

AS-BUILT

3382 ws/1 Ashleigh Knolls (Ph. II)

WINCHESTER HOMES ASHLEIGH KNOLLS

WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3382-D PHASE 2

Type of Building	Single Family
No. of Lots/Parcels	123
No. of Water House Connections	0
Total No. of Sewer House Connections	109
No. of Sewer House Connections in Phase 2	108
Drainage Area	Not Applicable
Treatment Plant	Ashleigh Knolls



VICINITY MAP
SCALE: 1" = 600'

PHASE 2				
ITEMS	QUANTITIES		RECORD	
	ESTIMATED	QUANTITIES	TYPE	SUPPLIER
2" PVC	441			
1 1/2" CURB VALVE AND RISER	10			
AIR/VACUUM RELEASE VALVE MANHOLE	1			
1,000-GALLON SEPTIC TANK WITH 500-GALLON PUMP CHAMBER UNIT, PUMPS, CONTROLS AND APPURTENANCES	10			
WASTEWATER DISPOSAL TRENCH	2,288			
NAME OF UTILITY CONTRACTOR:				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:				

~~SUPPLIER
OTHERS~~

~~NOTE - INDIVIDUAL SEPTIC TANK AND PUMP UNIT WILL BE CONSTRUCTED AT THE TIME OF BUILDING CONSTRUCTION WITH IN PUBLIC EASEMENT.~~

Reviewed for Howard Soil Conservation District and meets Technical requirements.

Patricia E. ...
U.S. Soil Conservation Service
Date: 9/27/94

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

John S. ...
Howard S.C.D.
Date: 9/27/94

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James A. ... 9/29/94
DIRECTOR OF PUBLIC WORKS DATE

Robert ... 9/19/94
CHIEF, BUREAU OF UTILITIES DATE

... 2/29/94
CHIEF, BUREAU OF ENGINEERING DATE

... 3/29/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: YRC					
DRN: BGM	BGM	ADD SUPPLIED BY OTHERS TO SEPTIC TANK QUANTITY	11-94		
CHK: ASJ		CREATE PHASED PLANS	9-94		
		FINAL SUBMITTAL	8-94		
DATE: 12-93	BY: NO.	REVISION	DATE		

COVER SHEET

600' SCALE MAP NO. 42-41 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM
CONTRACT NO. 50-3382-D
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 18

AS-BUILT

GENERAL NOTES

- 1 APPROXIMATE LOCATION ON 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.
- 2 ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- 3 ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- 4 ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- 5 CLEAR ALL UTILITIES BY A MINIMUM OF SIX INCHES. CLEAR ALL POLES BY TWO FEET MINIMUM OR 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 TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- 6 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.
- 7 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.
- 8 CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION	531-5533
BG&E CO. CONTRACTOR SERVICES	850-4620
BG&E CO. UNDER GROUND DAMAGE CONTROL	787-9068
MISS UTILITY	1-800-257-7777
COLONIAL PIPELINE CO.	795-1390
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF UTILITIES	313-4900
- 9 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.
- 10 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.
- 11 THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE.
- 12 ALL SEWER MAINS SHALL BE DIP CLASS 52, AND P.V.C. UNLESS OTHERWISE NOTED. PROVIDE MARKER TAPE OVER ALL PVC PIPELINES.
- 13 ALL MANHOLES SHALL BE FOUR FEET INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- 14 FORCE MAINS SHALL BE SDR 21 PVC AND DIP CLASS 52 WHERE INDICATED. PROVIDE MARKER TAPE OVER ALL PVC PIPELINES.

- 15 MANHOLES SHOWN WITH TWELVE INCH AND SIXTEEN INCH WALLS ARE FOR BRICK MANHOLES ONLY.
- 16 ALL HOUSES FOR THIS PROJECT DO NOT HAVE CELLAR SERVICE.
- 17 ALL MANHOLES ARE TO BE CONSTRUCTED ON UNDISTURBED EARTH.
- 18 PROVIDE COMPLETE SUPERVISION, DIRECTION, SCHEDULING AND COORDINATION OF ALL WORK UNDER THE CONTRACT, INCLUDING THAT OF SUBCONTRACTORS. BE RESPONSIBLE FOR ALL WORK AND INFORM ALL SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS OF ALL REQUIREMENTS OF THE CONTRACT.
- 19 ALL SEPTIC TANKS SHALL BE LOCATED OUTSIDE OF DRIVEWAY AND WALKWAY AREAS.

STRUCTURAL NOTES

- 1 SPECIFICATIONS AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" DATED 1989 FOR DESIGN, INCLUDING ALL INTERIM SPECIFICATIONS.
- 2 CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD. CONCRETE: $f_c = 1,200$ PSI REINFORCING STEEL: $f_s = 24,000$ PSI
- 3 CONCRETE: ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS.
- 4 KEYS: ALL KEYS ARE NOMINAL SIZE.
- 5 REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. WHERE NOT INDICATED, BAR LAP SPLICES SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS. THE MINIMUM CONCRETE COVER SHALL BE TWO INCHES UNLESS OTHERWISE NOTED. ALL REINFORCING IN TOP SLAB TO BE EPOXY COATED.
- 6 FOUNDATION: PRESUMED SOIL BEARING CAPACITY = 2,500 PSF. THE ENGINEER MUST APPROVE ALL FOUNDATIONS PRIOR TO CONCRETE PLACEMENT. IF UNSUITABLE MATERIAL IS ENCOUNTERED, THE MATERIAL SHALL BE UNDERCUT AND BACKFILLED WITH STRUCTURAL BACKFILL.
- 7 STRUCTURAL BACKFILL: CAST-IN-PLACE CONCRETE STRUCTURES AND PIPE SHALL BE BACKFILLED WITH SELECT GRANULAR BACKFILL MEETING THE REQUIREMENTS OF SRC GP-1 OR DGA. STRUCTURAL BACKFILL SHALL BE PLACED IN LOOSE LIFTS OF APPROXIMATELY SIX INCHES, AND COMPACTED TO 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASSHTO T-180. THE STATIC WEIGHT OF COMPACTION EQUIPMENT USED ADJACENT TO WALLS SHALL NOT EXCEED 3,000 POUNDS. NO BACKFILL SHALL BE PLACED AGAINST THE CAST-IN-PLACE WALLS UNTIL THE CONCRETE HAS ATTAINED THE SPECIFIED 28-DAY STRENGTH.
- () DEVELOPERS CERTIFICATE

"I/We certify that all development and 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 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."

Signature of Developer
Ralph E. Bice III

9/16/94
Date

() ENGINEER'S CERTIFICATE

"I 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."

Signature of Engineer
Anthony J. Pruner

09/03/94
Date

LEGEND

- AIR RELEASE VALVE MANHOLE
- AIR RELEASE VALVE W/ PRESSURE CLEANOUT
- CURB VALVE
- DIRECTION OF FLOW
- EXISTING UNDERGROUND TELEPHONE SERVICE
- EXISTING UNDERGROUND ELECTRIC SERVICE
- EXISTING GROUND ELEVATION CONTOUR
- FENCE (ALL TYPES)
- GROUNDWATER MONITORING WELL
- INLINE OR TERMINAL PRESSURE CLEANOUT
- ISOLATION VALVE
- MONITORING PORT
- PRESSURE LATERAL
- PRESSURE SEWER
- PROPERTY LINE
- PROPOSED GROUND ELEVATION CONTOUR
- SEPTIC TANK WITH PUMP CHAMBER
- TEST PIT
- TREE LINE
- TRENCH MARKER
- VALVE MANHOLE
- WELL

PHASE 2 DRAWING INDEX

SHEET NUMBER	SHEET NAME
1	COVER SHEET
2	GENERAL NOTES AND INDEX
3	COLLECTION SYSTEM KEY SHEET
3A	PHASING AND RESERVE AREA LOCATION PLAN
3B	RESERVE AREA DEVELOPMENT PLAN
4	PLAN MOORLAND, CARLISLE AND DOWNING
5	PROFILE MOORLAND, CARLISLE, DOWNING AND RAMSGATE
6	SEPTIC TANK PLAN AND SECTIONS
7	SEPTIC TANK NOTES
8	SEPTIC TANK ELECTRICAL DETAILS
9	AIR RELEASE VALVE/TERMINAL PRESSURE CLEANOUT WITH AIR RELEASE VALVE
10	TREATMENT SITE KEY SHEET
11	TREATMENT SITE PLAN (20 SCALE)
12	MANIFOLD PROFILE - CELL NO. 3 & 6
13	TREATMENT CELL SECTION
14	MISCELLANEOUS DETAILS
15	MISCELLANEOUS DETAILS
16	MISCELLANEOUS DETAILS
17	SEDIMENT AND EROSION CONTROL PLAN - 50 SCALE
18	SEDIMENT AND EROSION CONTROL - DETAILS
17A	REVISED HEADWORKS ACCESS ROAD ROAD PLAN, SEDIMENT & EROSION CONTROL
17B	REVISED HEADWORKS ACCESS ROAD - PROFILE

PHASE 2 NOTES

- 1. THESE PLANS ARE ONLY FOR THE CONSTRUCTION OF PHASE 2 OF THE ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM. SEE CONTRACT NO. 50-3382 FOR PHASE 1.

AS-BUILT 11/7/96

2382 WS/2

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS
9/29/94
DATE

CHIEF, BUREAU OF UTILITIES
9-19-94
DATE

CHIEF, BUREAU OF ENGINEERING
2/12/94
DATE

CHIEF, LAND DEVELOPMENT DIVISION
9/2/94
DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640

Professional Engineer
No. 12-93

DES: VRC				
DRN: BGMW				
CHK: BTP				
DATE: 12-93	BY	NO.	REVISION	DATE
			CREATE PHASED PLANS	7-24
			FINAL SUBMITTAL	8-94

GENERAL NOTES AND INDEX

600' SCALE MAP NO. 40-11 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

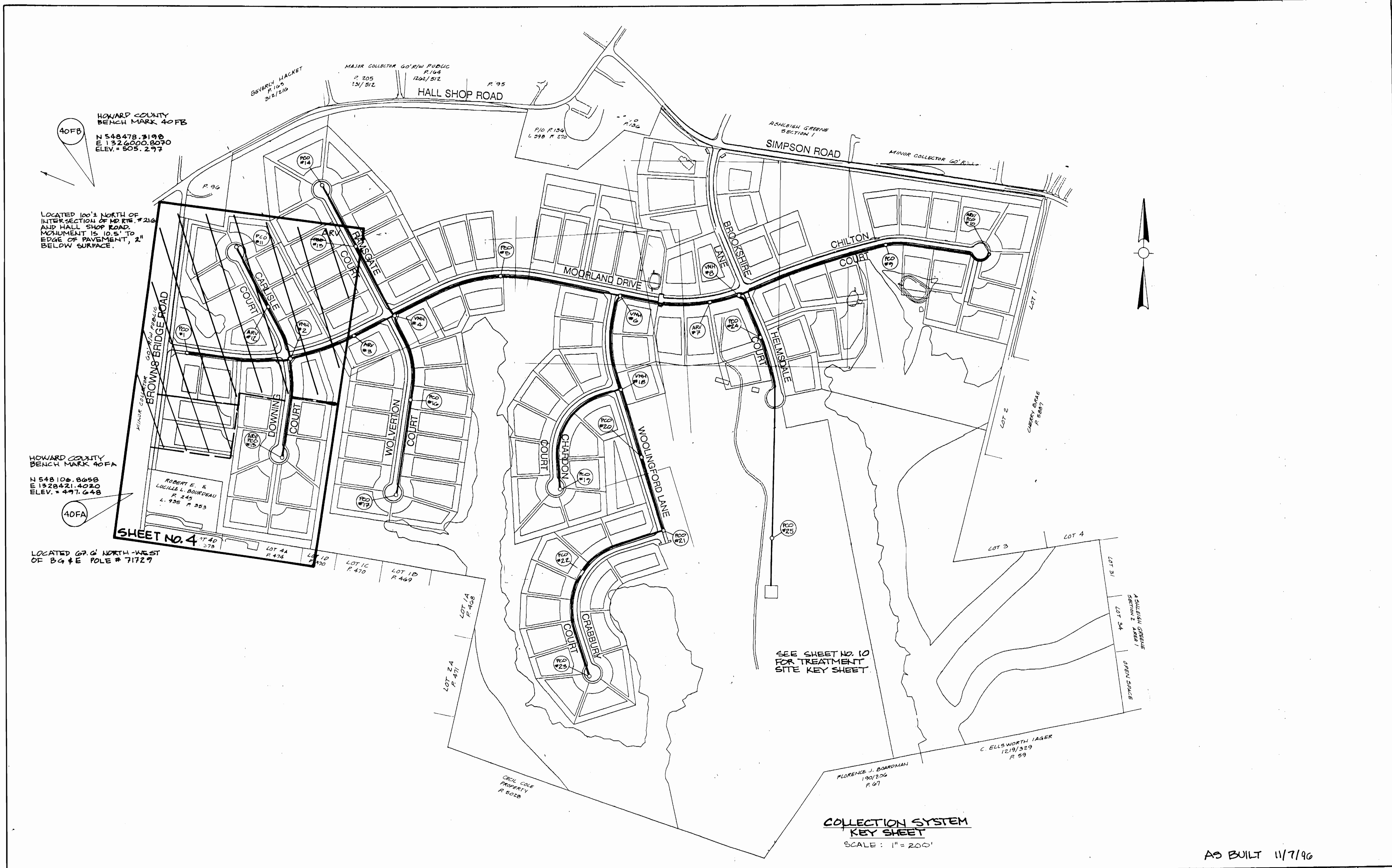
SCALE AS SHOWN

SHEET 2 OF 10

AS BUILT

ws/3

2852



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>James J. Lee</i> 9/27/94 Chief, Bureau of Engineering: <i>Paul J. Simpson</i> 9/22/94 Chief, Bureau of Utilities: <i>Robert J. ...</i> 9-19-94 Chief, Land Development Division: <i>...</i> 9/29/94		DAMES & MOORE 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640		DES: VRC DRN: BGLW CHK: AJF DATE: 12-93		COLLECTION SYSTEM KEY SHEET CREATE PLASSED PLANS 9-94 FINAL SUBMITTAL 8-94		ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3382-D ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 3 OF 13	
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AS BUILT

3382 ws/3A



AS BUILT 11/7/90

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James H. Chen 9/29/94
DIRECTOR OF PUBLIC WORKS DATE

Robert H. Davis 9-19-94
CHIEF, BUREAU OF UTILITIES DATE

Robert J. Sporn 9/22/94
CHIEF, BUREAU OF ENGINEERING DATE

Chris Dawson 9/23/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: VRC			
DRN: LCH			
CHK: ATP		CREATE PHASED PLANS	994
DATE: 12-93		FINAL SUBMITTAL	899
BY NO.		REVISION	DATE

PHASING AND RESERVE AREA LOCATION PLAN

SCALE: 1" = 200'

600' SCALE MAP NO. _____ BLOCK NO. _____

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3A OF 18

AS BUILT

3382 WS/3B



PLAN
SCALE: 1"=100'

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL SYSTEM

RESERVE AREAS DESIGN CRITERIA

- Assumed Percolation Rate - 30 min/in.
- Trench Design Criteria:
 - Infiltration surface - bottom area only.
 - Standard stone filled trenches.
 - Trench bottom depth varies to utilize the best perc strata.
- Wastewater Application Rate: 0.6 gal./ft²/day.
- Trench Length Calculations:
 - 109 residences.
 - Flow 300 gpd/residence.
 - Total flow 32,700 gpd.
 - Bottom area required 32,700/0.6 = 54,500 ft².
 - Trench width provided - 3 ft.
 - Trench length required - 18,167 ft. per reserve area.
 - Trench spacing 12 ft. center to center.
- Total reserve trench length required for two(2) areas - 36,333 ft.
- Number of reserve cells available - 16.
- Trench reserve length required per cell - 2270 ft. minimum.

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert B. Smith 9-29-94
DIRECTOR OF PUBLIC WORKS DATE

Robert B. Smith 9-29-94
CHIEF, BUREAU OF UTILITIES DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640

DES: VRC			
DRN: BGW			
CHK: AJP			
DATE: 8/94			
BY NO.			

RESERVE AREA DEVELOPMENT PLAN

CREATE PAVED PLANS

DATE: 9-94

600' SCALE MAP NO. 40-41 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM
CONTRACT NO. 50-3382-D

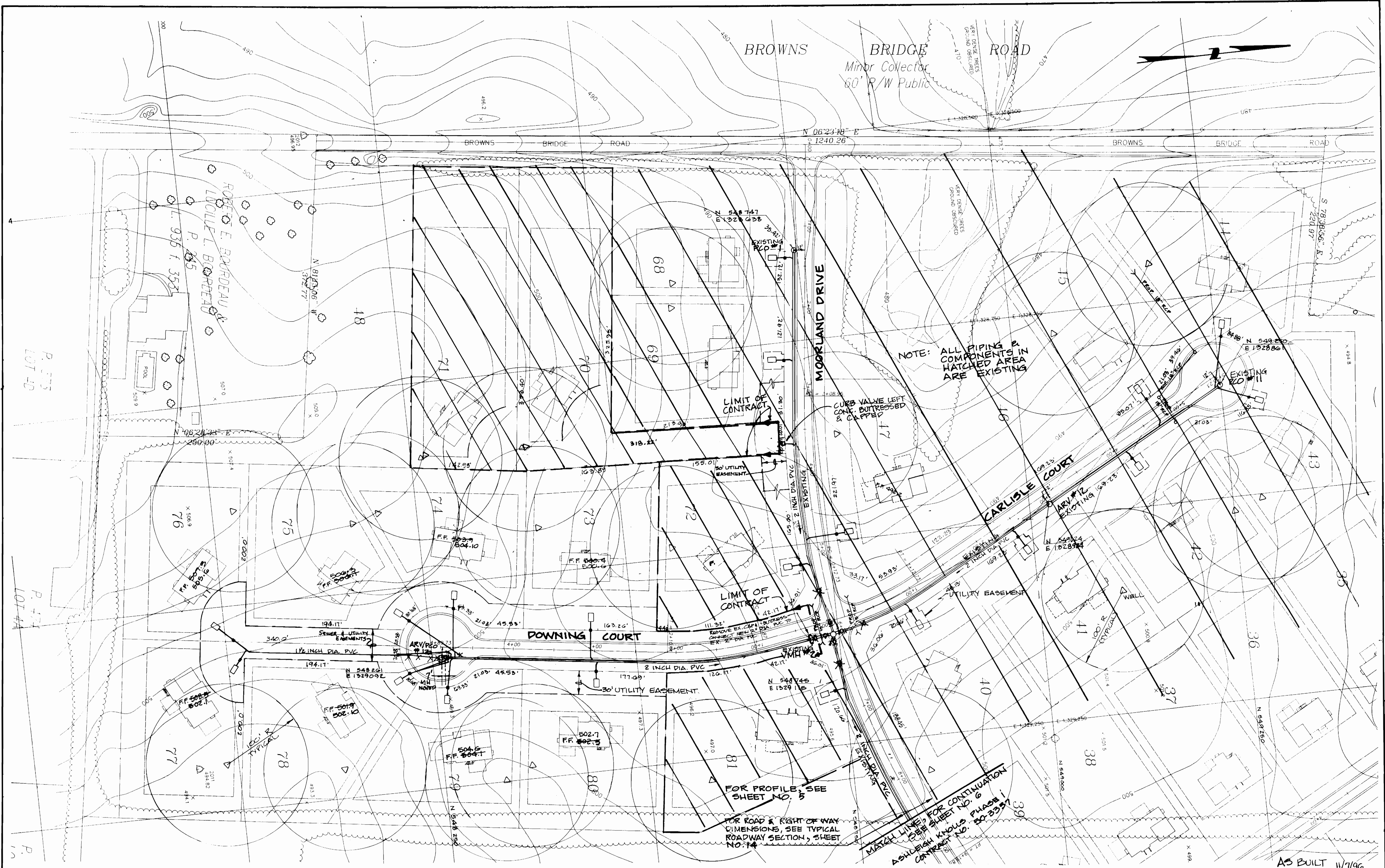
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 28 OF 12

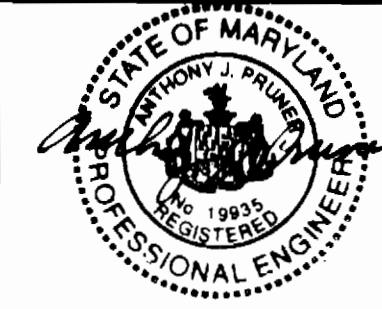
AS BUILT

3382 ws/4



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DAMES & MOORE
170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: VRC			
DRN: LCH			
CHK: AJP	DELETE LOTS 70 & 71 FROM CONTRACT	2-96	
DATE: 12-93	CREATE PHASED PLANS	9-94	
	FINAL SUBMITAL	8-94	
BY NO.	REVISION	DATE	

**PLAN MOORLAND,
CARLISLE AND DOWNING**
SCALE: 1" = 50'

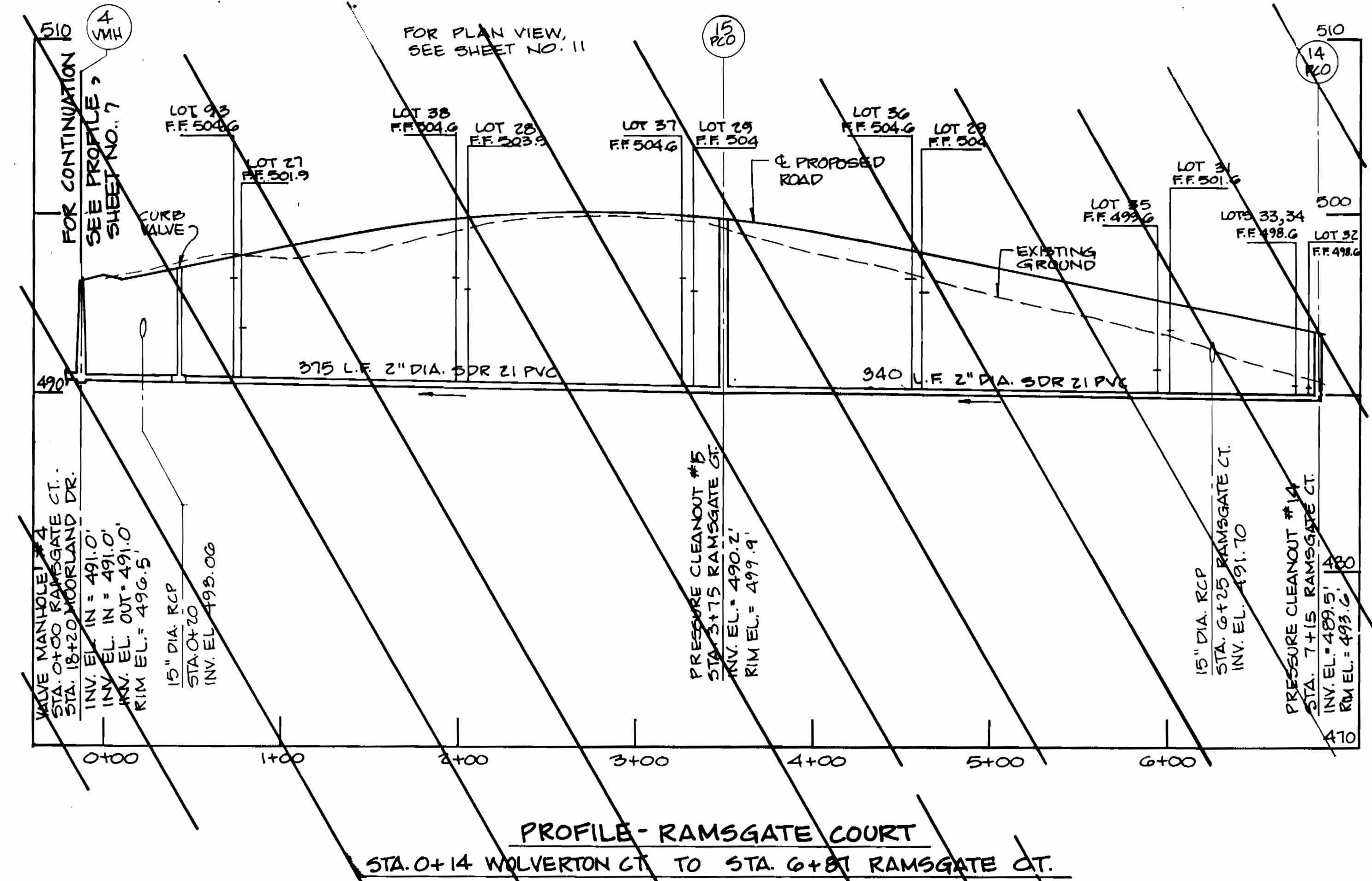
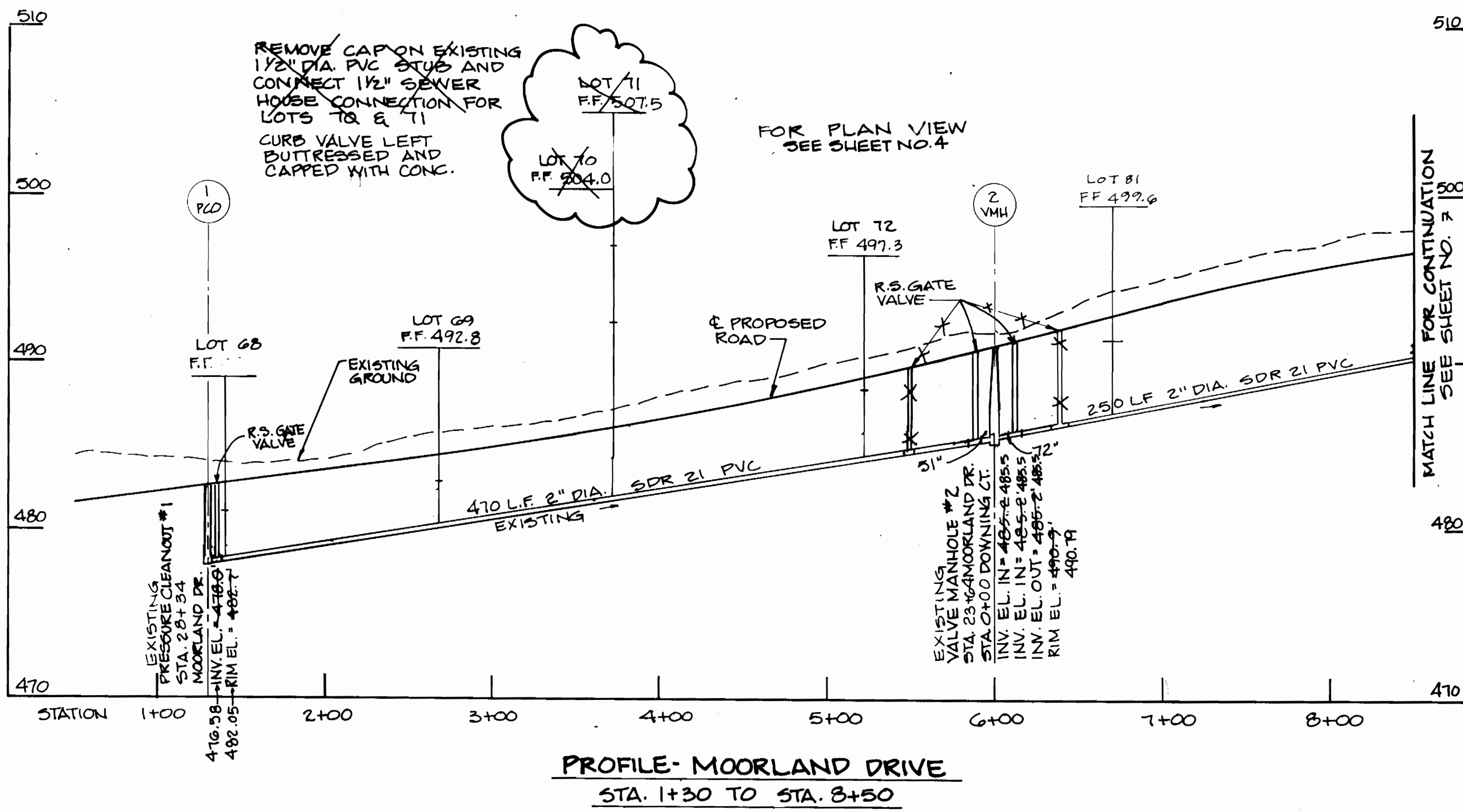
**ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM**
CONTRACT NO. 50-3382-D

