

**BENCH MARKS:**

**Ho. Co. Monument 471B**

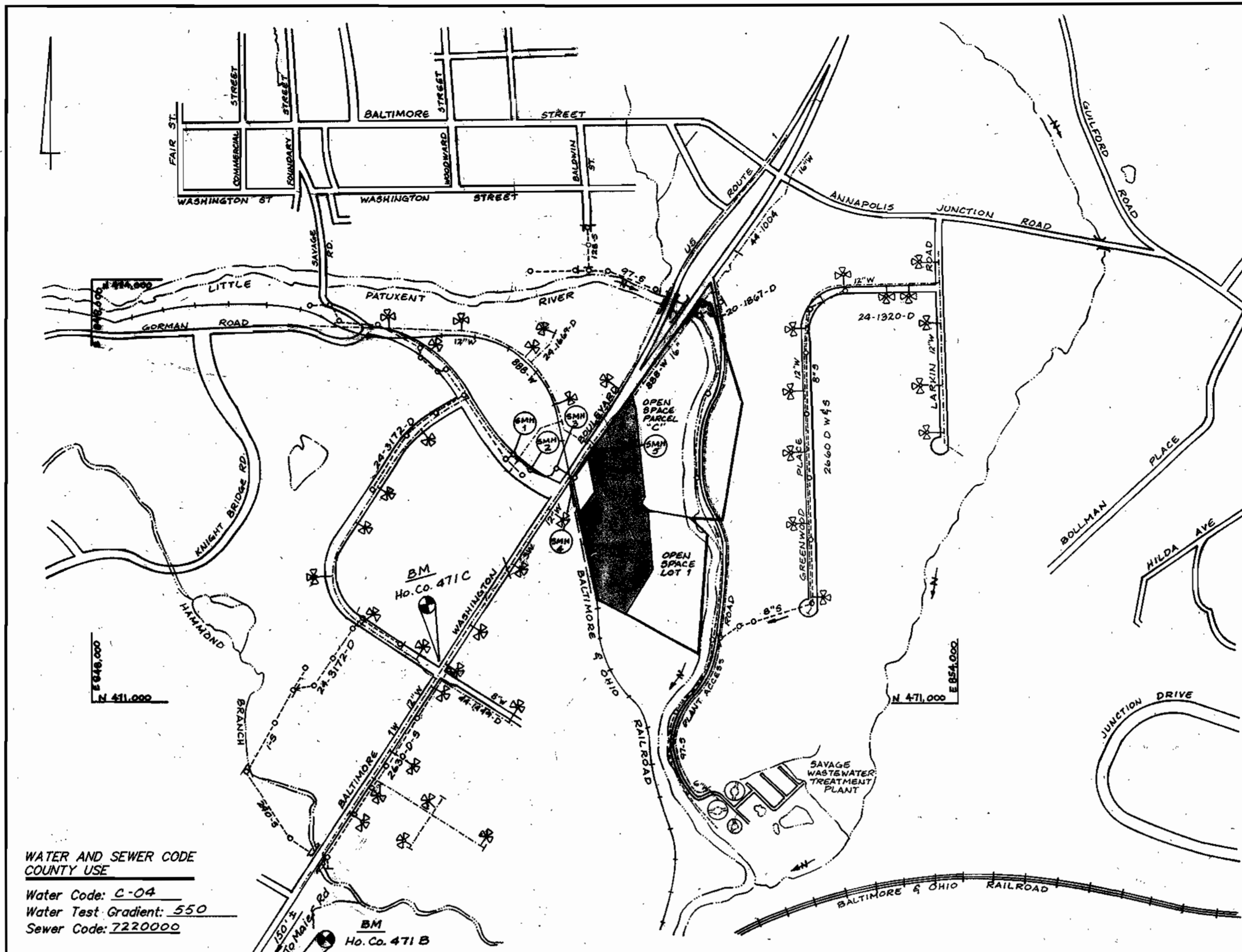
3/4 inch rebar with aluminum cap located 16.7 feet north of an existing fire hydrant, 2.4 feet off the edge of the U.S. Route 1 paving on the southwest quadrant of the U.S. Route 1/ Maier Road intersection.  
Elevation = 180.71

**Ho. Co. Monument 471C**

Standard Howard County aluminum disc on concrete monument, flush with the ground. Located 84.7 feet south of the edge of an existing storm drain inlet on the northwest quadrant of the Freestate Drive/ U.S. Route 1 intersection.  
Elevation = 189.05

**LEGEND**

EXISTING ROAD CENTERLINE	
EXISTING STORM DRAIN	
EXISTING GAS MAIN	
EXISTING WATERMAIN	
EXISTING SEWERMAIN	
EXISTING TELEPHONE CABLES	
EXISTING CURB & GUTTER	
PROPERTY LINE	
PROPOSED EASEMENT	
PROPOSED SEWER FORCE MAIN	
PROPOSED SEWER HOUSE CONNECTION & VALVE	
PROPOSED SEWER MANHOLE AND GRAVITY SEWERMAIN	
LIMITS OF DISTURBANCE	
SILT FENCE	
PROPOSED TEST PIT LOCATION	
PROPOSED WATERMAIN	
EXISTING TREELINE	
PROPOSED TREELINE	
DIRECTIONAL FLOW ARROW	



**WATER AND SEWER CODE COUNTY USE**

Water Code: 2-04  
Water Test Gradient: 550  
Sewer Code: 722000

Type of Buildings:	Commercial/Industrial
Number of Lots/Parcels:	3
Number of W.H.C.'S:	0
Number of S.H.C.'S:	4
Drainage Area:	Little Patuxent
Treatment Plant:	Little Patuxent Water Reclamation Plant

**INDEX OF SHEETS**

SHEET NO.	TITLE
1	COVER SHEET
2	PLAN VIEW
3	PROFILES & CONSTRUCTION DETAILS
4	SEDIMENT CONTROL PLAN, NOTES & DETAILS

**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 of tunnel 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 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 Details for Construction (latest edition). The Contractor shall have a copy of Volume IV on the job.
  - Existing utilities shown hereon were taken from existing drawings of record. No test pits have been made on existing utilities. The Contractor shall test pit in all locations that are noted by the symbols. Test pits shall be dug by the Contractor two weeks in advance of construction operations at his own expense. The Contractor shall notify the engineer of any discrepancies between design and actual elevations prior to beginning construction.
  - Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:
    - a. SHA: (410) 531-5833
    - b. BE (Contractor Services): (410) 850-4820
    - c. BE (Underground damage control): (410) 787-9088
    - d. Miss Utility: 1-800-257-7777
    - e. Colonial Pipeline Company: (410) 795-1390
    - f. Howard County Dept. of Public Works, Bureau of Utilities: (410) 313-4900
  - Trees and shrubs are to be protected from damage to maximum extent.
  - Trees and shrubs 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.
- 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 shall be to the knee shall be strapped to the tee.
  - 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 to the bury line elevations shown on the drawings. All fire hydrants shall be strapped and buttressed with concrete in accordance with the 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.
- PART III: SEWER**
- All sewer mains to be D.I.P. and P.V.C. unless otherwise noted.
  - All proposed sewers shall be public.
  - All manholes shall be 4'0" inside diameter unless otherwise noted.
  - Force mains shall be SDR-21 PVC.
  - Manholes designated W.T. in plan and profile shall have water tight frame and covers. Standard Detail 05.02. Where water tight manhole frame and cover is used, set top of frame 1'0" above finished grade unless otherwise noted on the drawings.
  - Houses with the symbol "C.N.S." indicates that cellar cannot be served.
  - Manholes shown with 12" and 18" walls are for brick manholes only.
  - The four (4) 1-1/4 inch sewer house connections shall be Type K copper as specified in Section 909.15.07 of the Standard Specifications and shall be installed 3'-6" below finished grade.
  - Force main shall be tested in accordance with memorandum dated April 3, 1995, titled "Hydrostatic Testing of Water Mains". Test pressure shall be 100 PSI.
  - All force main horizontal and vertical bends shall be buttressed. See detail, sheet 5.

**WATERMAIN & SEWER FORCE MAIN CONSTRUCTION PLANS**

**A. H. SMITH PROPERTY**

**PARCELS "A", "B" & "C"**

**6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND**

**CONTRACT NO. 24-3906-D**

ITEMS	QUANTITIES ESTIMATED	QUANTITIES AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" SDR-25 PVC Pipe	149 LF			
2" SDR-21 PVC Pipe	611 LF			
8" H.D.P.E. Sleeve	119 LF			
Std. Manhole (6.5.14)	1 ea.			
Main Line Clewman Lam photo	1 ea.			
Manhole Flushing	4 ea.			
2" SDR-21 PVC	2 ea.			
2" SDR-21 PVC 1/8 MB	5 ea.			
1 1/4" Valve (SHC)	4 ea.			
1/2" Type K Copper SHC	123 LF			
8" x 6" E.M.T.	2 ea.			
6" Valve	3 ea.			
Std. Manhole	2 ea.			
16" x 12" Flapping	1 ea.			
8" Valve	1 ea.			
8" x 6" Reducer	1 ea.			
12" x 8" Reducer	1 ea.			
6" Watermain	30 L.F.			
18" Watermain	2 L.F.			
8" Watermain	103 L.F.			

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

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT, AND MEET TECHNICAL REQUIREMENTS.

*J.L. Weinfeld* 10/13/00  
Signature Date  
NATURAL RESOURCES & INFORMATION SERVICE

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

*John P. Rauter* 10/13/00  
Signature Date  
HOWARD COUNTY SOIL CONSERVATION DISTRICT

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED UNDER THESE CONTRACT DRAWINGS.

[SDP-01-25]  
[F-00-31]

DEPARTMENT OF PUBLIC WORKS

*R. J. ...* 10-12-00  
Signature Date  
CHIEF-BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING

*...* 10/16/00  
Signature Date  
CHIEF-DEVELOPMENT ENGINEERING DIVISION

**LDE, INC.**  
9250 RUMSEY ROAD, SUITE 106  
COLUMBIA, MARYLAND 21045  
(410) 715-1070 (301) 596-3424



DESIGNED SDH	
DRAWN STB	
CHECKED BDB	
DATE 9/2000	
BY NO.	
REVISION	
DATE	

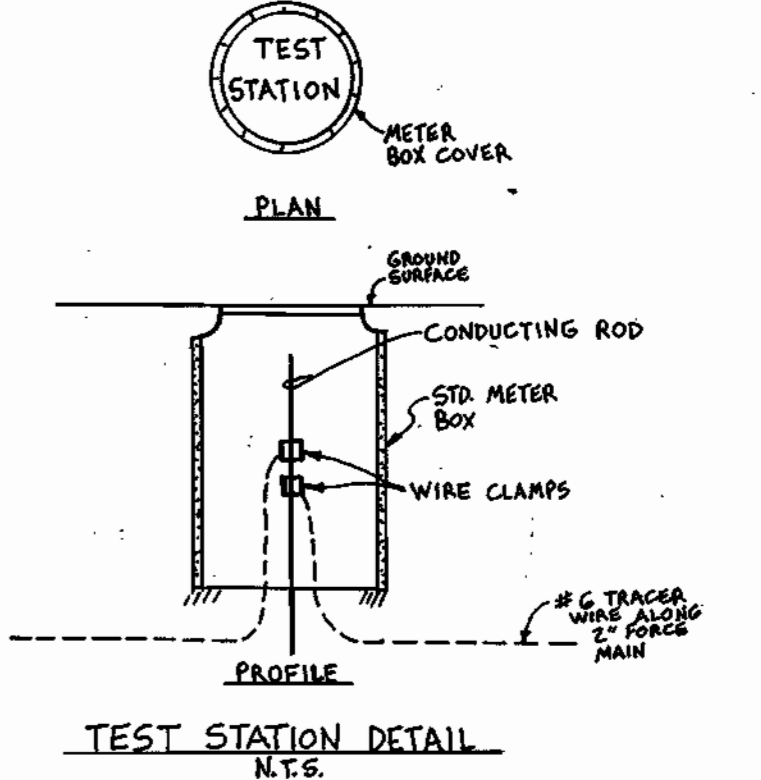
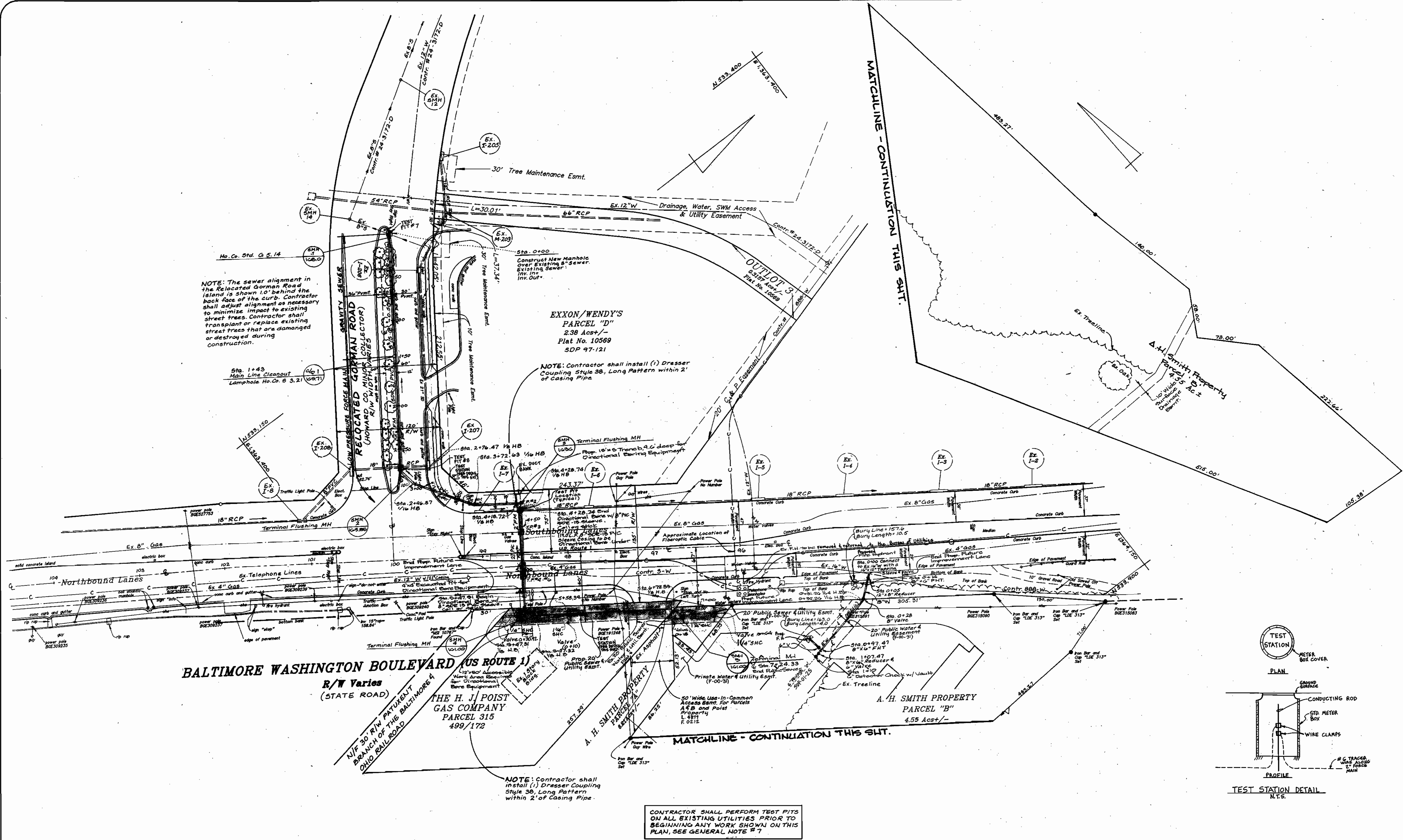
**TITLE SHEET**

