

3423 ws/1 Centre 9500 / The Timbers @ Troy Golf Course

QUANTITY TABLE			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	8" DIP CLASS 52 (WATER)	398	LF
2	6" DIP CLASS 52 (WATER)	25	LF
3	4" DIP CLASS 52 (WATER)	15	LF
4	6" SDR 35 (PRIVATE GRAVITY SEWER)	397	LF
5	8" SDR 35 (GRAVITY SEWER)	385	LF
6	2" SDR 21 (PRESSURE SEWER)	2486	LF
7	2" SDR 21 (PRIVATE PRESSURE SEWER)	322	LF
8	NO. OF WATER HOUSE CONNECTIONS	2	EA
9	NO. OF SEWER HOUSE CONNECTIONS	2	EA
10	750 GALLON GREASE TRAP	1	EA
11	AIR RELEASE MANHOLE	1	EA
12	FLUSHING CONNECTION	2	EA
13	SERVICE VALVE	2	EA
14	2" 1/8 HB	2	EA
15	2" 1/16 VB	2	EA
16	4" DIP CASING PIPE	40	LF
17	MANHOLE	1	EA
18	FIRE HYDRANTS	2	EA
19	8"x6" TEE	2	EA
20	8"x4" TEE	1	EA
21	6" VALVE	2	EA
22	4" VALVE	2	EA
23	4" PLUG	2	EA
24	8"x4" REDUCER	1	EA

BENCHMARK DATA		
NO.	LOCATION (1)	ELEVATION
37 EA	MARYLAND ROUTE 100 AT INTERSECTION 95	248.11
37 F3	MARYLAND ROUTE 100 0.4 MILE WEST OF INTERSECTION 95	291.77

1) REFER TO HOWARD COUNTY LOCATION SKETCH FOR EXACT LOCATION.

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

APPROVED: *[Signature]* 6/1/95  
HOWARD S.C.D. DATE

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

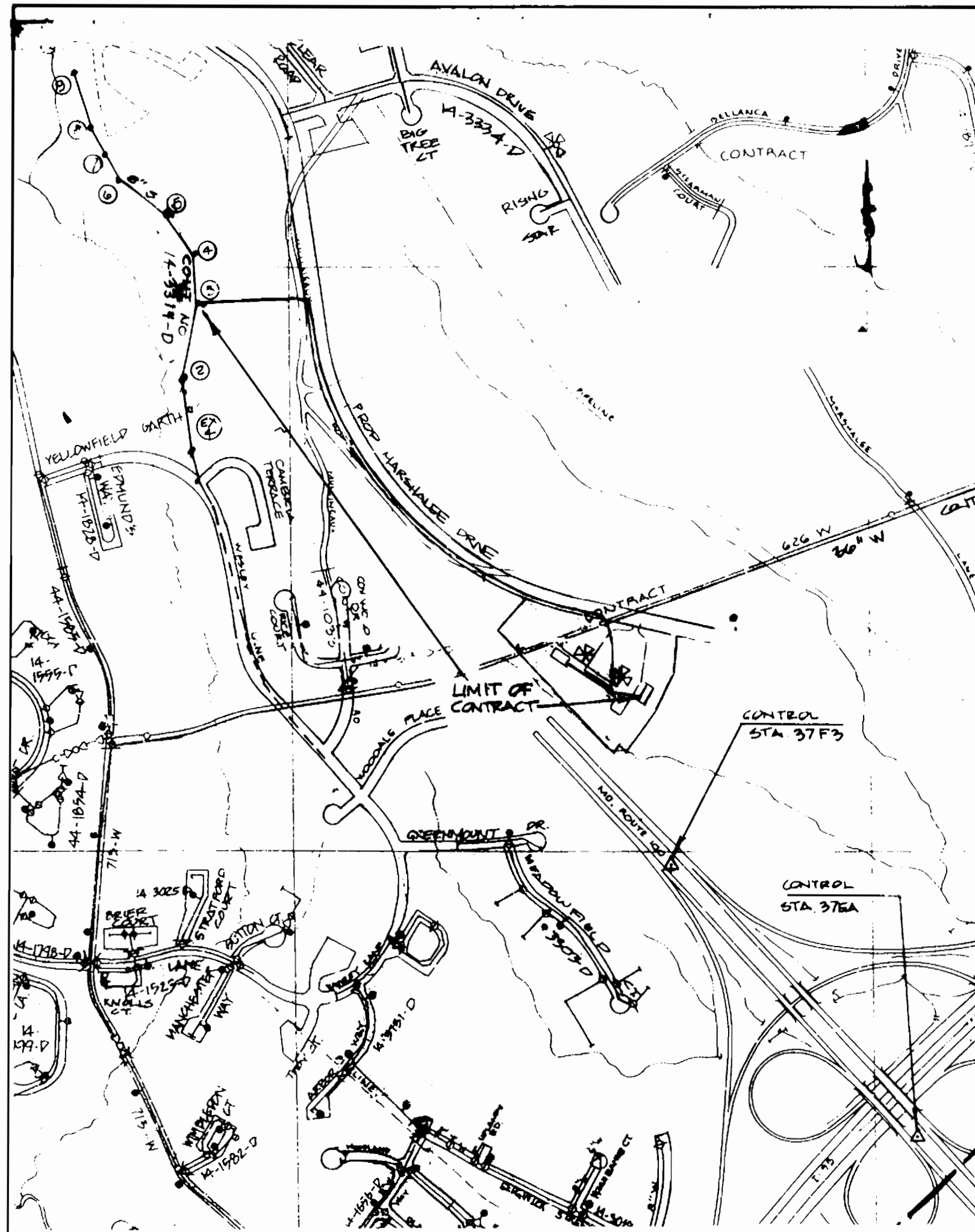
APPROVED: *[Signature]* 6/1/95  
U.S. SOIL CONSERVATION SERVICE DATE

NOTE: SEDIMENT CONTROL SHALL BE PROVIDED AS PER SDP-95-92, SDP-95-77 AND SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV, SECTION 219.

TYPE OF BUILDING - 8,000 SQ. FT. CLUBHOUSE  
 NO. OF LOTS/PARCELS - 1  
 NO. OF WATER HOUSE CONNECTIONS - 1  
 NO. OF SEWER HOUSE CONNECTIONS - 0  
 DRAINAGE AREA - PATAPSCO  
 TREATMENT PLANT - PATUXENT

WATER CODE - D04  
 SEWER CODE - 2610000  
 TEST GRADIENT - X

SHEET INDEX	
SHEET NO.	TITLE
1	TITLE SHEET
2	PLAN
3	PLAN
4	PROFILES
5	DETAILS AND DETAILS



VICINITY MAP  
SCALE 1"=800'

GENERAL NOTES

PART I

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TOWER AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWNED BY 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 DETAILS 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 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 UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
  - STATE HIGHWAY ADMINISTRATION (410) 531-5533
  - BGE CO. CONTRACTOR SERVICES (410) 850-4620
  - BGE CO. UNDERGROUND DAMAGE CONTROL (410) 787-9068
  - MES'S UTILITY 1-800-257-7777
  - COLONIAL PIPELINE (410) 795-1390
  - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS (410) 313-4900
  - BUREAU OF UTILITIES
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORROWING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPM REQUIREMENTS PER SECTION 18.114(G) OF THE HOWARD COUNTY CODE.

PART II - 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'-1/2' COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- 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 PLANS OR IN SPECIFICATIONS.
- THE MINIMUM VERTICAL CLEARANCE BETWEEN ANY WATER MAIN AND ANY OTHER UNDERGROUND UTILITIES IS ONE FOOT.

PART III - SEWER

- ALL SEWER MAINS SHALL BE DIP, CSPX OR P.V.C. UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE PVC SDR 21. FOR DETECTION USE MAGNETIC DETECTABLE TAPE ON THE PVC FORCE MAIN.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER-TIGHT FRAME AND COVERS, STANDARD DETAIL GS-52. WHERE WATER-TIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1" - 6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.
- GRINDER PUMP SHALL BE ENVIRONMENT ONE CORPORATION MODEL 2014.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 6/1/95  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 5-26-95  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 6/1/95  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 6/1/95  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**RBA** ENGINEERS - ARCHITECTS - PLANNERS