SCALE
AS
SHOWN
SHEET
4 OF 12

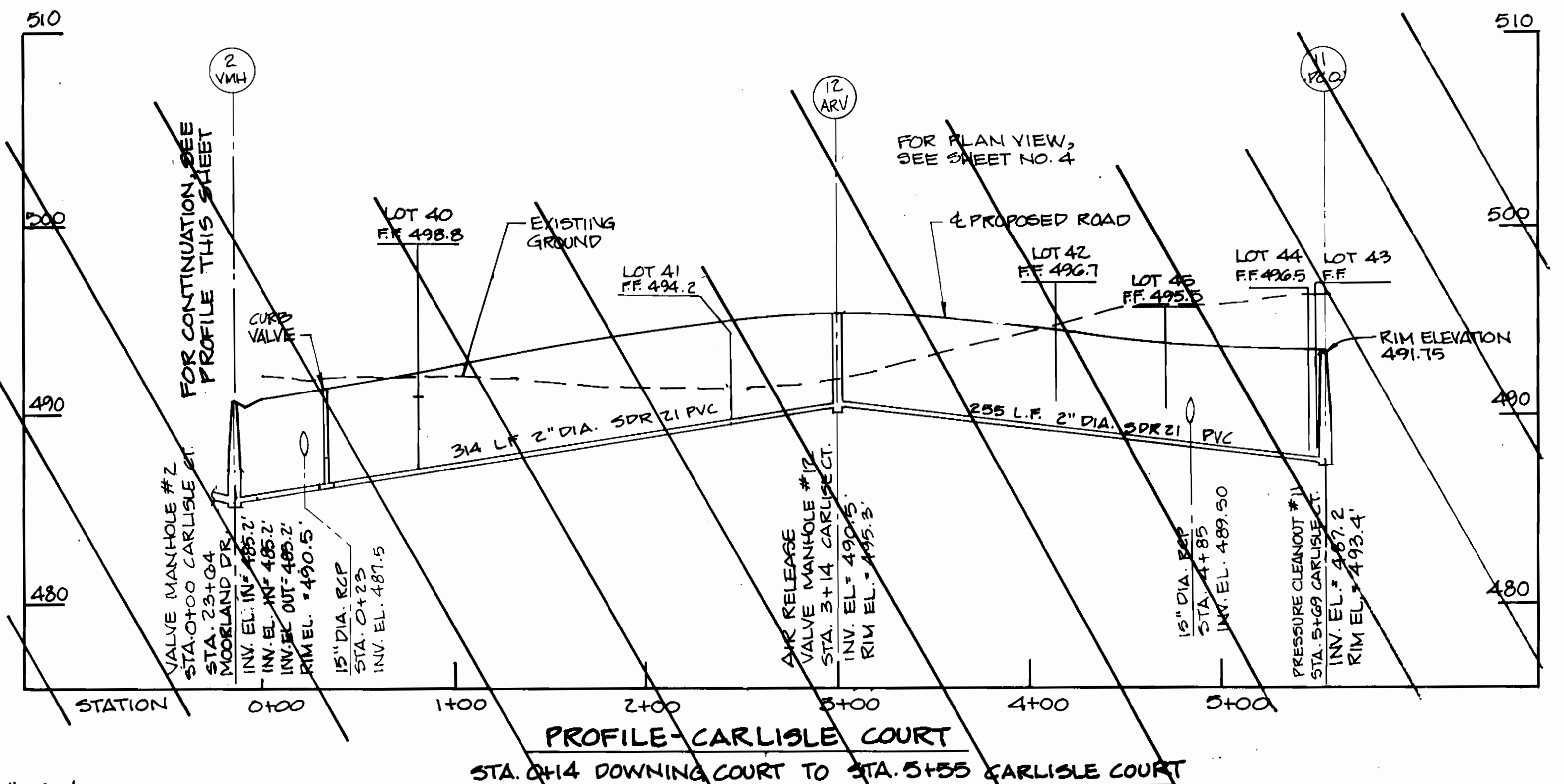
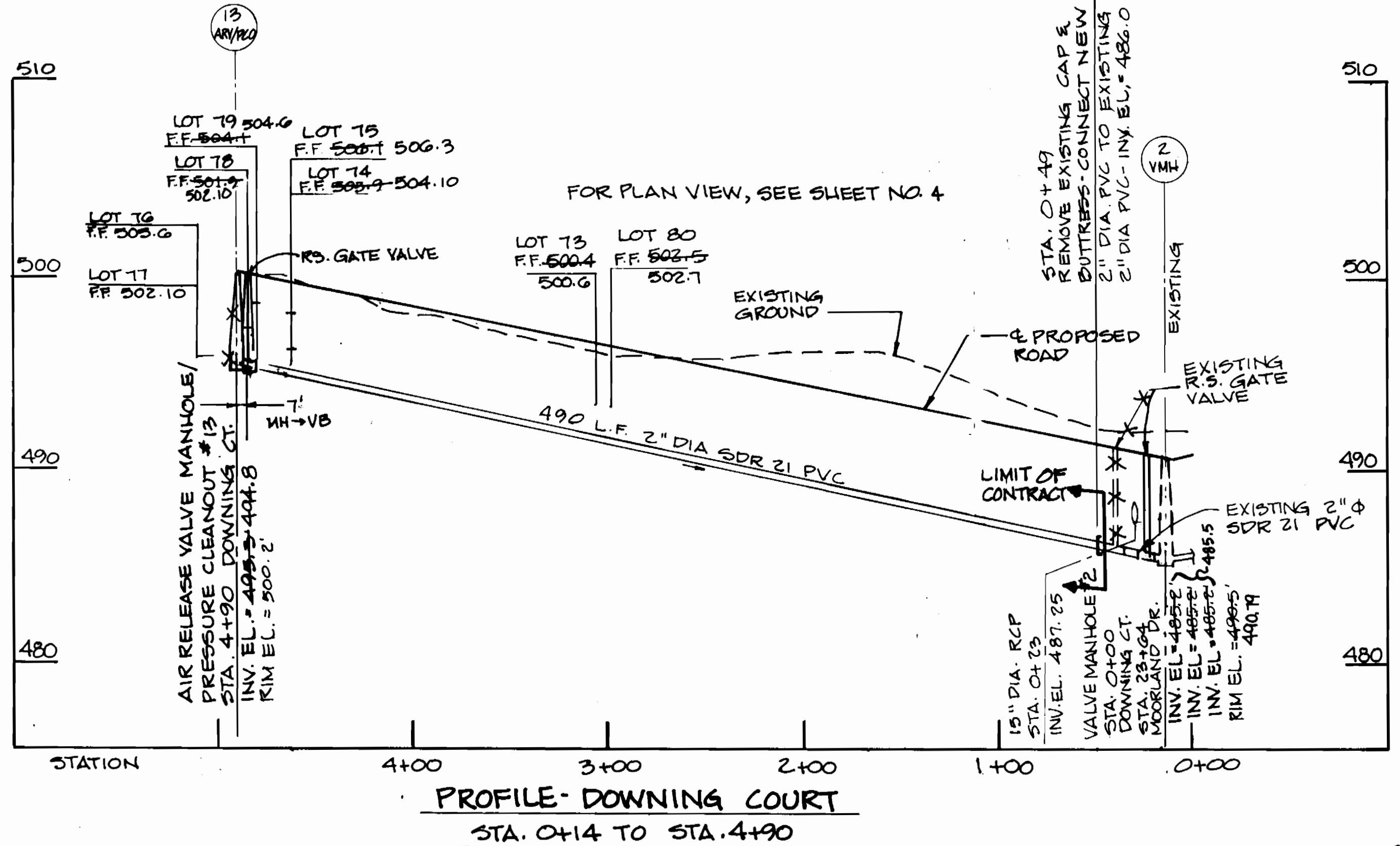
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

AS BUILT 11/7/96

AS BUILT



3382 ws/5 Ashleigh Knolls



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

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works
9-19-94
DATE

Chief, Bureau of Utilities
9/29/94
DATE

Chief, Land Development Division
9/29/94
DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-8840



DES: VRC			
DRN: LCH			
CHK: JSP		CREATE PHASED PLANS	9-94
DATE: 12-75		FINAL SUBMITTAL	8-94
BY NO.		REVISION	DATE

PROFILE MOORLAND,
CARLISLE, DOWNING
AND RAMSGATE

800' SCALE MAP NO. 32-41 BLOCK NO. 12

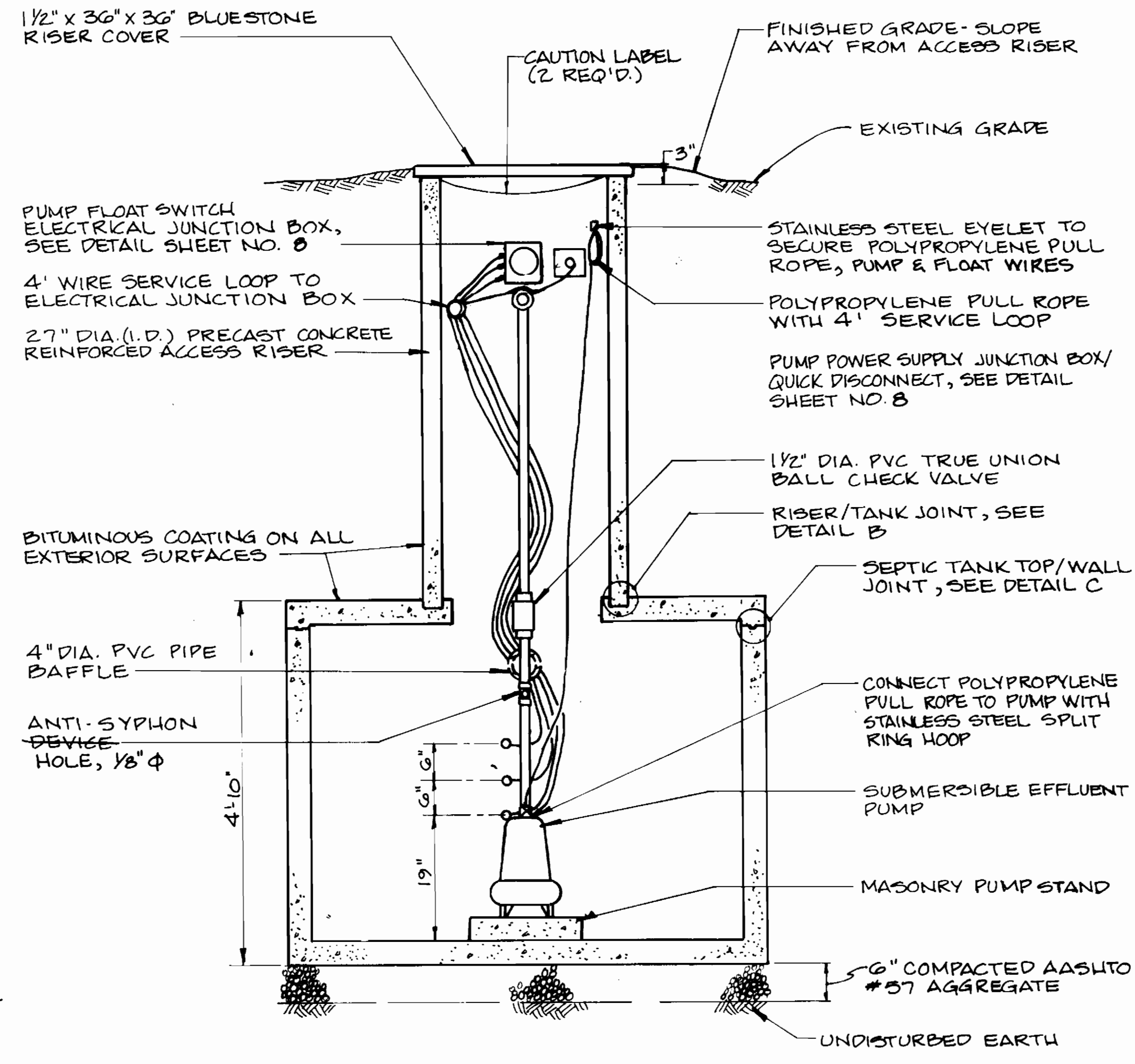
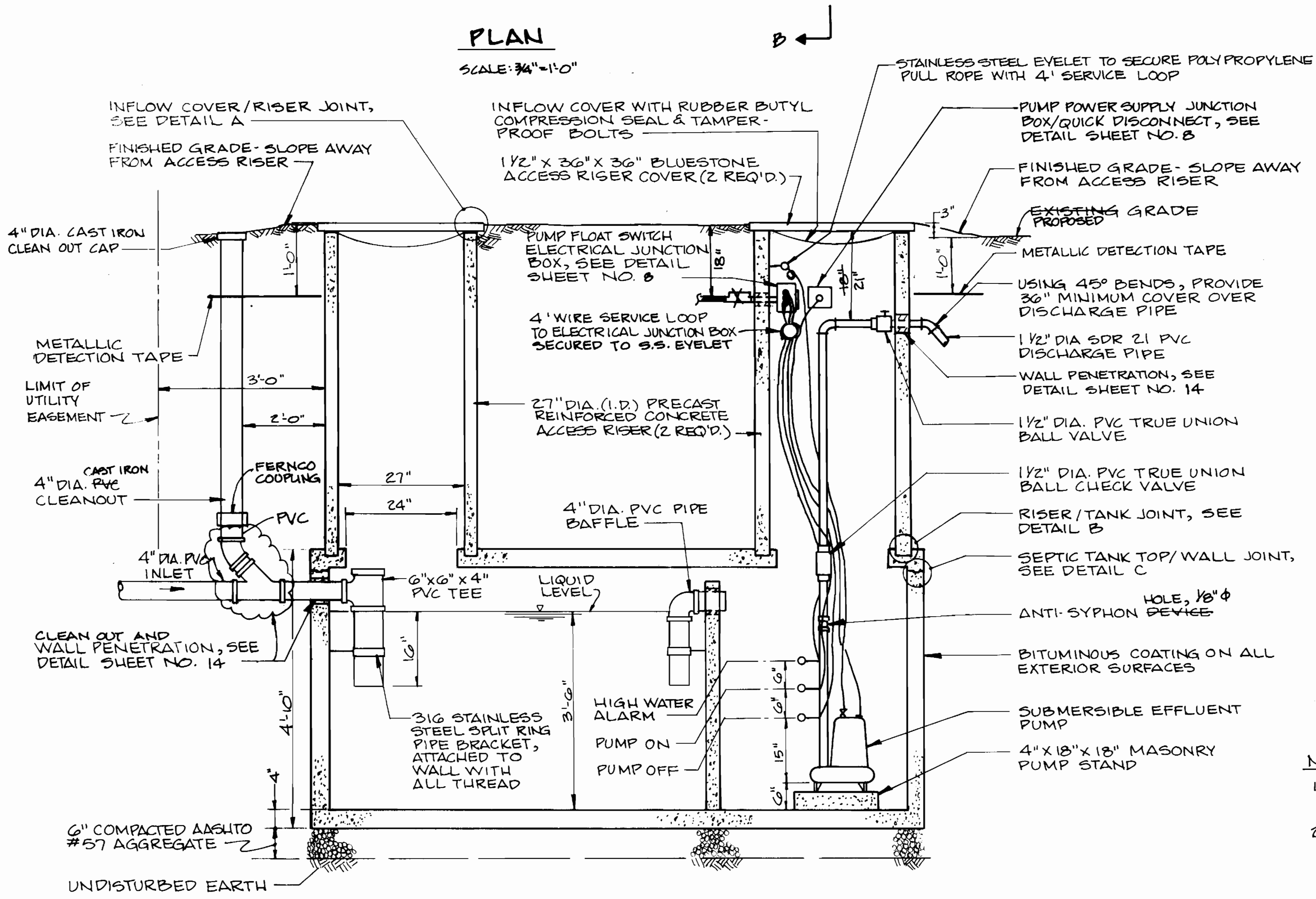
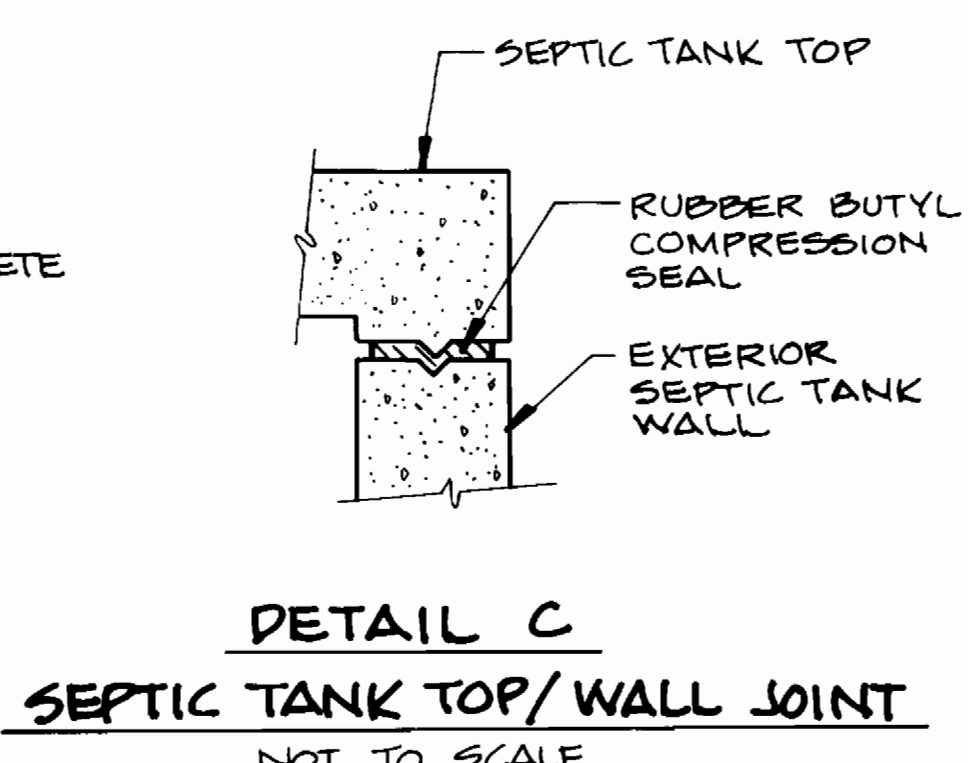
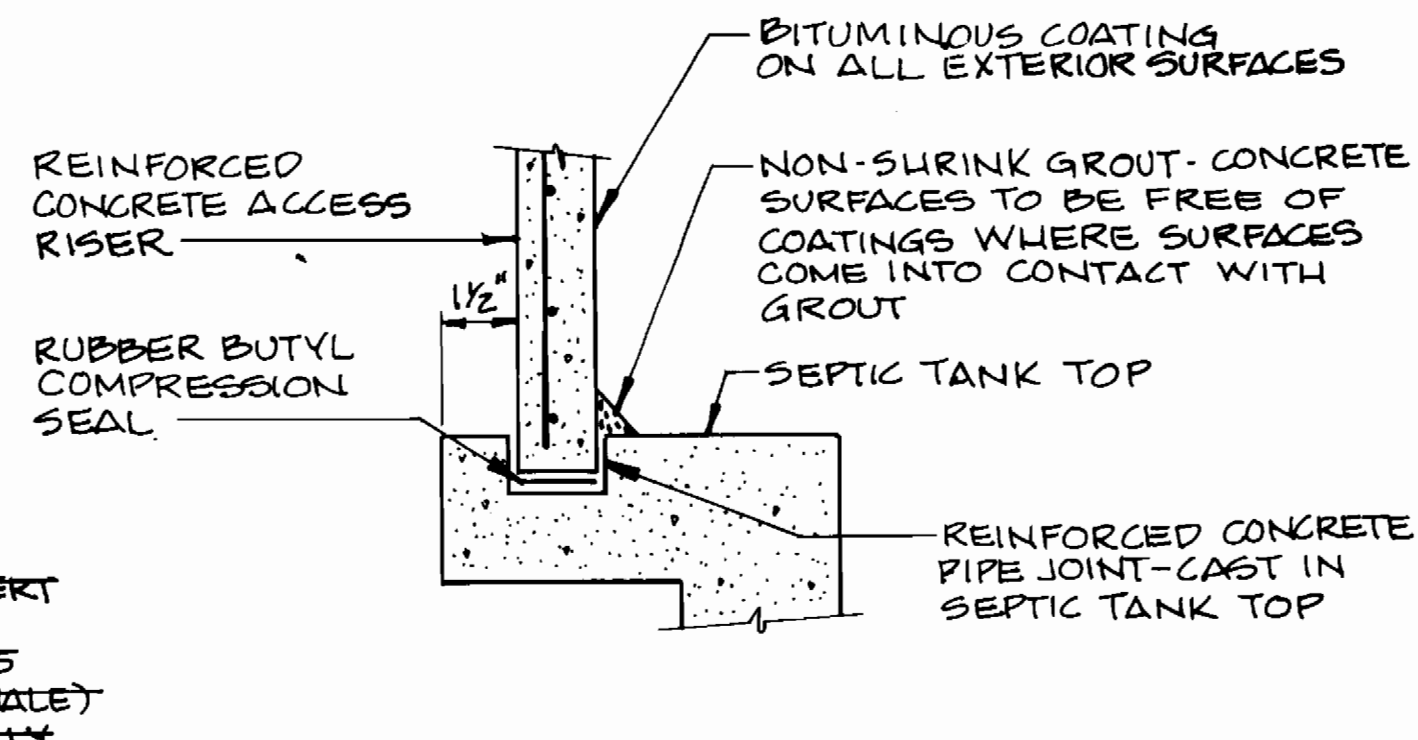
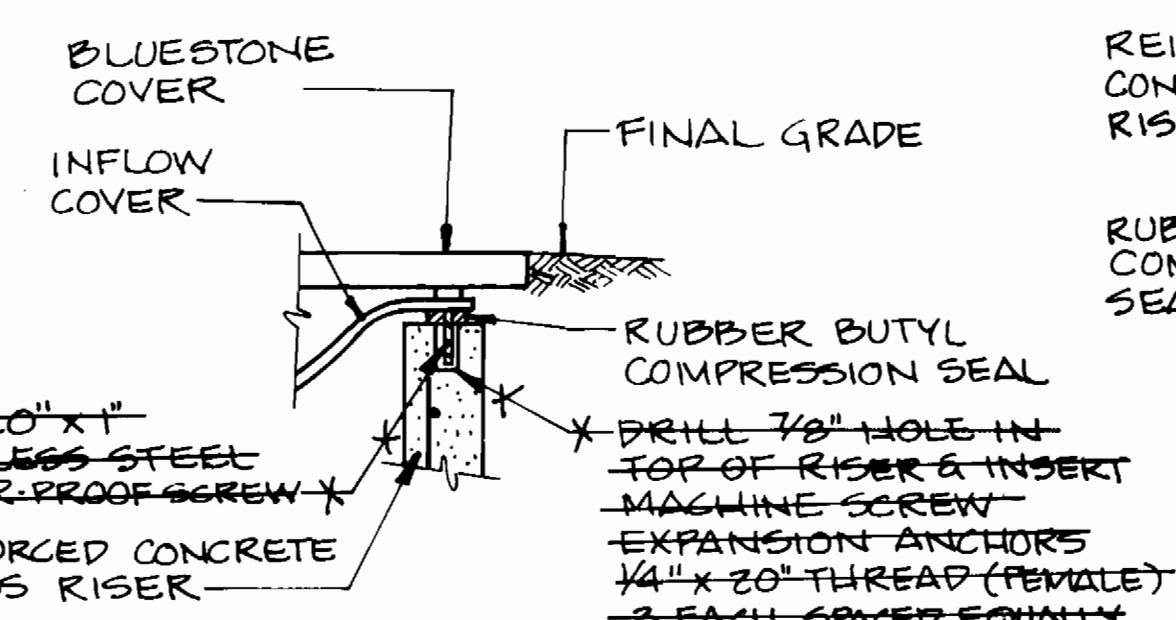
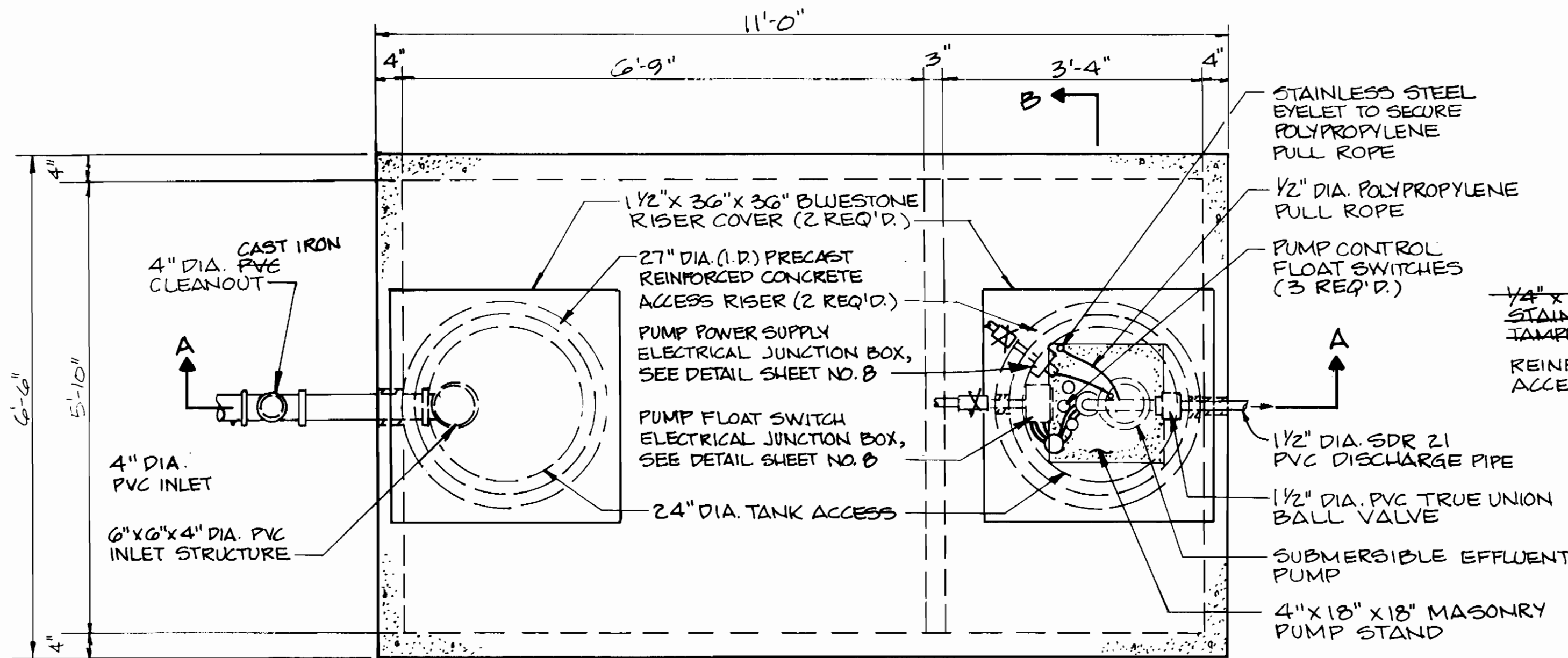
ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 18

AS BUILT



- NOTES:**
- SEE SEWER HOUSE CONNECTION DETAIL SHEET NO. 14
 - SEE SHEET NO. 7 FOR GENERAL INSTALLATION NOTES AND MATERIAL SPECIFICATIONS.

ws/6

3382

AS BUILT 11/19/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Rainey 9-19-94
CHIEF, BUREAU OF UTILITIES

Robert M. Rainey 9-19-94
CHIEF, BUREAU OF ENGINEERING

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: VRC			
DRN: LCH			
CHK: AJP	CREATE PHASED PLANS	9-94	
DATE: 12-93	FINAL SUBMITTAL	8-94	
BY NO.	REVISION	DATE	800' SCALE MAP NO. 45-41 BLOCK NO. 12

SEPTIC TANK
PLAN & SECTIONS

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 15

AS BUILT

ws/7

3382

GENERAL NOTES

- 1. All construction shall be accomplished in accordance with Howard County "Specifications for Construction" and "Standard Details" (September 1988 and amended) unless noted otherwise.
2. No modifications or alterations are to be made to the septic tank systems without the written approval of the Howard County Department of Public Works.
3. Components itemized below are intended to establish the quality of the article. If the Bidder proposes to use material or equipment of another manufacturer as an "or equal" all shop drawings shall conform to the requirements, conditions and procedures presented in the Contract Specifications.

SEPTIC TANK INSTALLATION NOTES

- 1. The tank shall be located so that the following minimum conditions are met:
a. Contractor/Homeowner shall provide a maintenance easement prepared by a licensed surveyor showing the precise routing of the pipeline from the tank to the in-street collection line.
b. Vertically locate the tank such that pipe slope shall be two percent (2%) minimum between the house and the tank with fall through the tank is three inches. Minimum cover of two feet from finish grade to top of pipe.
c. Provide three feet (3'-0") minimum cover over the discharge pipe between the tank and the street.
2. Excavate for new septic tank to undisturbed earth. Provide dewatering system so that excavation remains dry.
3. Install six inch minimum leveling bed of AASHTO #57 stone or screened gravel.
4. Install tank level, and at an elevation such that proper inlet elevation is established.
5. Backfill shall be placed around the tank so as to provide uniform support. Backfill shall be compacted in 8 inch layers to 95 percent compaction of the standard proctor of the backfill material utilized.
6. Install backfill to the invert of the inlet and outlet pipes.
7. Install pipe couplings from the tank stubs to the inlet and outlet sewer lines. The couplings shall be rigid, PVC couplings with shear strength equal to the attached piping.
8. Complete backfill operations and fill excavation to grade. Adjust septic tank risers to grade as shown on the drawings.
9. Install all pump equipment for pump tank installations.
10. Run pump through two complete operations to verify proper operation of floats and controls in the presence of the Engineer/Inspector.
11. The design precast concrete tank shall be certified by a professional engineer licensed in the State of Maryland.
12. The precast concrete septic tanks shall be vacuum tested for leaks following assembly and the connections of all pipe and conduits. Following the plugging of all pipes and the sealing of all other entrances as specified, the structures shall be tested by drawing a vacuum of four inches of mercury. Suitable plugs and equipment must be supplied by the Contractor for the purposes of the test. An acceptable test shall be one in which the vacuum loss following evacuation is zero over a five minute period.
13. Metallic detection tape shall be installed in all pipe trenches at a depth of one foot below finished grade.

A. PRECAST PRESSURE CONCRETE SEPTIC TANK COMPONENTS

Table with 3 columns: ITEM NUMBER, ITEM DESCRIPTION, QUANTITY. Includes items like Precast Concrete, 2 Compartment 1,500 gallon Septic Tank; 6" Diameter Inlet Structure; 4" Diameter Baffle Structure; Precast Concrete Riser; Inflow Protector Cover; Tamper Proof Bolts.

B. ELECTRICAL COMPONENTS - PRESSURE TANKS ONLY

Table with 3 columns: ITEM NUMBER, ITEM DESCRIPTION, QUANTITY. Includes items like Submersible Effluent Pump, Simplex Pump Control Panel, Aluminum panel, Mini-alarm light, Maintained selector switch, Provide full 3/16" black phenolic plate, Provide (1) 15 AMP, 120 volt, 1 pole breaker, Motor contactor, Dual input intrinsically safe barrier, Provide min. (3) Box lug type terminals, Pilot light, Elapsed time meter, Universal time delay relay, Pushbutton, Alarm horn, 3/4"x3.5" White on black engraved phenolic nameplate.

ITEM NUMBER, ITEM DESCRIPTION, QUANTITY

Table with 3 columns: ITEM NUMBER, ITEM DESCRIPTION, QUANTITY. Includes items like Control panel sign, 20 AMP Main Circuit Breaker and Enclosure, Polypropylene Mini-Floats, 3M Scotch Cast, Size B, #3 Insulation Resin, Stainless Steel - Series 700 Main Breaker Box Pump Control Box, 4-Inch Diameter SDR 35 PVC Pipe, 1/2-Inch Diameter SDR 21 PVC Pipe, Morrison Bleeder Valve, 1/2-Inch Diameter PVC True Union Ball Valve, 1/2-Inch Diameter PVC True Union Ball Check Valve.

ITEM NUMBER, ITEM DESCRIPTION, QUANTITY

Table with 3 columns: ITEM NUMBER, ITEM DESCRIPTION, QUANTITY. Includes items like Weld On Primer P-70 or equal, Weld On Pipe Cement 711 or equal, Pipe Joint Lubricant (Sub Aqueous), 316 Stainless Steel Split Ring Pipe Support Brackets Gravity Pressure, Metallic Plastic Marker Tape, 1/2-Inch Bronze Ball Curb Valve, Valve Stem Extension with two inch Operating Nut, 5/4-Inch Plastic Valve Box with Cast Iron Cover Marked 'SEWER', 4-Inch Diameter Cast Iron Cleanout Cap.

D. MISCELLANEOUS COMPONENTS

Table with 3 columns: ITEM NUMBER, ITEM DESCRIPTION, QUANTITY. Includes items like Rubber Butyl Compression Seal, Non Shrink Grout, Coal Tar Epoxy, Caution Label for Riser Cover, 1/2-Inch Polypropylene Rope with Stainless Steel Split Rings Lifting Hoops at each end, 4"x18"x18" Masonry Pump Stand, AASHTO #57 Aggregate, Pennsylvania Bluestone Riser Cover 36" x 36" x 1 1/2".

C. PIPING AND VALVE COMPONENTS

Table with 3 columns: ITEM NUMBER, ITEM DESCRIPTION, QUANTITY. Includes items like 4-Inch Diameter SDR 35 PVC Pipe, 1/2-Inch Diameter SDR 21 PVC Pipe, Morrison Bleeder Valve, 1/2-Inch Diameter PVC True Union Ball Valve, 1/2-Inch Diameter PVC True Union Ball Check Valve.

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Includes signatures and dates for Director of Public Works, Chief, Bureau of Engineering, and Chief, Land Development Division.

DAMES & MOORE. 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640.

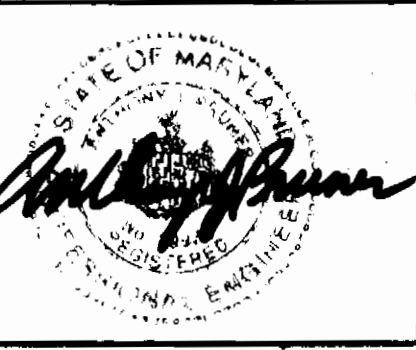
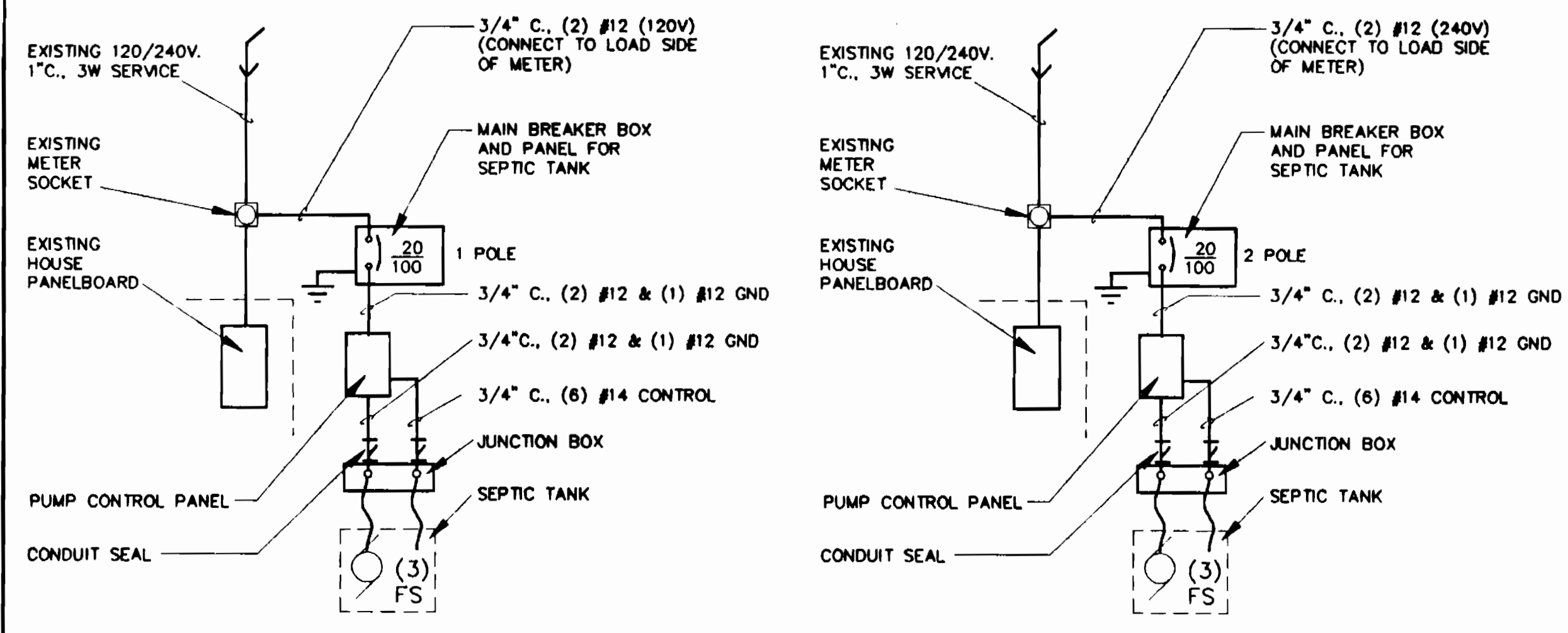


Table with columns: DES, DRN, CHK, DATE, BY, NO, REVISION. Includes handwritten entries like VRC, BqW, AJP, 12-73, and 9-94.

SEPTIC TANK NOTES. 600' SCALE MAP NO. 42-41 BLOCK NO. 12.

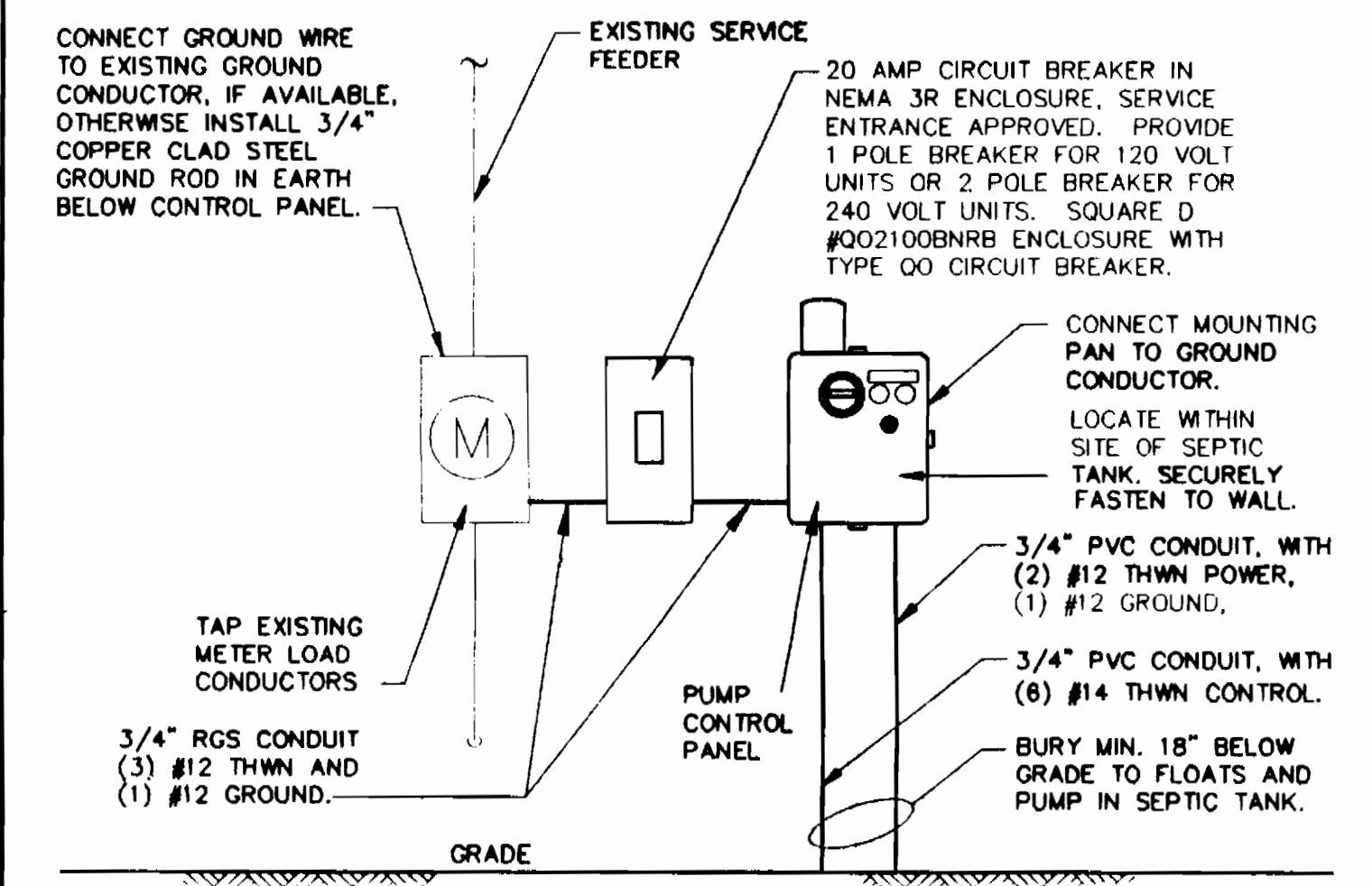
ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM. CONTRACT NO. 50-3382-D. SHEET 2 OF 18.

AS BUILT

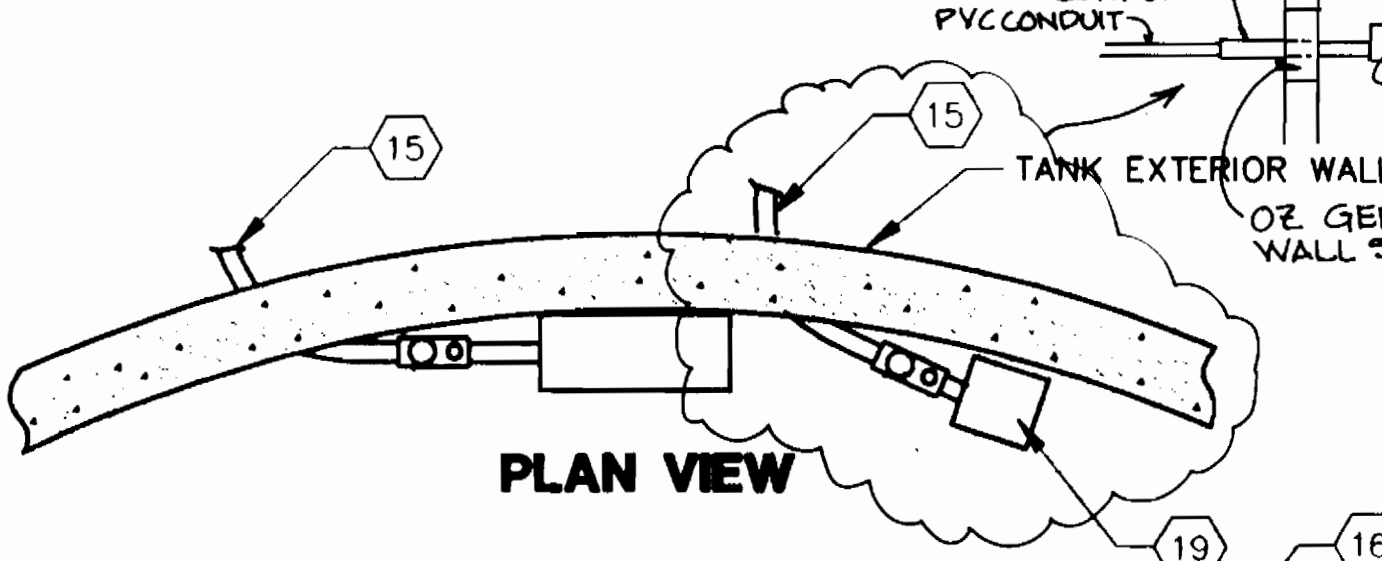


ONE LINE DIAGRAM
FOR 1/2 HP PUMPS

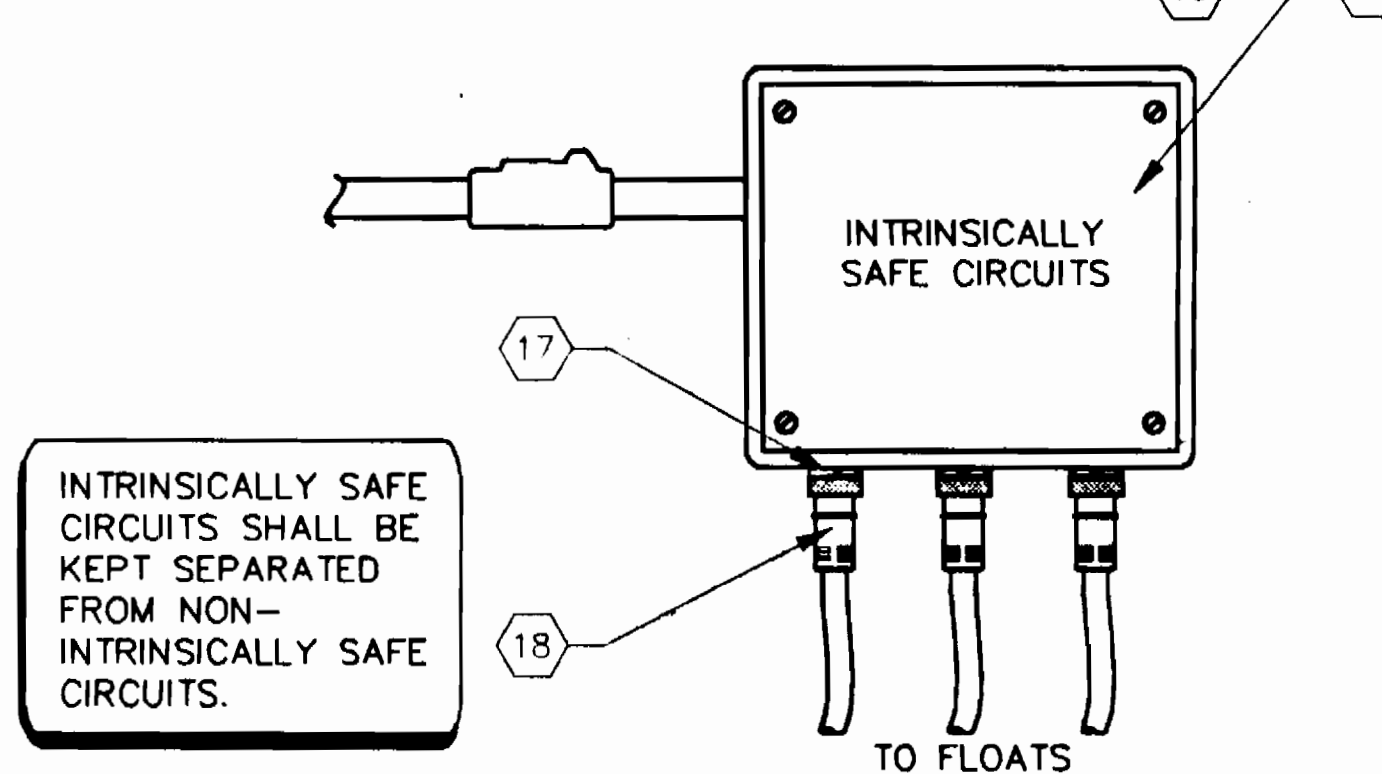
ONE LINE DIAGRAM
FOR 1-1/2 HP PUMPS



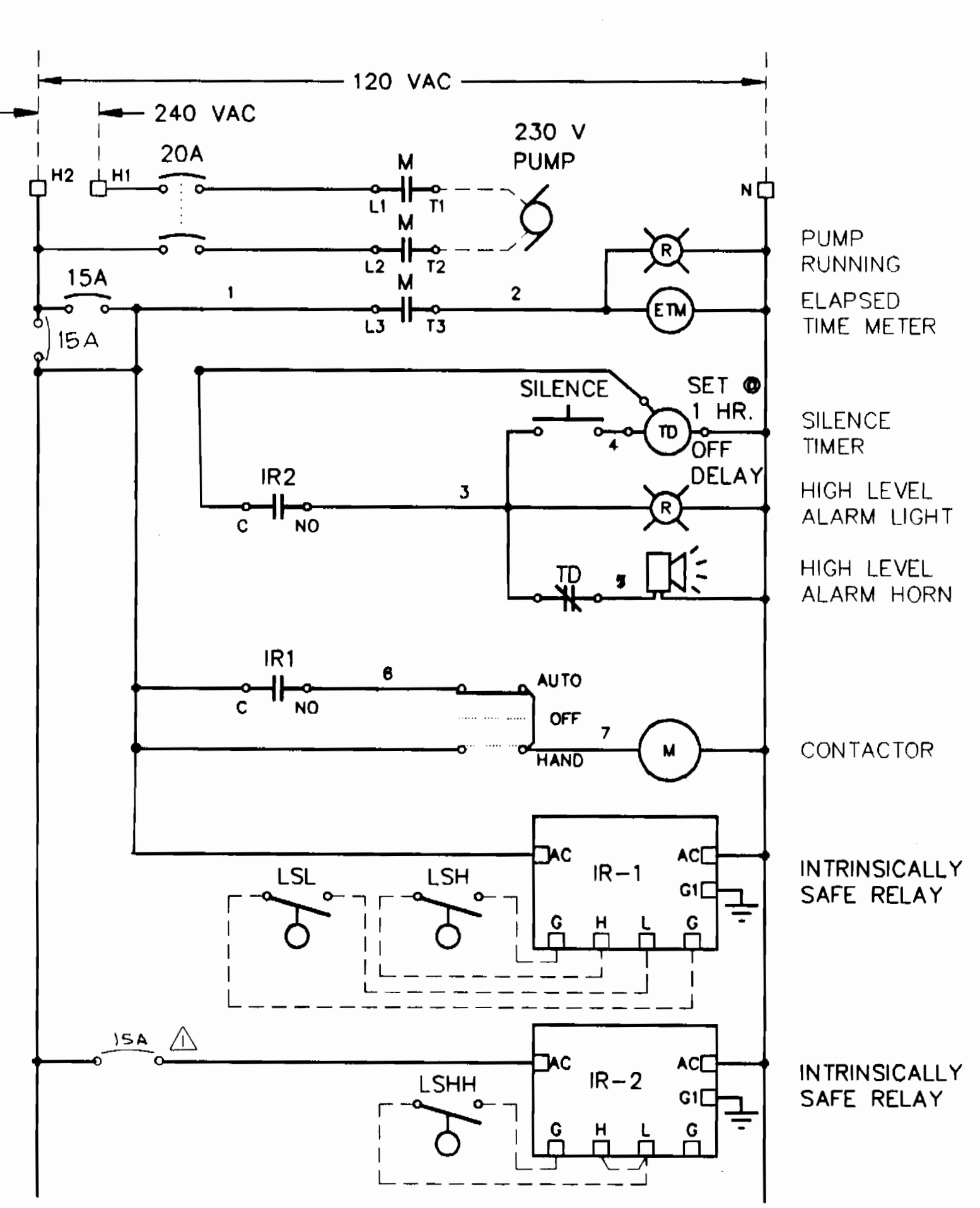
PUMP ELECTRICAL ARRANGEMENT
TYPICAL AT RESIDENCE



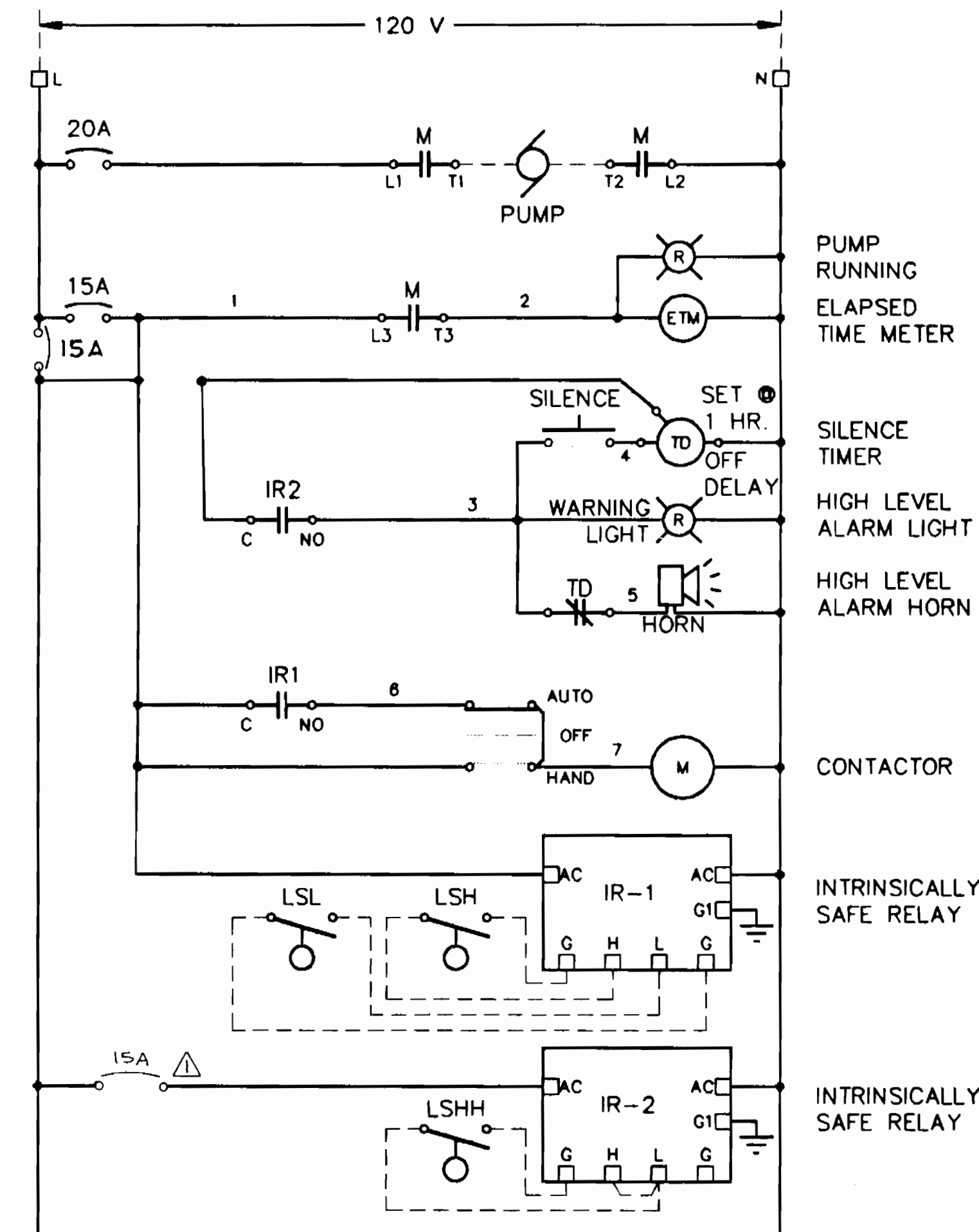
PLAN VIEW



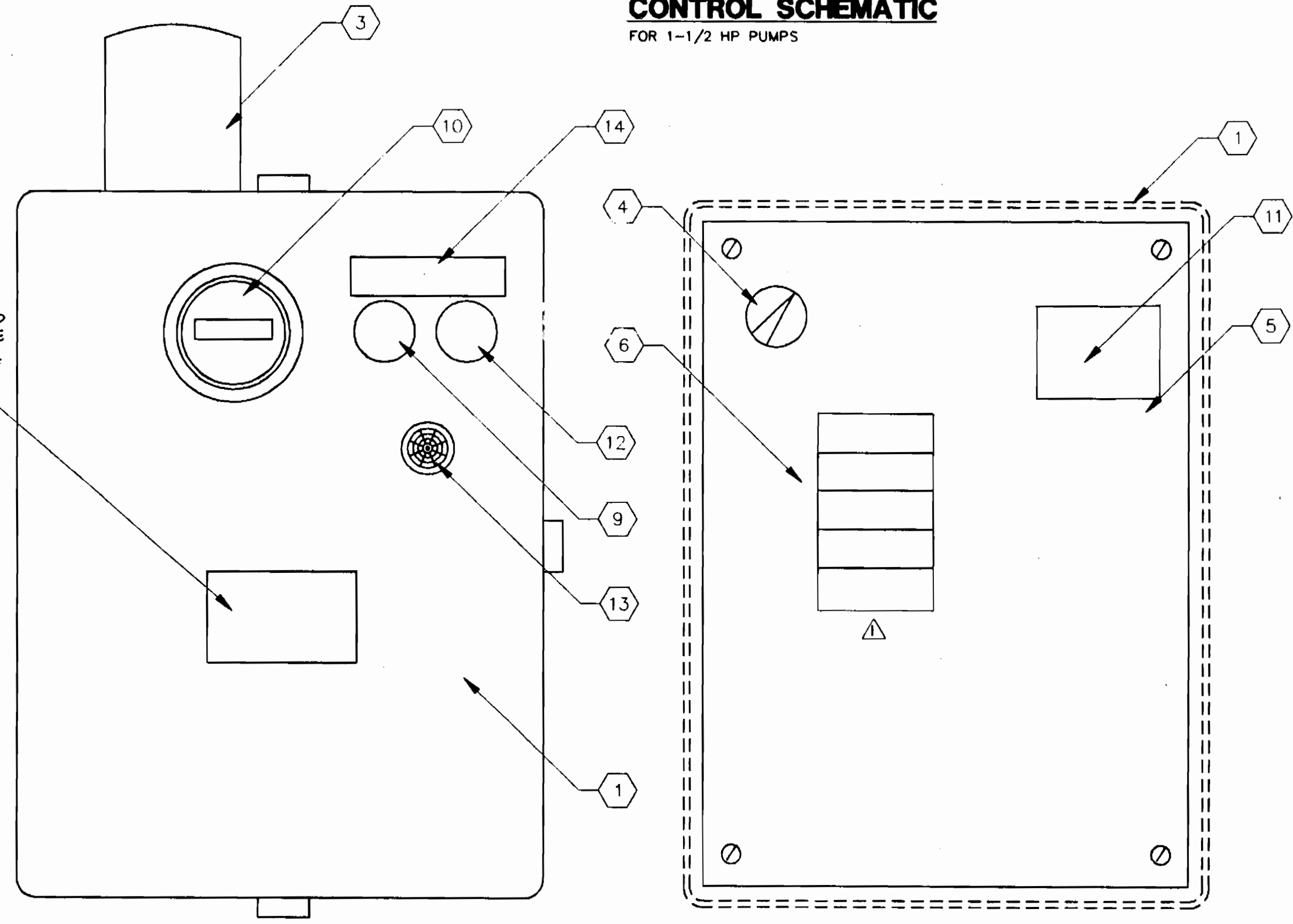
FLOAT SWITCH JUNCTION BOX DETAIL



CONTROL SCHEMATIC
FOR 1-1/2 HP PUMPS



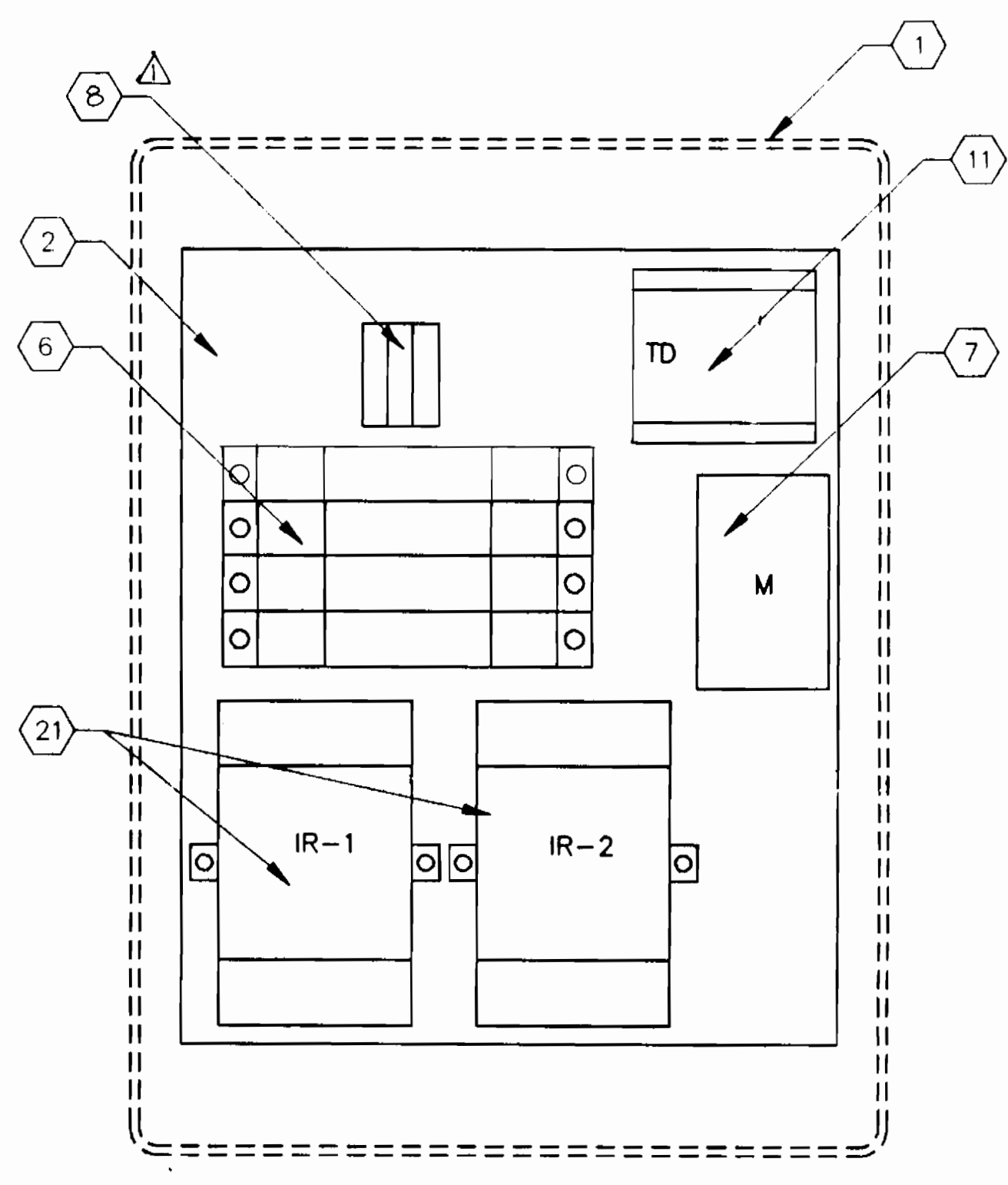
CONTROL SCHEMATIC
FOR 1/2 HP PUMPS



EXTERIOR

DEAD FRONT PANEL

PUMP CONTROL PANEL



INTERIOR

- NOTES**
- POLYESTER REINFORCED FIBERGLASS ENCLOSURE, NEMA 4X, 14"x10"x7.5"D, HOFFMAN CAT. #A-14107JFGOR, OR EQUAL.
 - MOUNTING PAN, ALUMINUM, .08" THICK, PROTECTED BY PLASTIC FILM, 10.75"H x 8.88"W, HOFFMAN CAT. #A-12P10AL, OR EQUAL.
 - MINI-ALARM LIGHT, RED ACRYLIC LENS, 120VAC WITH BULB, GASKET, AND FLASHER BUTTON, OHIO ELECTRIC CONTROL, INC. #ML-2, OR EQUAL.
 - MAINTAINED SELECTOR SWITCH, WITH SPDT CONTACT BLOCKS, 120 VOLT, SQUARE D, ZB2 B03, OR EQUAL. MOUNT IN ITEM NO. 5.
 - PROVIDE FULL 3/16" BLACK PHENOLIC PLATE TO SERVE AS "DEAD FRONT" SHIELD. PROVIDE THE FOLLOWING ENGRAVING OVER THE SELECTOR SWITCH "HAND-OFF-AUTO" AND LABEL EACH CIRCUIT BREAKER AS TO ITS PROPER SERVICE BY ENGRAVING EITHER "CONTROL" OR "PUMP POWER" AT THE APPROPRIATE LOCATIONS. THE ENGRAVING SHALL BE 1/8" WHITE LETTERS. LOCATE DEAD FRONT PLATE TO PROVIDE NECESSARY WRING CLEARANCE BEHIND SELECTOR SWITCH AND ADEQUATE CLEARANCE BETWEEN DOOR MOUNTED DEVICES AND PLATE. CUT HOLES IN PLATE FOR MOUNTING SELECTOR SWITCH AND FOR ACCESS TO CIRCUIT BREAKERS AND TIMER AS INDICATED.
 - PROVIDE (3) 15 AMP, 120 VOLT, 1 POLE BREAKERS FOR CONTROL CIRCUITRY. PROVIDE (1) 20 AMP, 240 VOLT, 2 POLE BREAKER FOR SYSTEMS USING A 240 VOLT PUMP, OR, PROVIDE (1) 20 AMP, 120 VOLT 1 POLE BREAKER FOR SYSTEMS USING A 115 VOLT PUMP. BREAKERS SHALL BE SQUARE D TYPES QOU15 AND QOU215, OR EQUAL. PROVIDE SPACER BETWEEN CIRCUIT BREAKERS AND MOUNTING PAN SO THAT BREAKER OPERATOR PROTRUDES THROUGH DEAD FRONT PANEL.
 - MOTOR CONTACTOR, IFC TYPE, 4 POLE, 18 AMP, 120VAC COIL, SQUARE D #C1 D18 00G6, OR EQUAL.
 - PROVIDE MIN. (3) BOX LUG TYPE TERMINALS COMPLETE WITH MOUNTING RAIL, END BARRIER, AND LABELS, SQUARE D TYPE GK, OR EQUAL.
 - PILOT LIGHT, 120V/6V TRANSFORMER TYPE, NEMA 4X, RED, SQUARE D #ZB2 BV3, OR EQUAL.
 - ELAPSED TIME METER, 2-1/2" ROUND, 120 VOLT, RESETTABLE, 6 DIGIT DIGITAL READOUT TO INCLUDE TENTHS OF HOURS, CRAMER #635G H&T, OR EQUAL. FABRICATE NEOPRENE GASKET AND INSTALL BETWEEN METER FLANGE AND ENCLOSURE FACE.
 - UNIVERSAL TIME DELAY RELAY, DPDT, 120 VOLT, CONFIGURED FOR OFF DELAY SERVICE, SSAC #TRU3 WITH MATCHING 11-PIN SOCKET, OR EQUAL.
 - PUSHBUTTON, 120 VOLT, MOMENTARY, WITH N.O. CONTACT BLOCK, SQUARE D #ZB2 B22/ ZB2 B2101, OR EQUAL.
 - ALARM HORN, 120 VOLT, WEATHERPROOF, 95 dB @ 2 FEET, FLOYD BELL #AW-09-2010, OR EQUAL.
 - 3/4"x3.5" WHITE ON BLACK ENGRAVED PHENOLIC NAMEPLATE TO READ:
PUMP RUNNING HORN
 SILENCE
WITH LETTERING CENTERED OVER PILOT LIGHT AND PUSHBUTTON.
 - TRANSITION RIGID GALVANIZED STEEL CONDUIT TO PVC CONDUIT AT END OF 90 DEG. ELBOW. USE RIGID GALVANIZED STEEL CONDUIT THROUGH TANK WALL IN TANK INTERIOR.
 - CORROSION RESISTANT NEMA 4 JUNCTION BOX, AS PROVIDED BY MEYERS.
 - CORROSION RESISTANT, 2-PIN RECEPTACLE TO MATCH FLOAT SWITCH COUPLER. FLOAT SWITCH MANUFACTURER SHALL FURNISH. CROUSE-HINDS, MINI-LINE, OR EQUAL.
 - CORROSION RESISTANT, 2-PIN COUPLER, PRE-MOLDED TO FLOAT SWITCH CABLE. FLOAT SWITCH MANUFACTURER SHALL FURNISH COMPLETE ASSEMBLY. COUPLER SHALL BE CROUSE-HINDS MINI-LINE, OR EQUAL.
 - HAZARDOUS AREA RECEPTACLE, 30A, 120V, 3W, CLASS I, GROUP D, DIVISION 1, FACTORY SEALED, WITH MATCHING PLUG, CROUSE-HINDS, OR EQUAL, CES 22H, CPH7XXX, VERIFY PLUG CABLE O.D. FOR SEAL FAILURE CIRCUIT.
 - NOT USED
 - DUAL INPUT INTRINSICALLY SAFE BARRIER, 120 VAC, ACCEPTS (1) OR (2) DRY CONTACT INPUTS, AND ONE FORM C CONTACT OUTPUT. WARRICK CONTROLS SERIES 27A1X0, OR EQUAL.
 - CONTROL PANEL SIGN SHALL BE ADHESIVE BACKED, NON-FADING. SIGN SHALL BE 3"x5" AND SHALL READ:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
SEPTIC TANK EFFLUENT PUMP CONTROLS
IN CASE OF ALARM, TELEPHONE 313-4900
DO NOT OPEN PANEL

AS BUILT 11/7/96

ws/8

3382

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James R. Lewis 9/22/94
DIRECTOR OF PUBLIC WORKS DATE

Robert M. Benjamin 9-19-94
CHIEF, BUREAU OF UTILITIES DATE

John J. ... 9/22/94
CHIEF, BUREAU OF ENGINEERING DATE

... 9/22/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-3640

STATE OF MARYLAND
PROFESSIONAL ENGINEER

DES:	VRG			
DRN:	EGW			
CHK:	AJP	EGW	ADD CIRCUIT BREAKER (HIGH WATER ALARM)	11-94
			CREATE PHASE PLANS	7-94
			FINAL SUBMITTAL	8-94
DATE:	12-95	BY:	NO.	REVISION

SEPTIC TANK ELECTRICAL DETAILS

600 SCALE MAP NO. 42-41 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

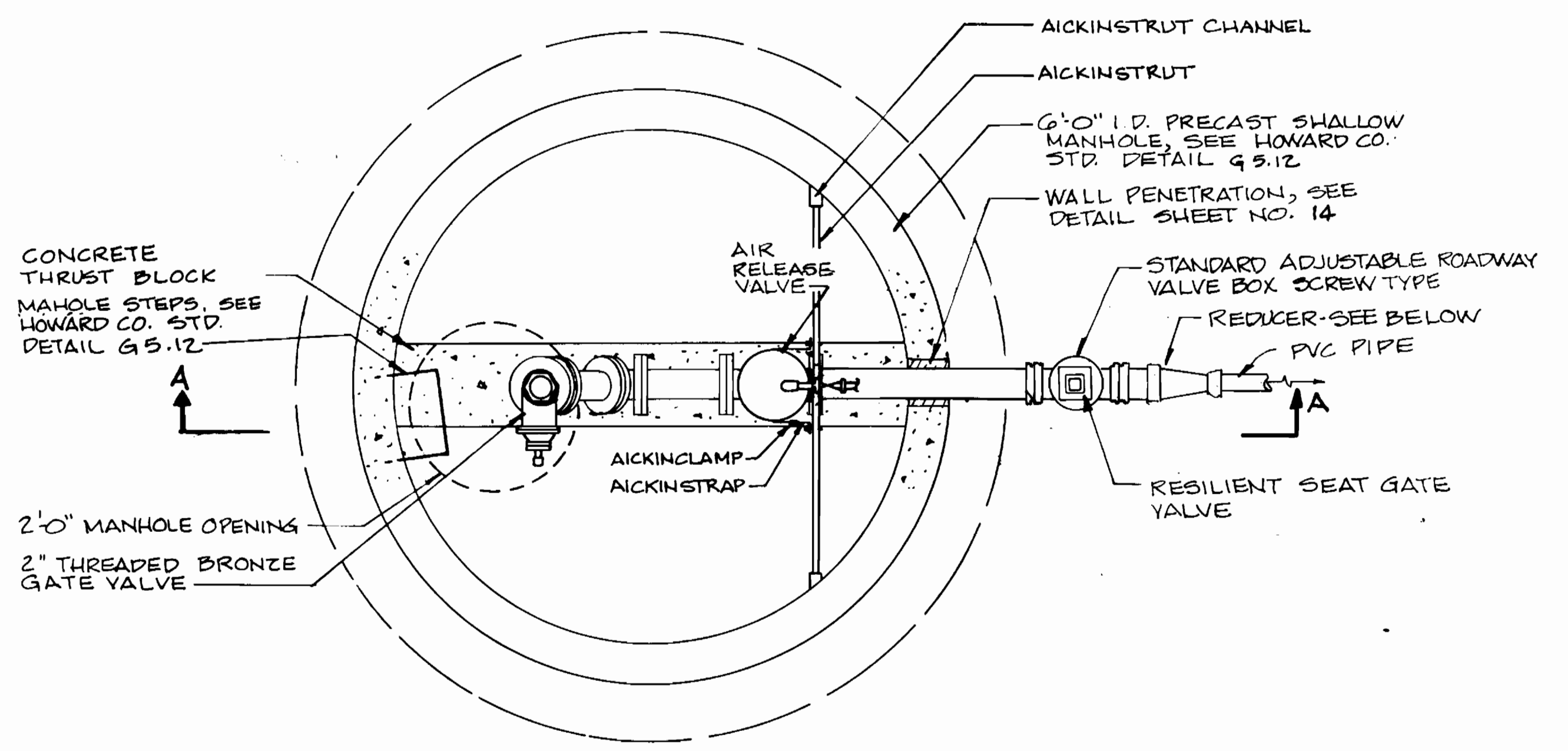
CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

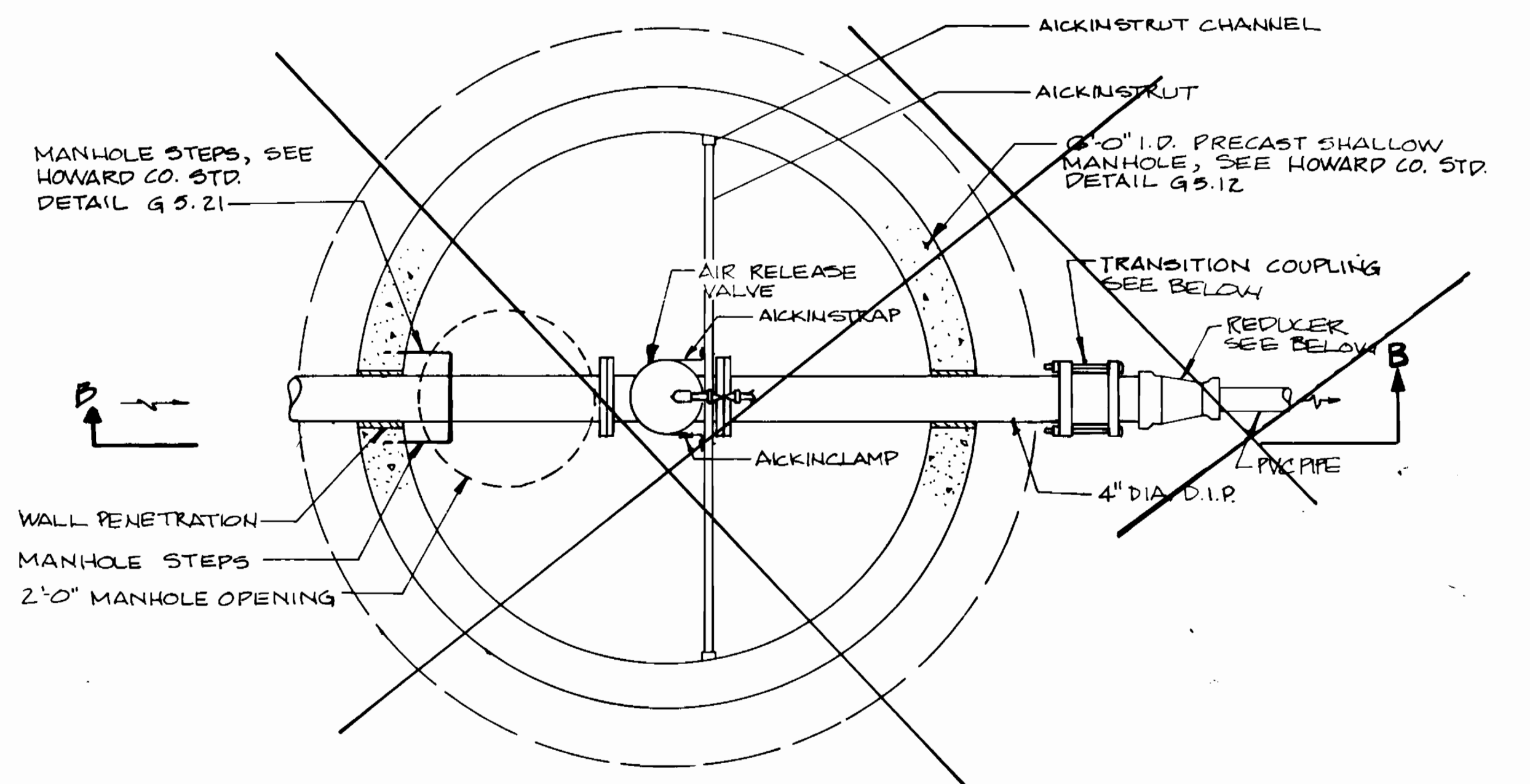
SCALE AS SHOWN

SHEET 8 OF 12

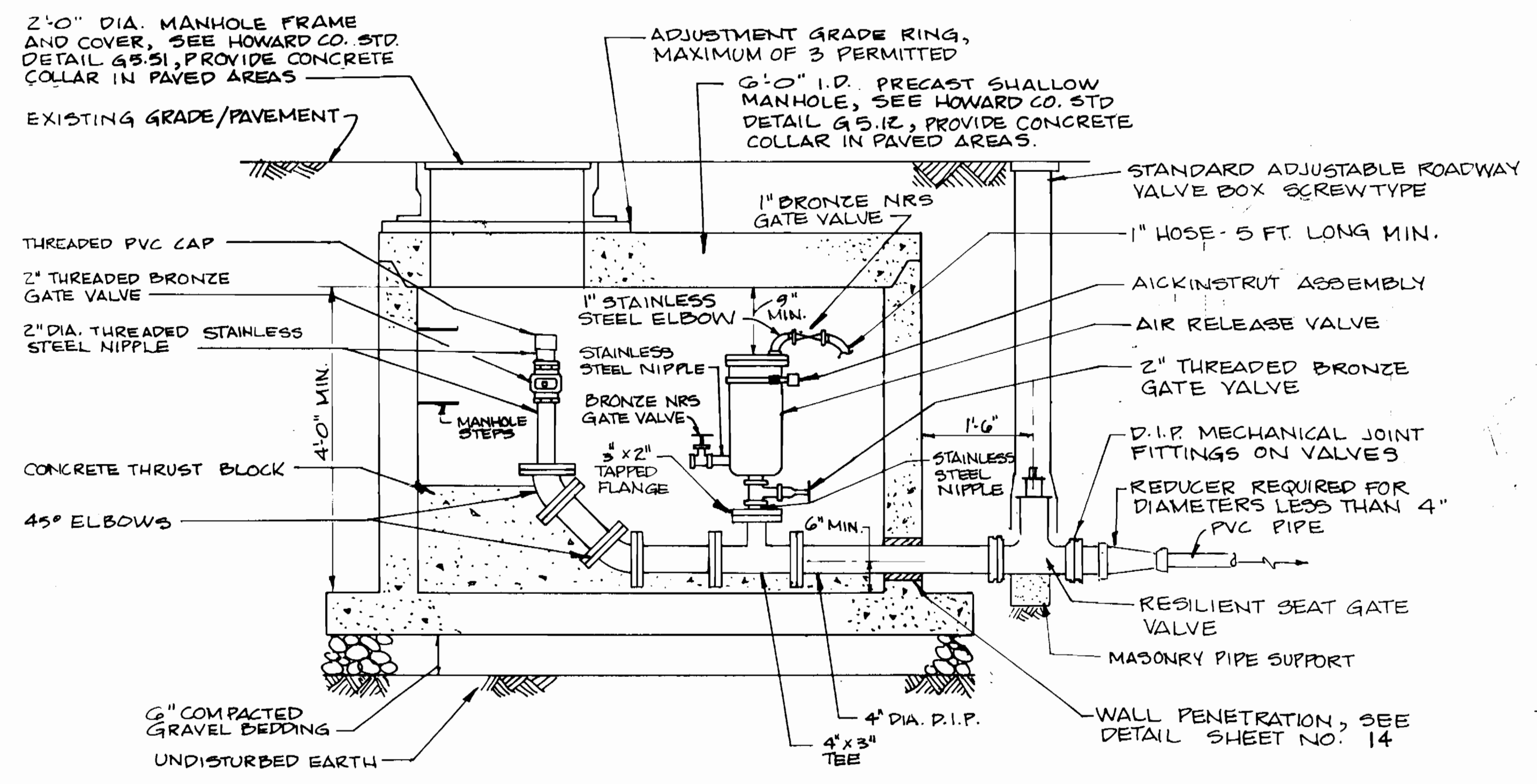
AS BUILT



PLAN



PLAN

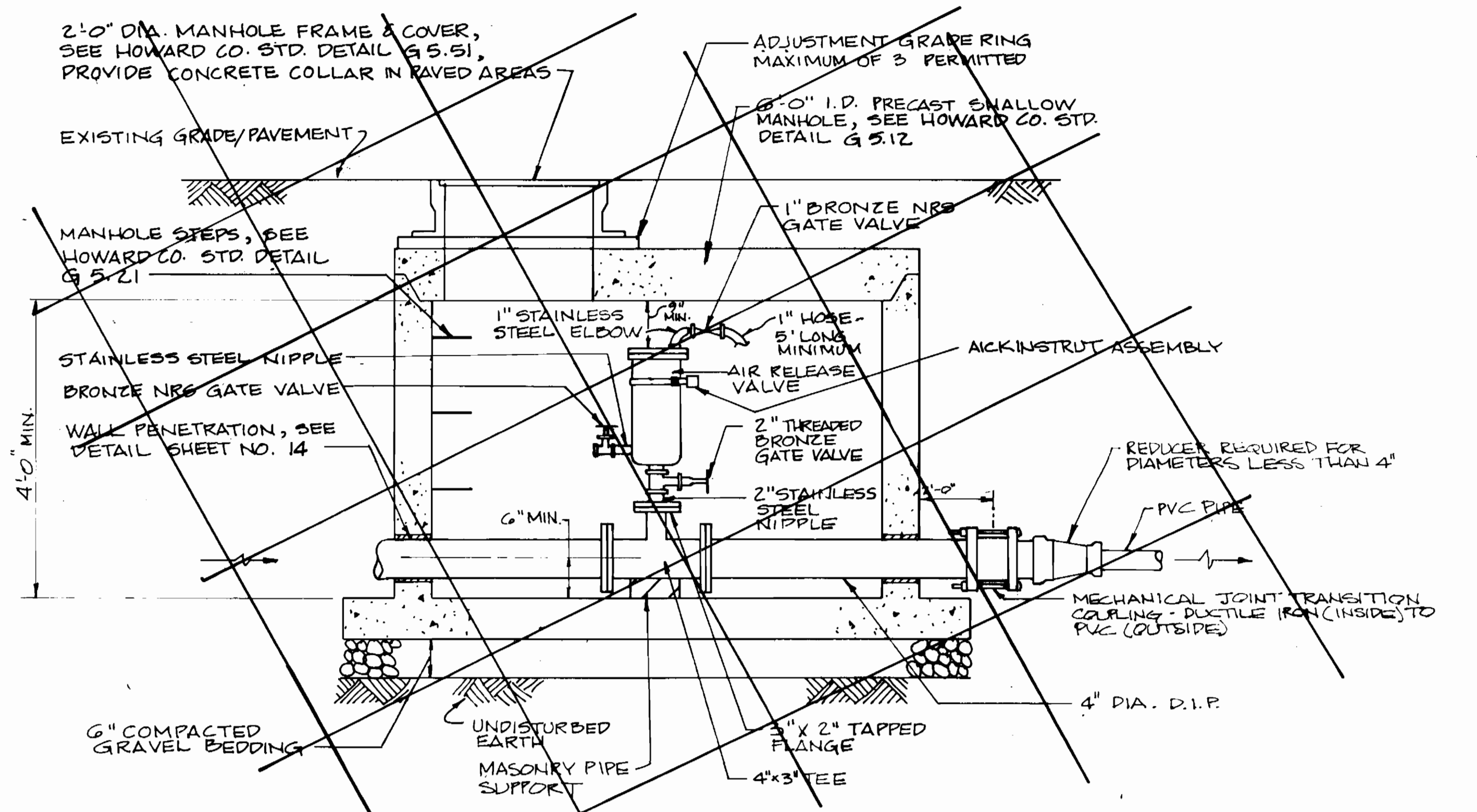


SECTION A-A

AIR RELEASE VALVE/TERMINAL PRESSURE CLEANOUT

SCALE: 3/4"=1'-0"

ALL PIPING AND FITTINGS IN THE MANHOLE, EXCLUDING THE VALVE NIPPLES SHALL BE 4 INCH DIA. DUCTILE IRON.



SECTION B-B

AIR RELEASE VALVE MANHOLE

SCALE: 3/4"=1'-0"

ALL PIPING AND FITTINGS IN THE MANHOLE EXCLUDING THE VALVE NIPPLE SHALL BE 4 INCH DIA. DUCTILE IRON.

AS BUILT 11/7/90

3382 ws/9

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ramon A. Linn 9/29/94
DIRECTOR OF PUBLIC WORKS DATE

Robert M. Benner 9-19-94
CHIEF, BUREAU OF UTILITIES DATE

William S. ... 2/27/94
CHIEF, BUREAU OF ENGINEERING DATE

... 9/29/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: VRC			
DRN: Bgk			
CHK: AJP			
DATE: 12-97	BY NO.	REVISION	DATE
		CREATE PHASED PLANS	9-94
		FINAL SUBMITAL	8-94

**AIR RELEASE VALVE/
TERMINAL PRESSURE CLEANOUT
WITH AIR RELEASE VALVE**

600' SCALE MAP NO. 4e-41 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3582-D

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

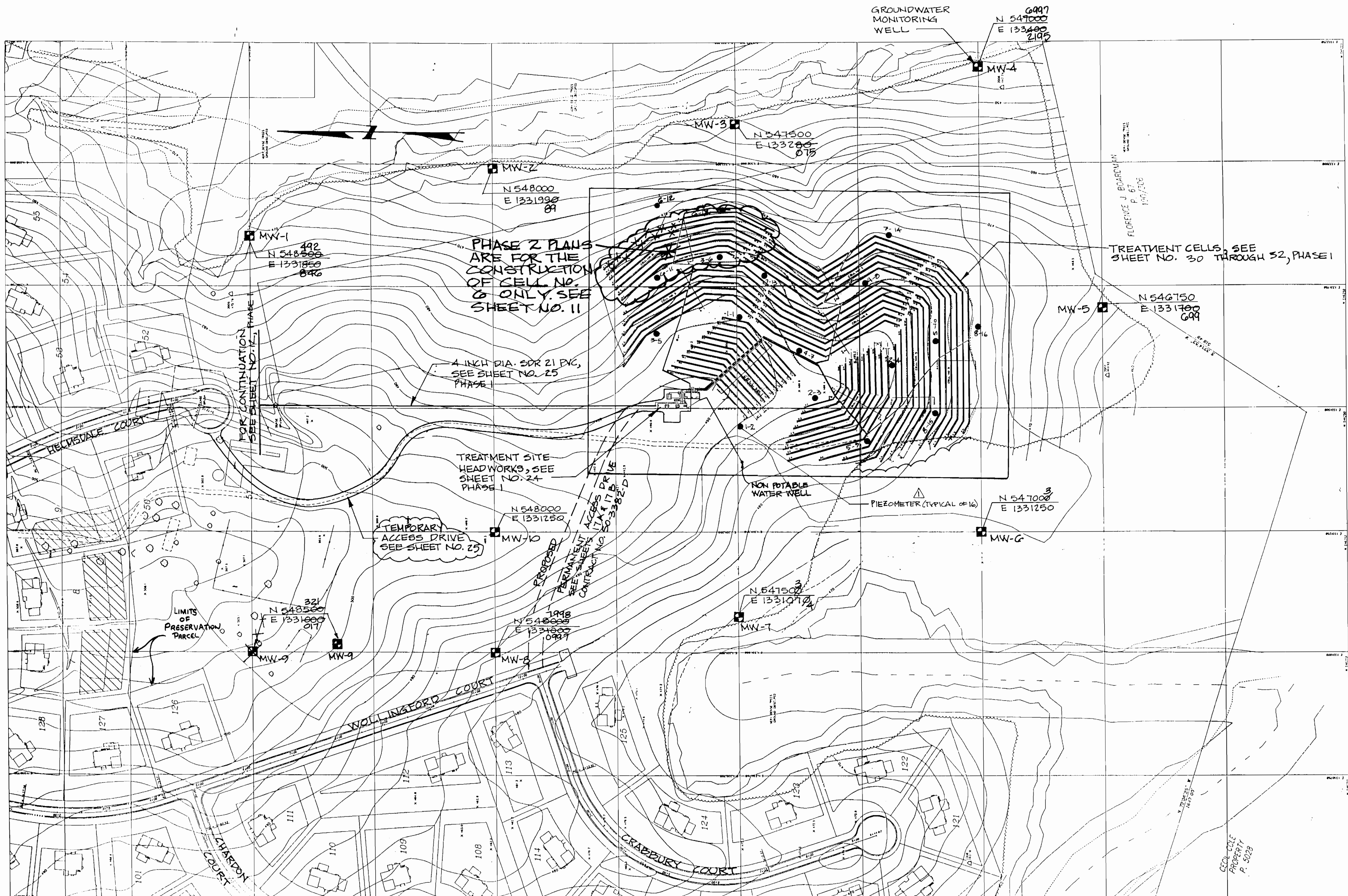
SHEET 7 OF 18

AS BUILT

Ashleigh Knolls

ws/10

3382



TREATMENT FACILITY KEY SHEET

SCALE: 1"=100'

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert A. Brown 9-29-94
DIRECTOR OF PUBLIC WORKS DATE

Robert A. Brown 9-19-94
CHIEF, BUREAU OF UTILITIES DATE

Robert A. Brown 9/29/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640

Robert A. Brown

DES: VRC			
DRN: BGW			
CHK: AJP			
DATE: 12-93			
BY	NO.	REVISION	DATE
BGW	1	ADD PIEZOMETERS	11-74
		CREATE PHASED PLANS	1-14
		FINAL SUBMITAL	8-94

TREATMENT FACILITY KEY SHEET

600' SCALE MAP NO. 40-41 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

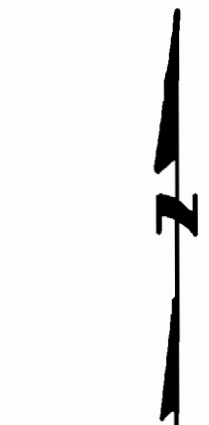
SHEET 10 OF 16

AS BUILT

ws/11

3382

SCALE: 1"=20'



- LEGEND**
- TRENCH MARKER
 - ▲ MONITORING PORT
 - TP-1 TEST PIT LOCATION
 - ↔ SECTION LINE

NOTE: DRILL 1/4 INCH DIAMETER HOLES SPACED 8 FT. CENTER TO CENTER STARTING FROM A DISTANCE OF 4 FT. FROM INFILTRATOR END CAP CLOSEST TO MANIFOLD PIPING

NOTE: ALL PIPING FROM VALVE VAULT IS 4" UNTIL POINT OF REDUCTION

2" MANIFOLD SERVING CELL NO. 1 TO BE ENCASED IN CONCRETE

NOTE: THIS PLAN IS FOR CONSTRUCTION OF CELL NO. G ONLY. ALL COMPONENTS IN HATCHED AREA ARE EXISTING

REMOVE CAP FROM EXISTING 4" PVC MANIFOLD. CONNECT NEW 4" PVC MANIFOLD. SEE DETAIL SHEET NO. 15 FOR EXISTING CAP ARRANGEMENT

MONITORING PORT, SEE DETAIL SHEET NO. 15

TRENCH MARKER, SEE DETAIL SHEET NO. 15

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

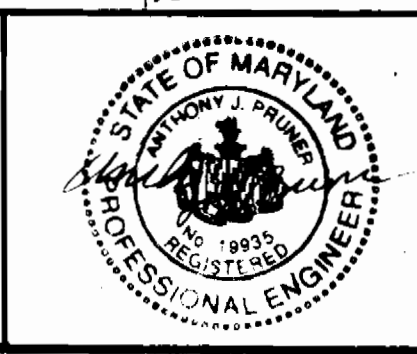
James A. Lewis 9/27/94
DIRECTOR OF PUBLIC WORKS DATE

Robert M. Bailey 9-19-94
CHIEF, BUREAU OF UTILITIES DATE

William J. ... 9/27/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-8640



DES: VRC		
DRN: LCH		
CHK: AJP	CELL G & GA	8-95
	CREATE PHASED PLANS	9-94
	FINAL SUBMITTAL	8-94
DATE: 12-93	BY NO.	REVISION
		DATE

TREATMENT SITE PLAN

SCALE: 1" = 20'

600' SCALE MAP NO. 40-41 BLOCK NO. 12

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

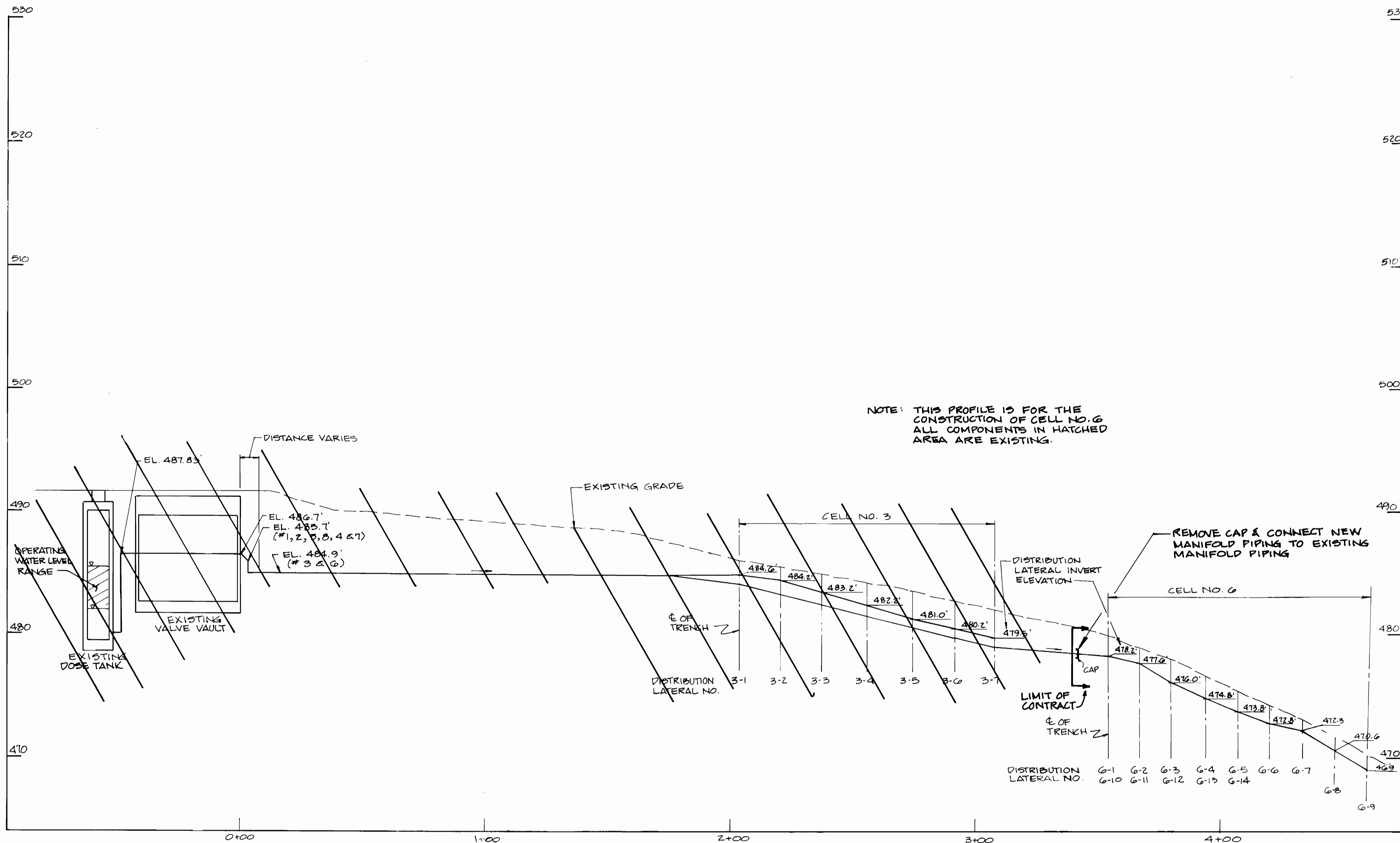
CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 11 OF 18

AS BUILT



**TREATMENT CELL NO. 6
PROFILE**

SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

ws/12

3382

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		DAMES & MOORE	
Director of Public Works <i>[Signature]</i> DATE: 9-19-94	Chief, Bureau of Engineering <i>[Signature]</i> DATE: 9/29/94	170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640	STATE OF MARYLAND Professional Engineer Seal <i>[Signature]</i>

DES: VRC	
DRN: BJK	
CHK: AJP	
DATE: 12-93	BY: NO.

NO.	REVISION	DATE
1	CELL NO. 6 / LATERALS G-1 TO G-14	8-95
2	CREATE PLASSED PLANS	9-94
3	FINAL SUBMITTAL	8-94

**MANIFOLD PROFILE
CELL NO. 6**

600' SCALE MAP NO. 42-41 BLOCK NO. 12

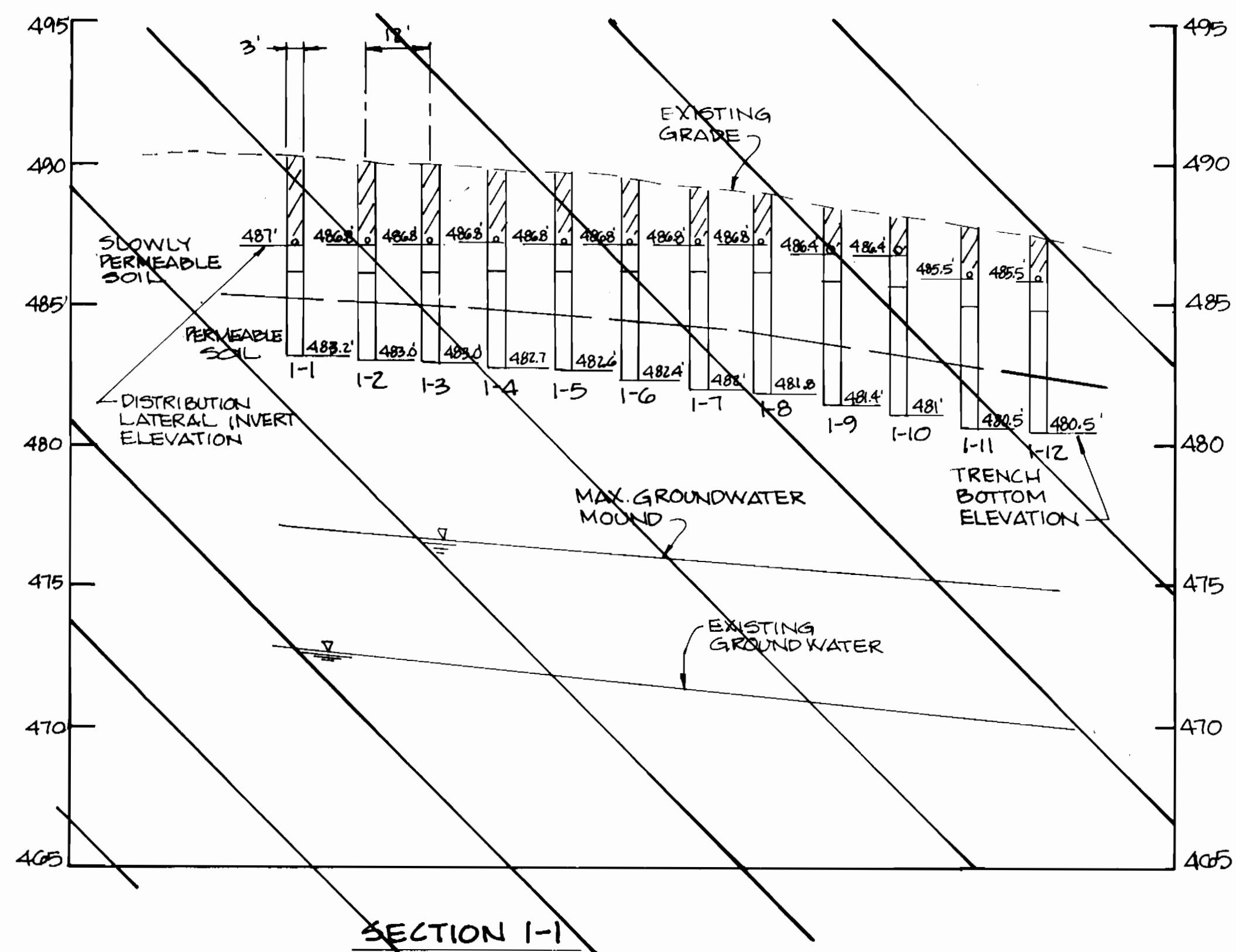
**ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM**

CONTRACT NO. 50-3382-D

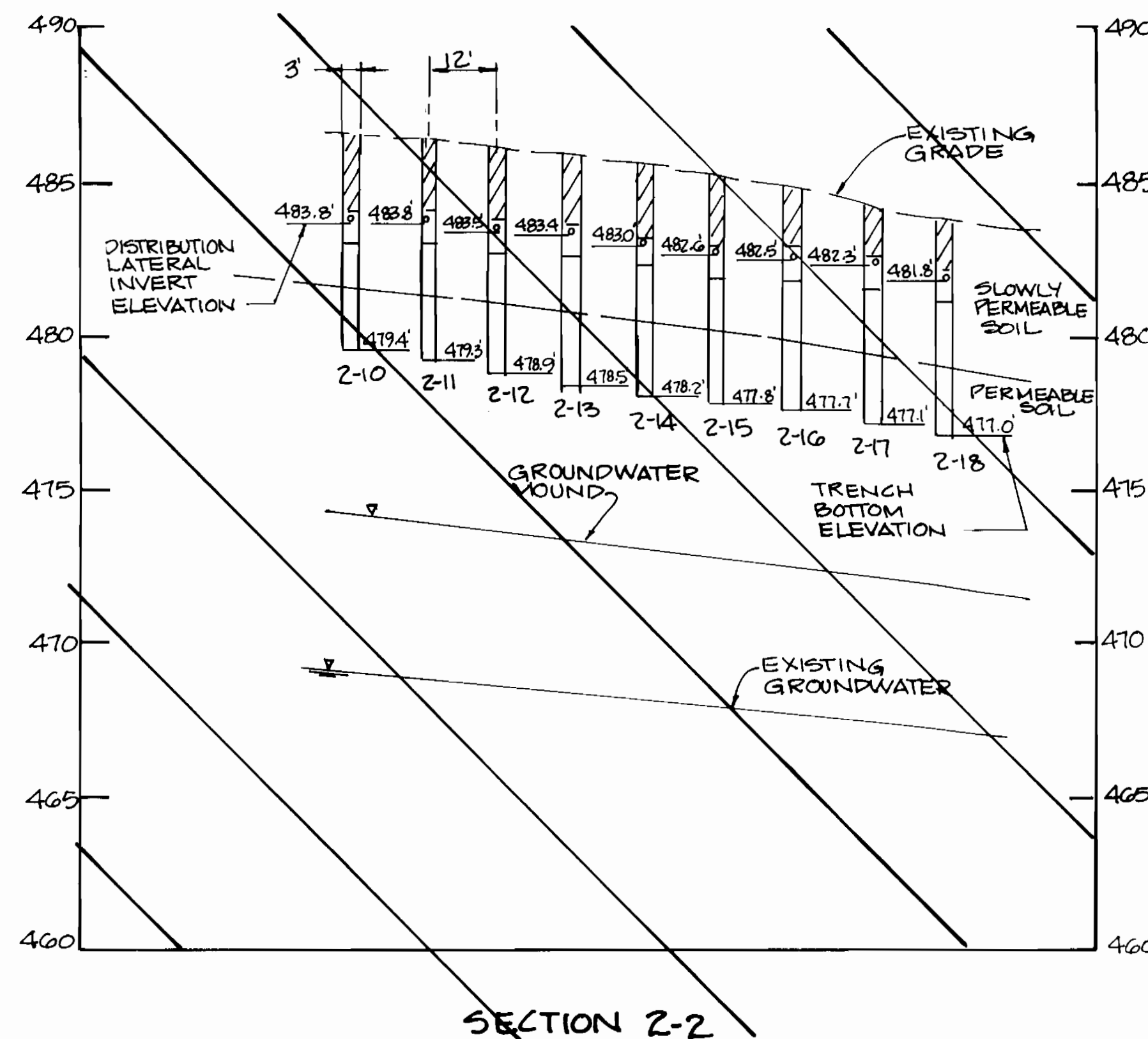
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 12 OF 12

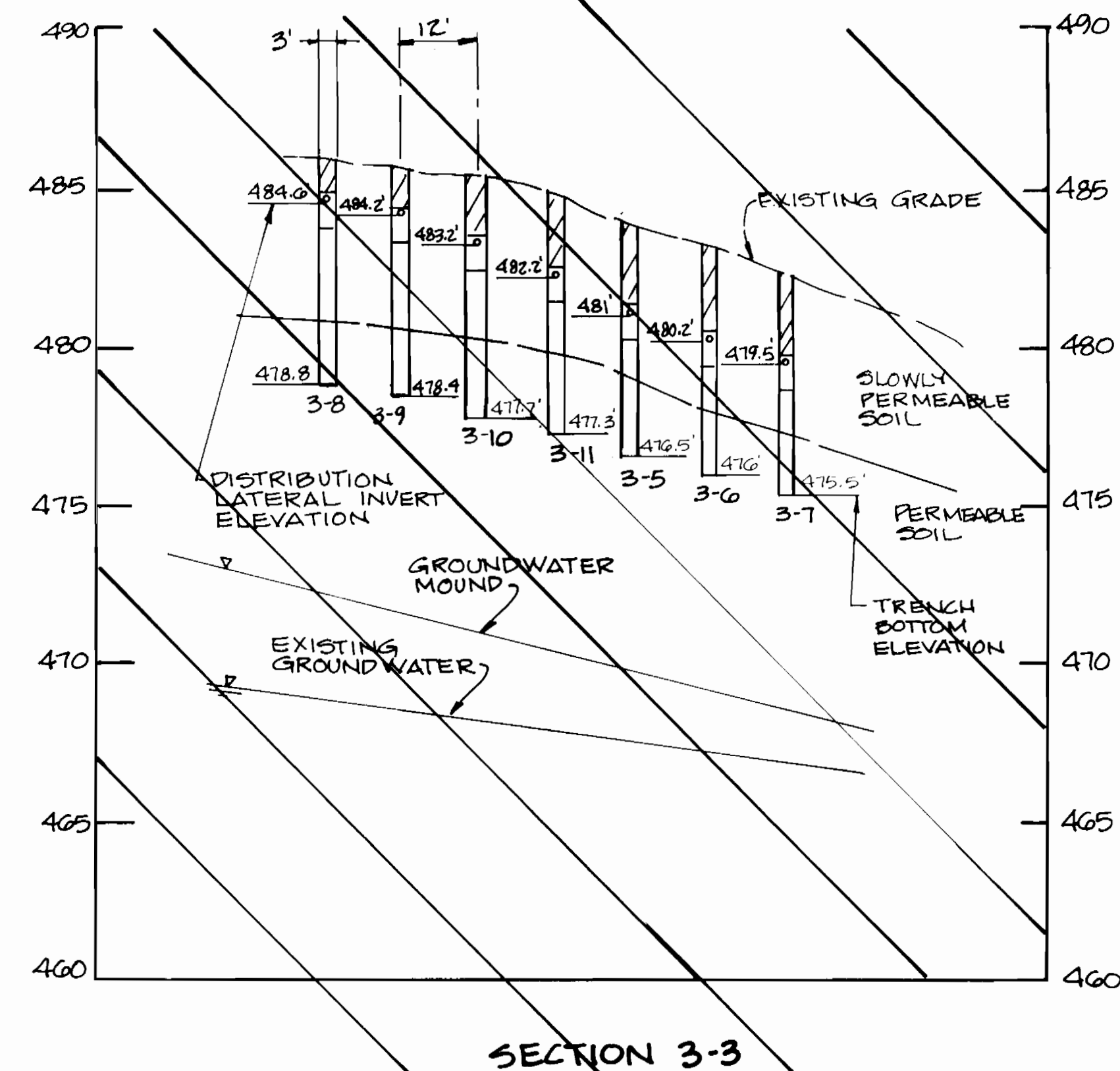
AS BUILT



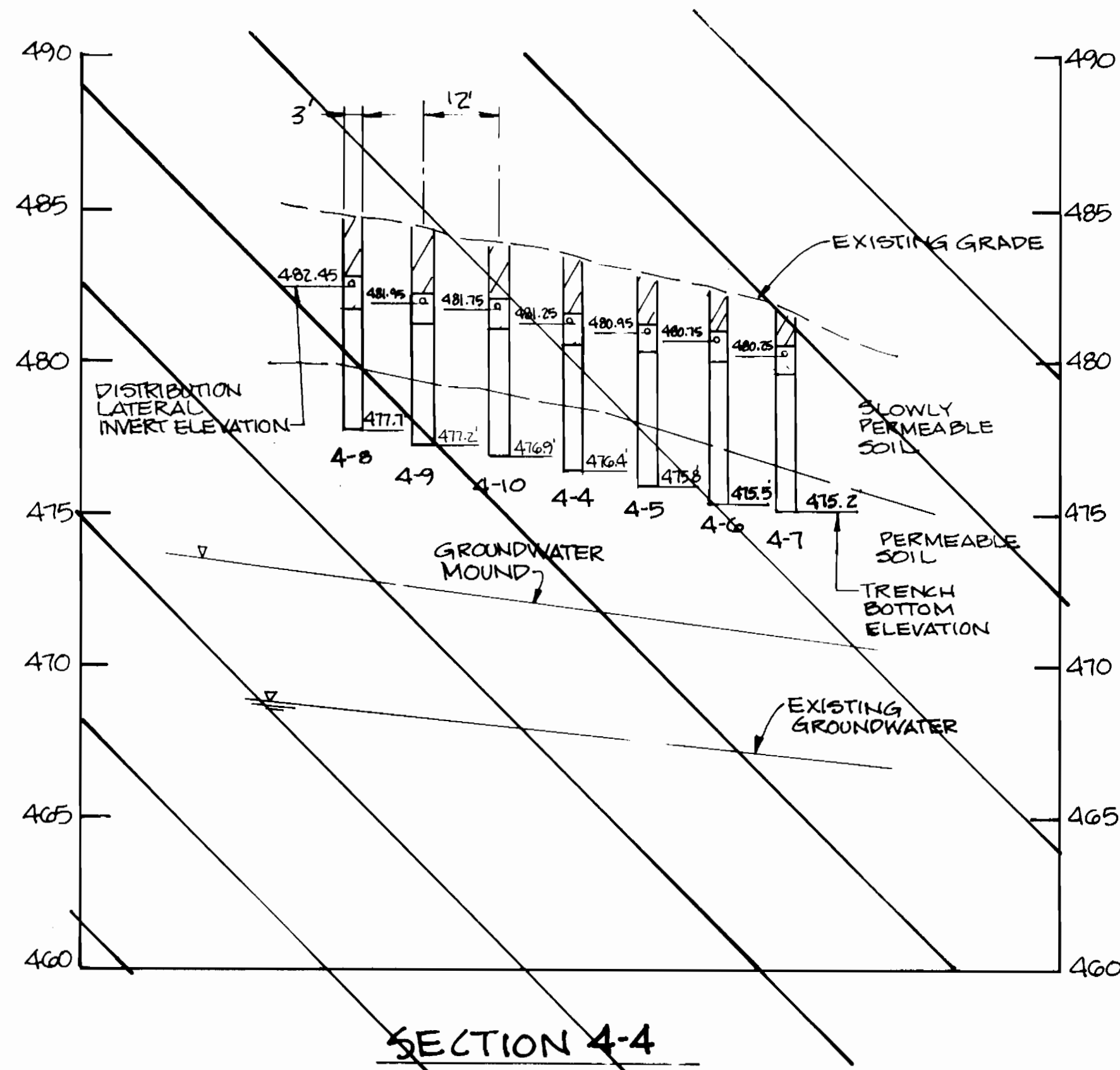
SECTION 1-1



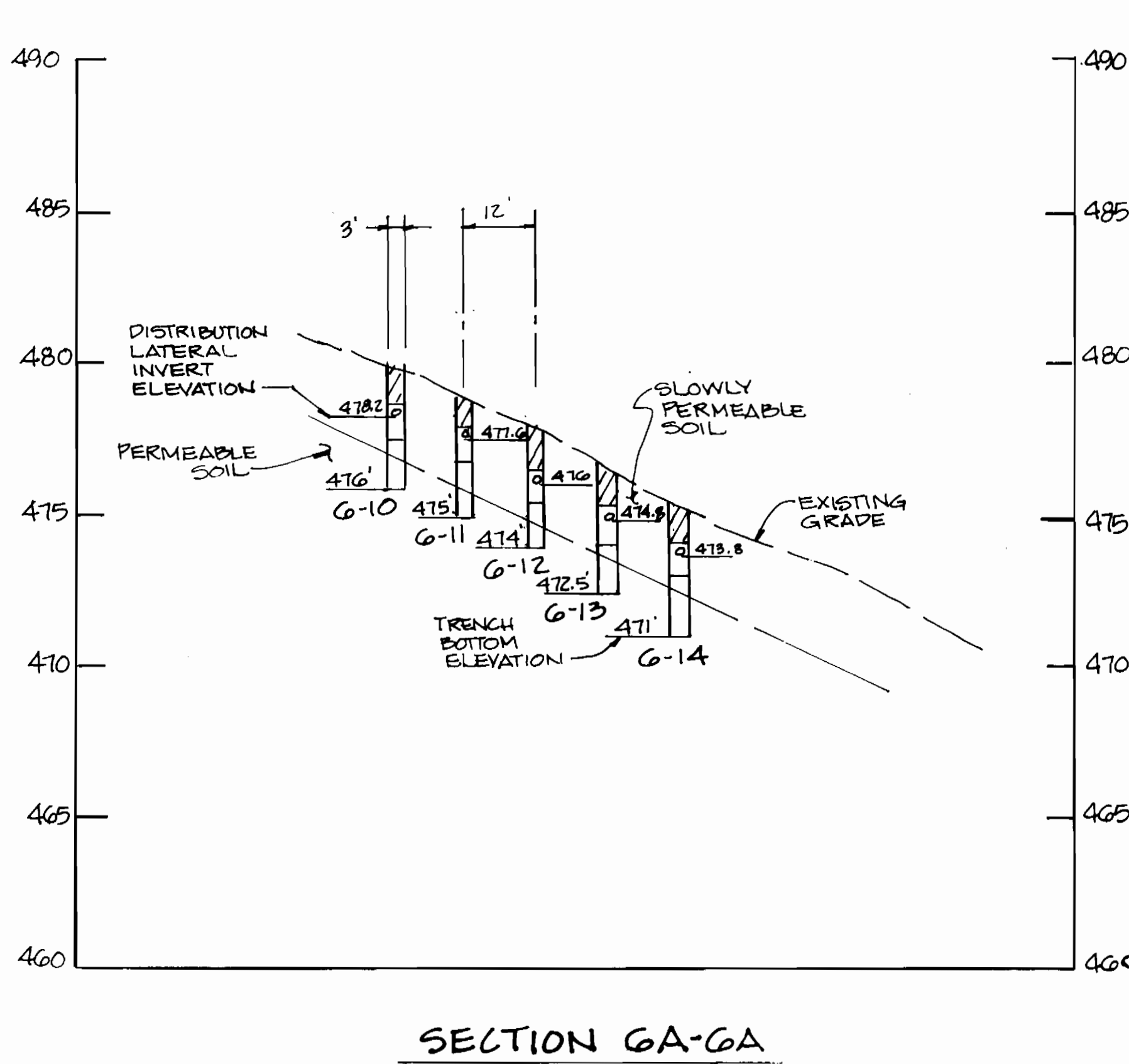
SECTION 2-2



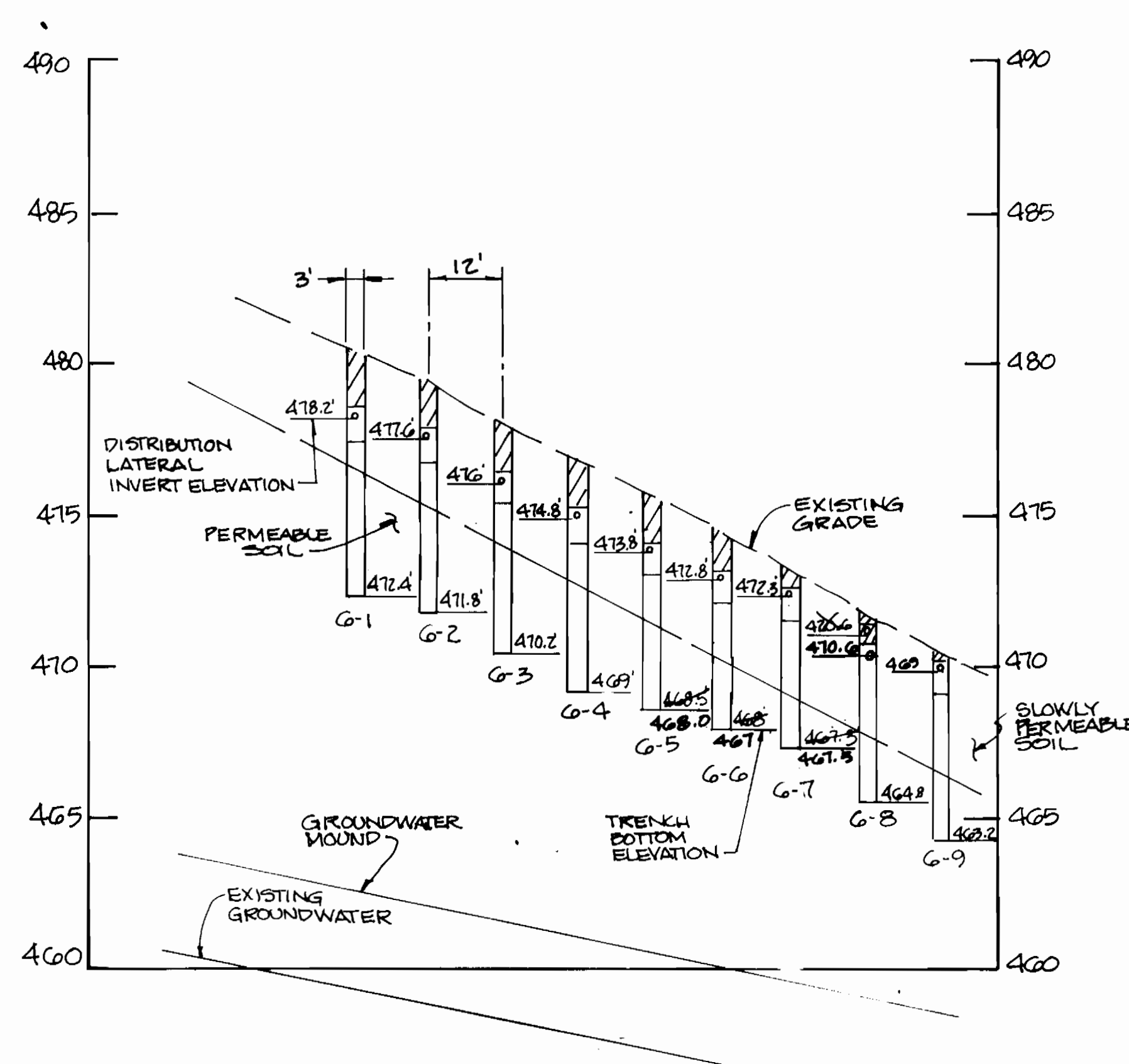
SECTION 3-3



SECTION 4-4



SECTION GA-GA
CELL NO. G



SECTION G-G
CELL NO. G

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

AS BUILT 11/7/96

ws/13

3382

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James A. Lee 9/29/94
 DIRECTOR OF PUBLIC WORKS DATE
Robert M. Benning 9-19-94
 CHIEF, BUREAU OF UTILITIES DATE
Charles D. Spang 9/29/94
 CHIEF, BUREAU OF ENGINEERING DATE
Michael J. ... 9/29/94
 CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: VRC			
DRN: BGW			
CHK: AJP			
DATE: 12-93			
BY NO.			
REVISION			
DATE			

SECTION GA & SECTION G
CREATE PHASED PLANS
FINAL SUBMITTAL

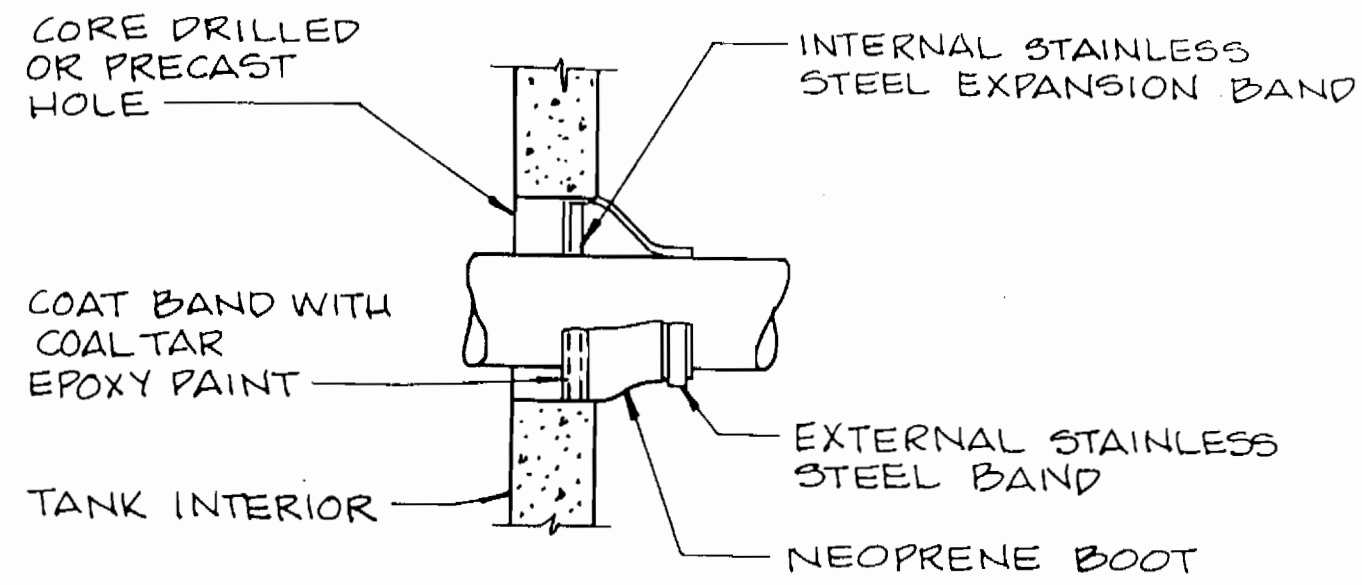
TREATMENT CELL SECTIONS

800' SCALE MAP NO. 40-41 BLOCK NO. 12

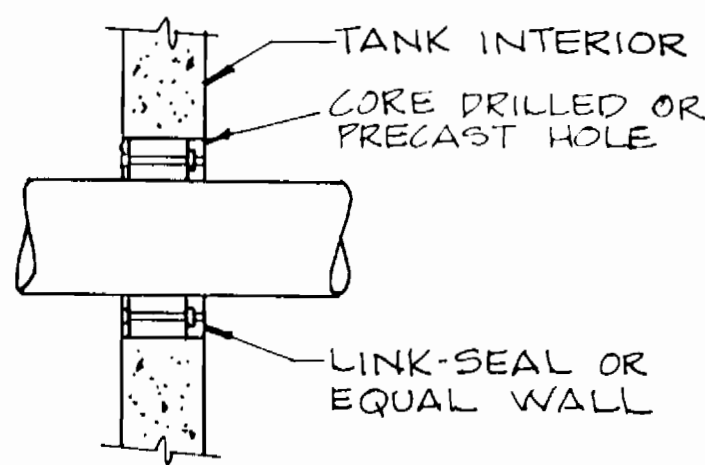
ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 13 OF 18

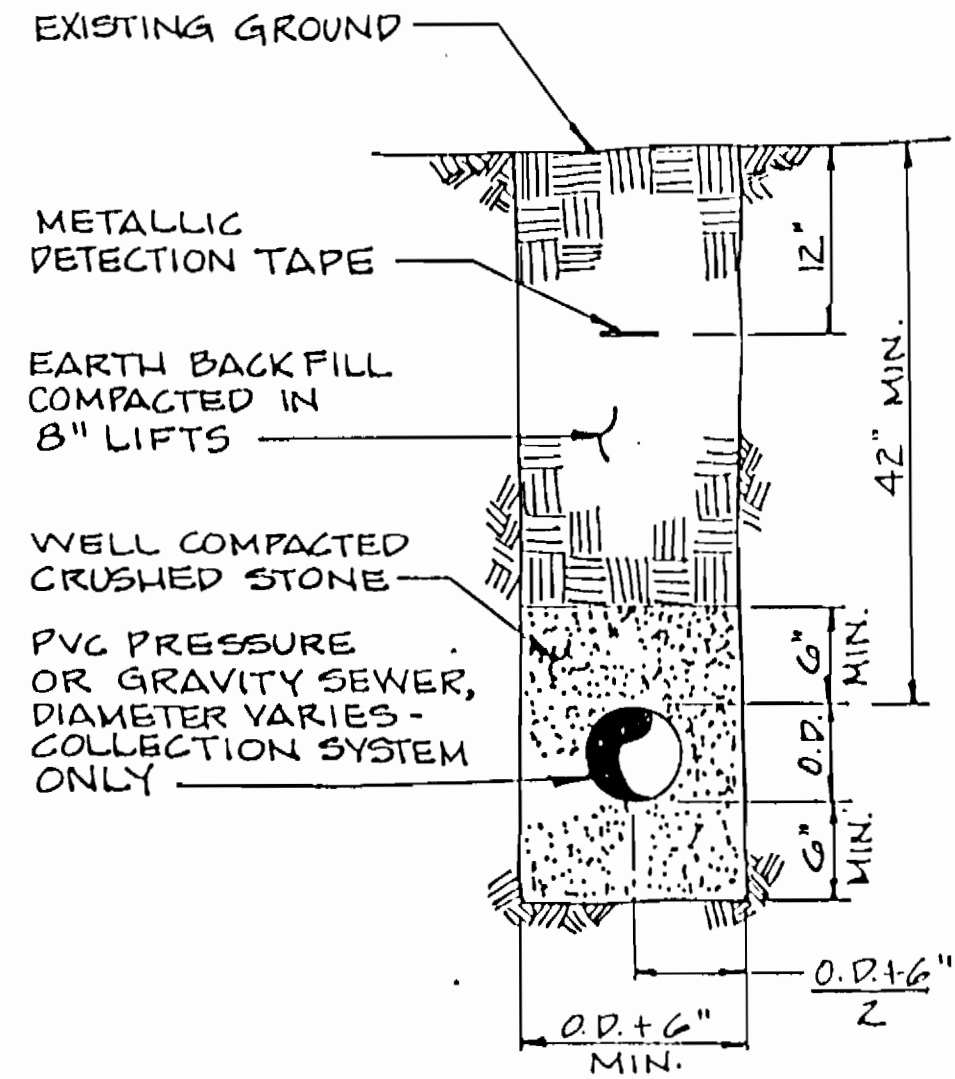


NEOPRENE BOOT
FOR PIPES 4" DIA. AND LARGER

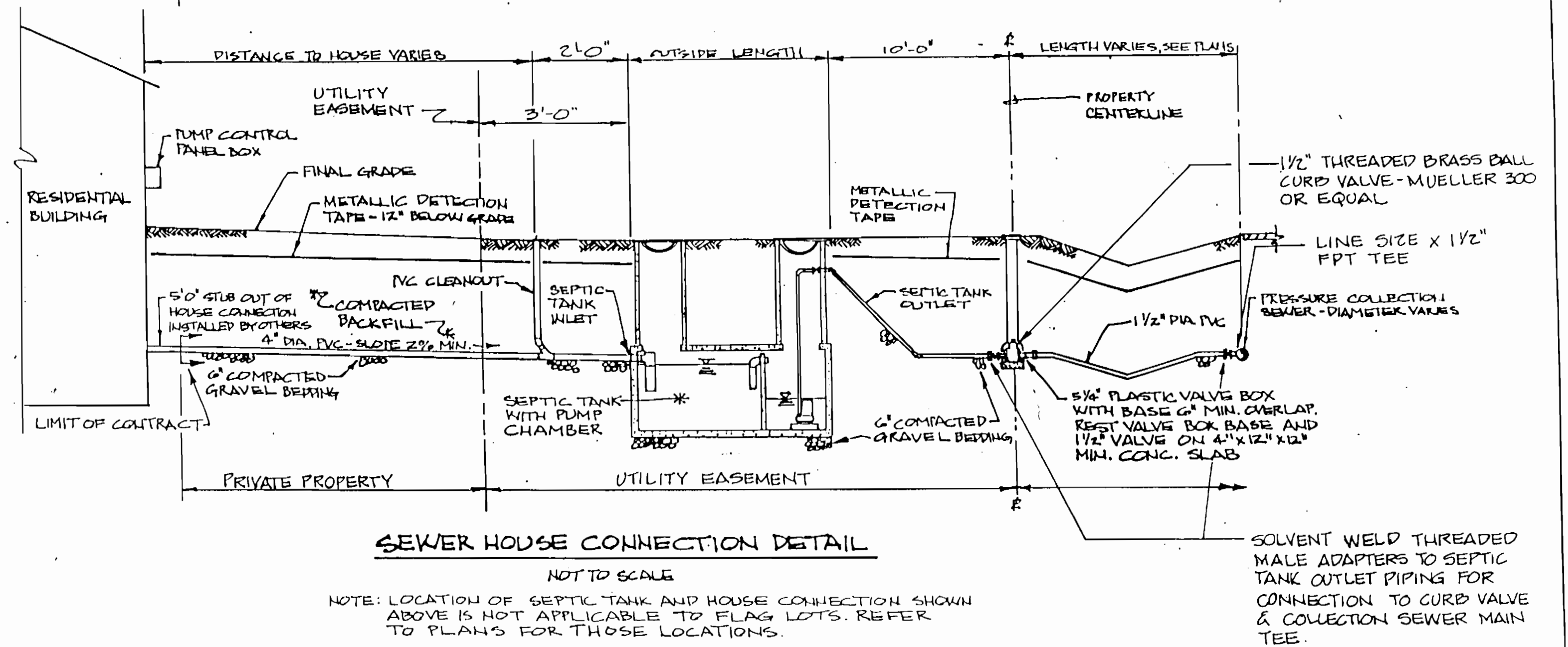
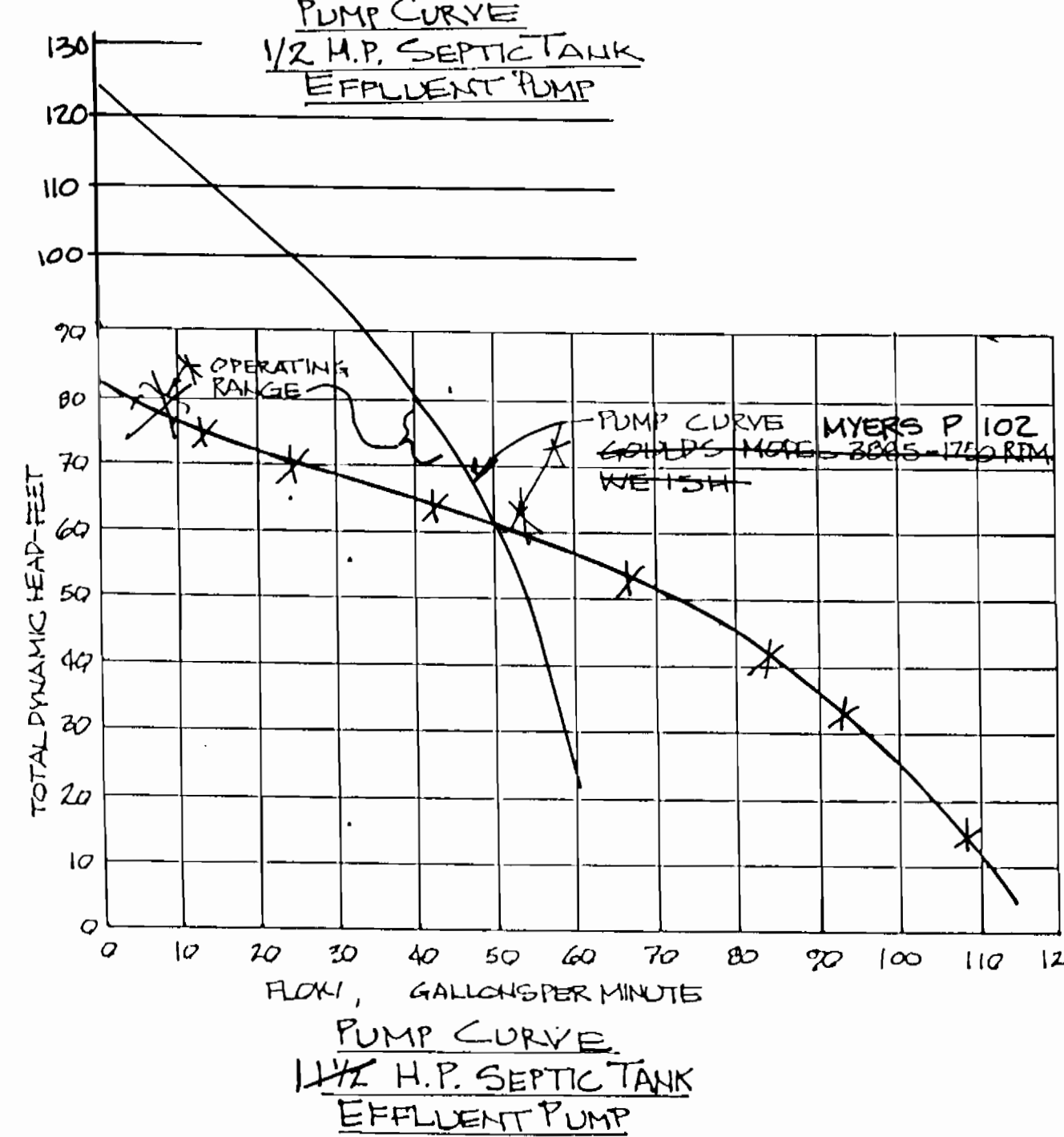
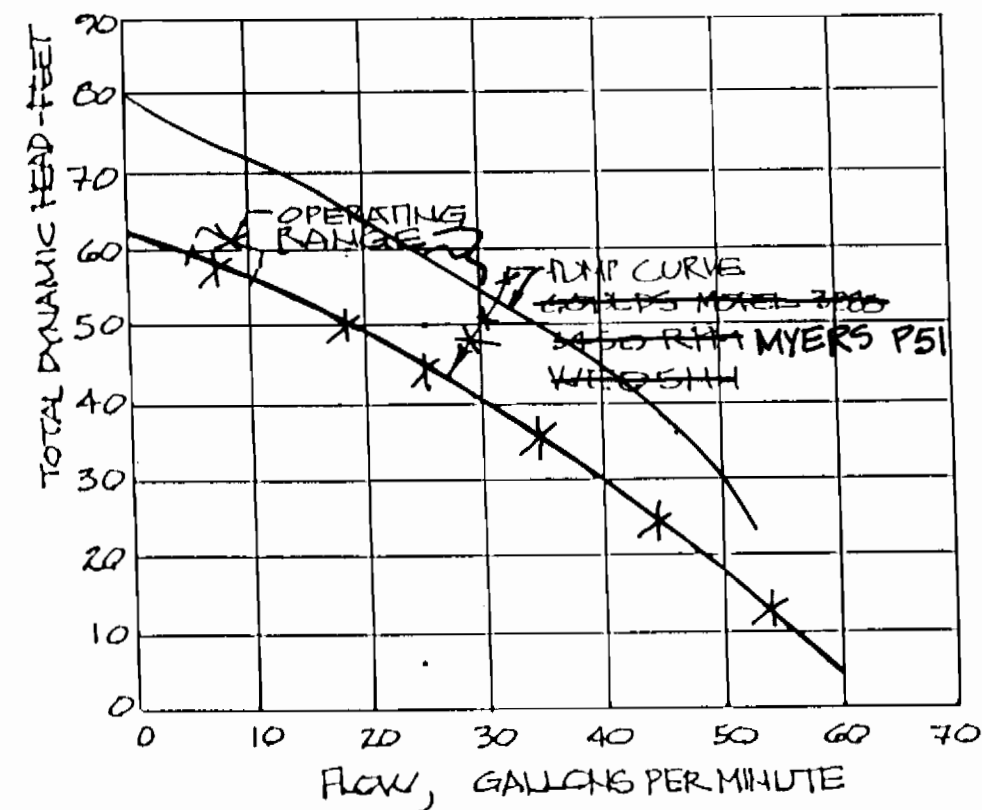


LINK-SEAL
FOR PIPES LESS THAN 4" DIA.
DETAIL - WALL PENETRATIONS
NOT TO SCALE

- NOTES:
1. ALL METAL PARTS TO BE STAINLESS STEEL.
 2. ALL METAL PARTS TO BE COATED WITH COAL TAR EPOXY FOLLOWING INSTALLATION INSIDE AND OUT.

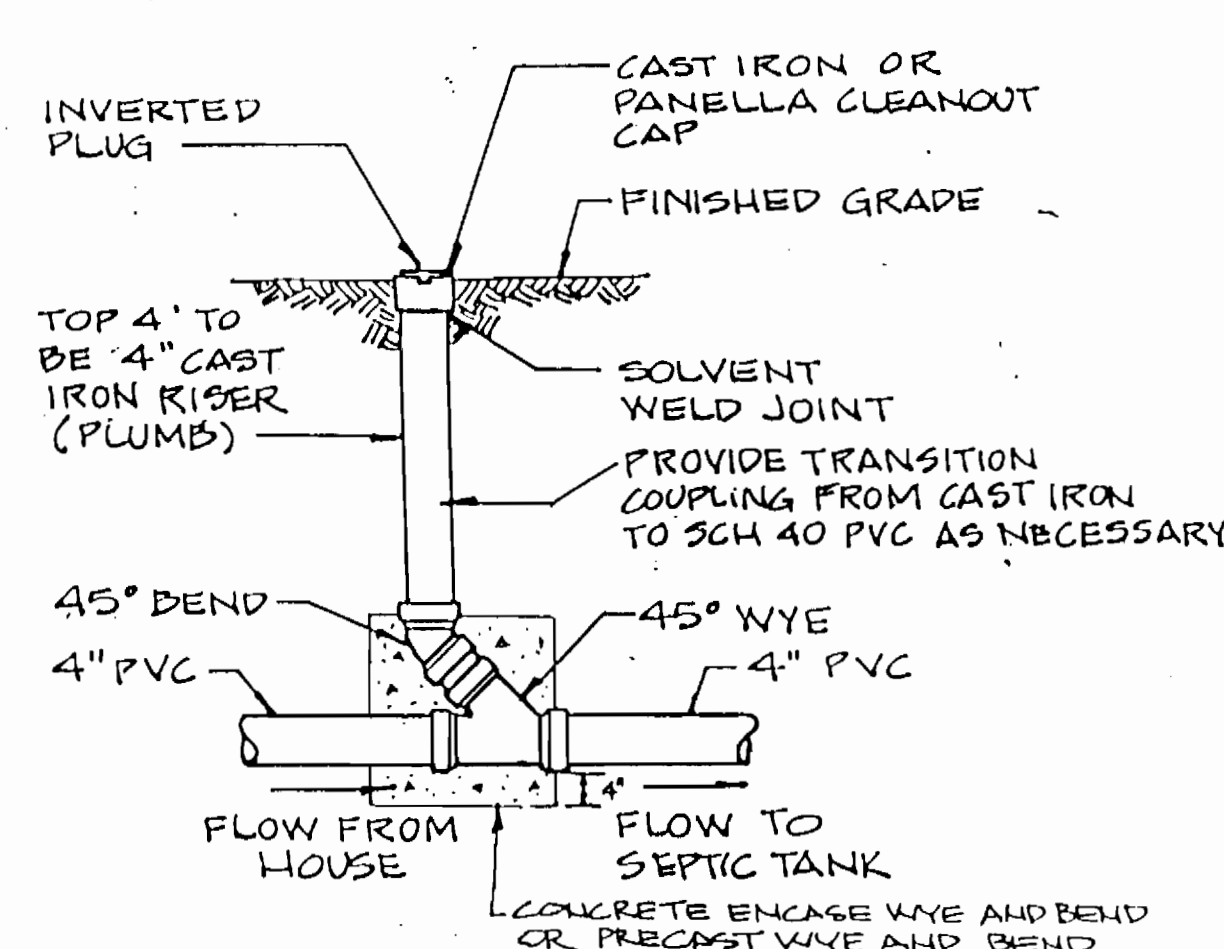


PIPE TRENCH & BEDDING DETAIL
NOT TO SCALE

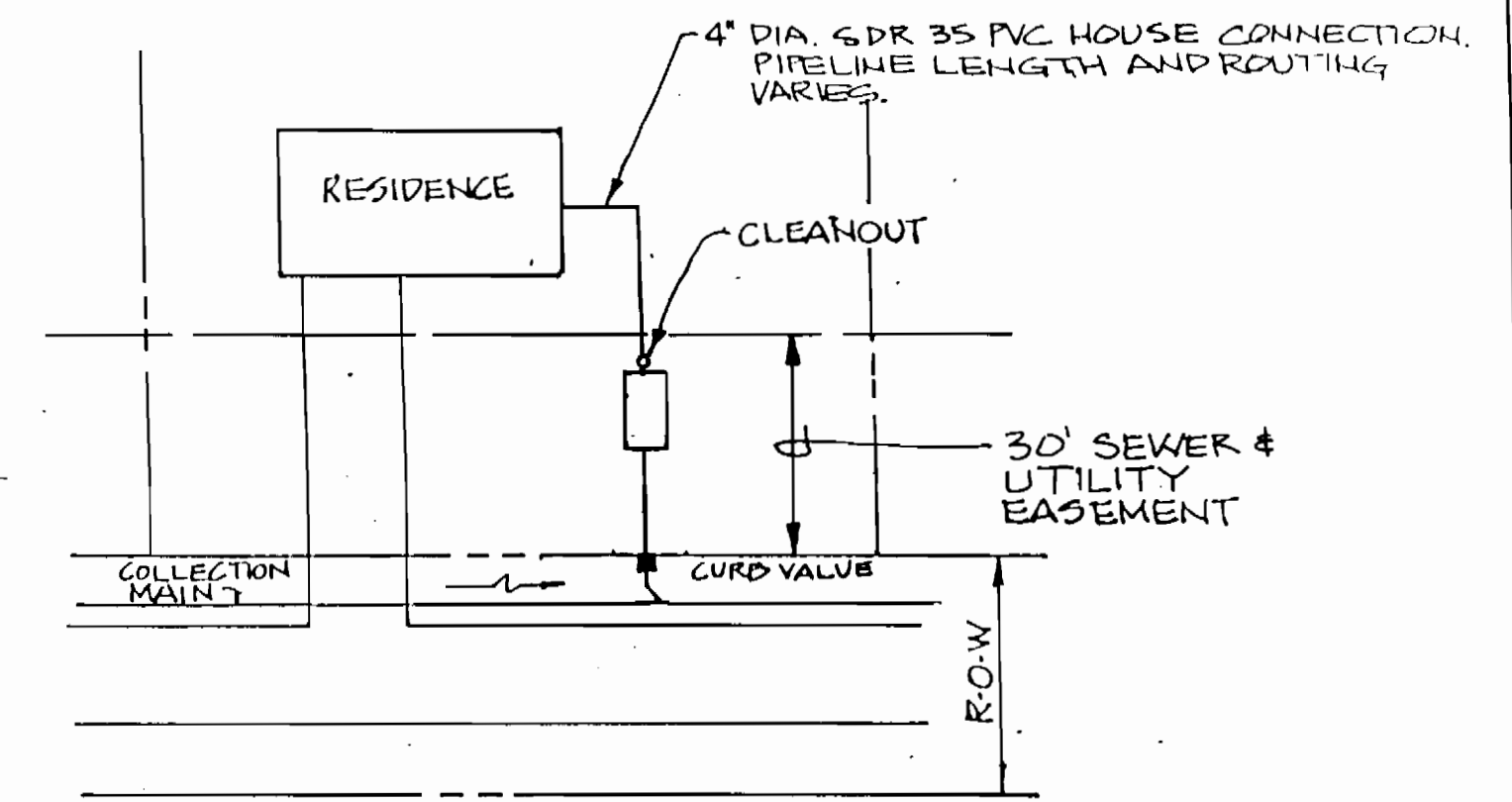


SEWER HOUSE CONNECTION DETAIL
NOT TO SCALE

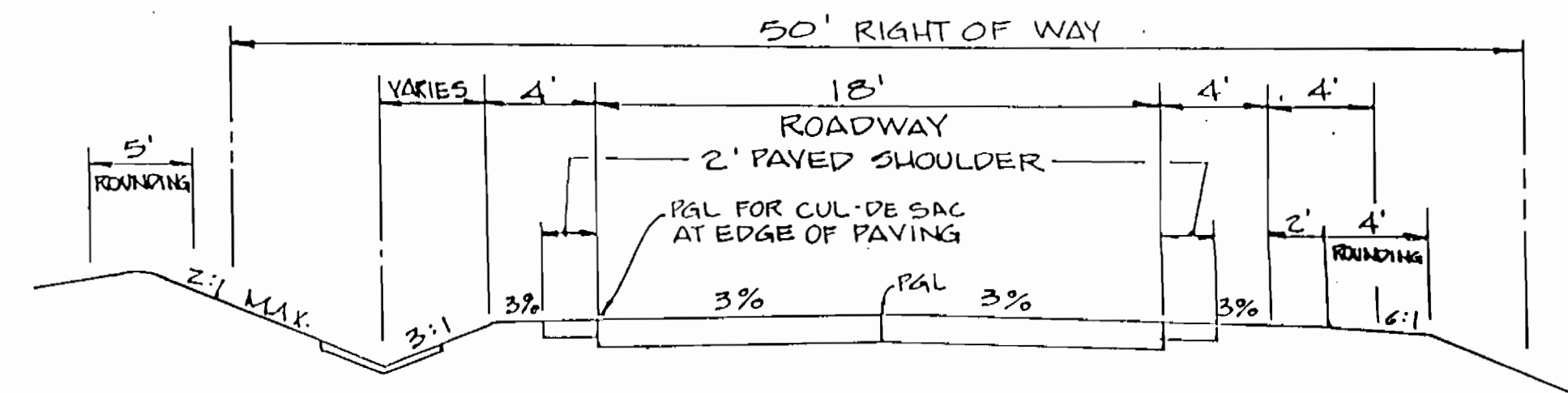
NOTE: LOCATION OF SEPTIC TANK AND HOUSE CONNECTION SHOWN ABOVE IS NOT APPLICABLE TO FLAG LOTS. REFER TO PLANS FOR THOSE LOCATIONS.



GRAVITY CLEANOUT
NOT TO SCALE



TYPICAL SEWER & UTILITY EASEMENT
NOT TO SCALE



TYPICAL ROADWAY SECTION
NOT TO SCALE

AS BUILT 11/7/96

ws/14

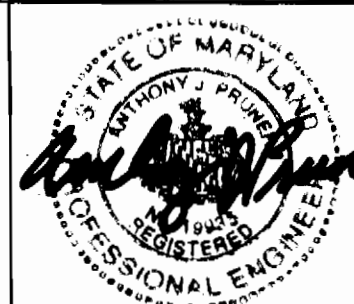
3382

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: Robert M. Beninger 9-19-94
Chief, Bureau of Engineering: Robert M. Beninger 9/23/94
Chief, Land Development Division: Robert M. Beninger 9/23/94

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230
ANNAPOLIS, MARYLAND 21401
(410) 224-5640



DES: VRC			
DRAWN: BGW			
CHK: AJP	CREATE PHASED PLANS	9-94	
DATE: 12-93	FINAL SUBMITTAL	8-94	
BY NO.	REVISION	DATE	

MISCELLANEOUS DETAILS

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

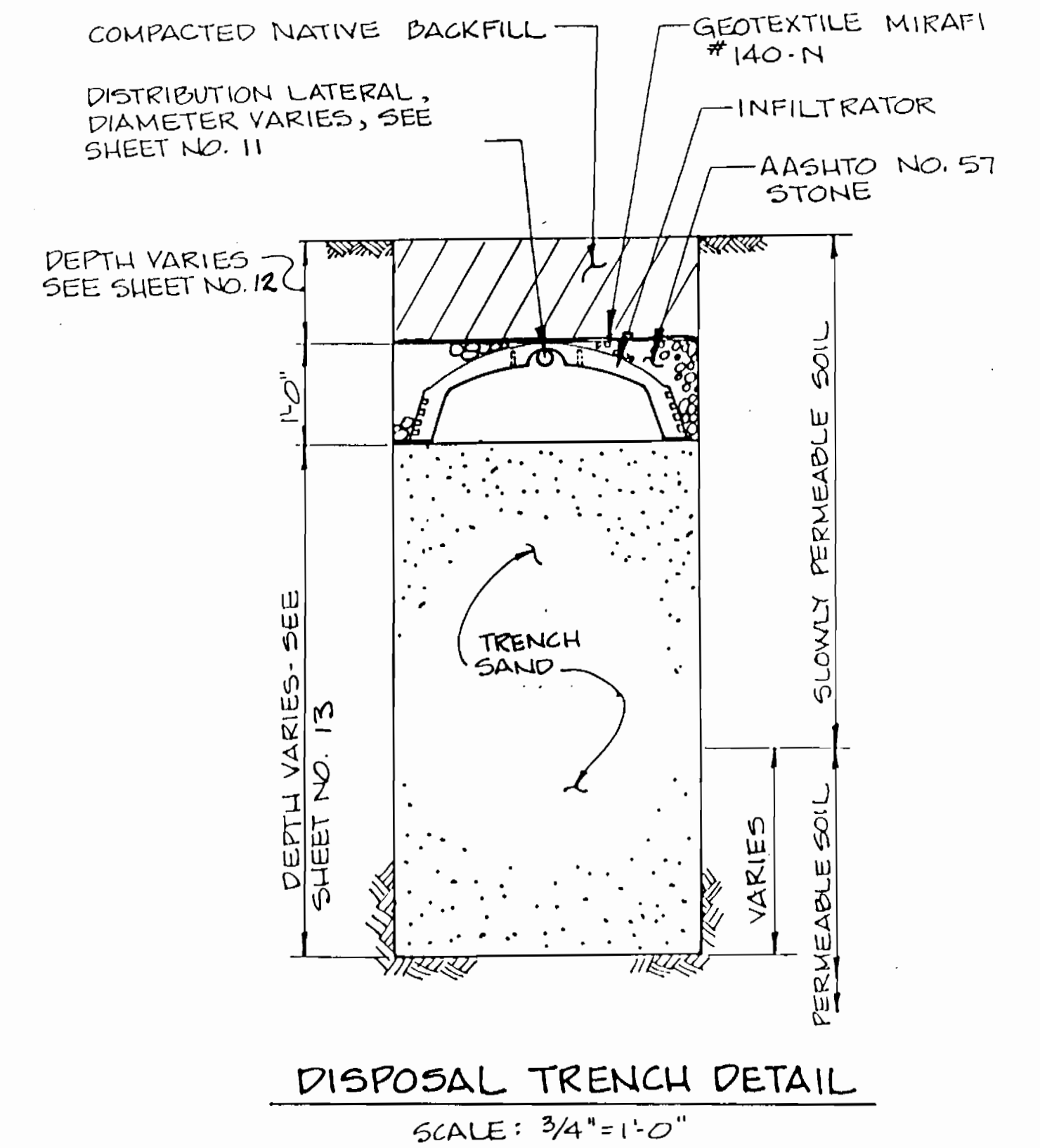
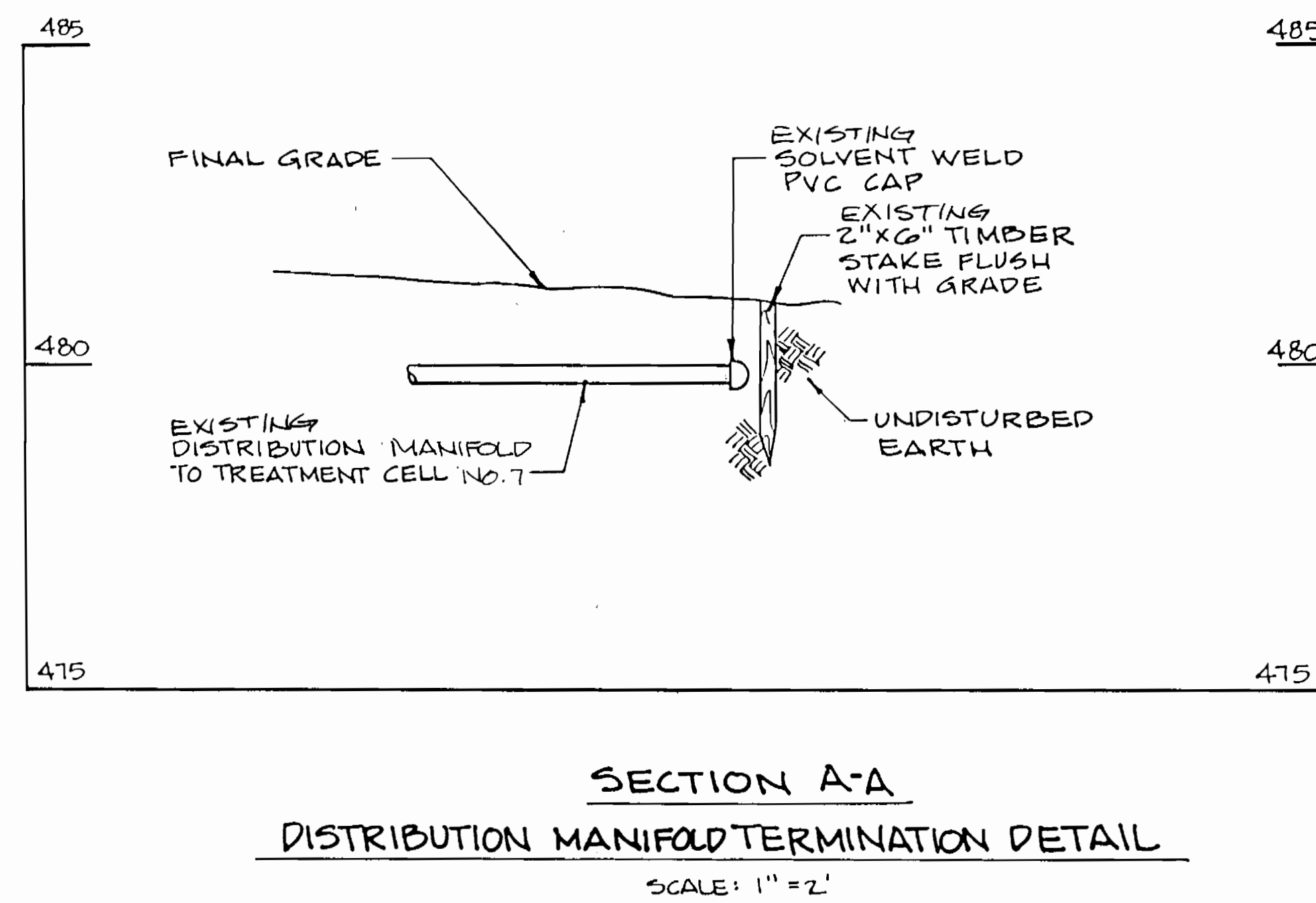
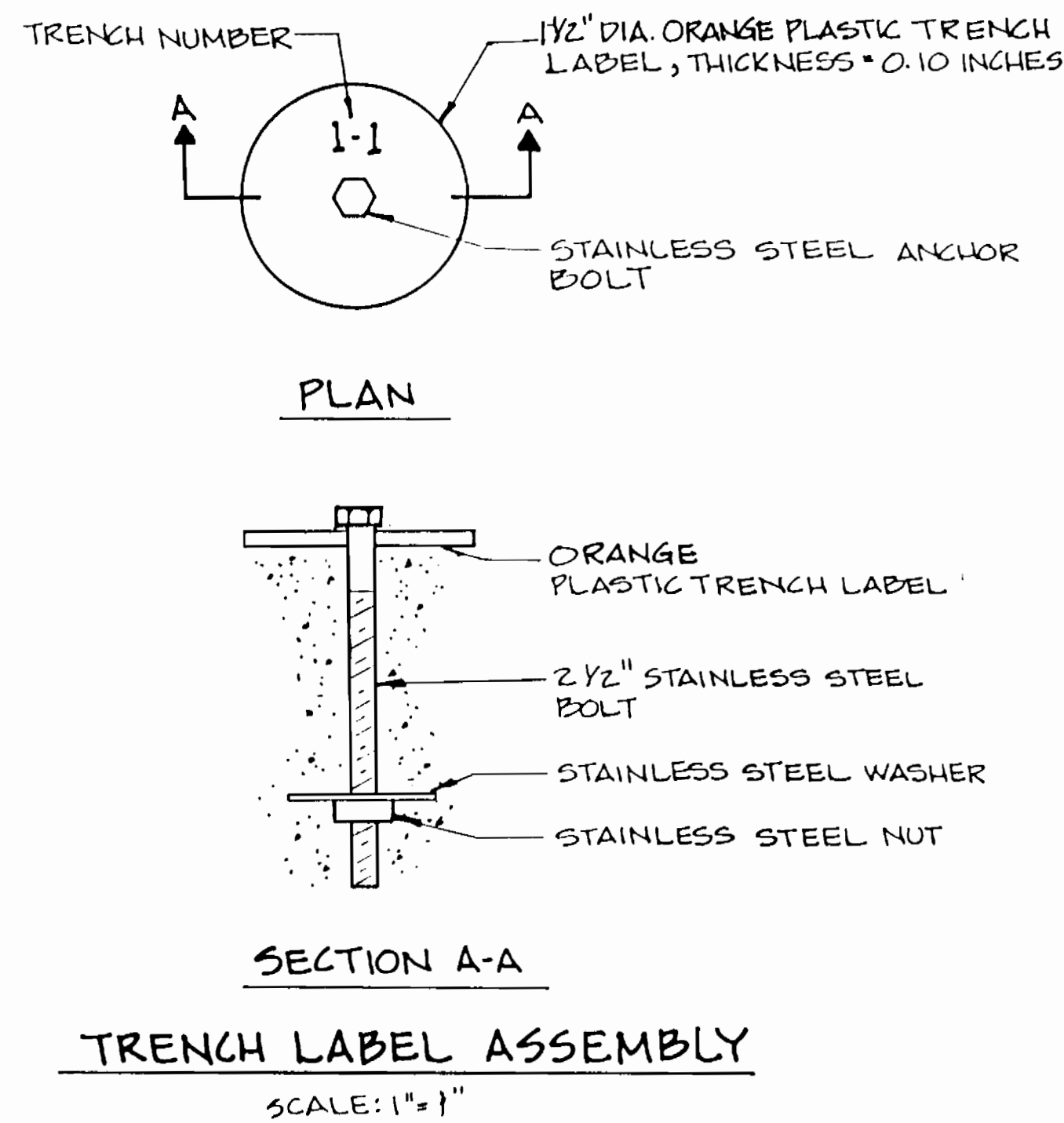
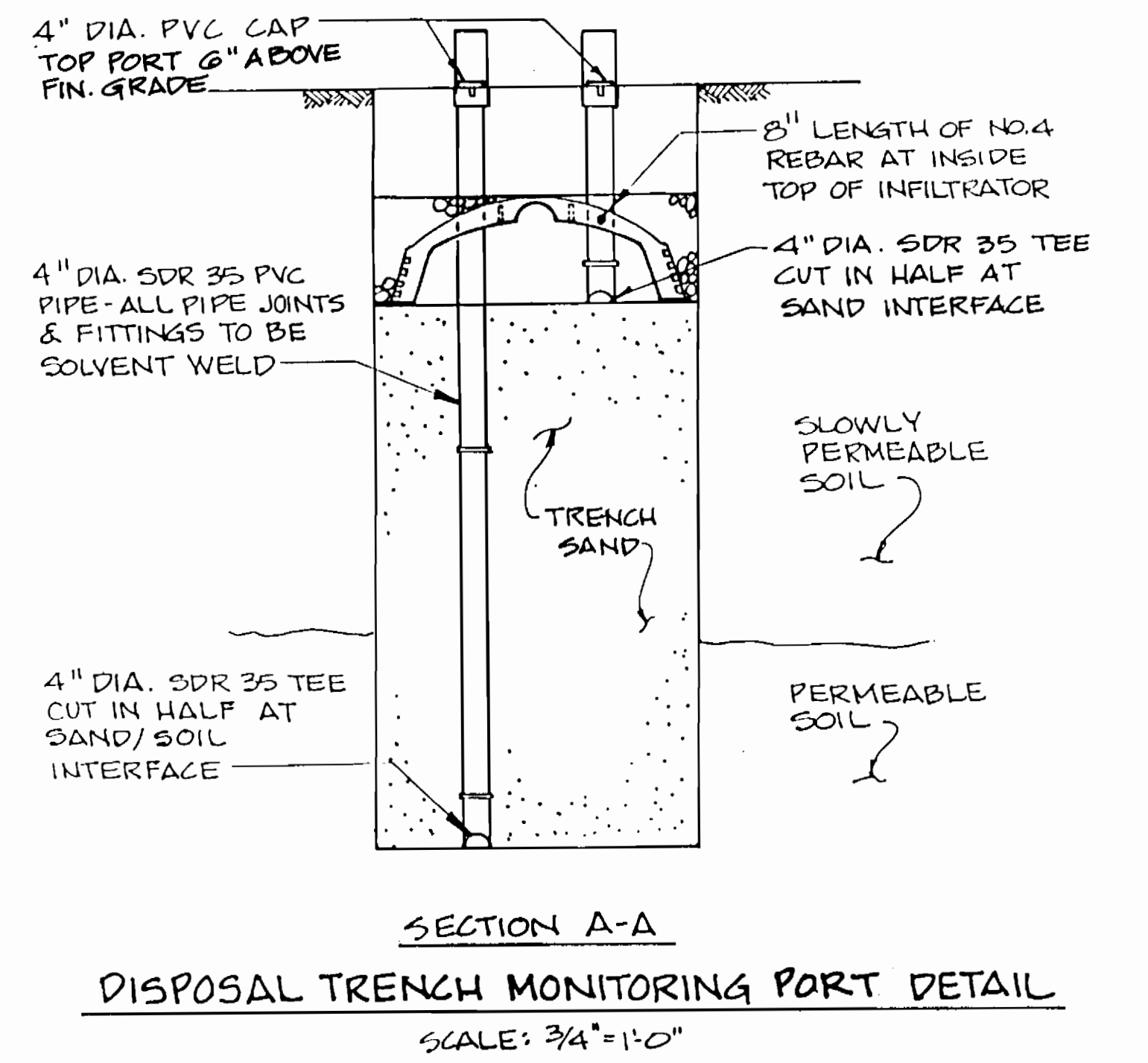
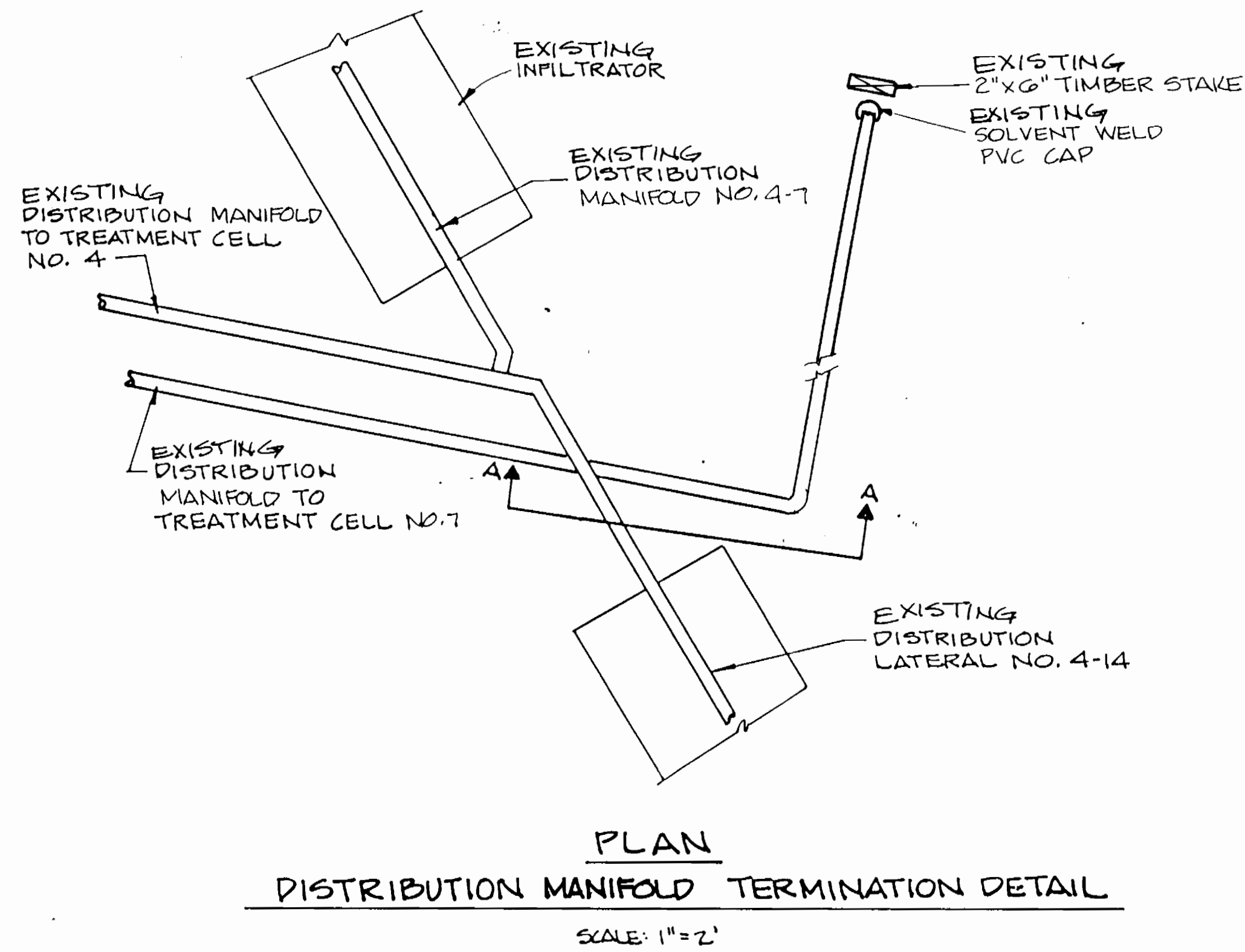
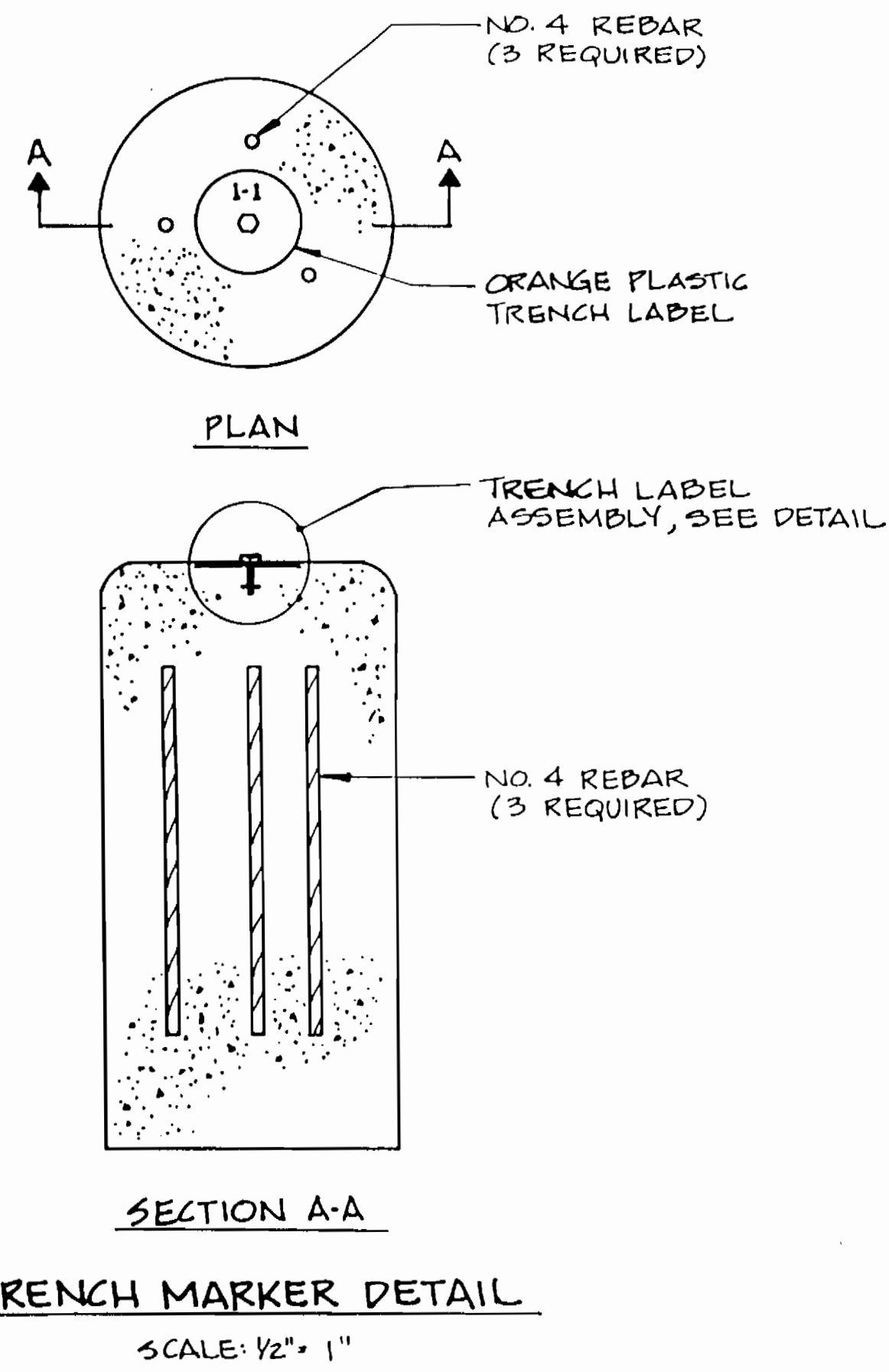
ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 14 OF 18