600 SCALE MAP NO. 47 BLOCK 15

**A. H. SMITH PROPERTY**  
PARCELS "A", "B" & OPEN SPACE LOTS 1 & 2

TAX MAP NO. 47 P/O PARCEL 144  
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
CONTRACT NO. 24-3906-D

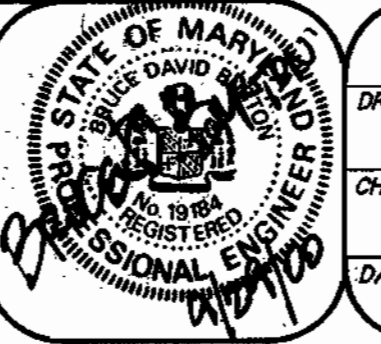




DEPARTMENT OF PUBLIC WORKS  
*Robert B. Bennett* 12-12-00  
 CHIEF-BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 12/16/00  
 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

LDE, INC.  
 9250 RUNSEY ROAD, SUITE 106  
 COLUMBIA, MARYLAND 21045  
 (410) 715-1070 (301) 596-3424



DESIGNED SDH	BY NO.	REVISION	DATE
DRAWN STB			
CHECKED BOB			
DATE 9/2000			

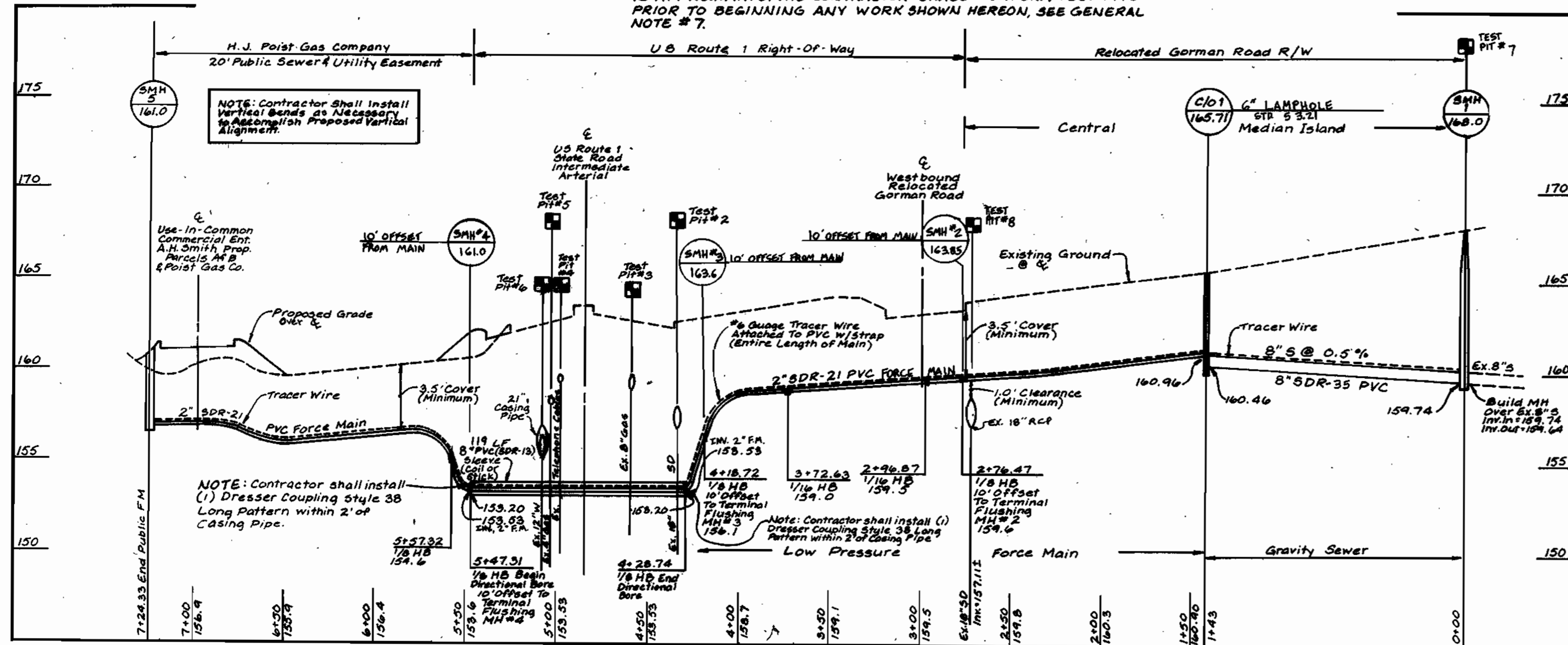
**PLAN**  
 800 SCALE MAP NO. 47 BLOCK 18

WATERMAIN & SEWER FORCE MAIN CONSTRUCTION PLAN  
**A. H. SMITH PROPERTY**  
 PARCELS A, B & OPEN SPACE LOTS 142  
 TAX MAP NO. 47 P/O PARCEL 144  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 CONTRACT NO. 24-3906-D

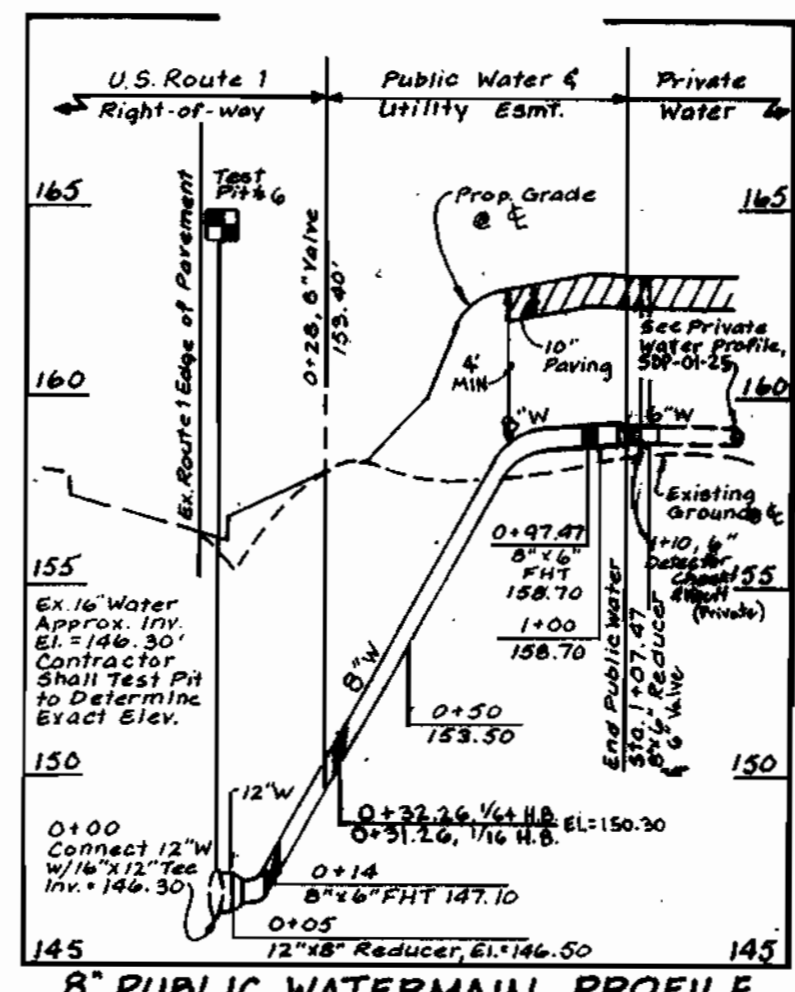
SCALE  
 1" = 50'  
 SHEET  
 2 OF 4



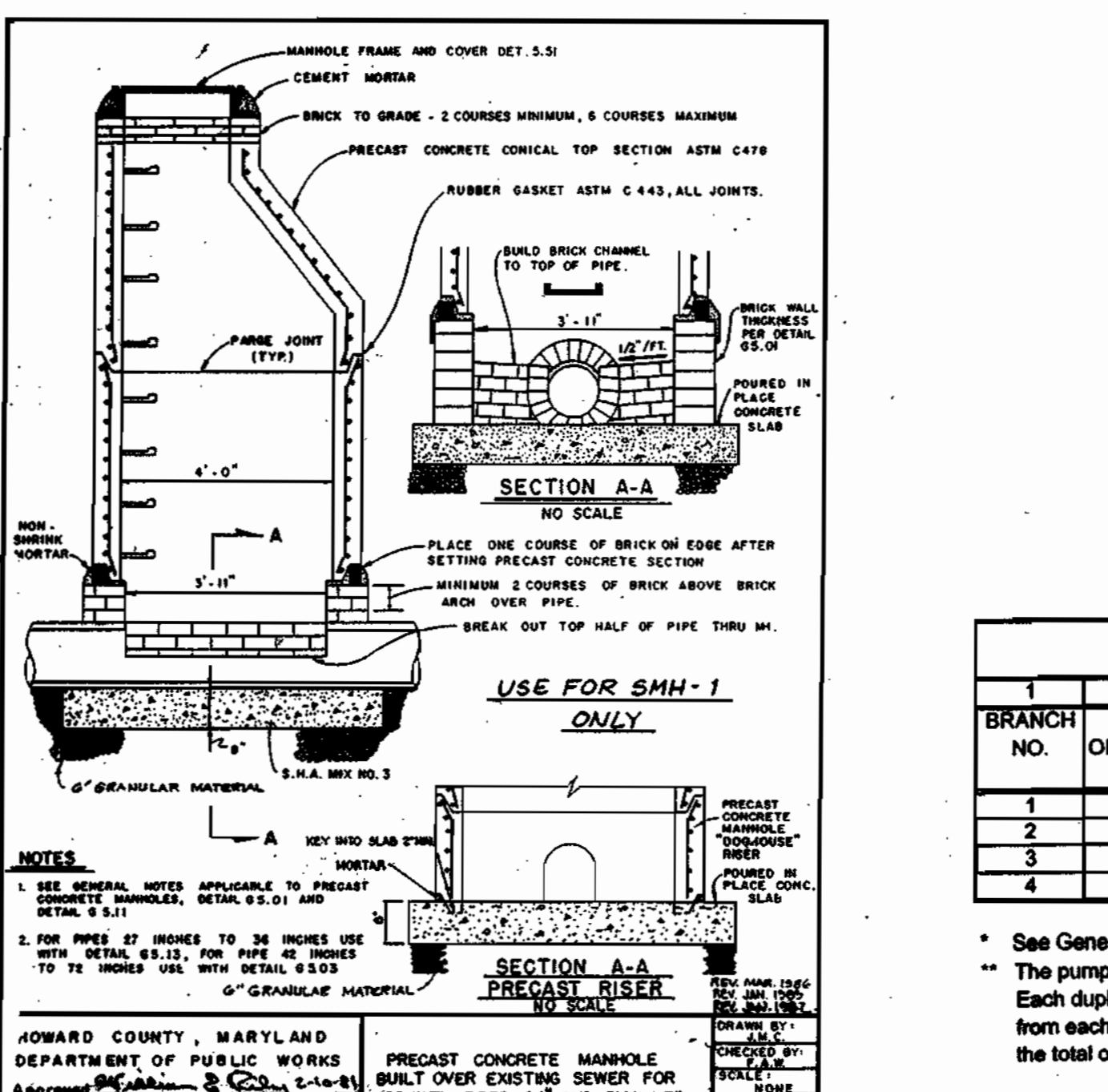
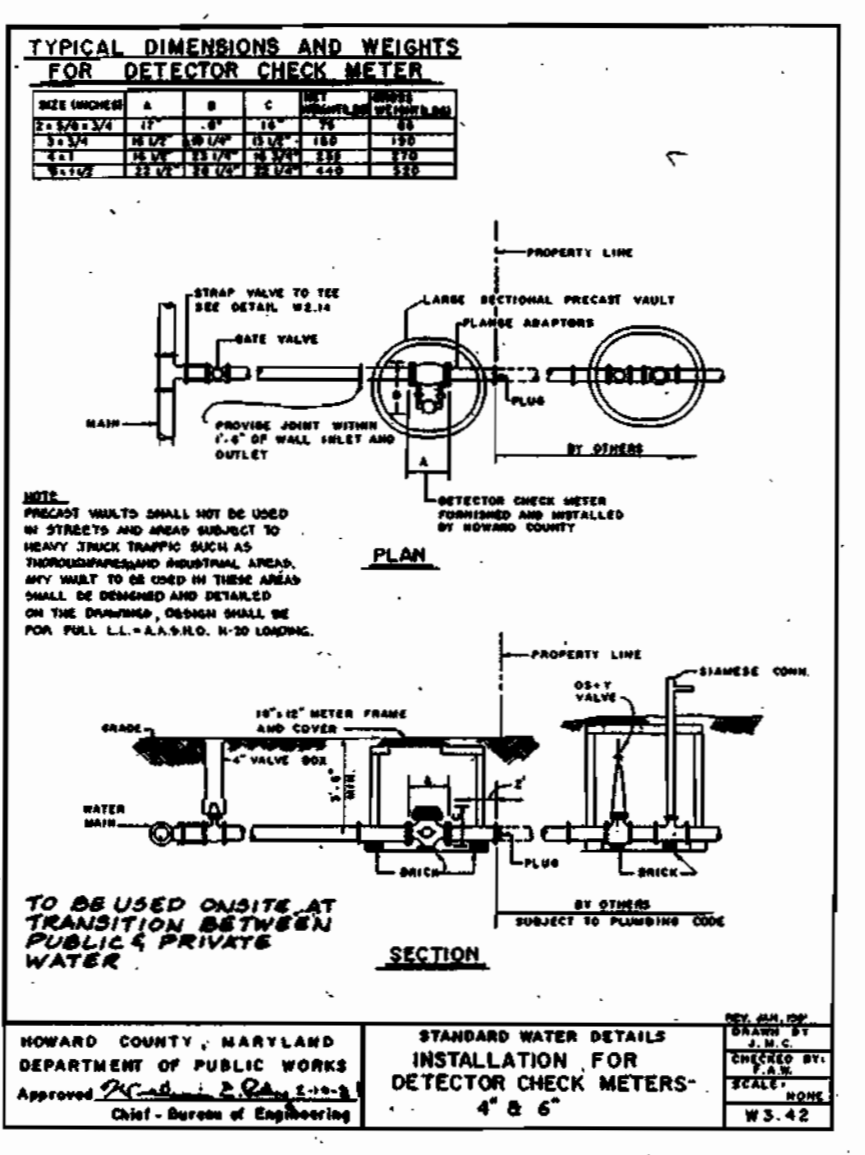
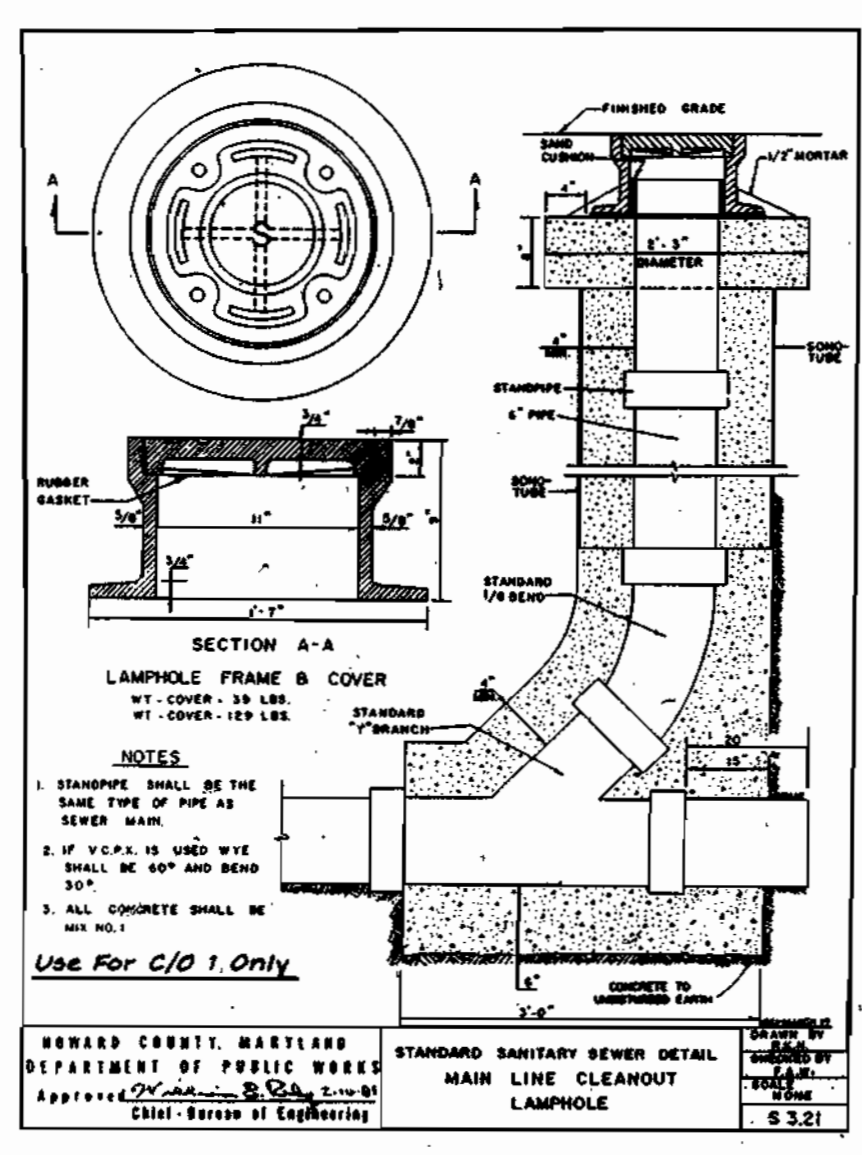
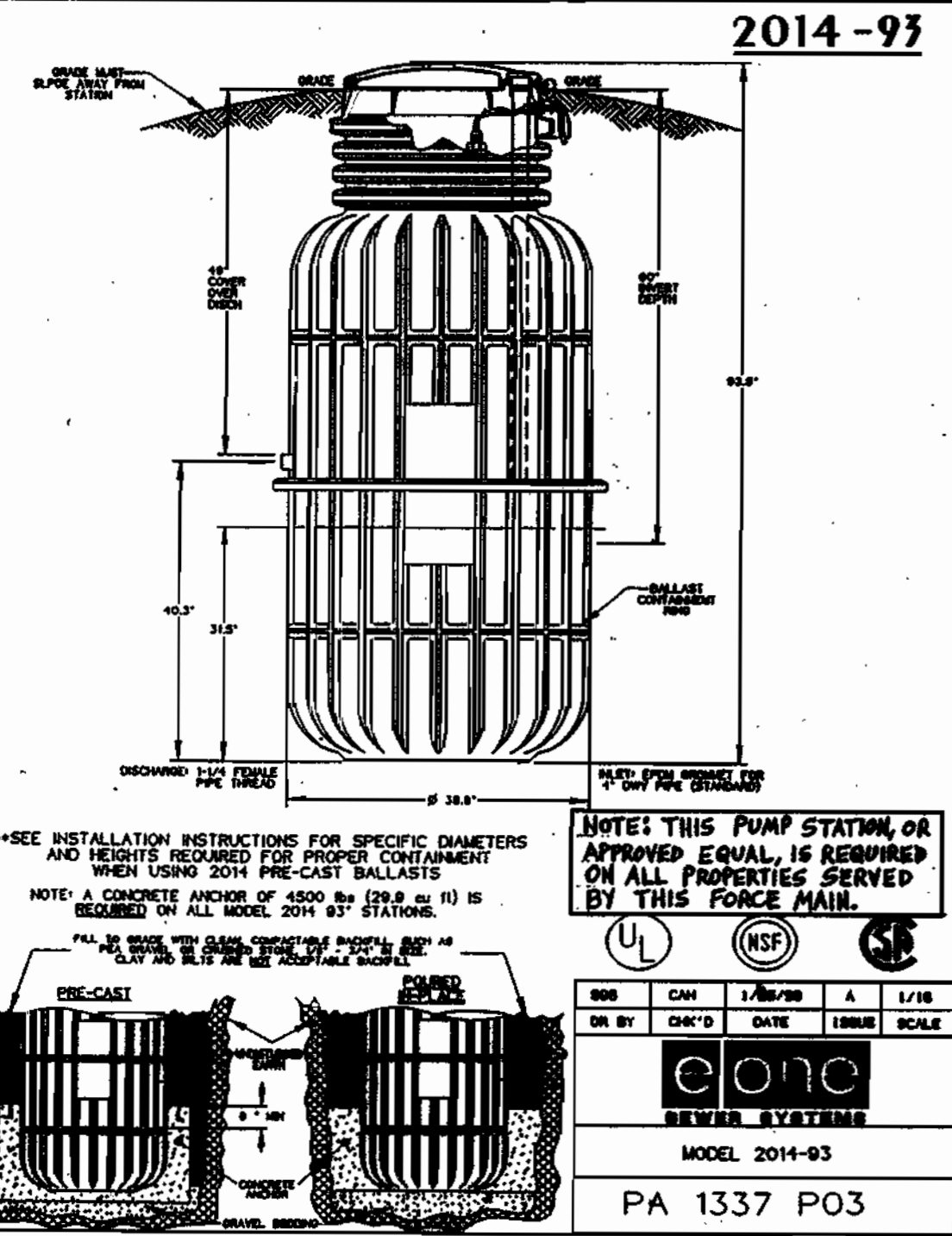
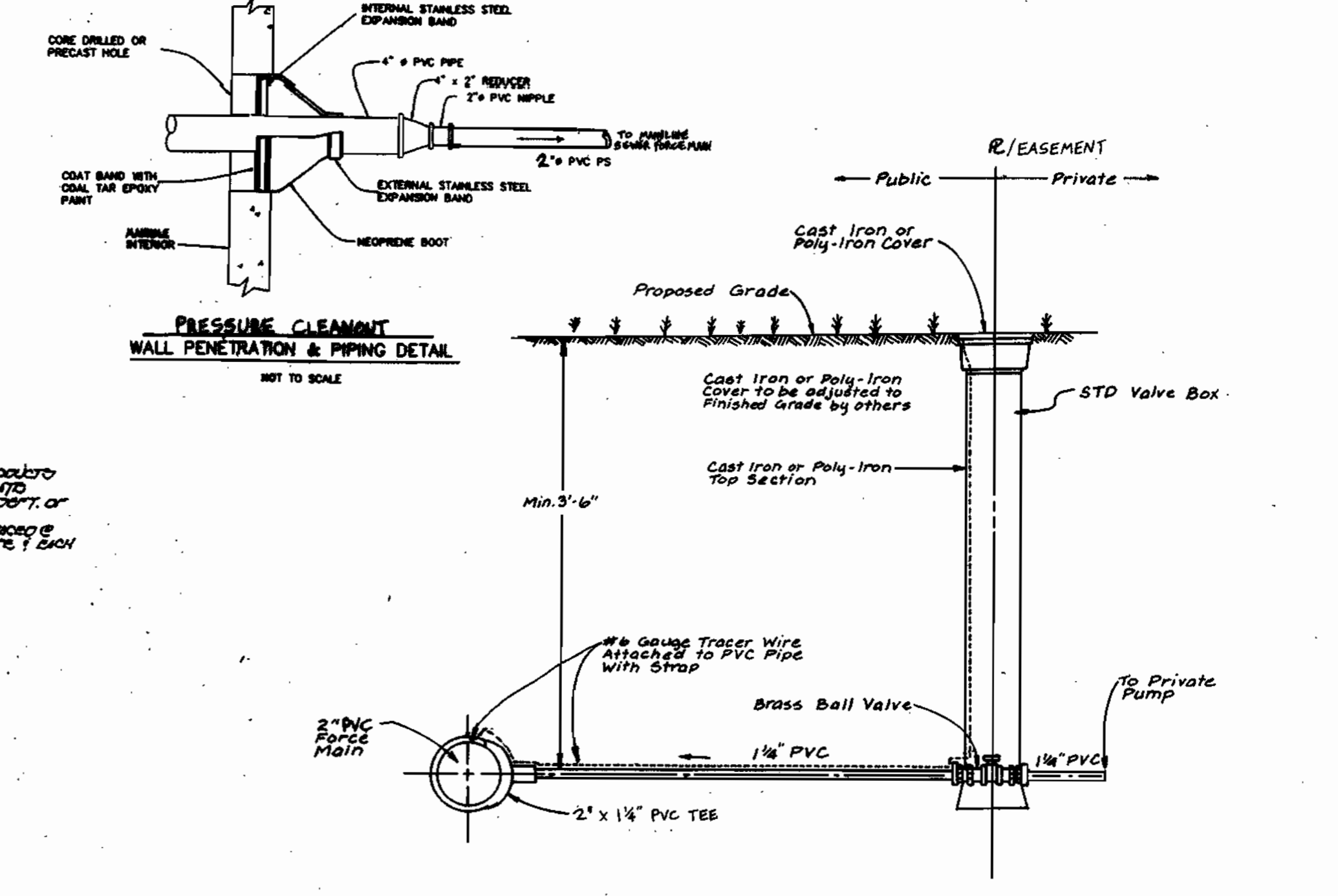
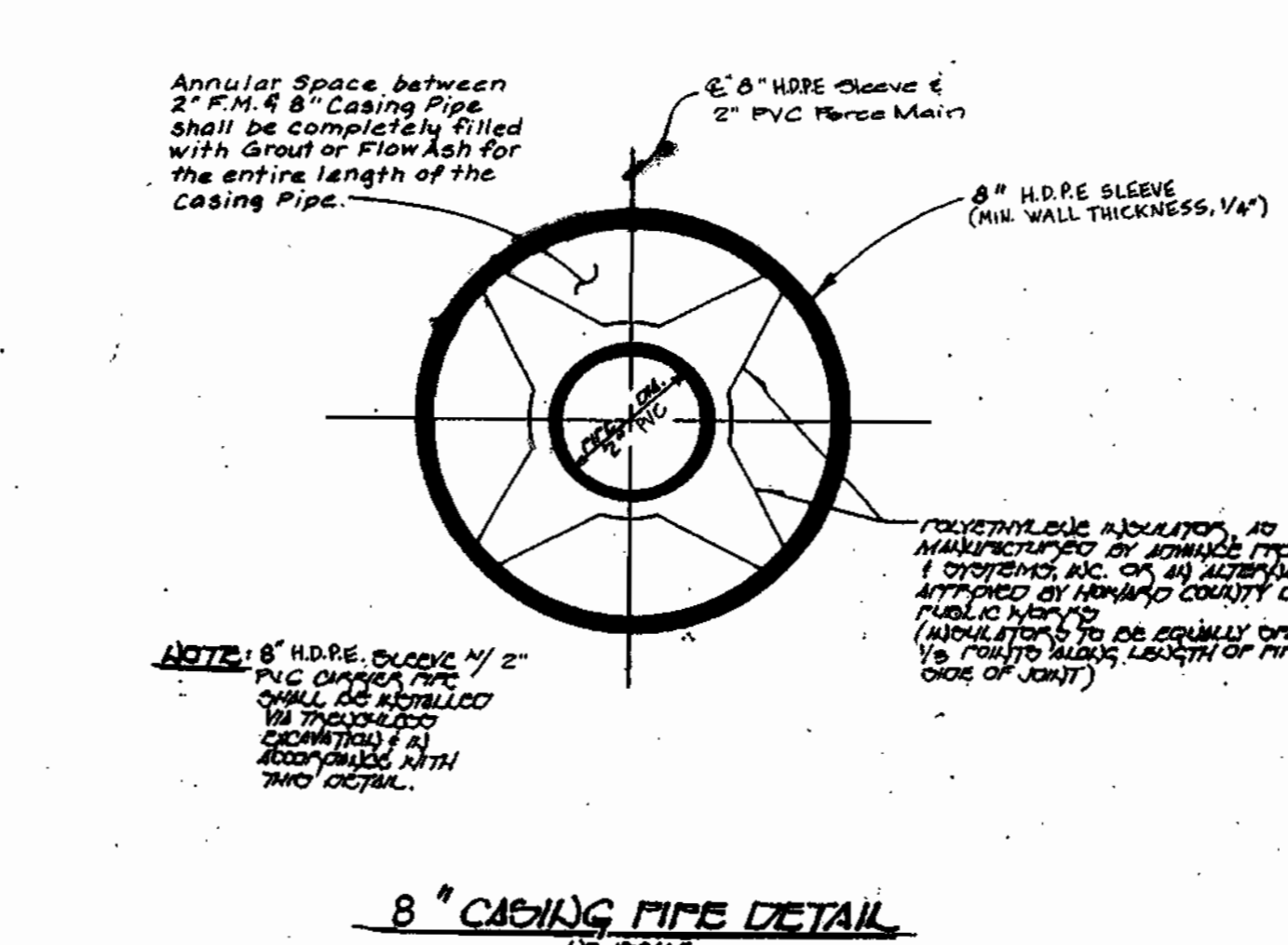
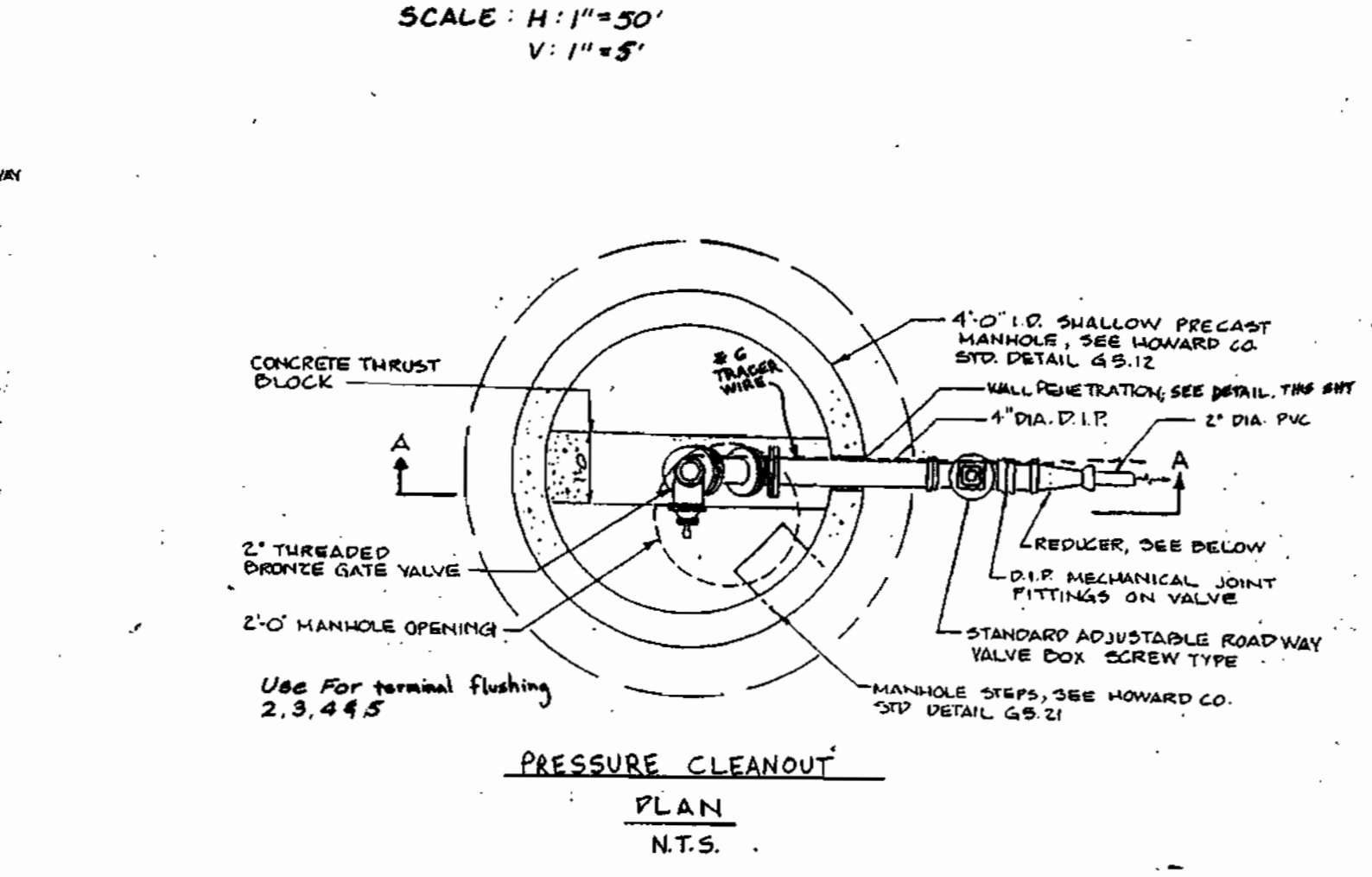
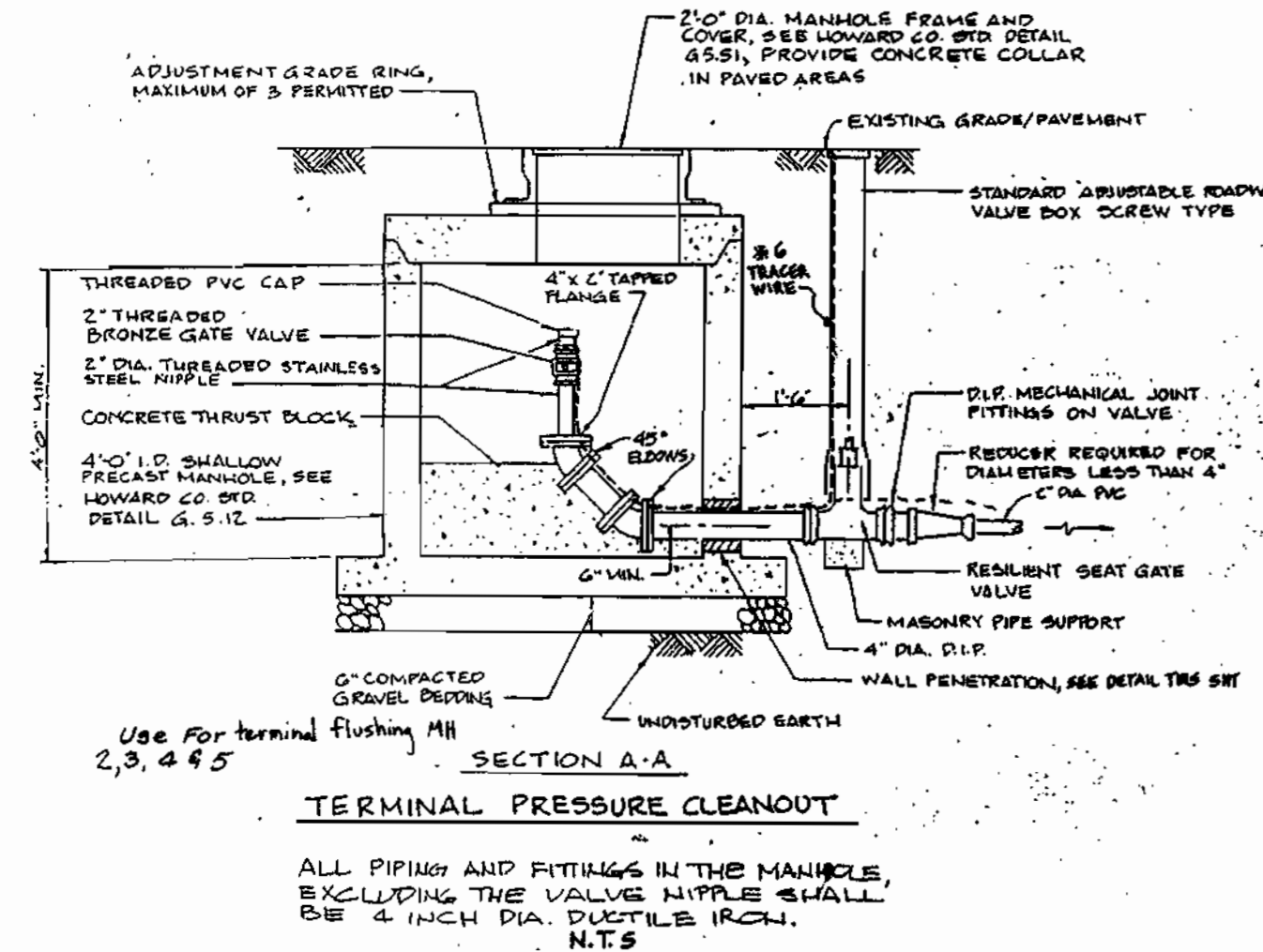
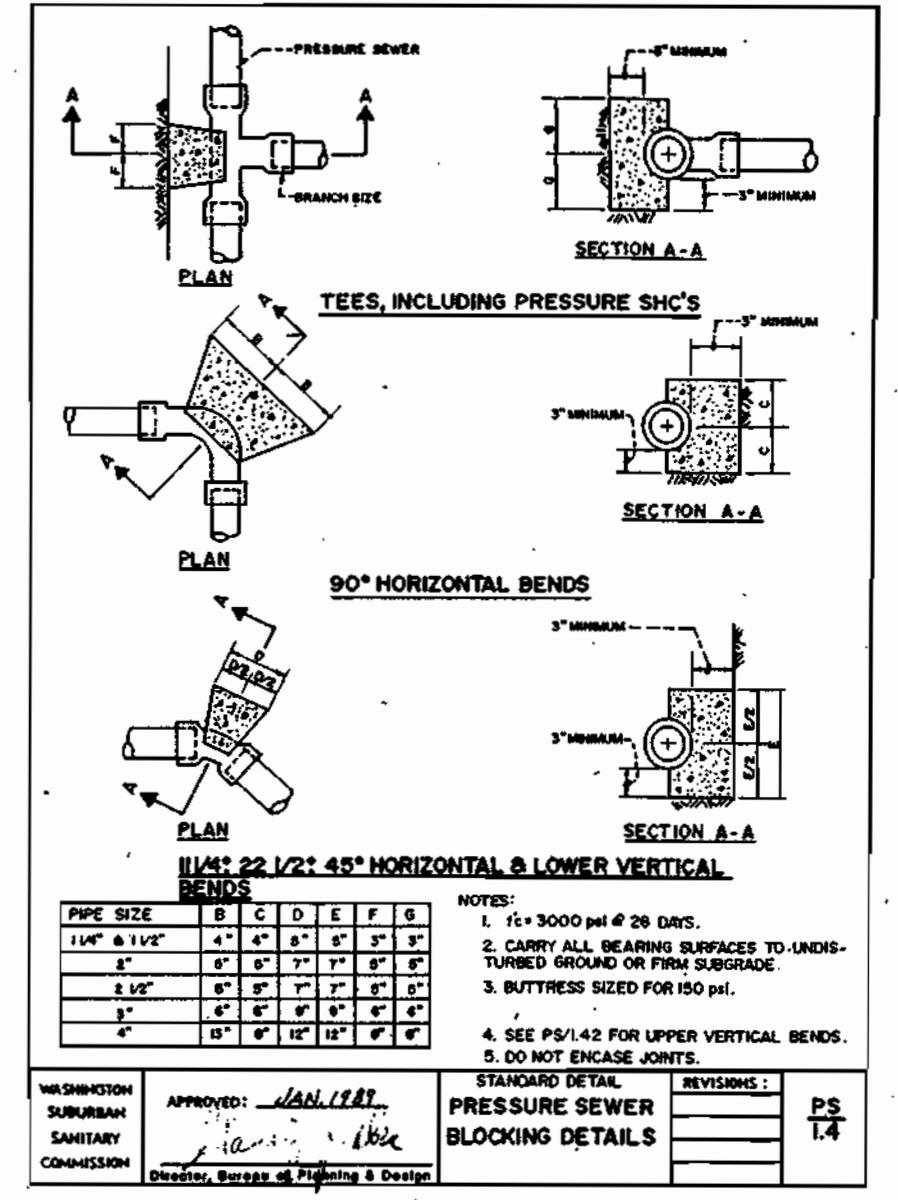
NOTE: THE LOCATION OF EXISTING UTILITIES SHOWN HEREON IS APPROXIMATE. THE CONTRACTOR SHALL PERFORM TEST PITS PRIOR TO BEGINNING ANY WORK SHOWN HEREON, SEE GENERAL NOTE # 7.



2" PUBLIC LOW PRESSURE FORCE MAIN PROFILE  
SCALE: H: 1" = 50'  
V: 1" = 5'



8" PUBLIC WATERMAIN PROFILE  
SCALE: H: 1" = 50'  
V: 1" = 5'



SEWER STRUCTURE SCHEDULE

MANHOLE NO.	TOP RIM ELEV.	INV. IN	INV. OUT	LOCATION	REMARKS
1	168.00	159.74	159.64	N 633431.32 E 1363313.64	See Ho. Co. Std. G-5.14
C/O 1	165.71	160.96	160.46	N 533350.38 E 1363431.53	See Ho. Co. Std. W-3.42
2	163.85	-	159.60	N 533269.17 E 1363549.51	See Detail, sheet 3 of 4
3	163.60	-	156.10	N 533368.27 E 1363568.79	See Detail, sheet 3 of 4
4	161.00	-	153.53	N 533287.57 E 1363767.14	See Detail, sheet 3 of 4
5	161.00	-	156.90	N 533432.62 E 1363663.12	See Detail, sheet 3 of 4

LOW PRESSURE SEWER SYSTEM PIPE SCHEDULE AND BRANCH ANALYSIS FOR PROPOSED FORCE MAIN SERVING THE A.H. SMITH PROPERTY

BRANCH NO.	NO. OF PUMPS	ACCUM. TOTAL	MAX. ON	MAX. FLOW (gpm)	PIPE SIZE (in.)	MAX. VELOCITY (fps)	LENGTH (ft.)	FRIC. LOSS (ft/100 ft)	ACCUM. FRICTION LOSS (ft)	MAX. MAIN PUMP ELEV. (ft.)	MINIMUM PUMP ELEV. (ft.)	ELEV. DIFF. (ft.)	MAX. TOTAL HEAD (ft.)
1	2 (1)	2	2 (1)	22	4-1/4"	4.18	45	1.87	30.09	163.00	151.00	12	42.08
2	4 (2)	6	4 (2)	44	"2"	3.59	138	5.37	28.21	160.00	149.00	11	39.21
3	2 (1)	2	2 (1)	22	4-1/4"	4.18	31	1.29	22.84	163.00	155.00	8	30.84
4	0	8 (4)	8 (3)	66	"2"	5.84	369	21.55	21.55	163.00	-	-	-

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED UNDER THESE CONTRACT DRAWINGS

DEPARTMENT OF PUBLIC WORKS | DEPARTMENT OF PLANNING AND ZONING | LDE, INC. 9250 RUNSEY ROAD, SUITE 106 COLUMBIA, MARYLAND 21045 (410) 715-1070 (301) 596-3424 | WATERMAIN & SEWER FORCE MAIN CONSTRUCTION PLAN | A. H. SMITH PROPERTY | PARCELS A, B & OPEN SPACE LOTS 1 & 2 | TAX MAP NO. 47 | 6TH ELECTION DISTRICT | P/O PARCEL 144 | HOWARD COUNTY, MARYLAND | CONTRACT NO. 24-3906-D | PROFILE, NOTES & DETAILS | SCALE As Shown | SHEET 3 of 4



**HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES**

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction. (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 disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1; b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, 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 (Section C) for permanent seeding, sod, temporary seeding, and mulching. 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: 23.57 Acres
  - Area Disturbed: 0.69 Acres
  - Area to be roofed or paved: 0.00 Acres
  - Area to be vegetatively stabilized: 0.07 Acres
  - Total Cut: 250 Cu. Yds. (Utility trenching)
  - Total Fill: 530 Cu. Yds. (Only)
- 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 control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the Inspection agency shall be requested upon completion of installation of 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.

**HOWARD SOIL CONSERVATION DISTRICT  
PERMANENT SEEDING NOTES**

Apply to graded or cleared areas 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, disking, or other acceptable means before seeding, if not previously loosened.

**SOIL AMENDMENTS:** In lieu of soil test recommendations, use one of the following schedules:

- PREFERRED** — Apply 2 tons per acre dolomitic limestone (92 lbs/1000sq. ft.) and 800 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (8 lbs/1000sq. ft.).
- ACCEPTABLE** — Apply 2 tons per acre dolomitic limestone (92 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

**SEEDING** — For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 80 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue and 2 lbs per acre (.05 lbs/1000sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) — 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) — Use sod. Option (3) — Seed with 60 lbs per acre Kentucky 31 Tall Fescue and mulch 2 tons / acre well anchored straw.

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

**MAINTENANCE** — Inspect all seeding areas and make needed repairs, replacements and reseedings.

**TEMPORARY SEEDING NOTES**

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

**SEEDBED PREPARATION:** — Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.

**SOIL AMENDMENTS:** — Apply 800 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq. ft.).

**SEEDING** — For periods March 1 thru April 30, and from August 15 thru October 15 seed with 2-12 bushels per acre of annual rye (3.2 lbs/1000sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs/1000sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

**21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**

**Definition**

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose**

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**Construction and Material Specifications**

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

Topsoil Specifications — Soil to be used as topsoil must meet the following:

- Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter.
- Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
- Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

For sites having disturbed areas under 5 acres:

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization — Section I — Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

- On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
  - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
  - Organic content of topsoil shall be not less than 1.5 percent by weight.
  - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

V. Topsoil Application

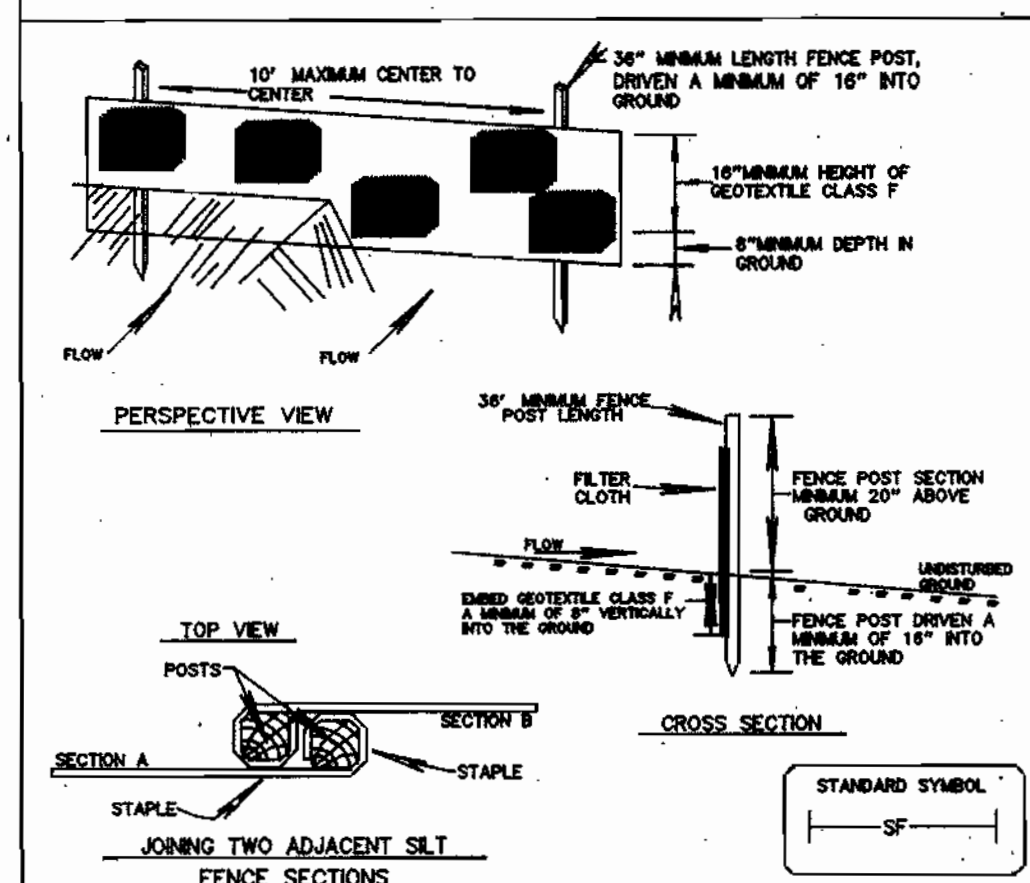
- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, elevated 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Alternative for Permanent Seeding — Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
  - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
- Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb./7,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VIA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1973.

**DETAIL 22 - SILT FENCE**



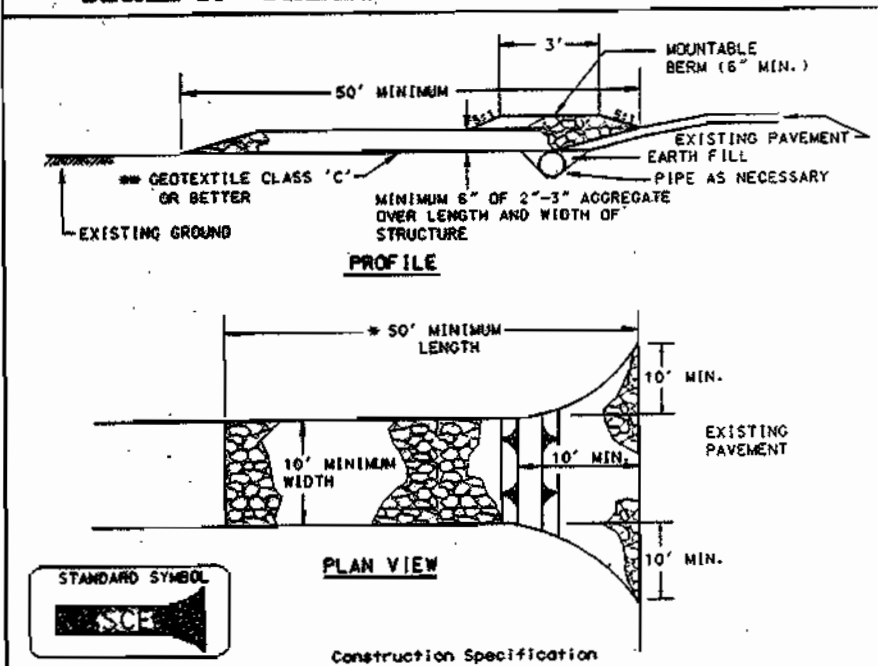
**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) and shall be of sound quality hardwood. Steel posts will be standard T or U 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:
 

Tensile Strength	50 lb/ft (min.)	Test: MSMT 509
Tensile Modulus	20 lb/ft (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft / minute (max.)	Test: MSMT 322
Filtration 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAVE E-19-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

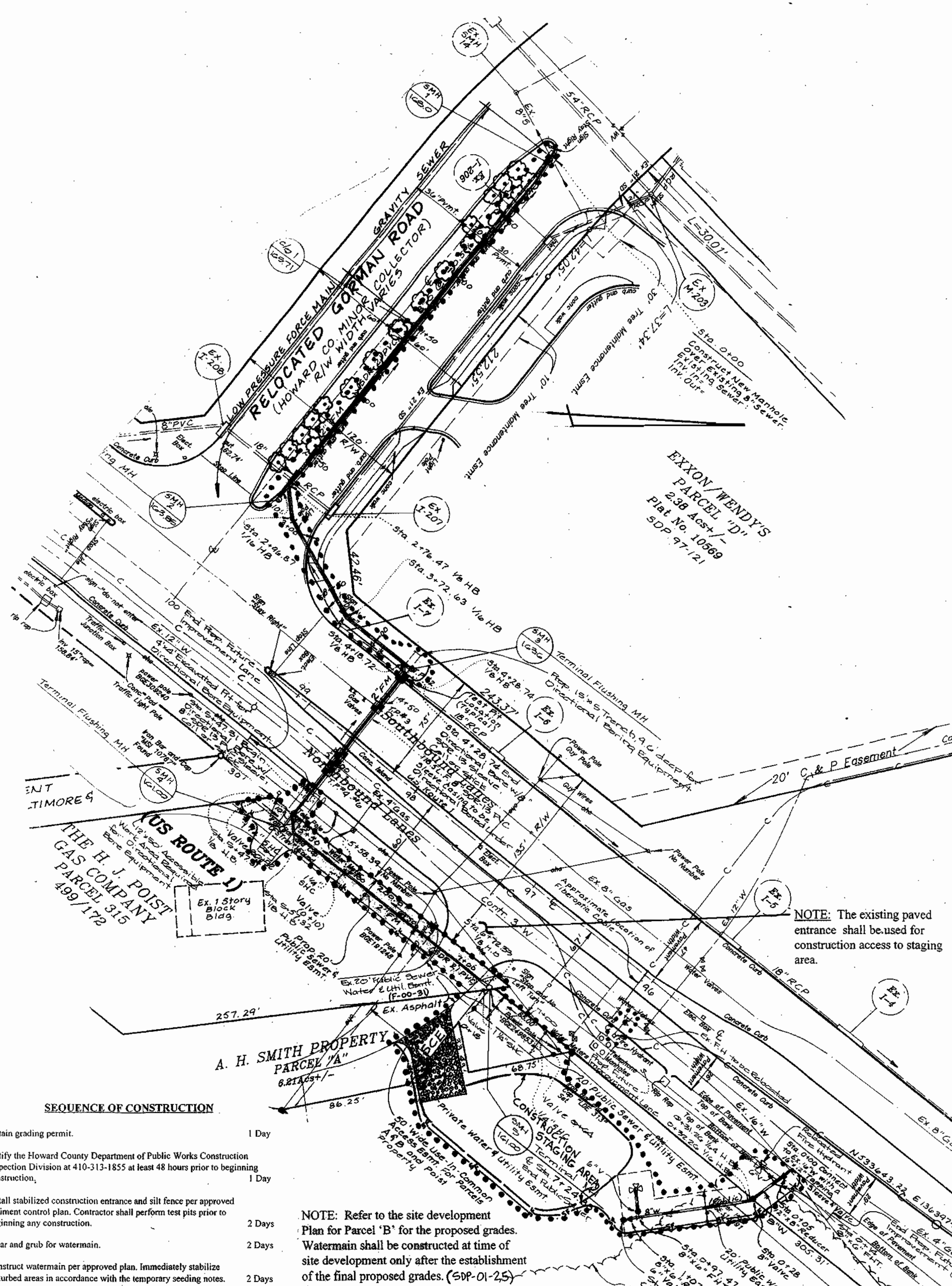
**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**



**Construction Specifications**

- Length - minimum of 50' (60' for single residence lots).
- Width - 10' minimum, should be stored at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be closed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or recycled or recycled concrete equivalent shall be placed at least 6" over the length and width of the entrances.
- Surface water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe entrance shall be sized through the entrance. Entrance shall be protected with a reinforced berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 12" minimum will be required.
- Location - a stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAVE E-21-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**SEQUENCE OF CONSTRUCTION**

- Obtain grading permit. 1 Day
- Notify the Howard County Department of Public Works Construction Inspection Division at 410-313-1855 at least 48 hours prior to beginning construction. 1 Day
- Install stabilized construction entrance and silt fence per approved sediment control plan. Contractor shall perform test pits prior to beginning any construction. 2 Days
- Clear and grub for watermain. 2 Days
- Construct watermain per approved plan. Immediately stabilize disturbed areas in accordance with the temporary seeding notes. 2 Days
- Remove or relocate existing signs and landscaping and within proposed sewermain alignment. 3 Days
- Construct low pressure sewer force main and gravity sewermain per approved plan. Once a section of pipe is installed and backfilled, immediately stabilize disturbed areas in accordance with the temporary seeding notes. (Note that no disturbance to the existing U.S. Route 1 paving shall occur. Directional bore proposed 6" casing under existing roadway.) 7 Days
- Immediately stabilize all remaining disturbed areas in accordance with the permanent seeding notes. 1 Day
- Replace or relocate signage and landscaping along Gorman Road. Repair Gorman Road in accordance with Howard County DPW requirements. Stabilize any remaining disturbed areas in accordance with the permanent seeding notes. 3 Days
- With the permission of the Sediment Control Inspector, remove all remaining sediment control devices and stabilize any remaining disturbed areas. 3 Days

NOTE: Refer to the site development Plan for Parcel 'B' for the proposed grades. Watermain shall be constructed at time of site development only after the establishment of the final proposed grades. (SOP-01-25)

PLAN  
1" = 50'

DEPARTMENT OF PUBLIC WORKS  
10-12-00  
CHIEF-BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
DATE

**LDE, INC.**  
9250 RUMSEY ROAD, SUITE 106  
COLUMBIA, MARYLAND 21045  
(410) 715-1070 (301) 596-3424  
Fax: (410) 715-9540

STATE OF MARYLAND  
DEPARTMENT OF ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION

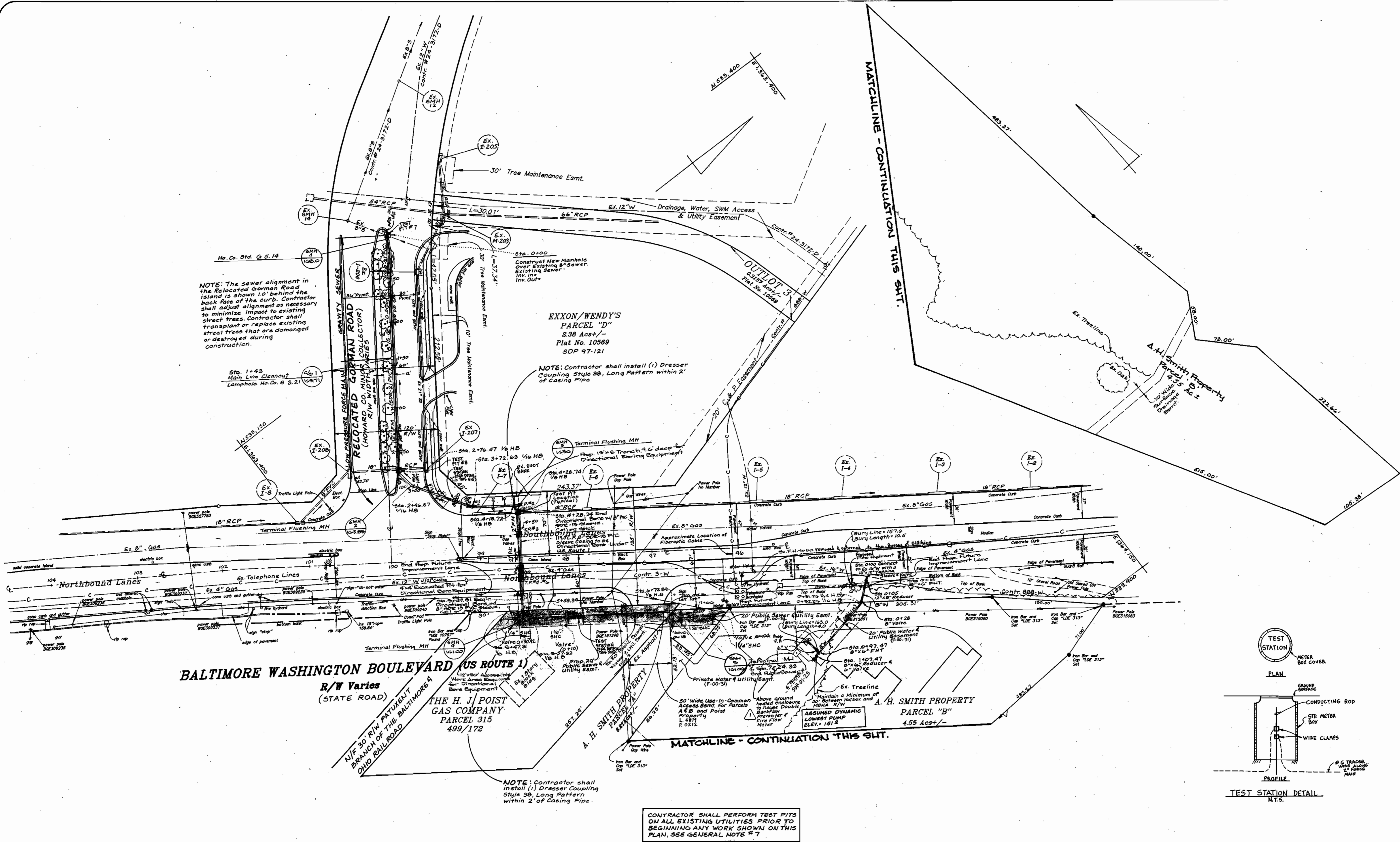
DESIGNED SDH  
DRAWN SB  
CHECKED BOB  
DATE 9/00

BY NO. REVISION DATE

Soil Erosion & Sediment Control Plan & Details

**A. H. SMITH PROPERTY**  
PARCELS "A", "B" & OPEN SPACE LOTS 142  
TAX MAP NO. 47 8/O PARCEL 144  
6th Election District Howard County, Maryland  
CONTRACT NO. 24-3906-D  
SCALE AS SHOWN  
SHEET 4 OF 4





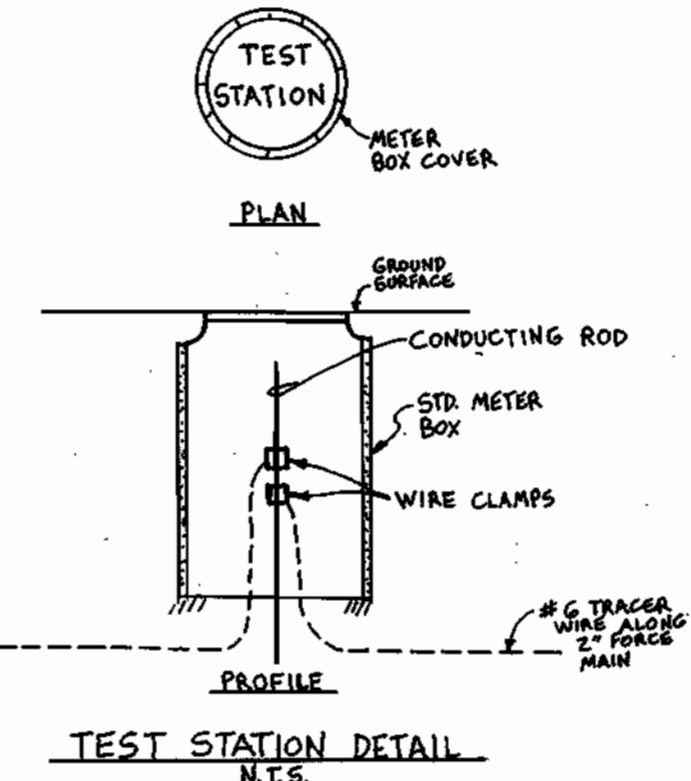
NOTE: The sewer alignment in the Relocated Gorman Road island is shown 10' behind the back face of the curb. Contractor shall adjust alignment as necessary to minimize impact to existing street trees. Contractor shall transplant or replace existing street trees that are damaged or destroyed during construction.

EXXON/WENDY'S PARCEL "D" 2.38 Ac +/- Plat No. 10589 SDP 97-121

NOTE: Contractor shall install (1) Dresser Coupling Style 38, Long Pattern within 2' of casing pipe.

NOTE: Contractor shall install (1) Dresser Coupling Style 38, Long Pattern within 2' of casing pipe.

CONTRACTOR SHALL PERFORM TEST PITS ON ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK SHOWN ON THIS PLAN, SEE GENERAL NOTE # 7

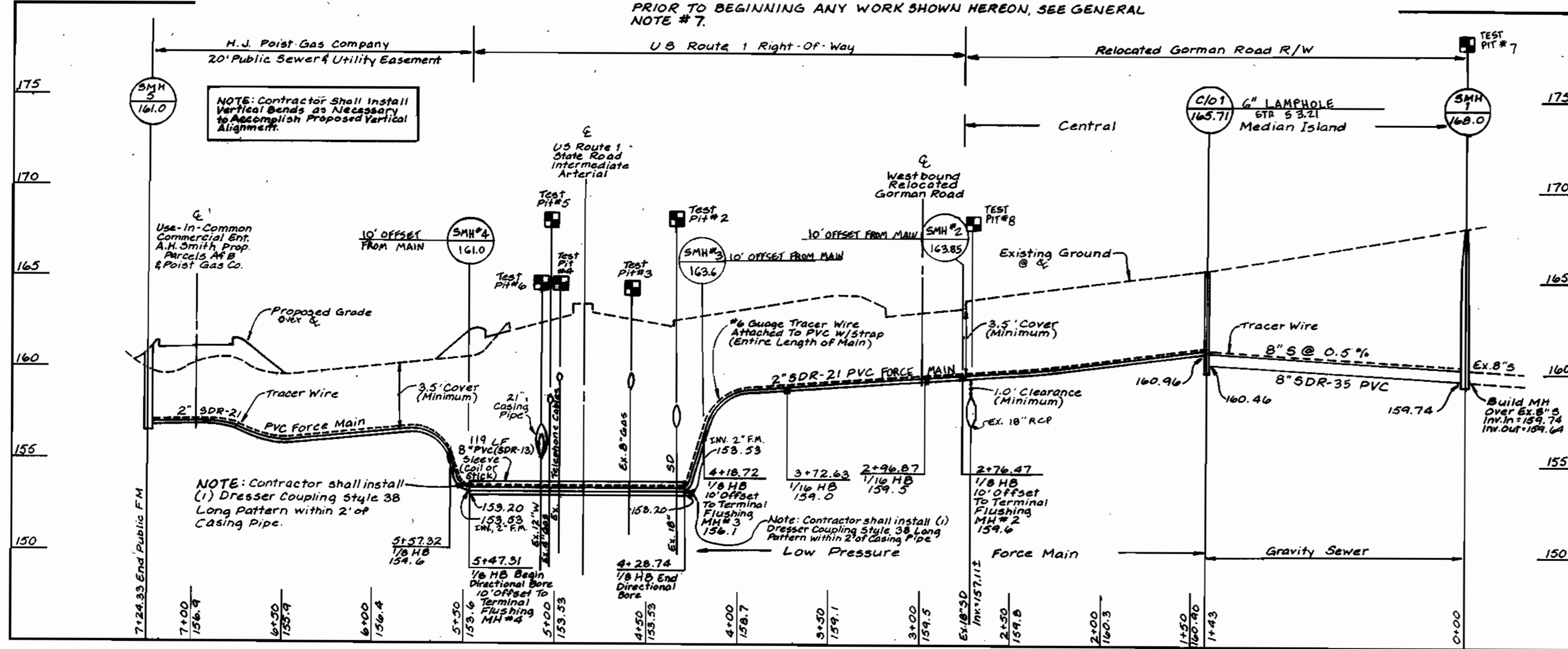


SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED UNDER THESE CONTRACT DRAWINGS

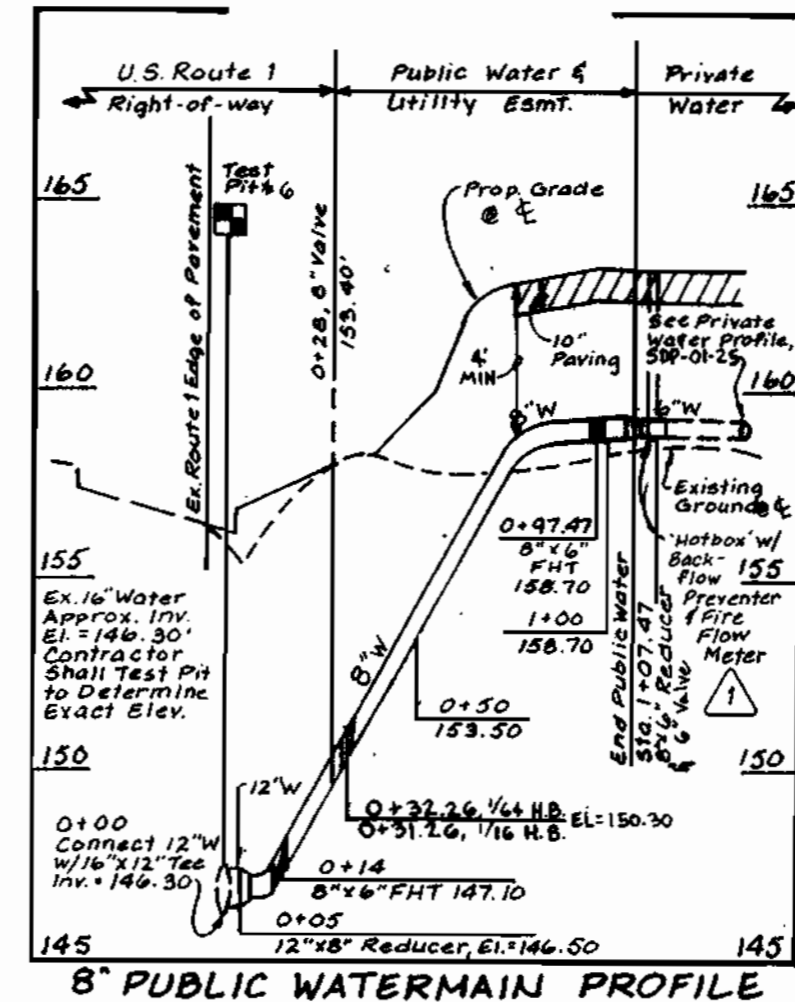
DEPARTMENT OF PUBLIC WORKS <i>Ruth Bennis</i> 10-12-02 CHIEF-BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING AND ZONING <i>[Signature]</i> 10/16/08 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE	LDE, INC. 9250 RUMSEY ROAD, SUITE 106 COLUMBIA, MARYLAND 21045 (410) 715-1070 (301) 596-3424		DESIGNED SDH DRAWN STB CHECKED BDB DATE 9/2000	LDE 1 Removed 6" detector check vault, added 'hot box' for backflow preventer and fire flow meter. 2-02	PLAN	WATERMAIN & SEWER FORCE MAIN CONSTRUCTION PLAN <b>A. H. SMITH PROPERTY</b> PARCELS A, B & OPEN SPACE LOTS 142 TAX MAP NO. 47 P/O PARCEL 144 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 24-3906-D	SCALE 1" = 50' SHEET 2 OF 4
---	---	---	--	---	---	------	---	--------------------------------------



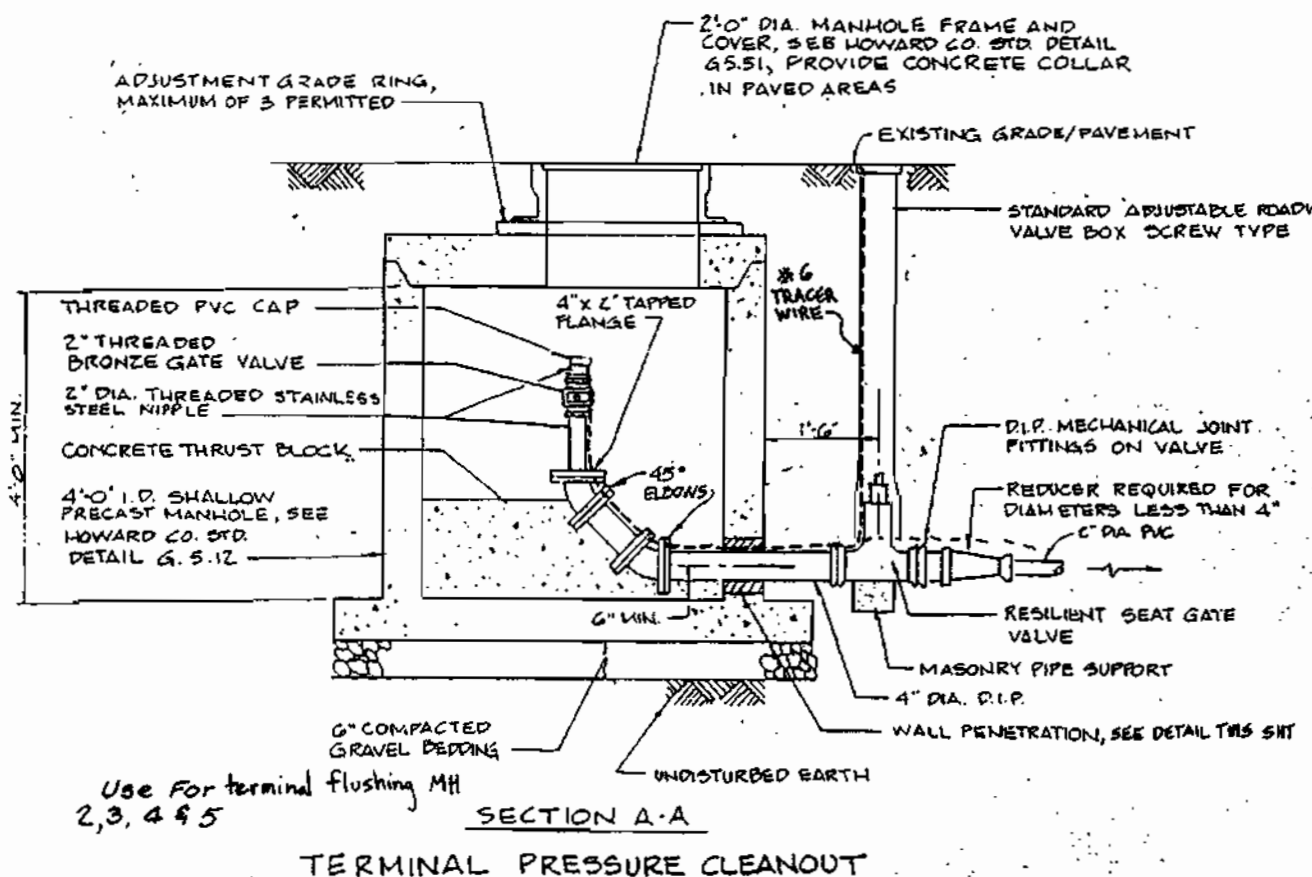
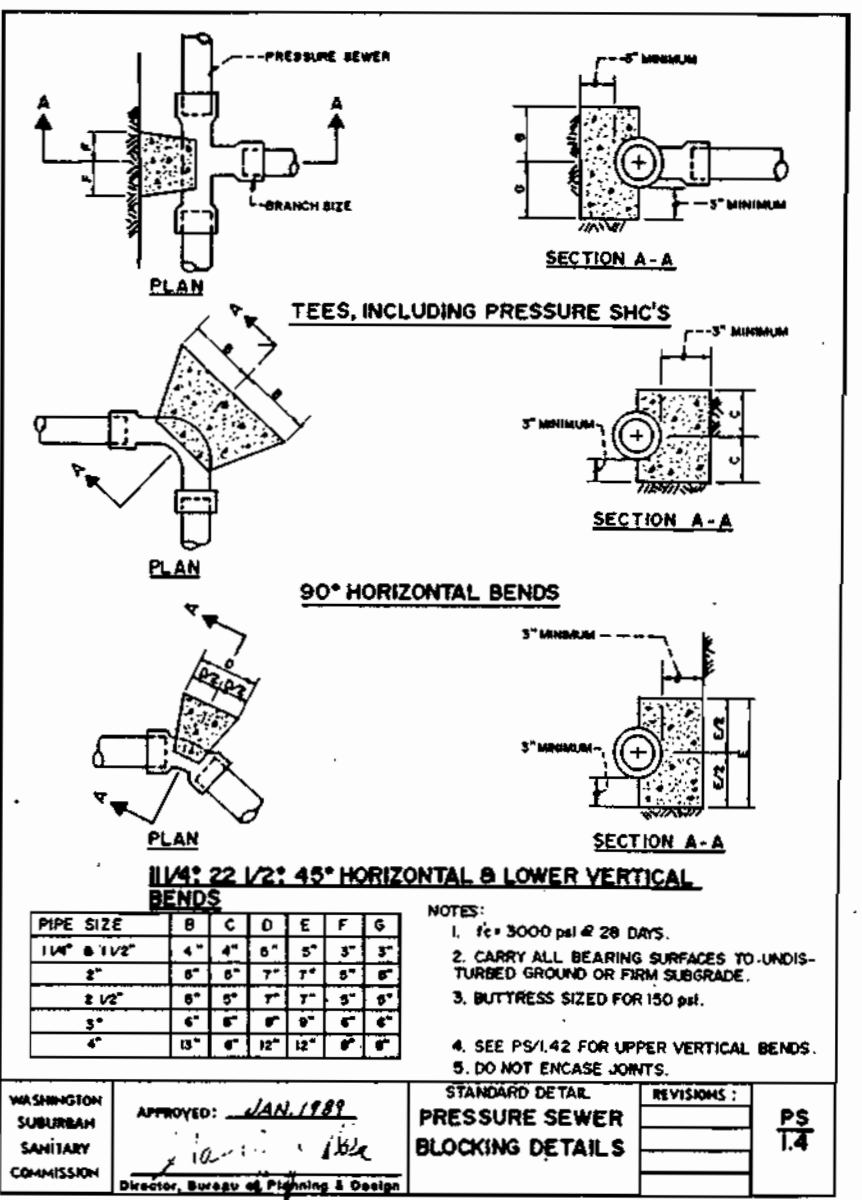
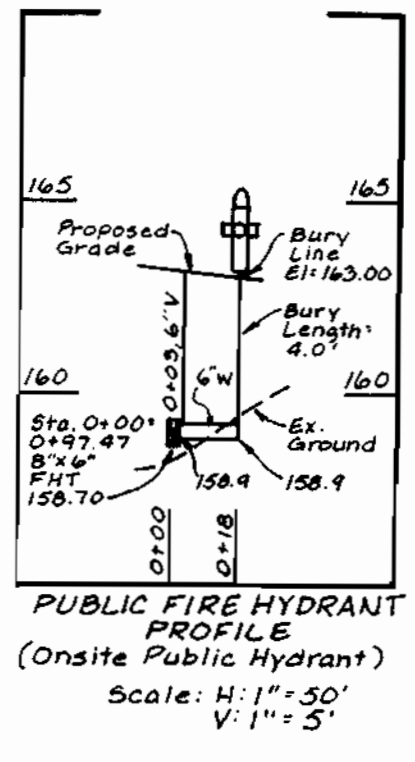
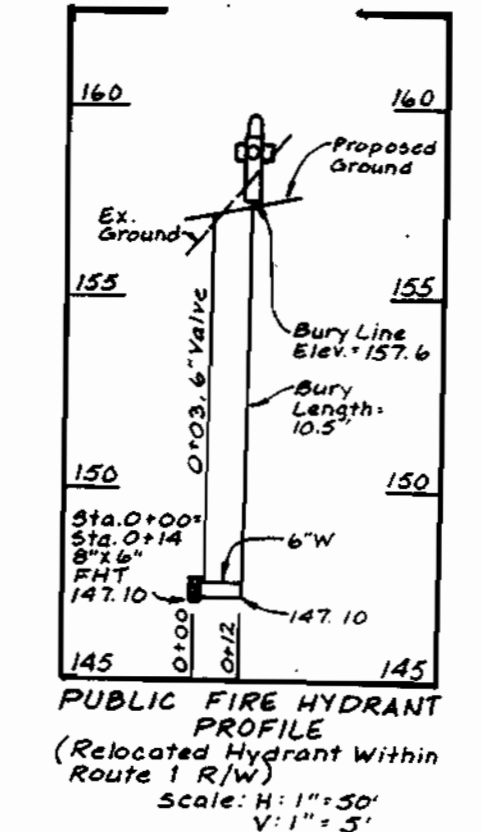
NOTE: THE LOCATION OF EXISTING UTILITIES SHOWN HEREON IS APPROXIMATE. THE CONTRACTOR SHALL PERFORM TEST PITS PRIOR TO BEGINNING ANY WORK SHOWN HEREON, SEE GENERAL NOTE # 7.



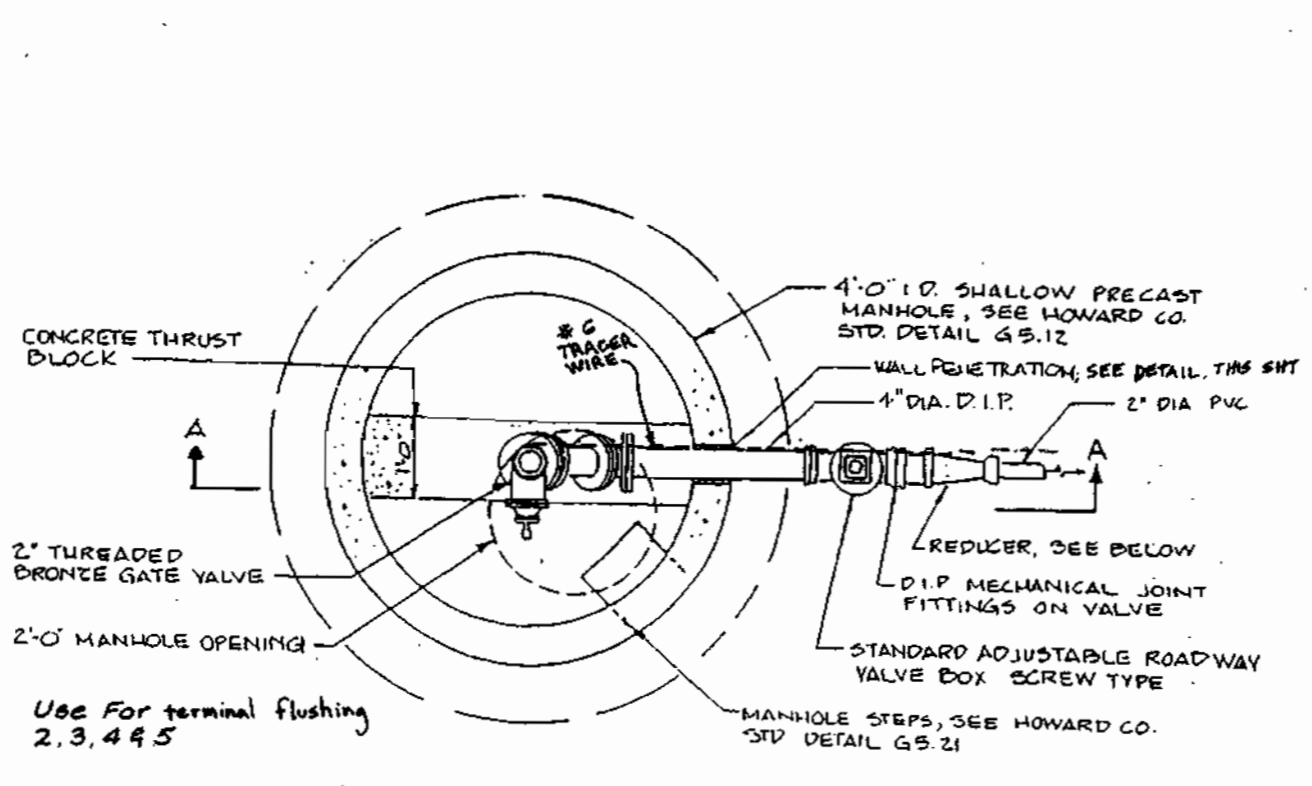
2\"/>



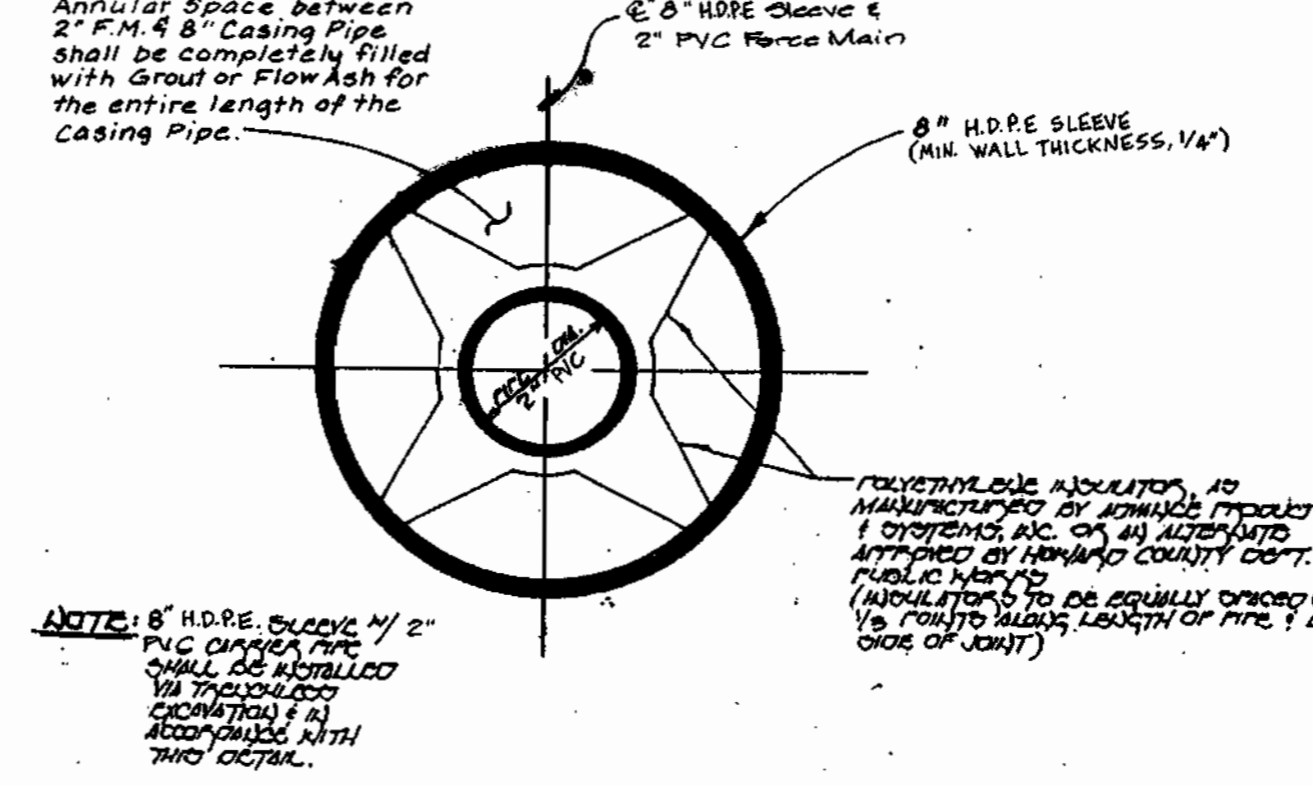
8\"/>



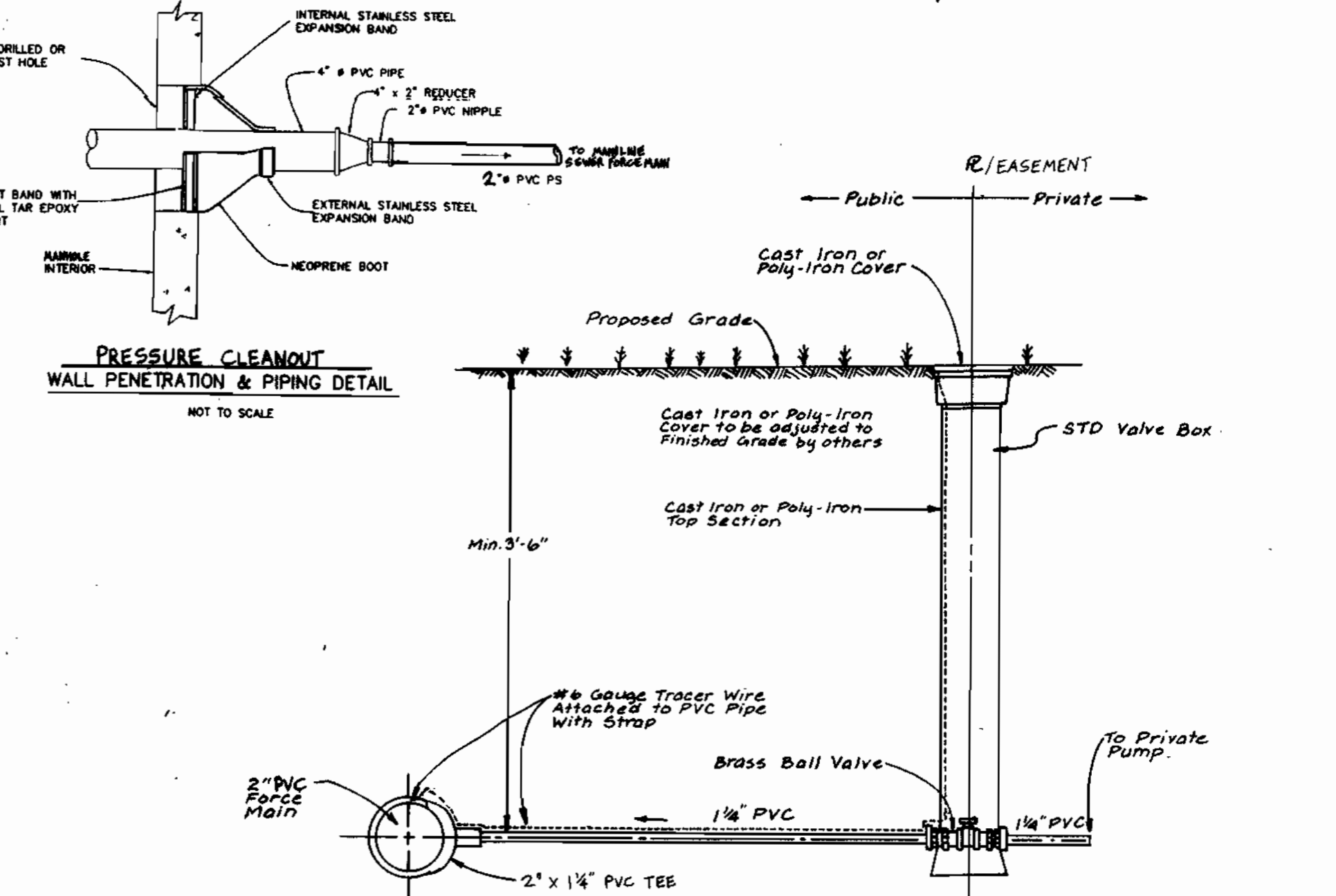
TERMINAL PRESSURE CLEANOUT SECTION A-A



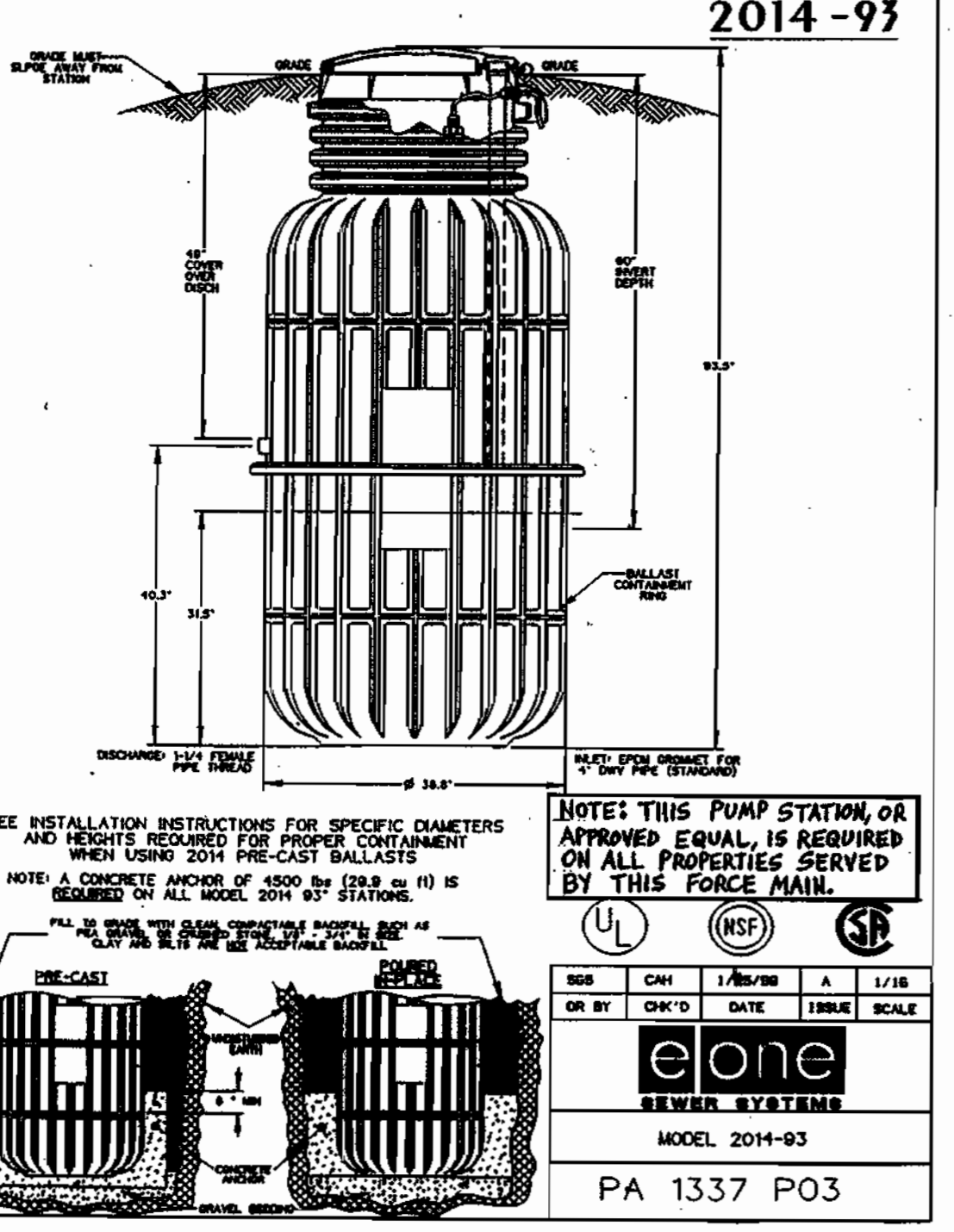
PRESSURE CLEANOUT PLAN N.T.S.



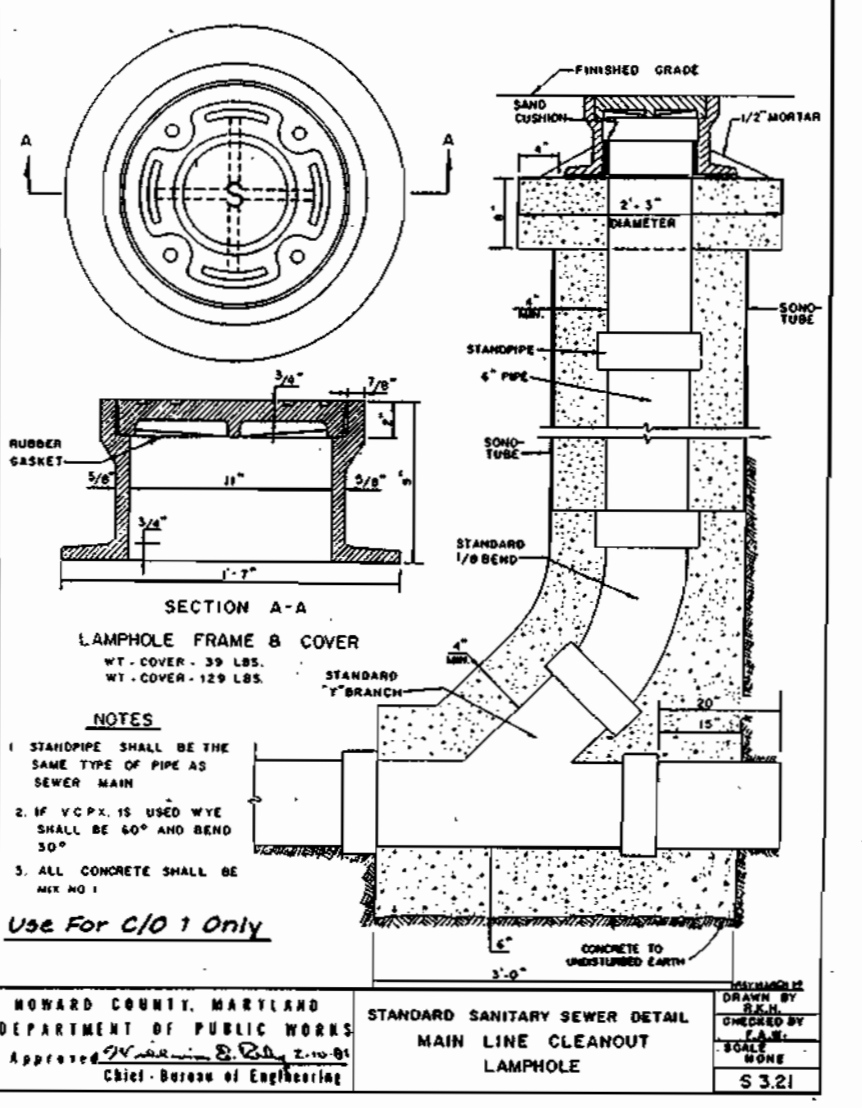
8\"/>



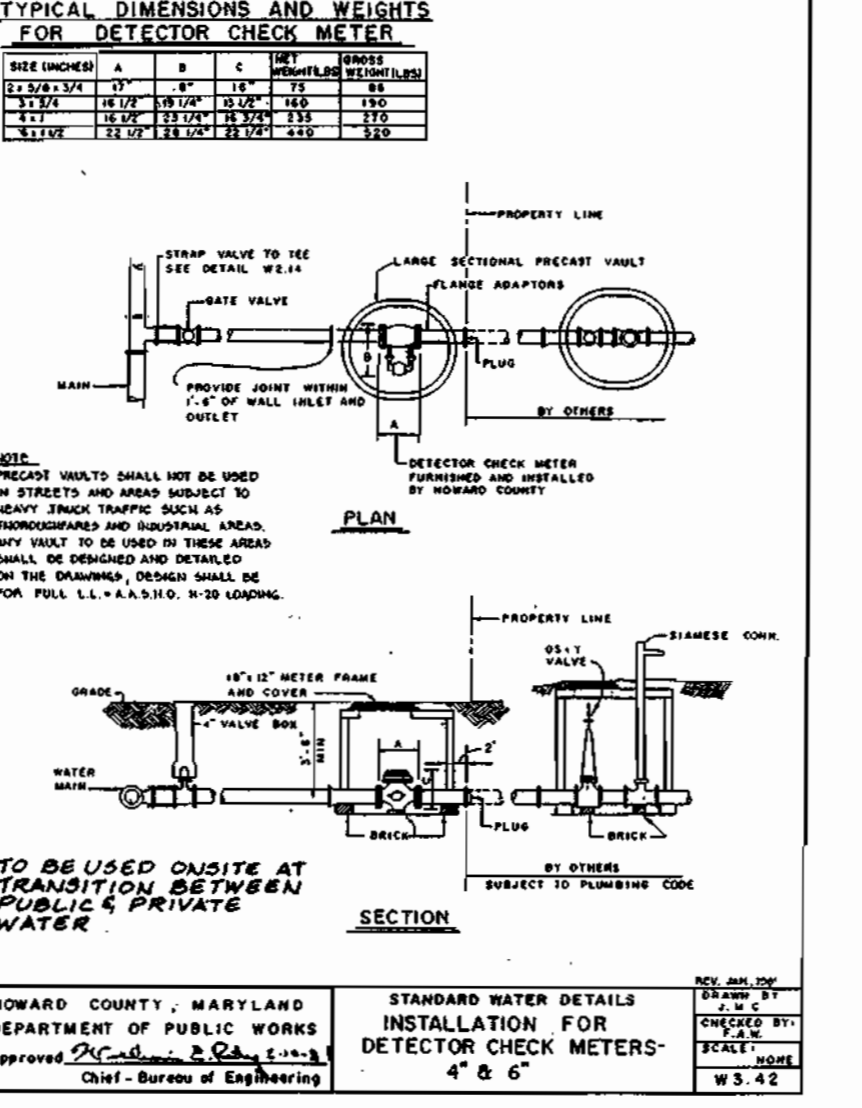
SEWER HOUSE CONNECTION DETAIL N.T.S.



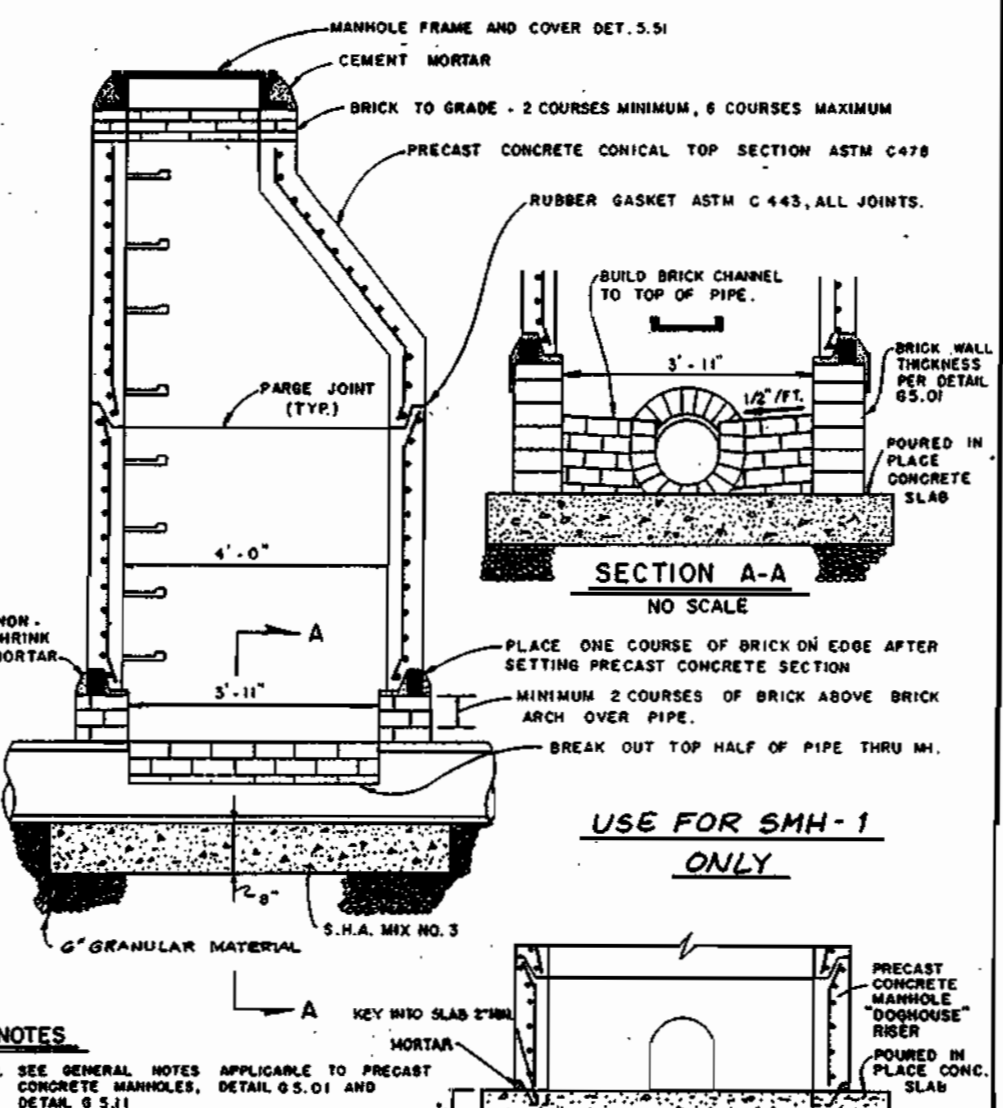
2014-93 PUMP STATION DETAIL



LAMP HOLES SECTION A-A



TYPICAL DIMENSIONS AND WEIGHTS FOR DETECTOR CHECK METER



SECTION A-A PRECAST RISER

SEWER STRUCTURE SCHEDULE						
MANHOLE NO.	TOP RIM ELEV.	INV. IN.	INV. OUT.	LOCATION	REMARKS	
1	168.00	159.74	159.64	N 533431.32 E 1363313.64	See Ho. Co Std. G-5.14	
C/O 1	165.71	160.96	160.46	N 533350.38 E 1363431.53	See Ho. Co Std. W-3.42	
2	163.85	-	159.60	N 533269.17 E 1363549.81	See Detail, sheet 3 of 4	
3	163.60	-	156.10	N 533366.27 E 1363656.79	See Detail, sheet 3 of 4	
4	161.00	-	153.53	N 533287.37 E 1363767.14	See Detail, sheet 3 of 4	
5	161.00	-	156.90	N 533432.62 E 1363863.12	See Detail, sheet 3 of 4	

LOW PRESSURE SEWER SYSTEM PIPE SCHEDULE AND BRANCH ANALYSIS FOR PROPOSED FORCE MAIN SERVING THE A.H. SMITH PROPERTY													
BRANCH NO.	NO. OF PUMPS	ACCUM. TOTAL	MAX. ON FLOW	MAX. FRICTION LOSS (ft/100 ft)	PIPE SIZE (in.)	MAX. VELOCITY (fps)	LENGTH (ft.)	FRICTION LOSS (ft.)	ACCUM. FRICTION LOSS (ft.)	MAX. MAIN PUMP ELEV. (ft.)	MINIMUM PUMP ELEV. (ft.)	ELEV. DIFF. (ft.)	MAX. TOTAL HEAD (ft.)
1	2 (1)	2	2 (1)	22	1-1/4"	4.16	45	1.87	30.08	163.00	151.00	12	42.08
2	4 (2)	6	4 (2)	44	2"	3.89	138	5.37	28.21	160.00	149.00	11	39.21
3	2 (1)	2	2 (1)	22	1-1/4"	4.16	31	1.29	22.84	163.00	155.00	8	30.84
4	0	8 (4)	8 (3)	66	2"	5.84	369	21.55	21.55	163.00	-	-	-

See General Note # 9, under section III.  
 The pump system proposed for the properties connecting to the public force main is a duplex pump system. Each duplex station contains two (2) pumps capable of operating at the same time. The average outflow pumped from each individual pump is 11 gallons per minute. Therefore, since each station contains two (2) pumps the total outflow from each duplex station is 22 gpm.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED UNDER THESE CONTRACT DRAWINGS

DEPARTMENT OF PUBLIC WORKS | DEPARTMENT OF PLANNING AND ZONING | LDE, INC. 9250 RUMSEY ROAD, SUITE 106 COLUMBIA, MARYLAND 21045 (410) 715-1070 (301) 596-3424 | DESIGNED SDH | DRAWN STB | CHECKED BDB | DATE 9/2000 | WATERMAIN & SEWER FORCE MAIN CONSTRUCTION PLAN | A. H. SMITH PROPERTY | PARCELS A, B & OPEN SPACE LOTS 1 & 2 | TAX MAP NO. 47 | 6TH ELECTION DISTRICT | CONTRACT NO. 24-3906-D | P/O PARCEL 144 | HOWARD COUNTY, MARYLAND | SCALE As Shown | SHEET 3 of 4