

SEDIMENT CONTROL NOTES

- FOR SEDIMENT CONTROL FOR THIS CONTRACT, SEE THE APPROVED ROAD CONSTRUCTION PLANS.
- MATERIALS FROM TRENCH EXCAVATION TO BE PLACED ON UPHILL SIDE TRENCH.
- CONTRACTOR TO BACKFILL, COMPACT AND STABILIZE IMMEDIATELY AFTER INSTALLATION OF PIPE. NO TRENCHES WILL BE LEFT OPEN AT THE END OF EACH DAY, EXCEPT THAT PORTION WHERE WORK HAS STOPPED.
- ANY SEDIMENT CONTROL FACILITIES ENCOUNTERED DURING PIPE CONSTRUCTION TO BE RETURNED TO ORIGINAL CONDITION IMMEDIATELY UPON COMPLETION OF THAT PORTION OF WORK.
- SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATION AND AS PER ROAD CONSTRUCTION PLANS.

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 SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTRACTED 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 MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME FOUR, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME FOUR ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE 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 UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THIS PLANS:

STATE HIGHWAY ADMINISTRATION : 531-5533
 BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES : 850-4620
 - UNDERGROUND DAMAGE CONTROL : 787-9068
 - TROUBLE SHOOTING : 298-9001

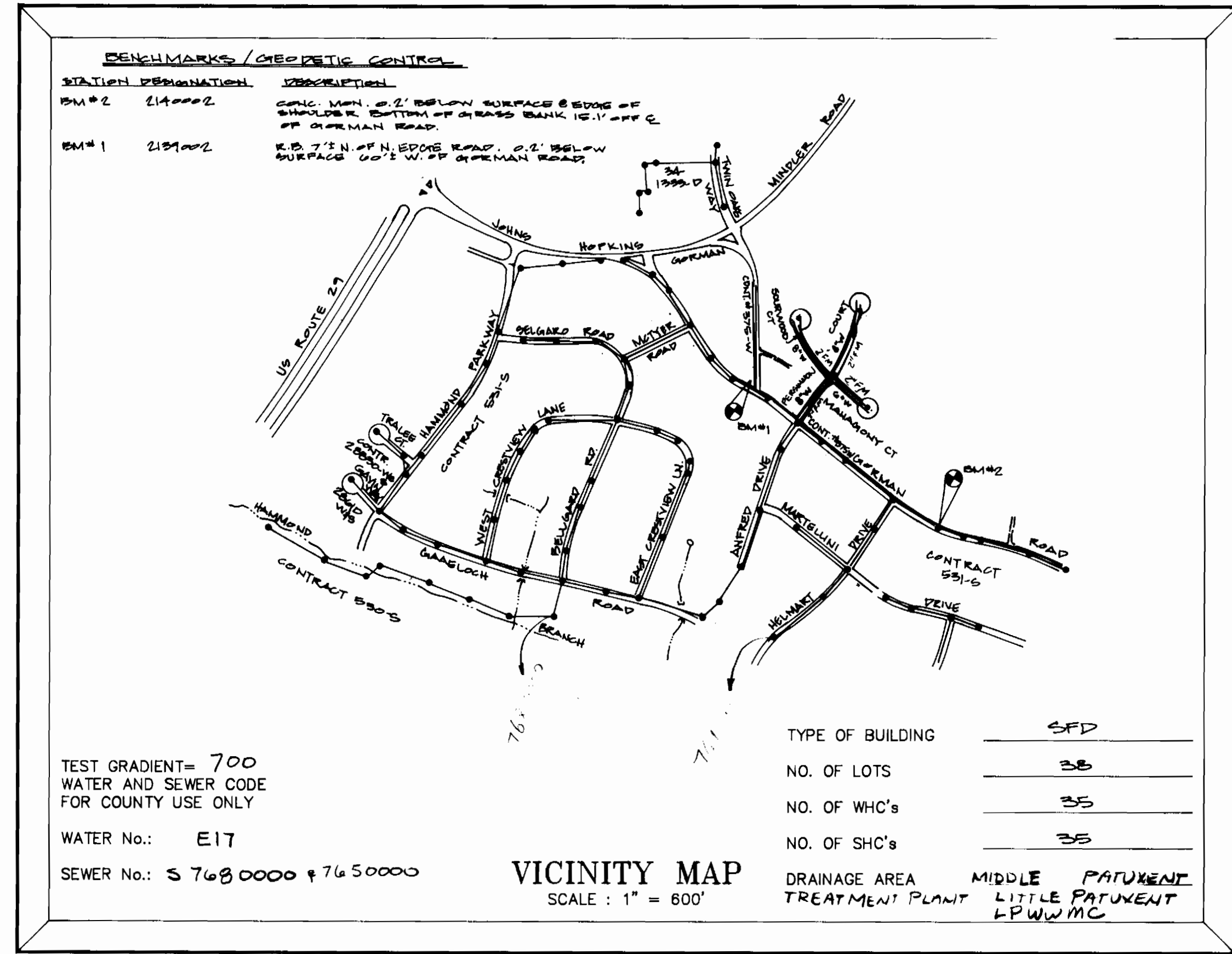
MIDDLE PATUXENT TREATMENT PLANT : 410-684-6200
 CHEESAPEAKE AND PHOENIX TELEPHONE COMPANY : 410-684-6200

- 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 DAMAGE BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2' COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED FOR 4" DETAIL W/11 AND W/2-15.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- WATER MAINS OR WATER HOUSE CONNECTION LINES MUST BE PLACED SO AS TO HAVE AT LEAST ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- CONSTRUCTION OF ALL PUBLIC PORTIONS OF THE PRESSURE SEWERS SHALL BE IN ACCORDANCE WITH THE W.S.S.C. GENERAL CONDITIONS/SPECIFICATIONS AND STANDARD DETAILS AS PERTAINING TO GRINDER PUMPS/PRESSURE SEWERS, UNLESS OTHERWISE SHOWN.
- AFTER PRESSURE TESTING AND PRIOR TO PLACING FORCE MAIN INTO SERVICE, THE SYSTEM WILL BE FILLED FROM A POTABLE WATER SOURCE UNDER P.W.'S DIRECTION.
- REFER TO SITE PLAN FOR INFORMATION RELATING TO PUMP DETAILS & RELATED EQUIPMENT.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- ALL PUMPS WILL BE E-1 MODEL GP214-1AD OR AS SHOWN PER THIS PLAN.
- MANHOLES LOCATED WITHIN PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAME AND COVER, STANDARD DETAIL G 5.51
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATION C-153 : DUCTILE IRON COMPACT FITTINGS, 3" THROUGH 12" FOR WATER & OTHER LIQUIDS.
- ALL EXISTING STRUCTURES TO BE REMOVED.
- FORCE MAINS SHALL BE OF 30R 21 PVC, DETECTABLE WARNING TAPE WILL BE UTILIZED. FOR ALL GRAVITY SEWER MAINS SHALL BE P.V.C.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CANNOT BE SERVED.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 515-2450 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 10-114(a) OF THE HOWARD COUNTY CODE.
- THE CONTRACTOR SHALL SUPPLY AND INSTALL DETECTABLE WARNING TAPE ON ALL NON-METALLIC PRESSURE SEWER MAINS AND LATERALS.
- PRESSURE TESTING OF THE FORCE MAIN WILL BE IN ACCORDANCE WITH WOPC TEST PROCEDURES, SECTION 0271-10, SEE SHEET B OF B.
 OWNER / DEVELOPER : CENTEX HOMES
 #2127 BOBBY COURT
 CROFTON, MD. 21224

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
1 1/2" PVC	391 LF	394'		J.M. MANUFACTURING LIVINGSTON
2" PVC	648 LF	648'		"
2 1/2" PVC	742 LF	742'		"
MANHOLE	4 EA	4		ATLANTIC CONCRETE
1" WVC	252 LF	25'		HALLHEAD CO. / WATER PFC
6" DIP	1048 LF	1087'		ATLANTIC STATES WATER PFC
8" DIP	1179 LF	800'		"
8" VALVE	5 EA	5		MUELLER CO. / WATER PFC
8" VALVE	3 EA	3		"
6" TEE	4 EA	4		TIGER PIPE / WATER PFC
6" REDUCER	3 EA	3		"
BLOWOFF	2 EA	1		"
FIRE HYDRANT	3 EA	3		MUELLER CO. / WATER PFC
8" TEE	1 EA	1		"
8" WVC	912 LF	1070'		HALLHEAD CO. / WATER PFC
6" TEE	1 EA	1		TIGER PIPE / WATER PFC
4" VALVE	1 EA	1		MUELLER CO. / WATER PFC
4" DIP	35 LF	35'		ATLANTIC STATES WATER PFC
1 1/2" RED	3 EA	3		SCANTAL ENG. KILMICK, MD.
2 1/2" RED	2 EA	2		"
1 1/2" PVC	470 LF	534'		J.M. MANUFACTURING LIVINGSTON
FLUSH COHN	4 EA	4	TERMINAL	HOWARD INDUSTRIAL PRODUCTS
FLUSH COHN	1 EA	1	IN-LINE AWAY	ERKO METER & SA. INC.
SEW. VAL. ASS.	1 EA	1		HATWARK INDUSTRIAL PRODUCTS
8" PVC	65 LF	0		N/A
2" VALVE	2	2		"
8" D.I.P.		435'		ATLANTIC STATES WATER PFC
4" D.I.P.		2'		"

NAME OF UTILITY CONTRACTOR: NERCOBA CONTRACTING

SURVEY AND DRAFTING DIVISION AS-BUILT DATE: _____



COOPER PROPERTY

CONTRACT No. 34-3217-D

WATER AND SEWER MAIN EXTENSIONS

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

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

Patricia Crofton 3/30/94
 U.S. SOIL CONSERVATION SERVICE DATE

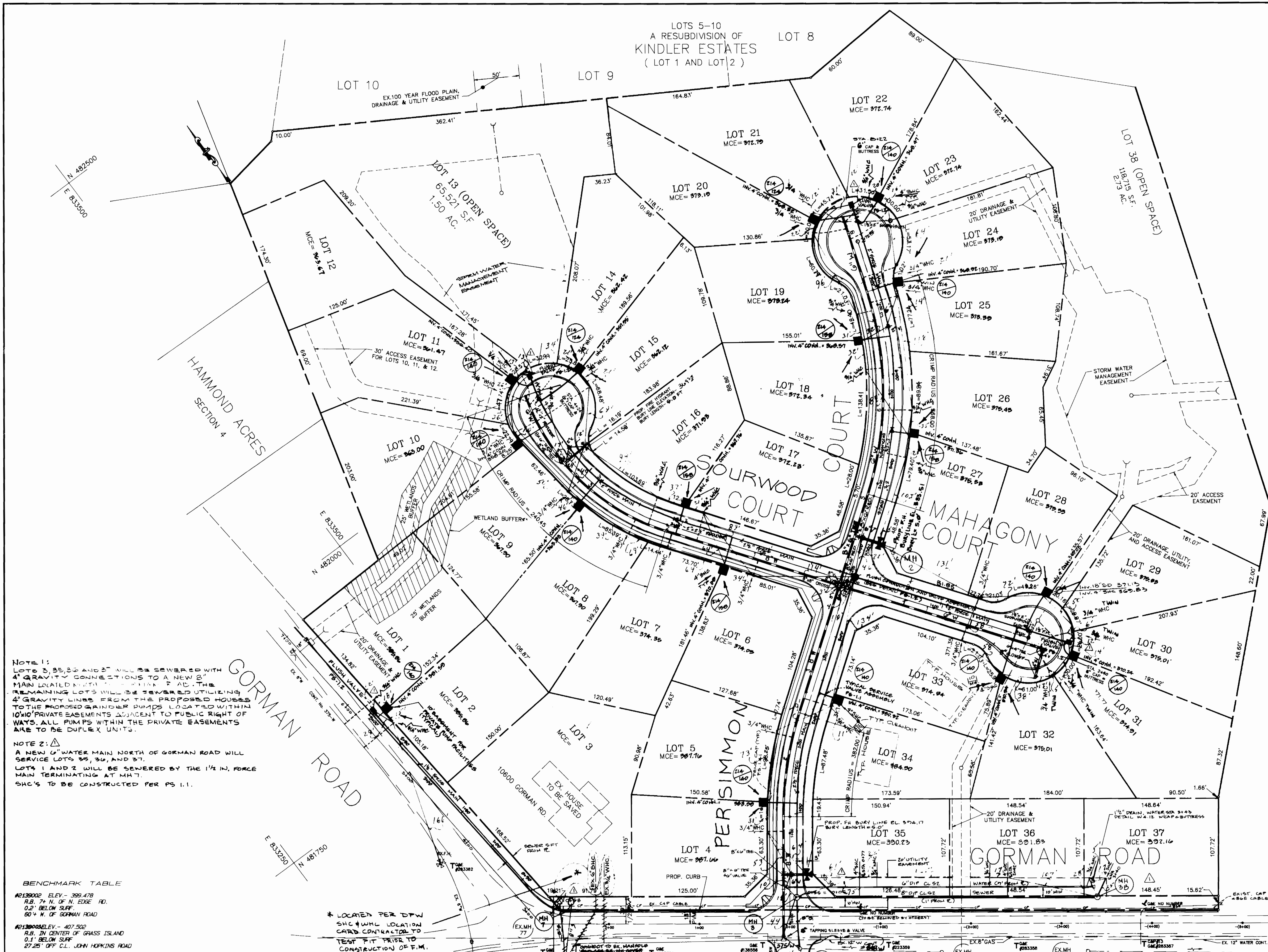
THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.

APPROVED:
John P. Robertson 3/30/94
 HOWARD SOIL CONSERVATION DISTRICT DATE

F-93-17 SDD - N/A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. <i>Carroll Seppan</i> 3/31/94 DIRECTOR OF PUBLIC WORKS DATE	PREPARED BY: AMERICAN ENGINEERING, INC. CIVIL ENGINEERING CONSULTANTS AND LAND PLANNER 871-A MAIN STREET LAUREL, MD. 20707 BALT. (410) 880-3039 WASH. (301) 953-1221	DES: D.C.W. DRN: W.D.F. CHK: R.A. DATE: 9-18-92	REVISED QUANTITIES 12/19/94	PLAN WATER, SEWER AND FORCE MAINS	COOPER PROPERTY SECTION 1 / AREA 1 LOTS 1-35 CONTRACT No. 34-3217-D 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 1 OF 5
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6/30/95



WATER LINE INFORMATION

ITEM	ROAD STATION	OFFSET
GORMAN ROAD		
8" WPCV	0+00	10' LEFT
PERSIMMON COURT		
8" WPCV	0+00	7' LEFT
6" VALVE	0+00	5' LEFT
FIRE HYDRANT	0+00	15' RIGHT
6" VALVE	0+00	7' LEFT
8" WPCV	0+00	7' LEFT
6" VALVE	0+00	11' LEFT
6" WPCV	0+00	7' LEFT
6" VALVE	0+00	15' RIGHT
6" WPCV	0+00	7' LEFT
6" VALVE	0+00	30' LEFT
6" WPCV	0+00	7' LEFT
6" VALVE	0+00	7' LEFT
MAHOGANY COURT		
6" WPCV	1+19	7' RIGHT
6" VALVE	1+19	11' RIGHT
6" WPCV	1+19	35' RIGHT
6" CAP & BUTTRESS	2+23	7' RIGHT
SOURWOOD COURT		
6" WPCV	0+00	7' LEFT
6" VALVE	0+00	5' LEFT
FIRE HYDRANT	0+00	10' RIGHT
6" WPCV	0+00	7' LEFT
6" VALVE	0+00	30' LEFT
6" WPCV	0+00	7' LEFT

SEWER LINE INFORMATION

ITEM	ROAD STATION	OFFSET	MANHOLE INFORMATION
GORMAN ROAD			
8" WPCV	0+00	10' LEFT	TOP MANHOLE ELEV. 399.47
6" VALVE	0+00	5' LEFT	
FIRE HYDRANT	0+00	15' RIGHT	
6" VALVE	0+00	7' LEFT	
8" WPCV	0+00	7' LEFT	
6" VALVE	0+00	11' LEFT	
6" WPCV	0+00	7' LEFT	
6" VALVE	0+00	15' RIGHT	
6" WPCV	0+00	7' LEFT	
6" VALVE	0+00	30' LEFT	
6" WPCV	0+00	7' LEFT	
6" VALVE	0+00	7' LEFT	
PERSIMMON COURT			
8" WPCV	0+00	7' RIGHT	TOP MANHOLE ELEV. 399.47
6" VALVE	0+00	7' RIGHT	
6" VALVE	0+00	7' RIGHT	
6" WPCV	0+00	7' RIGHT	
6" VALVE	0+00	7' RIGHT	
TERMINAL PUMPING CONNECTOR	0+00	7' RIGHT	TOP UTILITY BOX ELEV. 399.47
MAHOGANY COURT			
8" WPCV	1+19	7' LEFT	
6" VALVE	1+19	11' LEFT	
TERMINAL PUMPING CONNECTOR	2+23	7' LEFT	TOP UTILITY BOX ELEV. 399.47
SOURWOOD COURT			
8" WPCV	0+00	7' RIGHT	TOP MANHOLE ELEV. 399.47
6" VALVE	0+00	5' RIGHT	
6" VALVE	0+00	5' RIGHT	
6" WPCV	0+00	5' RIGHT	
6" VALVE	0+00	5' RIGHT	
TERMINAL PUMPING CONNECTOR	0+00	5' RIGHT	TOP UTILITY BOX ELEV. 399.47

NOTE 1:
 LOTS 3, 35, 36 AND 37 WILL BE SEWERED WITH 4" GRAVITY CONNECTIONS TO A NEW 8" MAIN LOCATED NORTH OF GORMAN ROAD. THE REMAINING LOTS WILL BE SEWERED UTILIZING 4" GRAVITY LINES FROM THE PROPOSED HOUSES TO THE PROPOSED GRINDER PUMPS LOCATED WITHIN 10' PRIVATE EASEMENTS ADJACENT TO PUBLIC RIGHT OF WAYS. ALL PUMPS WITHIN THE PRIVATE EASEMENTS ARE TO BE DUPLEX UNITS.

NOTE 2:
 A NEW 6" WATER MAIN NORTH OF GORMAN ROAD WILL SERVICE LOTS 35, 36, AND 37. LOTS 1 AND 2 WILL BE SEWERED BY THE 1 1/2" FORCE MAIN TERMINATING AT MH 7. SHC'S TO BE CONSTRUCTED PER PS 1.1.

NOTE 3: EXISTING 6" & 8" WPCV WILL BE PROVIDED UNDER PAVED DRIVEWAYS AND SIDEWALKS PER PS 1.1.

NOTE 4: PROVIDE 10FT (MIN) SEPARATION BETWEEN SEWER AND WATER MAINS.

NOTE 5: CONTRACTOR SHALL POT-HOLE TO LOCATE PHONE & CABLE LINES NEAR MH 1. MH 1 SHALL BE LOCATED 5' NORTH OF THESE UTILITIES.

NOTE 6: CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-271-7777) 5 WORKING DAYS IN ADVANCE TO LOCATE EXISTING UTILITIES IN THE AREA ADJACENT TO THE FORCE MAINS SYSTEM. POT-HOLE AS NECESSARY TO VERIFY.

BENCHMARK TABLE

#2130002	ELEV. - 399.478
R.B. 74' N. OF N. EDGE PD.	
0.2' BELOW SURF	
60' N. OF GORMAN ROAD	
#2130003	ELEV. - 407.502
R.B. IN CENTER OF GRASS ISLAND	
0.1' BELOW SURF	
27.25' OFF C.L. JOHN HOPKINS ROAD	

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.

Director of Public Works: *John A. ...* 3/3/94
 Chief, Bureau of Engineering: *Robert ...* 3/30/94
 Chief, Bureau of Utilities: *Robert ...* 3-25-94
 Chief, Land Development Division: *...* 3/2/94

PREPARED BY:
AMERICAN ENGINEERING, INC.
 CIVIL ENGINEERING CONSULTANTS
 AND LAND PLANNER

771-A MAIN STREET LAUREL, MARYLAND 20707
 BALTO. (410) 880-3039
 WASH. (301) 863-1221

DES: B.I.S.	REVISION	DATE
DRN: W.D.F.	1. REVISE SEWER WATER MAINS, INFO CHANGES, ADD NOTES, AND	12/10/94
CHK: D.C.W.	2. ADD NEW 6" WPCV & EASEMENT ALONG LOTS 35-37	
DATE: 10/92	BY: NO.	REVISION

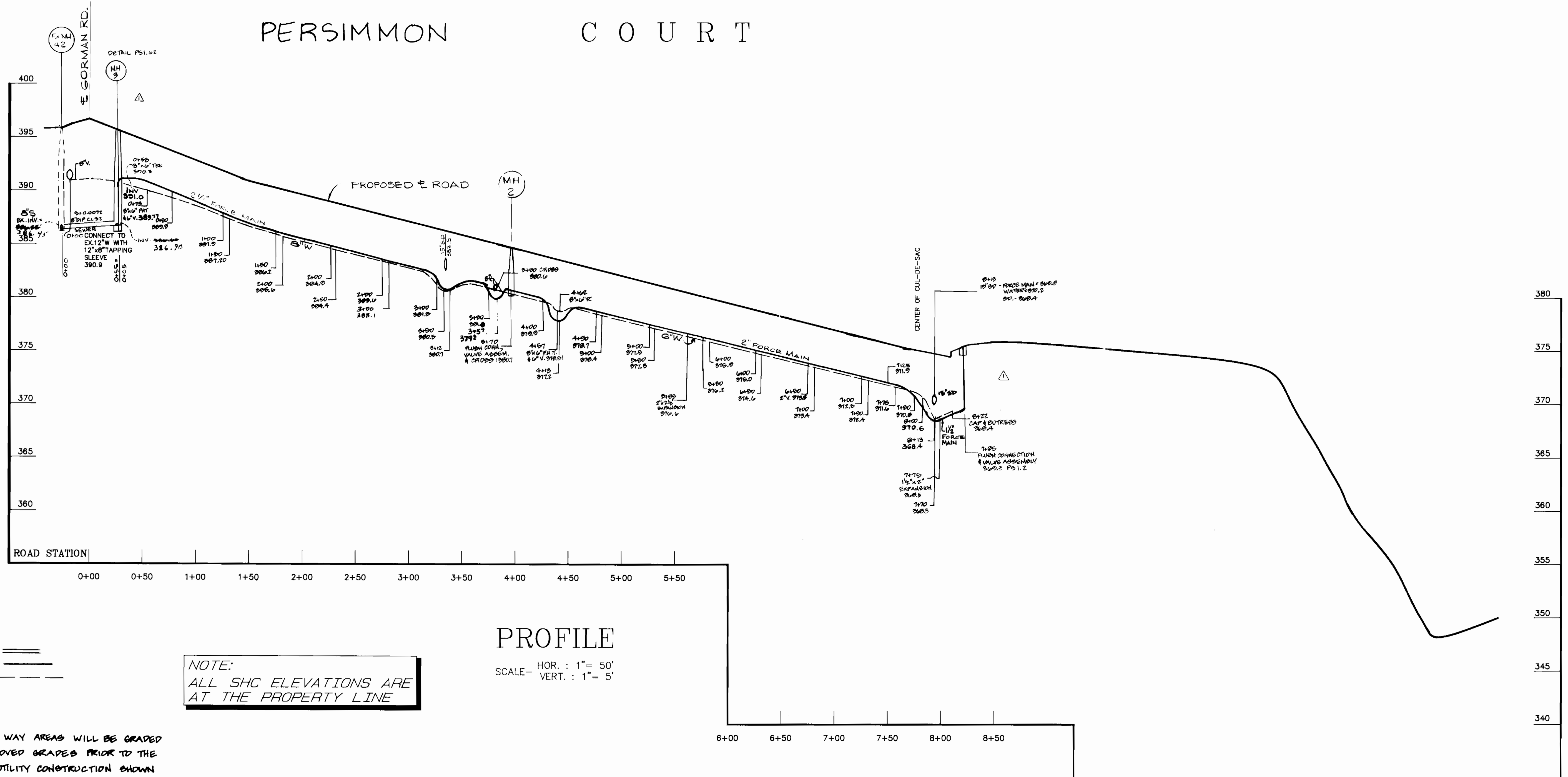
PLAN
 WATER AND SEWER
 MAIN EXTENSIONS

600' SCALE MAP NO. 41 BLOCK NO. 12

COOPER PROPERTY
 SECTION 1 / AREA 1 LOTS 1-38
 CONTRACT NO. 24-3217-D
 ELECTION DISTRICT NO.
 HOWARD COUNTY, MARYLAND.

SCALE AS SHOWN
 SHEET 2 OF 5

PERSIMMON COURT



LEGEND
 GRAVITY SEWER
 SEWER FORCE MAIN
 WATER MAIN

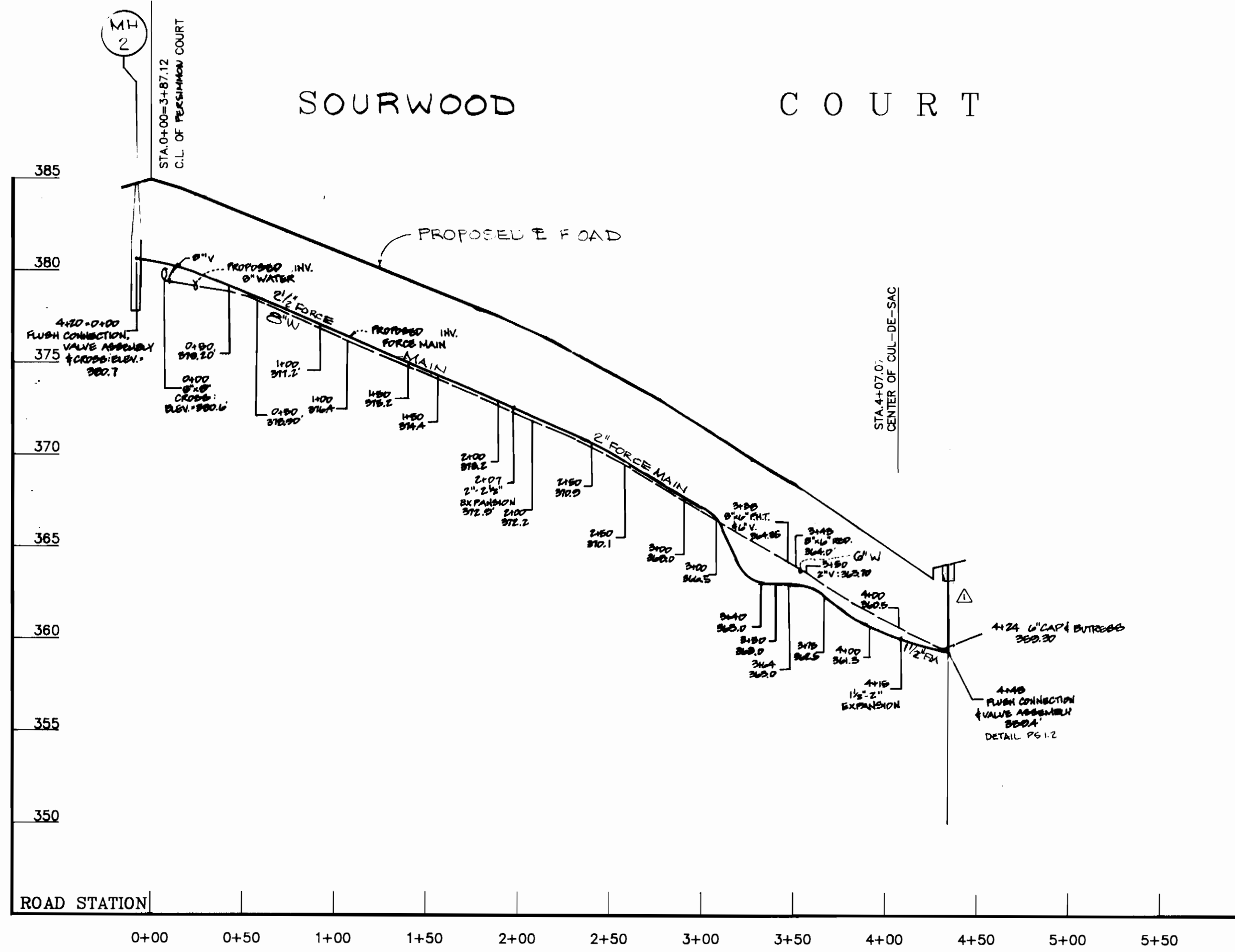
NOTE:
 ALL SHC ELEVATIONS ARE AT THE PROPERTY LINE

NOTE:
 ALL ROAD RIGHT OF WAY AREAS WILL BE GRADED WITHIN 6' OF APPROVED GRADES PRIOR TO THE INSTALLATION OF UTILITY CONSTRUCTION SHOWN ON THIS PLAN.

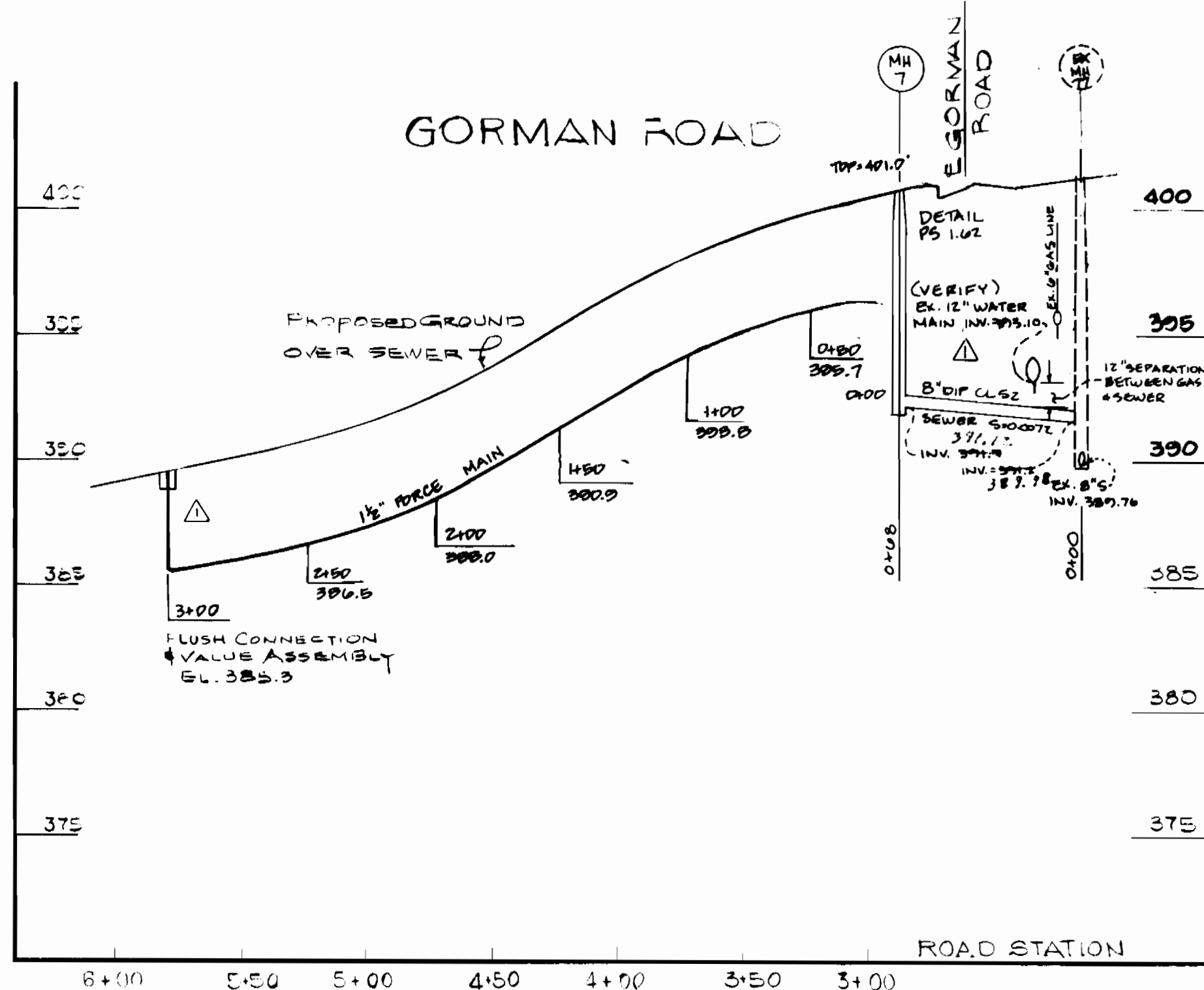
PROFILE

HOR. : 1" = 50'
 VERT. : 1" = 5'

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: <i>James J. Slavin</i> 3/31/94 Chief, Bureau of Utilities: <i>Robert W. Reagin</i> 3-25-94		PREPARED BY: AMERICAN ENGINEERING, INC. CIVIL ENGINEERING CONSULTANTS AND LAND PLANNER Chief, Bureau of Engineering: <i>Paul H. Symon</i> 3/30/94 Chief, Land Development Division: <i>Mark A. Danvers</i> 2/10/94		671-A MAIN STREET LAUREL, MD. 20707 BALT. (410) 880-3039 WASH. (301) 953-1221		DES: B.I.S. DRN: W.D.F. CHK: D.C.W. DATE: 3/94		REVISIONS REVISION NO. DATE REVISIONED MH'S CONNECTIONS, DETAIL PS. 1.2+1.1+1.2, 8" DI. PIPESZ 12/19/94		PROFILE WATER AND SEWER MAIN EXTENSIONS 600' SCALE MAP NO. 41 BLOCK NO. 16		COOPER PROPERTY SECTION 1 / AREA 1 LOTS 1-38 CONTRACT NO. 84-0217-D ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND.		SCALE AS SHOWN SHEET 3 OF 5
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PROFILE
SCALE- HOR. : 1" = 50'
VERT. : 1" = 5'

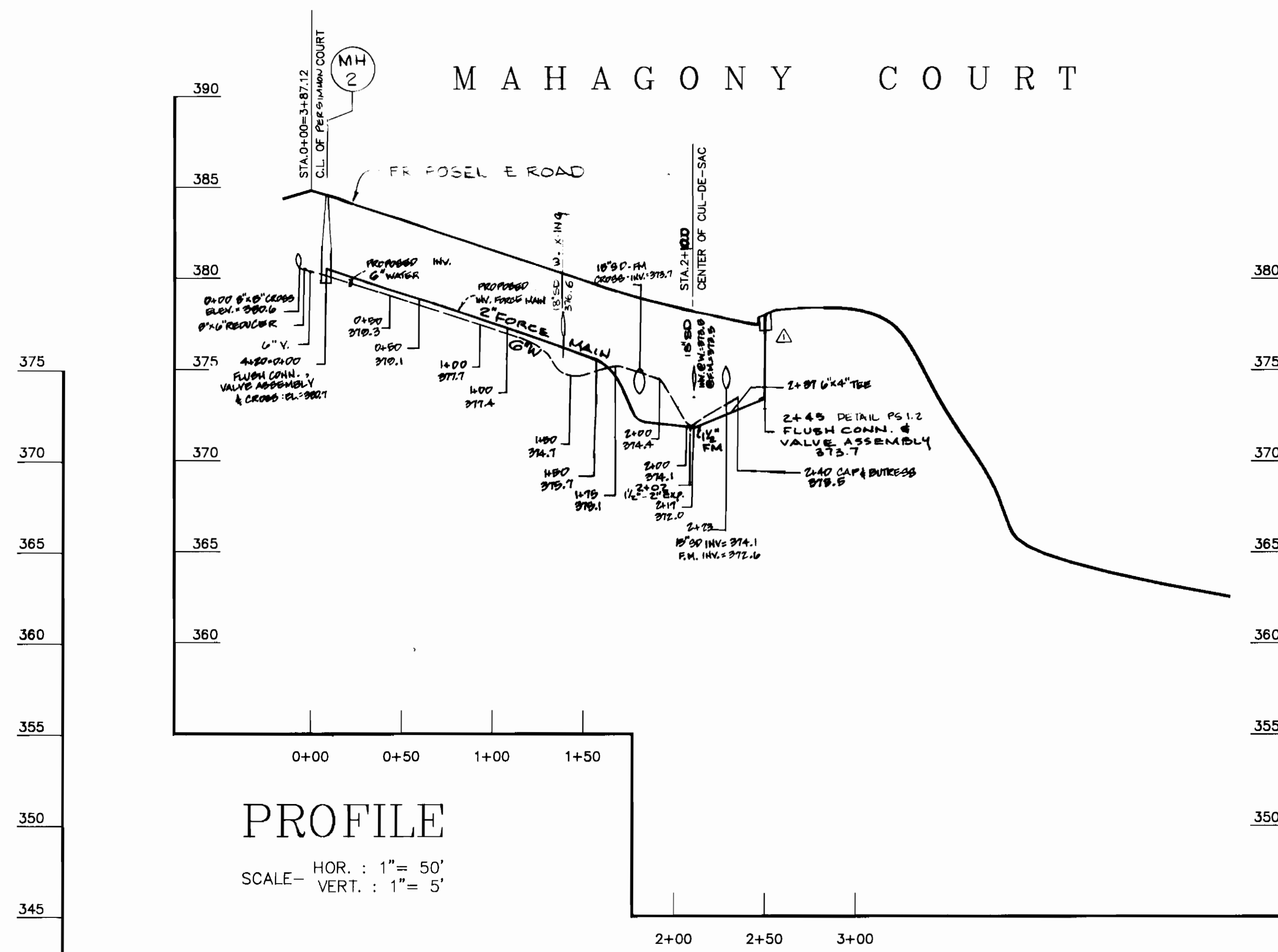


PROFILE
SCALE- HOR. : 1" = 50'
VERT. : 1" = 5'

- NOTE: 1. ALL ROAD RIGHT OF WAY AREAS WILL BE GRADED WITHIN 6" OF APPROVED GRADES PRIOR TO THE INSTALLATION OF UTILITY CONSTRUCTION SHOWN ON THIS PLAN.**
2. CONTRACTOR TO ADJUST GRADE ON 18" ACCMP PIPE TO PROVIDE 8"(MIN.) CLEARANCE OVER SEWER MAIN.
3. CONTRACTOR SHALL DEEPEN WATER MAIN AT 18" ACCMP CROSSING TO PROVIDE 12"(MIN.) CLEARANCE UNDER DRAIN LINE.

LEGEND

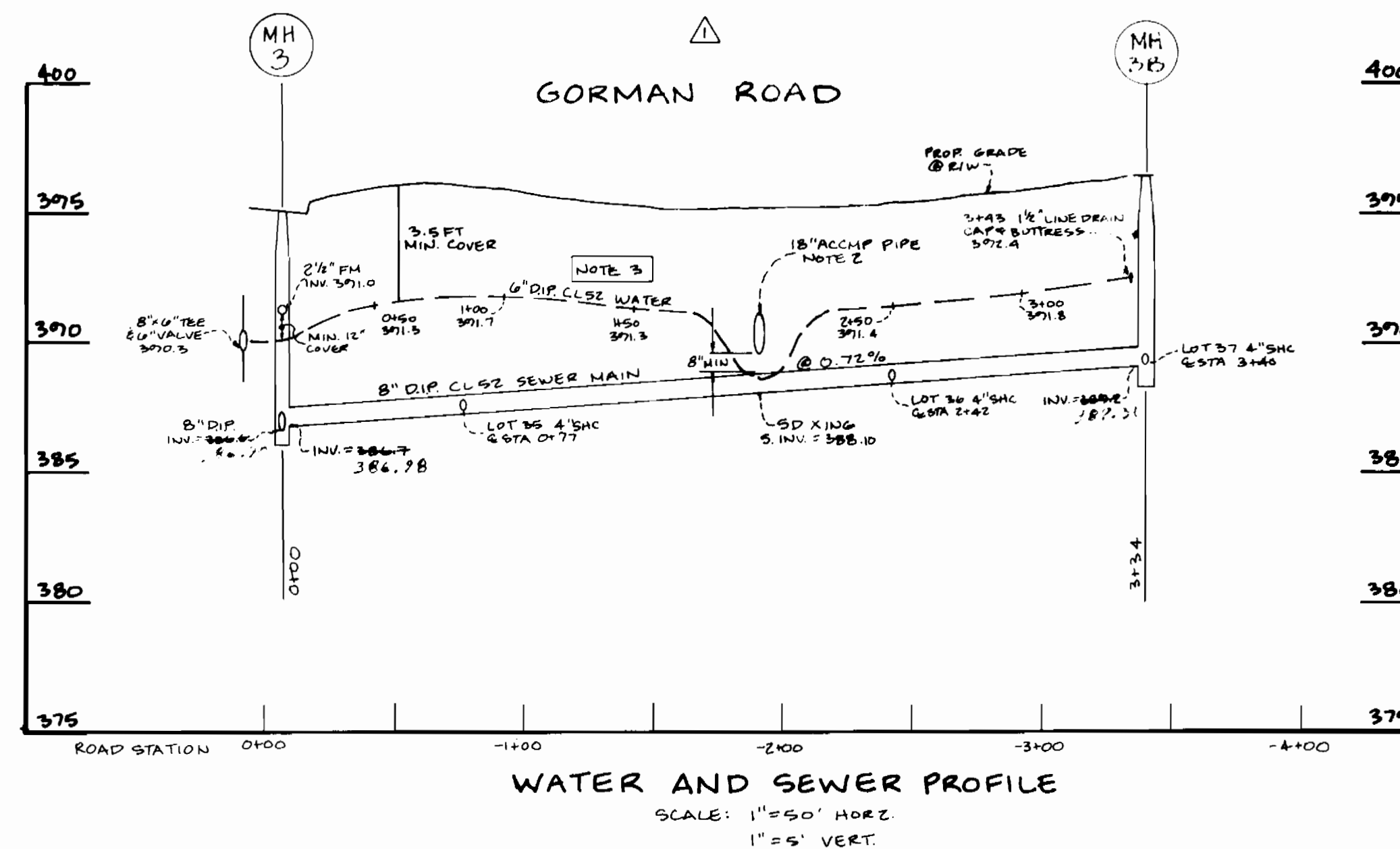
GRAVITY SEWER	—————
SEWER FORCE MAIN	=====
WATER MAIN	-----



PROFILE
SCALE- HOR. : 1" = 50'
VERT. : 1" = 5'

MINIMUM BASEMENT ELEVATION

LOT	ELEVATION
35	370.23
36	371.53
37	372.16



WATER AND SEWER PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

3/31/94
DATE

3/30/94
DATE

3-25-94
DATE

3/30/94
DATE

PREPARED BY:
AMERICAN ENGINEERING, INC.
CIVIL ENGINEERING CONSULTANTS
AND LAND PLANNER

871-A MAIN STREET
LAUREL, MD. 20707

BALT. (410) 880-3039
WASH. (301) 953-1221



DES: B.I.S.	12/19/94
DRN: W.D.F.	
CHK: D.C.W.	
DATE: 10/92	
BY: NO.	REVISION
DATE	

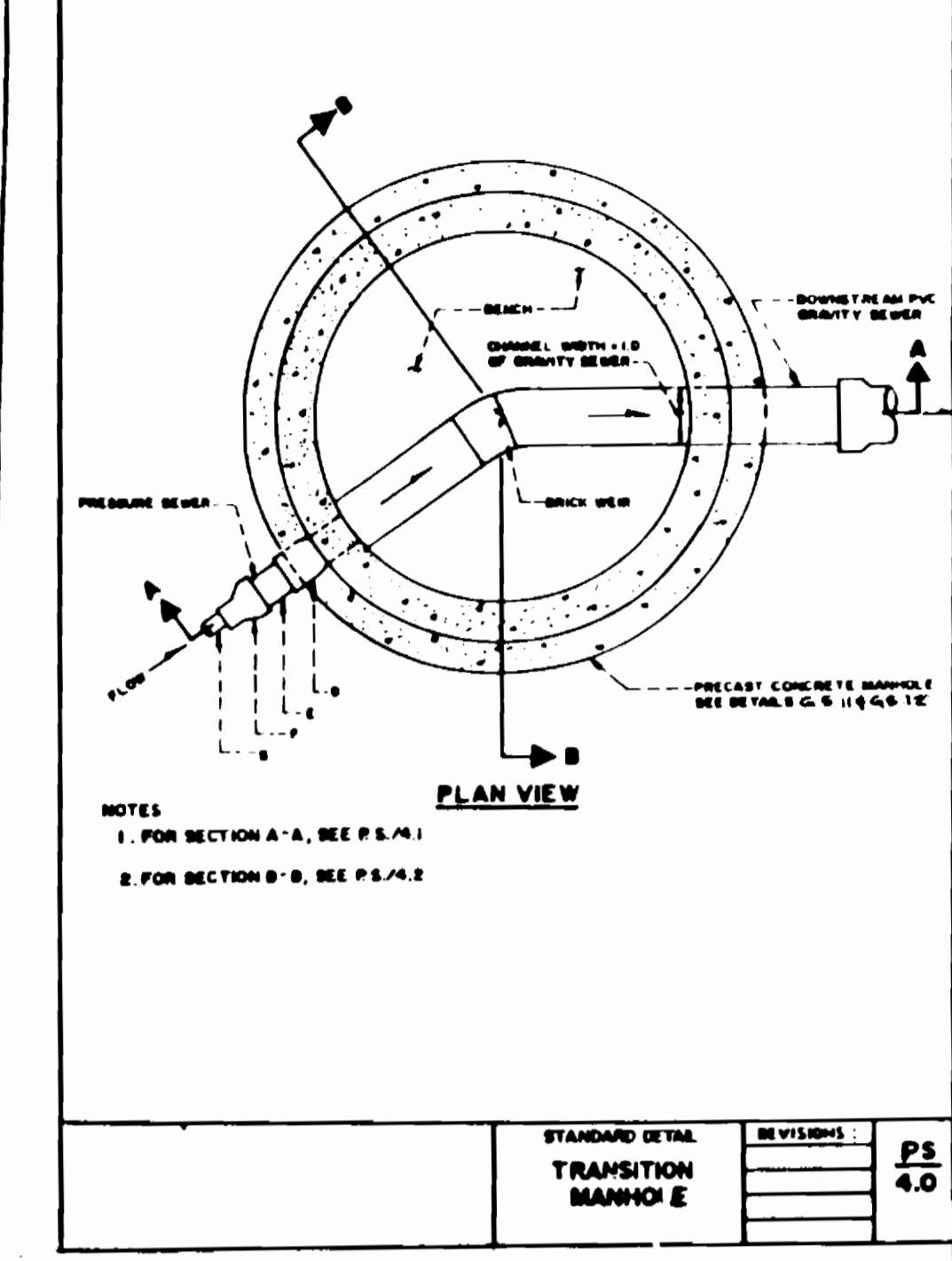
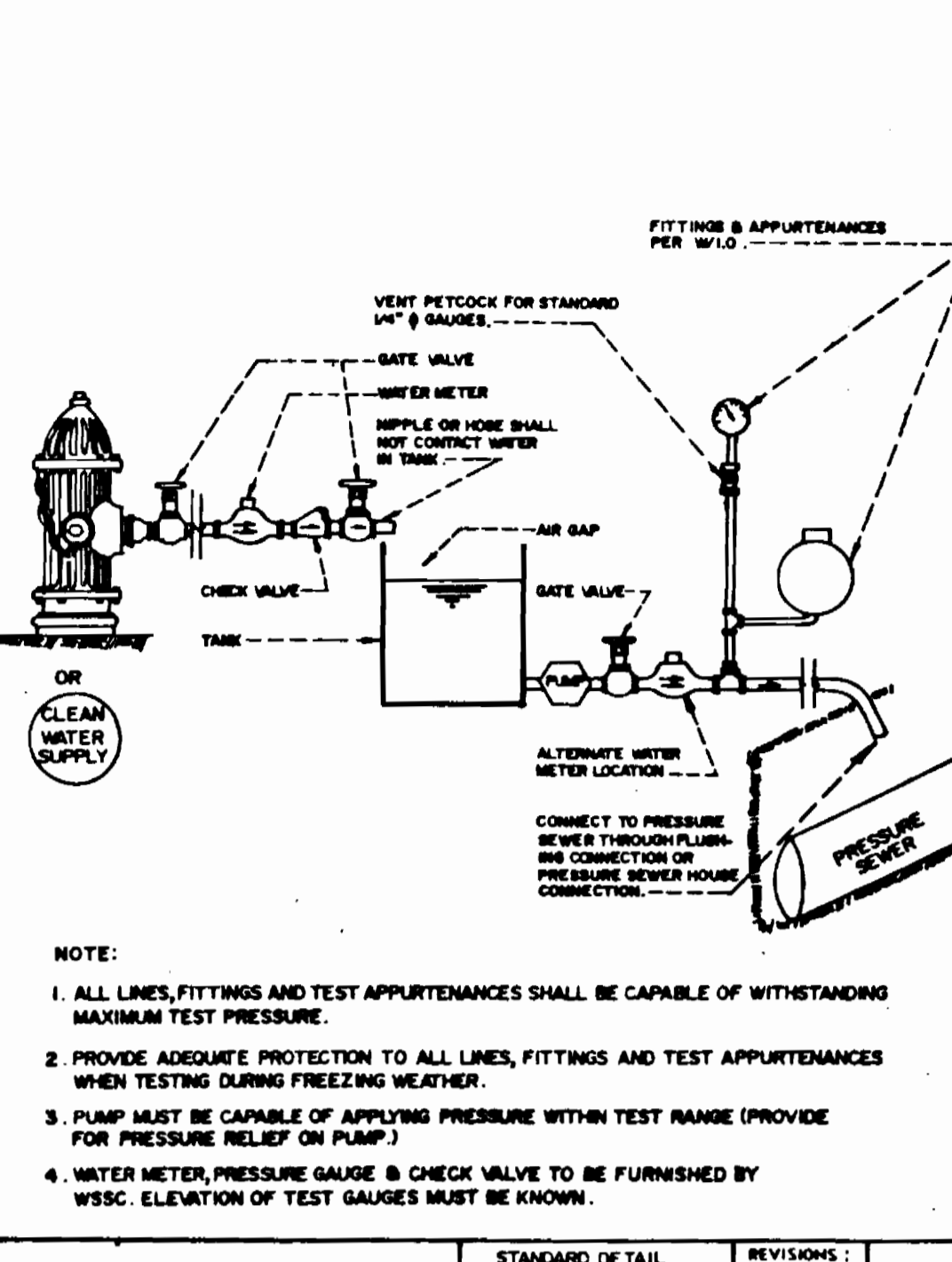
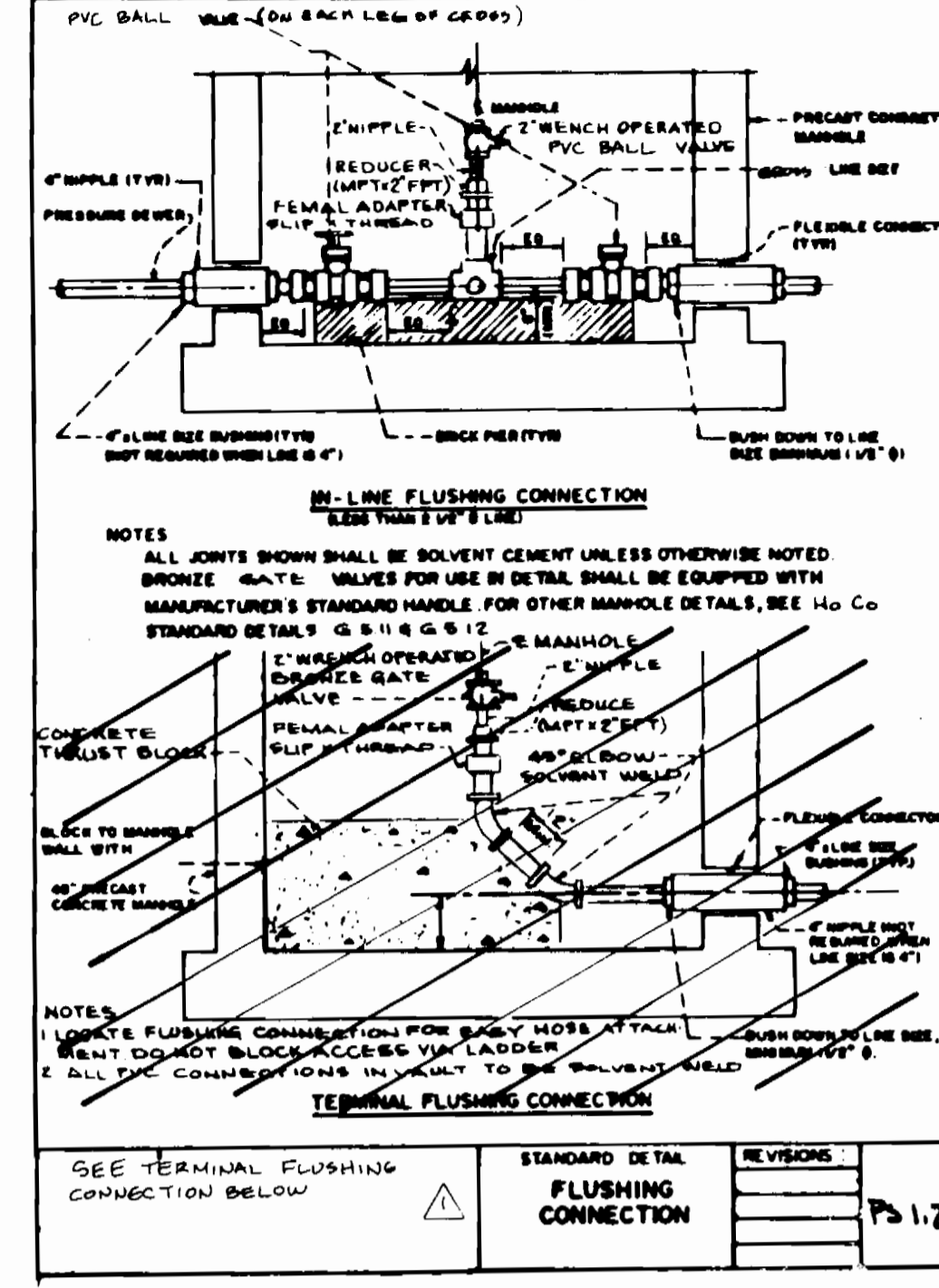
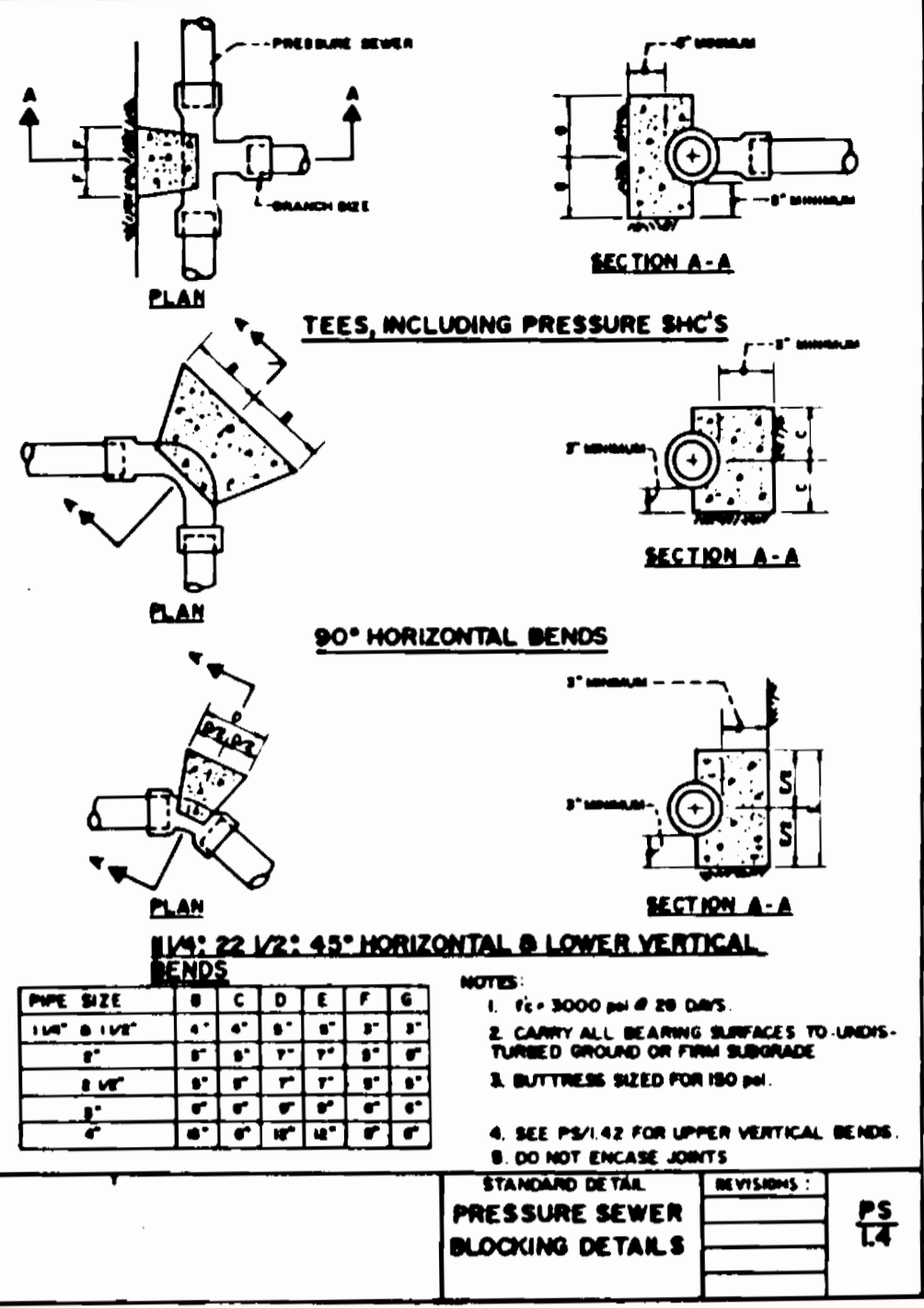
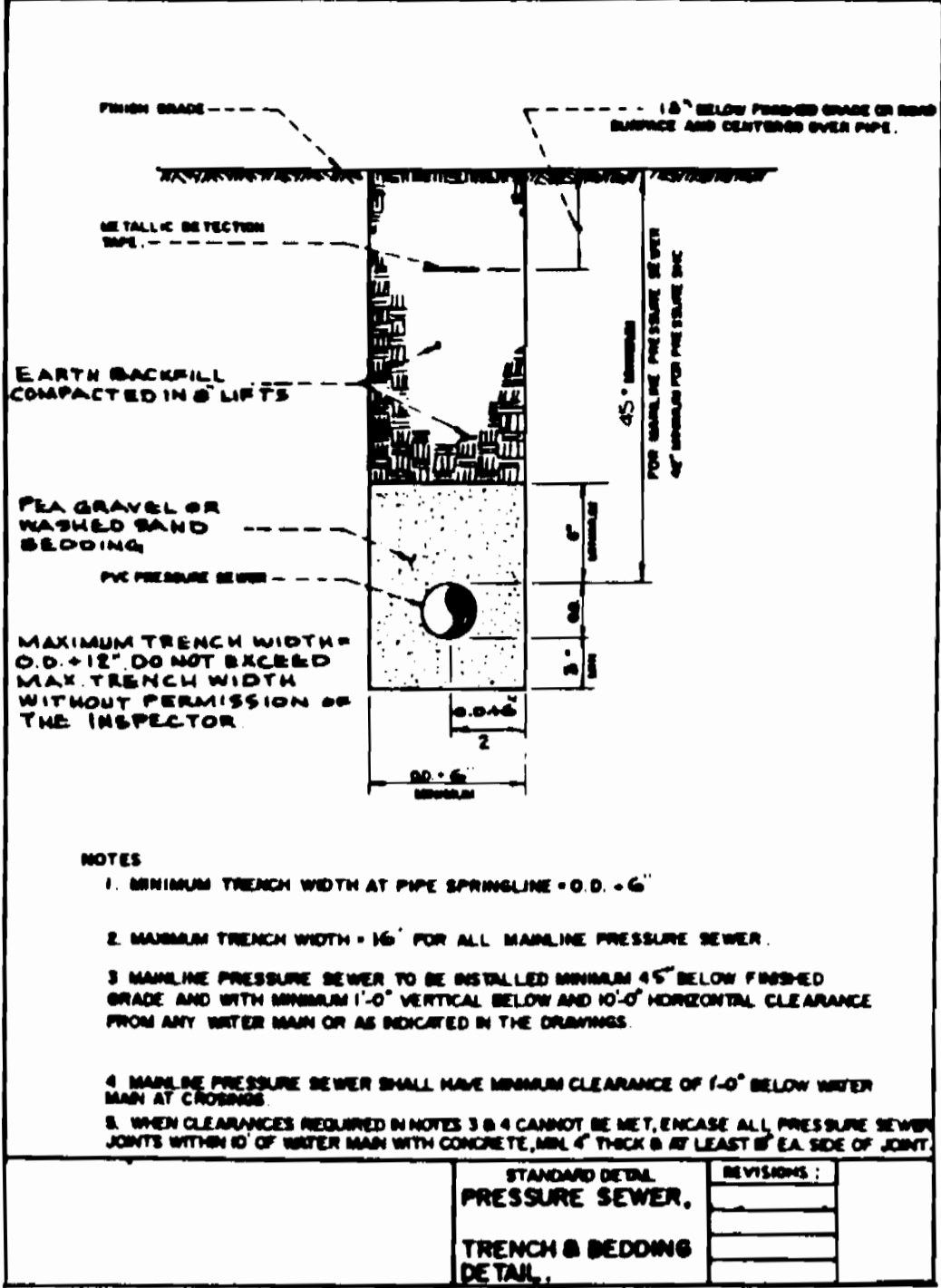
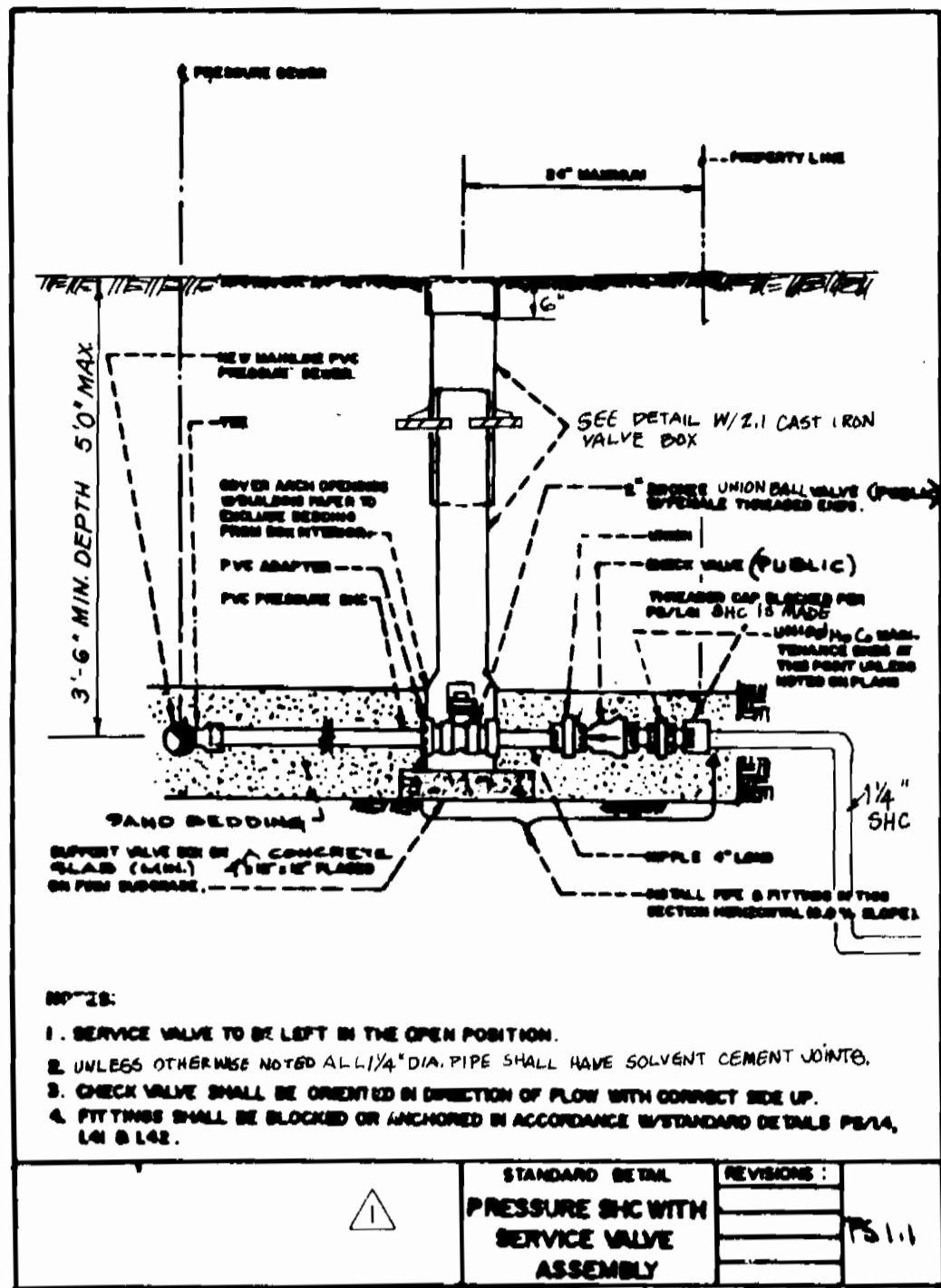
PROFILE
WATER AND SEWER
MAIN EXTENSIONS

600'SCALE MAP NO. 41 BLOCK NO. 12

COOPER PROPERTY
SECTION 1 / AREA 1 LOTS 1-38
CONTRACT NO. 24-0217-D
ELECTION DISTRICT NO. 8
HOWARD COUNTY, MARYLAND.

SCALE
AS
SHOWN

SHEET
4 OF 5



PRESSURE TESTING SPEC.

1. Field pressure tests shall be performed on PVC pressure sewer pipe and connections 4-inch or smaller diameter.

a. Pressure gauge, valves, water and water meter for testing will be furnished by the Contractor shall set up the testing equipment by connecting to PVC pressure sewers at tees, house connections, flushing assemblies, or other approved fittings. When testing a new pressure sewer system without direct connections to a sanitary sewer, the Contractor shall set up testing apparatus in accordance with Standard Detail W11.0. When testing new pressure sewer system which is connected to an existing system, the Contractor shall set up testing apparatus equipment in accordance with Standard Detail PS7.0.

b. Test pressure shall be 100 psi at the low point of the system or as indicated on the Drawings but the Contractor shall not exceed this pressure.

c. The Contractor shall conduct all pressure testing with the Engineer in attendance. Contractor shall provide 72 hours notice to Engineer prior to testing.

d. Before beginning the pressure test, the Contractor shall:

- Cure solvent cement joints and concrete thrust blocks.
- Completely backfill the pipe as specified in Section 02200.
- Cap or plug ends of test sections and brace caps to withstand thrust developed under test pressure.
- Slowly fill section of pipe to be tested with water until completely full and all has been expelled.

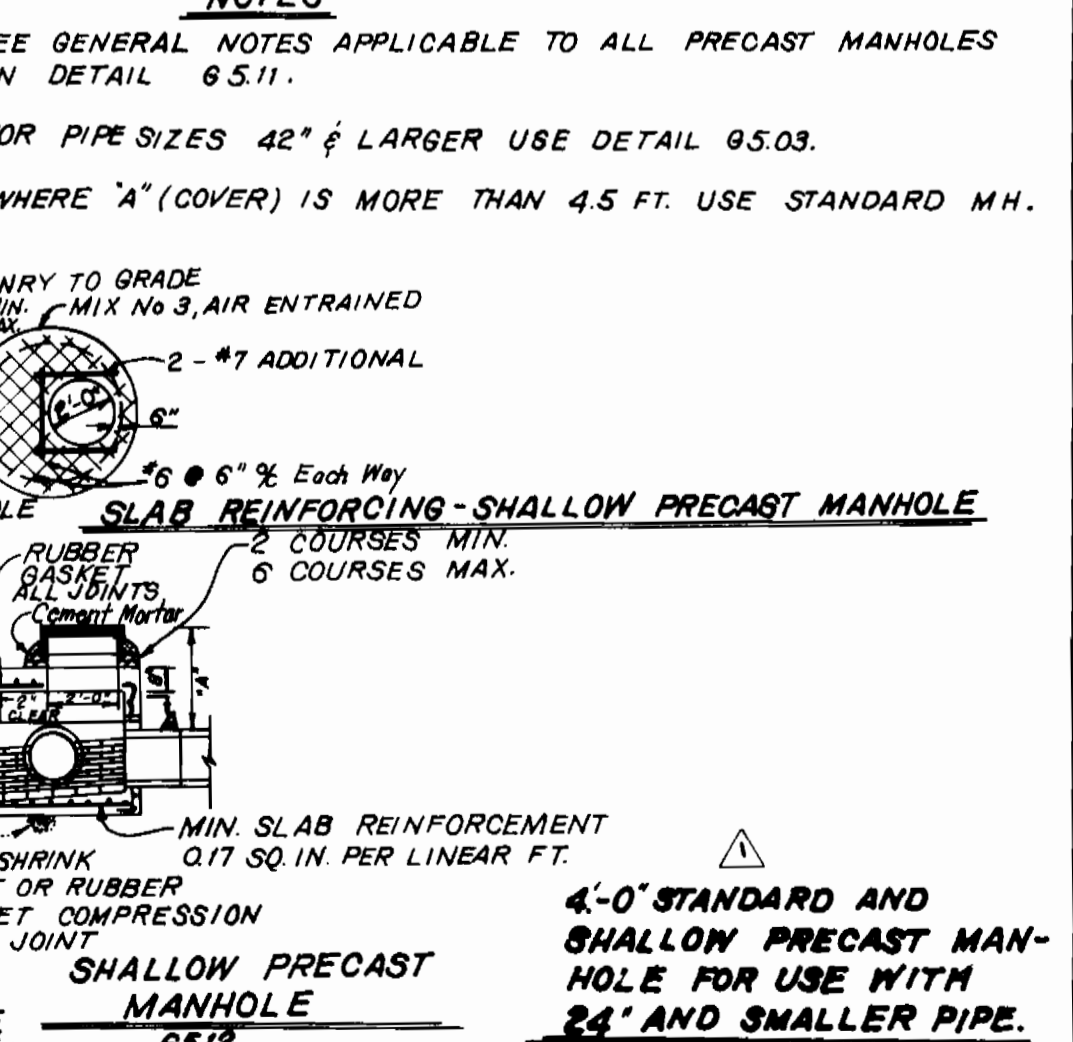
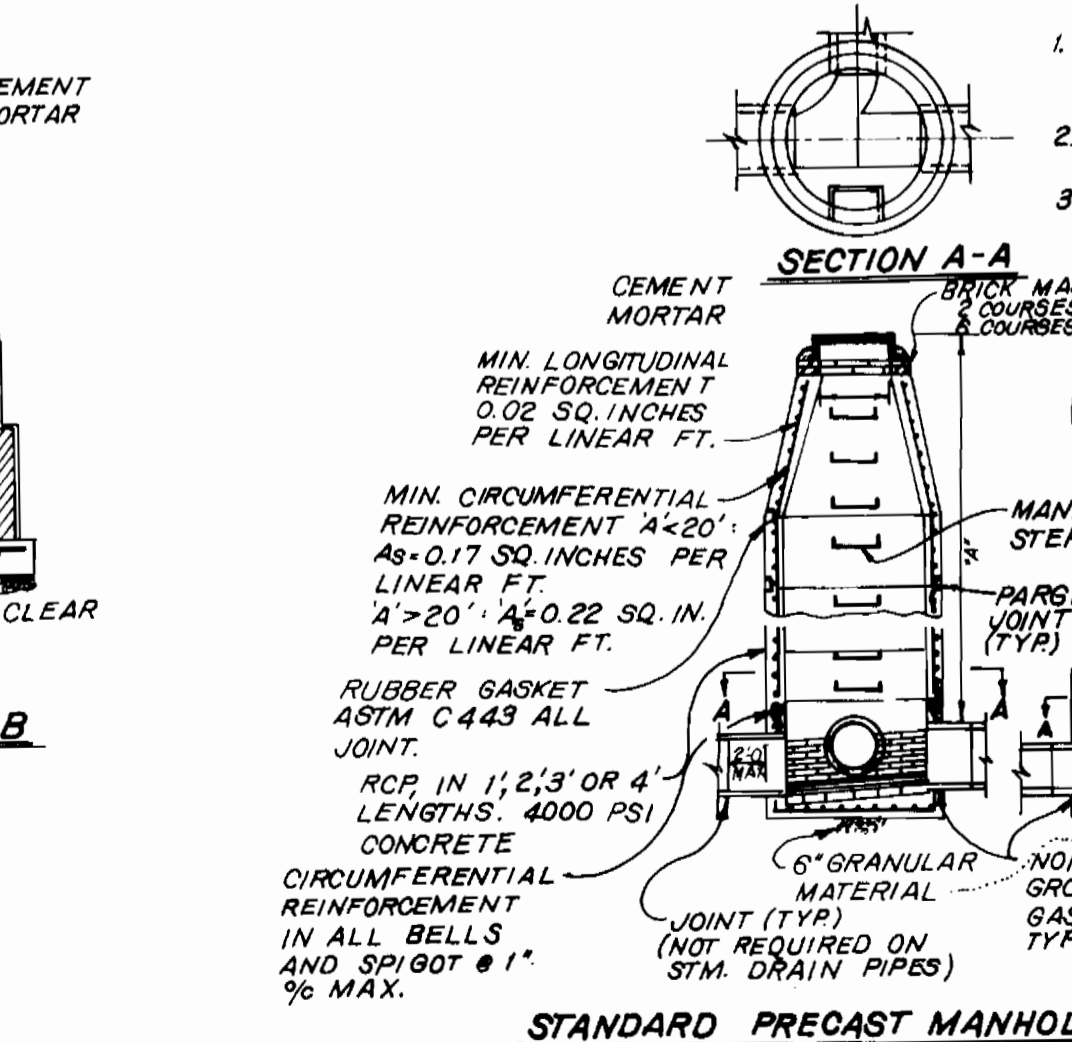
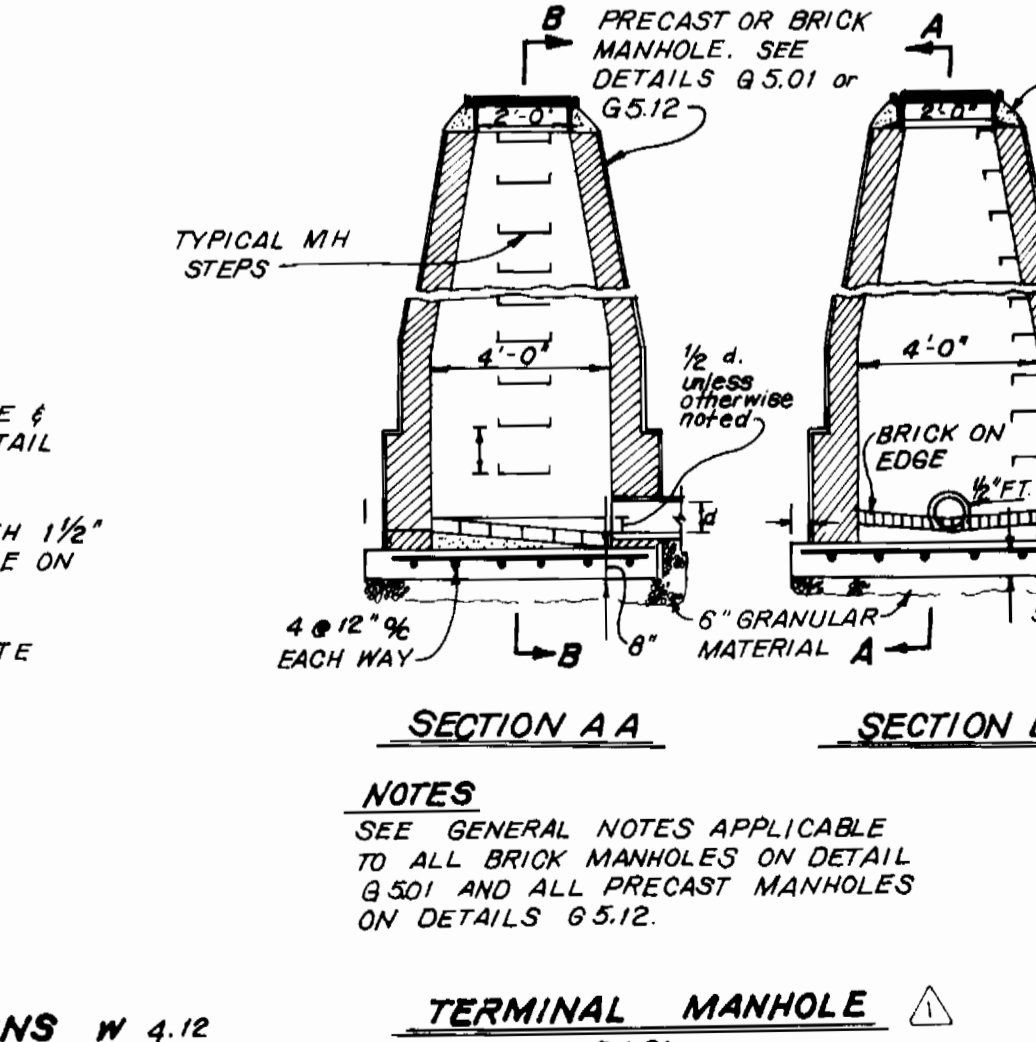
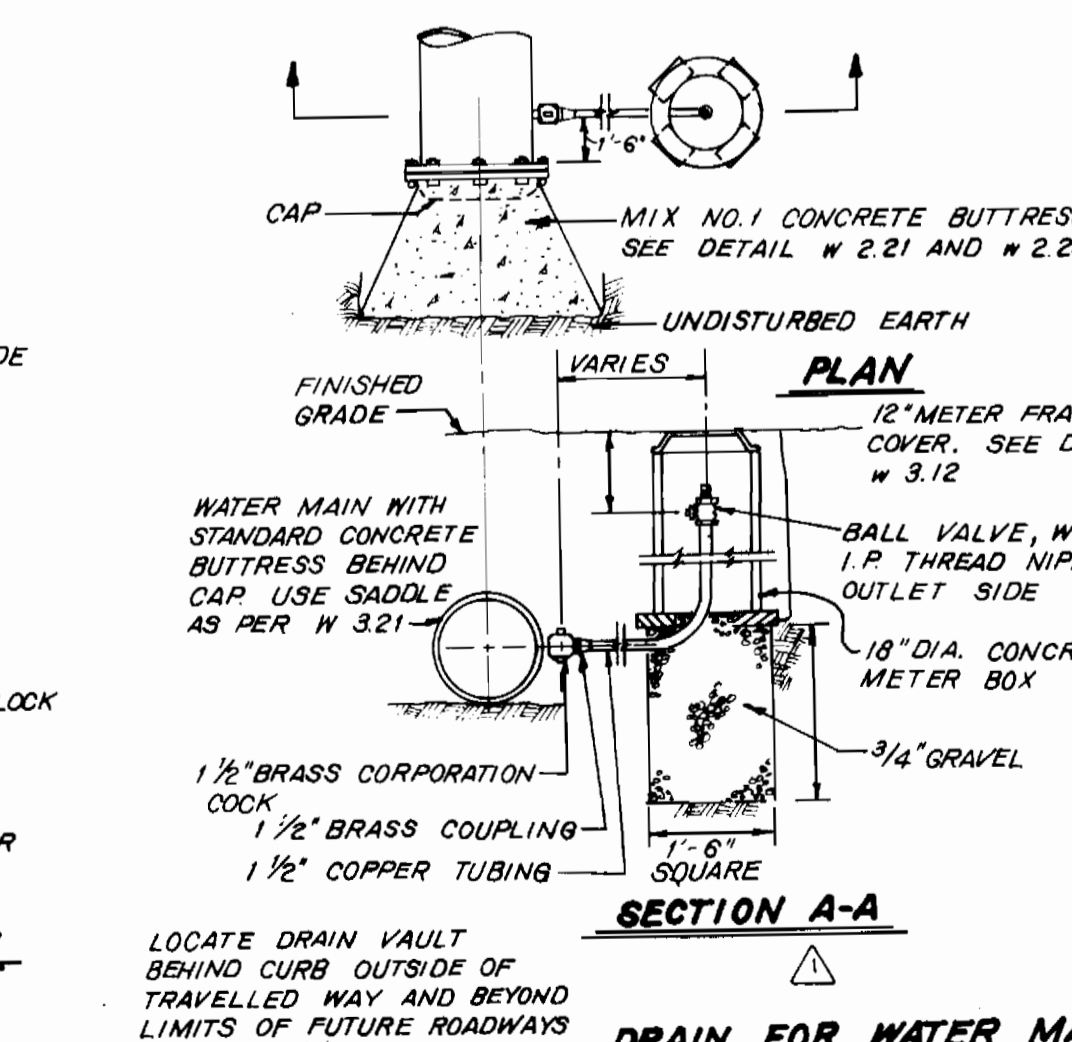
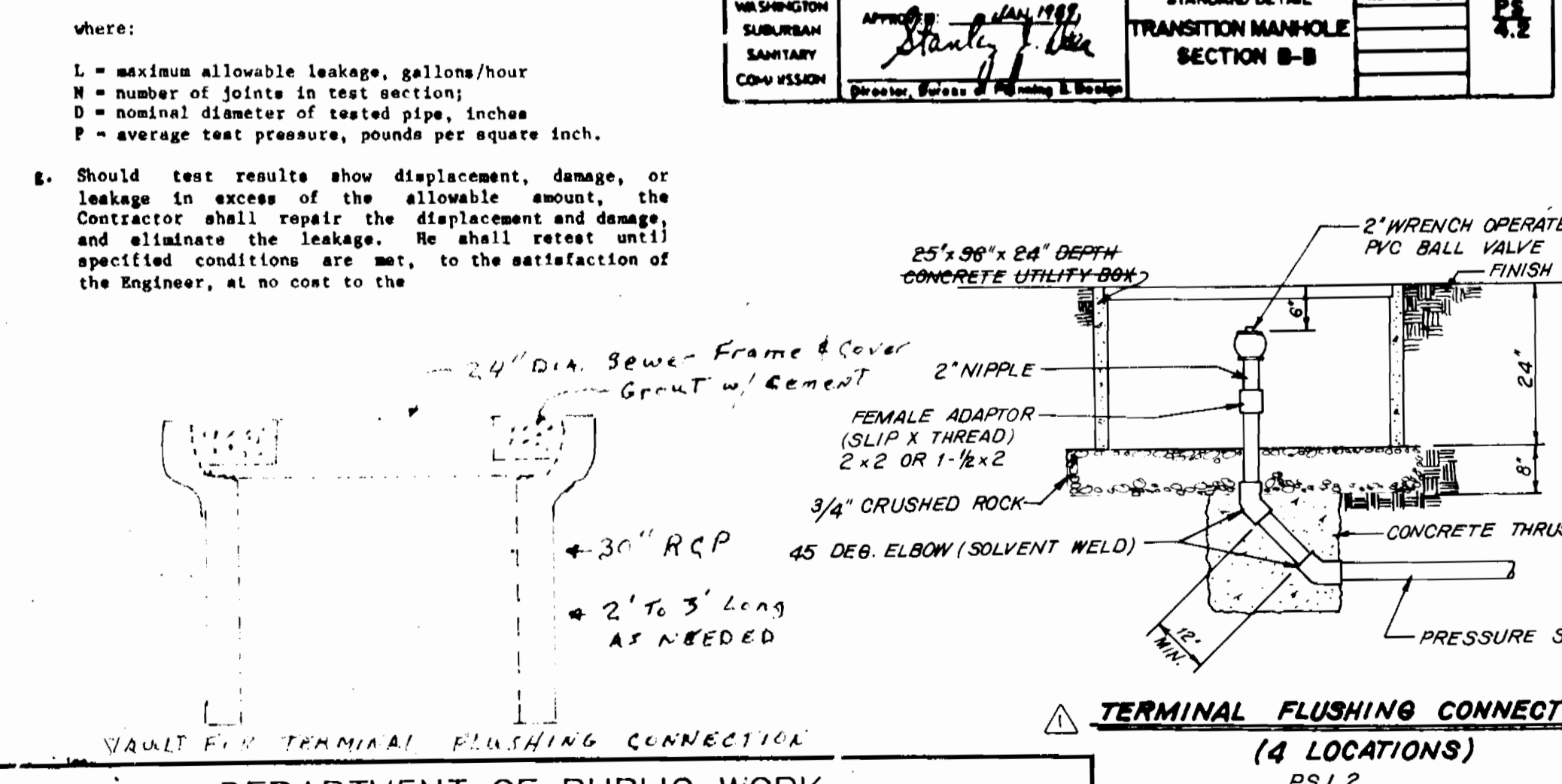
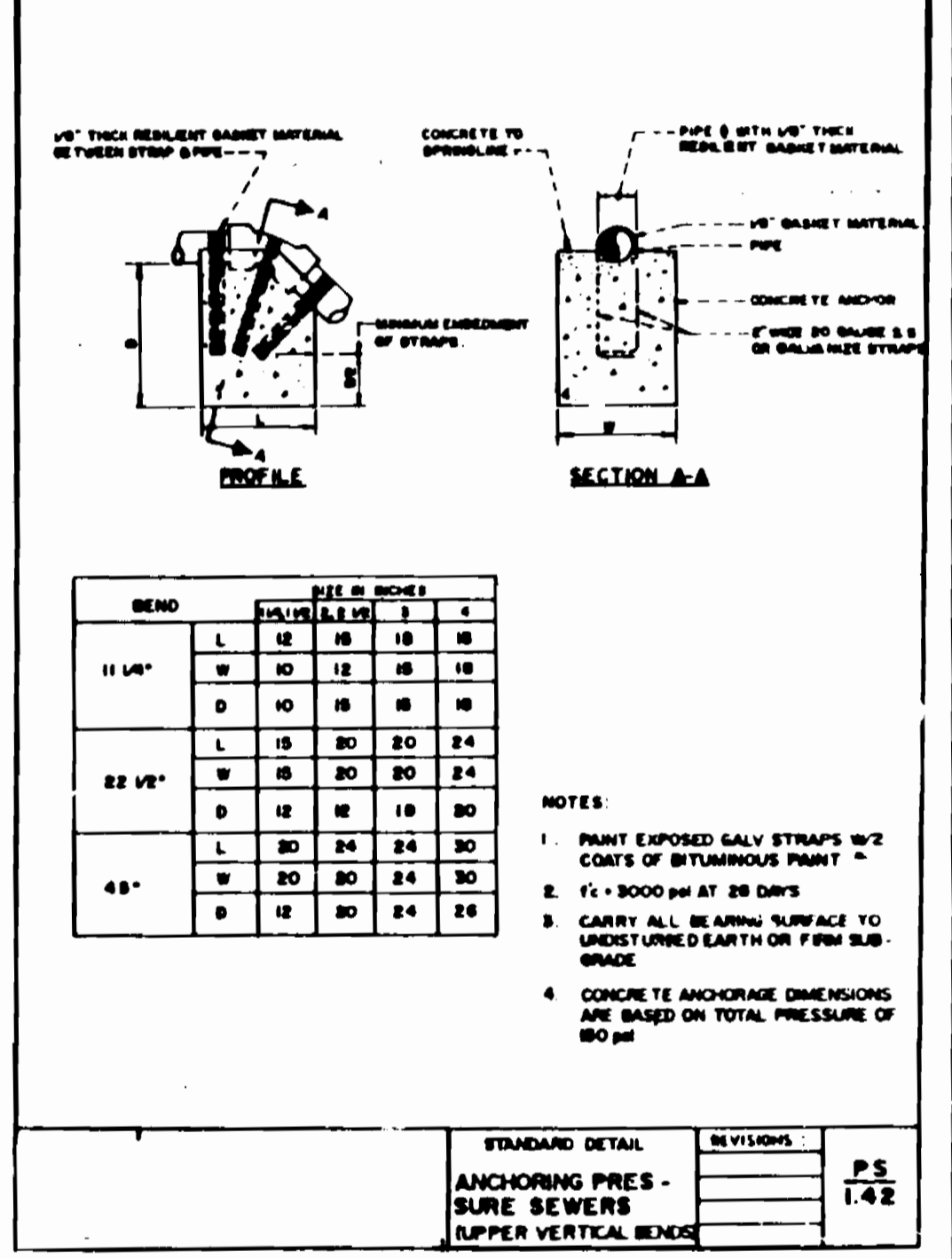
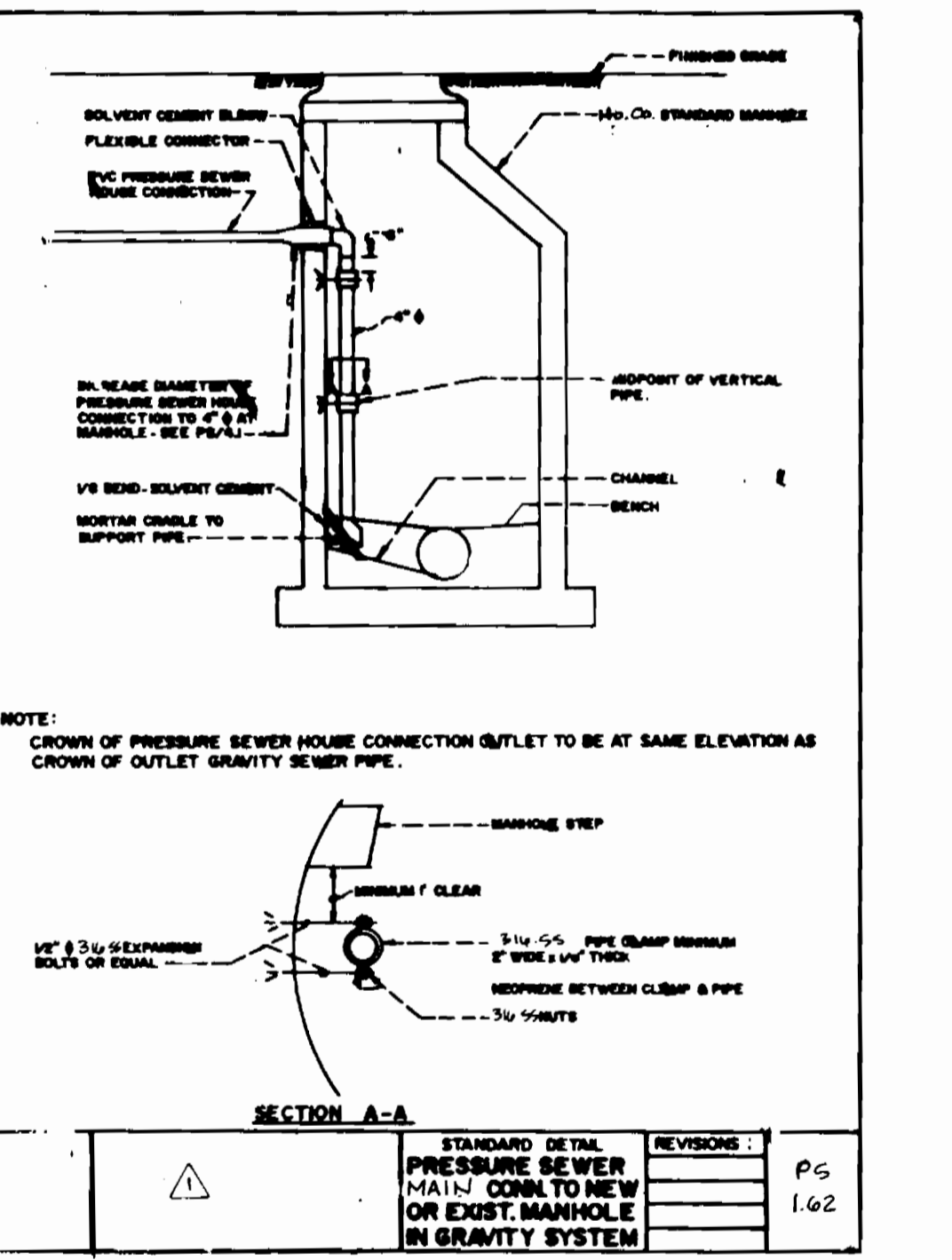
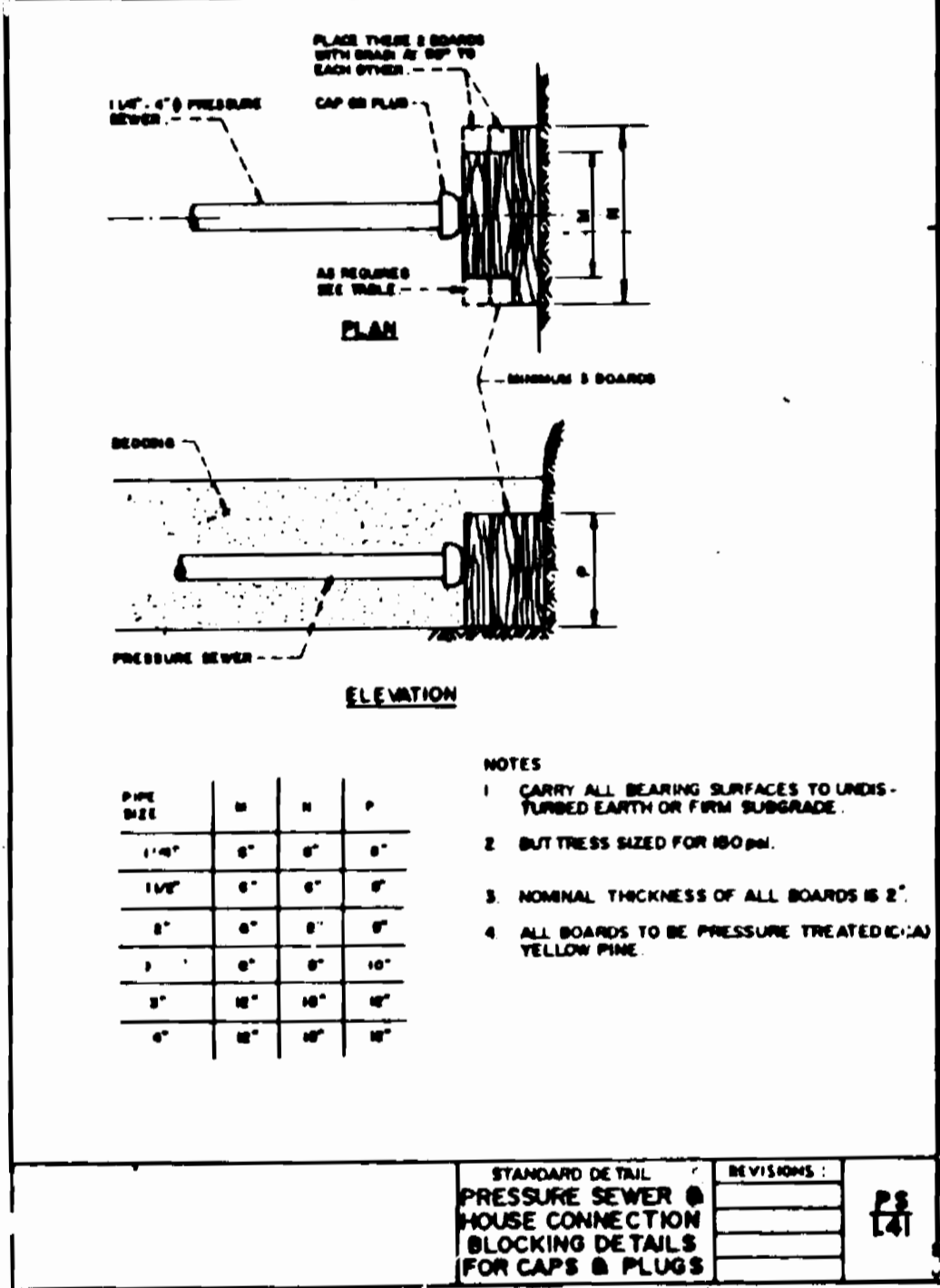
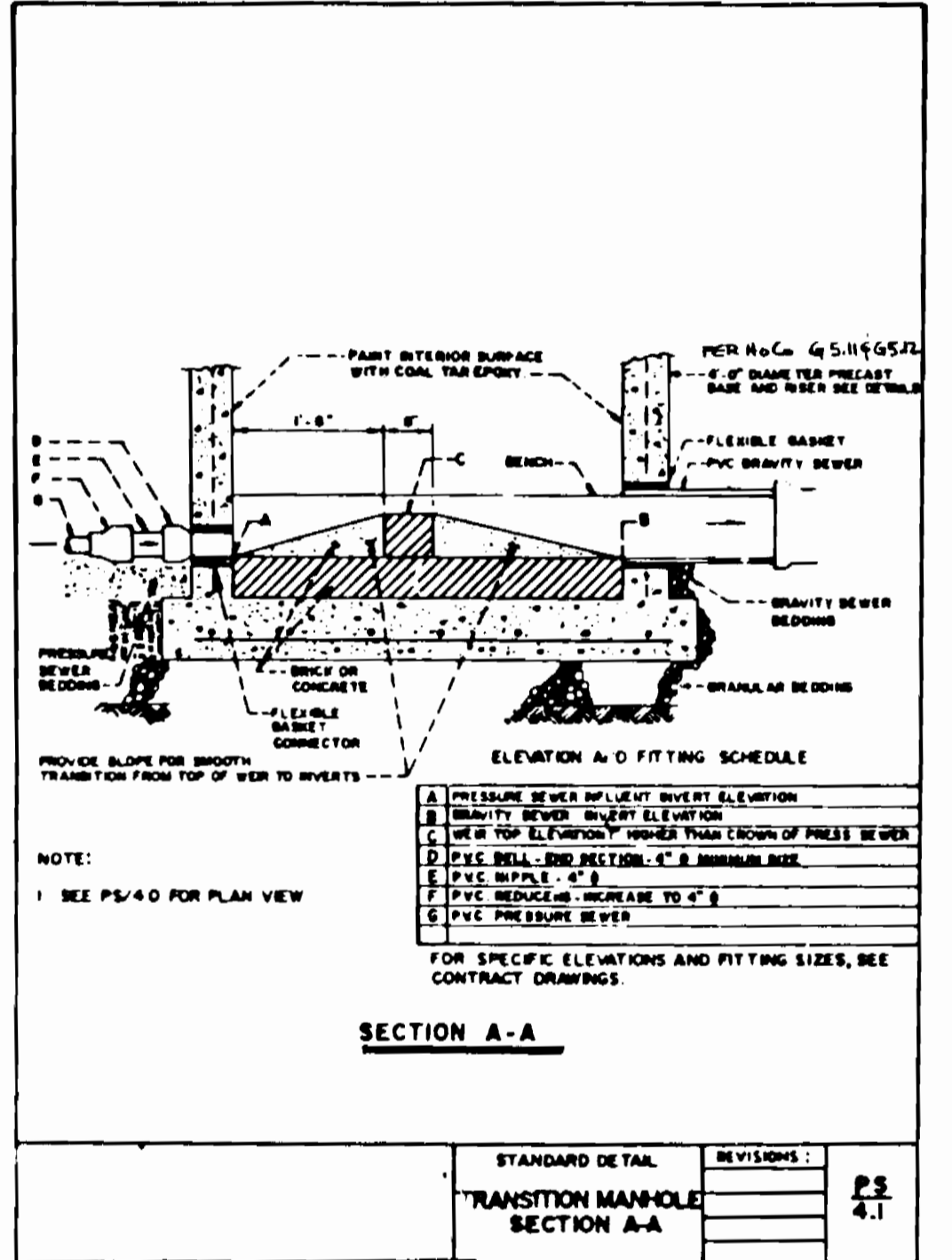
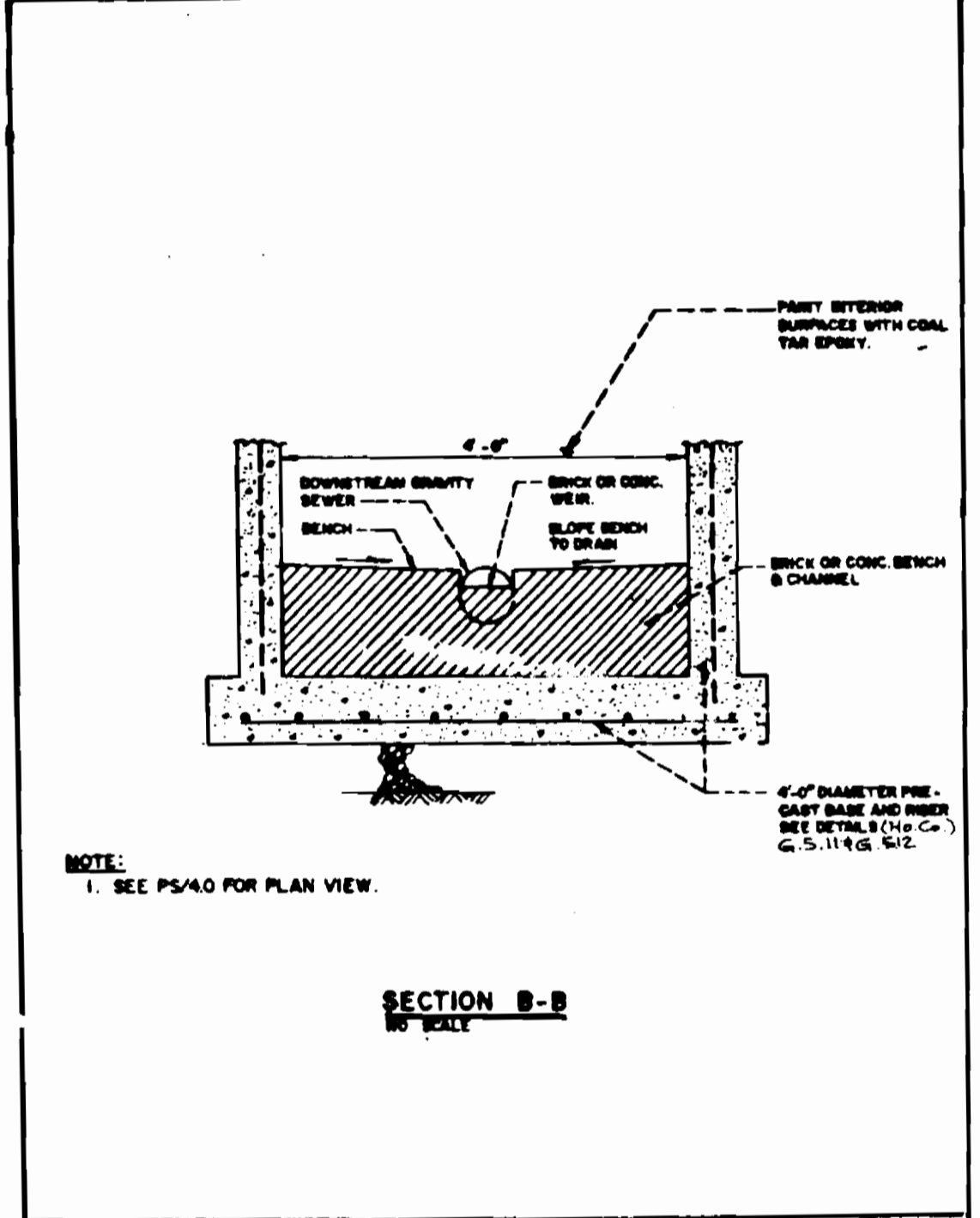
e. Subject test section to the test pressure for a minimum of two hours. Completion personnel will operate valves during this portion of the test.

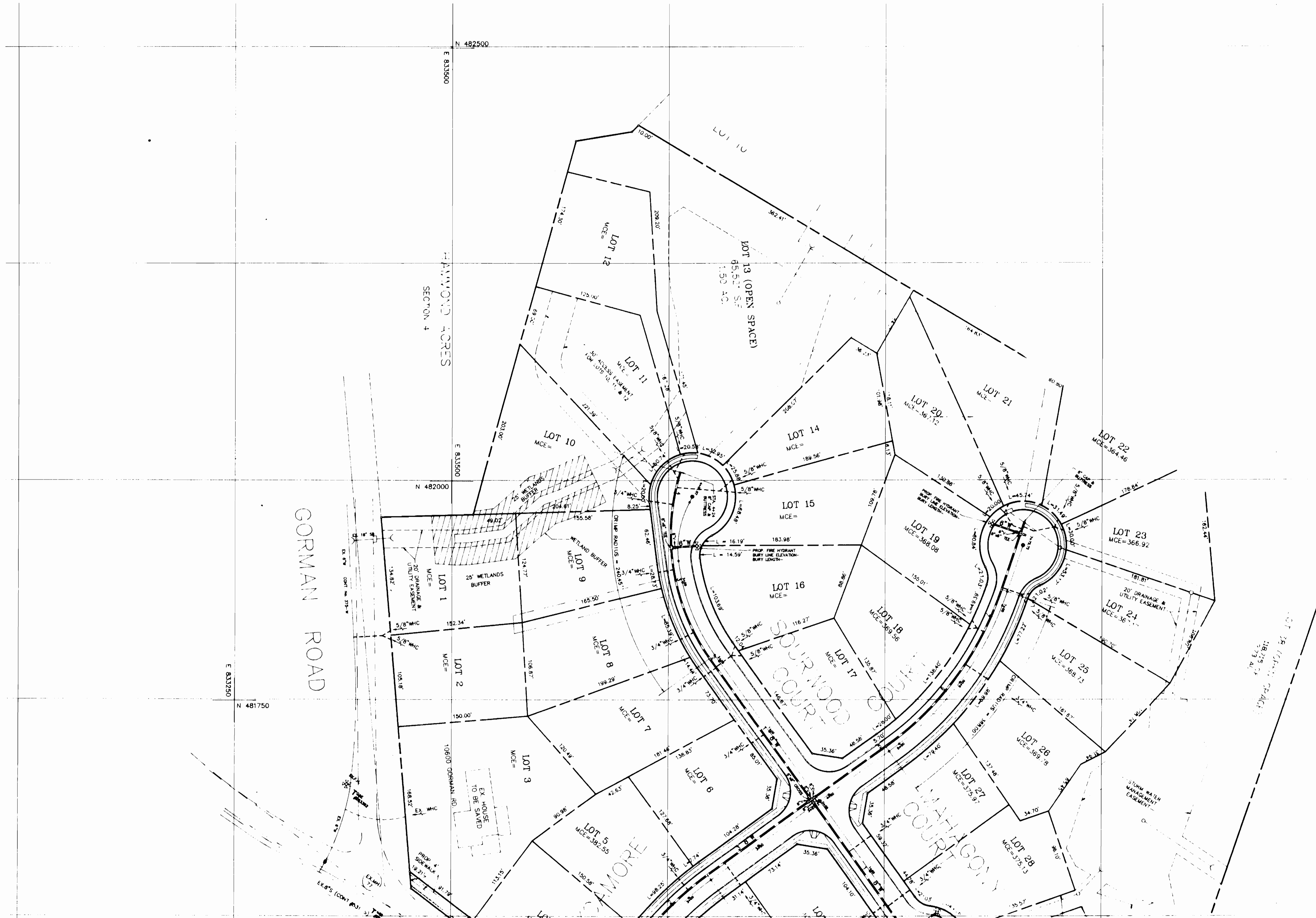
f. No leakage allowance will be permitted for pipe with solvent cement joint or threaded joint. Maximum allowable leakage for pipe with gasketed joints will be calculated using the following formula:

$$L = \frac{NVP}{7000}$$

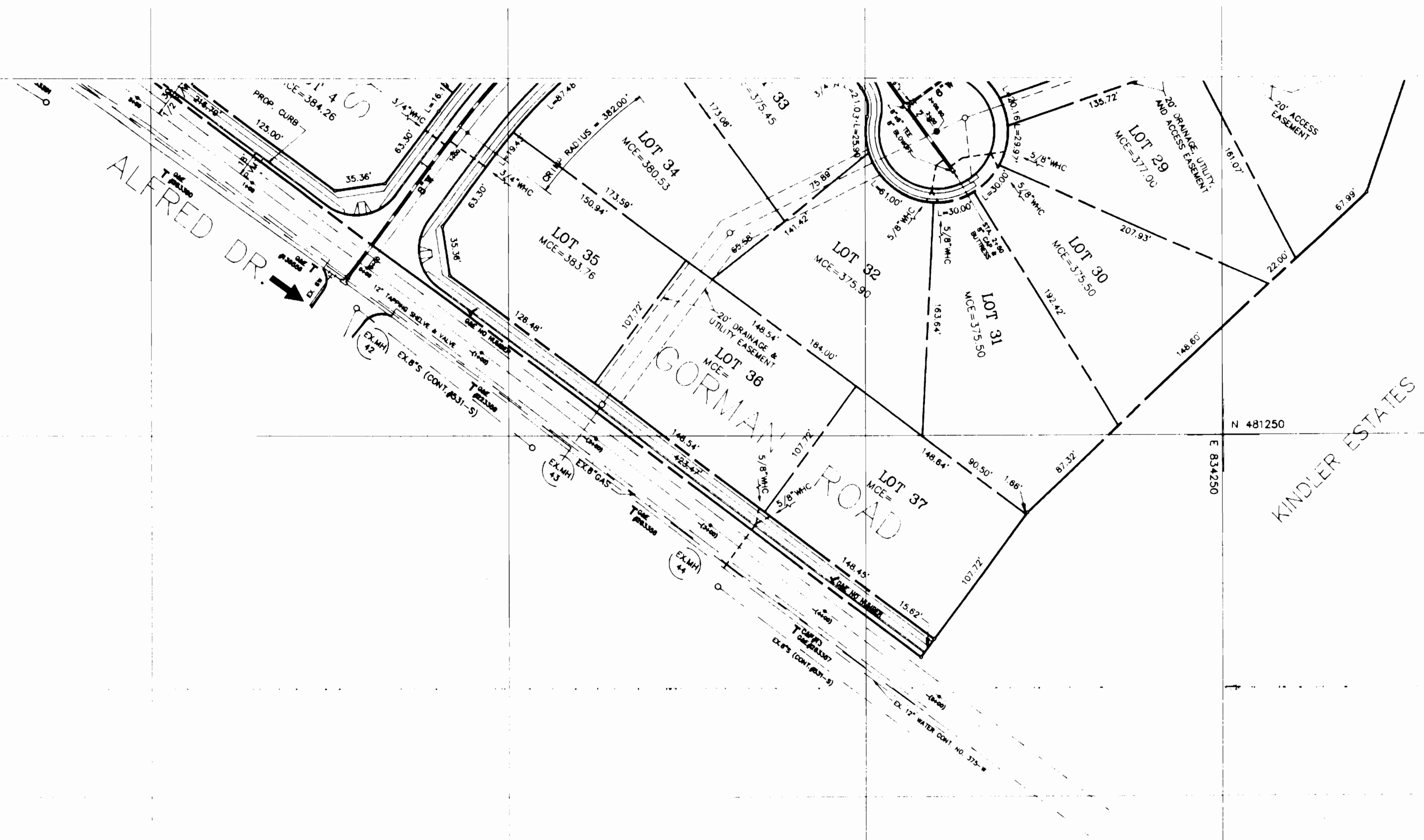
where:
 L = maximum allowable leakage, gallons/hour
 N = number of joints in test section;
 D = nominal diameter of tested pipe, inches
 P = average test pressure, pounds per square inch.

g. Should test results show displacement, damage, or leakage in excess of the allowable amount, the Contractor shall repair the displacement and damage, and eliminate the leakage. He shall retest until specified conditions are met, to the satisfaction of the Engineer, at no cost to the





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