AS BUILT



NOTE: DISTRIBUTION MANIFOLD TERMINATION DETAIL IS TYPICAL OF CELLS 6, 7, & 8

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DAMES & MOORE

DES: VRC				
DRN: BGW				
CHK: AJP		CREATE PHASED PLANS	9-94	
		FINAL SUBMITAL	8-94	
DATE: 12-93	BY	NO.	REVISION	DATE

MISCELLANEOUS DETAILS

ASHLEIGH KNOLLS
WASTEWATER COLLECTION, TREATMENT
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

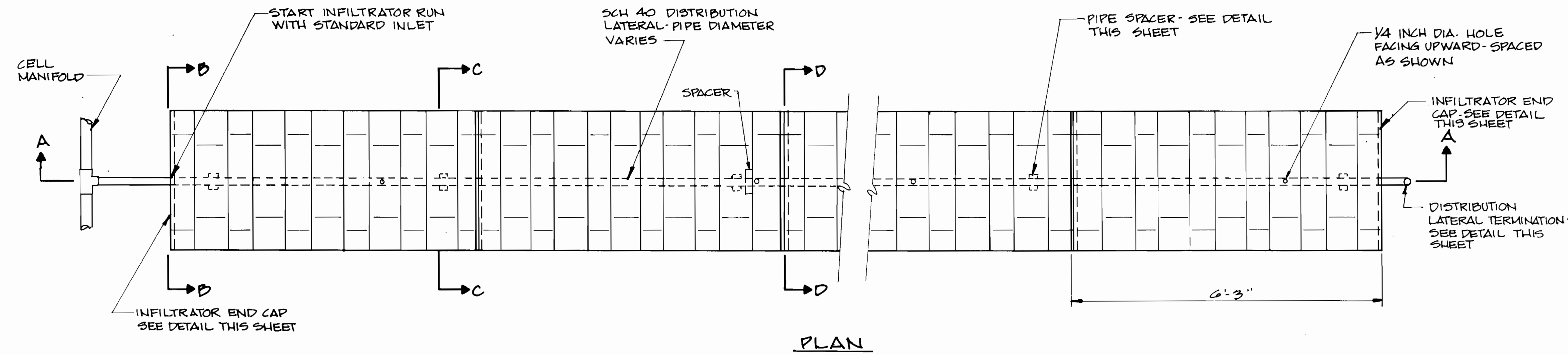
SHEET
15 OF 19

3382 ws/15 Ashleigh Knolls

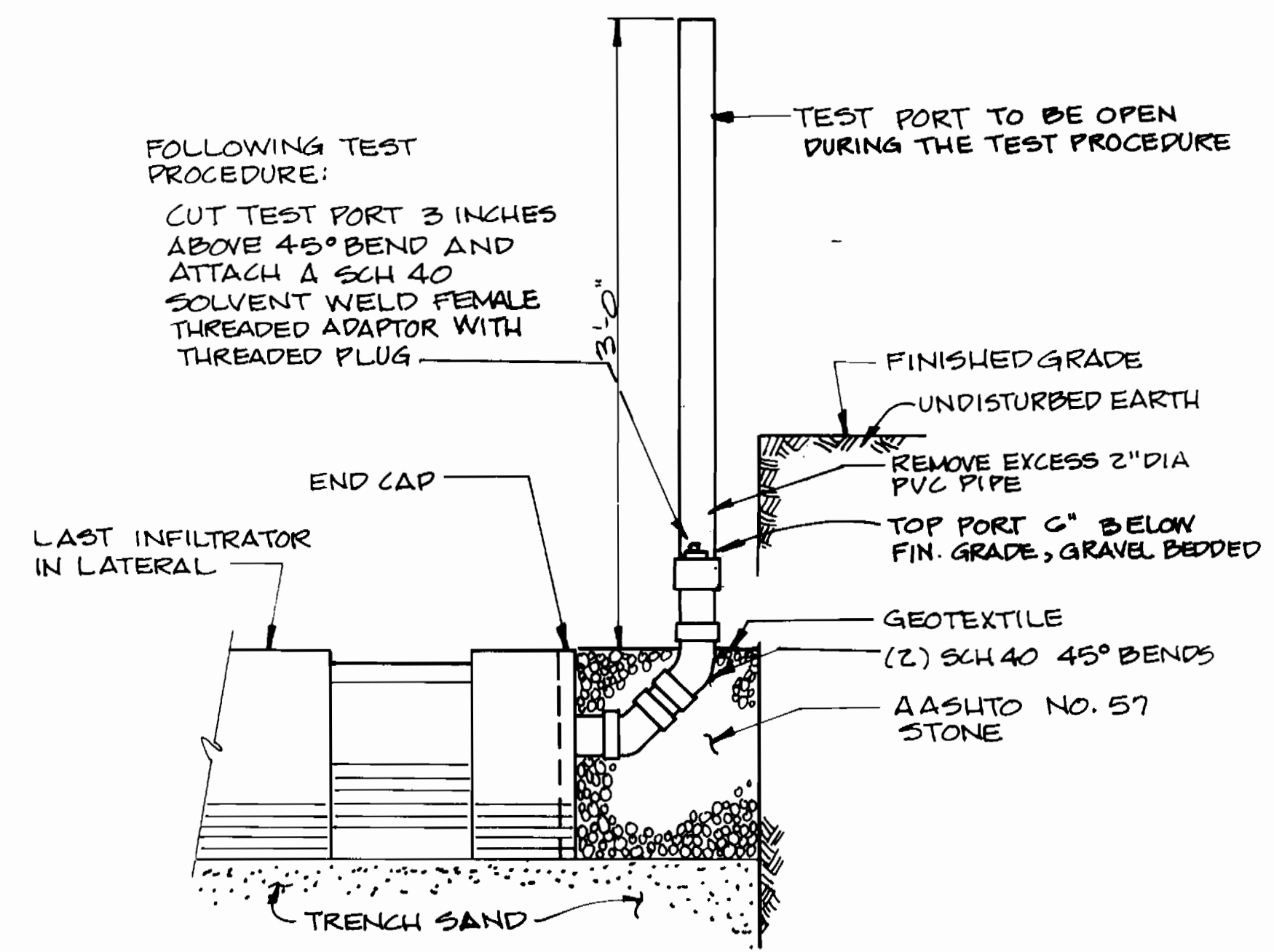
[Signature] 9-29-94
 DIRECTOR OF PUBLIC WORKS DATE
 [Signature] 9-19-94
 CHIEF, BUREAU OF UTILITIES DATE
 [Signature] 9/29/94
 CHIEF, BUREAU OF ENGINEERING DATE
 [Signature] 9/29/94
 CHIEF, LAND DEVELOPMENT DIVISION DATE

170 JENNIFER ROAD, SUITE 230
 ANNAPOLIS, MARYLAND 21401
 (410) 224-5640

AS BUILT

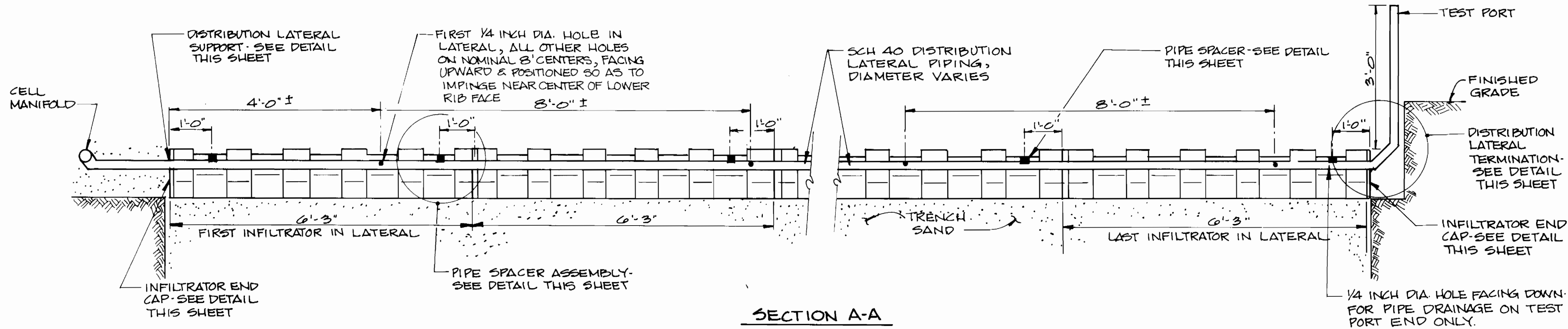


PLAN



DISTRIBUTION LATERAL TERMINATION DETAIL

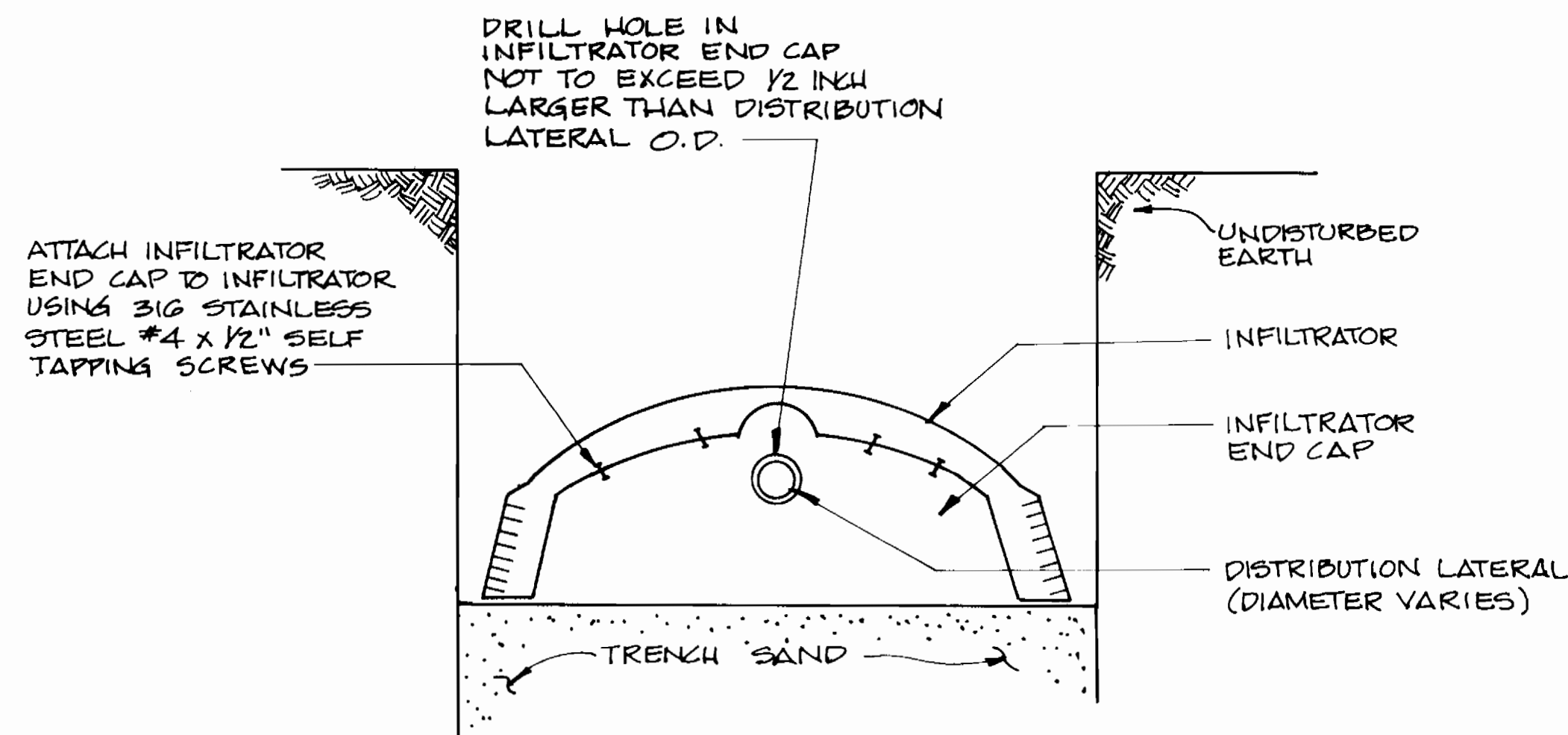
SCALE: 1 1/2" = 1'-0"



SECTION A-A

INFILTRATOR AND LATERAL PIPING ASSEMBLY DETAIL

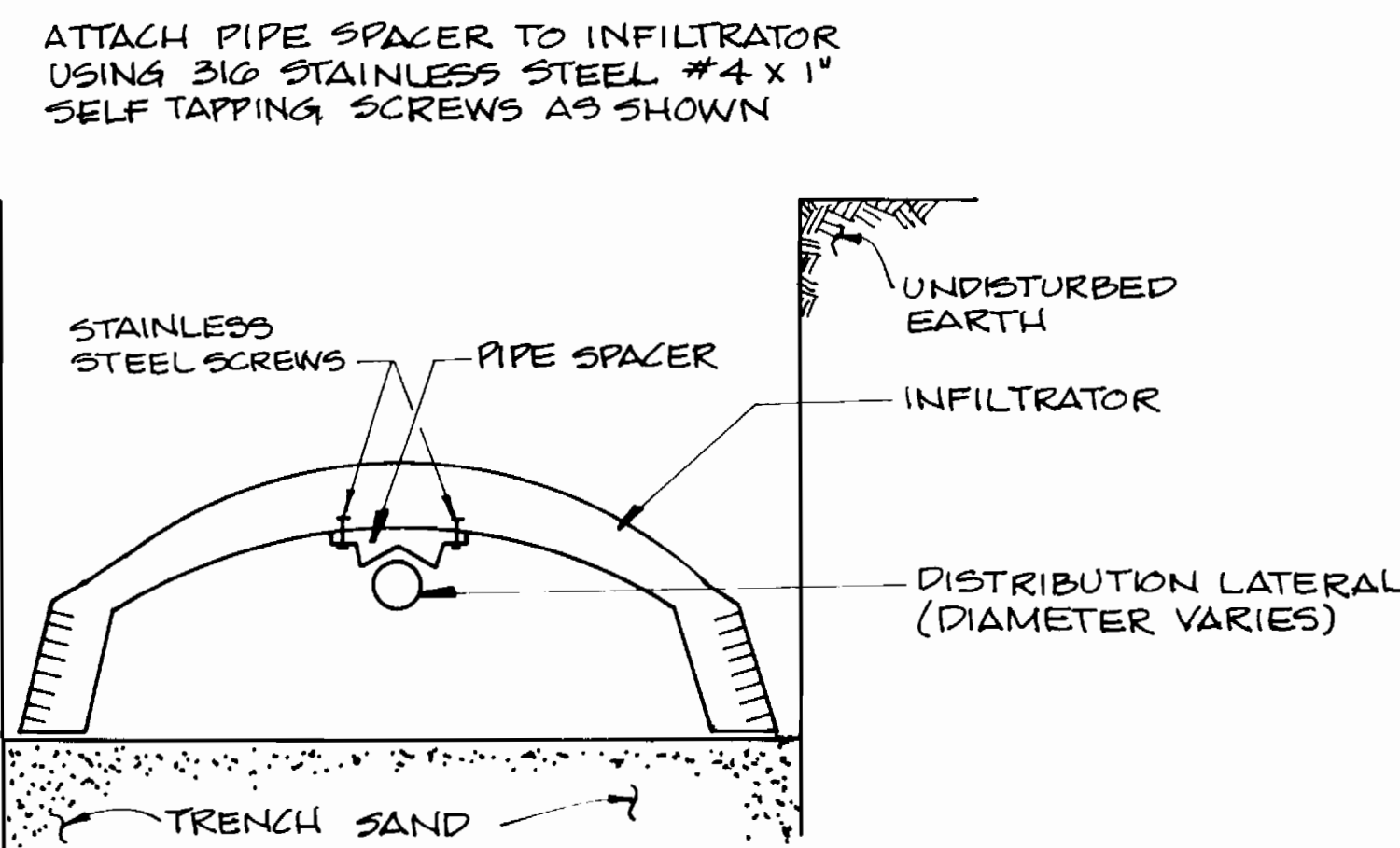
SCALE: 3/4" = 1'-0"



SECTION B-B

INFILTRATOR END CAP DETAIL

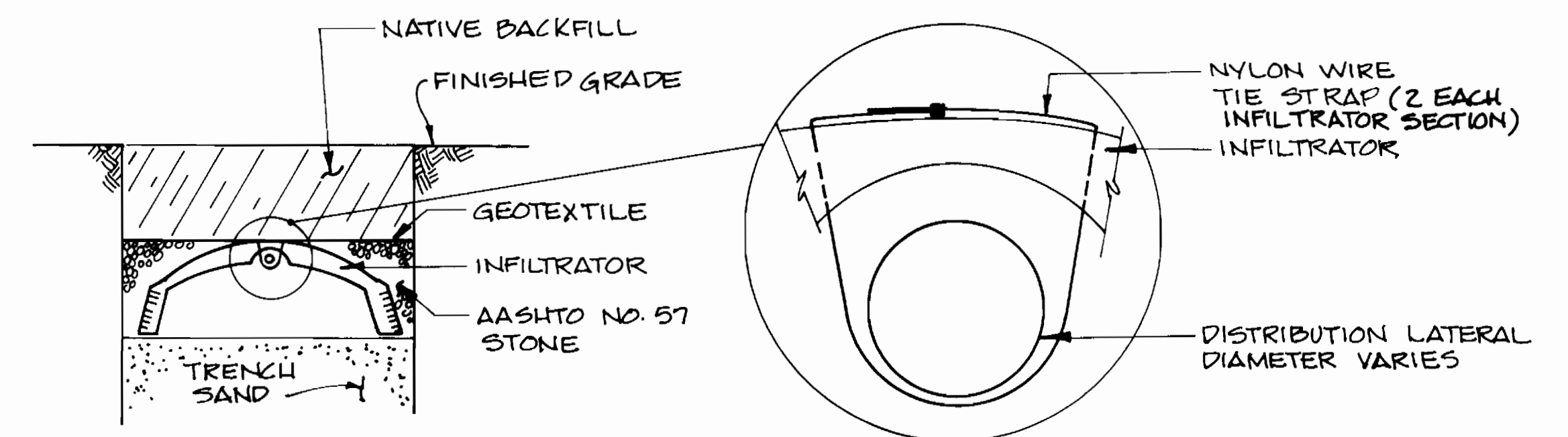
SCALE: 1 1/2" = 1'-0"



SECTION C-C

PIPE SPACER ASSEMBLY DETAIL

SCALE: 1 1/2" = 1'-0"



SECTION D-D

DISTRIBUTION LATERAL SUPPORT DETAIL

NOT TO SCALE

AS BUILT 11/7/96

3382 ws/16

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Benjamin 9/29/94
 DIRECTOR OF PUBLIC WORKS DATE
Robert M. Benjamin 9-19-94
 CHIEF, BUREAU OF UTILITIES DATE
Robert M. Benjamin 9/29/94
 CHIEF, BUREAU OF ENGINEERING DATE
Robert M. Benjamin 9/29/94
 CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE
 170 JENNIFER ROAD, SUITE 230
 ANNAPOLIS, MARYLAND 21401
 (410) 224-5640



DES: VRC					
DRN: LCH					
CHK: AJP					
DATE: 12-93					
BY	NO.	REVISION	DATE		
		CREATE PHASED PLANS	7-94		
		FINAL SUBMITTAL	8-94		

MISCELLANEOUS DETAILS

600' SCALE MAP NO. 32-41 BLOCK NO. 12

ASHLEIGH KNOLLS
 WASTEWATER COLLECTION, TREATMENT
 AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5

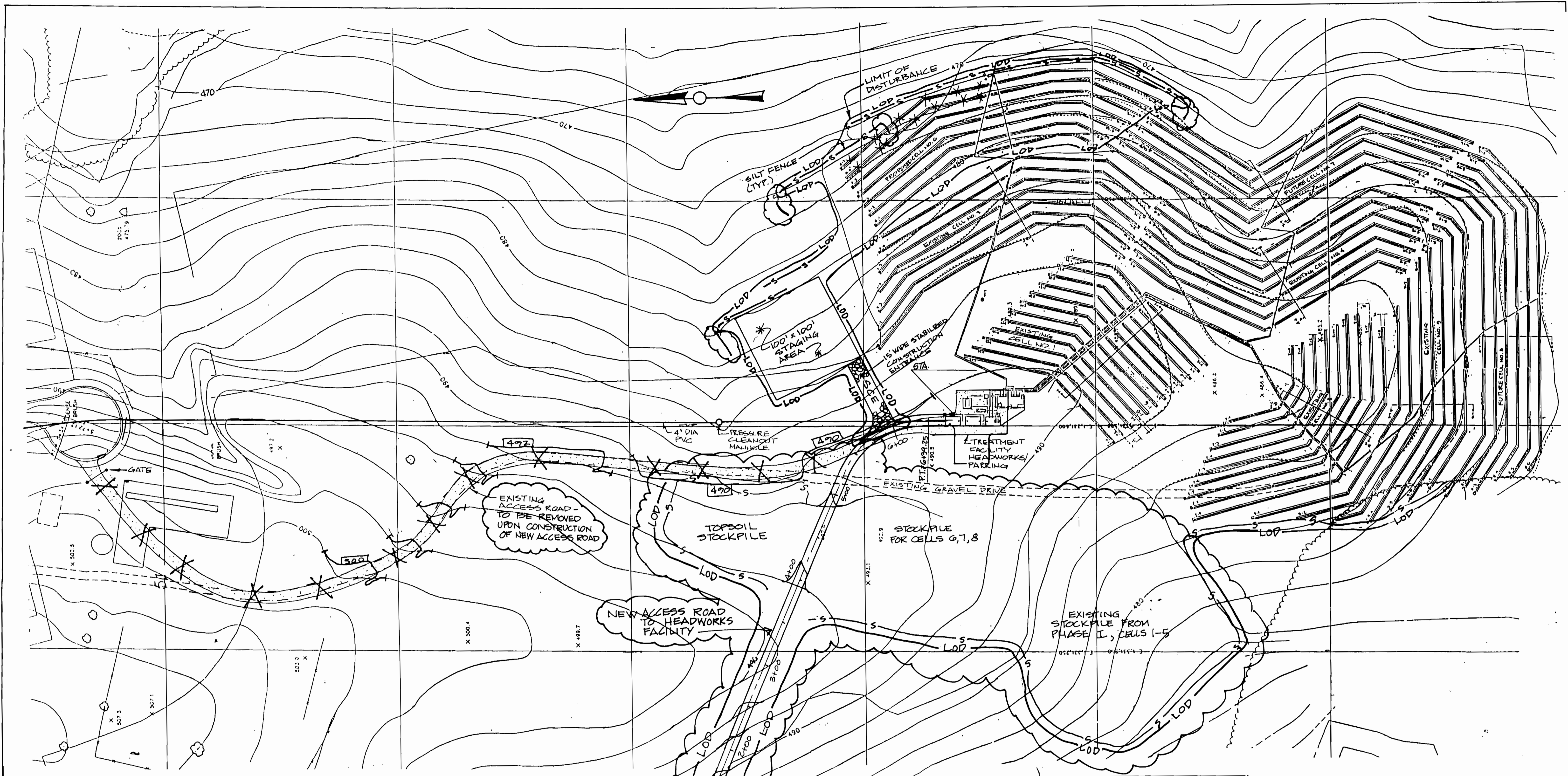
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 16 OF 18

3382 WS/17-A Ashleigh Knolls

AS BUILT



REVISED SITE ANALYSIS:
 TOTAL AREA OF SITE 11.80 AC.
 AREA DISTURBED 4.32 AC.
 AREA TO BE ROOFED OR PAVED .28 AC.
 AREA TO BE VEGETATIVELY STABILIZED 4.04 AC.
 TOTAL CUT 1200 CU.YP.
 TOTAL FILL 1200 CU.YP.
 OFFSITE WASTE/BORROW AREA LOC.