7164 COLUMBIA GATEWAY DRIVE, SUITE 205  
COLUMBIA, MARYLAND 21046  
410-312-0964



DES.	BY	NO.	REVISION
J.W.C.			
DRN:	E.L.B.		
CHK:	M.G.M.		
DATE:	5/16/95		

TITLE SHEET  
WATER AND SEWER EXTENSION PLAN

NUMBER OF LOTS: 1

600' SCALE MAP NO. 37 BLOCK NO. 10

CENTRE 9500, PARCEL K  
THE TIMBERS AT TROY GOLF COURSE  
CLUBHOUSE AND MAINTENANCE FACILITIES

CONTRACT NO. 14-3423-D

1ST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

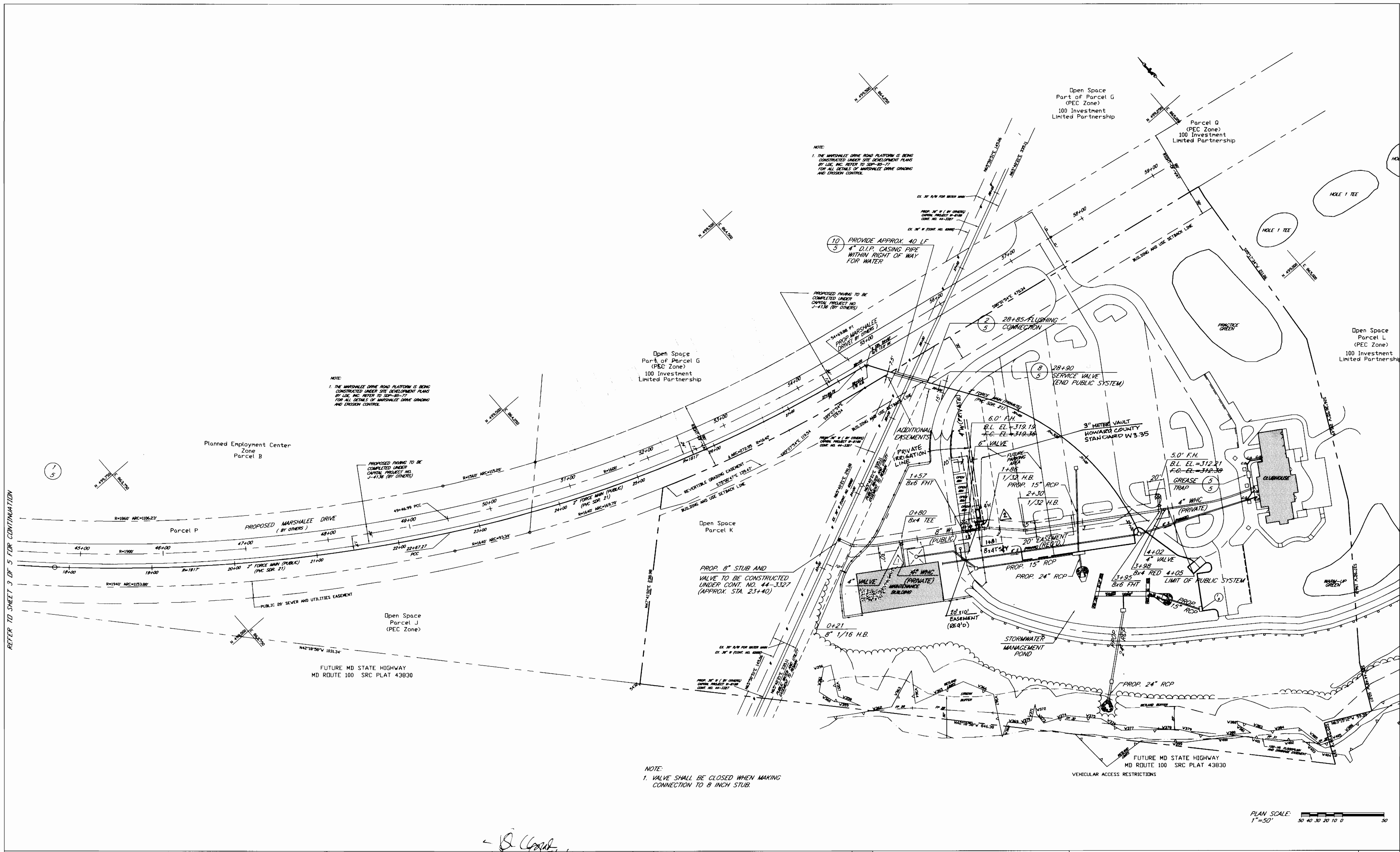
SCALE AS SHOWN

SHEET 1 OF 5

DRAWING FILE: HC121215



3423 ws/2 Centre 9500



REFER TO SHEET 3 OF 5 FOR CONTINUATION

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Conroy* 6/1/95  
DIRECTOR OF PUBLIC WORKS DATE

*Robert* 5-26-95  
CHIEF, BUREAU OF UTILITIES DATE

*Robert* 6/1/95  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert* 6/1/95  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**RBA** ENGINEERS • ARCHITECTS • PLANNERS  
7164 COLUMBIA GATEWAY DRIVE, SUITE 205  
COLUMBIA, MARYLAND 21046  
410/312-0966



DES:	BY:	NO.	REVISION
J.W.C.	J.W.C.	1	MAINTENANCE BLDG. WHC SIZE
DRN:	E.L.B.	2	ADDED IRRIGATION METER VAULT & EASEMENT 8/1/94
CHK:	M.G.M.		
DATE:	5/16/95		

PLAN  
WATER AND SEWER EXTENSION PLAN

NUMBER OF LOTS: 1

600' SCALE MAP NO. 37 BLOCK NO. 10

CENTRE 9500, PARCEL K  
THE TIMBERS AT TROY GOLF COURSE  
CLUBHOUSE AND MAINTENANCE FACILITIES

CONTRACT NO. 14-3423-D

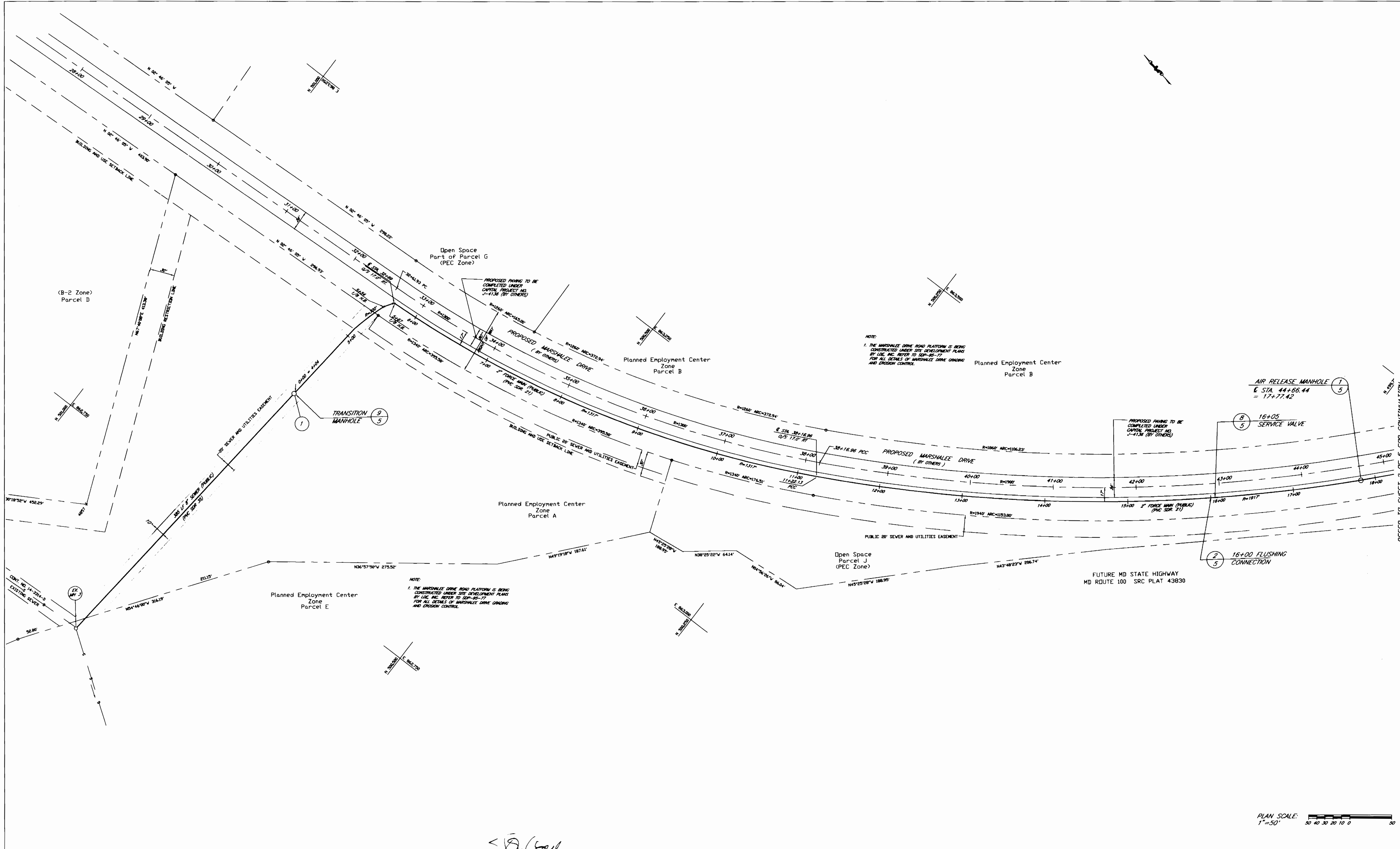
1ST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 5

DRAWING FILE: 12129AS

3423 ws/3 Centre 9500



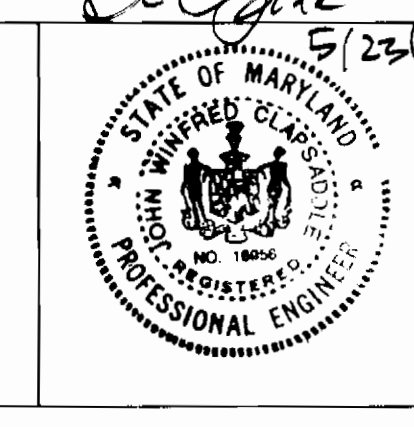
PLAN SCALE: 1"=50'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *Robert J. Baum* 5-26-95  
Chief, Bureau of Utilities

Chief, Bureau of Engineering: *Paul J. Seaton* 6/1/95  
Chief, Land Development Division: *William J. ...* 6/1/95

**RBA** ENGINEERS • ARCHITECTS • PLANNERS  
7164 COLUMBIA GATEWAY DRIVE, SUITE 205  
COLUMBIA, MARYLAND 21046  
410/312-0966



DESIGNER	BY	NO.	REVISION
J.W.C.			
DRN: E.L.B.			
CHK: M.G.M.			
DATE: 5/16/95			

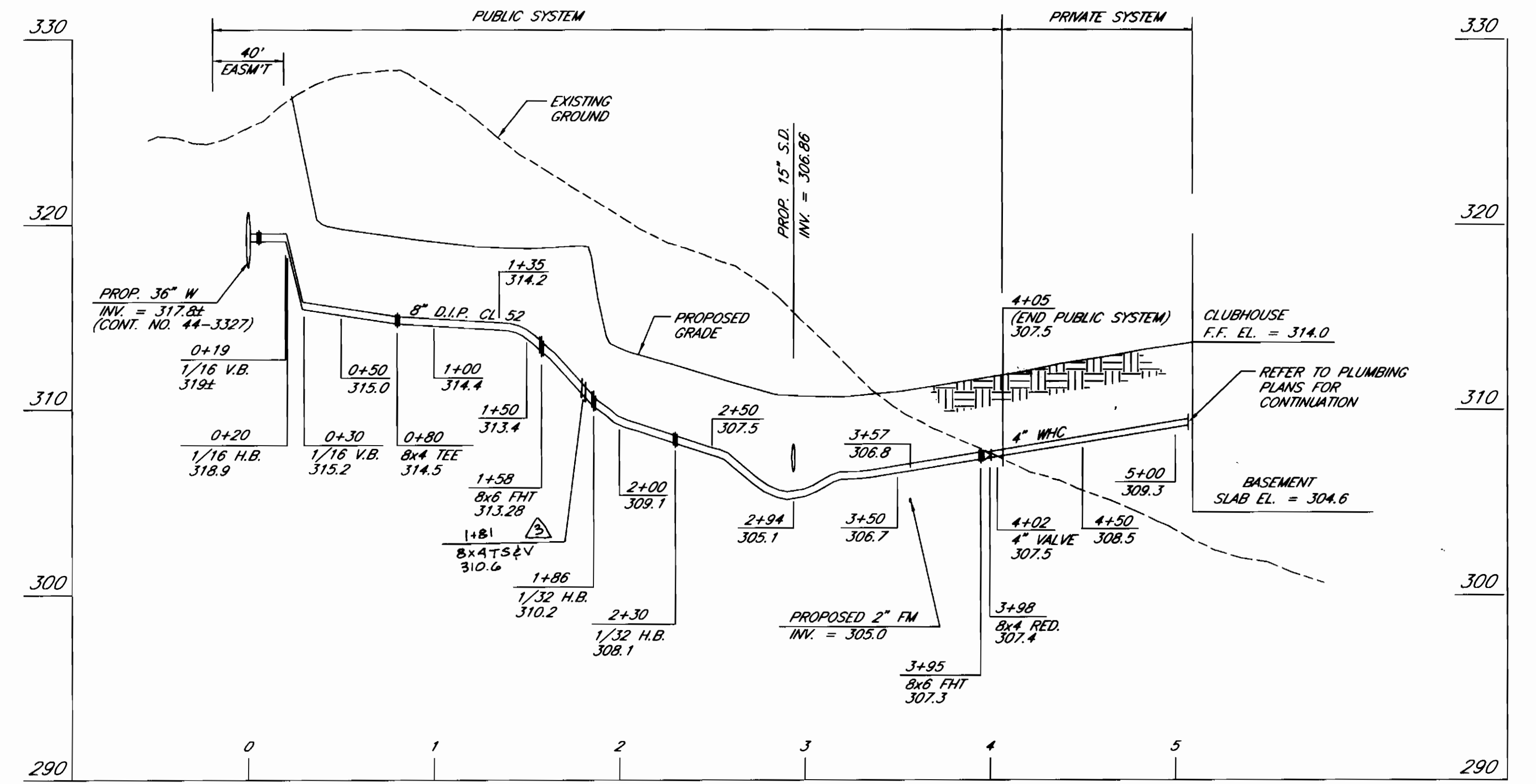
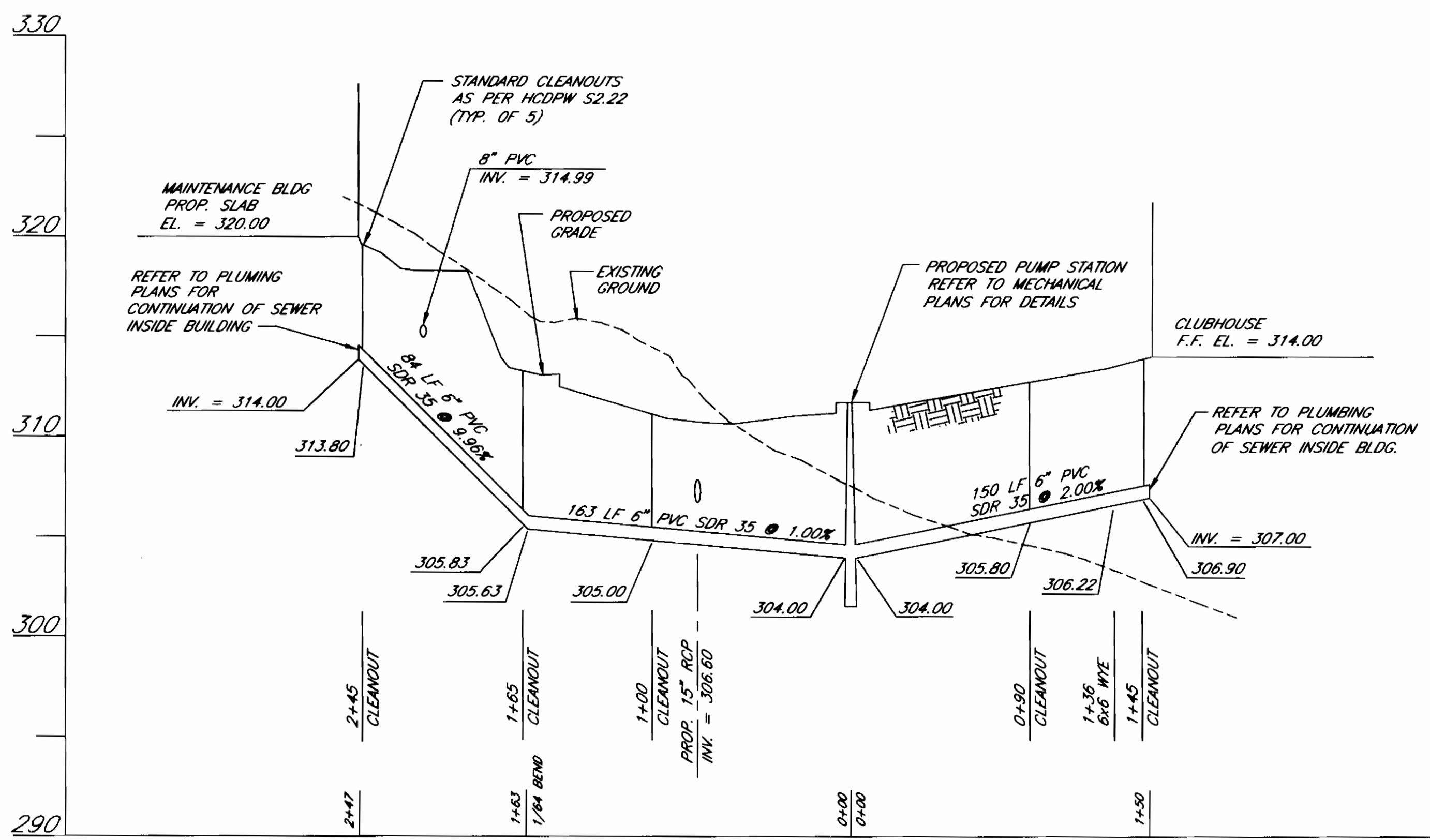
PLAN  
WATER AND SEWER EXTENSION PLAN  
NUMBER OF LOTS: 1  
600' SCALE MAP NO. 37 BLOCK NO. 10

CENTRE 9500, PARCEL K  
THE TIMBERS AT TROY GOLF COURSE  
CLUBHOUSE AND MAINTENANCE FACILITIES  
CONTRACT NO. 14-3423-D  
1ST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 3 OF 5  
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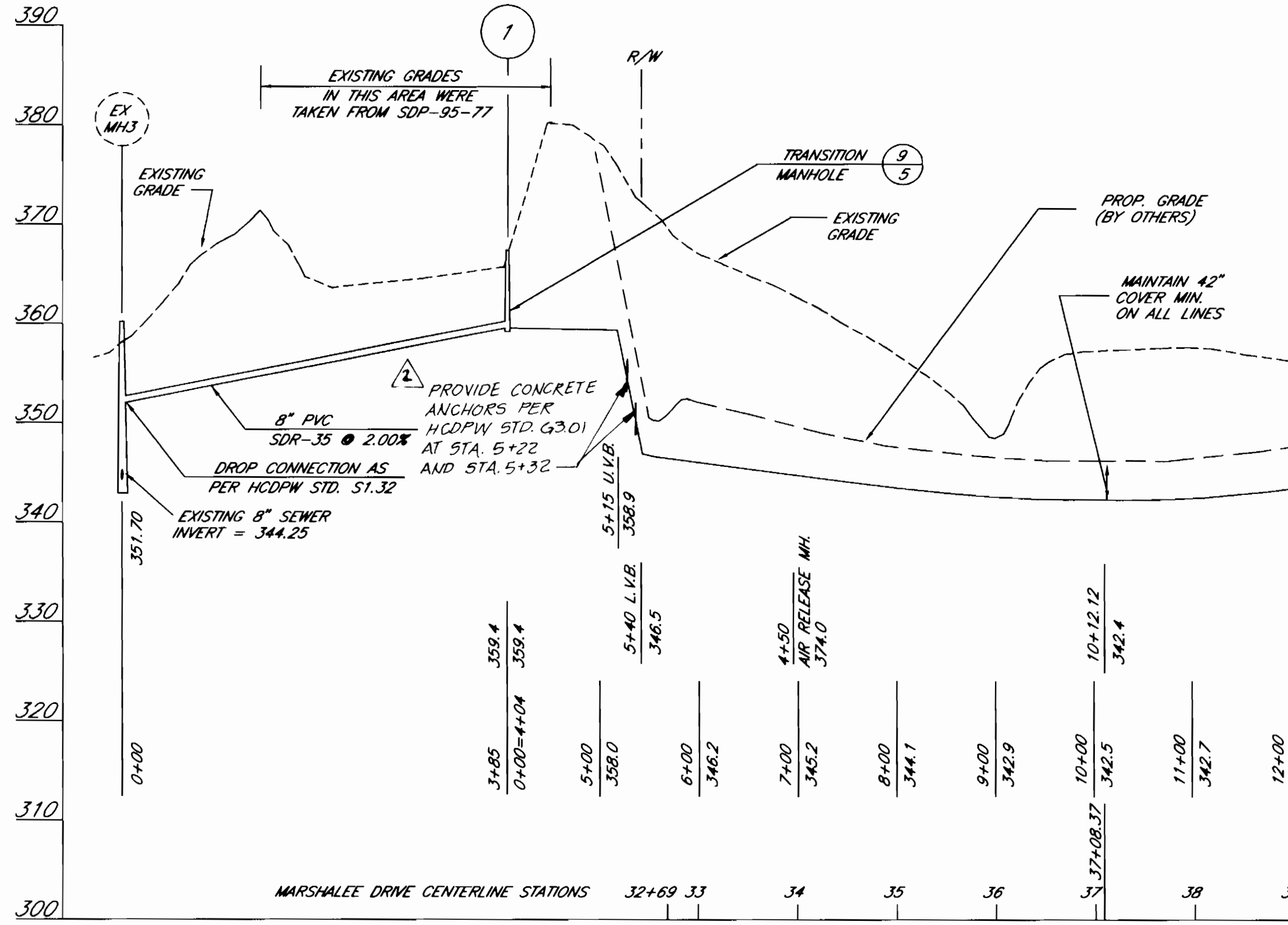


3423 ws/4 Centre 9500



**SEWER HOUSE CONNECTION (PRIVATE)**

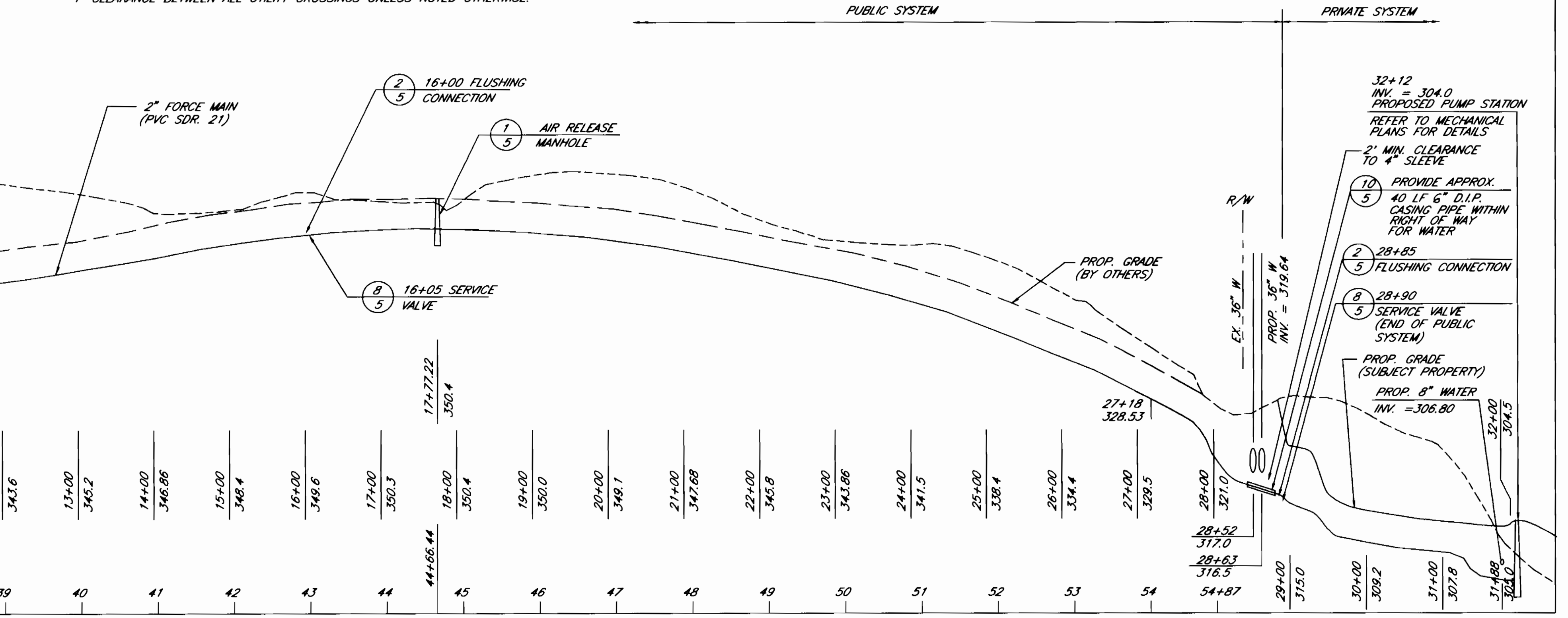
SCALE: HORIZ: 1"=50'  
VERT: 1"=5'



NOTE: PROPOSED INVERTS ARE BASED BEST AVAILABLE TOPOGRAPHY AT TIME OF DESIGN AND ON THE DESIGN CENTERLINE GRADES AND SUPERELEVATION DATA FOR MARSHALEE DRIVE DATED DEC. 8, 1994. THESE PLANS WERE PROVIDED BY HOWARD COUNTY. SHOULD GROUND ELEVATIONS BE DIFFERENT CONTRACTOR SHALL INSURE THAT MINIMUM COVER OF 42" IS PROVIDED ON ALL LINES AT ALL LOCATIONS. PROVIDE A MINIMUM OF 1' CLEARANCE BETWEEN ALL UTILITY CROSSINGS UNLESS NOTED OTHERWISE.

**8" WATER MAIN PROFILE**

SCALE: HORIZ: 1"=50'  
VERT: 1"=5'



**SANITARY FORCE MAIN PROFILE**

SCALE: HORIZ: 1"=50'  
VERT: 1"=5'

DES.	J.W.C.	BY NO.	REVISION	DATE
		JNC 2	ADDED CONCRETE ANCHORS	
		HLZ 1	ADDED IRRIGATION TAP	8/1/95
CHK.	M.G.M.			
DATE:	5/16/95			

PROFILES WATER AND SEWER EXTENSION PLAN

NUMBER OF LOTS: 1

600' SCALE MAP NO. 37 BLOCK NO. 10

CENTRE 9500, PARCEL K  
THE TIMBERS AT TROY GOLF COURSE  
CLUBHOUSE AND MAINTENANCE FACILITIES

CONTRACT NO. 14-3423-D

1ST ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 5

DRAWING FILE: HC1212PR

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. Shaw* 6/1/95  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. Brown* 5-26-95  
CHIEF, BUREAU OF UTILITIES DATE

*Robert J. Brown* 6/1/95  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. Brown* 6/1/95  
CHIEF, LAND DEVELOPMENT DIVISION DATE

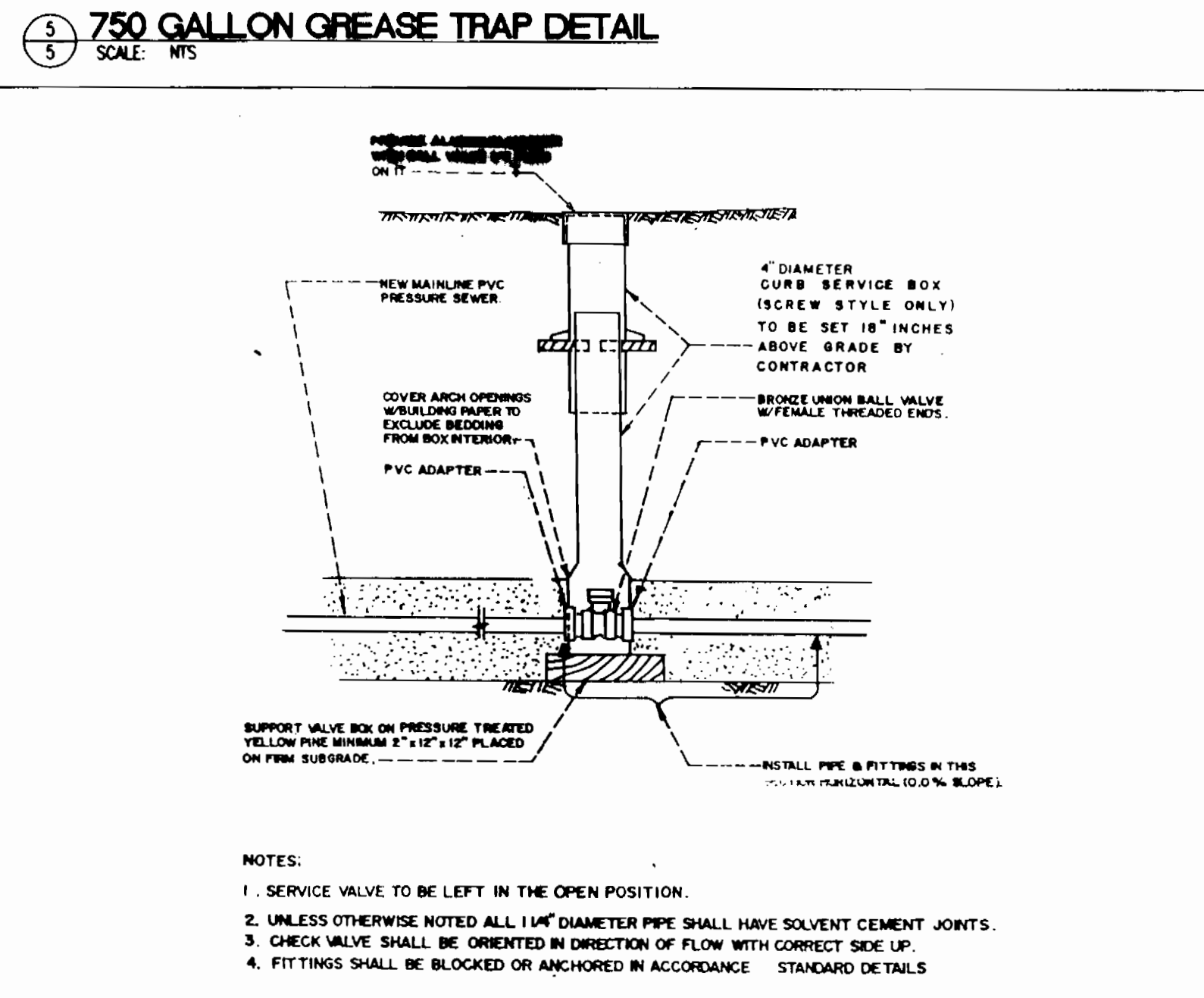
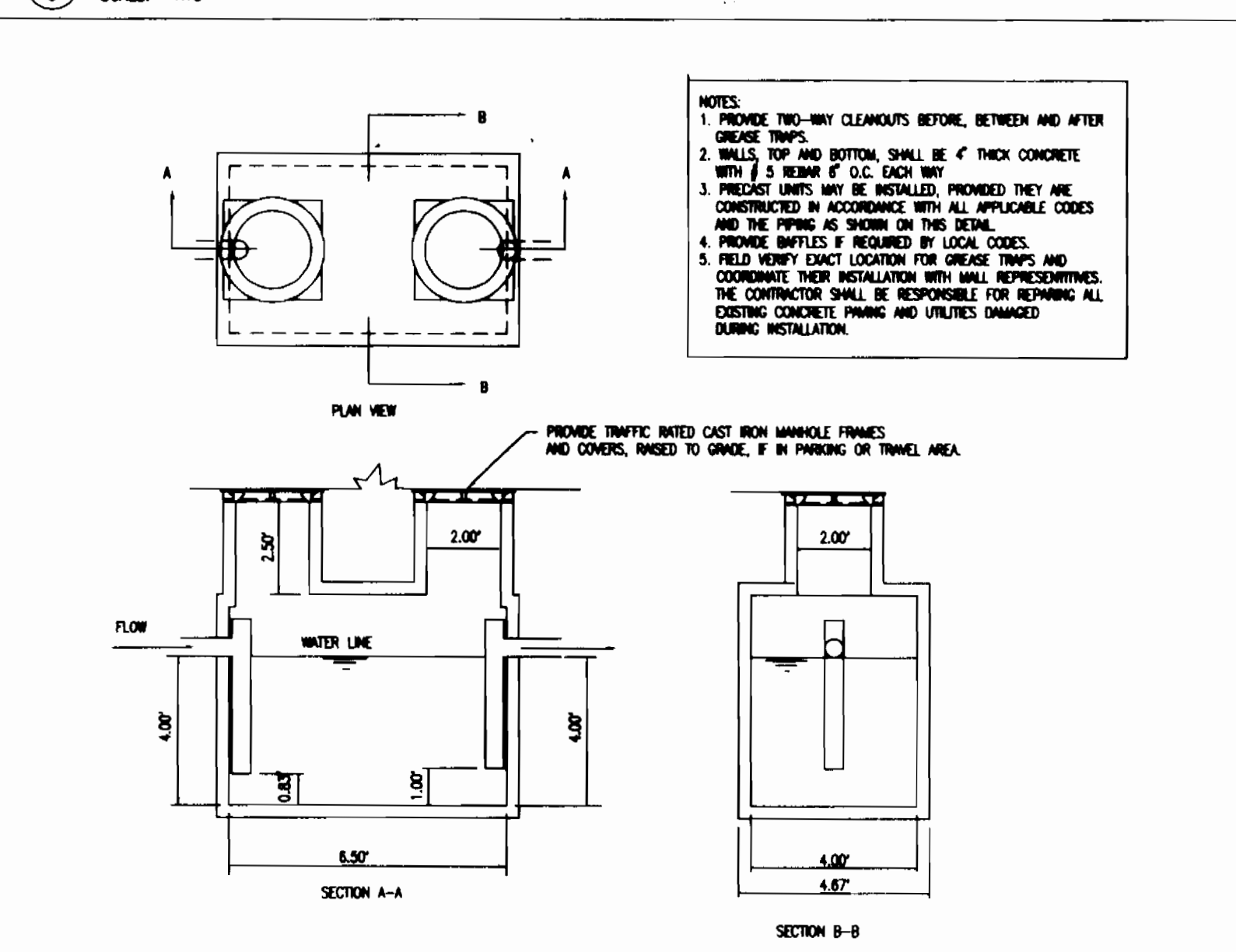
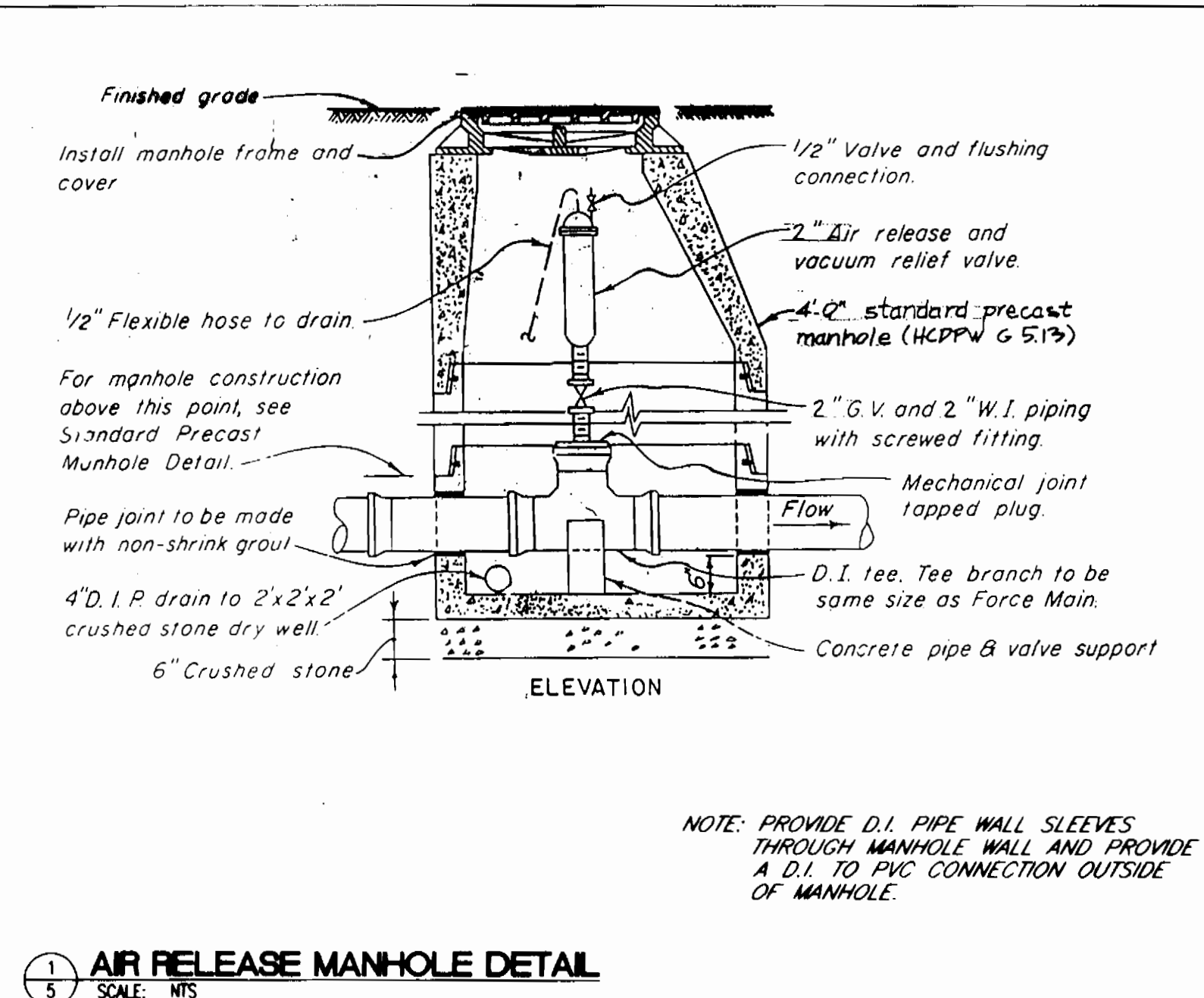
**RBA** ENGINEERS • ARCHITECTS • PLANNERS

7164 COLUMBIA GATEWAY DRIVE, SUITE 205  
COLUMBIA, MARYLAND 21046  
410-312-0266





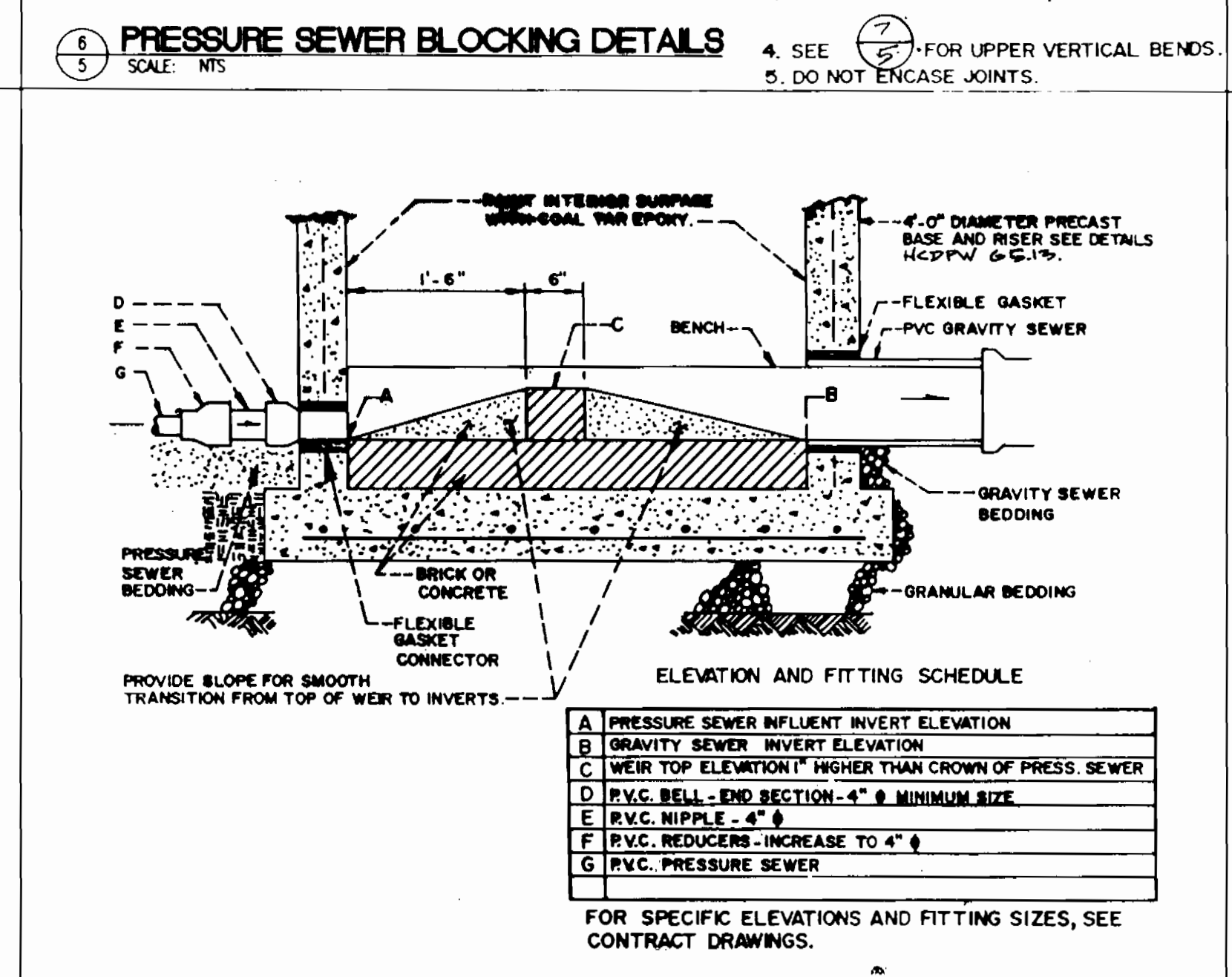
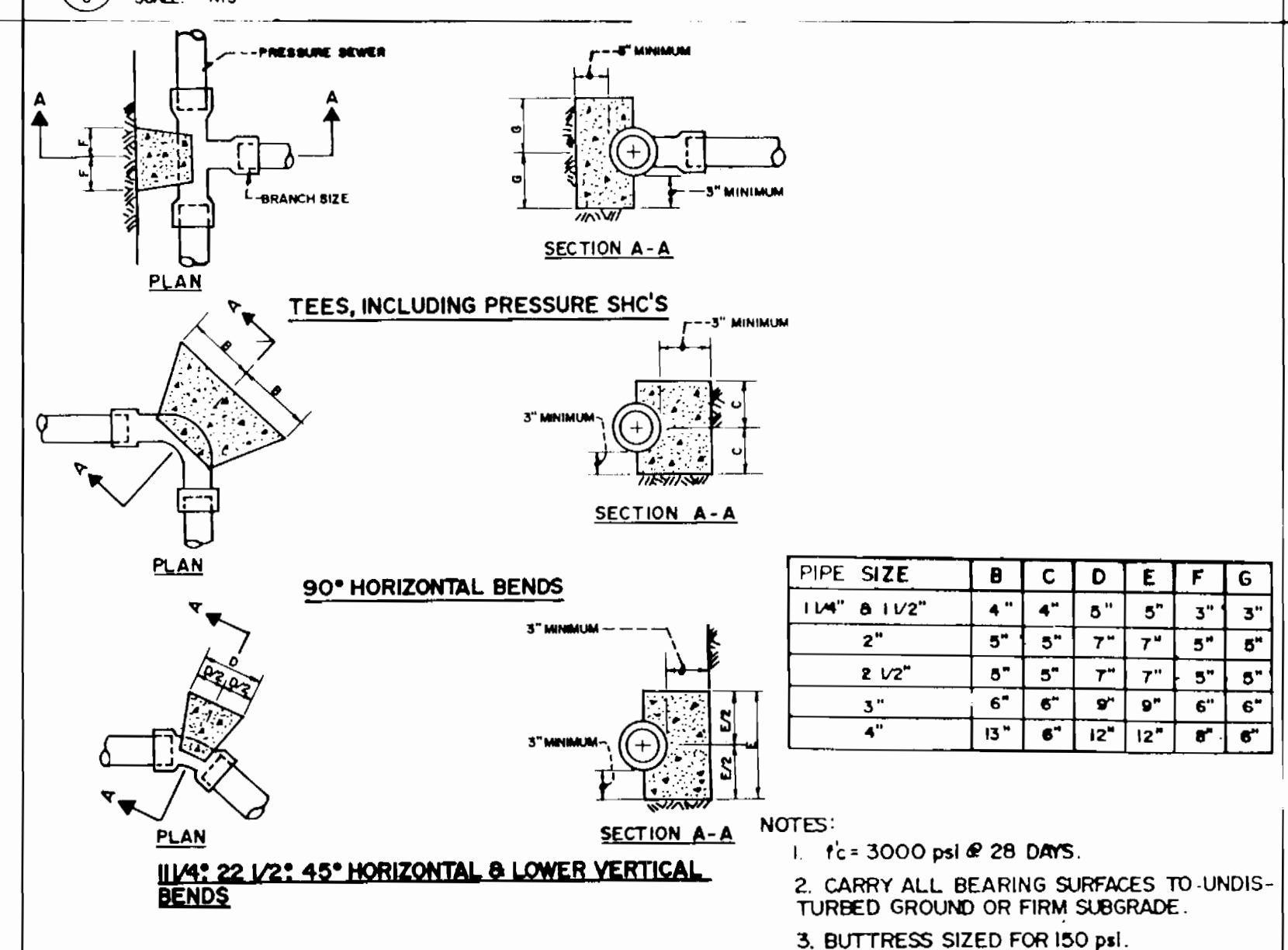
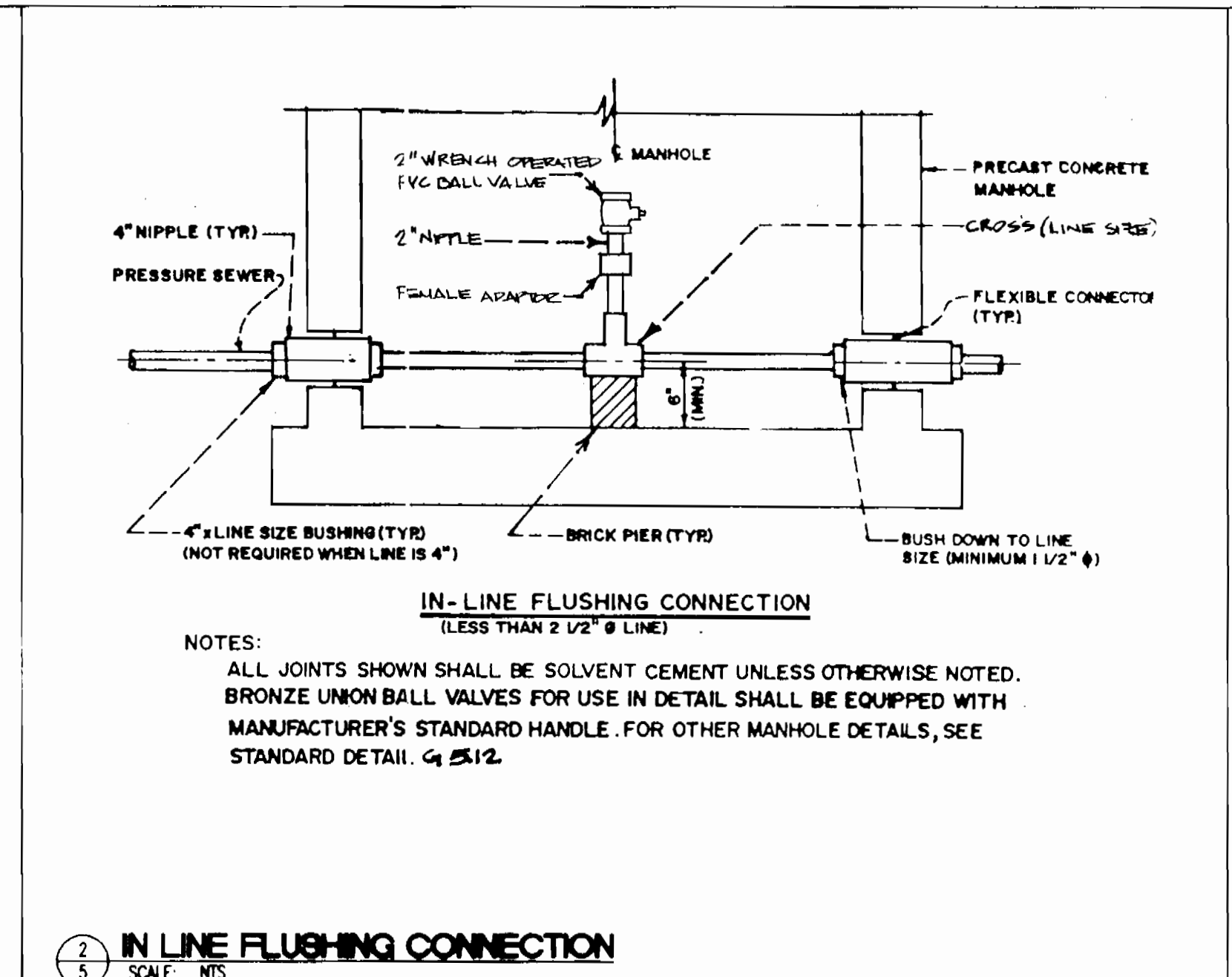
3A23 ws/s Centre 9500



**8** **5** **PRESSURE SEWER SERVICE VALVE ASSEMBLY**  
SCALE: NTS

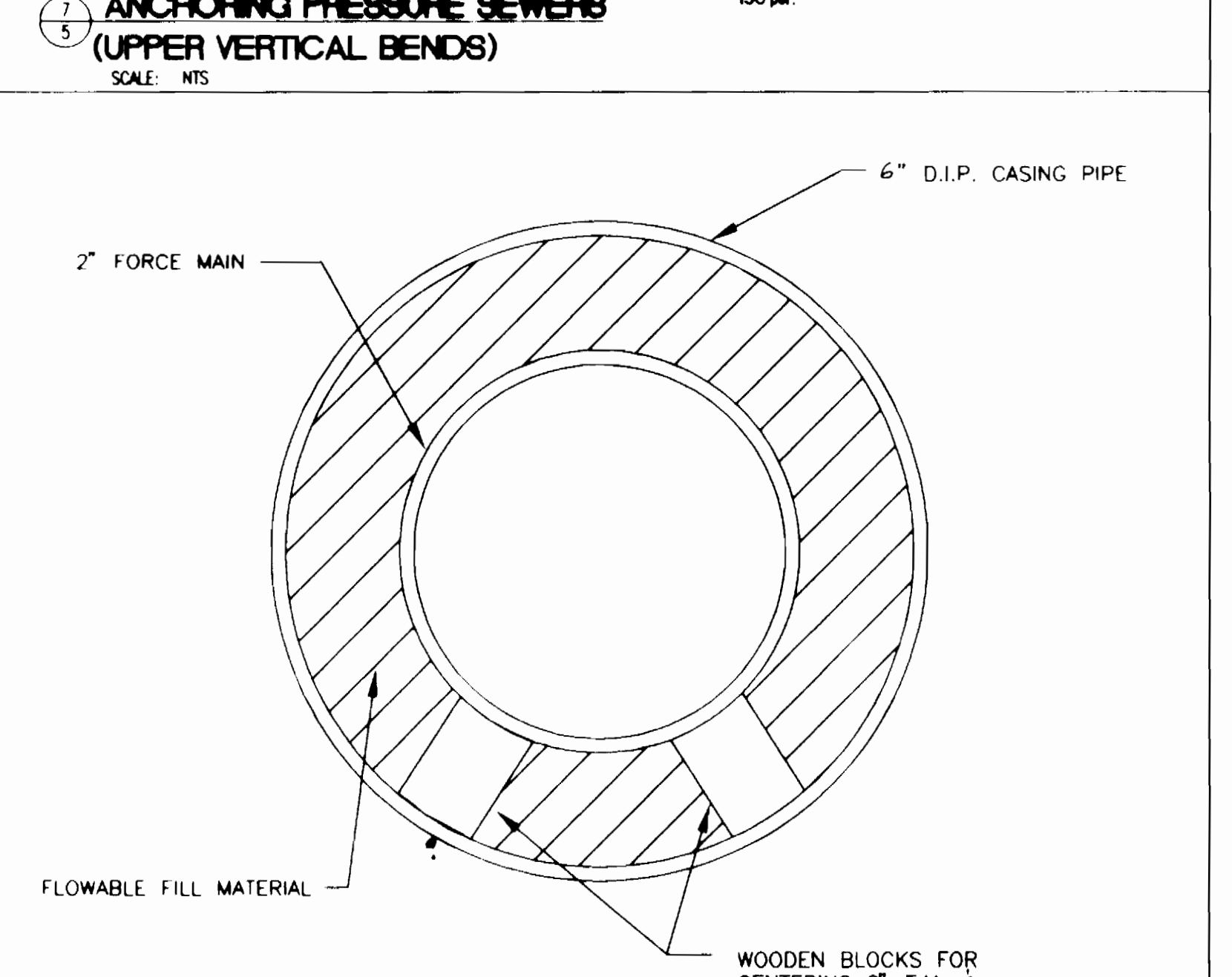
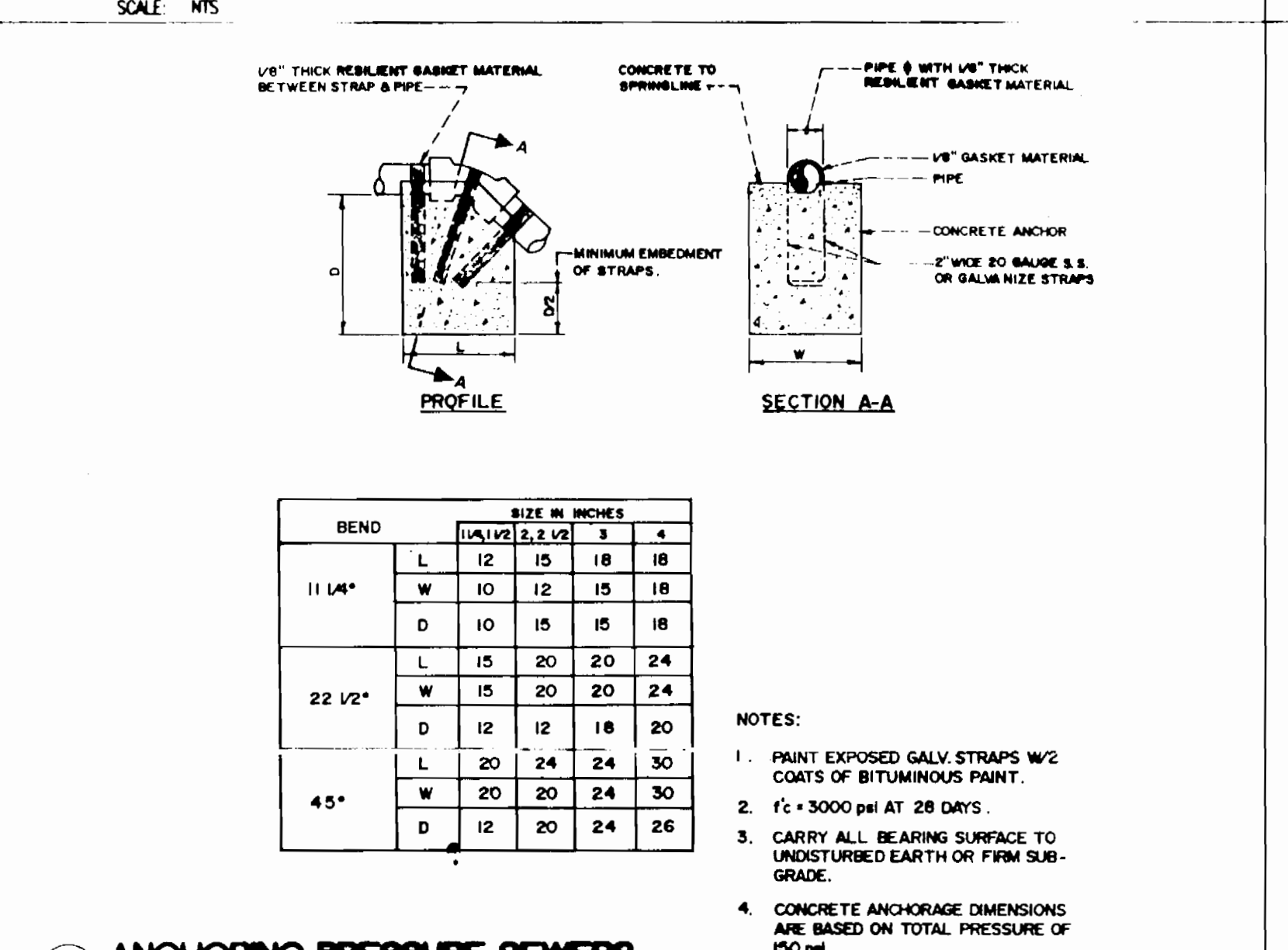
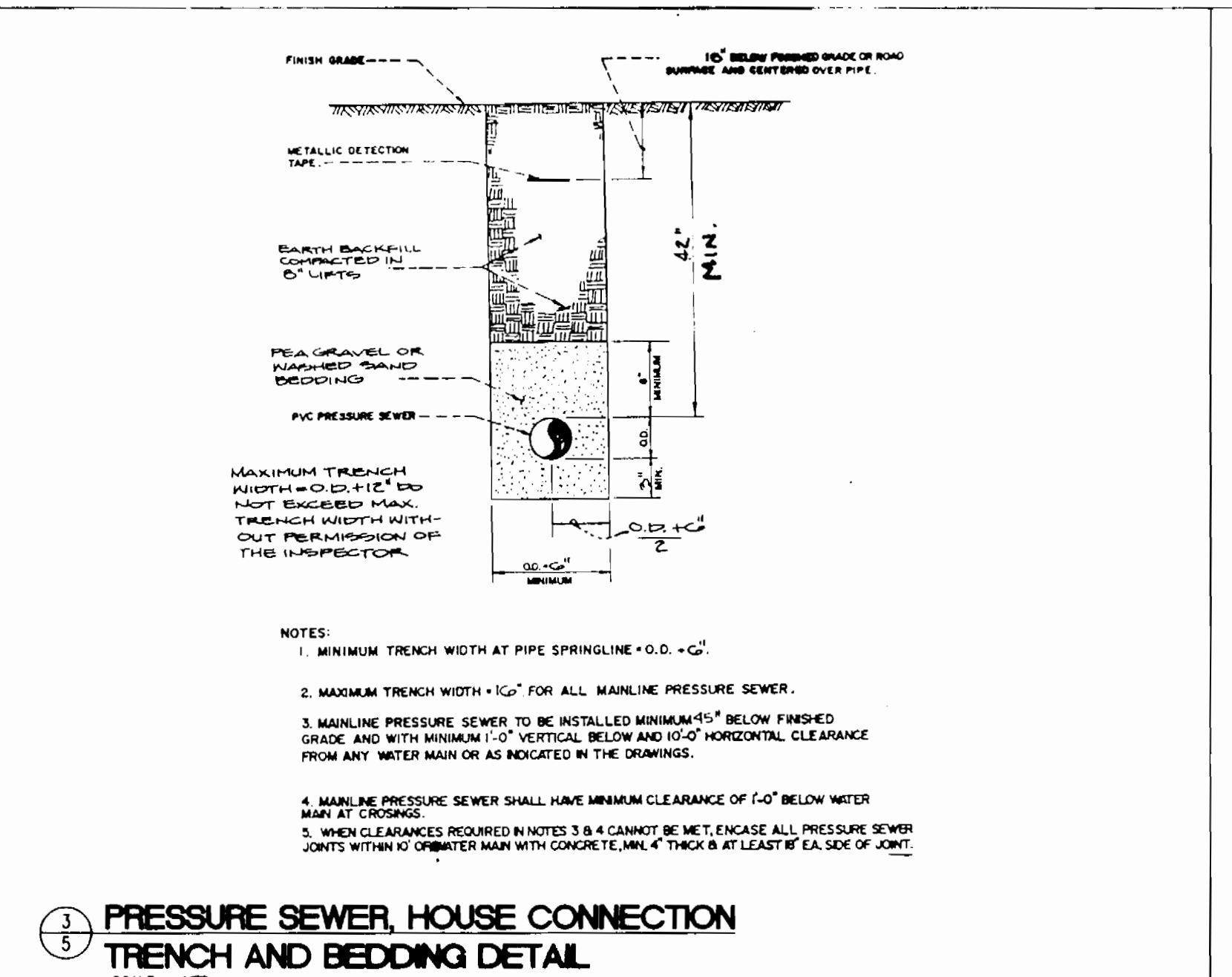
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

5/23/95  
DES: J.W.C.  
BY: E.L.B.  
CHK: M.G.M.  
DATE: 5/16/95



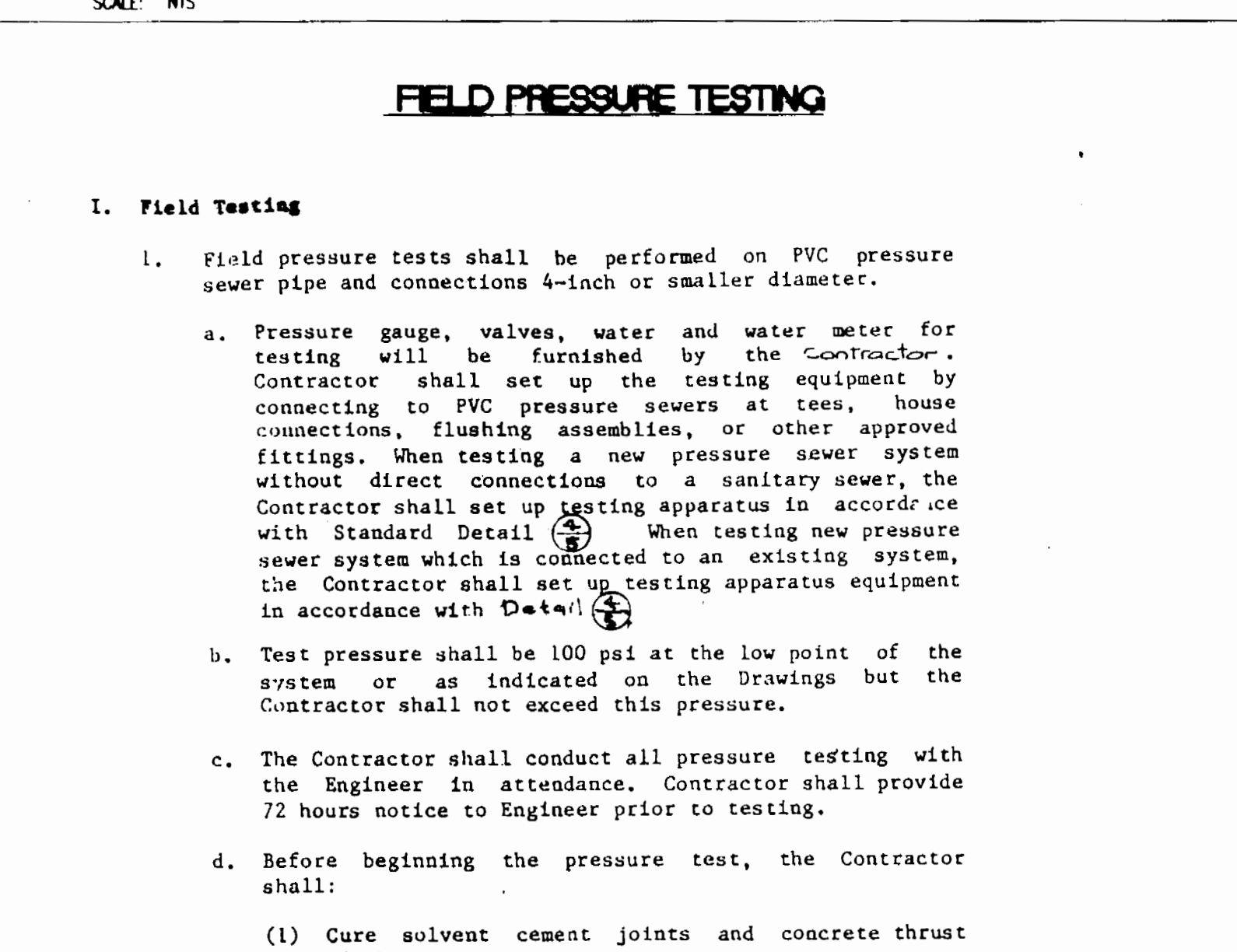
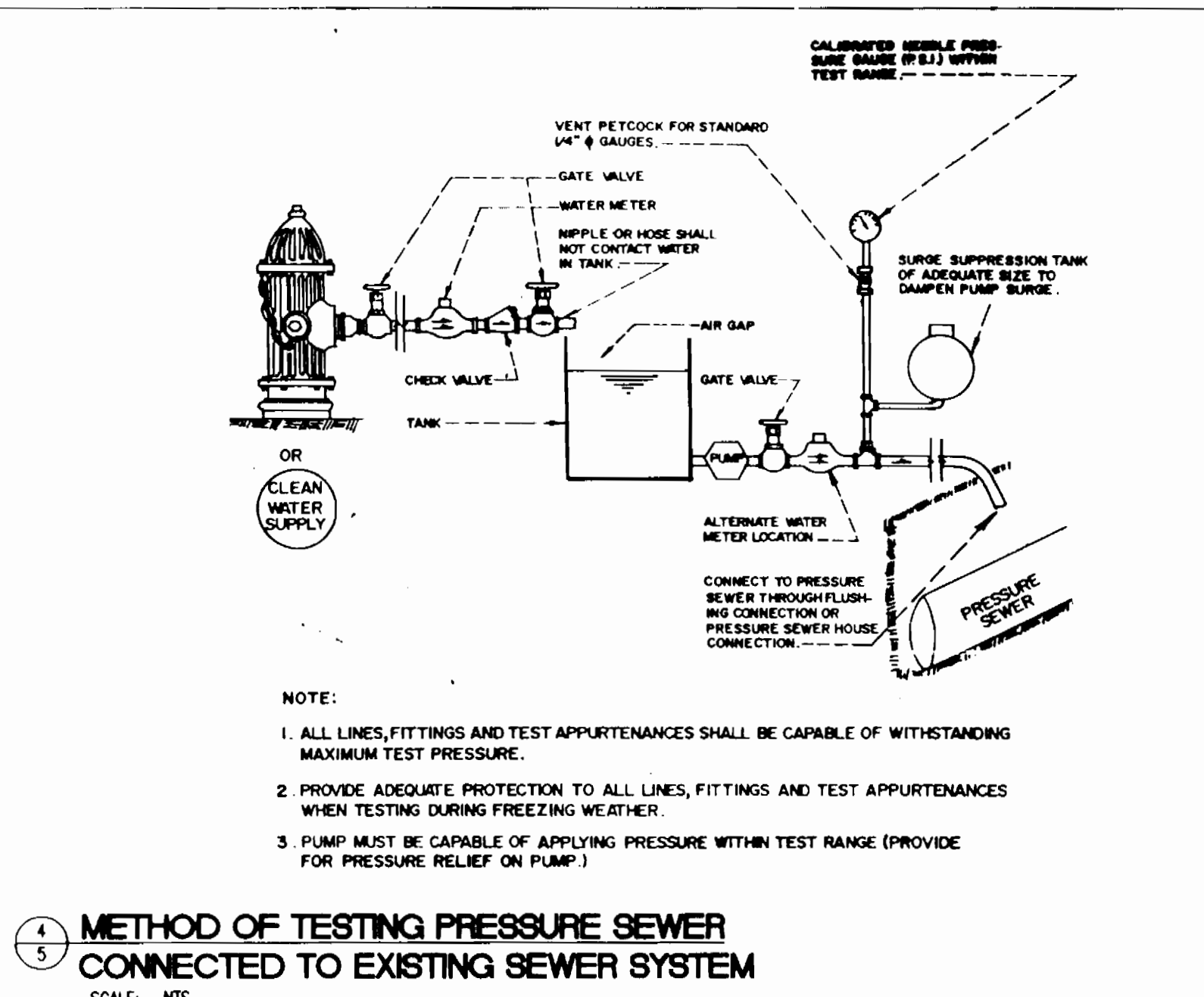
**9** **5** **TRANSITION MANHOLE**  
SCALE: NTS

THE RBA ENGINEERS - ARCHITECTS - PLANNERS  
7164 COLUMBIA GATEWAY DRIVE, SUITE 205  
COLUMBIA, MARYLAND 21046  
410-312-0966



**10** **5** **D.I.P. CASING PIPE**  
SCALE: NTS

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND



**11** **5** **METHOD OF TESTING PRESSURE SEWER CONNECTED TO EXISTING SEWER SYSTEM**  
SCALE: NTS

**12** **5** **FIELD PRESSURE TESTING**

I. Field Testing

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. 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 11. When testing new pressure sewer system which is connected to an existing system, the Contractor shall set up testing apparatus equipment in accordance with Detail 12.

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 Detail 11.
- 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 air has been expelled.

e. Subject test section to the test pressure for a minimum of two hours. Commission 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:

$$L = \frac{ND\sqrt{P}}{7400}$$

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 additional cost.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND