

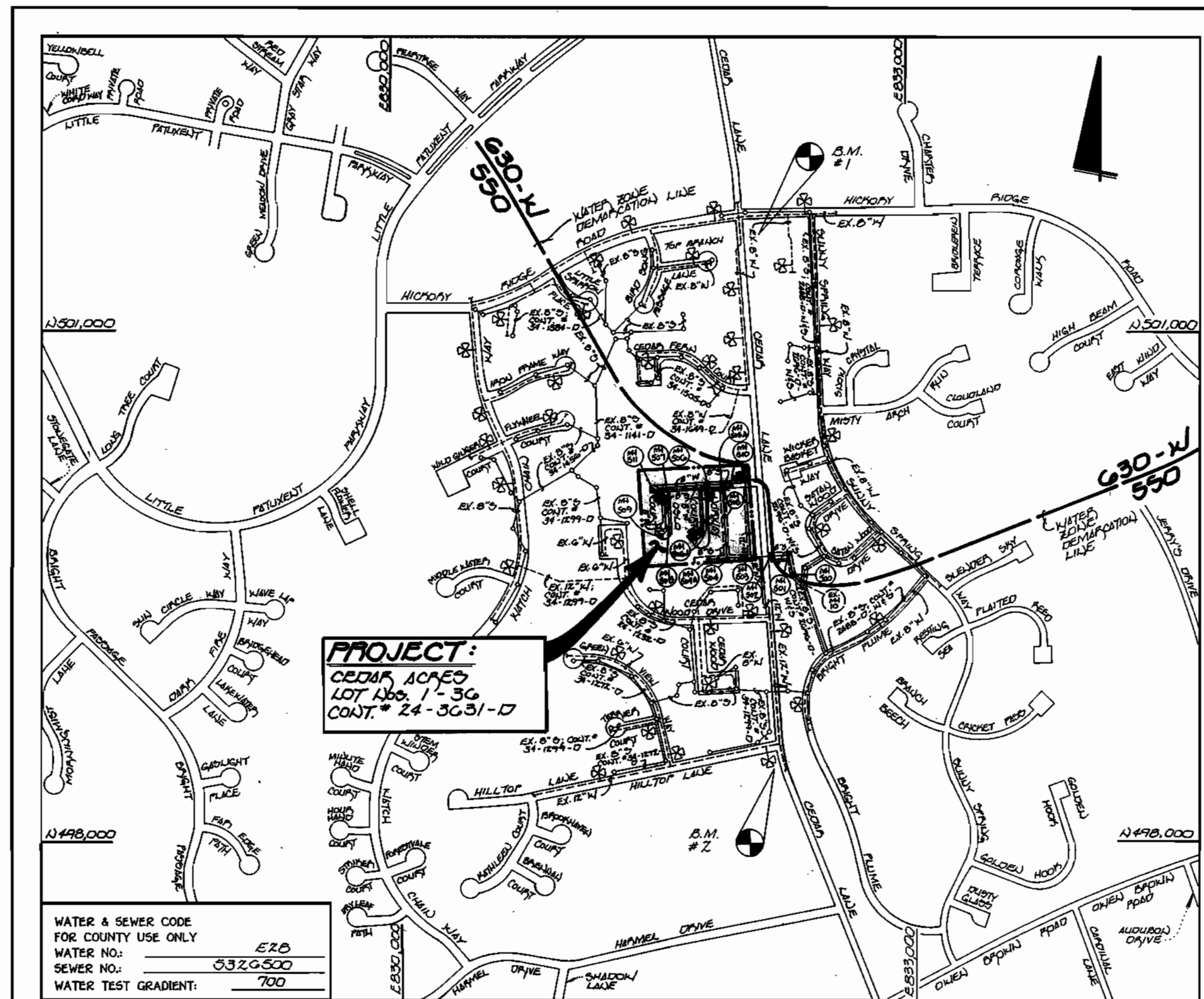
| QUANTITIES | | | | |
|-------------------|------------|------------|---------------------|----------------|
| ITEM | ESTIMATED | AS-BUILT | | |
| | | QUANTITIES | TYPE | SUPPLIER |
| 8" SEWER | 1,794 L.F. | 1784 L.F. | PVC SDR 35 | J.M. / ETI |
| 8" SEWER (DIP) | 230 L.F. | 230 L.F. | DIP CL-92 | GRIFFIN |
| 4" SEWER | 876 L.F. | 861 L.F. | PVC SDR 35 | J.M. / ETI |
| MANHOLES | 15 EACH | 17 EA. | PRECAST CONC. | ATLANTIC CONC. |
| 12" WATER | 890 L.F. | 886 L.F. | DIP CL-92 | GRIFFIN |
| 8" WATER | 1,182 L.F. | 1165 L.F. | DIP CL-92 | GRIFFIN |
| 6" WATER | 95 L.F. | 82 L.F. | DIP CL-92 | GRIFFIN |
| PIPE HYDRANTS | 4 EACH | 4 EA. | KENNEDY | KENNEDY |
| 1" WVC | 277 L.F. | 332 L.F. | TYPE 'K' COPPER | READING |
| 3/4" WVC | 535 L.F. | 516 L.F. | TYPE 'K' COPPER | READING |
| 12" V.TEE | 1 EACH | 1 EA. | M.J. TEE CL-92 | GRIFFIN |
| 8" V.TEE | 2 EACH | 2 EA. | M.J. TEE CL-92 | GRIFFIN |
| 6" V.TEE | 4 EACH | 4 EA. | M.J. RN / TEE | GRIFFIN |
| 12" VALVES | 2 EACH | 2 EA. | R.S. / M.J. VALVE | KENNEDY |
| 8" VALVES | 4 EACH | 4 EA. | R.S. / M.J. VALVE | KENNEDY |
| 6" VALVES | 4 EACH | 4 EA. | R.S. / M.J. VALVE | KENNEDY |
| 12" 1/2 H.D. | 4 EACH | 4 EA. | M.J. 1/2 SAND CL 92 | GRIFFIN |
| 8" 1/2 H.D. | 2 EACH | 2 EA. | M.J. 1/2 SAND CL 92 | GRIFFIN |
| 12" FLUGS OUTPICK | 1 EACH | 1 EA. | M.J. CAP | GRIFFIN |
| 8" FLUGS OUTPICK | 3 EACH | 3 EA. | M.J. CAP | GRIFFIN |

FOREMAN: RONNIE SKILMAN

BENCHMARK INFORMATION

BENCHMARK No. 1 HOWARD COUNTY MONUMENT 355
 N 562, 140, 4425
 E 1,344, 544, 5028
 ELEV. = 452.359

BENCHMARK No. 2 HOWARD COUNTY MONUMENT 25
 N 559, 205, 3513
 E 1,344, 085, 9511
 ELEV. = 411.067



TYPE OF BUILDING: RESIDENTIAL SINGLE FAMILY DETACHED
 NUMBER OF LOTS: 36 (33 BUILDABLE)
 NO. OF WATER HOUSE CONNECTIONS: 33
 NO. OF SEWER HOUSE CONNECTIONS: 33
 DRAINAGE AREA: LITTLE POTOMAC
 TREATMENT PLANT: LITTLE POTOMAC WATER QUALITY MANAGEMENT CENTER, SHAGE, MARYLAND

VICINITY MAP

SCALE 1"=600'

PLAN REFERENCE NUMBERS: F97-115

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.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (0991 AMENDMENTS) THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- WHERE TEST FITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL **BT** 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 FITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED 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:
 - STATE HIGHWAY ADMINISTRATION - 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
 - BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 787-9088
 - HBS UTILITY - 1-800-257-7777
 - COLONIAL PIPELINE CO. - 755-1590
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4990
- 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- T.B. DENOTES TEST BORING.
- MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G 5.52.
- WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL 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 TREES SHALL BE STRAPPED TO TREES.
- 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 ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W11 AND W213). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH ANWA SPECIFICATIONS C-153; DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.110(D) OF THE HOWARD COUNTY CODE.

