

**GENERAL NOTES**

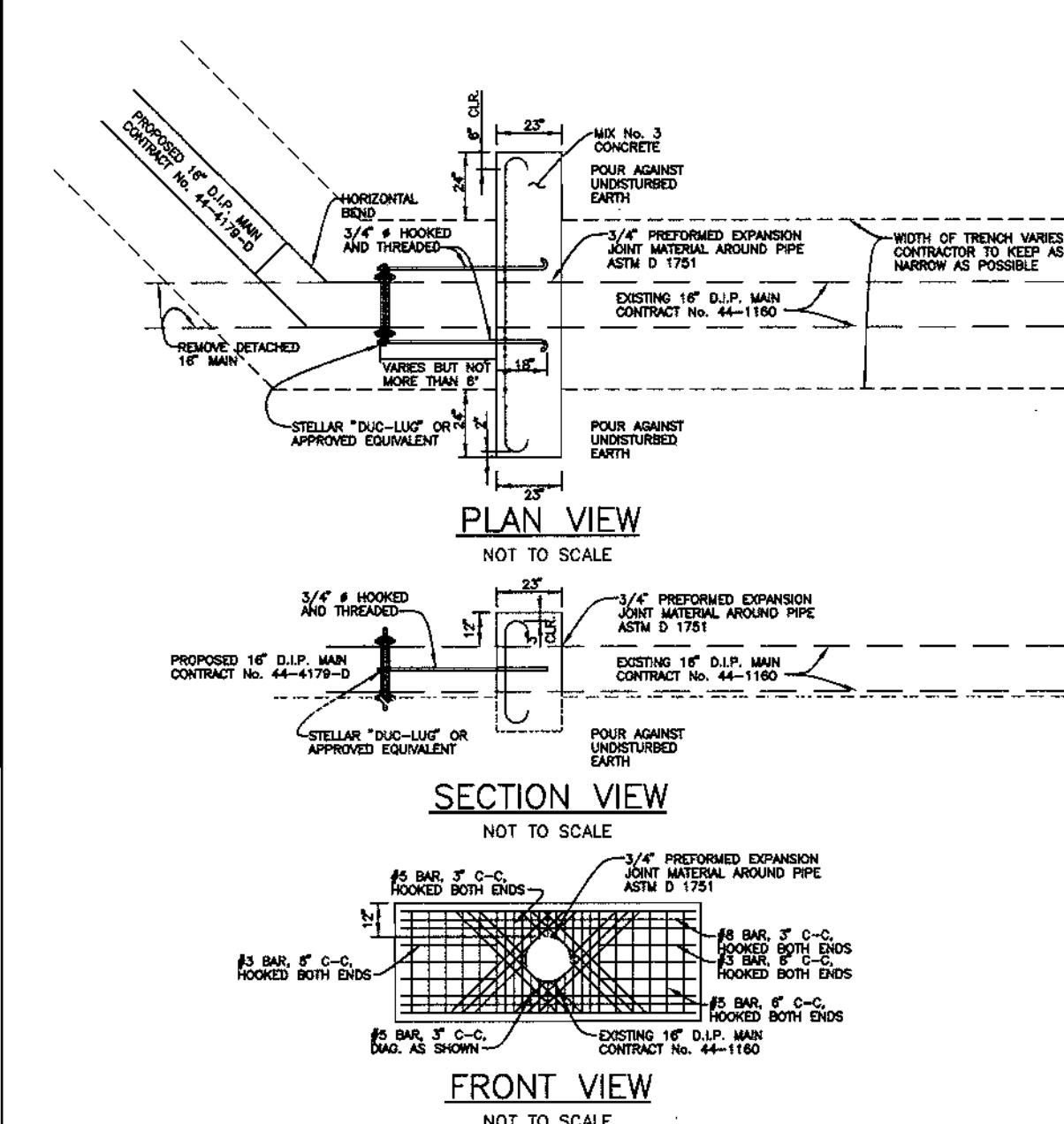
**PART 1 - GENERAL**

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. 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, NAD 83 / 91.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. 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 BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES 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 IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). 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 PITS. 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. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

- |                                       |                             |
|---------------------------------------|-----------------------------|
| AT&T.....                             | 1-800-252-1133              |
| BGE (CONTRACTOR SERVICES).....        | 410-850-4820                |
| BGE (UNDERGROUND DAMAGE CONTROL)..... | 410-787-9068                |
| BUREAU OF UTILITIES.....              | 410-313-4900                |
| COLONIAL PIPELINE CO.....             | 410-795-1390                |
| MISS UTILITY.....                     | 1-800-257-7777              |
| STATE HIGHWAY ADMINISTRATION.....     | 410-531-5533                |
| VERIZON.....                          | 1-800-743-0333/410-224-9210 |
- 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.
  - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(c) OF THE HOWARD COUNTY CODE.

**PART 2 - WATER**

- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3" - 6" 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 INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

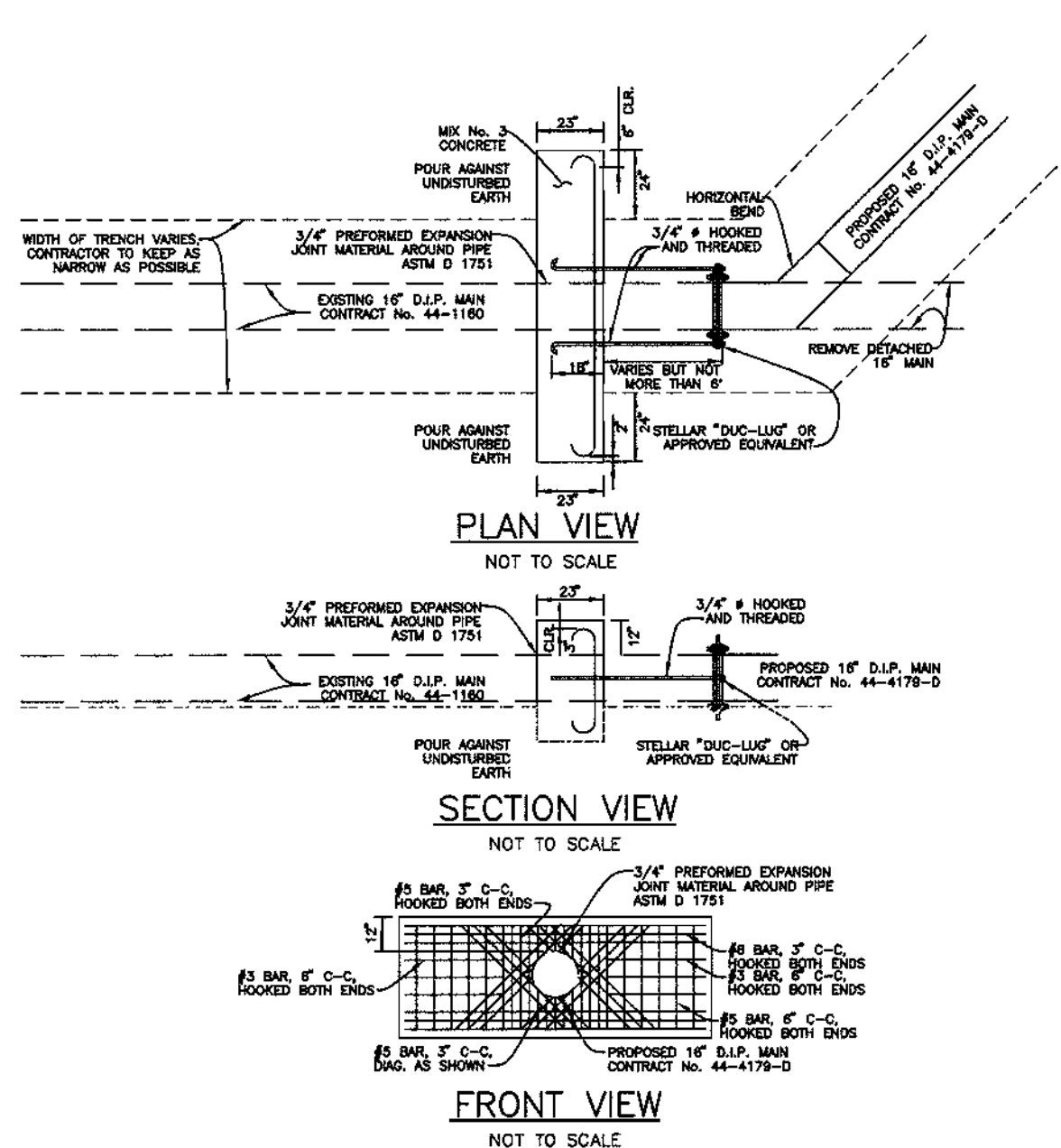


**DEADMAN BUTTRESS #1**

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

*John L. Roberts* 3/24/04  
HOWARD SOIL CONSERVATION DISTRICT

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



**DEADMAN BUTTRESS #2**

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

*Jim Meyer* 3/24/04  
NATURAL RESOURCES CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Rhety Berman* 3-30-04  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Chad Blum* 4/1/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELICOTT CITY, MARYLAND 21043  
PHONE: 410-485-8105 FAX: 410-485-8644

*Donald Moan* 3/23/04

DES: JMC  
DRN: MCR  
CHK: DAM  
DATE: 3/04

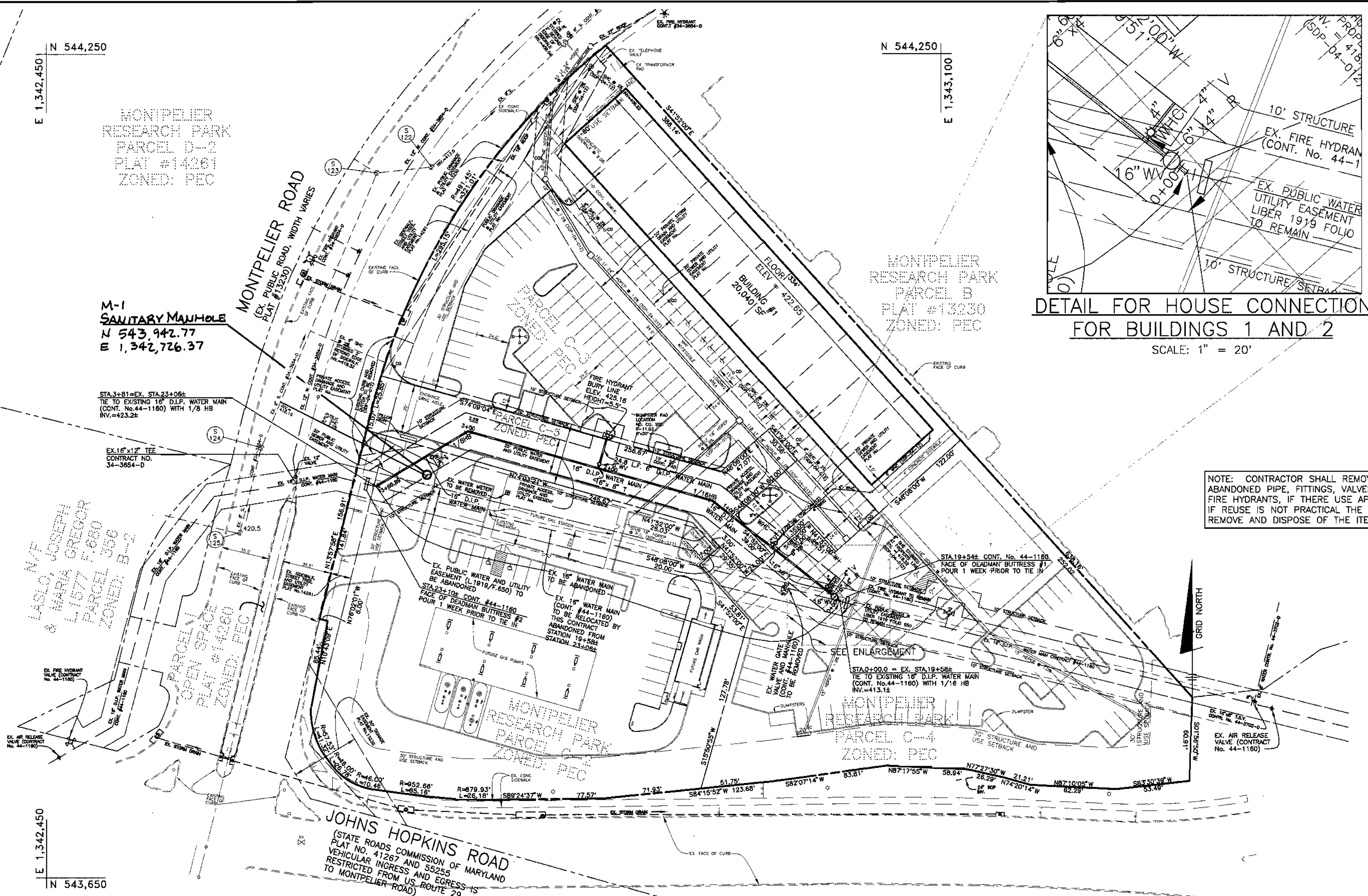
BY NO. REVISIONS

DATE 600 SCALE MAPS: 41

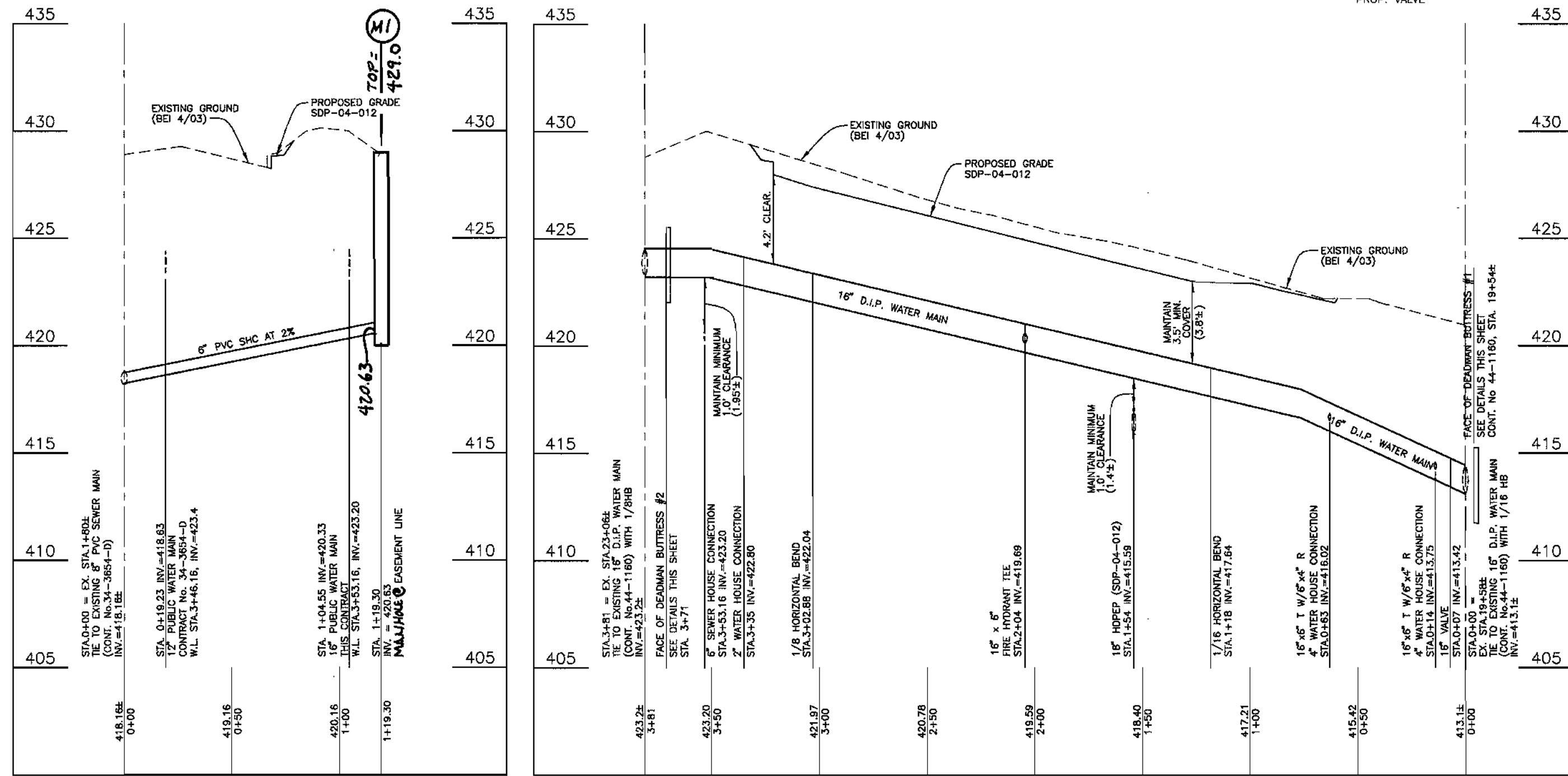
WATER AND SEWER PLAN,  
PROFILE AND DETAILS

**MONTPELIER RESEARCH CENTER**  
PARCELS C-2, C-3, C-4, AND C-5  
ELECTION DISTRICT NO. 5  
CONTRACT No. 44-4179-D

SCALE:  
AS SHOWN  
SHEET NO.  
1 OF 2

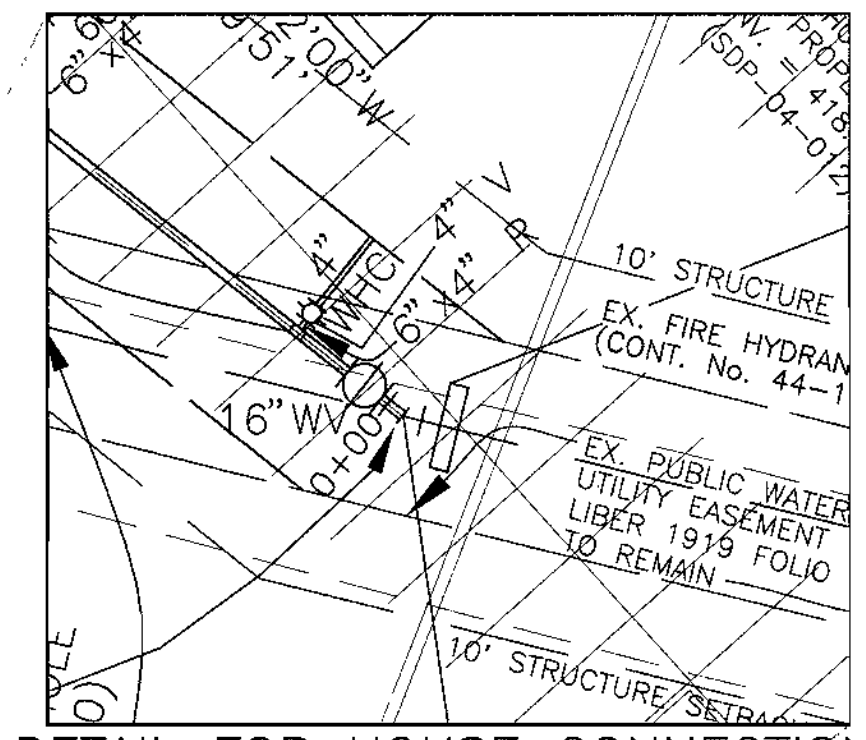


**PLAN**  
SCALE: 1" = 50'



**SEWER HOUSE CONNECTION PROFILE**  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'

**WATER PROFILE**  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



**DETAIL FOR HOUSE CONNECTION FOR BUILDINGS 1 AND 2**  
SCALE: 1" = 20'

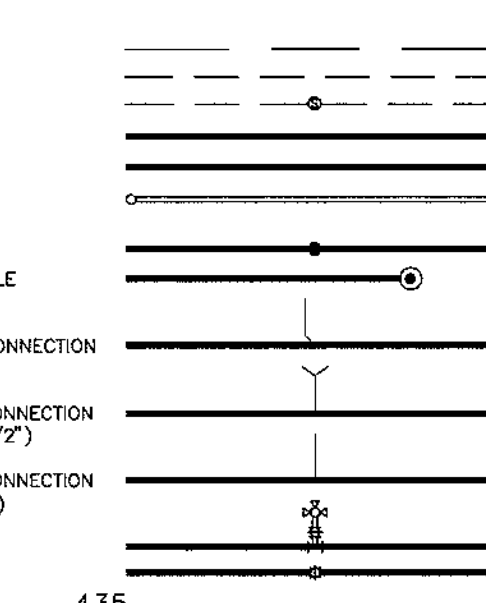
NOTE: CONTRACTOR SHALL REMOVE AND SALVAGE ALL ABANDONED PIPE, FITTINGS, VALVES, VALVE BOXES AND FIRE HYDRANTS, IF THEIR REUSE APPEARS PRACTICAL. IF REUSE IS NOT PRACTICAL THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE ITEMS OFFSITE.



WATER AND SEWER COUNTY CODE  
WATER CODE: E21  
SEWER CODE: 6440000  
TEST GRADIENT: 700

TYPE OF BUILDING: RETAIL/COMMERCIAL  
NUMBER OF BUILDABLE PARCELS: 4  
NUMBER OF SHCS: 0  
NUMBER OF WHCS: 3  
DRAINAGE AREA: PATIENT  
TREATMENT PLANT: LITTLE PATUXENT WATER RECLAMATION PLANT

**LEGEND**



**VICINITY MAP**  
SCALE: 1" = 600'

**BENCH MARKS**  
HO. CO. #41EC (NAD '83) ELEV. 430.329'  
STANDARD DISC ON CONCRETE MONUMENT BEING 23' NORTH OF THE PC OF THE CURB AND 5.6' SOUTH OF THE PC OF THE CURB AND 3.3' SOUTH OF LEFT REAR CORNER OF INLET NEAR J. HOPKINS U APPLIED PHYSICS LAB  
N 543588.822' E 1342628.79'  
HO. CO. #41FA (NAD '83) ELEV. 407.585'  
STANDARD DISC ON CONCRETE MONUMENT BEING 8' EAST OF BGE POLE #553388, 13.3' SOUTH OF LEFT REAR CORNER OF INLET AND 2' NORTH OF THE EDGE OF HAMMOND PKWY.  
N 543109.869' E 1344797.53'

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
2" WHC	13 L.F.			
4" WHC	13 L.F.			
16" D.I.P.	381 L.F.			
16" VALVE	1 EACH			
6" VALVE	1 EACH			
6" D.I.P.	25 L.F.			
1/8" HB (16")	2 EACH			
1/16" HB (16")	2 EACH			
FIRE HYDRANT	1 EACH			

APURTENANCE	WATERLINE STATION	NORTHING	EASTING
1/16" HB (16")	0+00	543,851.1	1,343,026.5
1/16" HB (16")	1+18	543,924.6	1,342,933.9
FIRE HYDRANT TEE	2+04	543,948.3	1,342,851.0
1/8" HB (16")	3+03	543,975.3	1,342,756.3
1/8" HB (16")	3+81	543,935.2	1,342,689.4

**SEQUENCE OF CONSTRUCTION**

- CONTRACTOR SHALL OBTAIN A GRADING PERMIT.
- NOTIFY JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY AND MEADWESTVACO CORPORATION AT LEAST 2 WEEKS PRIOR TO SHUTDOWN OF THE EXISTING MAIN.
- NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. COORDINATE CLOSURE OF VALVES WITH CONSTRUCTION.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AS SHOWN ON SHEET 2.
- NEW WATER MAIN AND HYDRANT IS TO BE INSTALLED FROM VALVE AT STATION 0+07 TO STATION 3+75. THE DEADMAN BUTTRESSES ARE TO BE POURED ONE WEEK PRIOR TO ATTACHMENT TO WATERMAIN.
- NEW WATER MAIN IS TO BE PRESSURE TESTED AND CHLORINATED. DRAIN CHLORINATION THROUGH THE PROPOSED 4" WHC AT STATION 0+20.
- ON A SATURDAY NIGHT CLOSE THE EXISTING VALVES AS SHOWN ON CONTRACT NO. 44-1160, AT STATIONS 6+40, 30+57 AND ON THE STUB AT 30+37; CONTRACT NO. 44-3702-D, STATION 0+00; AND CONTRACT NO. 34-3654-D CL STATION 2+96.
- DRAIN THE EXISTING MAIN FROM THE FIRE HYDRANT, CONTRACT NO. 44-1160, AT STATION 18+80.
- ONCE THE MAIN IS DRAINED CUT THE EX. 16" MAIN AND MAKE THE CONNECTION TO THE NEW MAIN.
- TO AVOID SUSPENSION OF SOLIDS, SLOWLY OPEN THE 16" VALVE, CONT. NO. 44-1160, AT STA. 6+40.
- INSPECT THE CONNECTIONS BETWEEN THE NEW MAIN AND CONTRACT NO. 44-1160.
- ON THE WESTVACO PROPERTY, DRAIN THE WATER UNTIL ADEQUATE WATER QUALITY IS ACHIEVED.
- CONTACT THE POINTS OF CONTACT WITH WESTVACO AND JOHN HOPKINS UNIVERSITY AND INFORM THEM THAT WORK IS COMPLETED.
- STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES ON SHEET 2.
- WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE AS NECESSARY.



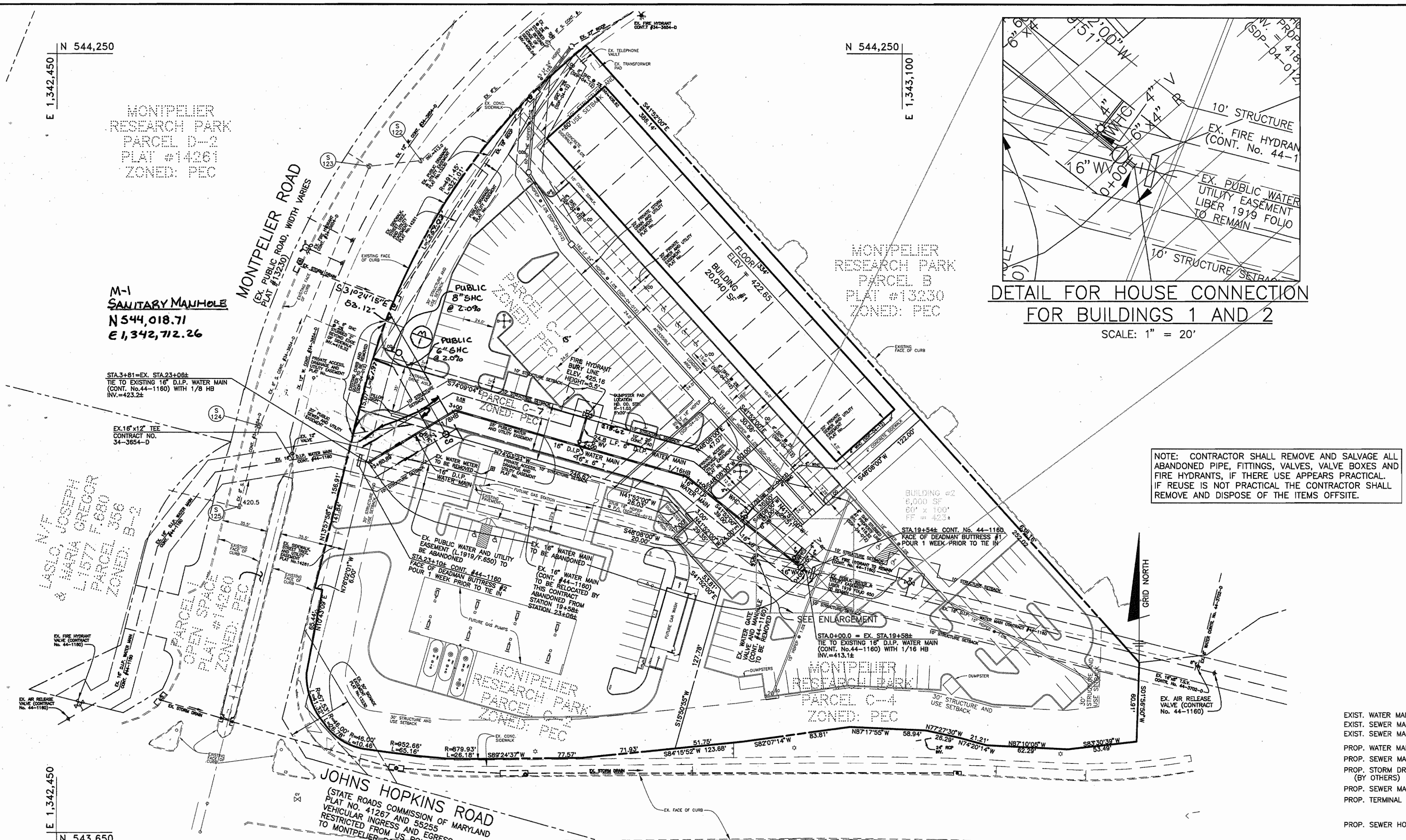
**GENERAL NOTES**

**PART 1 - GENERAL**

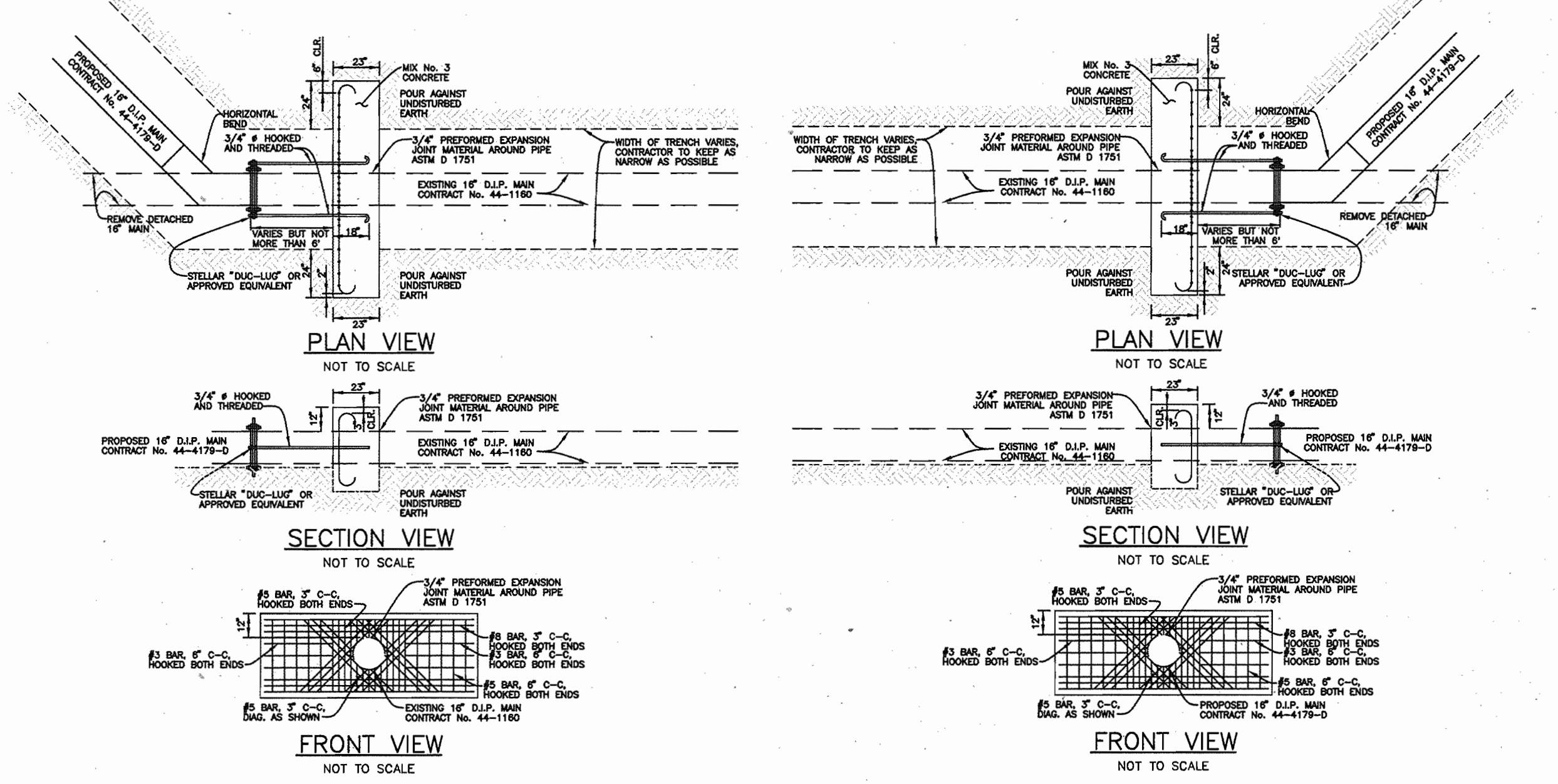
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**PLAN**  
SCALE: 1" = 50'

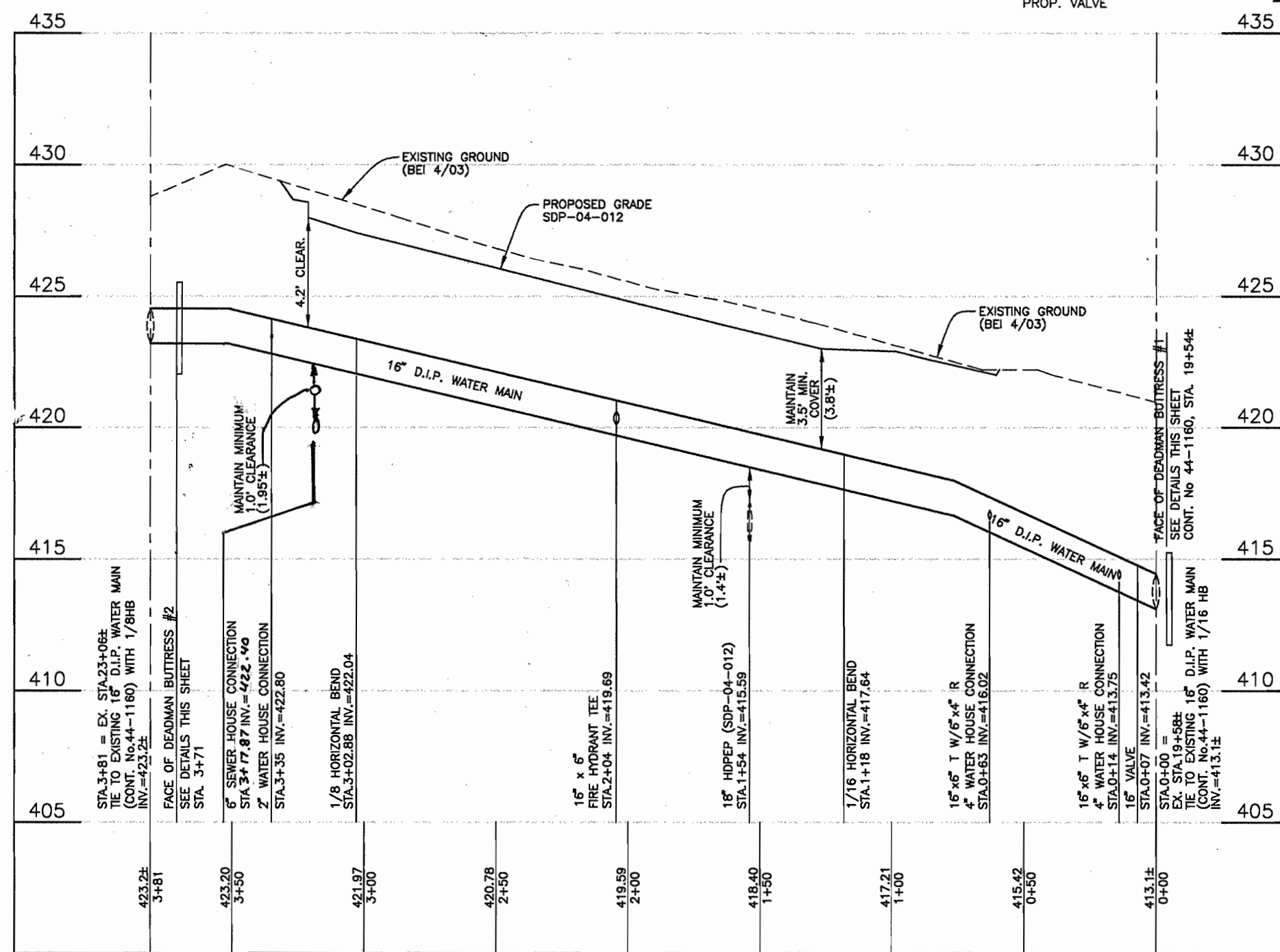


**DEADMAN BUTTRESS #1**

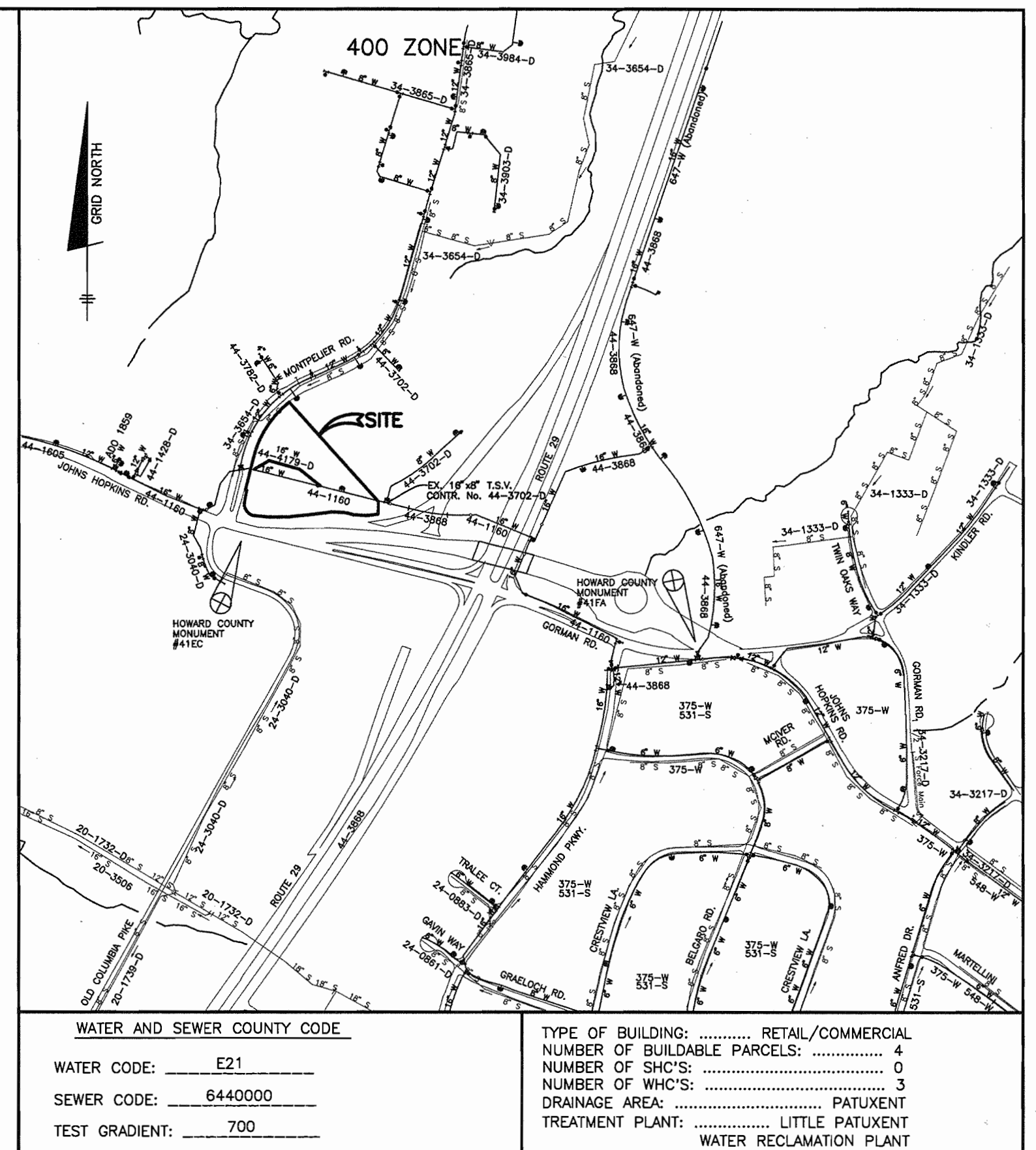
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John L. Blanton* 3/24/04  
HOWARD SOIL CONSERVATION DISTRICT  
DATE

*Jim Mays* 3/24/04  
NATURAL RESOURCES CONSERVATION SERVICE  
DATE



**WATER PROFILE**  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'



**LEGEND**

- EXIST. WATER MAIN
- EXIST. SEWER MAIN
- EXIST. SANITARY MANHOLE
- PROP. WATER MAIN
- PROP. SEWER MAIN
- PROP. SANITARY MANHOLE
- PROP. TERMINAL MANHOLE
- PROP. SEWER HOUSE CONNECTION (DOUBLE - 1 1/2")
- PROP. WATER HOUSE CONNECTION (SINGLE - 1")
- PROP. FIRE HYDRANT
- PROP. VALVE

**VICINITY MAP**  
SCALE: 1" = 600'

**BENCH MARKS**

HO. CO. #41EC (NAD '83)	ELEV. 430.329'
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N 543588.822'	E 1342628.79'
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ITEMS	QUANTITIES ESTIMATED	QUANTITIES AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
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6" D.I.P.	25 L.F.			
1/8" HB (16")	2 EACH			
1/16" HB (16")	2 EACH			
FIRE HYDRANT	1 EACH			

NAME OF UTILITY CONTRACTOR:  
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:

**SEQUENCE OF CONSTRUCTION**

- CONTRACTOR SHALL OBTAIN A GRADING PERMIT.
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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Ruth Beaman* 3-30-04  
CHIEF, BUREAU OF UTILITIES  
DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Chris Blanton* 4/1/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE

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

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

*Donald Moan*  
3/23/04

DES: JMC  
DRN: MCR  
CHK: DAM  
DATE: 3/04

NO.	REVISIONS	DATE
3	1 REVISE LOCATION OF SHC TO C-2	5/24/04

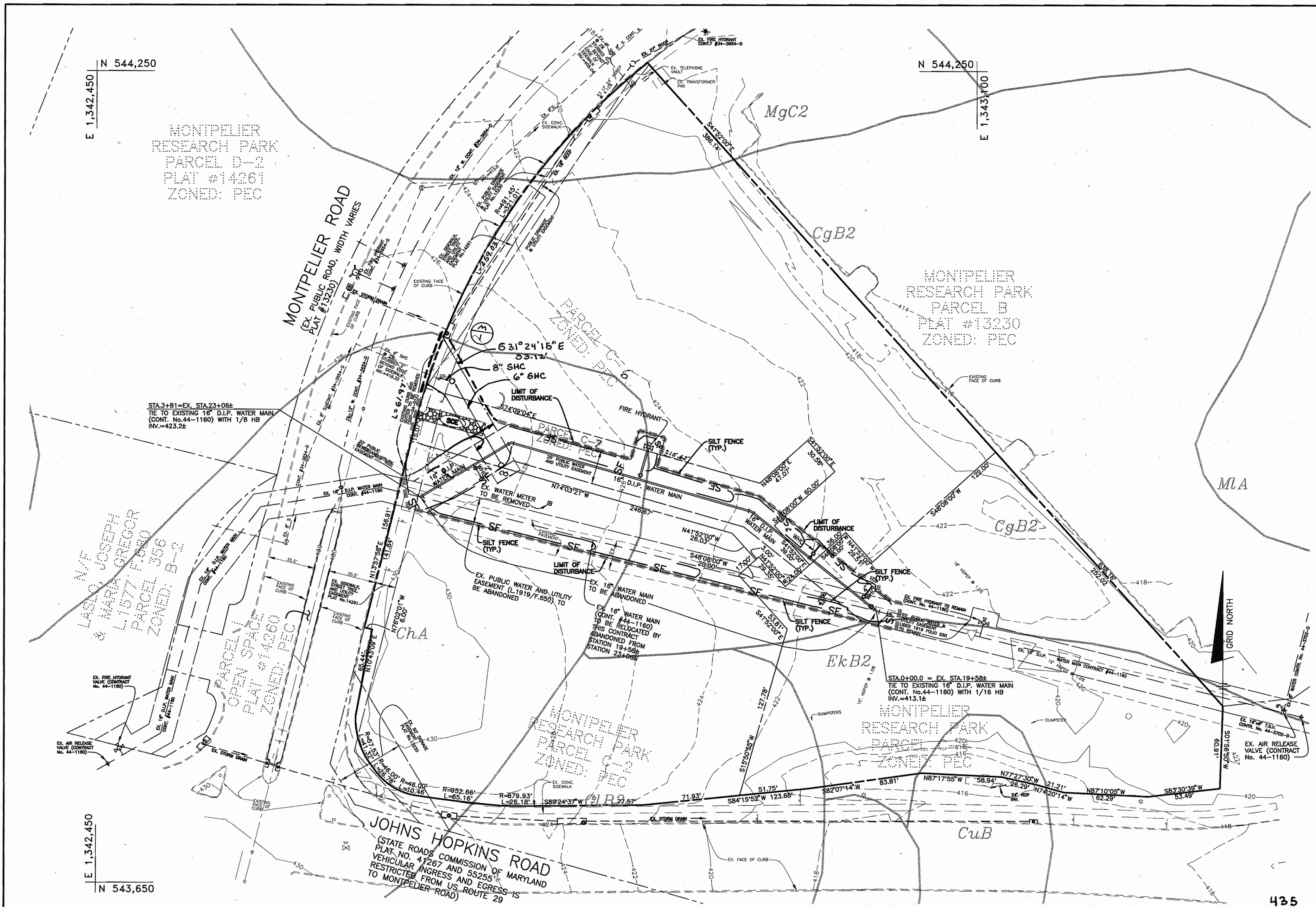
**WATER AND SEWER PLAN,  
PROFILE AND DETAILS**

600 SCALE MAPS: 41  
BLOCKS: 17

**MONPELIER RESEARCH CENTER**  
PARCELS C-2, C-6, C-4, AND C-7  
ELECTION DISTRICT NO. 5

CONTRACT No. 34-4179-D

SCALE:  
AS SHOWN  
SHEET NO.  
1 OF 2



SEDIMENT CONTROL PLAN  
SCALE: 1" = 50'

SOILS LEGEND	
MAP SYMBOL	SOIL TYPE
CgB2	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ChA	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
MgC2	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
EkB2	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED

SITE CONTAINS NO HYDRIC SOILS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 29

BY THE DEVELOPER:  
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.

DEVELOPER - HOWARD ROAD LIMITED PARTNERSHIP  
**HOWARD RESNICK**  
DATE: 3/23/04

BY THE ENGINEER:  
I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

**Donald Moon**  
ENGINEER - DONALD A. MASON, P.E. # 21443  
DATE: 3/23/04

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

**Jim Mason**  
NATURAL RESOURCES CONSERVATION OFFICER  
DATE: 3/24/04

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

**John K. Robertson**  
HOWARD SOIL CONSERVATION DISTRICT  
DATE: 3/24/04

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

**Robert Williams**  
CHIEF, BUREAU OF UTILITIES  
DATE: 3-30-04

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

**Donald Moon**  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 4/1/04

**BENCHMARK**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
ENGINEERING, INC.  
8400 BALTIMORE NATIONAL PIKE A SUITE 418  
ELLIOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-8644

**Donald Moon**  
ENGINEER  
DATE: 3/23/04

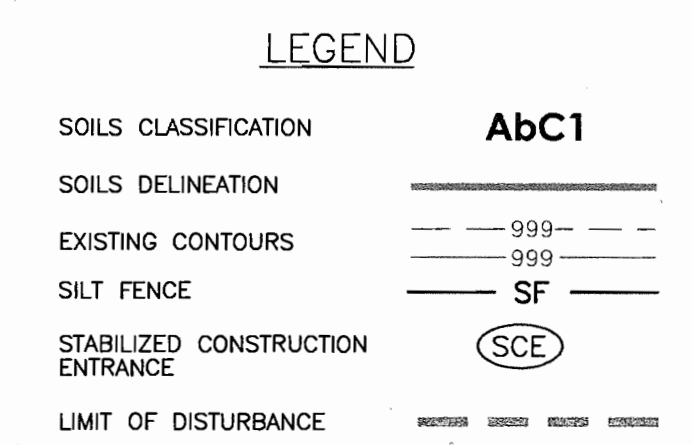
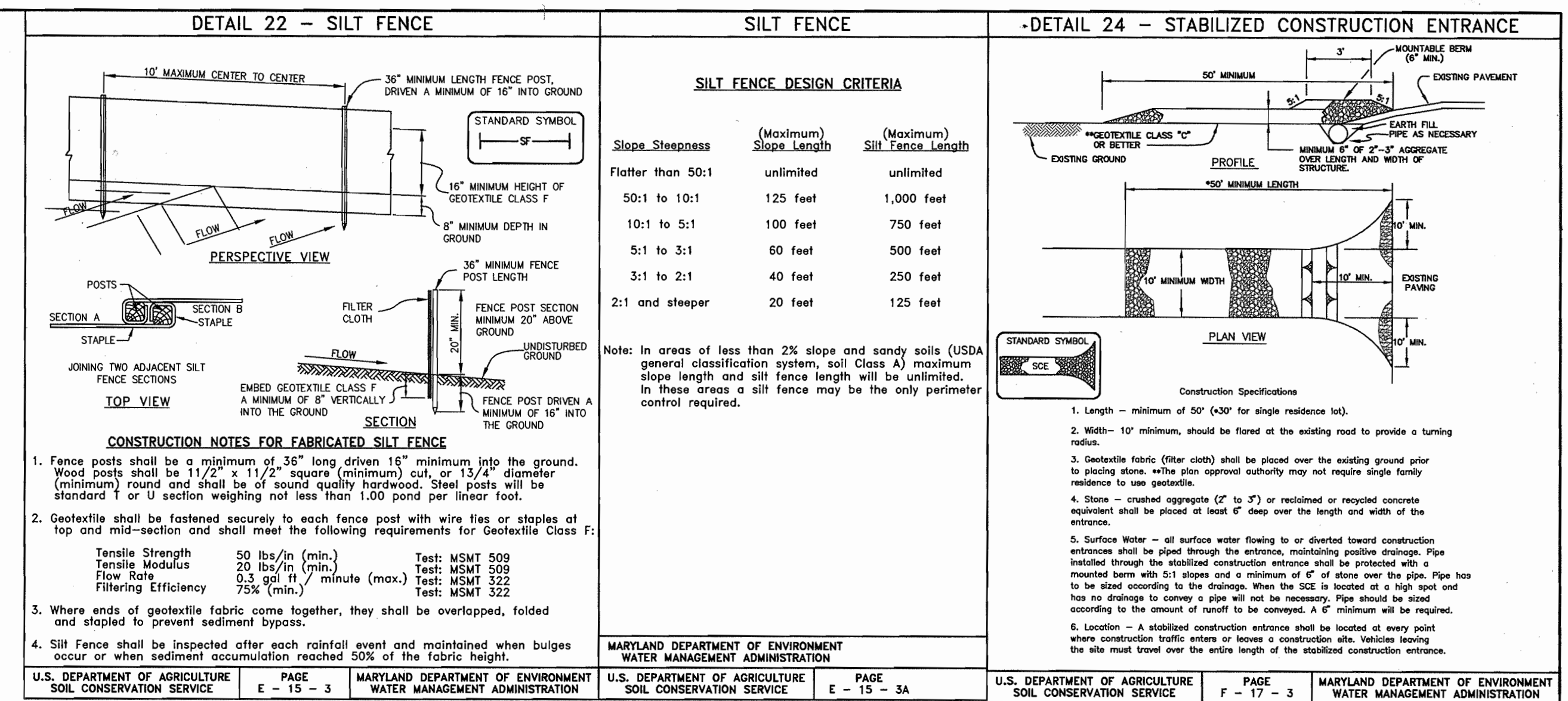
DES:	JMC			
DRN:	MCR			
CHK:	DAM			
DATE:	3/04			
BY:	NO.	REVISIONS	DATE	
	1	REVISE SHC TO PARCEL C-2	5/26/04	

SEDIMENT AND EROSION CONTROL PLAN, NOTES AND DETAILS

600 SCALE MAPS: 41 BLOCKS: 17

**MONTPELIER RESEARCH CENTER**  
PARCELS C-2, C-6, C-4, AND C-7  
ELECTION DISTRICT NO. 5  
CONTRACT No. 34-4179-D

SCALE: AS SHOWN  
SHEET NO. 2 OF 2



**PERMANENT SEEDING NOTES**

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

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

Soil Amendments: In lieu of soil test recommendations, use on the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) 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 sf).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

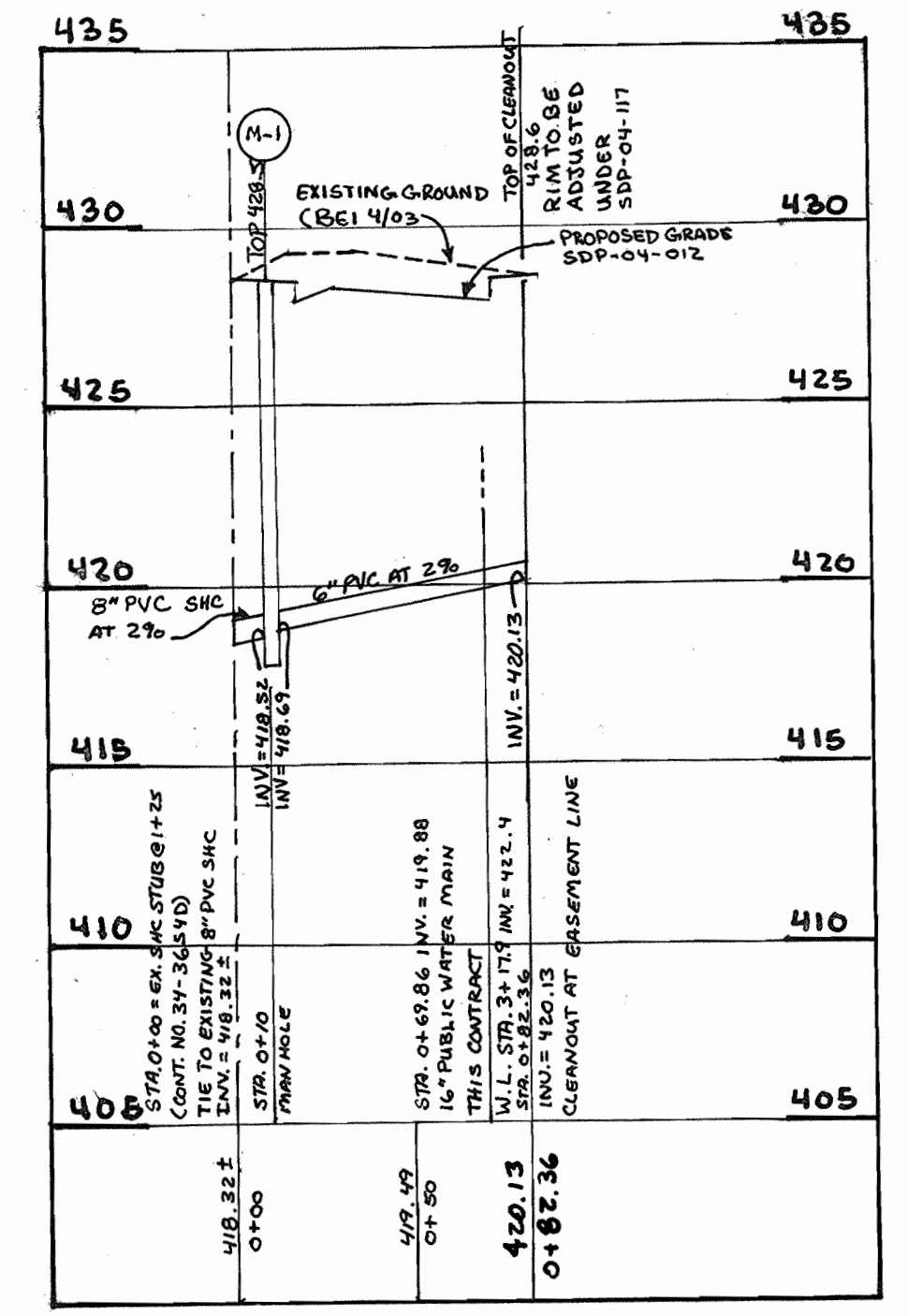
Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 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 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

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

**SEDIMENT CONTROL NOTES**

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control, and revisions thereto.
- Following initial soil disturbances or 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 calendar days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the Howard County Design Manual, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" for Permanent Seeding (Sec. 51) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:  
Total Area of Site: 4.83 ± acres  
Area to be Disturbed: 0.81 ± acres  
Area to be roofed or paved: 0.00 ± acres  
Area to be vegetatively stabilized: 0.61 ± acres  
Total Cut: 0 C.Y.  
Total Fill: 0 C.Y.  
Offsite Waste/Borrow Area 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 DPW Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.
- Quantities and estimates shown are for sediment control purposes only. Contractor shall prepare his/her own quantity estimates to his/her satisfaction.  
\* It is the responsibility of the contractor to identify the soil/borrow site and notify and gain approval from the sediment control inspector of the site and it's grading permit number at the time of construction.



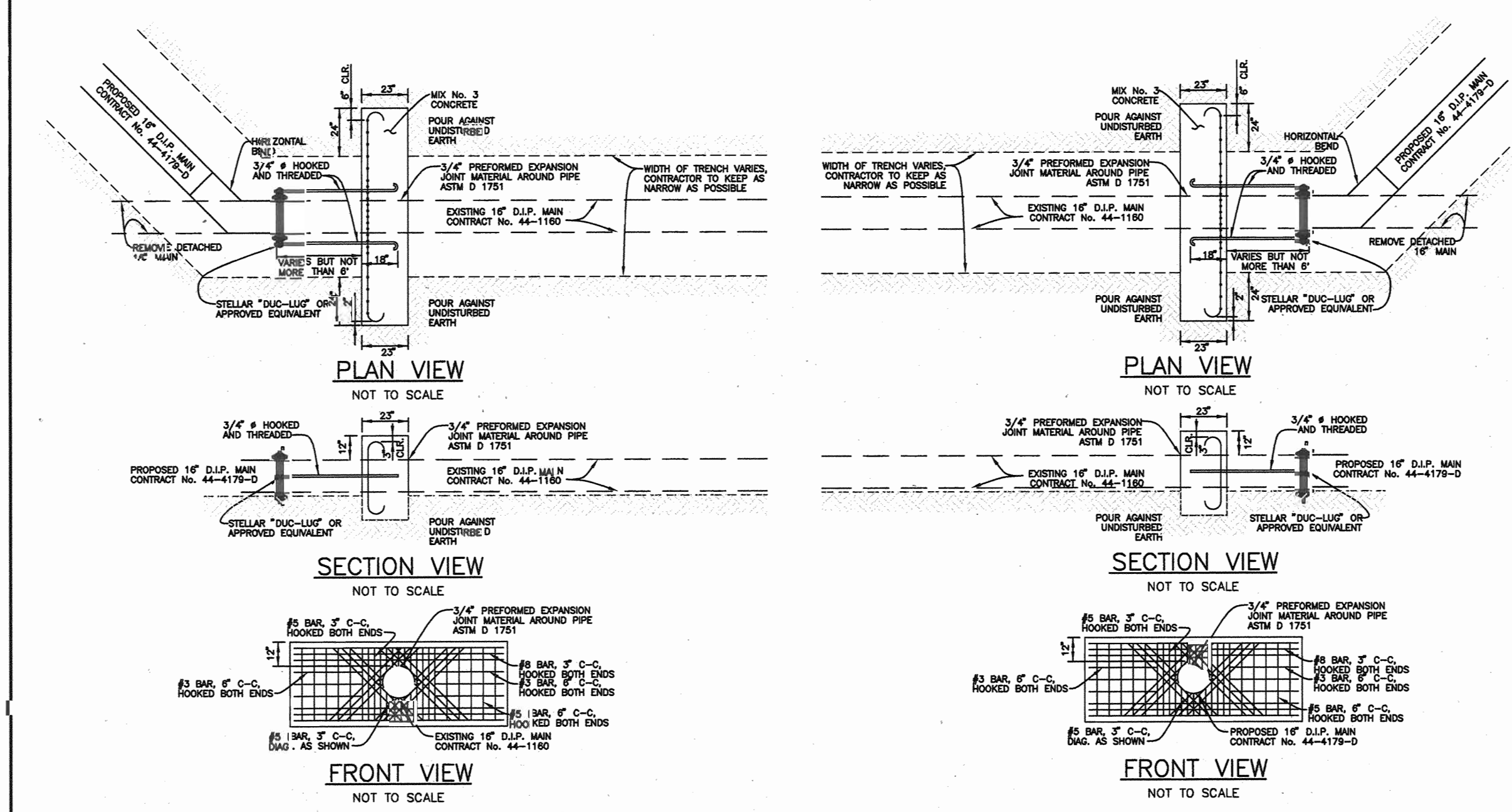
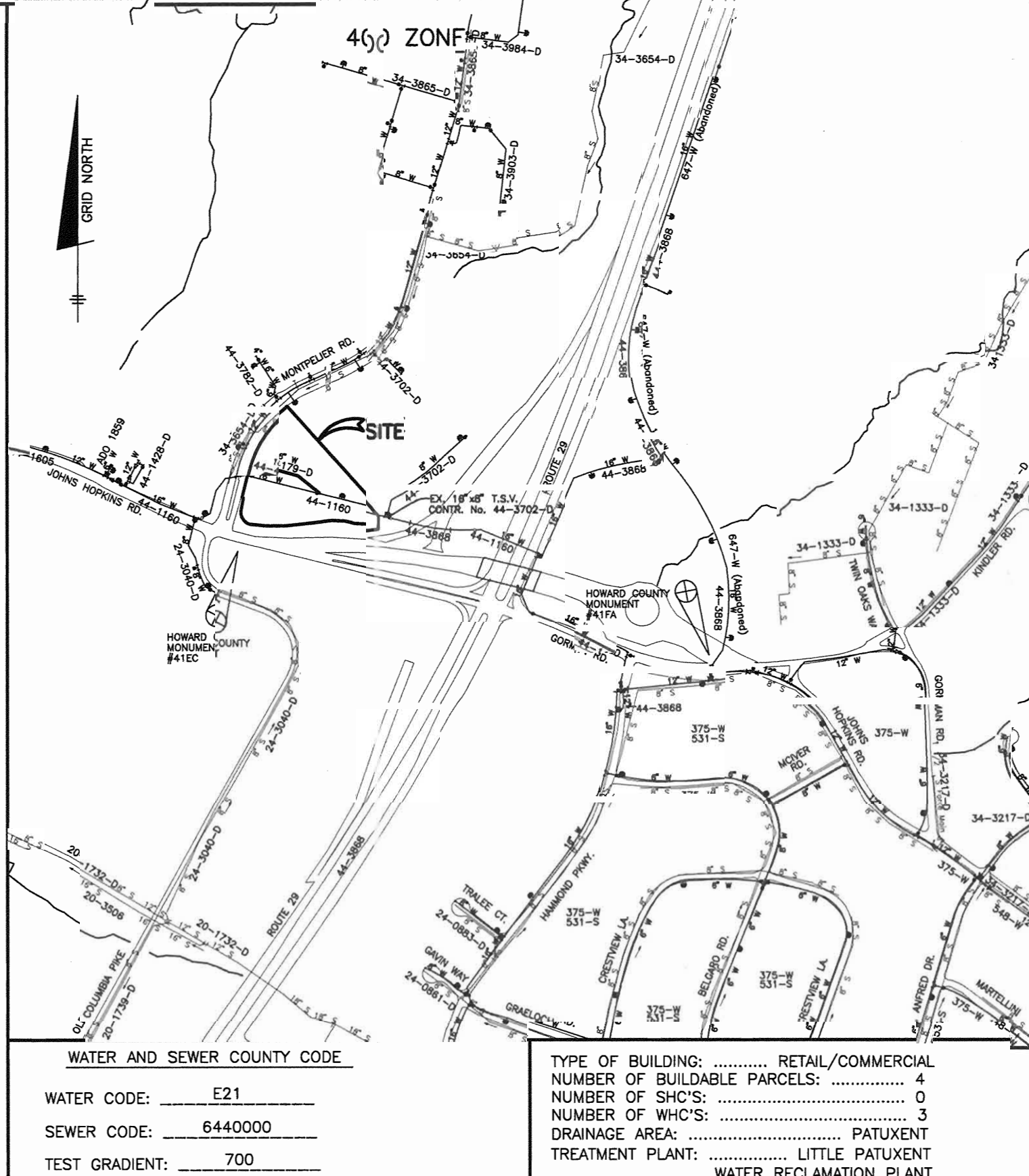
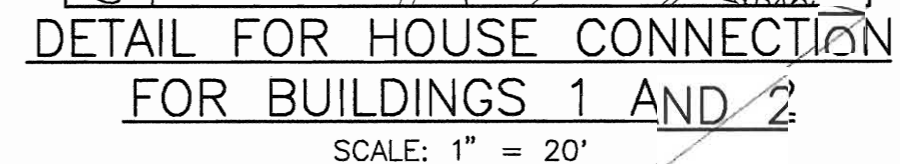
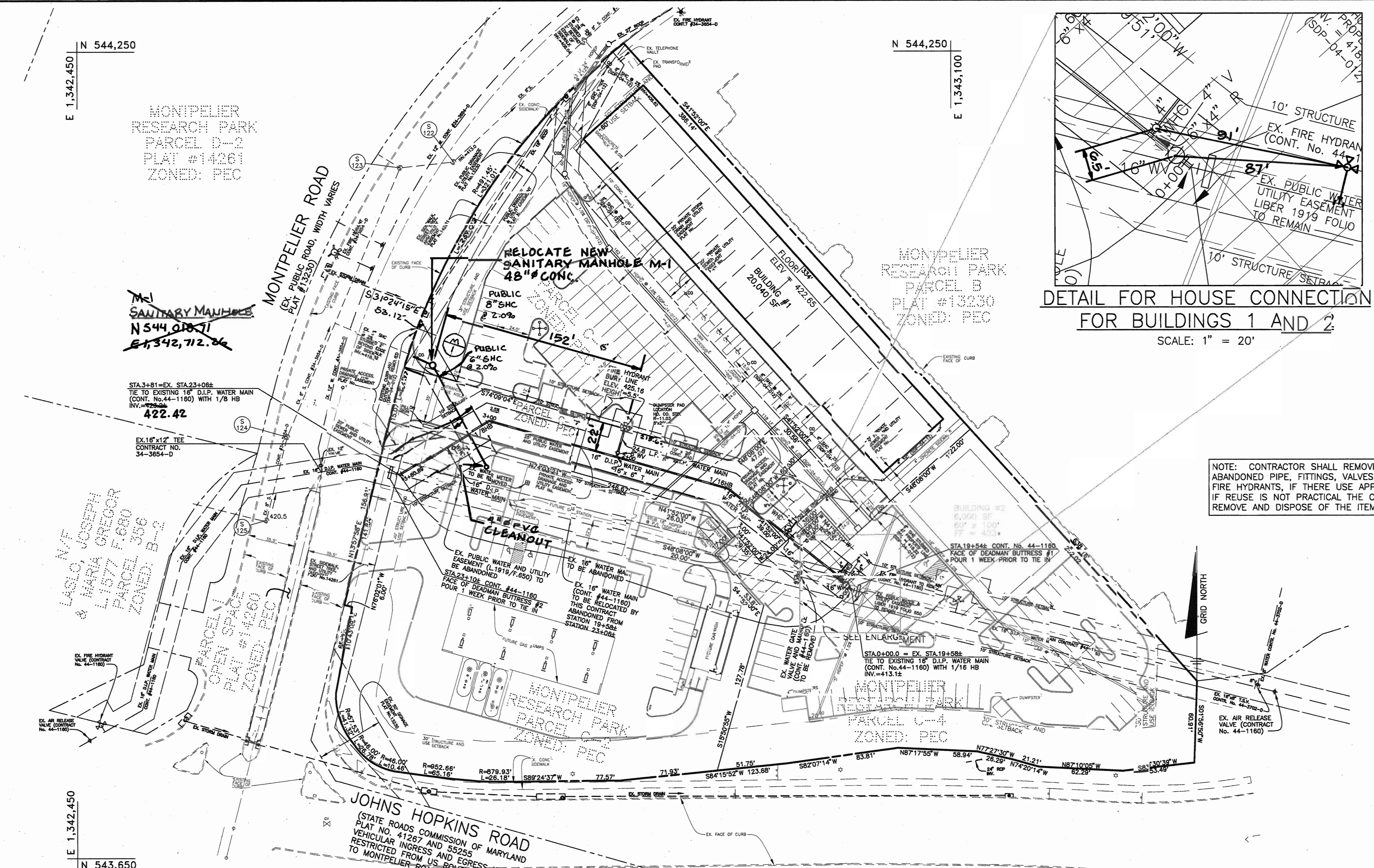
**GENERAL NOTES**

**PART 1 - GENERAL**

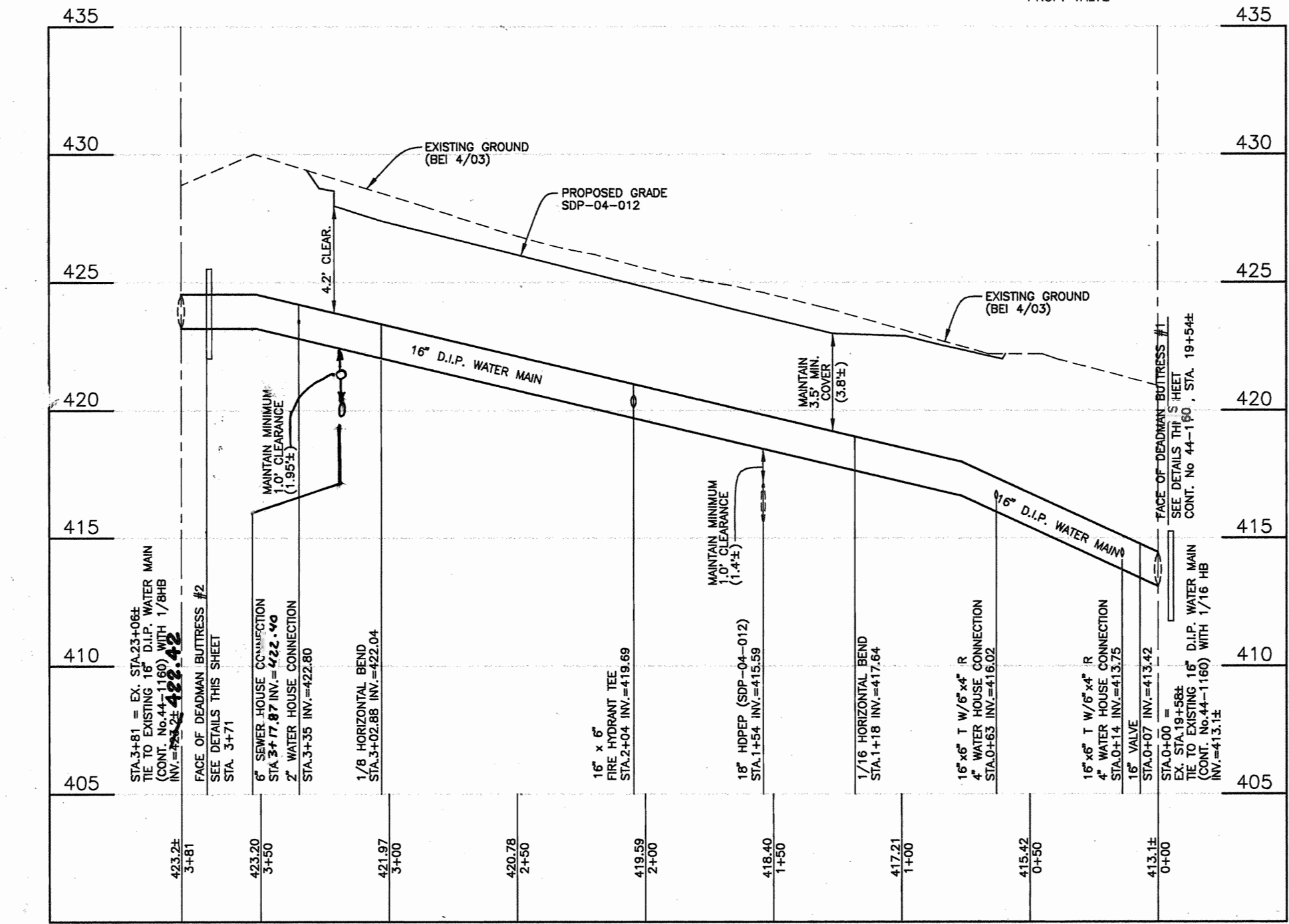
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83 / 91.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. 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 BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED TO 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 IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). 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 PITS. 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.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 AT&T.....1-800-252-1133  
 BGE (CONTRACTOR SERVICES).....410-850-4620  
 BGE (UNDERGROUND DAMAGE CONTROL).....410-787-9068  
 BUREAU OF UTILITIES.....410-313-4900  
 COLONIAL PIPELINE CO.....410-795-1390  
 MISS UTILITY.....1-800-257-7777  
 STATE HIGHWAY ADMINISTRATION.....410-531-5533  
 VERIZON.....1-800-743-0333/410-224-9210
- 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.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(c) OF THE HOWARD COUNTY CODE.

**PART 2 - WATER**

- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3" - 6" 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 INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.



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



**WATER PROFILE**  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'

QUANTITIES		AS-BUILT	
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	TYPE
2\"/>			

- SEQUENCE OF CONSTRUCTION**
- CONTRACTOR SHALL OBTAIN A GRADING PERMIT.
  - NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. COORDINATE CLOSURE OF VALVES WITH CONSTRUCTION.
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AS SHOWN ON SHEET 2.
  - NEW WATER MAIN AND HYDRANT IS TO BE INSTALLED FROM VALVE AT STATION 0+07 TO STATION 3+75. THE DEADMAN BUTTRESSES ARE TO BE POURED ONE WEEK PRIOR TO ATTACHMENT TO WATERMAIN.
  - NEW WATER MAIN IS TO BE PRESSURE TESTED AND CHLORINATED. DRAIN CHLORINATION THROUGH THE PROPOSED 4\"/>

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

*John P. Robertson* 3/24/04  
HOWARD SOIL CONSERVATION DISTRICT

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

*Jim Meyer* 3/24/04  
NATURAL RESOURCES CONSERVATION

**AS BUILT**  
DATE: AUGUST 2004

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Rhonda Berman* 3-30-04  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Chad Hammon* 4/1/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-8644

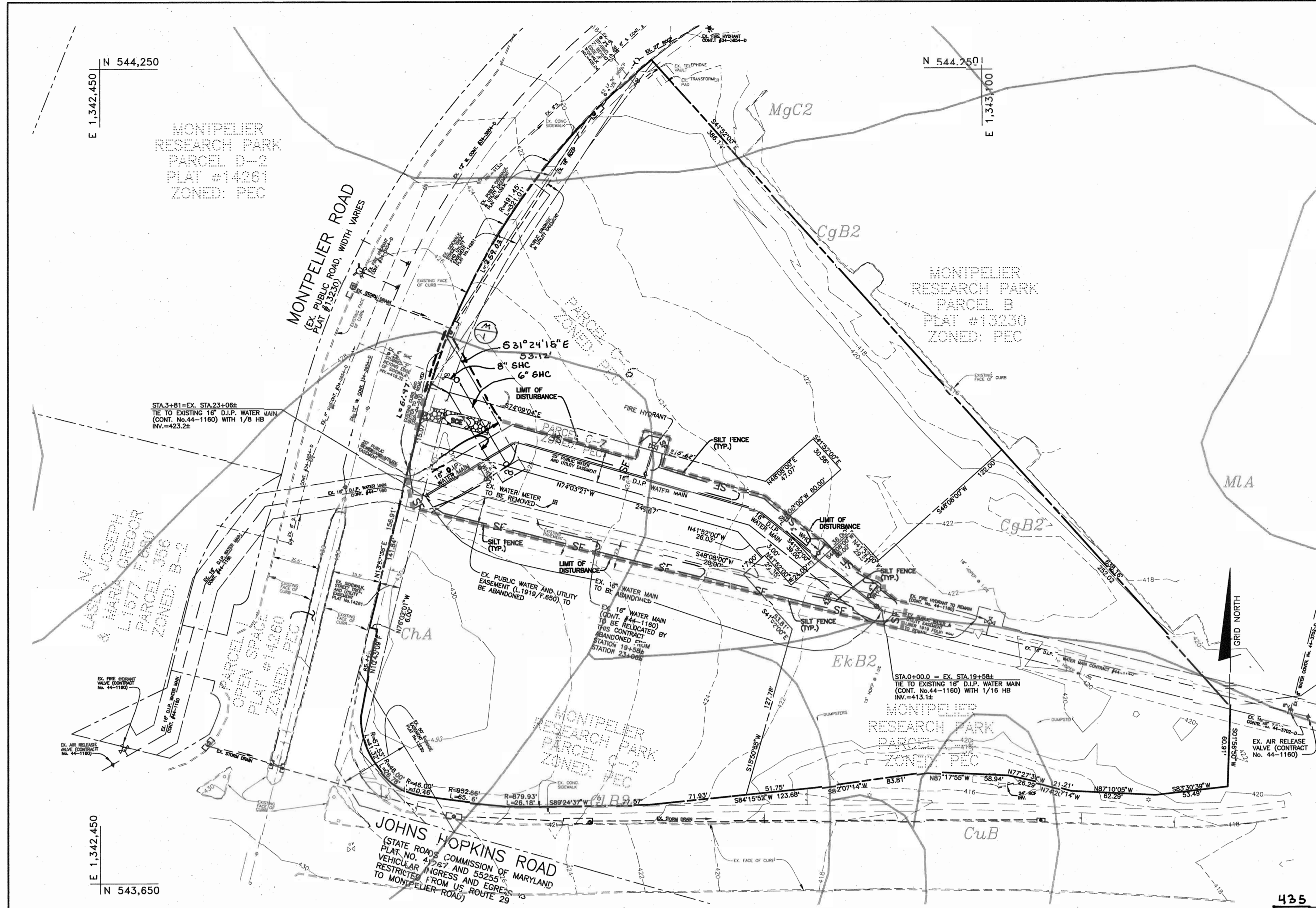
*Donald Mason* 3/23/04

DES: JMC  
DRN: MCR  
CHK: DAM  
DATE: 3/04

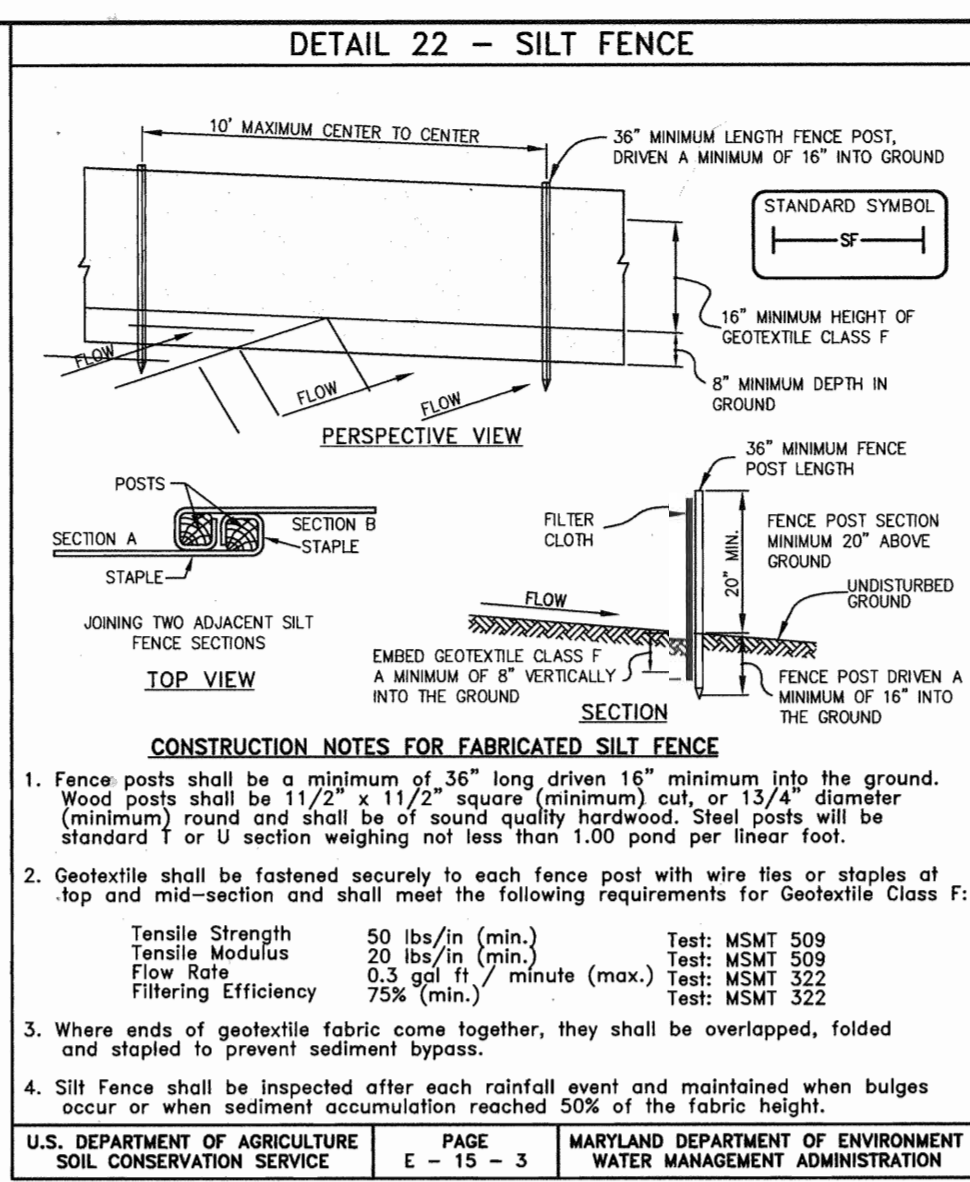
NO.	REVISIONS	DATE
1	REVISE LOCATION OF SHC TO C-2	5/24/04

CONTRACT No. 44-4179-D  
WATER AND SEWER PLAN,  
PROFILE AND DETAILS  
600 SCALE MAPS: 41 BLOCKS: 17

**MONTPELIER RESEARCH CENTER**  
PARCELS C-2, C-6, C-4, AND C-7  
ELECTION DISTRICT NO. 5  
CONTRACT No. 34-4179-D  
SCALE: AS SHOWN  
SHEET NO. 1 OF 2

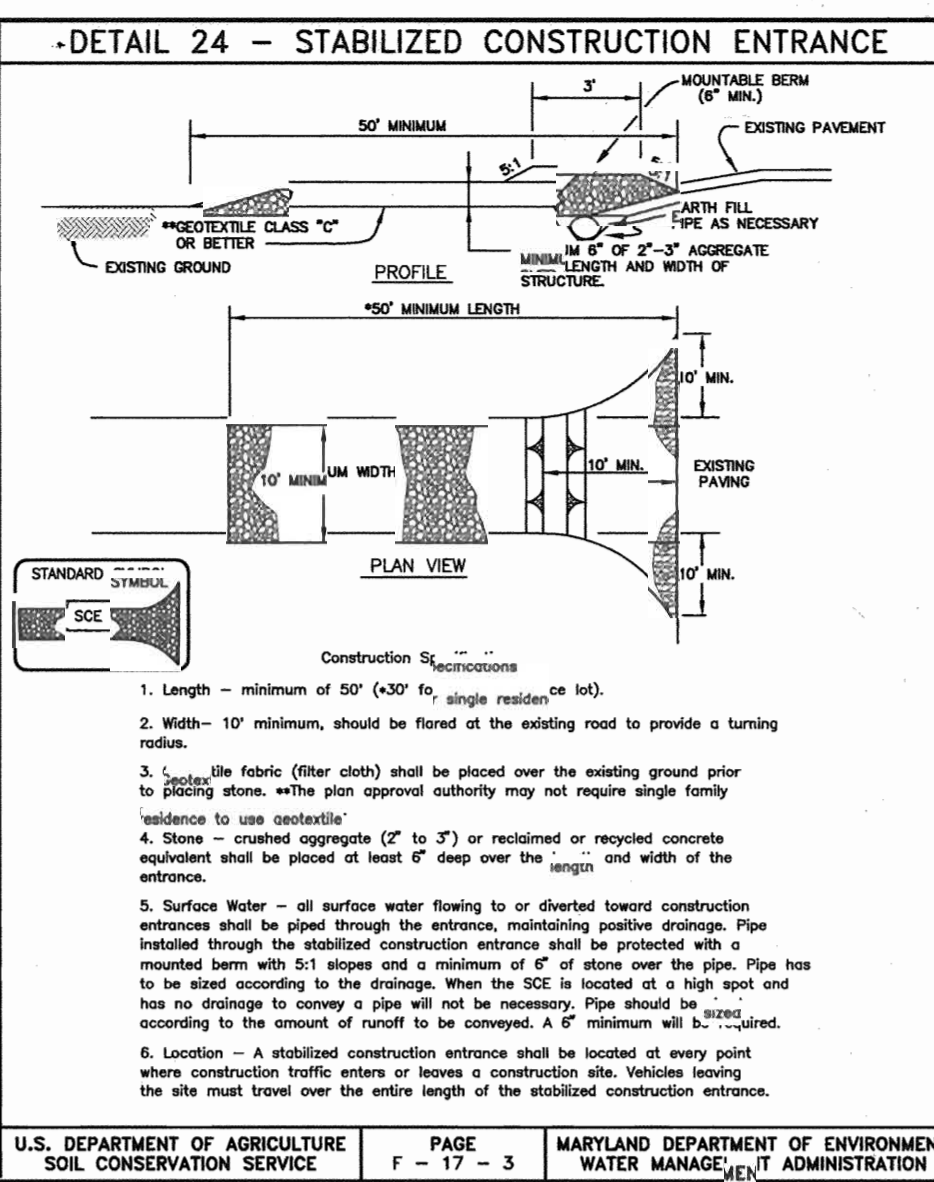


SEDIMENT CONTROL PLAN  
SCALE: 1" = 50'



SILT FENCE DESIGN CRITERIA		
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

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



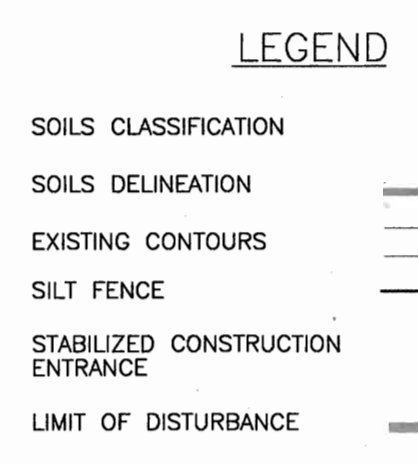
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1" or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

MARYLAND DEPARTMENT OF ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION

MARYLAND DEPARTMENT OF ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION



PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

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

Soil Amendments: In lieu of soil test recommendations, use on the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) 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 sf).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring; Option 2) use sod; Option 3) seed with 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 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

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

TEMPORARY SEEDING NOTES

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

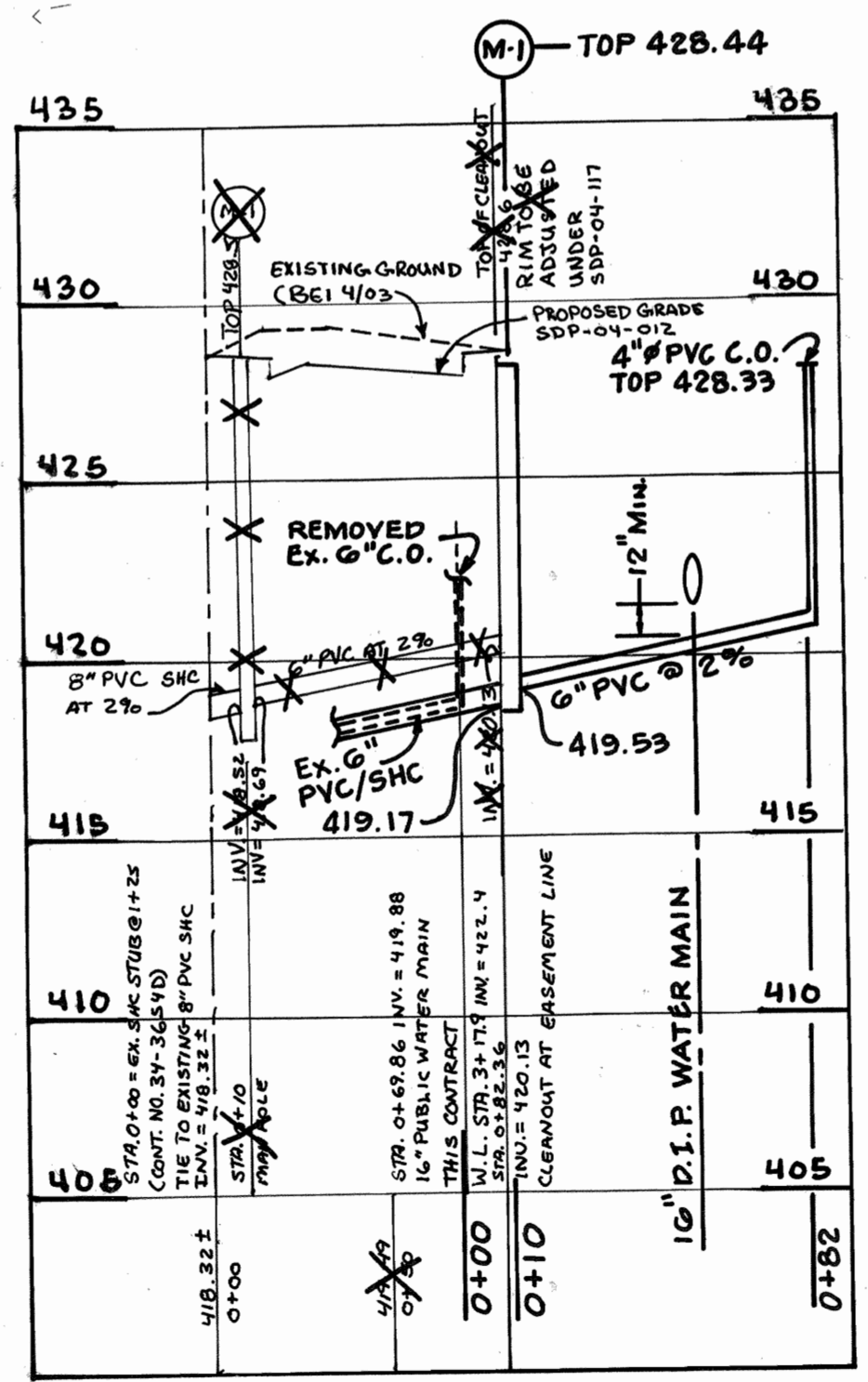
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

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

Seeding: For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period November 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

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



SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
CgB2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Cha	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
MgC2	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
EkB2	C	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED

SITE CONTAINS NO HYDRIC SOILS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 29

BY THE DEVELOPER:

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.

*Howard Roberts* 3/23/04 DATE  
DEVELOPER - HOPKINS ROAD LIMITED PARTNERSHIP  
HOWARD ROBERTS

BY THE ENGINEER:

I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Donald Moon* 3/23/04 DATE  
ENGINEER - DONALD A. MOON, P.E. # 21443

*Jim Mann* 3/24/04 DATE  
NATURAL RESOURCES CONSERVATION

*John K. Robertson* 3/24/04 DATE  
HOWARD SOIL CONSERVATION DISTRICT

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*John K. Robertson* 3-30-04 DATE  
CHIEF, BUREAU OF UTILITIES

*John K. Robertson* 4/1/04 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK  
ENGINEERS & LAND SURVEYORS & PLANNERS  
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE A SUITE 418  
ELLSWORTH CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-8844

*Donald Moon* 3/23/04

DES: JMC  
DRN: MCR  
CHK: DAM  
DATE: 3/04

SC 1 REVISE SHEET TO PARCEL C-2 5/24/04  
BY NO. REVISIONS DATE

SEDIMENT AND EROSION CONTROL PLAN, NOTES AND DETAILS

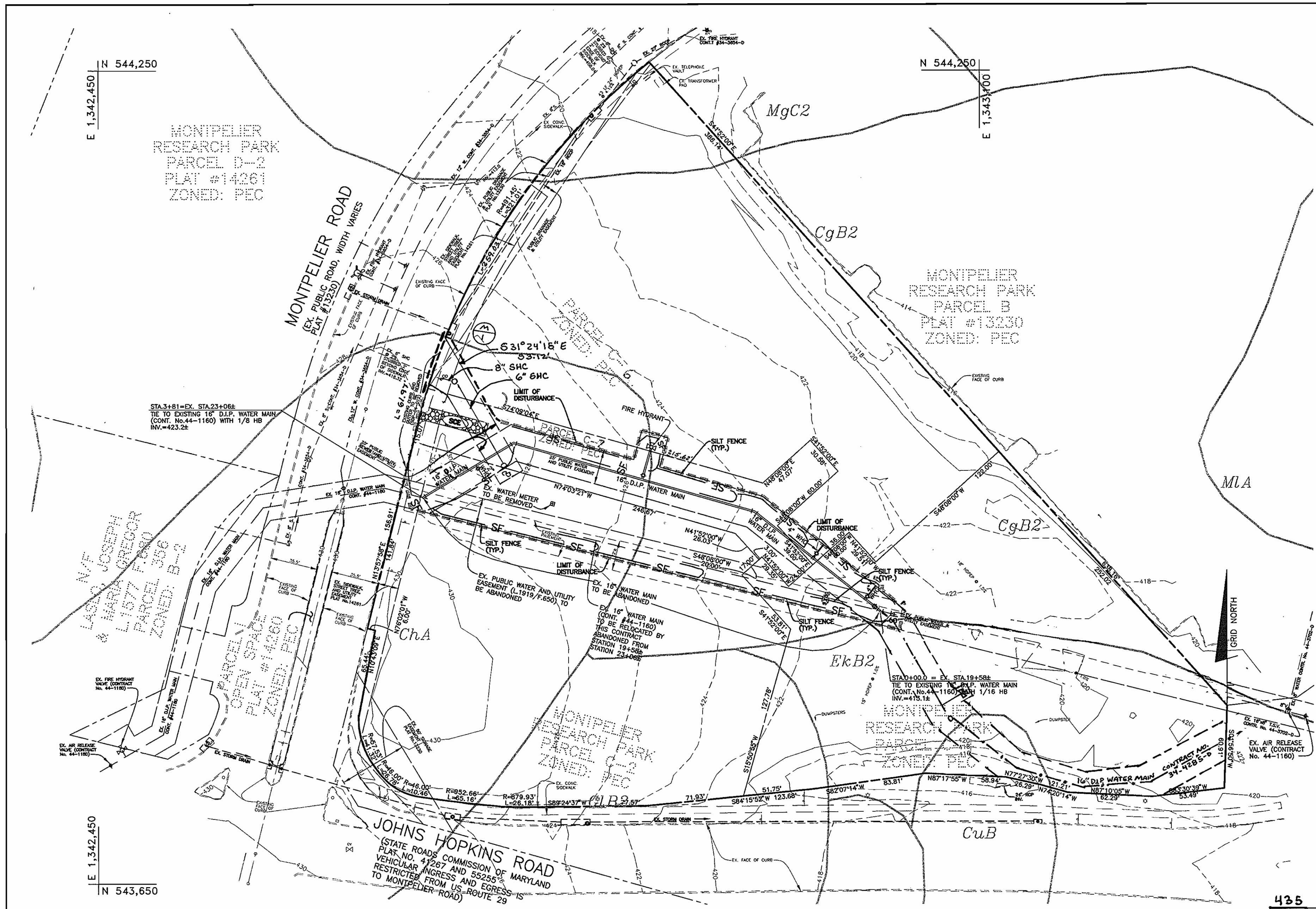
600 SCALE MAPS: 41 BLOCKS: 17

CONTRACT No. 44-4179-D GP-04-72

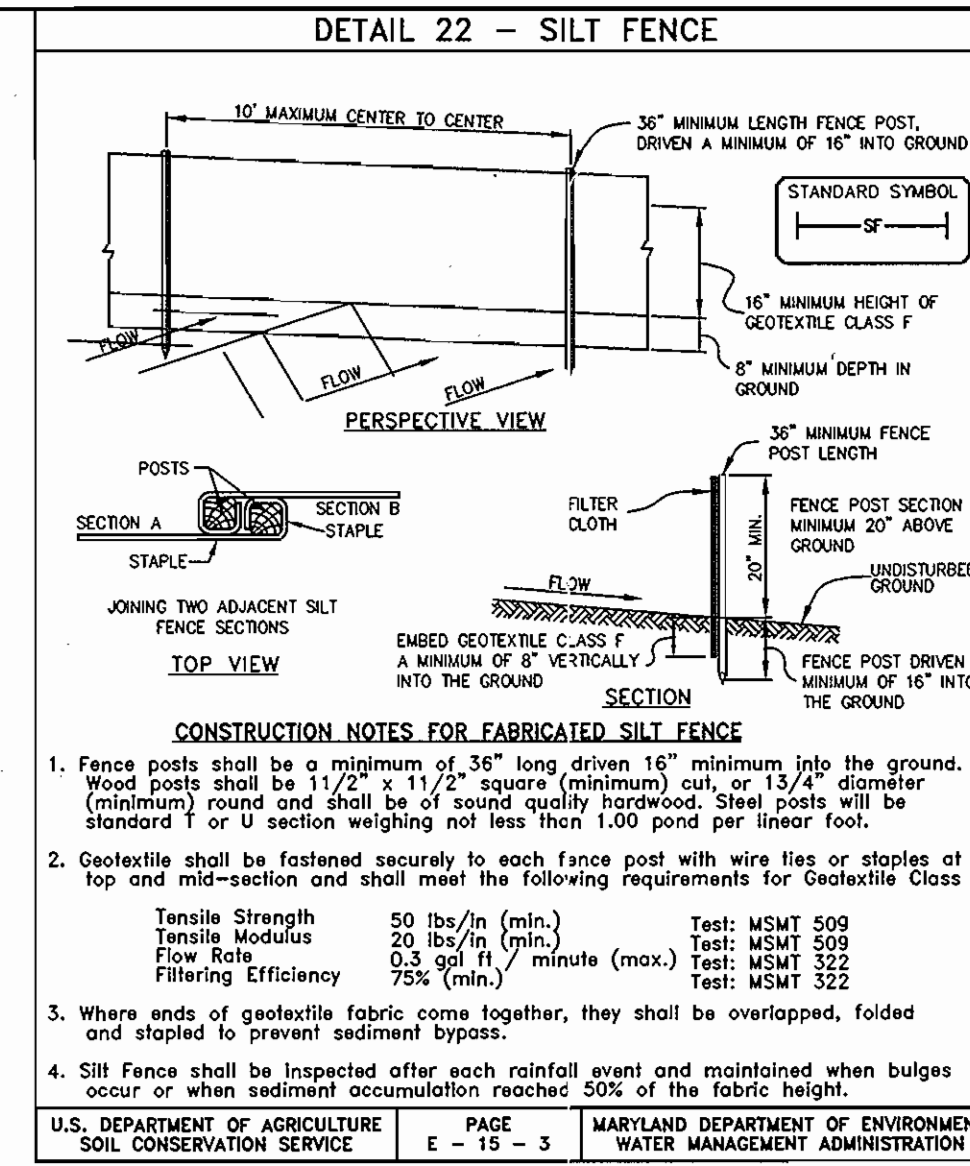
AS BUILT  
DATE: AUGUST 2004

CONTRACT No. 34-4179-D

SCALE: AS SHOWN  
SHEET NO. 2 OF 2



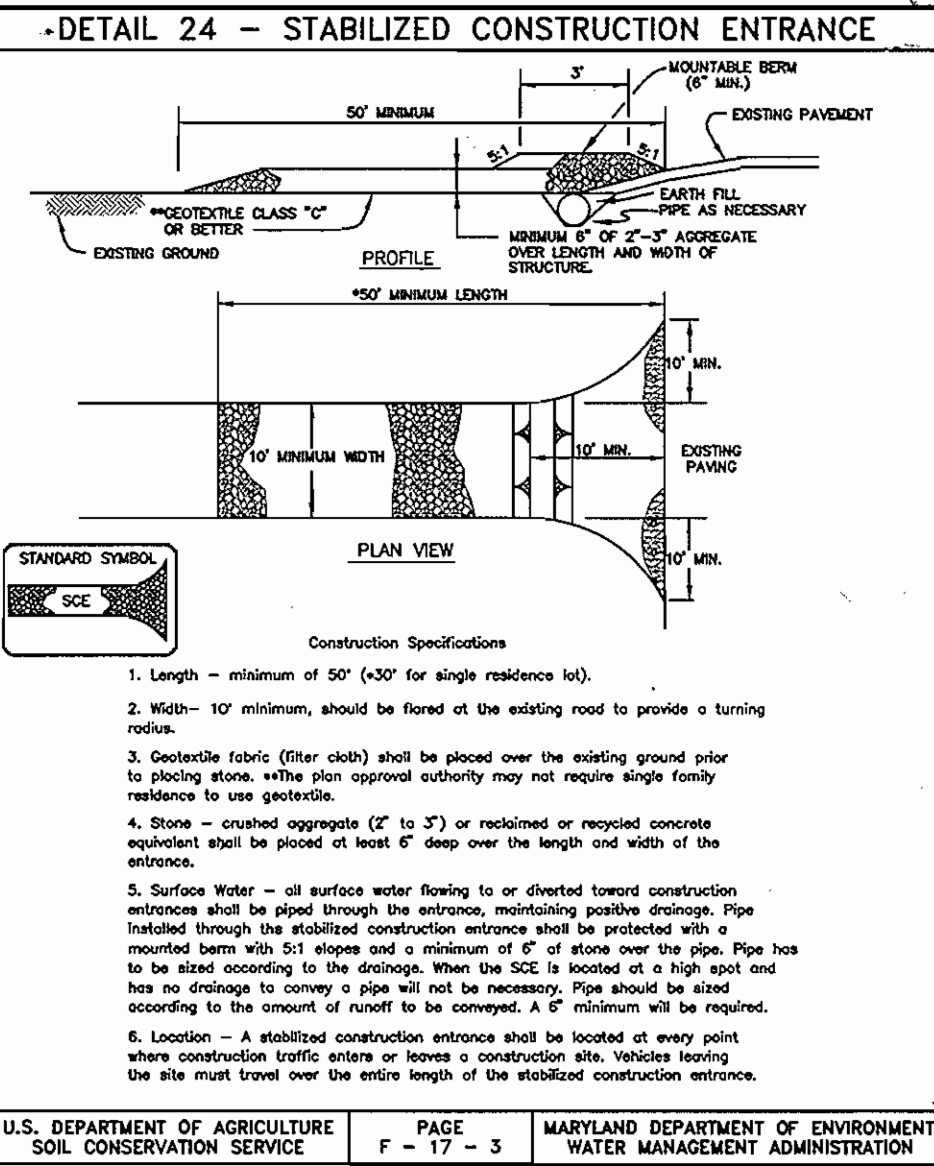
**SEDIMENT CONTROL PLAN**  
SCALE: 1" = 50'



**SILT FENCE DESIGN CRITERIA**

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 5:1	unlimited	unlimited
5:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

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



**CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard U or section weighing not less than 100 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /min. (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

**PERMANENT SEEDING NOTES**

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

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

Soil Amendments: In lieu of soil test recommendations, use on the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) 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 sf).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1, 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 90 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

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

**TEMPORARY SEEDING NOTES**

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

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

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

Seeding: For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period November 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

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

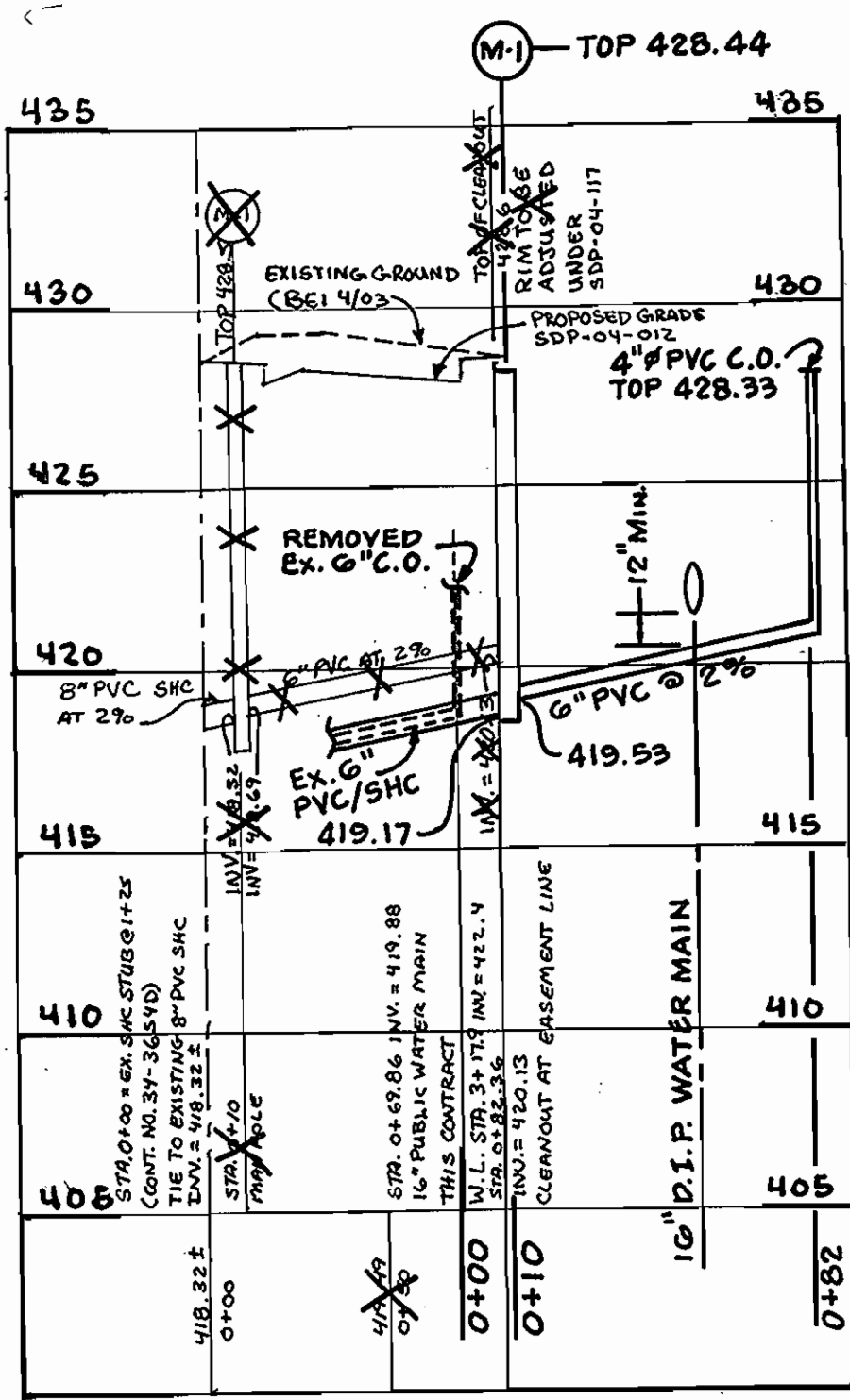
**LEGEND**

SOILS CLASSIFICATION	AbC1
SOILS DELINEATION	---
EXISTING CONTOURS	999
SILT FENCE	SF
STABILIZED CONSTRUCTION ENTRANCE	SCE
LIMIT OF DISTURBANCE	---

**SOILS LEGEND**

MAP SYMBOL	SOIL GROUP	SOIL TYPE
CgB2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ChA	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
MgC2	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ExB2	C	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED

SITE CONTAINS NO HYDRIC SOILS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 29



**AS BUILT**  
DATE: AUGUST 2004

BY THE DEVELOPER:  
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.

DEVELOPER - HOPKINS ROAD LIMITED PARTNERSHIP  
**Howard Robinson**  
DATE: 3/23/04

BY THE ENGINEER:  
I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

**Donald Moon**  
ENGINEER - DONALD A. MOON, P.E. # 21443  
DATE: 3/23/04

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

**John M. Mason**  
NATURAL RESOURCES CONSERVATION  
DATE: 3/24/04

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

**John B. Robertson**  
HOWARD SOIL CONSERVATION DISTRICT  
DATE: 3/24/04

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

**Richard B. Bowers** 3-30-04  
CHIEF, BUREAU OF UTILITIES

**John D. Manning** 4/16/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

**Donald Moon**  
DATE: 3/23/04

DES: JMC				
DRN: MCR				
CHK: DAM	EDD 2	REVISE 10" WATER MAIN ELEVATION CONTRACTING 34-4285-D	9/26/04	
DATE: 3/04	JC 1	REVISE SHC TO PARCEL C-2	5/26/04	
BY NO.		REVISIONS	DATE	

SEDIMENT AND EROSION CONTROL PLAN, NOTES AND DETAILS

600 SCALE MAPS: 41 BLOCKS: 17

CONTRACT No. 44-4179-D

GP-04-72

SCALE: AS SHOWN

SHEET NO. 2 OF 2

CONTRACT No. 34-4179-D

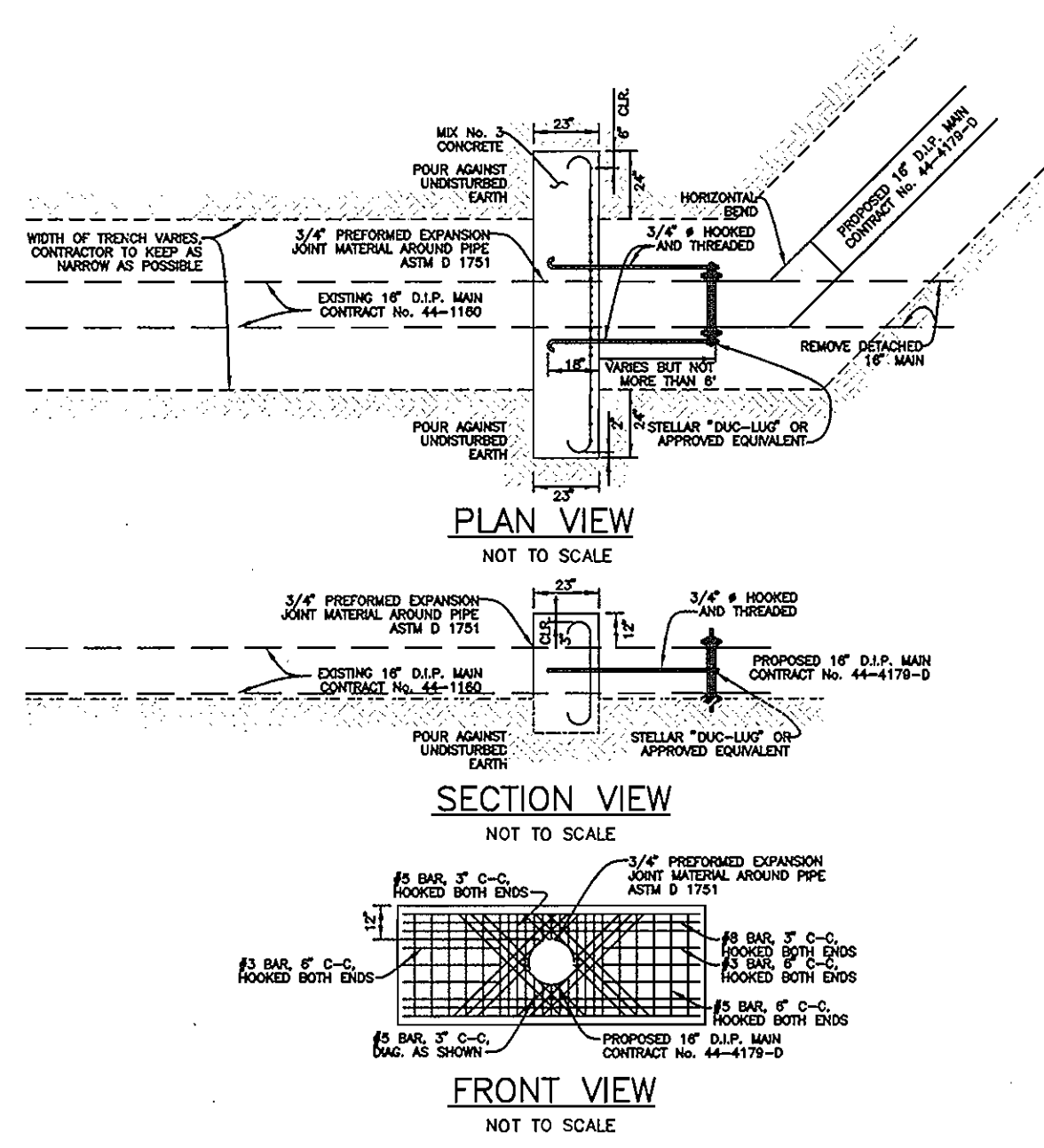
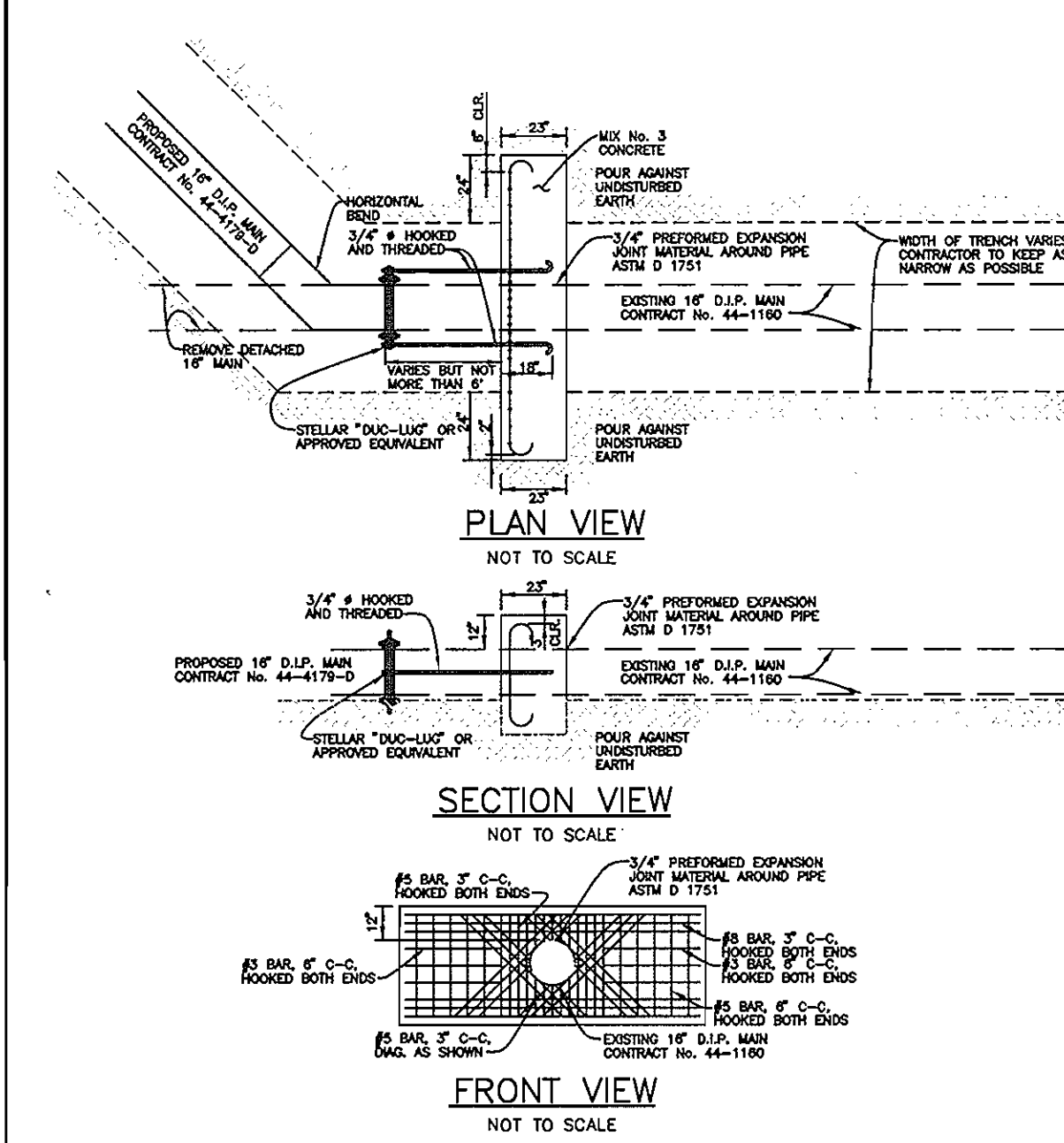
GENERAL NOTES

PART 1 - GENERAL

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. 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, NAD 83 / 91.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. 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 BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES 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 IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). 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 PITS. 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. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 AT&T.....1-800-252-1133  
 BGE (CONTRACTOR SERVICES).....410-850-4520  
 BGE (UNDERGROUND DAMAGE CONTROL).....410-787-9068  
 BUREAU OF UTILITIES.....410-313-4900  
 COLONIAL PIPELINE CO.....410-795-1390  
 MISS UTILITY.....1-800-257-7777  
 STATE HIGHWAY ADMINISTRATION.....410-531-5533  
 VERIZON.....1-800-743-0333/410-224-9210
- 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.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAINING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART 2 - WATER

- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3" - 6" 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 INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.



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

*John R. Robertson* 3/24/04  
 HOWARD SOIL CONSERVATION DISTRICT  
 SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER THIS PLAN

GP-04-72

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

*Jim M. Myers* 3/24/04  
 NATURAL RESOURCES CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Ruth Beaman* 3-30-04  
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

*Chad Blum* 4/1/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 ENGINEERING, INC.

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

*Donald Moran* 3/23/04

DES: JMC  
 DRN: MCR  
 CHK: DAM  
 DATE: 3/04

NO.	REVISIONS	DATE
1	REVISED LOT LINE, BUILDING, PARKING AND WATER/SEWER AS SHOWN ON CONTRACT NO. 34-1285-D	9-29-06
2	REVISE LOCATION OF SHC TO C-2	5/24/07

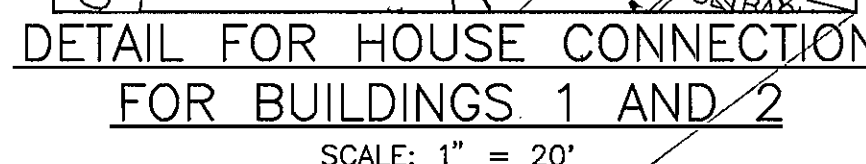
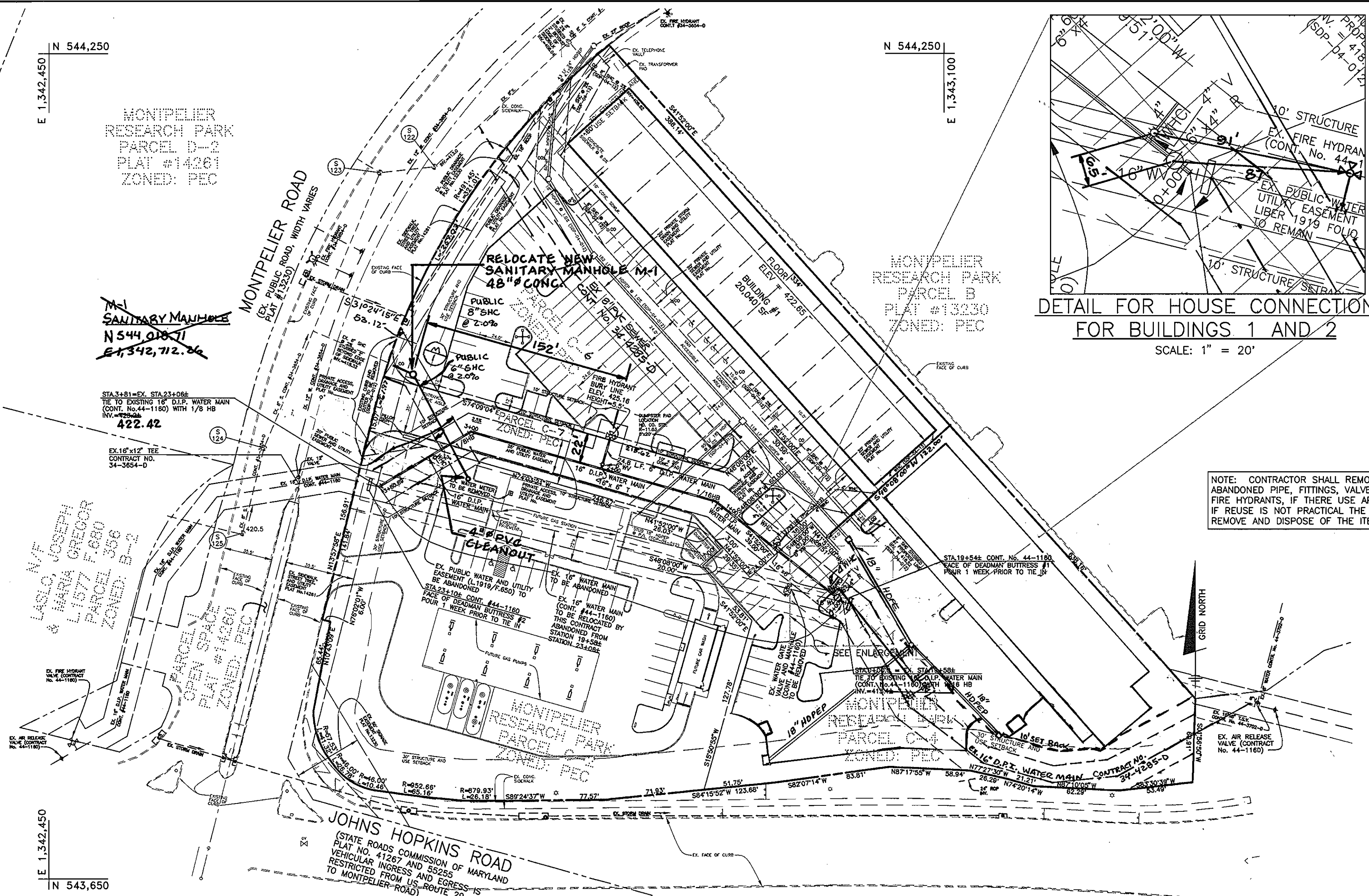
WATER AND SEWER PLAN,  
 PROFILE AND DETAILS

600 SCALE MAPS: 41 BLOCKS: 17

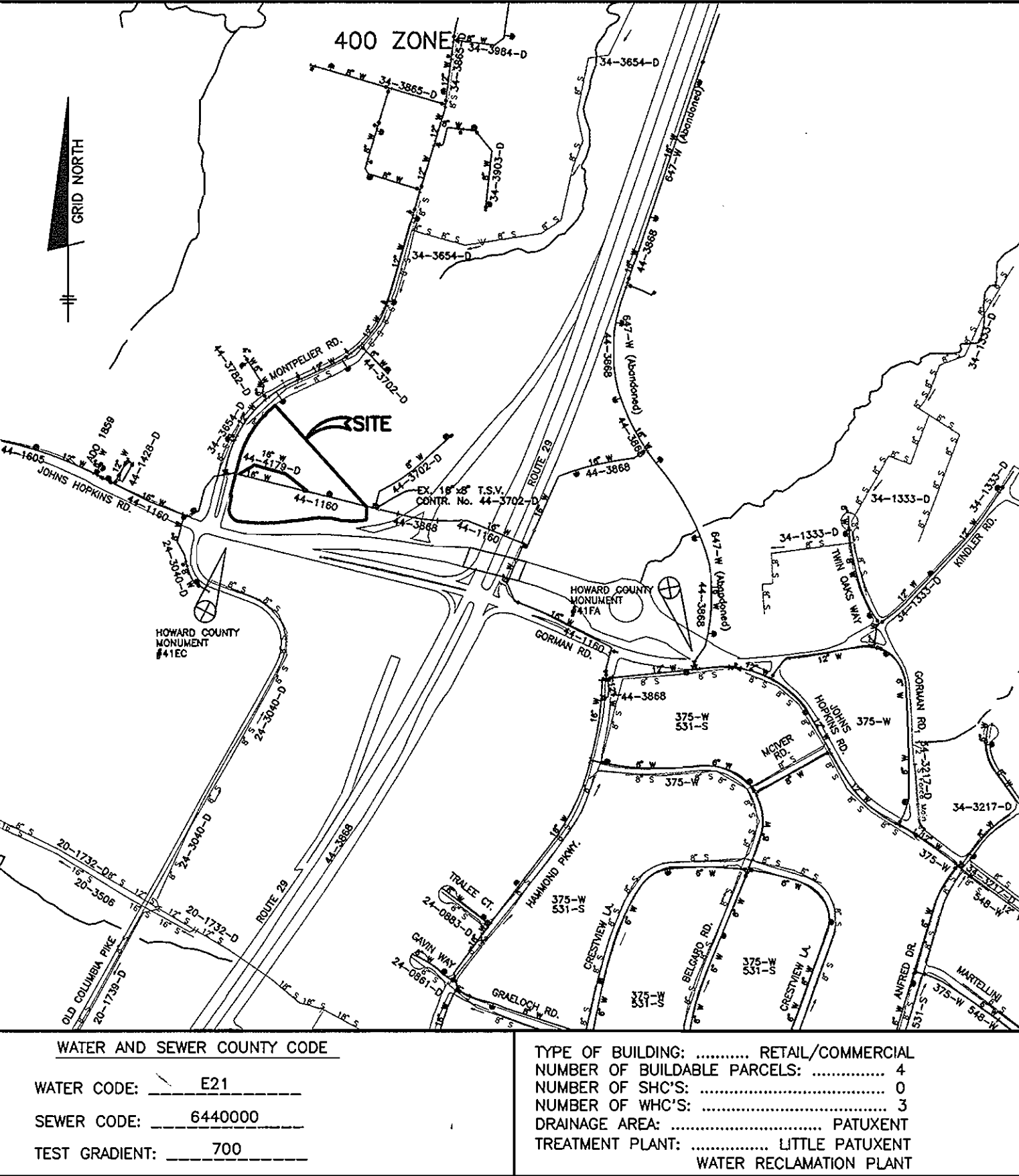
MONTPELIER RESEARCH CENTER  
 PARCELS C-2, C-6, C-4, AND C-7  
 ELECTION DISTRICT NO. 5  
 CONTRACT No. 34-4179-D

SCALE:  
 AS SHOWN

SHEET NO.  
 1 OF 2



NOTE: CONTRACTOR SHALL REMOVE AND SALVAGE ALL ABANDONED PIPE, FITTINGS, VALVES, VALVE BOXES AND FIRE HYDRANTS, IF THERE USE APPEARS PRACTICAL. IF REUSE IS NOT PRACTICAL THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE ITEMS OFFSITE.



LEGEND

EXIST. WATER MAIN	
EXIST. SEWER MAIN	
EXIST. SEWER MANHOLE	
PROP. WATER MAIN	
PROP. SEWER MAIN	
PROP. STORM DRAIN (BY OTHERS)	
PROP. SEWER MANHOLE	
PROP. TERMINAL MANHOLE	
PROP. SEWER HOUSE CONNECTION	
PROP. WATER HOUSE CONNECTION (DOUBLE - 1 1/2\"/>	
PROP. WATER HOUSE CONNECTION (SINGLE - 1\"/>	
PROP. FIRE HYDRANT	
PROP. VALVE	

VICINITY MAP  
 SCALE: 1" = 600'

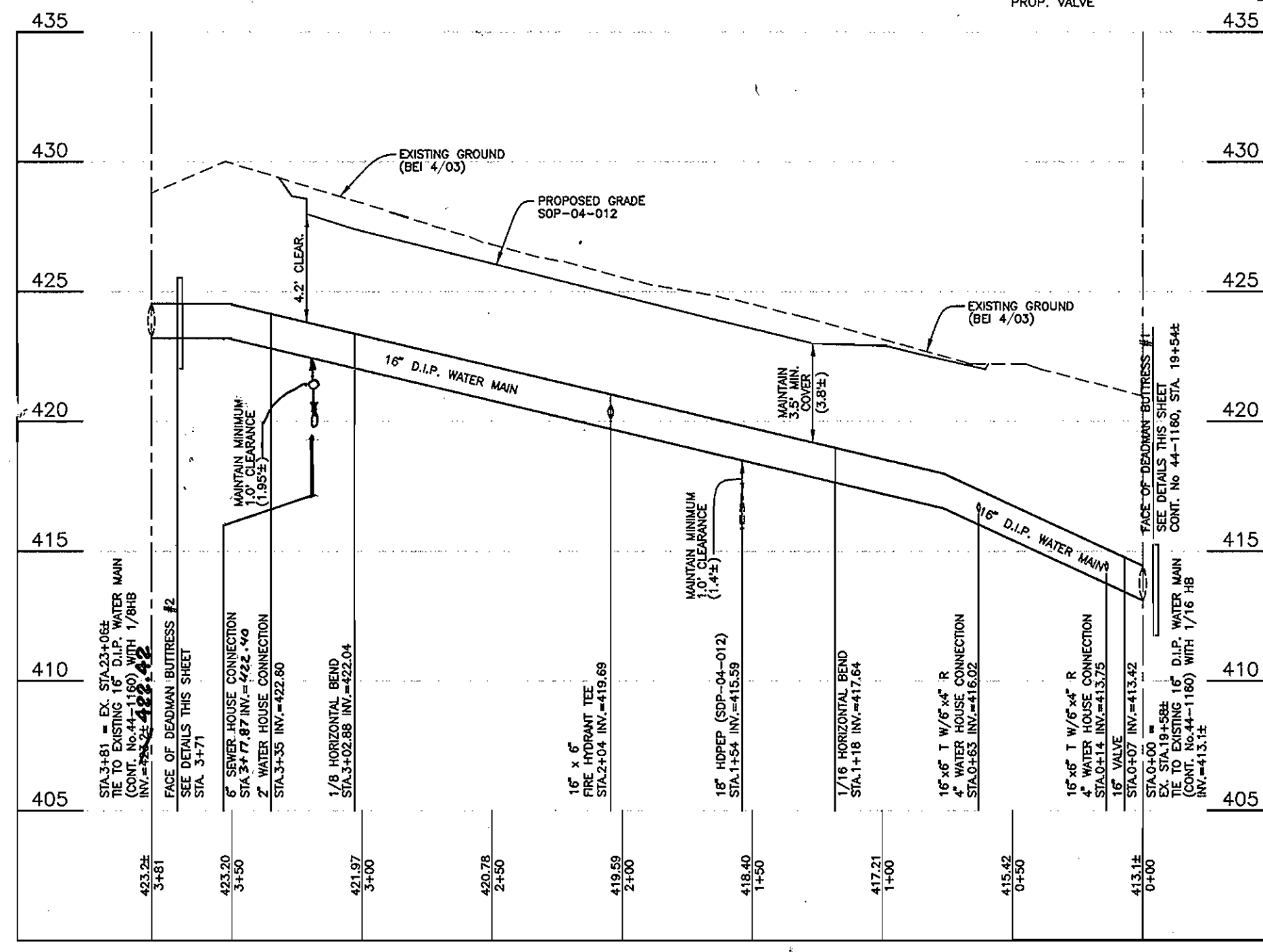
LEGEND

WATER AND SEWER COUNTY CODE	TYPE OF BUILDING: RETAIL/COMMERCIAL
WATER CODE: E21	NUMBER OF BUILDABLE PARCELS: 4
SEWER CODE: 6440000	NUMBER OF SHC'S: 0
TEST GRADIENT: 700	NUMBER OF WHO'S: 3
	DRAINAGE AREA: PATUXENT
	TREATMENT PLANT: WATER RECLAMATION PLANT

BENCH MARKS

HO. CO. #41EC (NAD '83)	ELEV. 430.329'
STANDARD DISC ON CONCRETE MONUMENT BEING 23' NORTH OF A TRAFFIC SIGNAL POLE, 5.6' SOUTH OF THE PC OF THE CURB AND 3.3' SOUTH OF CURB EB J. HOPKINS ROAD NEAR J. HOPKINS'S APPLIED PHYSICS LAB.	
N 543588.822'	E 1342628.79'
HO. CO. #41FA (NAD '83)	ELEV. 407.585'
STANDARD DISC ON CONCRETE MONUMENT BEING 8' EAST OF BGE POLE #553388, 13.3' SOUTH OF LEFT REAR CORNER OF INLET AND 27' NORTH OF THE EDGE OF HAMMOND PKWY.	
N 543109.869'	E 1344797.53'

PLAN  
 SCALE: 1" = 50'



WATER PROFILE  
 VERTICAL SCALE: 1" = 5'  
 HORIZONTAL SCALE: 1" = 50'

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	QUANTITIES	TYPE	MANUF./SUPPLIER
2" WHC	13 L.F.	13 L.F.	COPPER	HOWELL METAL
4" WHC	13 L.F.	13 L.F.	CLASS 52	TYLER
6" D.I.P.	381 L.F.	381 L.F.	CLASS 52	TYLER
16" VALVE	1 EACH	1 EACH	SPURGEAR	KENNEDY
6" VALVE	1 EACH	1 EACH	MJ GATE	KENNEDY
6" D.I.P.	25 L.F.	25 L.F.	CLASS 52	TYLER
1/8" HB (16")	2 EACH	1 EACH	CLASS 52	TYLER
1/16" HB (16")	2 EACH	1 EACH	CLASS 52	TYLER
FIRE HYDRANT	1 EACH	1 EACH	B-2B	KENNEDY

NAME OF UTILITY CONTRACTOR: UTILITIES UNLIMITED INC.  
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE: AUGUST 2004

APURTANCE	WATERLINE STATION	NORTHING	EASTING
1/16" HB (16")	0+00	543,851.1	1,343,026.5
1/16" HB (16")	1+18	543,924.6	1,342,933.9
FIRE HYDRANT TEE	2+04	543,948.3	1,342,851.0
1/8" HB (16")	3+03	543,975.3	1,342,756.3
1/8" HB (16")	3+81	543,935.2	1,342,689.4

- SEQUENCE OF CONSTRUCTION
- CONTRACTOR SHALL OBTAIN A GRADING PERMIT.
  - NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND MEADWESTVACO CORPORATION AT LEAST 2 WEEKS PRIOR TO SHUTDOWN OF THE EXISTING MAIN.
  - NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. COORDINATE CLOSURE OF VALVES WITH CONSTRUCTION.
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AS SHOWN ON SHEET 2.
  - NEW WATER MAIN AND HYDRANT IS TO BE INSTALLED FROM VALVE AT STATION 0+07 TO STATION 3+75.
  - THE DEADMAN BUTTRESSES ARE TO BE POURED ONE WEEK PRIOR TO ATTACHMENT TO WATERMAIN.
  - NEW WATER MAIN IS TO BE PRESSURE TESTED AND CHLORINATED. DRAIN CHLORINATION THROUGH THE PROPOSED 4" WHC AT STATION 0+20.
  - ON A SATURDAY NIGHT CLOSE THE EXISTING VALVES AS SHOWN ON CONTRACT NO. 44-1160, AT STATIONS 6+40, 30+57 AND ON THE STUB AT 30+37; CONTRACT NO. 44-3702-D, STATION 0+00; AND CONTRACT NO. 34-3654-D CL STATION 2+96.
  - DRAIN THE EXISTING MAIN FROM THE FIRE HYDRANT, CONTRACT NO. 44-1160, AT STATION 18+80.
  - ONCE THE MAIN IS DRAINED CUT THE EX. 16" MAIN AND MAKE THE CONNECTION TO THE NEW MAIN.
  - TO AVOID SUSPENSION OF SOLIDS, SLOWLY OPEN THE 16" VALVE. CONTRACT NO. 44-1160, AT STA. 6+40.
  - INSPECT THE CONNECTIONS BETWEEN THE NEW MAIN AND CONTRACT NO. 44-1160.
  - ON THE WESTVACO PROPERTY, DRAIN THE WATER UNTIL ADEQUATE WATER QUALITY IS ACHIEVED.
  - CONTACT THE POINTS OF CONTACT WITH WESTVACO AND JOHN HOPKINS UNIVERSITY AND INFORM THEM THAT WORK IS COMPLETED.
  - STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES ON SHEET 2.
  - WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE AS NECESSARY.