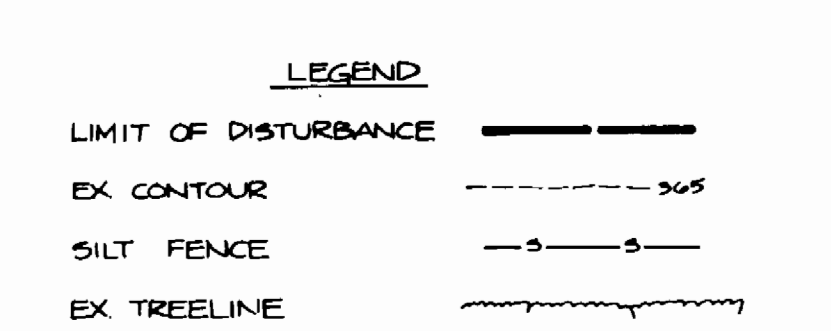
SILT FENCE
NO SCALE

- SEDIMENT CONTROL NOTES**
- A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (892-2437).
 - 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) 500 (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.
- 7) SITE ANALYSIS:**
- | | |
|------------------------------------|------------|
| TOTAL AREA OF SITE | 1256 ACRES |
| AREA TO BE ROOFED OR PAVED | 0.23 ACRES |
| AREA TO BE VEGETATIVELY STABILIZED | 0.23 ACRES |
| TOTAL CUT | CU YDS. |
| TOTAL FILL | CU YDS. |
| OFFSITE MASTER/SUBAREA LOCATION | |
- 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 DPM Sediment Control Inspector.
 - All sediment traps 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.

- PERMANENT SEEDING PREPARATION**
- SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY BAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY DISSEMINATED.
- SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
- PREFERRED - APPLY 2 TONS PER ACRE DOMINANT Limestone (92 10s/1000 sq ft) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 10s/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 10s/1000 sq ft).
 - ACCEPTABLE - APPLY 2 TONS PER ACRE DOMINANT Limestone (92 10s/1000 sq ft) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 10s/1000 sq ft) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
- SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (11.4 10s/1000 sq ft) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 40 LBS OF KENTUCKY 31 TALL FESCUE PER ACRE AND 150 LBS PER ACRE (1.05 10s/1000 sq ft) OF KEEPING 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 SOO. OPTION (3) SEED WITH 40 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.
- MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 10s/1000 sq ft) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 210 GALLONS PER ACRE (5 9s/1000 sq ft) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 340 GALLONS PER ACRE (8 9s/1000 sq ft) FOR ANCHORING.
- MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

- TEMPORARY SEEDING PREPARATION**
- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY BAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSESED.
- SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 10s/1000 sq ft).
- SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 1-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 10s/1000 sq ft). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF KEEPING LOVEGRASS (1.05 10s/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 SOO.
- MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 10s/1000 sq ft) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 210 GALLONS PER ACRE (5 9s/1000 sq ft) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 340 GALLONS PER ACRE (8 9s/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.

- SEQUENCE OF CONSTRUCTION**
- OBTAIN WATER & SEWER CONSTRUCTION PERMIT.
 - INSTALL S.C.E. & SILT FENCE.
 - INSTALL WATER & SEWER.
 - COMPLETE WATER & SEWER INSTALLATION AND UPON THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.



HOWARD SOIL CONSERVATION DISTRICT
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Jean M. Helm 3/31/92
U.S. SOIL CONSERVATION SERVICE DATE

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

John C. Dalton 3/31/92
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jean M. Helm 3/31/92
DIRECTOR OF PUBLIC WORKS DATE

John C. Dalton 3/31/92
CHIEF, BUREAU OF ENGINEERING DATE

John C. Dalton 3/31/92
CHIEF, BUREAU OF UTILITIES DATE

John C. Dalton 3/31/92
CHIEF, LAND DEVELOPMENT DIVISION DATE

TSA GROUP, INC.
planning • engineering • surveying
8480 Baltimore National Pike • Suite 418
Ellicott City, Maryland 21043

John C. Dalton 3/31/92
DATE

DES: JME					
DRN: DBT					
CHK: JME					
DATE: 9-23-91	BY: NO.	REVISIONS	DATE	600' SCALE MAP NO. 42	BLOCK NO. 16

PLAN OF
WATER & SEWER MAINS

CAMPBELL
SECTION 1
ELECTION DISTRICT NO. 8
CONTRACT NO. 24-3184-D

SCALE AS SHOWN
SHEET 2 OF 2