CONTRACT NO. 24-3631-D

CEDAR ACRES

LOT NOS. 1 - 36

**WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND**

WATER & SEWER AS-BUILT

DEVELOPER'S CERTIFICATE

"I HEREBY CERTIFY THAT ALL DEVELOPMENT & CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT, EROSION CONTROL, SEDIMENT CONTROL & THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEVELOPMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION & SEDIMENTATION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERSONNEL TO OBTAIN PERMISSION BY THE HOWARD COUNTY COMMISSIONERS/CONTRACTOR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

Michael J. McMan for CHANDLER HOMES 6-4-97
 SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION & SEDIMENT CONTROL MEASURES IS A COMPLETE & ACCURATE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS & THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

John A. Decker 6-5-97
 SIGNATURE OF ENGINEER DATE

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

Cheryl Simmons 8/1/97
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

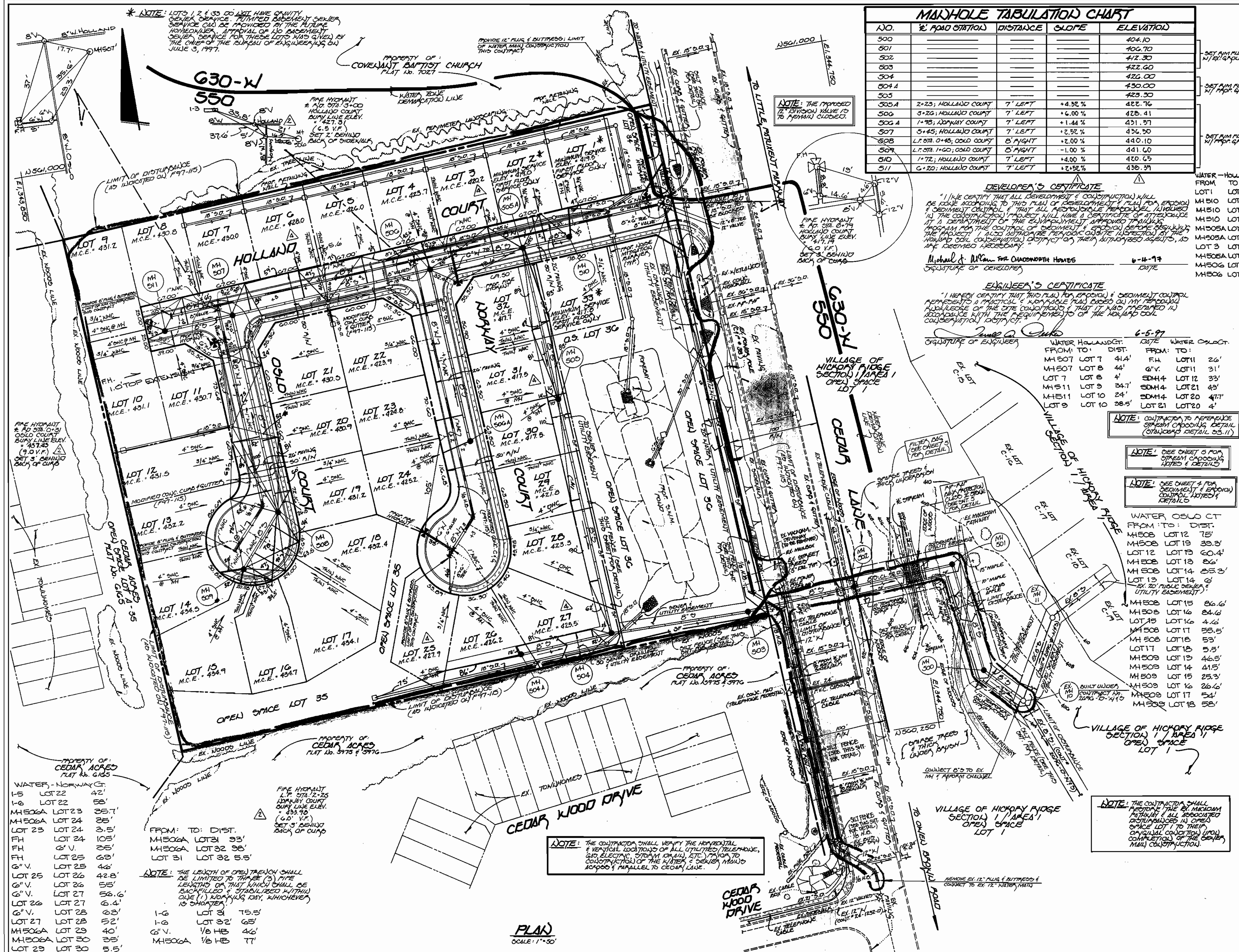
APPROVED: John R. Roberts 8/1/97
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AS SHOWN ON THESE PLANS AND UNDER F 97-115.

Michael J. McMan for CHANDLER HOMES 6-4-97
 SIGNATURE OF DEVELOPER DATE

CONTRACT NO. 24-3631-D
 CEDAR ACRES
 LOT NOS. 1 - 36
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

| | | | | | |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert B. Brown 8-1-97 CHIEF, BUREAU OF UTILITIES DATE | DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND John A. Decker 8/1/97 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE | Fisher, Collins & Carter, Inc. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK 10272 Baltimore National Pike Ellicott City, Maryland 21042 (410) 481-2855 TERRELL A. FISHER | DESIGNED BY: M.J.M. DRAWN BY: J.M.H. CHECKED BY: P.W.K. DATE: JULY, 1997 | TITLE SHEET 600' SCALE MAP NO. 35 BLOCK NO. 11 F.C.C. WORK ORDER NO. 30558 FILE NAME: G:/DRAWINGS/30558/ | CEDAR ACRES LOT NOS. 1 - 36 CONTRACT NO. 24-3631-D FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 1 OF 5 |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|



MANHOLE TABULATION CHART

| NO. | % ROAD STATION | DISTANCE | SLOPE | ELEVATION |
|------|--------------------------|----------|--------|-----------|
| 500 | | | | 404.10 |
| 501 | | | | 406.70 |
| 502 | | | | 412.30 |
| 503 | | | | 422.00 |
| 504 | | | | 426.00 |
| 504A | | | | 430.00 |
| 505 | | | | 423.30 |
| 505A | 2+25, HOLLAND COURT | 7' LEFT | +4.92% | 422.76 |
| 506 | 3+20, HOLLAND COURT | 7' LEFT | +6.00% | 425.41 |
| 506A | 1+95, NORWAY COURT | 7' LEFT | +1.44% | 431.97 |
| 507 | 5+45, HOLLAND COURT | 7' LEFT | +2.92% | 436.50 |
| 508 | L.F. 0+45, CEDAR COURT | 8' RIGHT | +2.00% | 440.10 |
| 509 | L.F. 0+1+00, CEDAR COURT | 8' RIGHT | -1.00% | 441.60 |
| 510 | 1+72, HOLLAND COURT | 7' LEFT | +4.80% | 440.65 |
| 511 | C+20, HOLLAND COURT | 7' LEFT | +2.92% | 438.39 |

SHC INVERT @ PROPERTY LINE CHART

| STATION | LOT | ELEVATION |
|--------------------|------------------------|-----------|
| MH 504 TO MH 504 A | | |
| 0+20 FT. | 21 | 421.01 |
| @ MH 504A FT. | 22 (SHC @ MH) | 421.76 |
| @ MH 504A CTR. | 25 (SHC @ MH) | 423.24 |
| MH 504 TO MH 505 | | |
| 0+00 LT. | 28 (SHC) | 418.70 |
| 1+50 LT. | 29 (SHC) | 417.20 |
| @ MH 505 LT. | 30 (SHC @ MH) | 412.84 |
| @ MH 505 LT. | 31 (SHC @ MH) | 412.88 |
| MH 505 TO MH 505A | | |
| 0+80 LT. | 32 | 415.08 |
| 0+85 FT. | # 33 (FF SERVICE ONLY) | 415.11 |
| MH 505A TO MH 506 | | |
| 0+32 FT. | 3 | 415.06 |
| @ MH 506 FT. | 4 (SHC @ MH) | 418.77 |
| MH 506 TO MH 506 A | | |
| 0+45 FT. | 22 | 419.13 |
| 1+00 FT. | 23 | 419.76 |
| @ MH 506A FT. | 24 (SHC @ MH) | 420.35 |
| MH 506A TO MH 507 | | |
| 0+70 FT. | 5 | 421.01 |
| 1+40 FT. | 6 | 423.21 |
| 2+00 FT. | 7 | 423.09 |
| MH 507 TO MH 508 | | |
| 0+60 LT. | 21 | 423.75 |
| 1+35 FT. | 12 | 426.39 |
| 1+40 LT. | 20 | 426.10 |
| 1+95 FT. | 13 | 427.05 |
| 2+00 LT. | 19 | 426.43 |
| MH 508 TO MH 509 | | |
| 0+15 LT. | 15 | 427.49 |
| 0+30 LT. | 17 | 428.97 |
| 0+60 LT. | 16 | 429.65 |
| @ MH 509 LT. | 15 (SHC @ MH) | 429.88 |
| @ MH 509 FT. | 14 (SHC @ MH) | 429.73 |
| MH 509A TO MH 510 | | |
| 0+25 LT. | # 2 (FF SERVICE ONLY) | 414.15 |
| @ MH 510 LT. | # 1 (FF SERVICE ONLY) | 414.51 |
| MH 510 TO MH 511 | | |
| 0+50 FT. | 8 | 426.07 |
| 0+70 LT. | 11 | 425.93 |
| @ MH 511 FT. | 9 (SHC @ MH) | 426.27 |
| @ MH 511 LT. | 10 (SHC @ MH) | 426.19 |

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT & CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT & PLAN FOR EROSION & SEDIMENT CONTROL & THAT ALL NECESSARY PERMITS (LICENSES) & THE NECESSARY CONTROL MEASURES WILL BE INSTALLED & MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD & THAT I WILL REMAIN RESPONSIBLE FOR THE CONTROL OF EROSION & SEDIMENT BEFORE & DURING THE CONSTRUCTION PERIOD & THAT I WILL REMAIN RESPONSIBLE FOR THE CONTROL OF EROSION & SEDIMENT AFTER CONSTRUCTION, AS ARE DEEMED NECESSARY.