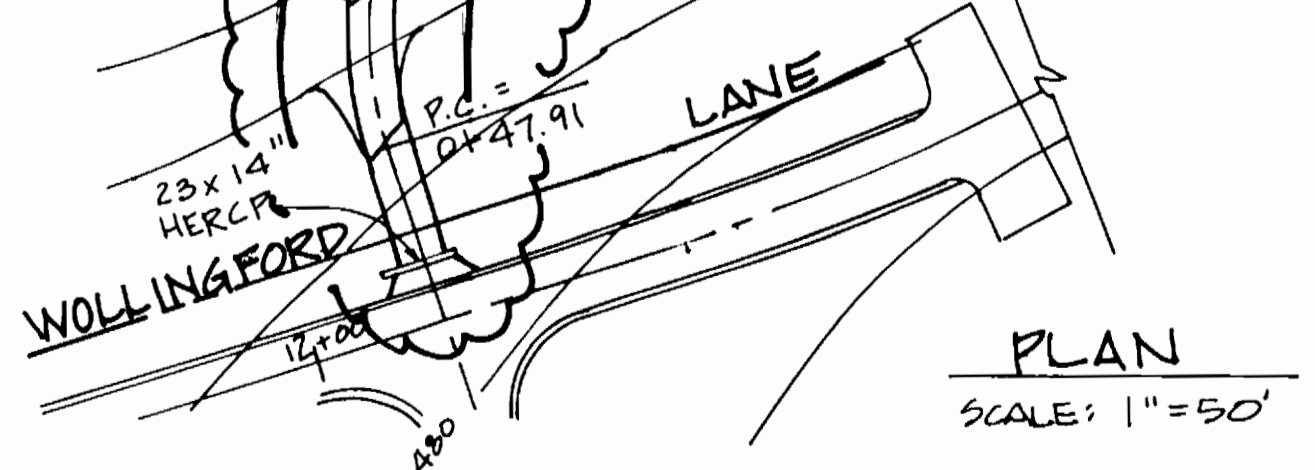
THESE CONSTRUCTION PLANS SHEETS 17A OF 18 AND 17B OF 18 WILL SUPERCEDE THE CONSTRUCTION PLAN SHEET 17 OF 18 APPROVED AND SIGNED BY DIRECTOR OF PUBLIC WORKS ON 9/29/94.

- NOTES:
1. SEE HOWARD COUNTY DEPT. OF PLANNING AND ZONING, FILE NOS. F-70-61, F-73-116, AND F-74-78 FOR SEDIMENT AND EROSION CONTROL PLANS FOR ALL WORK SHOWN ON THESE DRAWINGS LOCATED OUTSIDE THE TREATMENT FACILITY AREA SHOWN ON THIS SHEET.
 2. CONTRACTOR IS NOT PERMITTED TO EXCAVATE MORE TRENCH THAN CAN BE BACKFILLED AND STABILIZED IN ONE DAY.
 3. ALL STOCKPILED MATERIAL SHALL BE PLACED AS SHOWN ON THIS SHEET.
 4. ALL EXCAVATED MATERIALS ARE TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 5. SILT FENCE IS TO BE STAKED AT 3'-5' INTERVALS IN PLACE OF THE STANDARD 10' OFFSET.
 6. THIS PLAN IS FOR THE CONSTRUCTION OF CELL NO. 6 ONLY.

AS BUILT 11/7/96

REVIEW FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
Jatrina Cash 9/8/95
 U.S. SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
John K. Rantow 9/8/95
 HOWARD S.C.D. DATE



PLAN
 SCALE: 1"=50'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Robert B. Berman 9-11-95
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
John K. Rantow 9/11/95
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DAMES & MOORE
 170 JENNIFER ROAD, SUITE 230
 ANNAPOLIS, MARYLAND 21401
 (410) 224-5640

Anthony Brown

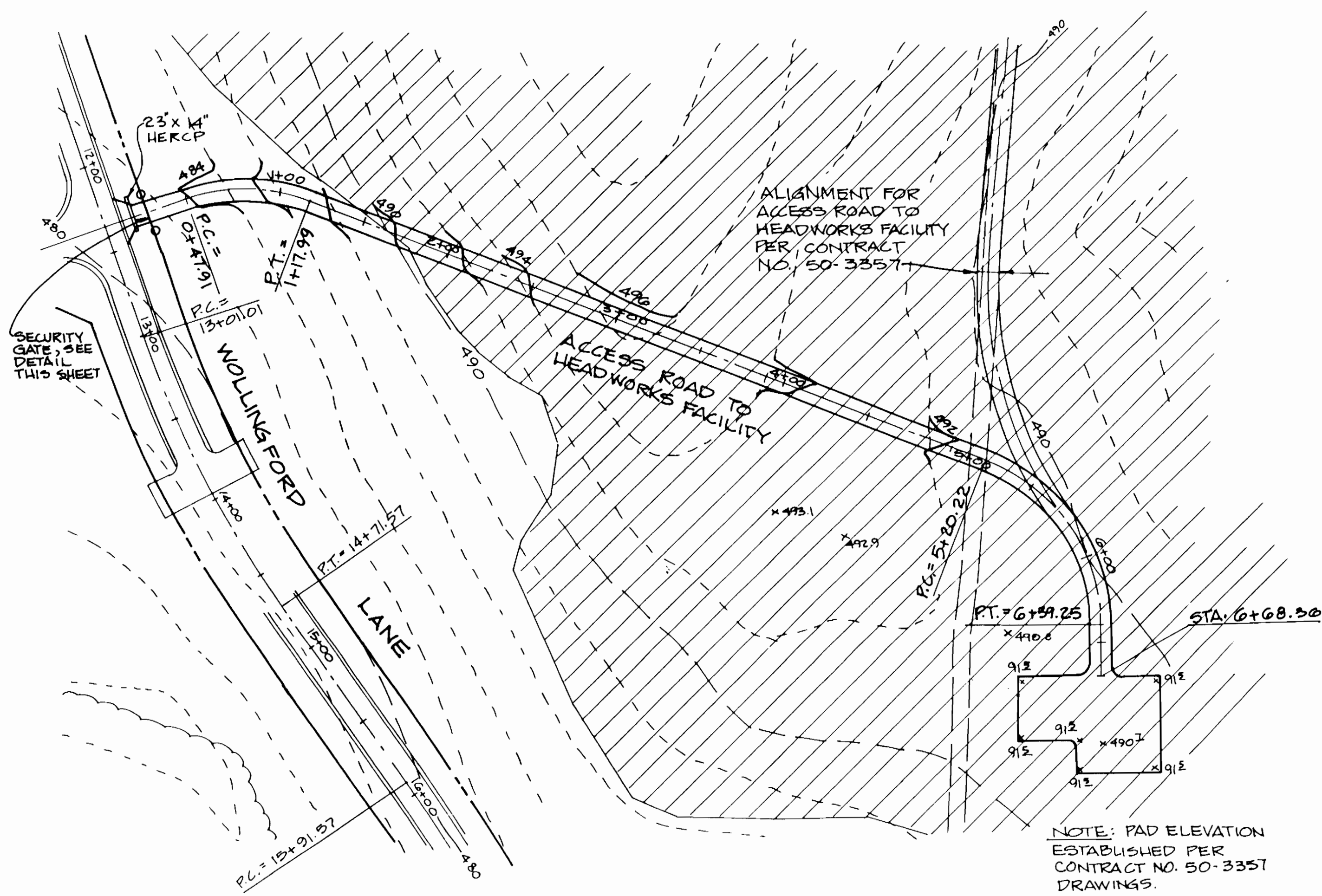
DES:	VRC		
DRN:	LCH		
CHK:	ATP	ADDED STOCKPILE/ACCESS ROAD	9-95
		CREATE PHASED PLANS	1-94
		FINAL SUBMITTAL	8-94
DATE:	12-93	BY	NO
		REVISION	DATE

SEDIMENT AND EROSION CONTROL PLAN

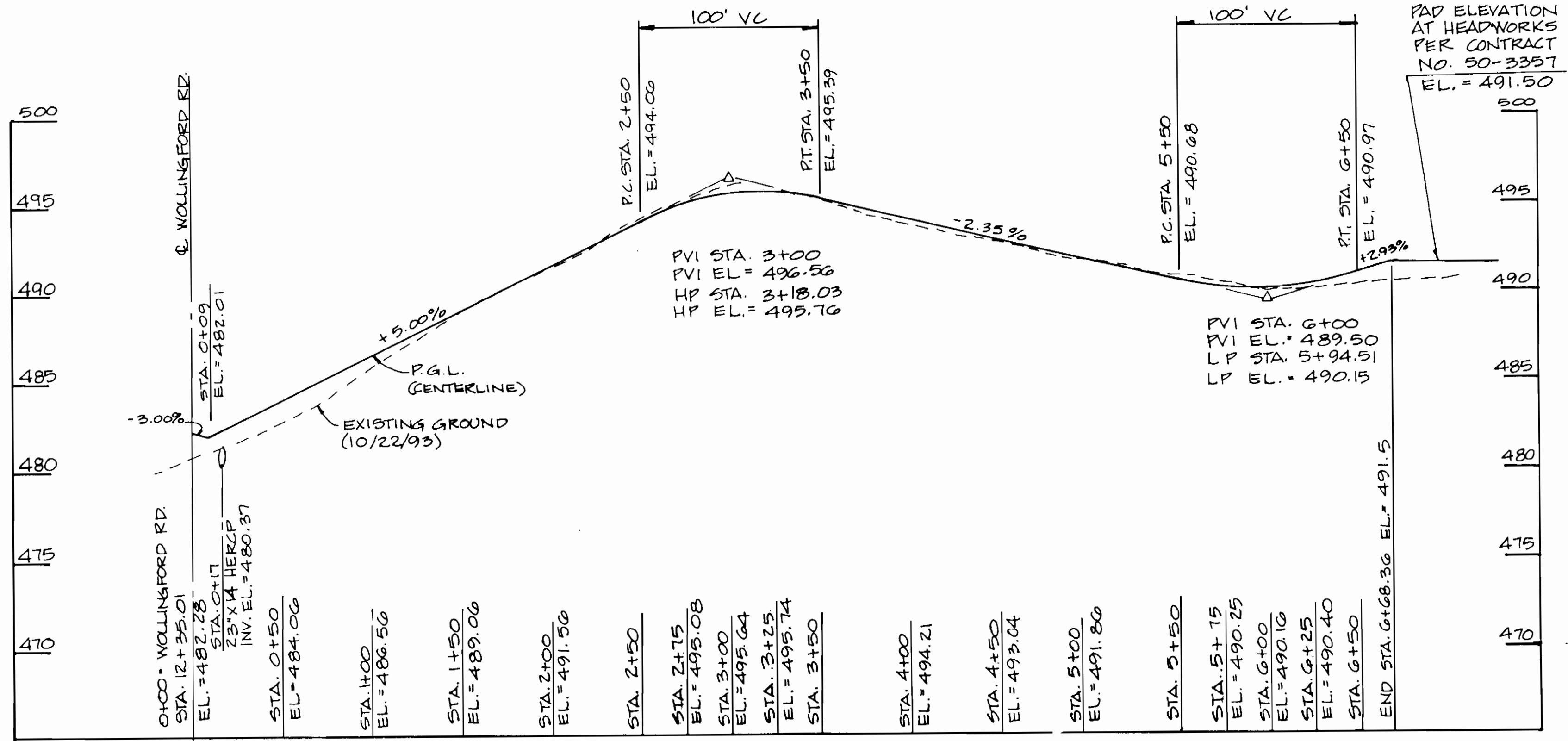
600' SCALE MAP NO. 10-91 BLOCK NO. 17

**ASHLEIGH KNOLLS
 WASTEWATER COLLECTION, TREATMENT
 AND DISPOSAL SYSTEM**
 CONTRACT NO. 50-5382-D
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

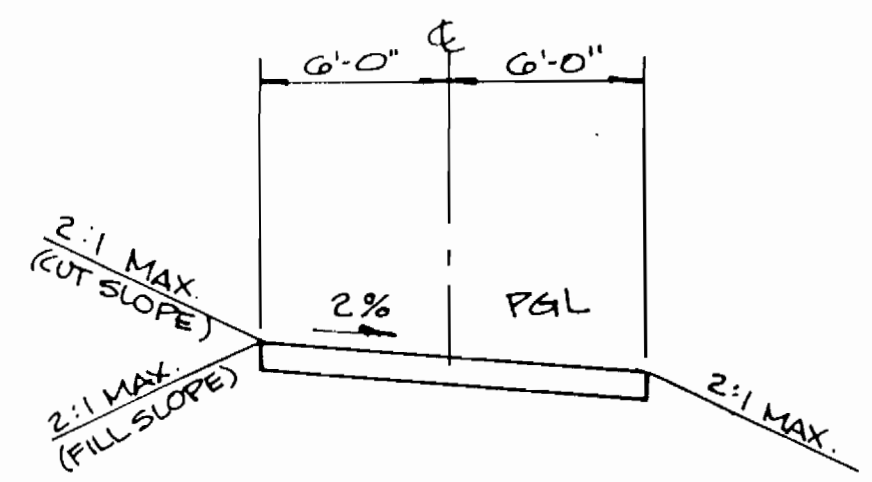
SCALE AS SHOWN
 SHEET 17A OF 18



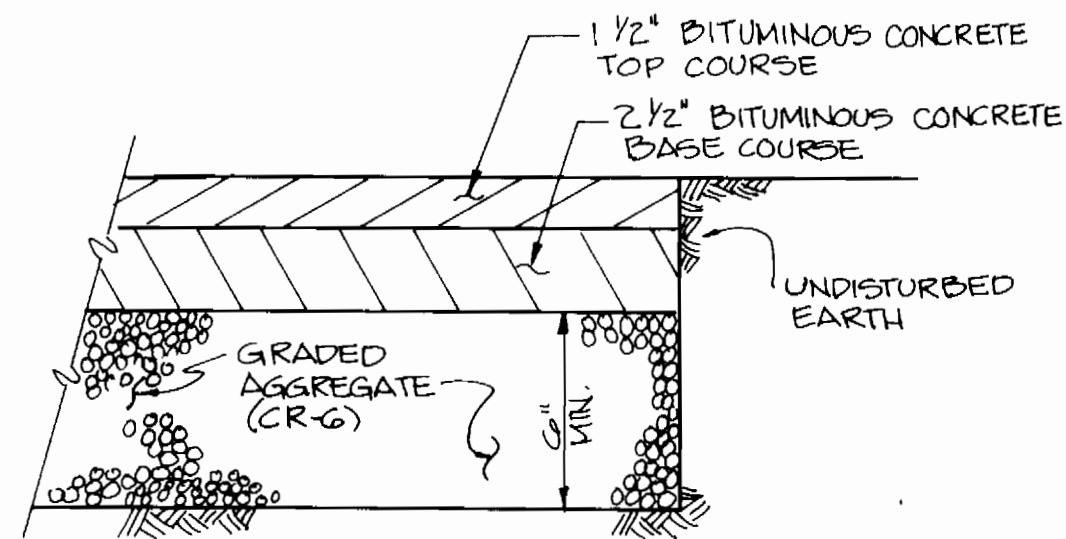
PLAN
ACCESS ROAD TO HEADWORKS FACILITY
 SCALE: 1"=50'



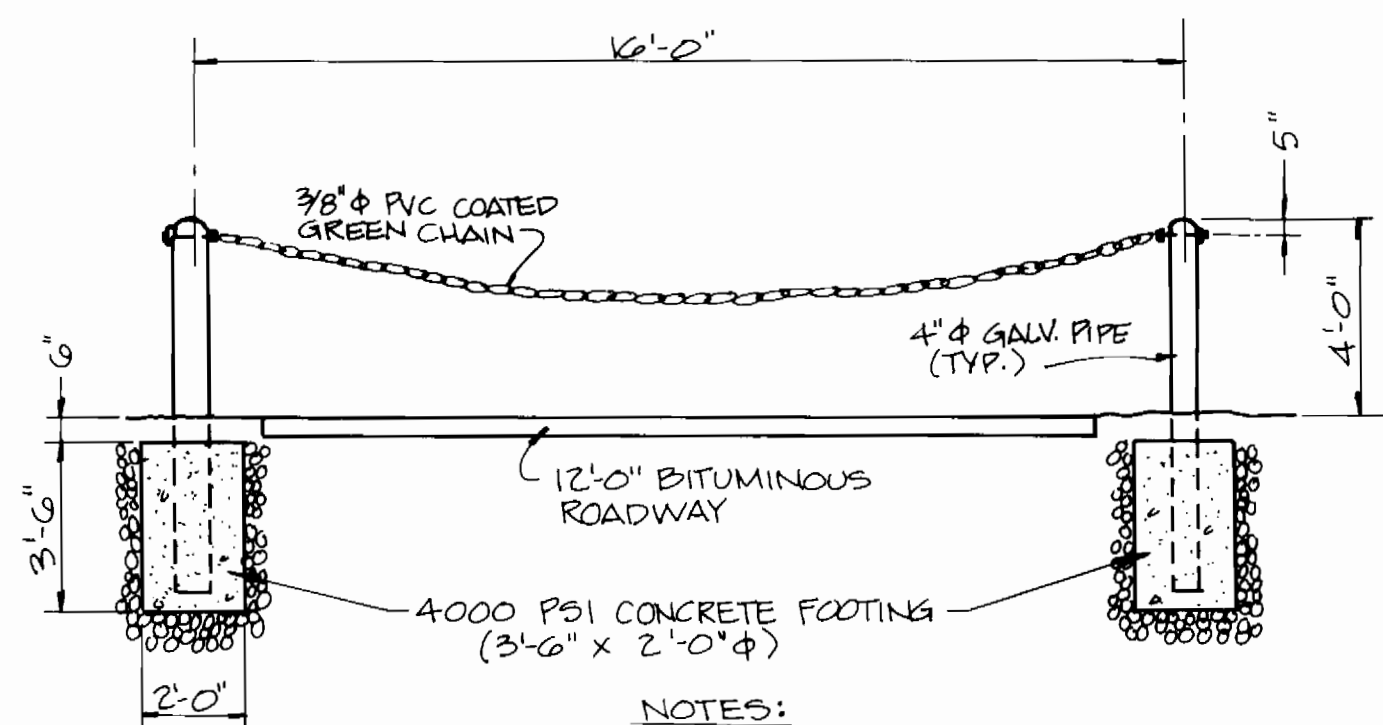
PROFILE
ACCESS ROAD TO HEADWORKS FACILITY VIA WOLLINGFORD RD.
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'



TYPICAL DRIVEWAY SECTION
 NOT TO SCALE



TREATMENT FACILITY PAVEMENT DETAIL
 NOT TO SCALE



SECURITY GATE DETAIL
 SCALE: 1/4"=1'-0"

NOTES:
 1. ALL STEEL MEMBERS TO BE HOT DIPPED GALVANIZED. EYE BOLTS, NUTS & WASHERS (3/8" DIA. MIN.)
 2. 3/8" DIA. PVC COATED CHAIN (COLOR GREEN) WITH TAMPER-PROOF LINK ON FIXED END.
 3. 4" PIPE (GALVANIZED) LENGTH AS SHOWN, FILLED WITH CONC., PAINTED YELLOW.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert W. ...</i> CHIEF, BUREAU OF UTILITIES DATE: 9-11-95	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>Michael ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 9/14/95	DAMES & MOORE 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640	DES: RMM DRN: LCH CHK: AJP DATE: 9/95 BY: LCH NO: NO REVISION: PAVEMENT DETAIL AND SECURITY GATE DETAILS ADDED DATE: 11/96	ACCESS ROAD ALIGNMENT 600' SCALE MAP NO. _____ BLOCK NO. _____	ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3382-D ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 18
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AS BUILT

I. STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection 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 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 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 1991 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	11.80 Acres
Area Disturbed	1.35 Acres
Area to be roofed or paved	0 Acres
Area to be vegetatively stabilized	1.35 Acres
Total Cut	1200 Cu. Yds.
Total Fill	1200 Cu. Yds.
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.

II. 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/1000 sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. 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 (9 lbs/1000 sq. ft.)
 - Acceptable** - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq. 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/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq. 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/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 sq. 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/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.
- Maintenance** - Inspect all seeding areas and make needed repairs, replacements and reseeds.

III. 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 raking, disking or other acceptable plans before seeding, if not previously loosened.
- Soil Amendments:** - Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).
- Seeding:** - For periods March 1 thru April 30 and from August 15 thru October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq. 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/1000 sq. ft.) of unrotted weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 ft. or higher, use 348 gal per acre (8 gal/1000 sq. ft.) for anchoring.
- Refer to the 1983 MARYLAND AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

SEQUENCE OF CONSTRUCTION NOTES

- Obtain a grading permit.
- Notify Inspections and Permits (313-1855) a minimum of 48 hours prior to the start of any construction.
- Install stabilized construction entrance and silt fence as shown and detailed.
- Upon approval of the Howard County Sediment Control Inspector rough grade and construct the wastewater disposal trenches.
- Permanently stabilize all disturbed areas.
- Upon approval of the Howard County Sediment Control Inspector remove all sediment control devices.

STANDARD SYMBOLS



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

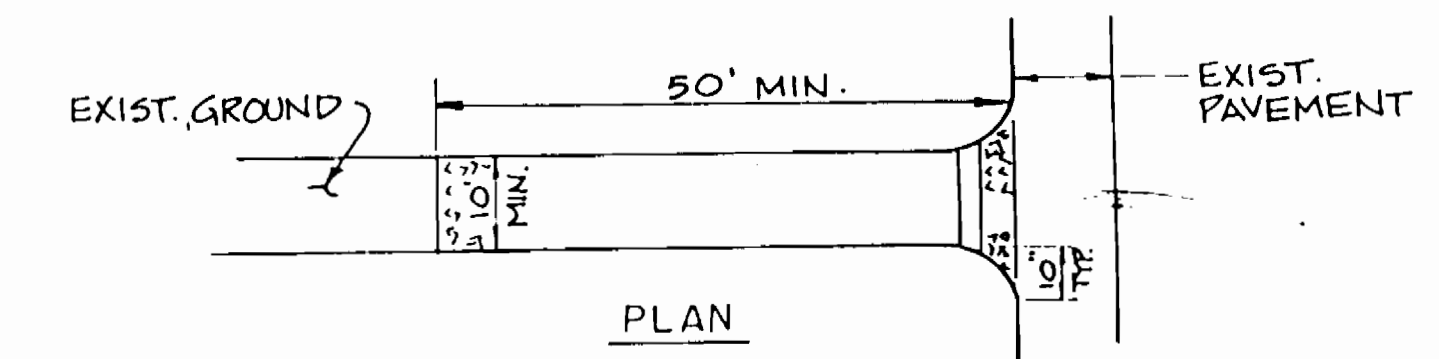
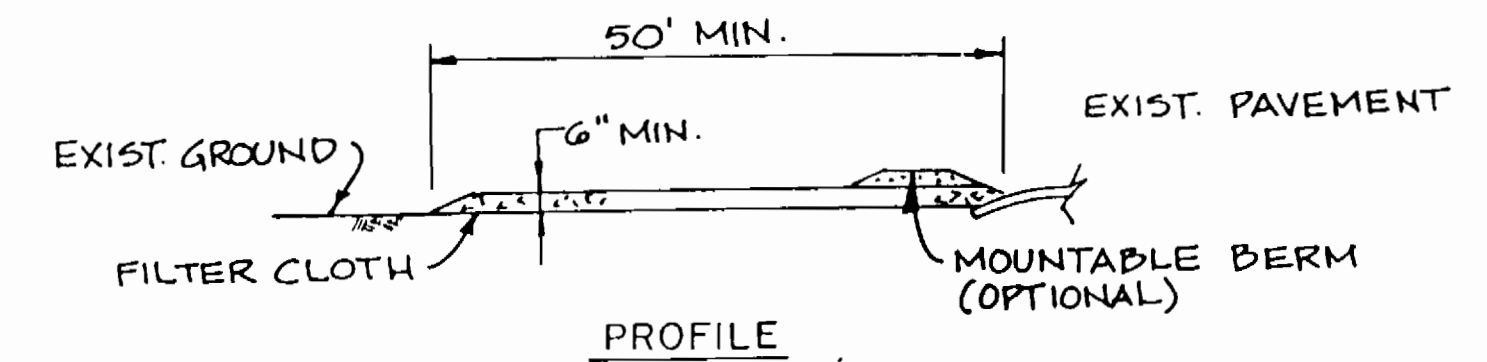
John R. Hunter 9/22/94

U.S. SOIL CONSERVATION SERVICE DATE

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

John R. Hunter 9/22/94

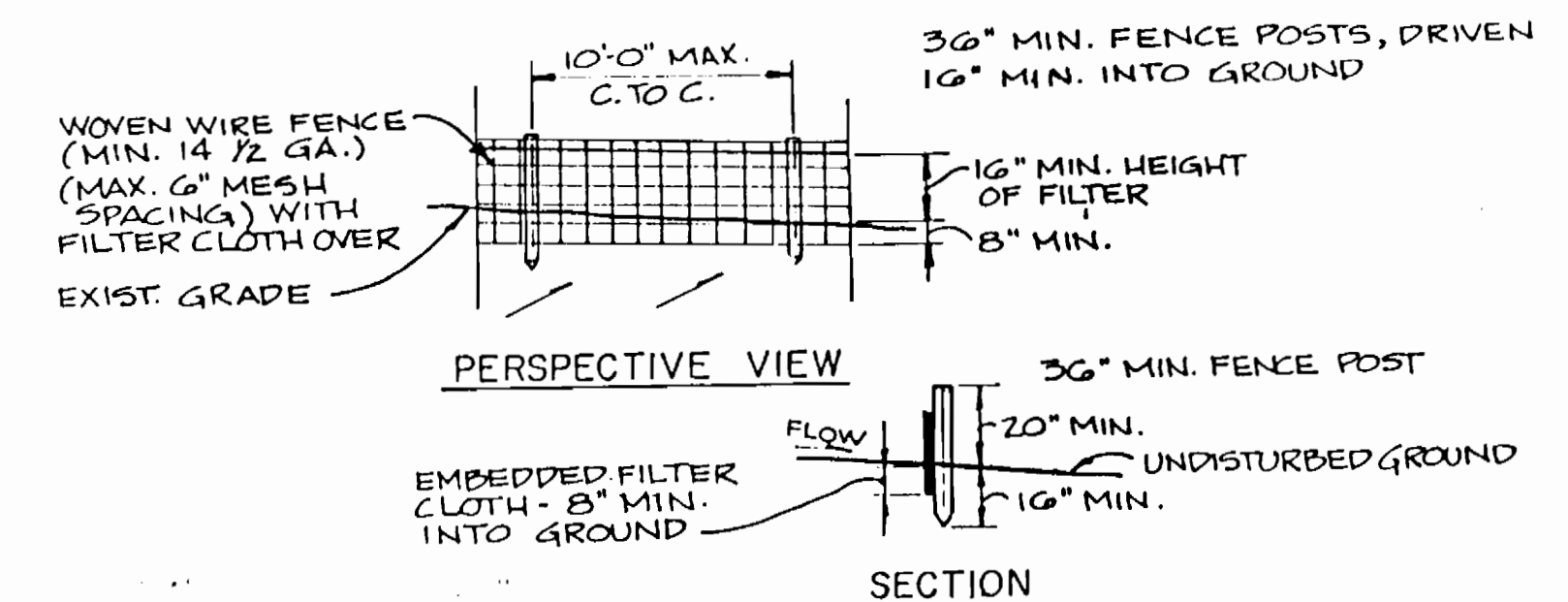
HOWARD S.C.D. DATE



STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE

II. CONSTRUCTION SPECIFICATIONS

- STONE SIZE - USE 2" STONE OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - AS REQUIRED. (FIFTY (50) FOOT MINIMUM)
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ON TO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



SILT FENCE NOT TO SCALE

III. CONSTRUCTION SPECIFICATION

- WOVEN WIRE FENCE TO FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE
- SILT FENCE TO BE INSTALLED ONLY PARALLEL TO EXISTING CONTOURS

POSTS:	STEEL, EITHER T OR U TYP.
FENCE:	WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING
FILTER CLOTH:	FILTER X, HIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL
REFABRICATED UNIT:	GEOFAB ENVIROFENCE OR APPROVED EQUAL

AS BUILT 11/7/96

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

John R. Hunter 9/22/94
DIRECTOR OF PUBLIC WORKS DATE

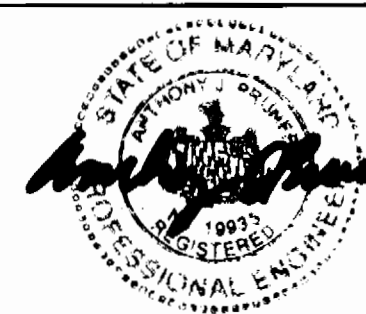
John R. Hunter 9/22/94
CHIEF, BUREAU OF ENGINEERING DATE

John R. Hunter 9/22/94
CHIEF, BUREAU OF UTILITIES DATE

John R. Hunter 9/22/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640



DES: VRC					
DRN: BGM					
CHK: ASP			CREATE PHASED PLANS	9/24	
DATE: 3-94			FINAL SUBMITAL	8/99	
BY	NO.	REVISION	DATE		

EROSION CONTROL DETAILS

600' SCALE MAP NO. 40-41 BLOCK NO. 12

ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

CONTRACT NO. 50-3382-D

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 16 OF 16

3382 ws/18