Michael A. Allen, For CHANDLER HOMES
 SIGNATURE OF DEVELOPER
 6-4-97 DATE

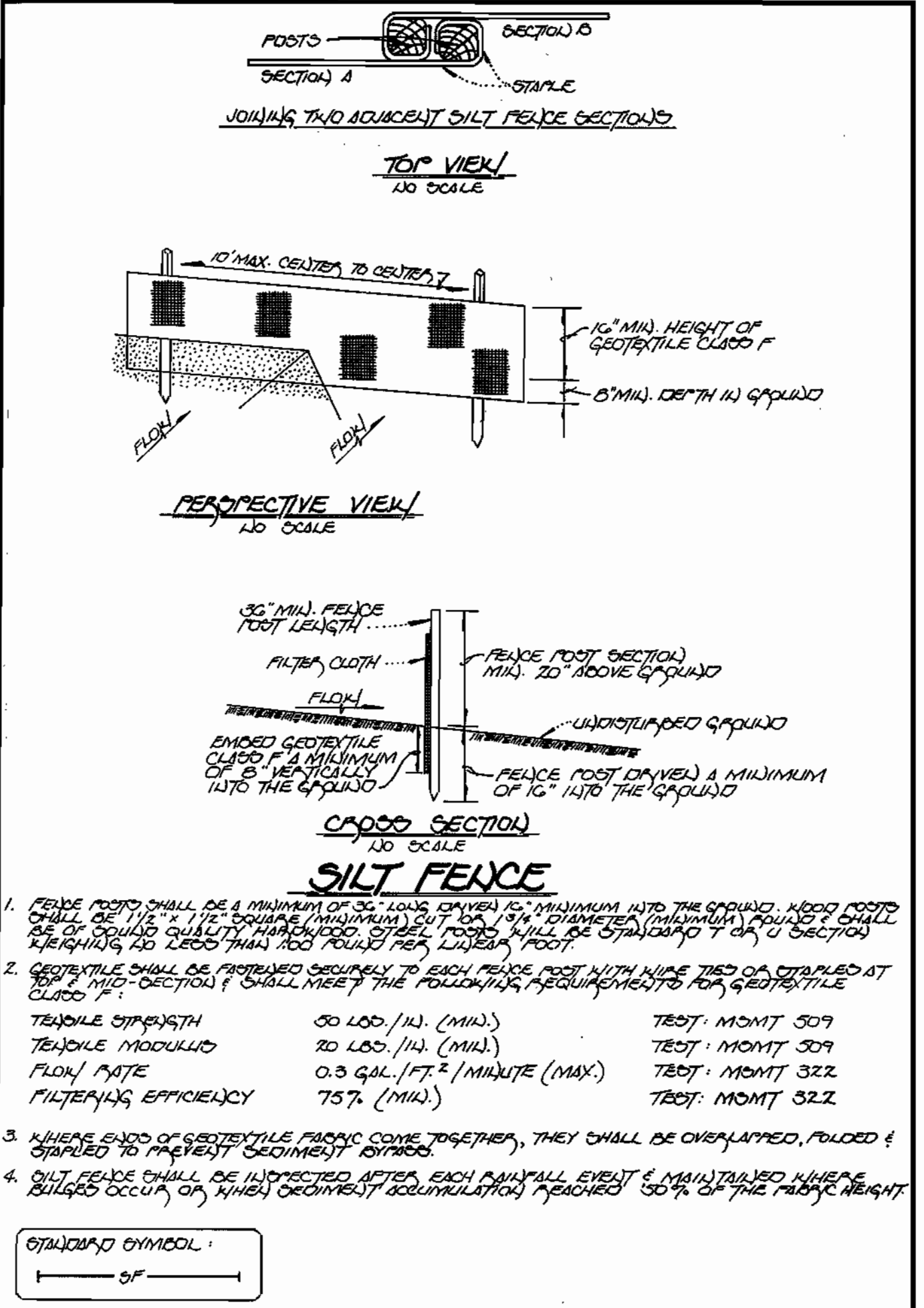
ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION & SEDIMENT CONTROL REPRESENTS A PRACTICAL & WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS & THAT IT HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT.

Paul A. Oatis
 SIGNATURE OF ENGINEER
 6-5-97 DATE

WATER HOLLAND CT

| FROM TO: DIST. | WATER COLLECT. |
|--------------------|-------------------|
| MH507 LOT 7 41.4' | LOT 11 2.6' |
| MH507 LOT 8 4.4' | LOT 11 3.1' |
| LOT 7 LOT 8 4' | SDMH4 LOT 12 3.3' |
| MH511 LOT 9 34.1' | SDMH4 LOT 21 4.5' |
| MH511 LOT 10 24' | SDMH4 LOT 20 4.7' |
| LOT 9 LOT 10 28.5' | LOT 21 LOT 20 4' |



- #### SILT FENCE
- FENCE POSTS SHALL BE A MINIMUM OF 30' LONG & 1.5" DIA. MINIMUM INTO THE GROUND. HOOD POSTS SHALL BE 1.5" DIA. SQUARE (MINIMUM) OUT OR 1.5" DIA. MINIMUM (MINIMUM) POSTS SHALL BE OF EQUAL QUALITY MINIMUM 3" DIA. POSTS SHALL BE STAINLESS STEEL & SHALL BE 18" LONG & 1.5" DIA. MINIMUM FOR LISTER'S POSTS.
 - GEOTEXTILE SHALL BE INSTALLED SEPARATELY TO EACH FENCE POST WITH WIRE TIED TO STAPLED AT GROUND. 5" DIA. SECTION & SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE:

| | | |
|----------------------|-----------------------------------------|----------------|
| TENSILE STRENGTH | 50 LBS./IN. (MIN) | TEST: MGMT 509 |
| TENSILE MODULUS | 20 LBS./IN. (MIN) | TEST: MGMT 309 |
| FLOW RATE | 0.3 GAL./FT ² / MINUTE (MAX) | TEST: MGMT 322 |
| FILTERING EFFICIENCY | 75% (MIN) | TEST: MGMT 322 |
 - WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FLORED & STAPLED TO PREVENT SEDIMENT ENTRAPMENT.
 - OUT FENCE SHALL BE INSTALLED AFTER EACH MAINLINE EVENT & MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. WHEN SEDIMENT ACCUMULATION REACHES 50% OF THE FABRIC HEIGHT, STAPLED OVERFLOW SHALL BE INSTALLED.

WATER - NORWAY CT

| | |
|---------------|-------|
| 1-5 LOT 22 | 42' |
| 1-6 LOT 22 | 58' |
| MH506A LOT 23 | 35.7' |
| MH506A LOT 24 | 28.5' |
| LOT 23 LOT 24 | 3.5' |
| FH LOT 24 | 103' |
| FH LOT 24 | 28.5' |
| FH LOT 25 | 69' |
| 6" V. LOT 25 | 46' |
| LOT 25 LOT 26 | 42.8' |
| 6" V. LOT 26 | 55' |
| 6" V. LOT 27 | 58.6' |
| LOT 26 LOT 27 | 6.4' |
| 6" V. LOT 27 | 63' |
| LOT 27 LOT 28 | 52' |
| MH506A LOT 29 | 40' |
| MH506A LOT 30 | 35' |
| LOT 29 LOT 30 | 5.5' |

FROM: TO: DIST.
 MH506A LOT 29 93'
 MH506A LOT 32 98'
 LOT 31 LOT 32 5.5'

NOTE: THE LENGTH OF OPEN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OF THAT WHICH SHALL BE BACKFILLED TO ORIGINAL UNDISTURBED ONE (1) WORKING DAY, UNLESS OTHERWISE SHOWN.

| | |
|---------------|-------|
| 1-6 LOT 31 | 75.5' |
| 1-6 LOT 32 | 65' |
| 6" V. 1/8 HB | 46' |
| MH506A 1/8 HB | 77' |

NOTE: THE CONTRACTOR SHALL VERIFY THE HORIZONTAL & VERTICAL LOCATIONS OF ALL UTILITIES (TELEPHONE, GAS, ELECTRIC, STREAM CHANNEL, ETC.) PRIOR TO CONSTRUCTION OF THE WATER & SEWER MAINS AND SHALL MAINTAIN A PARALLEL TO CEDAR LANE.

PLAN
 SCALE: 1" = 40'

| | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert W. Benner</i> CHIEF, BUREAU OF UTILITIES 8-1-97 DATE | DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND <i>John J. Dammann</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION 8/13/97 DATE | Fisher, Collins & Carter, Inc. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK 10272 Baltimore National Pike Beltsville, MD, Maryland, 21042 (410) 481-2855 | DESIGNED BY: M.J.M. DRAWN BY: J.M.H. CHECKED BY: P.W.K. DATE: JULY, 1997 BY NO. REVISION DATE | WATER AND SEWER MAINS PLAN VIEW 60' SCALE MAP NO. 35 BLOCK NO. 11 F.C.C. WORK ORDER NO. 30538 FILE NAME: G:/DRAWINGS/30538/ | CEDAR ACRES LOT NOS. 1 - 36 CONTRACT NO. 24-3631-D FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 2 OF 5 |
| | | | | | |

SECTION 20 : STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
Vegetative stabilization is the use of plants to stabilize soil on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration up to one year, and Permanent Seeding, for long-term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dunes, cut and fill slopes and other areas at final grade, former stockpiles and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff. Infiltration improves recharging, percolation, and groundwater recharge. Vegetation over time will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation

- Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
- Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
- Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Fertilizer may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark, and manufacturer of the producer.

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 90% total oxides (calcium and magnesium oxide). Limestone used shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.

iv. Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.

C. Seeded Preparation

Temporary Seeding

- Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural equipment, such as disc harrows or similar plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas greater than 3:1 should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
- Apply fertilizer and lime as prescribed on the plans.
- Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.

ii. Permanent Seeding

- Permanent soil conditions required for permanent vegetative establishment:

 - Soil pH shall be between 6.0 and 7.0.
 - Soil salinity shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay, but enough fine grained material (silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loess or silt loess is to be planted, then a sandy soil (60% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, additional amendments in accordance with Section 21 Standard and Specification for Topsoil.

b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to slide down a slope.

c. Apply soil amendments as per soil test or as indicated on the plans.

d. Soil amendments into the top 3-5" of topsoil by diking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for application. Where soil amendments will be applied, normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving a rough irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within 6 months immediately preceding the date of sowing such material on the job.
- Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
- Incubator - The incubator used in the seed testing shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Incubators shall not be used later than the date indicated on the fresh inoculant as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible. Temperatures above 75-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

- Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer, broadcast or drop seeded, or collector seeder).
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen maximum 100 lbs. per acre total of soluble nitrogen; P2O5 (phosphorous) 200 lbs/acre; K2O (potassium) 200 lbs/acre.
 - Lime - use only ground agricultural limestone, up to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - seed and shall be done immediately and without interruption.

ii. Dry Seeding This includes use of conventional drop or broadcast spreaders.

- Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding summaries or Tables 205 or 206. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
- Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Outdragger Seeding Mechanized seeders that apply and cover seed with soil.

- Outdragger seeding shall be used on slopes greater than 3:1 and shall provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
- Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (in order of preference)

- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, chafed, decayed or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
- Wood Cellulose Fiber Mulch (WCFF)
 - WCFF shall consist of specially prepared wood cellulose processed into a uniform fibrous mesh state.
 - WCFF shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFF, including dye, shall contain no germination or growth inhibiting factors.
 - WCFF materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on slopes having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFF material shall contain no elements or compounds at concentration levels that will be phytotoxic.
 - WCFF must conform to the following physical requirements: fiber length to approximately 1/8 inch; maximum dry weight of 100 lbs. per acre of 40 to 6.5, ash content 1.5% maximum and water holding capacity of 50% minimum.

c. Making Sterile Straw Mulch Mulch shall be applied to all seeded areas immediately after seeding.

- If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and the seeding season return and seeding can be performed in accordance with these specifications.
- When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall adhere a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a minimum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring) Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard.

- A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to steeper slopes where equipment can operate safely. If used on sloping areas, this practice should be used on the contour if possible.
- Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 50 lbs. per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Application of liquid binders should be heavier at the edges where wind catches much, such as in valleys and crests of berms. The remainder of seed should be applied after binder application. Synthetic binders - such as Acrylic DLR (Ago-Tack), DCA-70 Petroseal, Terra-Tax II, Terra-Tack AT or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

iv. Lightweight plastic netting may be staked over the mulch according to manufacturer's recommendations. Netting is usually available in rolls to 15' feet wide by 300 to 3,000 feet long.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (CLEAN-UP).
- 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 THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT CONTROL STRUCTURES MUST BE FORCED AND MAINTAINED AS SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE. ANNUAL EYE 0.2 LBS./ACRE OF WEEDING LOWGROSS (107 LBS./1,000 SQ.FT. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28). PROJECT SITE 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. 20), SOIL (SEC. 24), 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 | 0.23 ACRES |
| AREA DISTURBED | 0.00 ACRES |
| AREA TO BE SEEDING OR PAVED | 0.00 ACRES |
| AREA TO BE VEGETATIVELY STABILIZED | 0.23 ACRES |
| TOTAL CUT | 240.0 CU.YDS. |
| TOTAL FILL | 220.0 CU.YDS. |

OFFSITE WASTE/DROPOFF AREA LOCATION (SEE DRAWING) - ALL WASTE/DROPOFF AREAS MUST BE REPAIRED ON THE SAME DAY AS THE DISTURBANCE IS CAUSED BY GRADING.

ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY 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 ALL PERIMETER AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE REQUIRED 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 SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

PERMANENT SEEDING NOTES

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

SEEDING PREPARATION
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS
APPLY TWO TONS PER ACRE DOLOMITIC Limestone (92 LBS./1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) BEFORE SEEDING HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 3P-0-0 UREAZEM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE 0-15 LBS./1,000 SQ.FT. OF 10-20-20 FERTILIZER.

SEEDING
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (12.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE AND 100 LBS. PER ACRE (11.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.025 LBS./1,000 SQ.FT.) OF WEEDING LOWGROSS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROJECT SITE BY OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE 500 LBS. OPTION (3) SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.

MULCHING
APPLY 1 TO 2 TONS PER ACRE (90 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GAL/TON PER ACRE (5 GAL/1,000 SQ.FT.) OF ASPHALT ON FLAT AREAS, ON SLOPES 6 FEET OR HIGHER USE 340 GAL/TON PER ACRE (6 GAL/1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE
INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDING 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./1,000 SQ.FT.)

SEEDING
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1.5 BUSHELS PER ACRE OF ANNUAL RYE (0.2 LBS./ACRE OF WEEDING LOWGROSS (107 LBS./1,000 SQ.FT. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28). PROJECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOI.

MULCHING
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 230 GAL/TON PER ACRE (5 GAL/1,000 SQ.FT.) OF UNLOADED ASPHALT ON FLAT AREAS ON SLOPES 6 FEET OR HIGHER, USE 340 GAL/TON PER ACRE (6 GAL/1,000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1998 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEQUENCE OF CONSTRUCTION

- OBTAIN THE REQUIRED GRADING PERMIT.
- NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING ANY WORK (410-667-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410-313-1870).
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEET 2 OF THIS CONTRACT (5 DAYS). THE START OF CONSTRUCTION ON THE STREAM CROSSING SHALL BE CONSIDERED THE DATE WHEN THESE LIMITS MUST BE COMPLETED WITHIN 5 DAYS. CLEAR AND GRUB AS NECESSARY, ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE SEWER MAIN, AND ONLY WITHIN THE DESIGNATED SEWER AND UTILITY EASEMENTS (2 DAYS).
- NOTE: THE LENGTH OF OPEN WATER AND SEWER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS SHORTER.
- CONSTRUCT THE WATER AND SEWER MAINS AND APPURTENANCES (40 DAYS).
- STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET (5 DAYS).
- FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMITS HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES (5 DAYS).

DEFINITION PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

SPECIFICATIONS

- APPLICATION

SECTION 21 : STANDARDS AND SPECIFICATIONS FOR TOPSOIL

- DEFINITION
 - PURPOSE
 - SPECIFICATIONS
- APPLICATION**
- TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS. TOPSOIL SHALL CONTAIN LESS THAN 2% BY VOLUME OF GRASSES, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" DEPTH AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". AVOID SURFACE IRREGULARITIES. REPLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION". TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS.

DEVELOPER'S CERTIFICATION

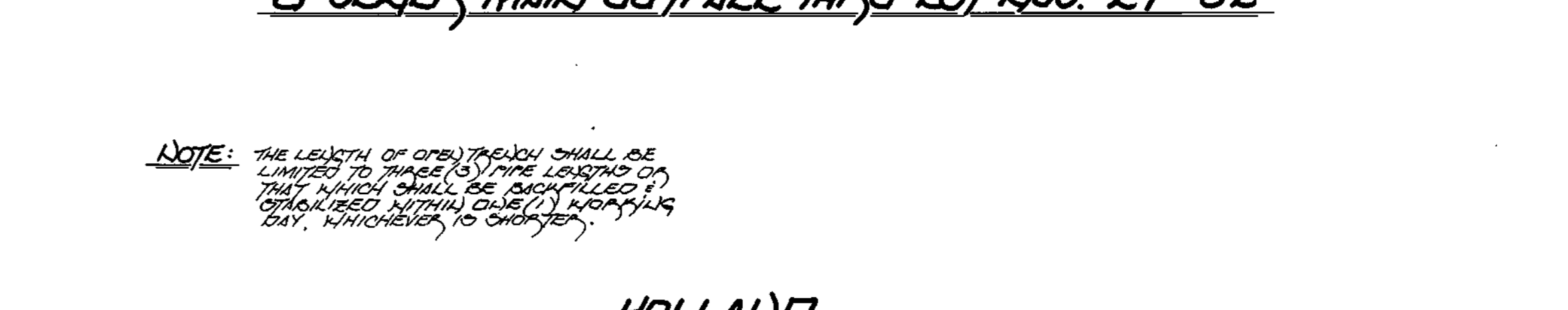
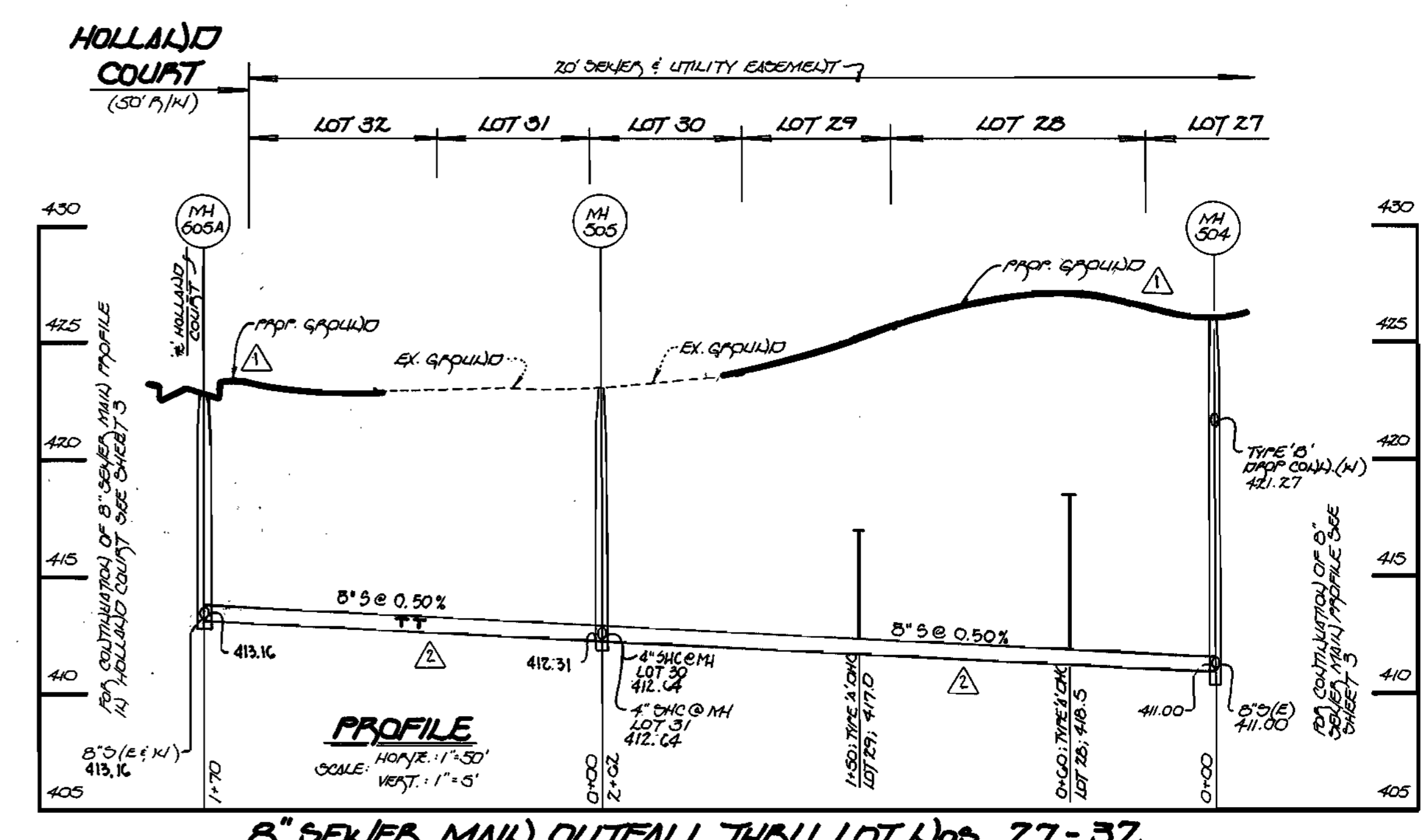
I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Michael J. Moran FOR CHADSWORTH HOMES 6-4-97
SIGNATURE OF DEVELOPER DATE

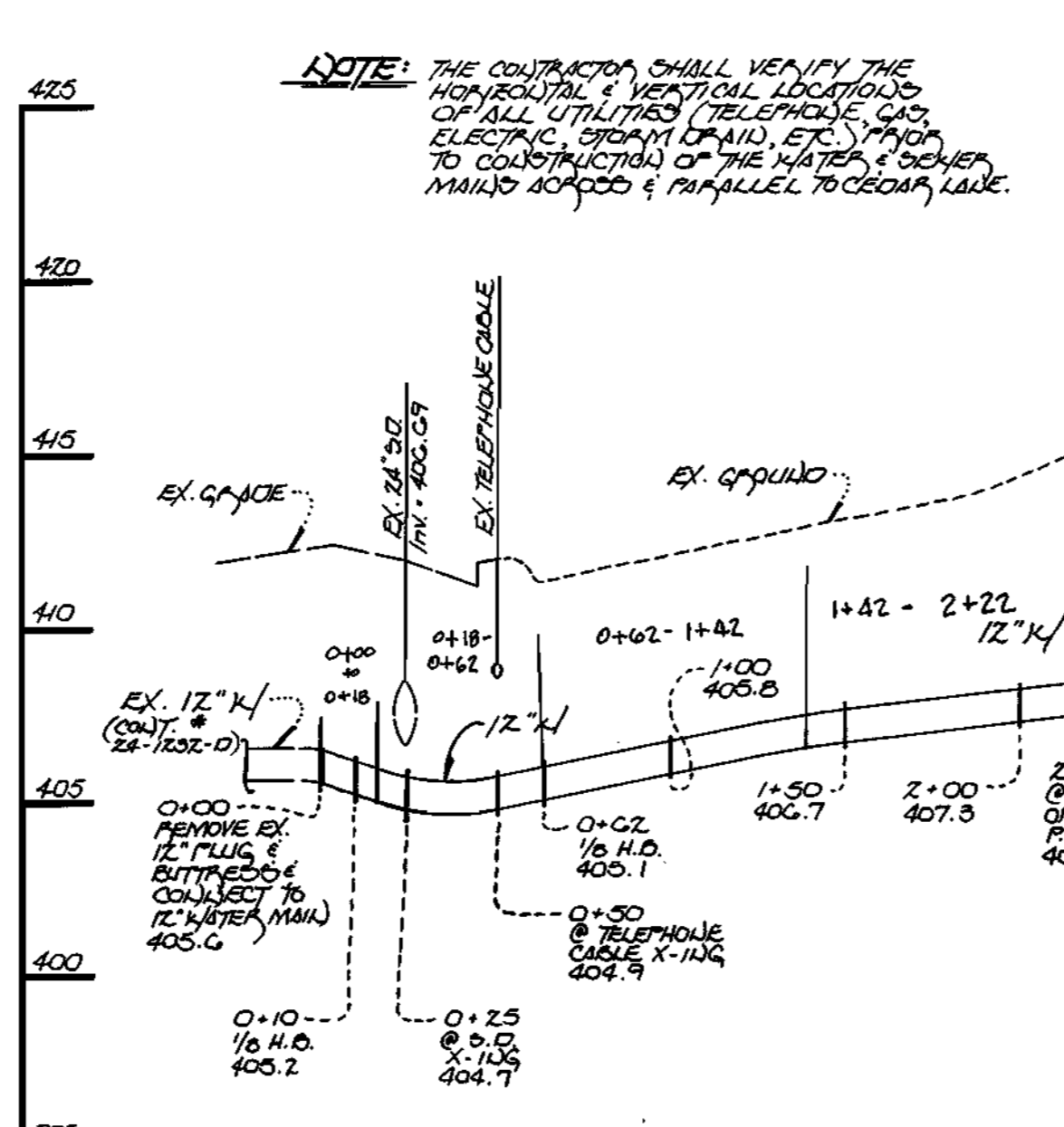
ENGINEER'S CERTIFICATION

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.

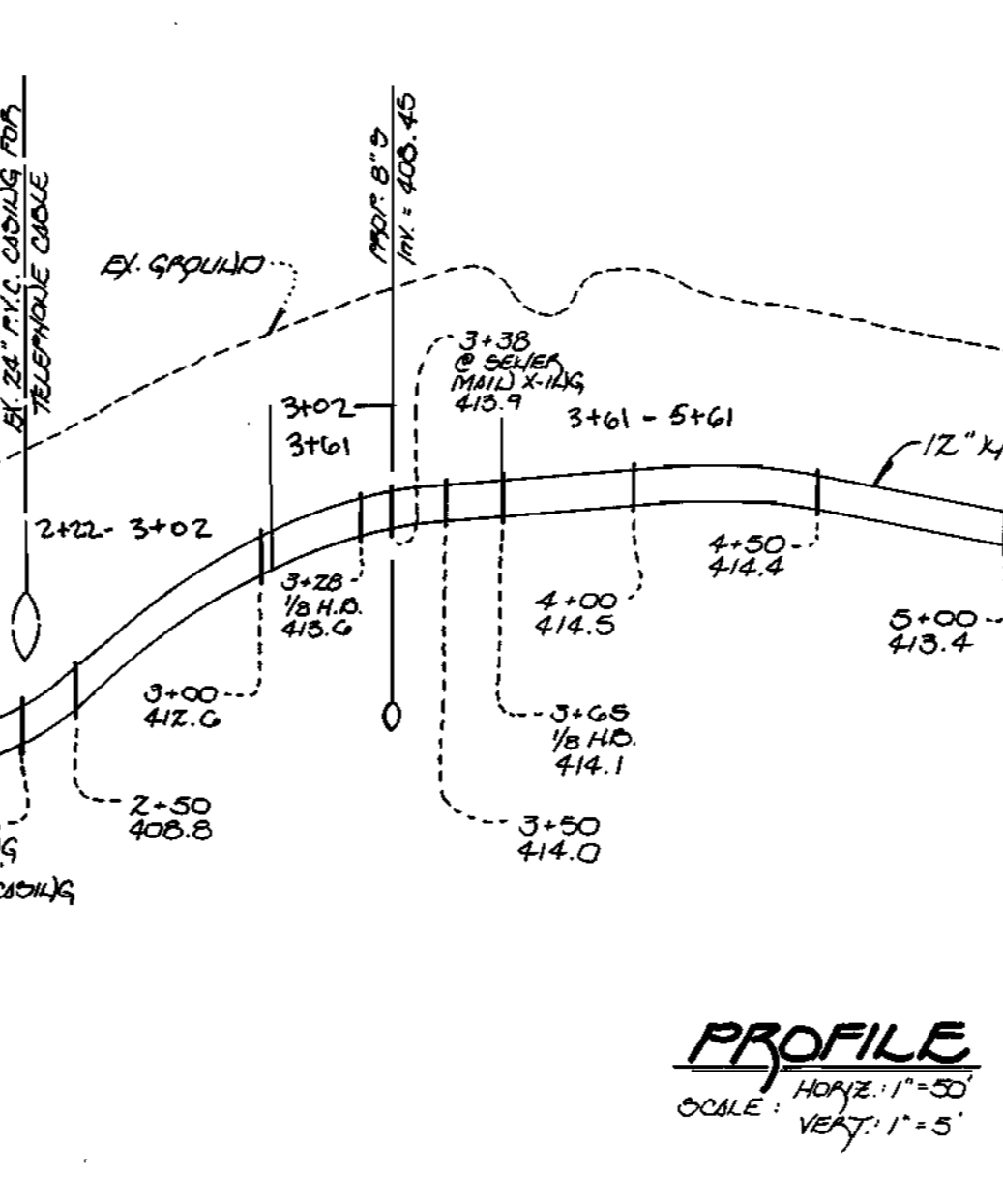
Michael J. Moran 6-5-97
SIGNATURE OF ENGINEER DATE



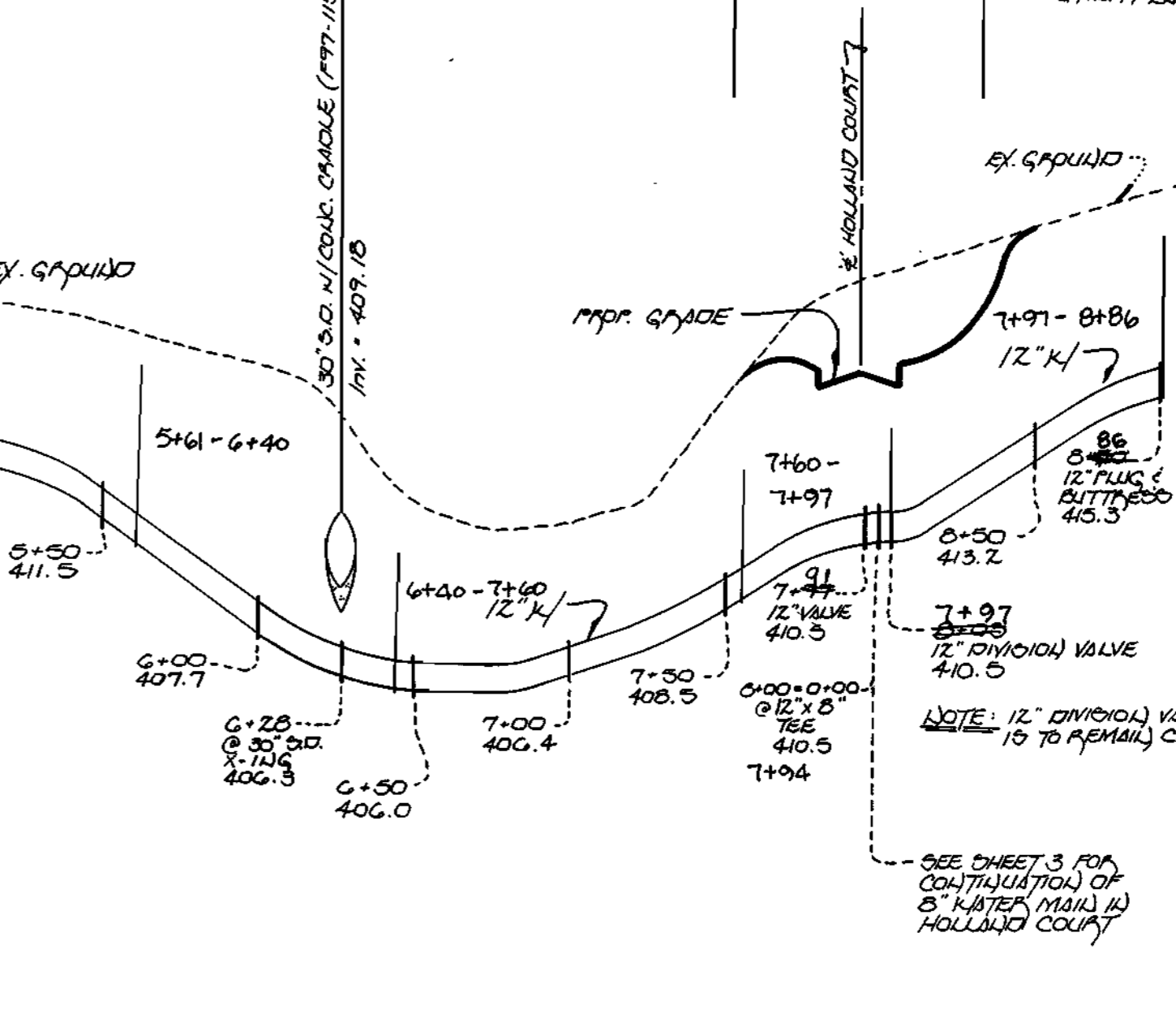
CEDAR LAKE (100' W/1/4)



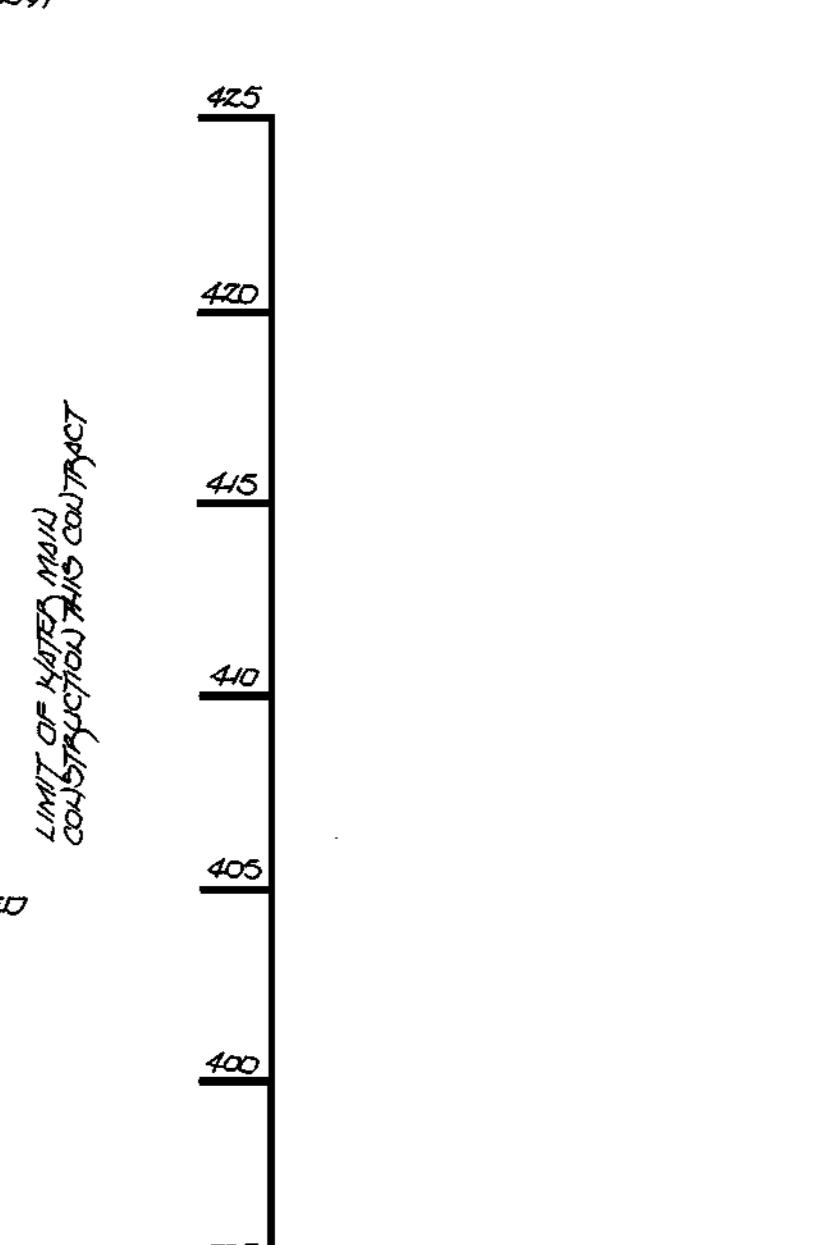
OPEN SPACE LOT 33 (20' WATER & UTILITY EASEMENT)



HOLLAND COURT (50' W/1/4)



OPEN SPACE LOT 34 (20' WATER & UTILITY EASEMENT)



| | |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert J. Baugher</i> CHIEF, BUREAU OF UTILITIES DATE: 8-1-97 | DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND <i>Michael J. Moran</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 8/1/97 |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

Fisher, Collins & Carter, Inc.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK
 18772 Baltimore National Pike
 Elliotts City, Maryland 21042
 (410) 461-2885

| | | | |
|--------------|---------------|-----------------------------------------|--------|
| DESIGNED BY: | M.J.M. | | |
| DRAWN BY: | M.J.M./J.M.M. | | |
| CHECKED BY: | P.W.K. | | |
| DATE: | MAY 21, 1997 | | |
| BY NO. | | REVISION | |
| | | REVISE SEWER MAIN PROFILE? | 6-1-97 |
| | | REVISE PROPOSED GROUND TO GRADE CHANGE? | 6-1-97 |

**WATER & SEWER MAIN PROFILES,
 NOTES & DETAILS**

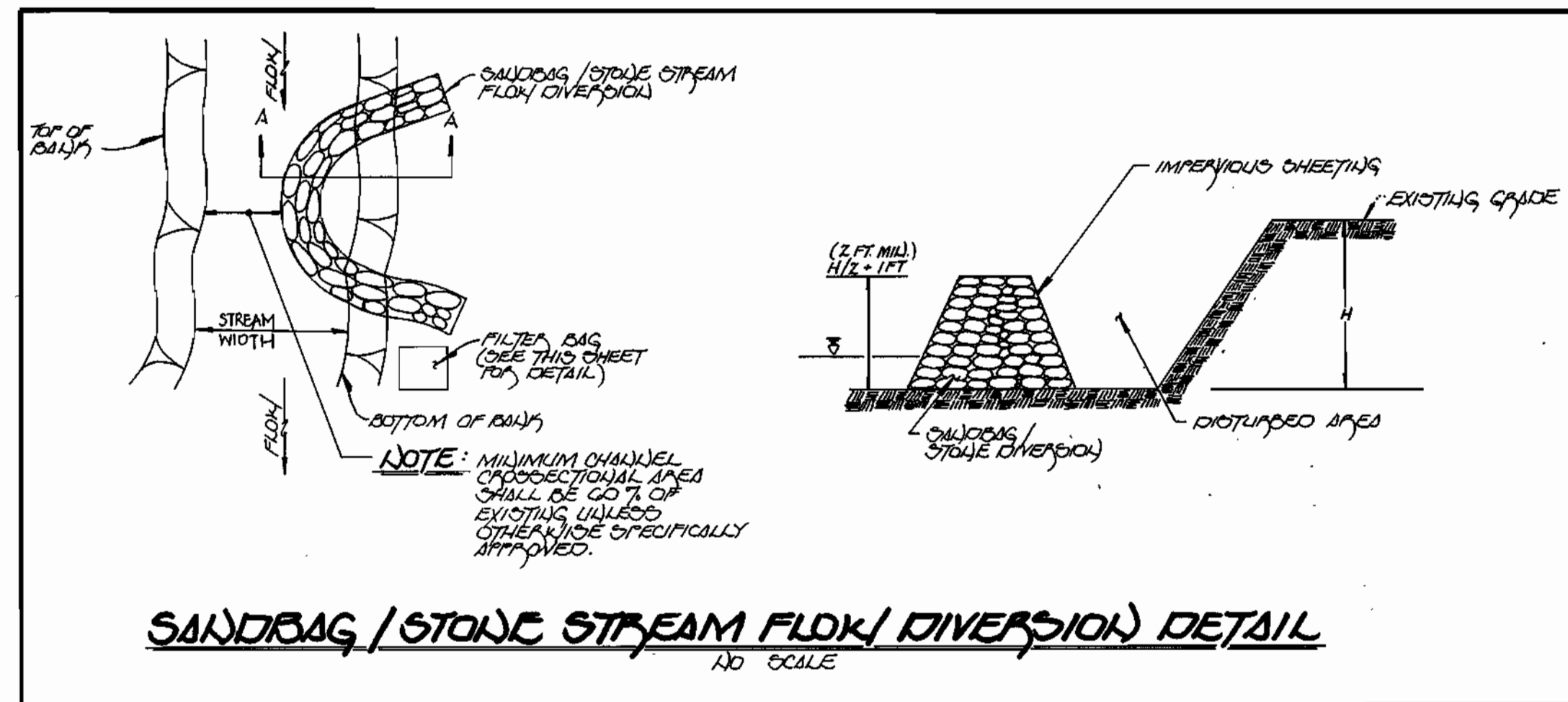
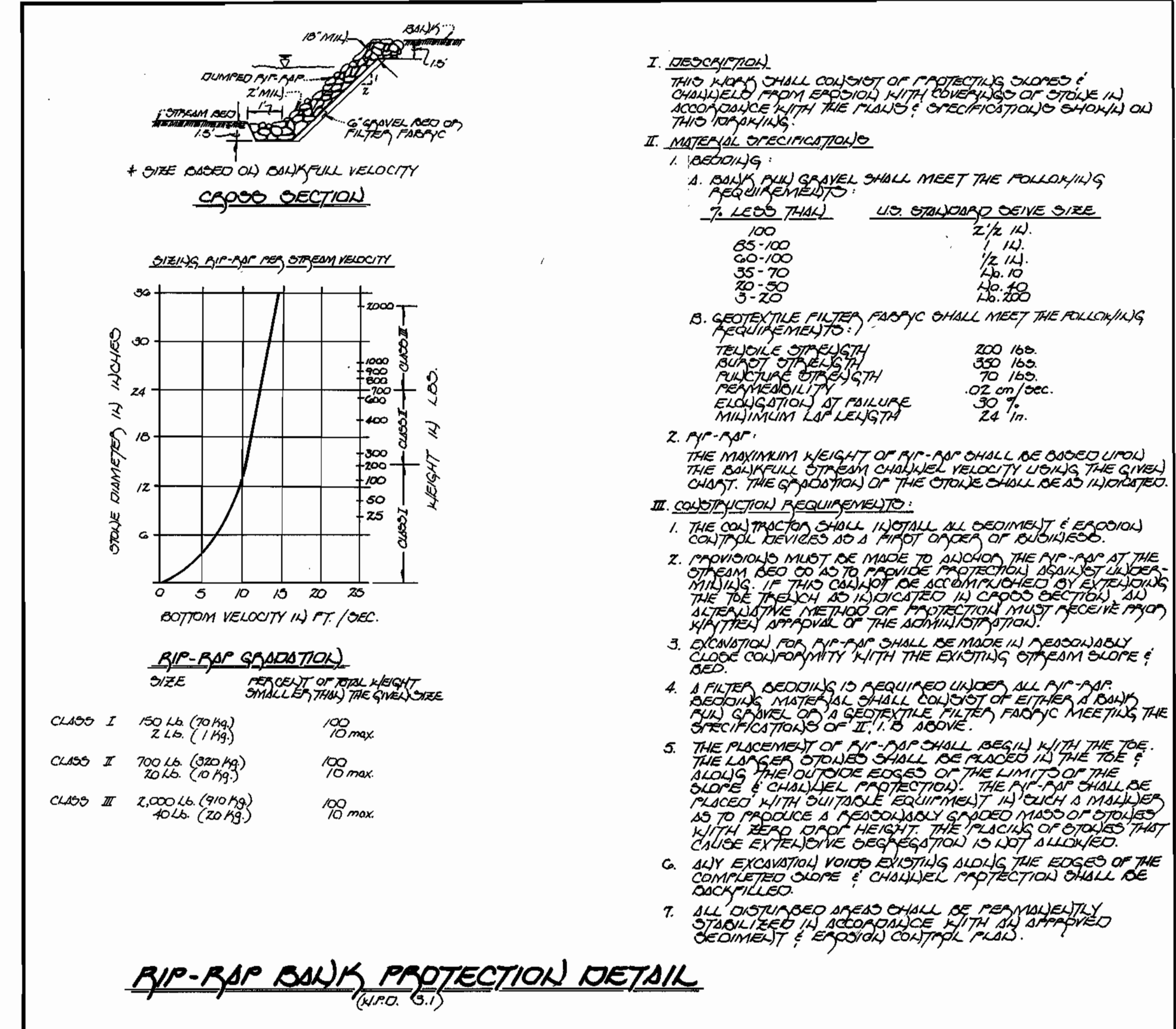
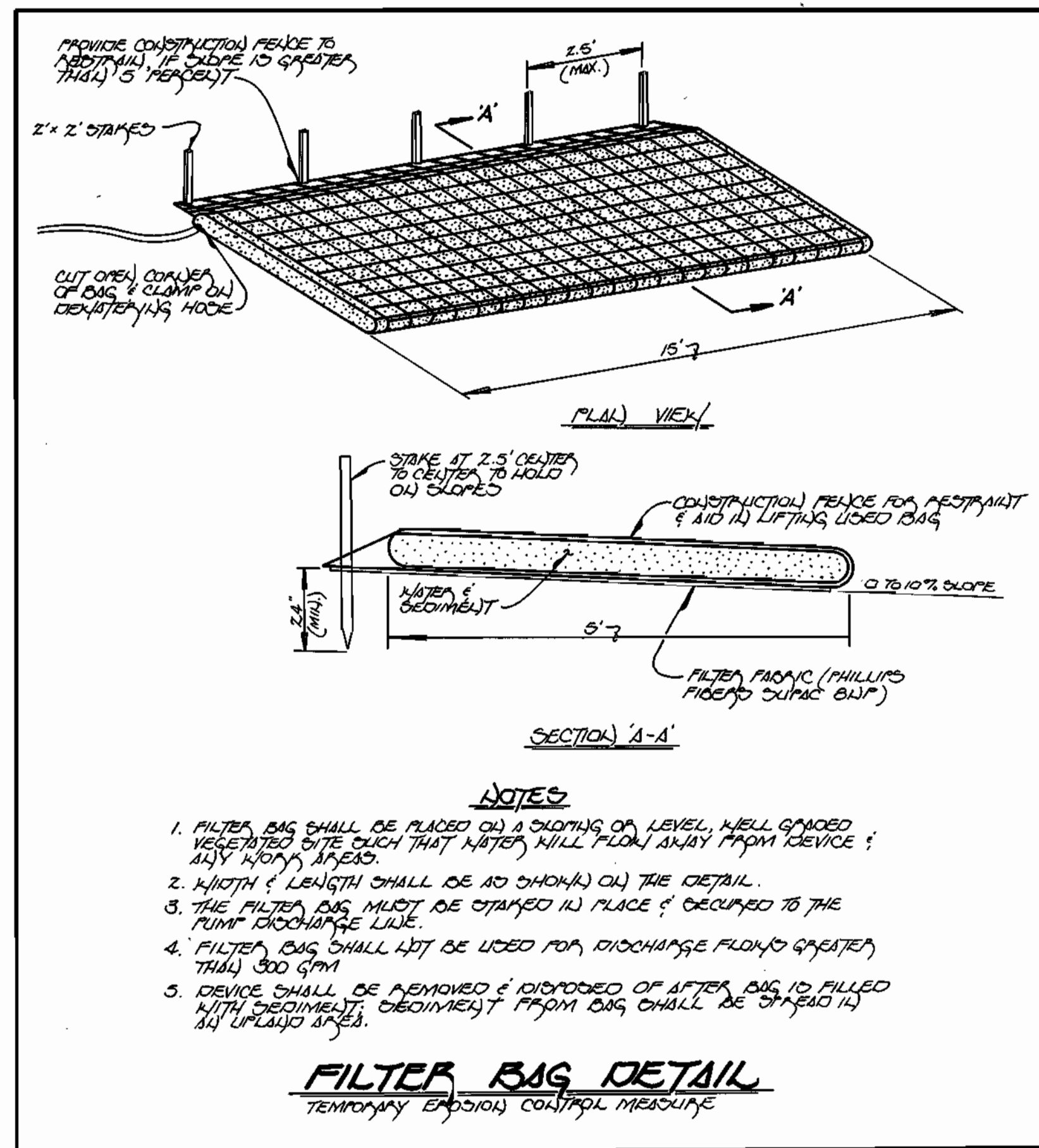
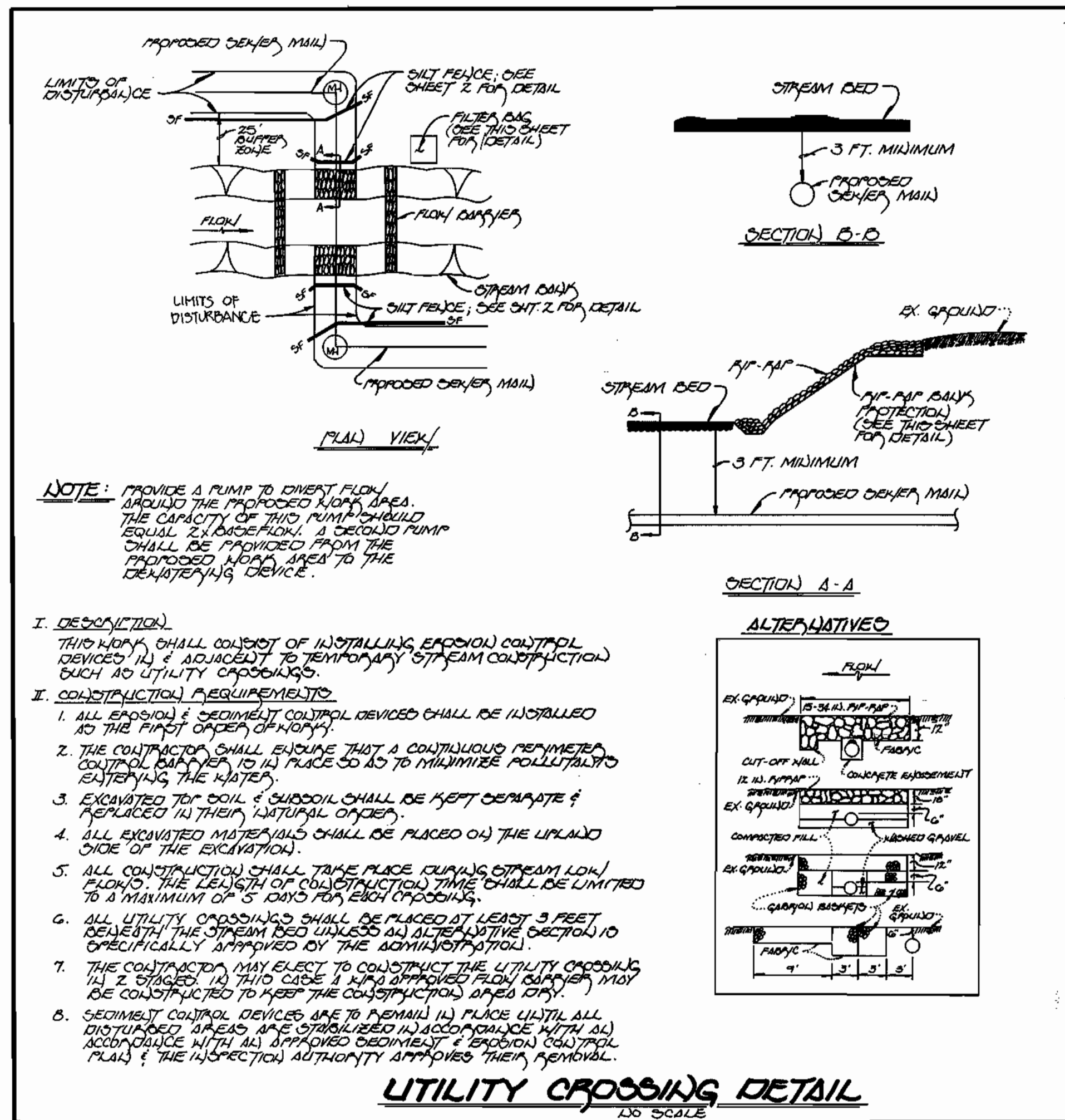
600' SCALE MAP NO. 35 BLOCK NO. II
 F.C.C. WORK ORDER NO. 30538
 FILE NAME: G/DRAWINGS/30538/

CEDAR ACRES
 LOT NOS. 1 - 36

CONTRACT NO. 24-3631-D
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 4 OF 5

CONTRACT NO. 24-3631-D
 CEDAR ACRES
 LOT NOS. 1-36
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND



DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

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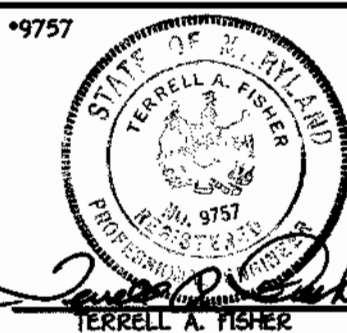
Michael J. ...
SIGNATURE OF DEVELOPER

...
SIGNATURE OF ENGINEER

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

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(410) 461-2865



DESIGNED BY: M.J.M.
DRAWN BY: M.J.M./J.M.M.
CHECKED BY: P.W.K.
DATE: MAY 21, 1997

NOTES AND DETAILS

60' SCALE MAP NO. 35 BLOCK NO. 11
F.C.C. WORK ORDER NO. 30530
FILE NAME: G/DRAWINGS/30530/

CEAR ACRES
LOT NOS. 1 - 36
CONTRACT NO. 24-3631-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 5

CONTRACT NO. 24-3631-D
CEAR ACRES
LOT NOS. 1-36
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND