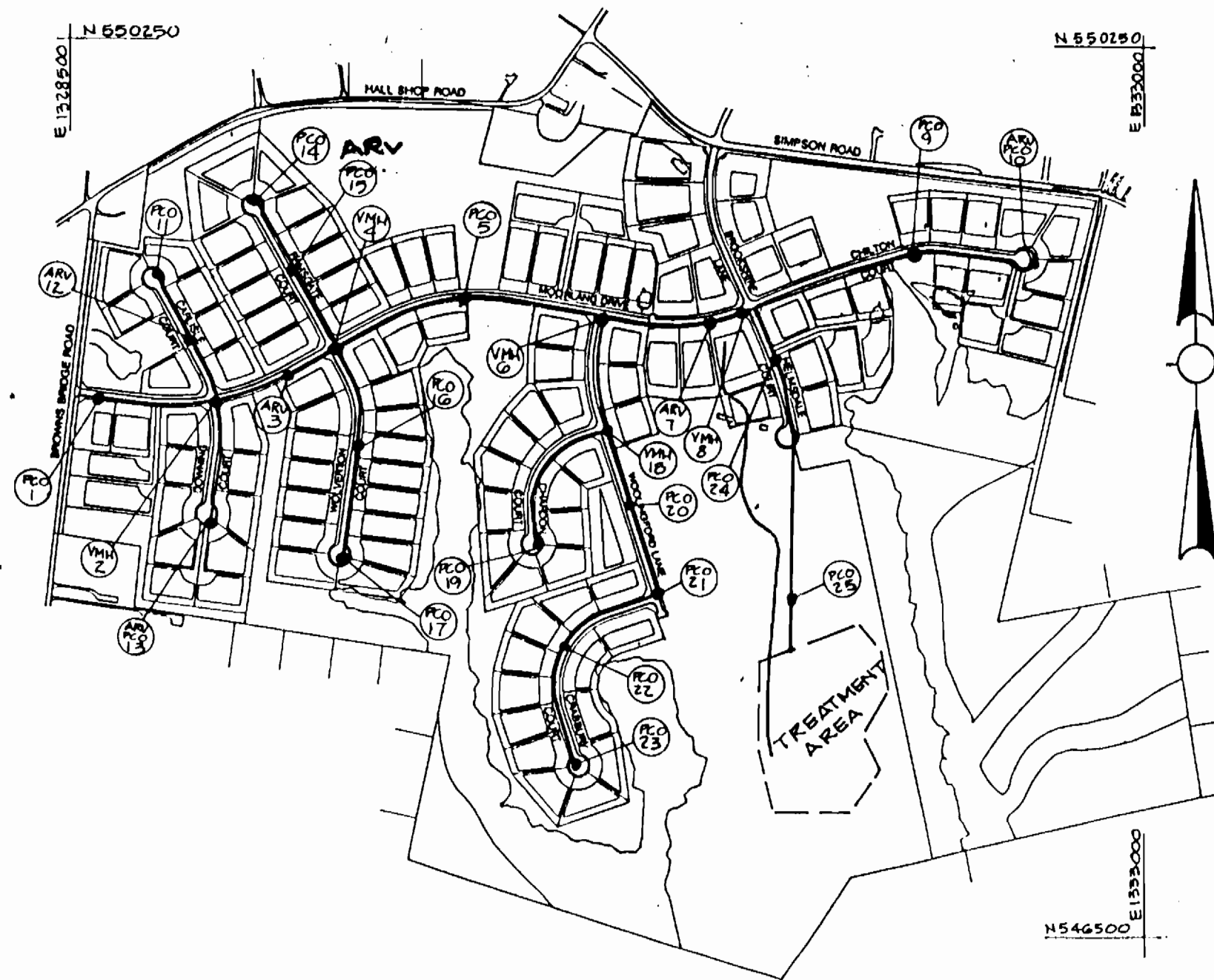


# WINCHESTER HOMES ASHLEIGH KNOLLS

## WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357

### PHASE 1

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 1	57
Drainage Area	Not Applicable
Treatment Plant	Ashleigh Knolls



VICINITY MAP  
SCALE: 1" = 600'

PHASE 1				
ITEMS	QUANTITIES ESTIMATED	RECORD		
		QUANTITIES	TYPE	SUPPLIER
4" PVC	2,055			
3" PVC	1,175			
2" PVC	3,850			
1½" CURB VALVE AND RISER	61			
PRESSURE COLLECTION LINE CLEANOUTS	8			
AIR/VACUUM RELEASE VALVE MANHOLE	4			
VALVE MANHOLE	4			
1,000-GALLON SEPTIC TANK WITH 500-GALLON PUMP CHAMBER UNIT, PUMPS, CONTROLS AND APPURTENANCES	57			
WASTEWATER TREATMENT FACILITY HEADWORKS	1			
WASTEWATER DISPOSAL TRENCH	11,440			
NAME OF UTILITY CONTRACTOR:				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:				

△  
SUPPLIED BY OTHERS

Reviewed for Howard Soil Conservation District and meets Technical requirements.

*Patricia Engler* 9/21/94  
U.S. Soil Conservation Service Date


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

*John K. Robertson* 9/21/94  
Howard S.C.D. Date

3357 s/1 Ashleigh Knolls

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>James M. Shaw</i> 9/20/94 DIRECTOR OF PUBLIC WORKS DATE <i>Robert N. Benjamin</i> 9-14-94 CHIEF, BUREAU OF UTILITIES DATE	DAMES & MOORE 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640	STATE OF MARYLAND ENGINEERING PROFESSIONAL SEAL	DES: VRC			COVER SHEET	ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 1 OF 54
			DRN: B&GW CHK: AJP DATE: 12-93	ADD "SUPPLIED BY OTHERS" TO SEPTIC TANK GUN. 11-94 CREATE PHASED PLANS 9-94 FINAL SUBMITTAL 8-94	BY NO. REVISION DATE			

**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 ~~SOME~~ ALL HOUSES FOR THIS PROJECT DO NOT HAVE CELLAR SERVICE. (WHI TO FORWARD LIST OF HOMES WITH CELLAR SERVICE TO SUBCONTRACTOR)
- 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

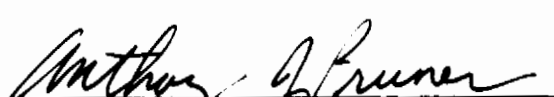
"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at Department of the Environment Approved Training Program for the Control of Sediment and Erosion before 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


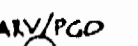

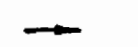
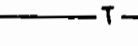

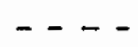
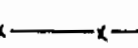














( ) ENGINEER'S CERTIFICATE

"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

09/09/94  
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 1 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	PLAN MOORLAND AND WOLVERTON
7	PROFILE MOORLAND AND WOLVERTON
8	PLAN MOORLAND AND CHILTON
9	PROFILE MOORLAND AND CHILTON
10	PLAN CHILTON
11	PLAN RAMSGATE
12	PLAN HELMSDALE AND BROOKSHIRE
13	PROFILE HELMSDALE AND BROOKSHIRE
14	PLAN WOLLINGFORD AND CHARDON
15	PROFILE WOLLINGFORD, CHARDON AND CRABBURY
16	PLAN CRABBURY
17	SEPTIC TANK PLAN AND SECTIONS
18	SEPTIC TANK NOTES
19	SEPTIC TANK ELECTRICAL DETAILS
20	TERMINAL PRESSURE CLEANOUT/INLINE PRESSURE CLEANOUT
21	AIR RELEASE VALVE/TERMINAL PRESSURE CLEANOUT WITH AIR RELEASE VALVE
22	INLINE THREE-WAY VALVE MANHOLE/INLINE FOUR-WAY VALVE MANHOLE
23	TREATMENT SITE KEY SHEET
24	TREATMENT FACILITY HEADWORKS, SITE PLAN AND CROSS SECTION
25	TREATMENT FACILITY ACCESS ROAD AND COLLECTION LINE PLAN AND PROFILE
26	FINAL SEDIMENTATION FACILITIES
27	DOSING TANK
28	VALVE VAULT - PLAN AND SECTIONS
29	VALVE VAULT - SECTION AND STRUCTURAL
30	TREATMENT SITE PLAN (20 SCALE)
31	TREATMENT SITE PLAN (20 SCALE)
32	TREATMENT SITE PLAN (20 SCALE)
33	MANIFOLD PROFILE - CELL NO. 1 & 2
34	MANIFOLD PROFILE - CELL NO. 3 & 6
35	MANIFOLD PROFILE - CELL NO. 4 & 7
36	MANIFOLD PROFILE - CELL NO. 5 & 8
37	TREATMENT CELL SECTION
38	TREATMENT CELL SECTION
39	TREATMENT SITE PIPING DETAILS
40	TREATMENT SITE PIPING DETAILS
41	MISCELLANEOUS DETAILS
42	MISCELLANEOUS DETAILS
43	MISCELLANEOUS DETAILS
44	MISCELLANEOUS DETAILS
45	MISCELLANEOUS DETAILS
46	SOIL ODOR FILTER STRUCTURE
47	SOIL ODOR FILTER BLOWER
48	SOIL ODOR FILTER DETAILS
49	ELECTRICAL - SITE PLAN AND NOTES
50	ELECTRICAL - CONTROL PANEL
51	ELECTRICAL - VALVE VAULT AND PANEL BOARDS
52	ELECTRICAL SCHEMATICS
53	EROSION CONTROL - PLAN - 50 SCALE
54	EROSION CONTROL DETAILS

3357 5/2

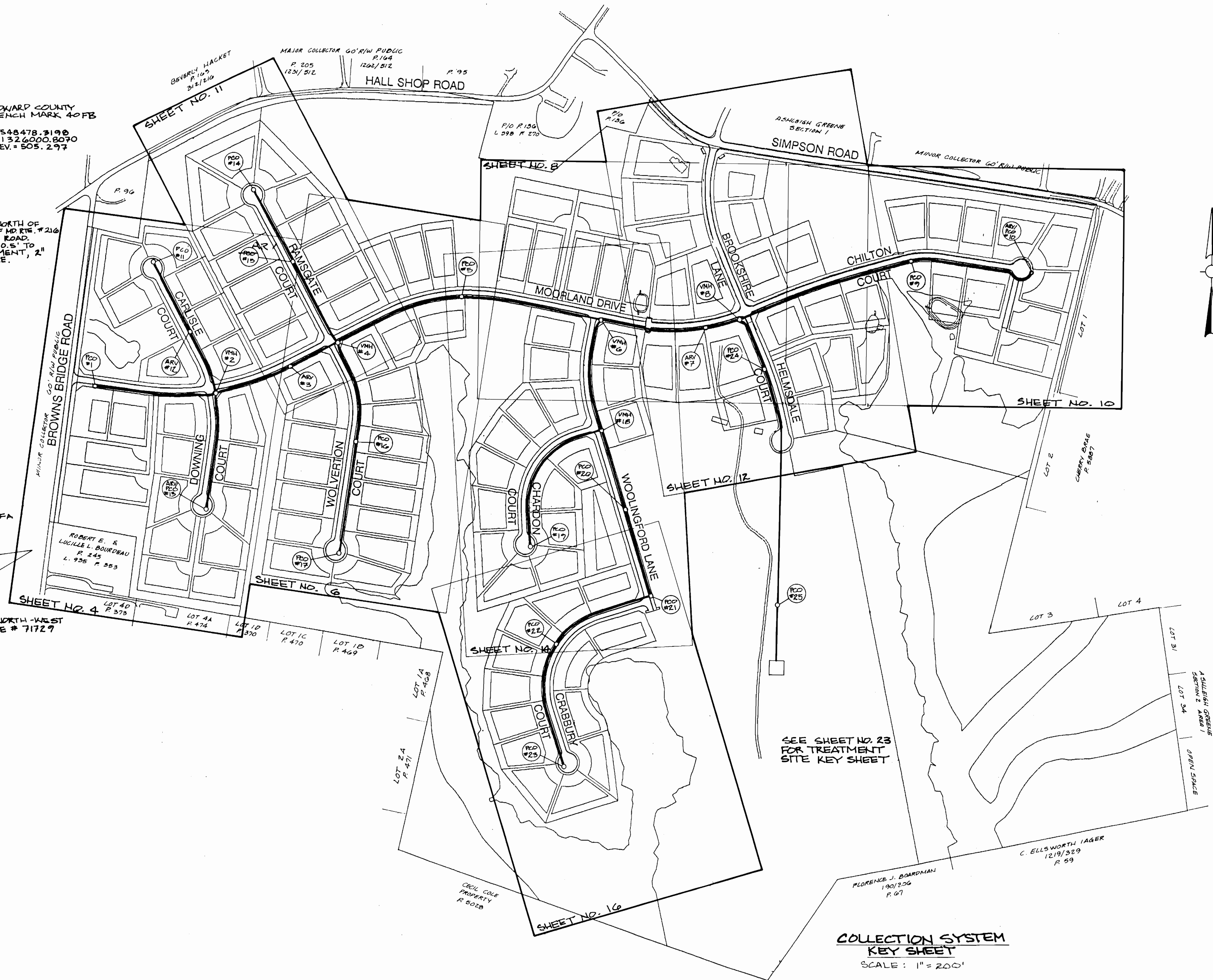
<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p> 9/16/94 DIRECTOR OF PUBLIC WORKS DATE</p> <p> 9/16/94 CHIEF, BUREAU OF ENGINEERING DATE</p> <p> 9/14/94 CHIEF, LAND DEVELOPMENT DIVISION DATE</p>	<p> DAMES &amp; MOORE</p> <p>170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640</p>	<p></p> <p>DATE: 12-93 BY NO. REVISION DATE</p>	<p>DES: VRC DRN: BGW CHK: JSP DATE: 12-93</p> <p>CREATE PHASED PLANS 9-94 FINAL SUBMITTAL 8-94</p>	<p style="text-align: center;"><b>GENERAL NOTES AND INDEX</b></p> <p style="text-align: center;">ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM</p> <p style="text-align: center;">CONTRACT NO. 50-3357</p> <p style="text-align: center;">ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 2 OF 54</p>
---	---	--	--	--	--

40FB  
 HOWARD COUNTY  
 BENCH MARK 40FB  
 N 548478.3190  
 E 1326000.8070  
 ELEV. = 505.297

LOCATED 100'± NORTH OF  
 INTERSECTION OF MD RTE. #216  
 AND HALL SHOP ROAD.  
 MONUMENT IS 10.5" TO  
 EDGE OF PAVEMENT, 2"  
 BELOW SURFACE.

HOWARD COUNTY  
 BENCH MARK 40FA  
 N 548106.8658  
 E 1328421.4020  
 ELEV. = 497.648

LOCATED 67.6' NORTH-WEST  
 OF BG # E POLE # 71729



3357 5/3

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Robert J. Benson* 9/26/94  
 DIRECTOR OF PUBLIC WORKS DATE

*Robert J. Benson* 9/14/94  
 CHIEF, BUREAU OF UTILITIES DATE

*Robert J. Benson* 9/26/94  
 CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. Benson* 9/26/94  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

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

DES: VRC			
DRN: BGLW			
CHK: NJP			
DATE: 12-93	BY NO.	REVISION	DATE
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

**COLLECTION SYSTEM  
 KEY SHEET**

SCALE: 1" = 200'

600' SCALE MAP NO. 40-41 BLOCK NO. 17

ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
 AS  
 SHOWN

SHEET  
 3 OF 54



3357 9/3A

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert J. ...* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. ...* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. ...* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert J. ...* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

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



DES: VRC			
DRN: LCH			
CHK: ATP	8/94	Δ	REVISE EASEMENT CREATE PHASED PLANS
DATE: 12-93			8/94
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. 50-3357

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
3A OF 54



ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL SYSTEM

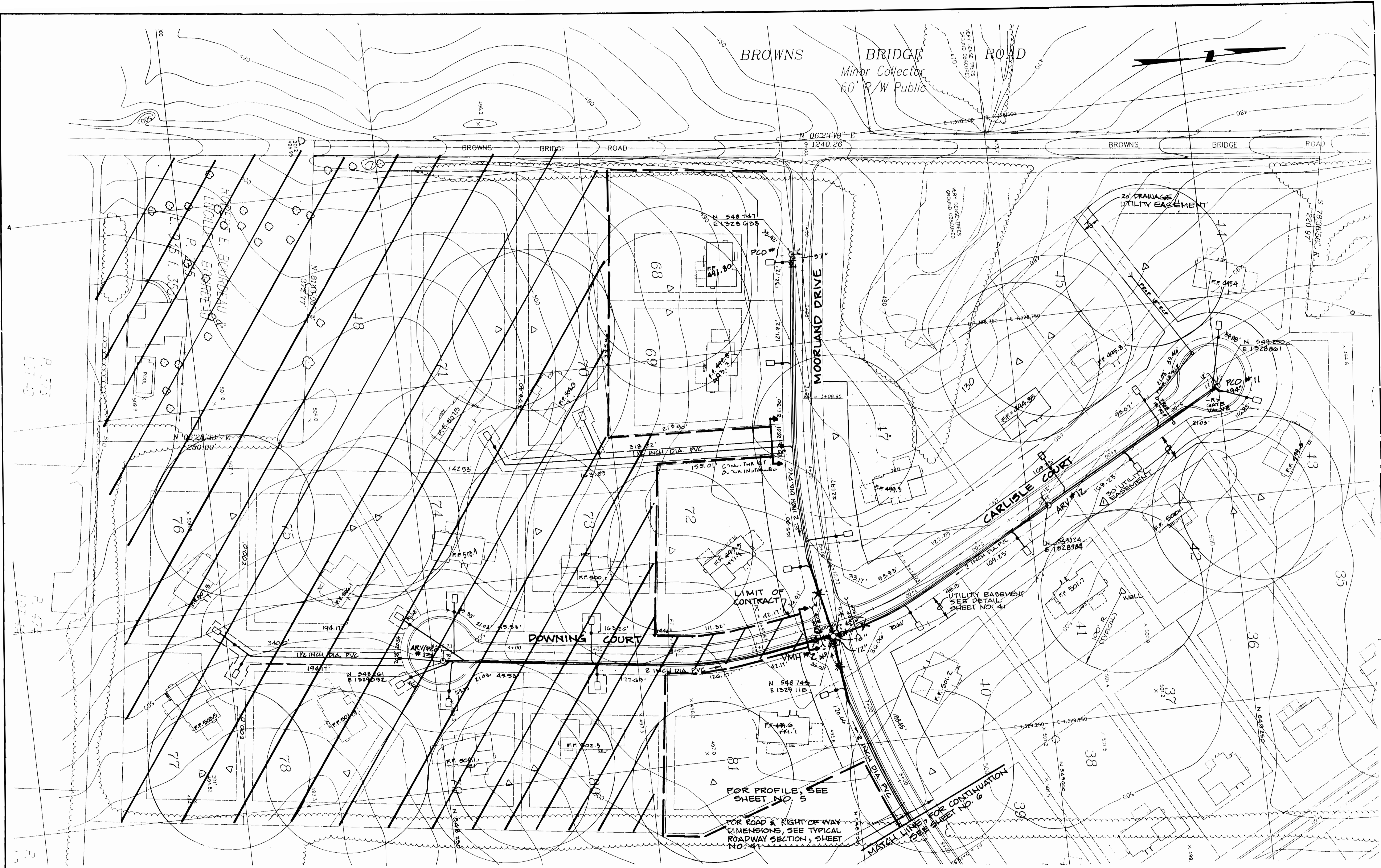
RESERVE AREAS DESIGN CRITERIA

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

PLAN  
SCALE: 1" = 100'

3357 5/3B

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James M. Law</i> 9/12/94 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Robert B. Brown</i> 9-14-94 CHIEF, BUREAU OF UTILITIES DATE</p>	<p> DAMES &amp; MOORE</p> <p>170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640</p> <p><i>Anthony...</i></p>	<p>DES: VRC</p> <p>DRN: B4W</p> <p>CHK: AJP</p> <p>DATE: 8/94</p> <p>BY NO. _____</p> <p>REVISION _____</p> <p>DATE _____</p>	<p style="text-align: center;"><b>RESERVE AREA DEVELOPMENT PLAN</b></p> <p>600' SCALE MAP NO. 40-41 BLOCK NO. 12</p>	<p style="text-align: center;">ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM</p> <p style="text-align: center;">CONTRACT NO. 50-3357</p> <p>ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 28 OF 54</p>
--	---	---	--	--	---



3357 5/4

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

*Robert M. Danner* 9/14/94  
 DIRECTOR OF PUBLIC WORKS DATE  
 CHIEF, BUREAU OF UTILITIES

*Robert M. Danner* 9/14/94  
 CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Danner* 9/14/94  
 CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Danner* 9/14/94  
 CHIEF, BUREAU OF UTILITIES DATE

**DAMES & MOORE**

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



DES: VRC			
DRN: LCH			
CHK: AJP			
DATE: 12-93			
BY	NO.	REVISION	DATE
		ADD LOT 130 TO CONTRACT	2-96
		ASBUILTS	10-95
		REVISE EASEMENTS	11-94
		CREATE PHASED PLANS	7-94
		FINAL SUBMITTAL	6-94

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

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

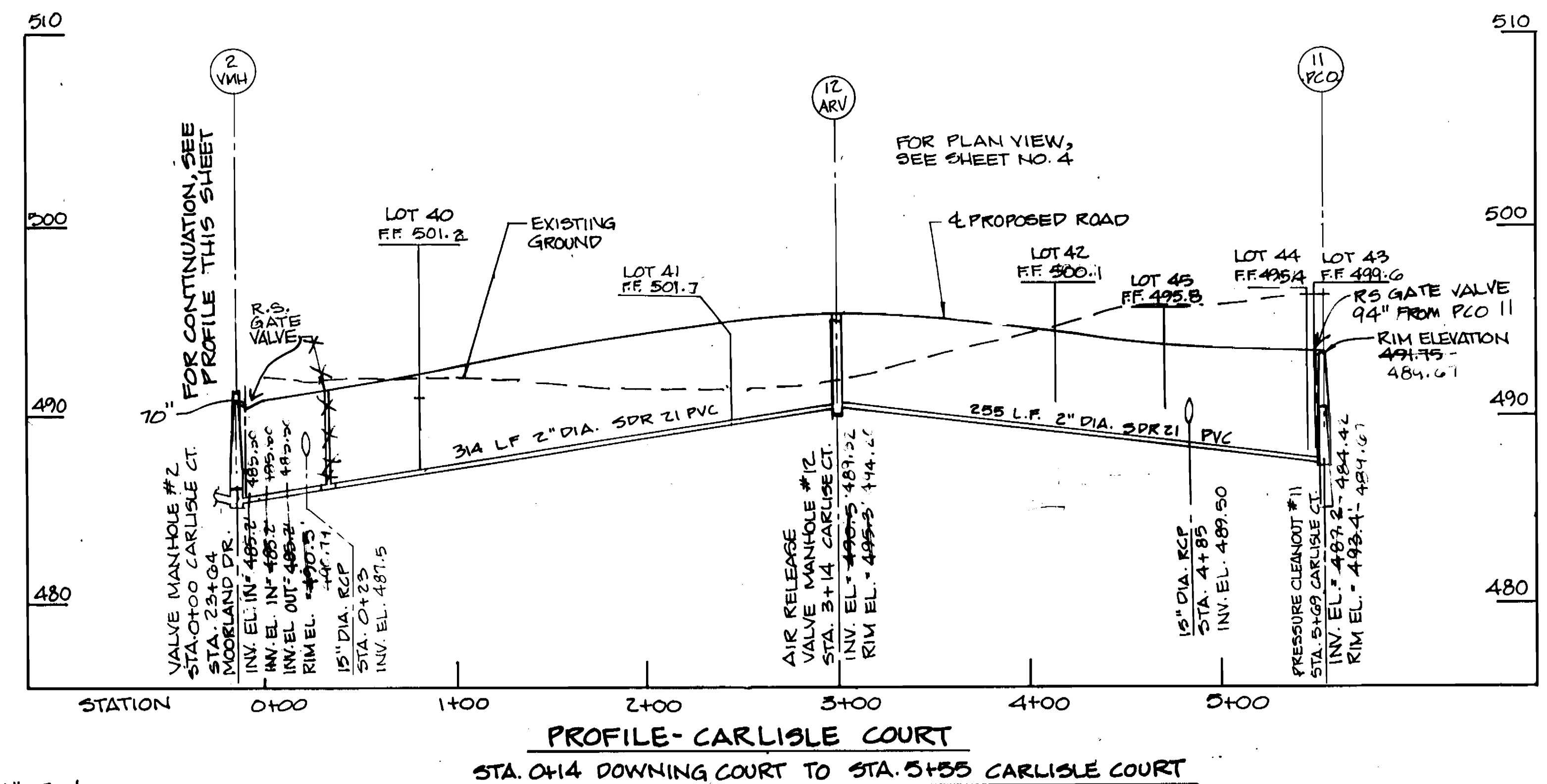
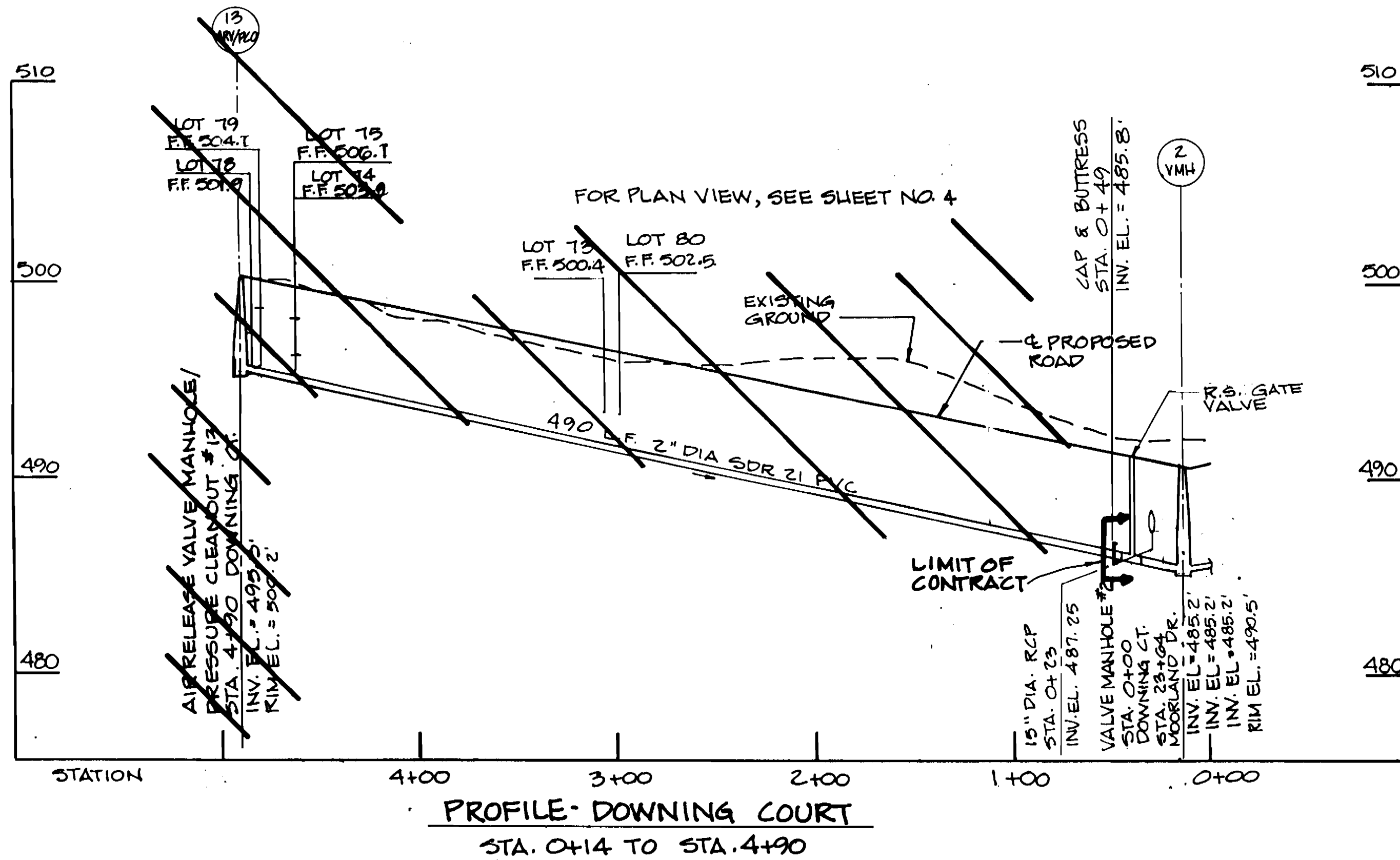
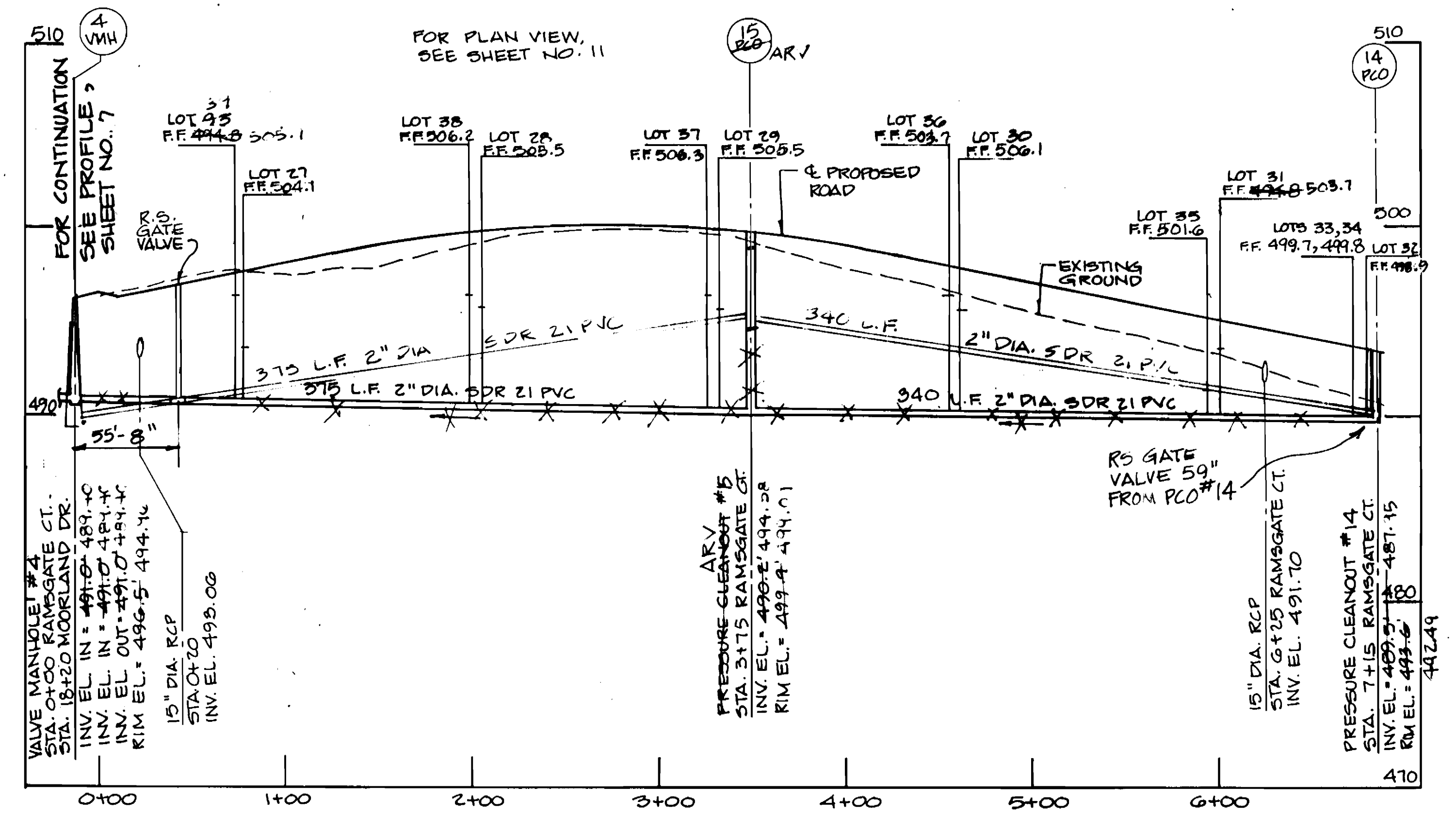
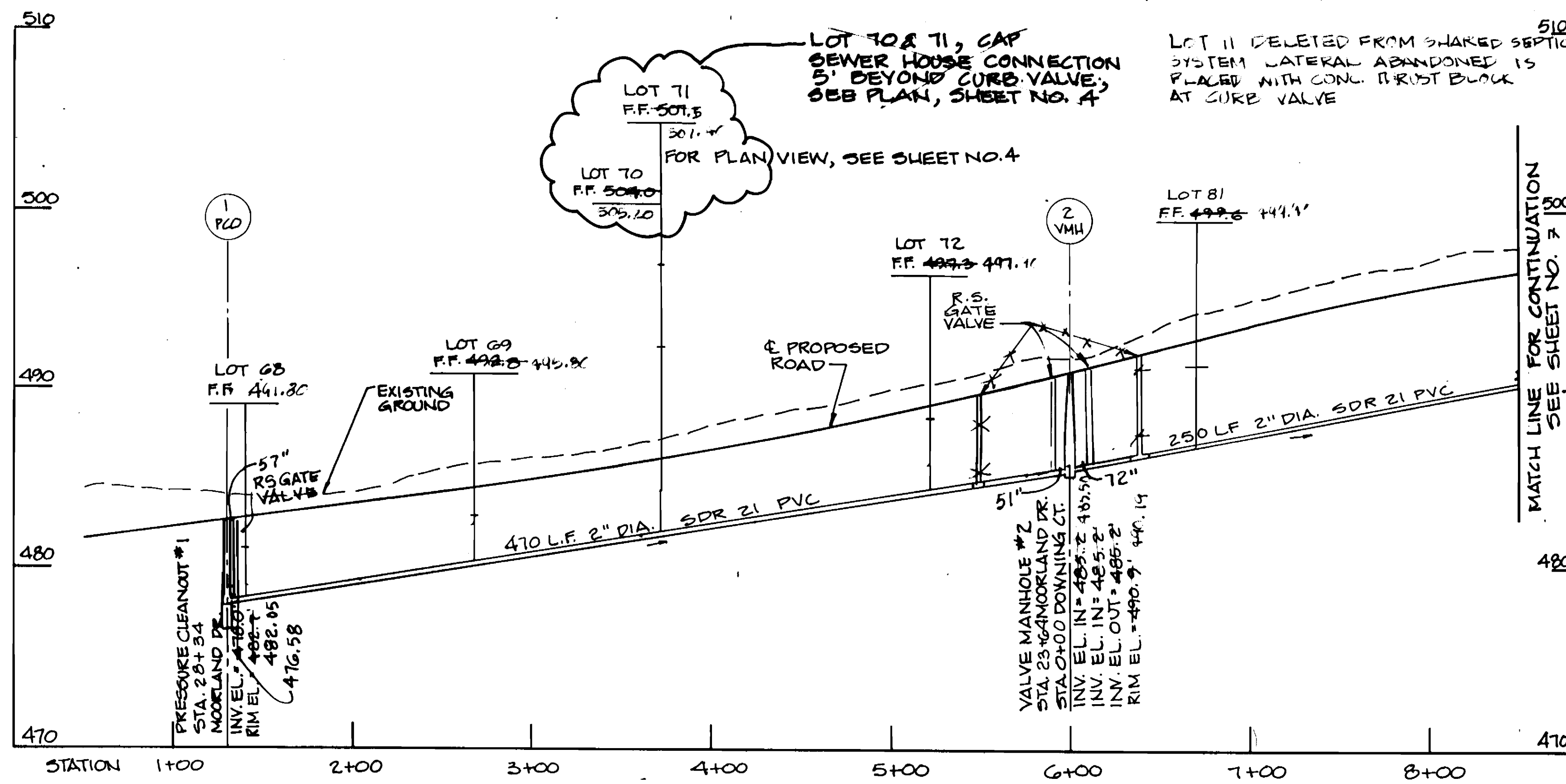
**ASHLEIGH KNOLLS**  
 WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

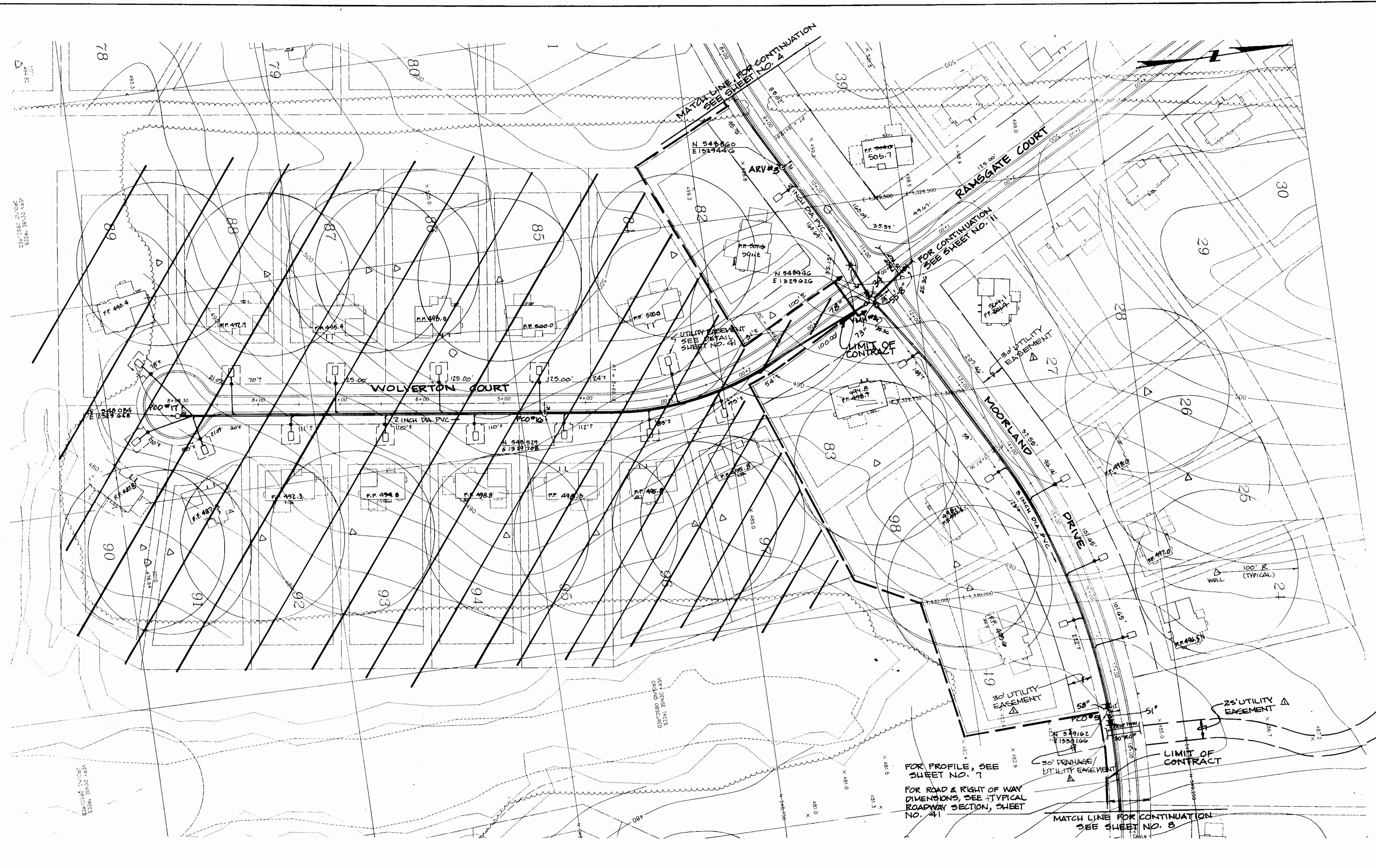
SHEET 4 OF 5



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

3357 5/5 Ashleigh Knolls

<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND DATE: 9-14-94 DATE: 9-14-94		<b>DAMES &amp; MOORE</b> 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-8640				DES: VRC PRN: LCH CHK: JSP DATE: 12-73		<b>PROFILE MOORLAND, CARLISLE, DOWNING AND RAMSGATE</b> AS-BUILT 10-93 GREAT PHASED PLANS 9-94 FINAL SUBMITTAL 8-94		<b>ASHLEIGH KNOLLS</b> WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 5 OF 54
--	--	---	--	--	--	---	--	--	--	---	--	---------------------------------



3357 s/6

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*John P. Shaw* 9-26-94  
 DIRECTOR OF PUBLIC WORKS DATE

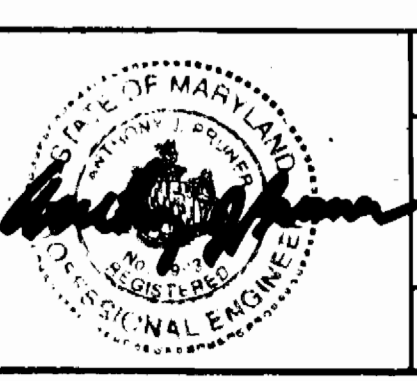
*Robert J. ...* 9-14-94  
 CHIEF, BUREAU OF UTILITIES DATE

*Robert J. ...* 9/26/94  
 CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. ...* 9/26/94  
 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: 11-93			
BY	NO.	REVISION	DATE
		AS BUILT	10-95
		REVISE EASEMENTS	11-94
		CREATE PHASED PLANS	9-94
		FINAL SUBMITAL	8-94

**PLAN**  
**MOORLAND AND WOLVERTON**

SCALE: 1" = 50'

600' SCALE MAP NO. 40-21 BLOCK NO. 12

ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM

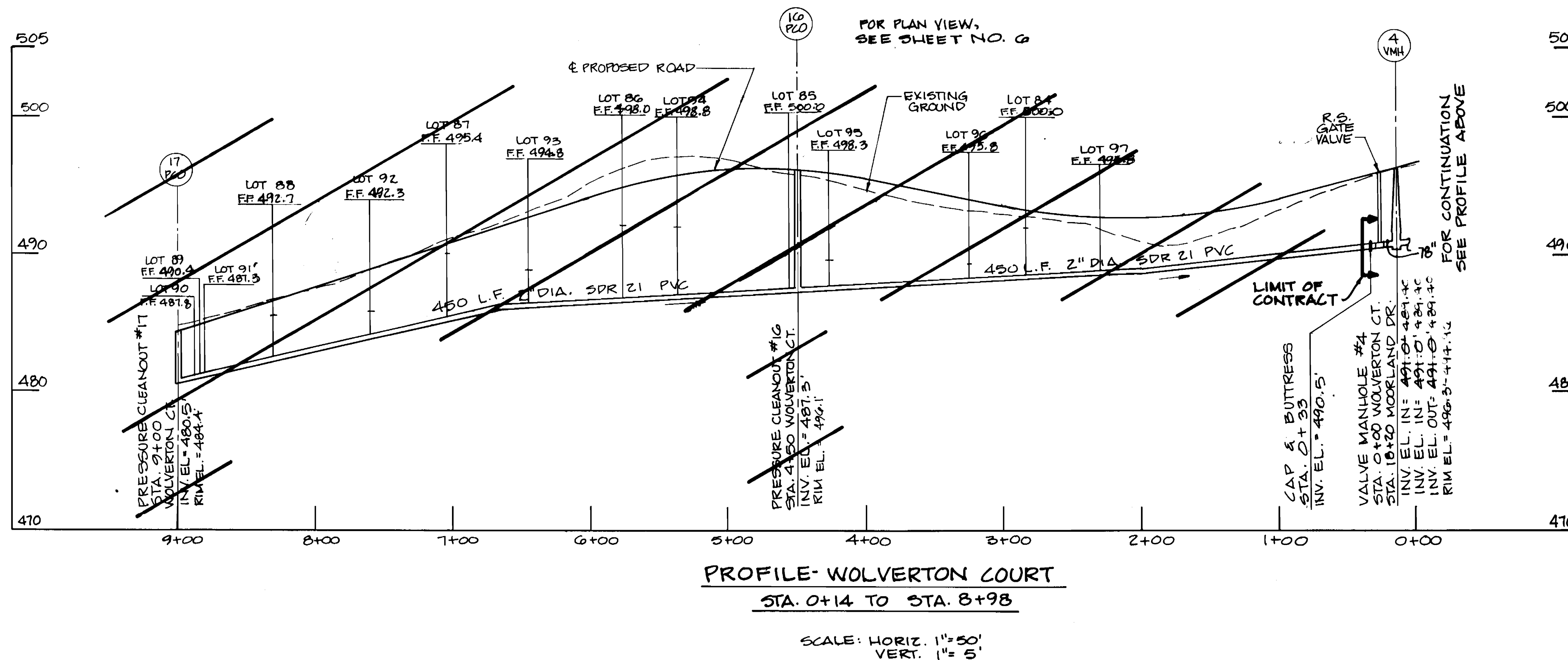
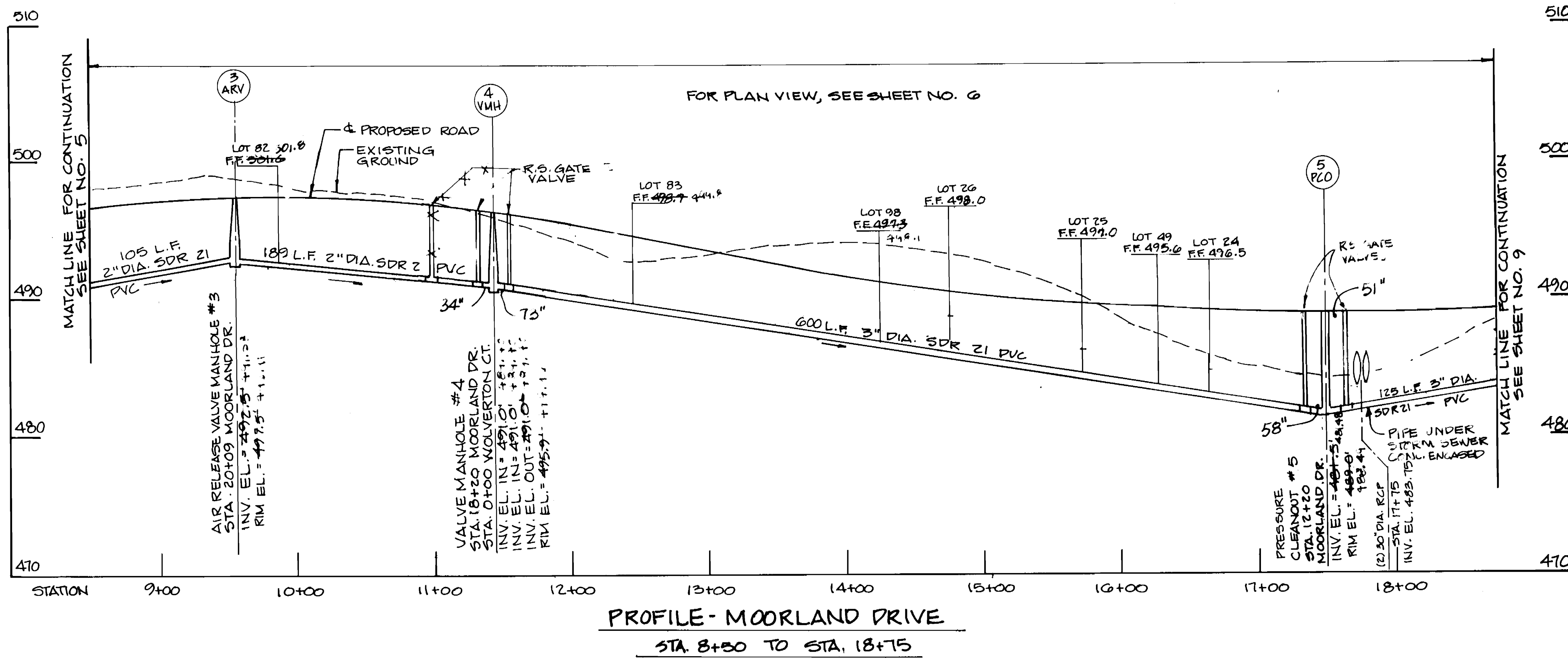
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 5A





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

3357 3/7

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

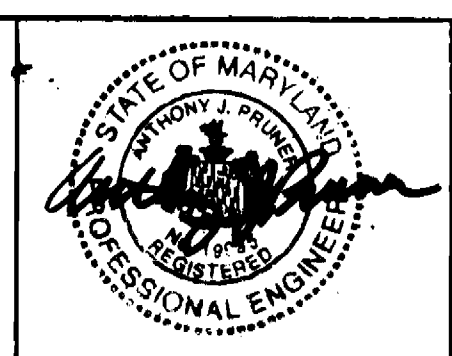
*Robert M. Bennett* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Bennett* 9/26/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Bennett* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES: VRL			
DRN: L6W			
CHK: AJP			
DATE: 12-93			
BY	NO.	REVISION	DATE
		AS BUILT	10/95
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

**PROFILE  
MOORLAND AND WOLVERTON**

800' SCALE MAP NO. 44-41 BLOCK NO. 12

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

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 7 OF 54



3357 9/8

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James H. Lee* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Richard J. Pagan* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. Pagan* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*Richard J. Pagan* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

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



DES: VRC			
DRN: LGH	AS BUILTS	10/95	
CHK: AJP	REVISE EASEMENTS	11-74	
DATE: 12-93	CREATE PHASED PLANS	9-94	
	FINAL SUBMITTAL	6-94	
BY NO.	REVISION	DATE	

**PLAN**  
**MOORLAND AND CHILTON**

SCALE: 1" = 50'

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

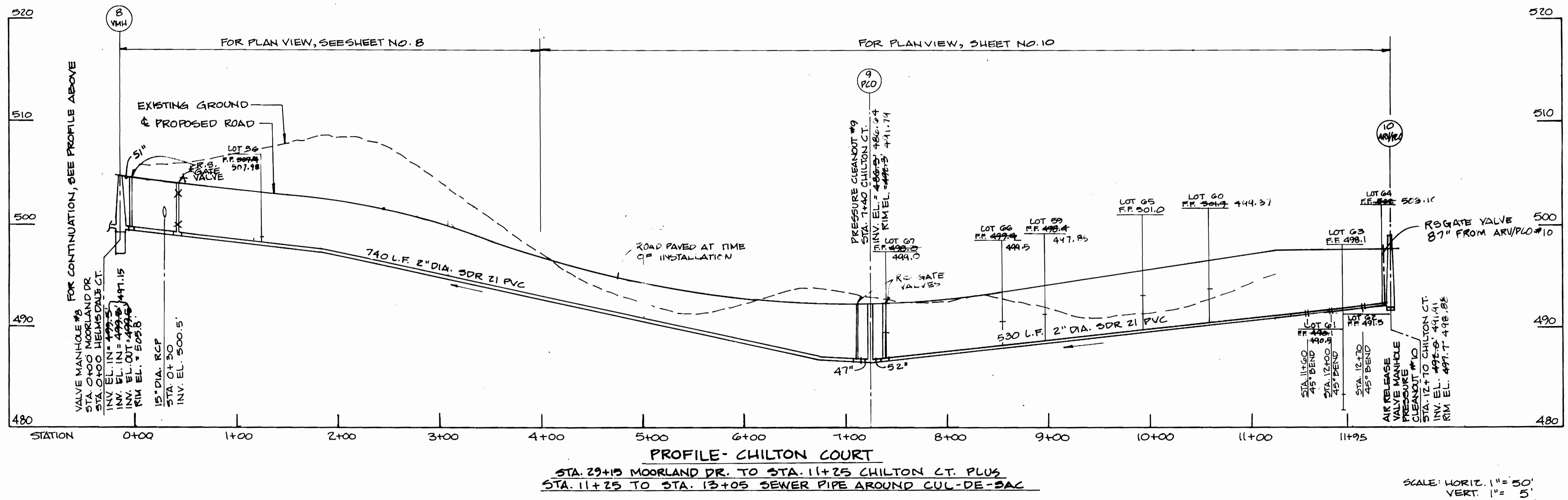
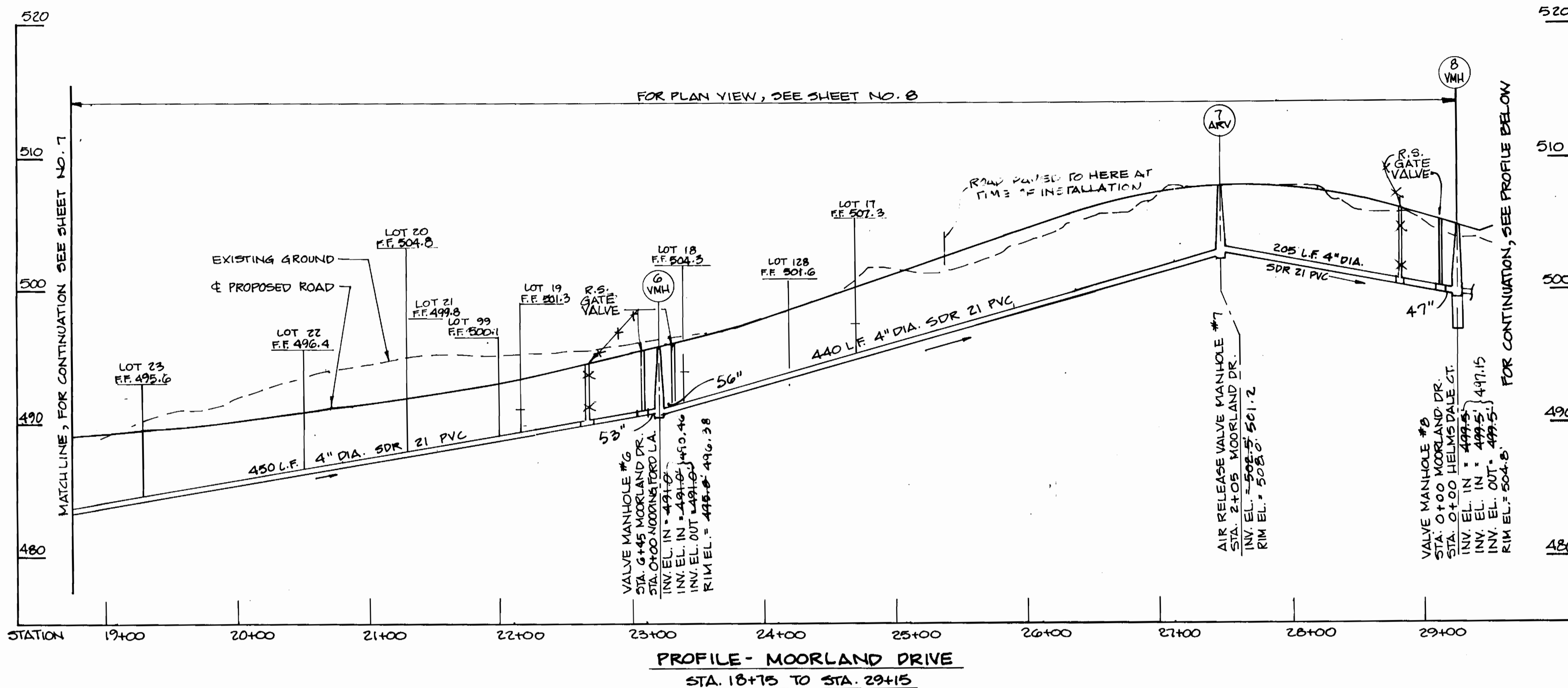
ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 8 OF 34



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

3357 9/9

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert B. ...* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*...* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*...* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES. VRC			
DRN. LGH			
CHK. AJP		AS BUILT	10/95
		CREATE PHASED PLANS	9/94
		FINAL SUBMITTAL	8/94
DATE 12-93	BY NO	REVISION	DATE

**PROFILE  
MOORLAND AND CHILTON**

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

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 9 OF 24

3357 s/10 Ashleigh Knolls



FOR ROAD & RIGHT OF WAY DIMENSIONS, SEE TYPICAL ROADWAY SECTION, SHEET NO. 41  
FOR PROFILE, SEE SHEET NO. 9

LIMIT OF CONTRACT

CHILTON COURT

PLAN CHILTON  
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DAMES & MOORE

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

DES: VRC				
DRN: LCH				10/93
CHK: AJP	BKH	AS BUILT		11/94
		REVISE EASEMENTS		9/94
		CREATE PHASED PLANS		8/94
DATE: 12-93	BY: NO.	FINAL SUBMITTAL		
		REVISION		

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

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

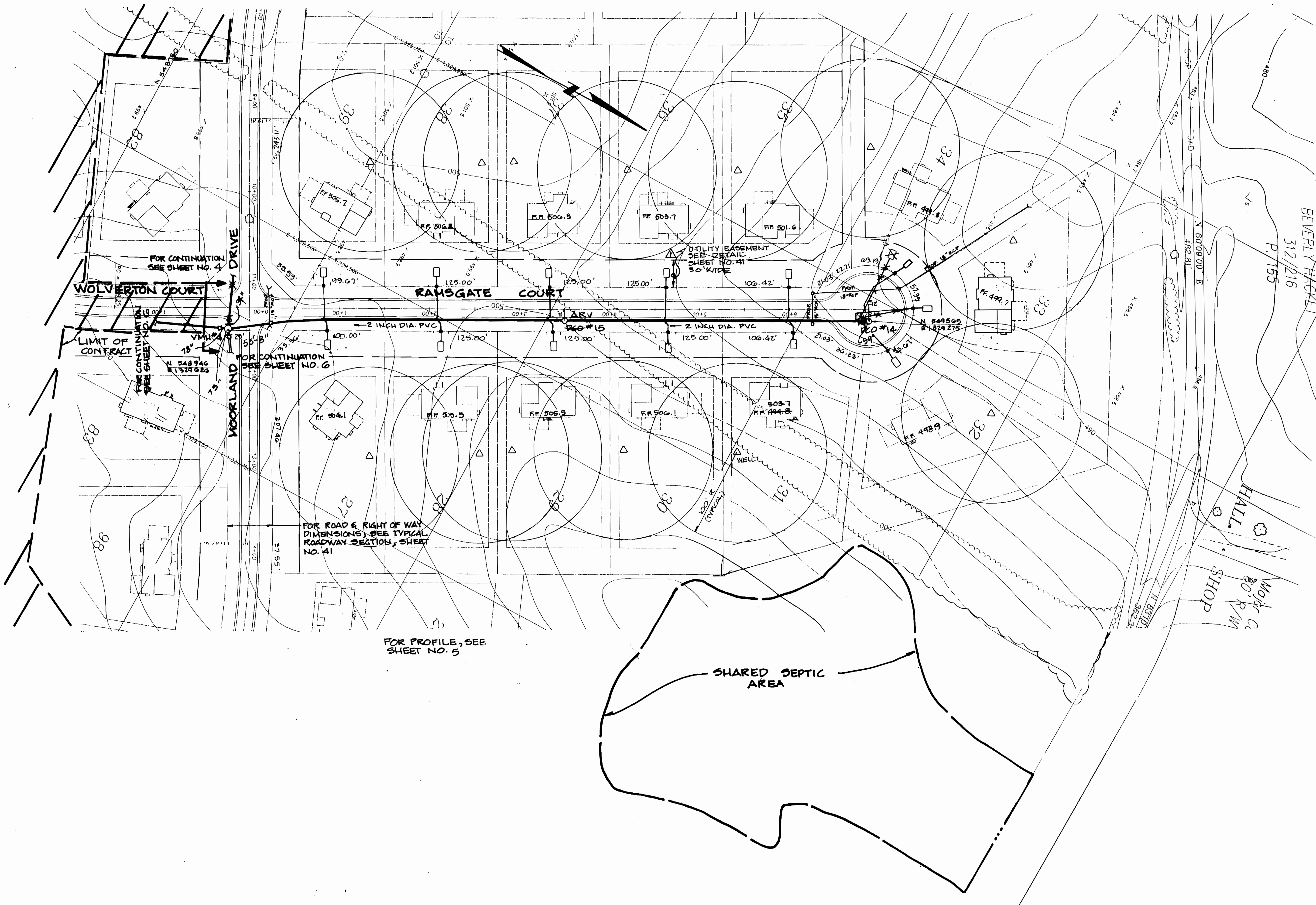
SCALE:  
AS  
SHOWN  
SHEET  
10 OF 21

*Robert B. Bennett* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert B. Bennett* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert B. Bennett* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert B. Bennett* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE



BEVERLY HACKEL  
312/216  
P.165

HALL  
SHOP  
Major Co  
50' P/W

FOR PROFILE, SEE SHEET NO. 5

FOR ROAD & RIGHT OF WAY DIMENSIONS, SEE TYPICAL ROADWAY SECTION, SHEET NO. 41

FOR CONTINUATION SEE SHEET NO. 4

FOR CONTINUATION SEE SHEET NO. 6

LIMIT OF CONTRACT

3357 5/11

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert W. Deming* 9/14/94  
DIRECTOR OF PUBLIC WORKS DATE  
*Robert W. Deming* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert W. Deming* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert W. Deming* 9/14/94  
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
		AS BUILT	10/95
		REVISE EASEMENTS	11-94
		CREATE PHASED PLANS	9/94
		FINAL SUBMITTAL	8/94

PLAN RAMSGATE  
SCALE: 1" = 50'

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

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-5357

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 11 OF 24

3357 5/12



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert D. ...*  
DIRECTOR OF PUBLIC WORKS  
DATE 9-14-94

*Robert D. ...*  
CHIEF, BUREAU OF ENGINEERING  
DATE 9-14-94

*Robert D. ...*  
CHIEF, LAND DEVELOPMENT DIVISION  
DATE 9-14-94

**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
AS EUILT			11-94
REVISE EASEMENTS - MOVE WELLS, LOT 57 & 58			9-94
CREATE PHASED PLANS			8-94
FINAL SUBMITTAL			

**PLAN  
HELMSDALE AND BROOKSHIRE**

SCALE: 1" = 50'

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

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

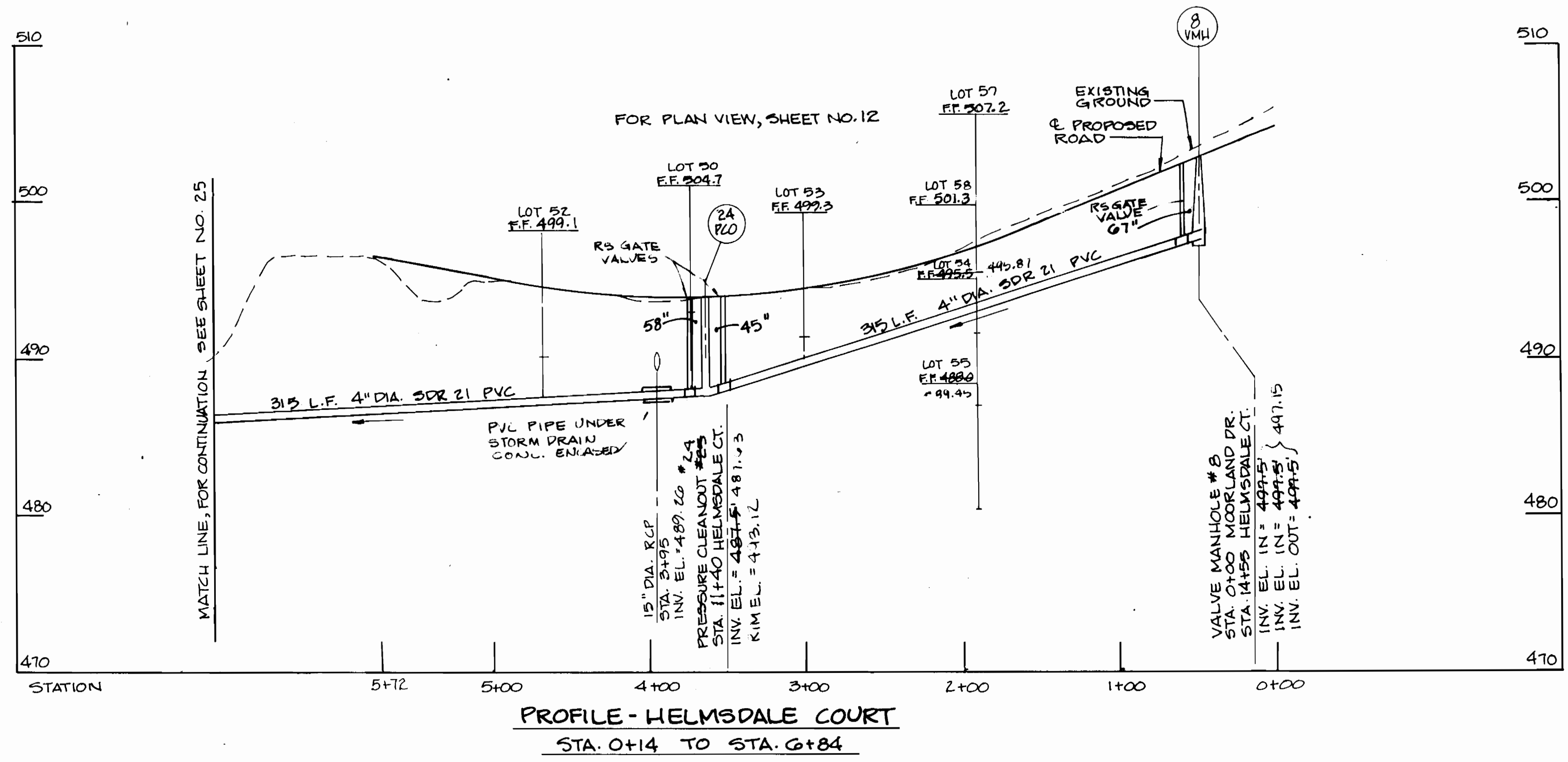
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
12 OF 54



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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert B. ...* 9/14/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert B. ...* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert B. ...* 9/14/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES:	VRC		
DRN:	LCH		
CHK:	AJP	AS BUILT	10/95
		CREATE PHASED PLANS	9/94
DATE:	12-93	FINAL SUBMITTAL	8-94
BY:	NO.	REVISION	DATE

**PROFILE  
HELMSDALE AND BROOKSHIRE**

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

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

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 12 OF 34

3357 9/14



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. Shaw* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. ...* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. ...* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert J. ...* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES:	VRC		
DRN:	LCH	ADD LOT 131 TO CONTRACT	2-96
CHK:	AJP	AS BUILT	10-95
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	6-94
DATE:	12-93		
BY:	NO.	REVISION	DATE

**PLAN**  
**WOLLINGFORD AND CHARDON**

SCALE: 1" = 50'

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

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

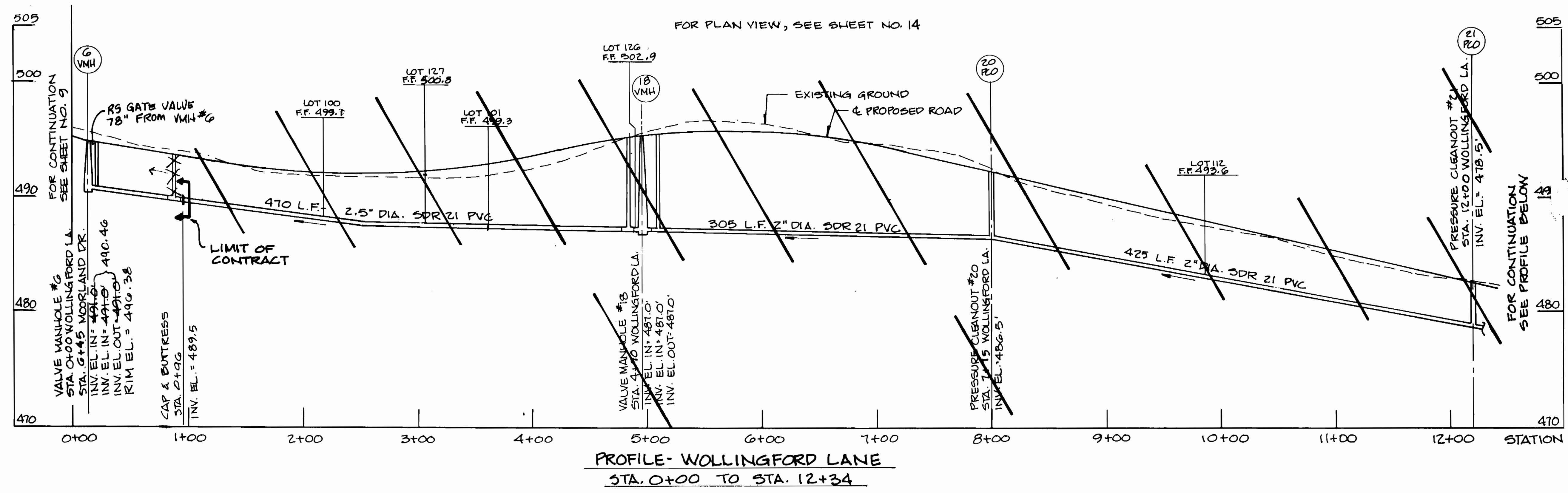
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

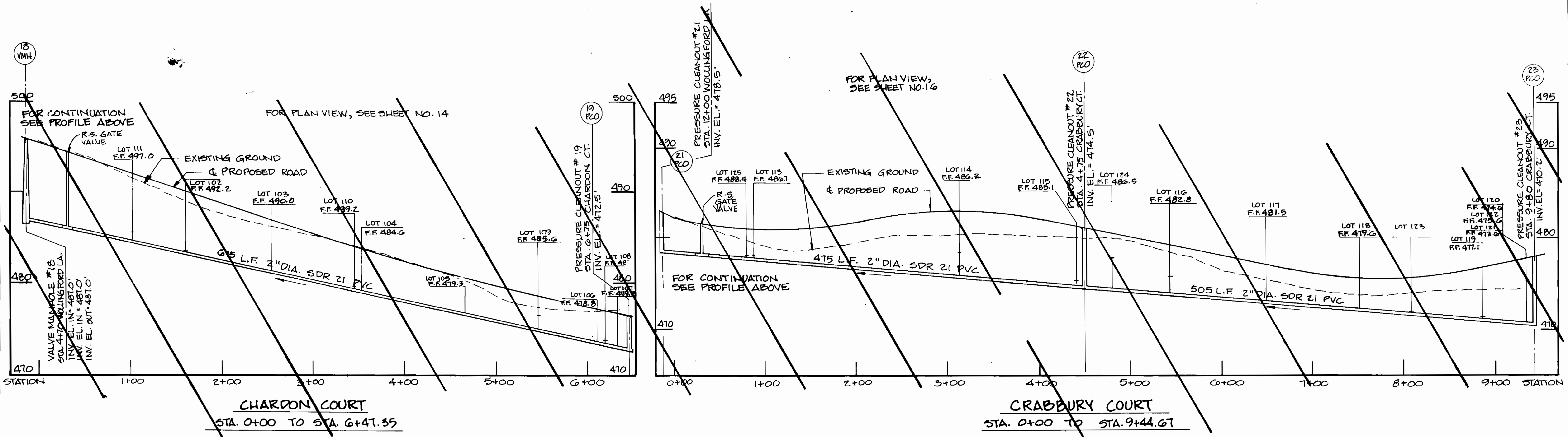
SCALE  
AS  
SHOWN

SHEET  
14 OF 54





PROFILE- WOLLINGFORD LANE  
STA. 0+00 TO STA. 12+34



CHARDON COURT  
STA. 0+00 TO STA. 6+47.35

CRABBURY COURT  
STA. 0+00 TO STA. 9+44.67

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

3357 9/15

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: *John A. Sluiter* 9/26/94  
Chief, Bureau of Engineering: *Robert J. Burman* 9/14/94  
Chief, Bureau of Utilities: *Robert J. Burman* 9/14/94  
Chief, Land Development Division: *Robert J. Burman* 9/26/94

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

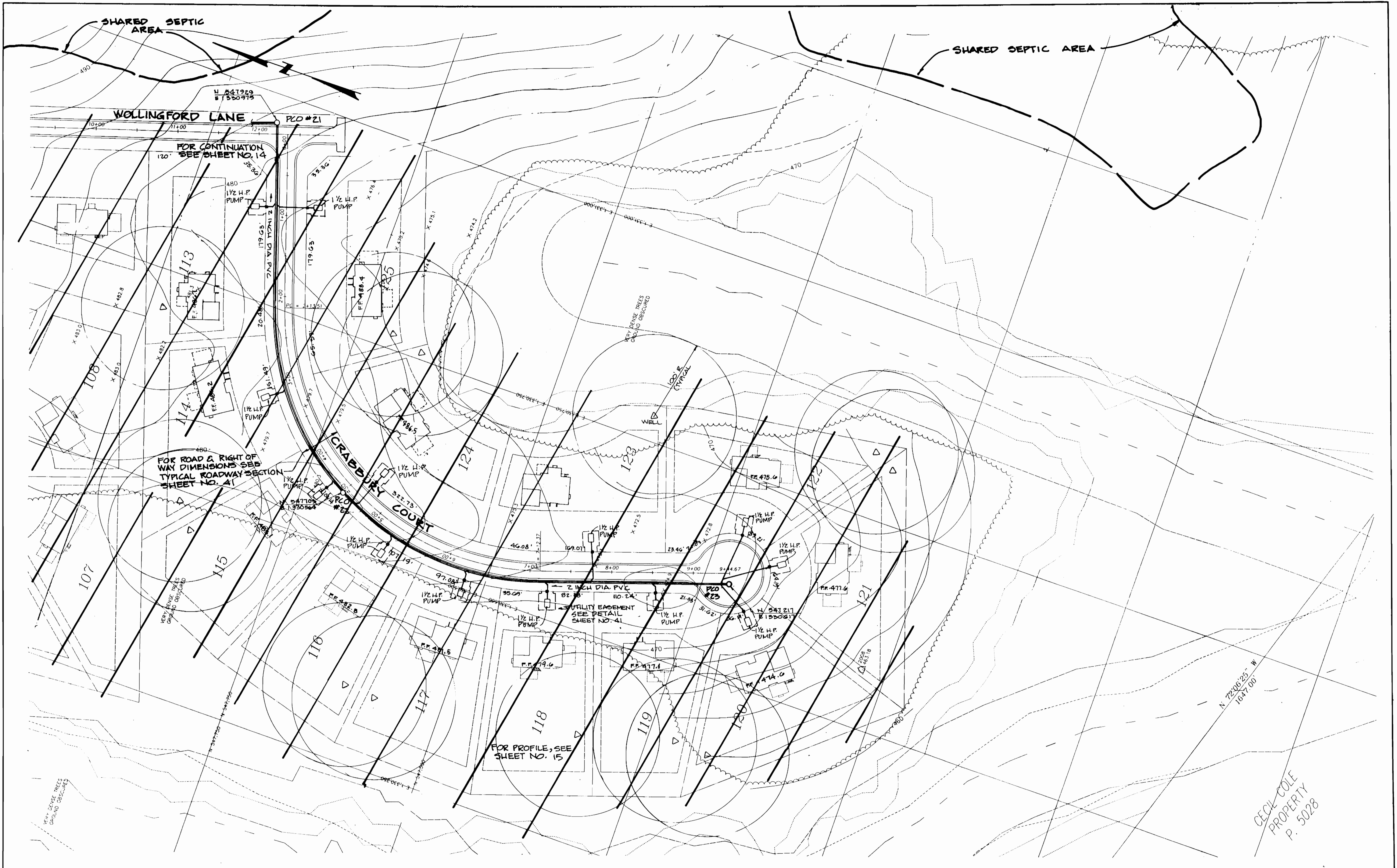


DES: VRC			
DRN: LCH			
CHK: AJP	AS BUILT	1993	
DATE: 12-93	CREATE PHASED PLANS	9-94	
	FINAL SUBMITTAL	8-94	
BY NO.	REVISION	DATE	

PROFILE WOLLINGFORD,  
CHARDON AND CRABBURY

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM  
CONTRACT NO. 50-3357  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 15 OF 34



3357 9/16

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

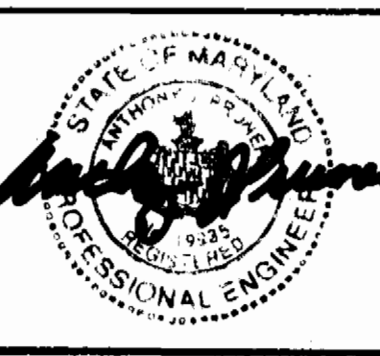
*[Signature]* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES: VRC			
DRN: LGH			
CHK: AJP	CREATE PHASED PLANS	9/24	
DATE: 12-93	FINAL SUBMITTAL	8/44	
BY NO.	REVISION	DATE	

**PLAN CRABBURY**

SCALE: 1" = 50'

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

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

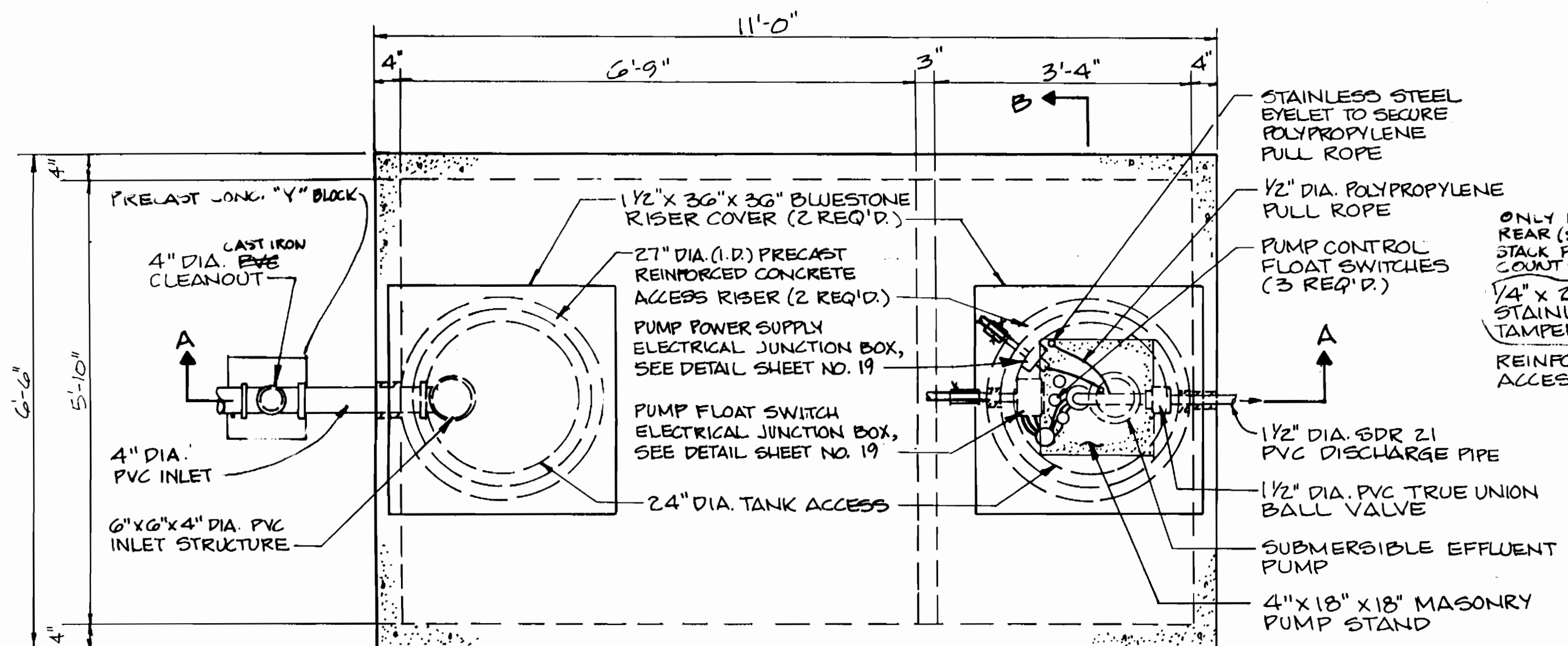
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

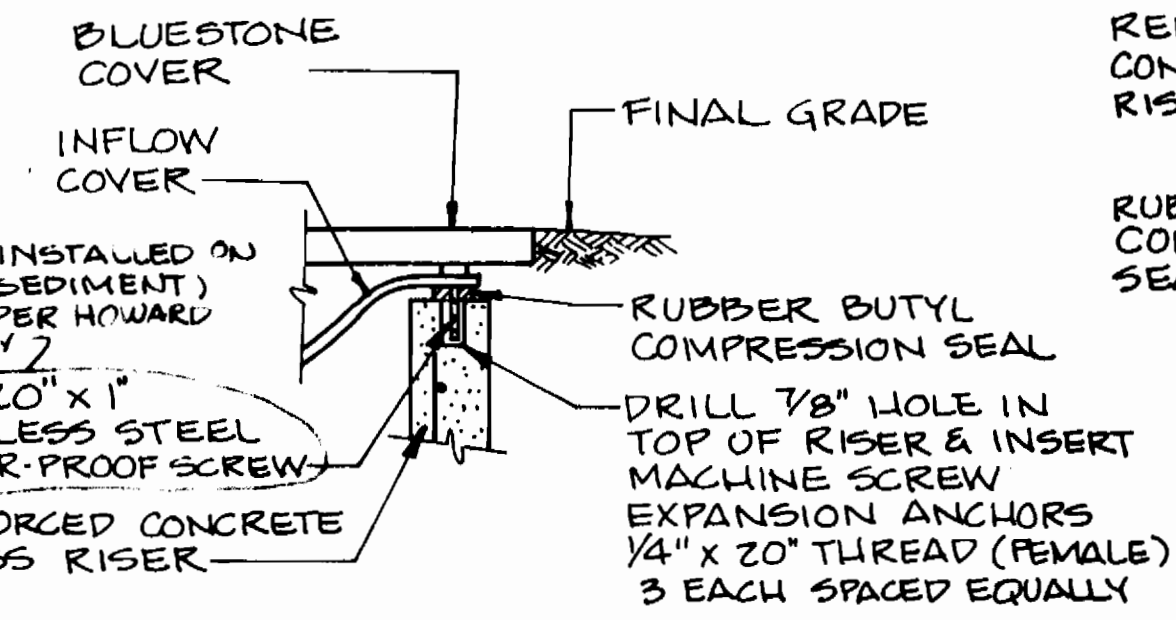
SHEET 16 OF 54

CECIL COLE  
PROPERTY  
P. 5028



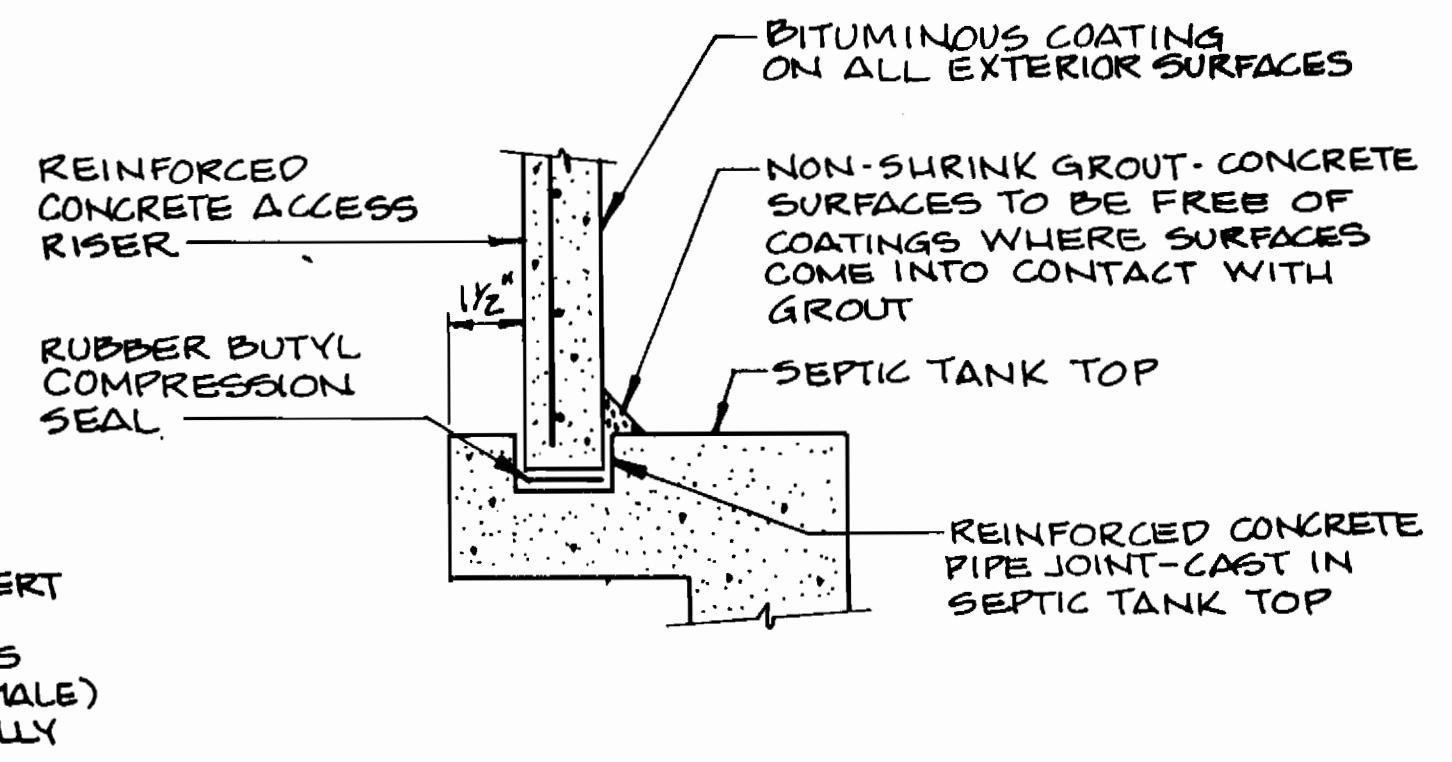
**PLAN**

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



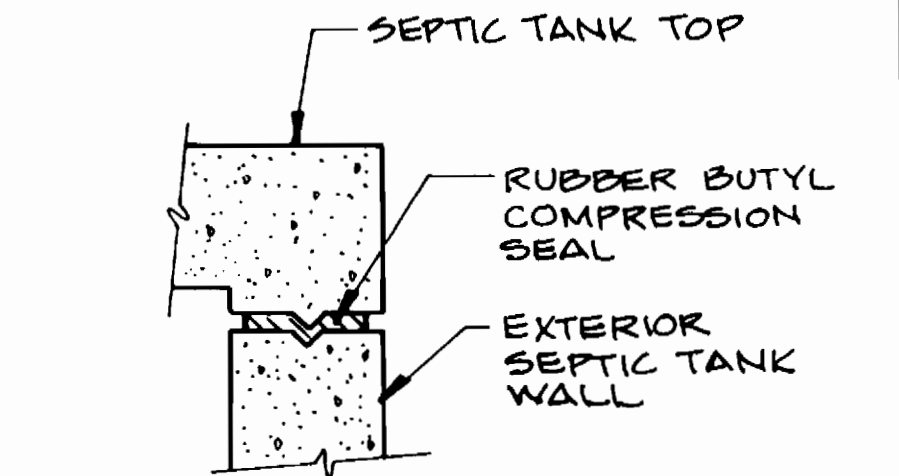
**DETAIL A  
INFLOW COVER/RISER JOINT**

NOT TO SCALE



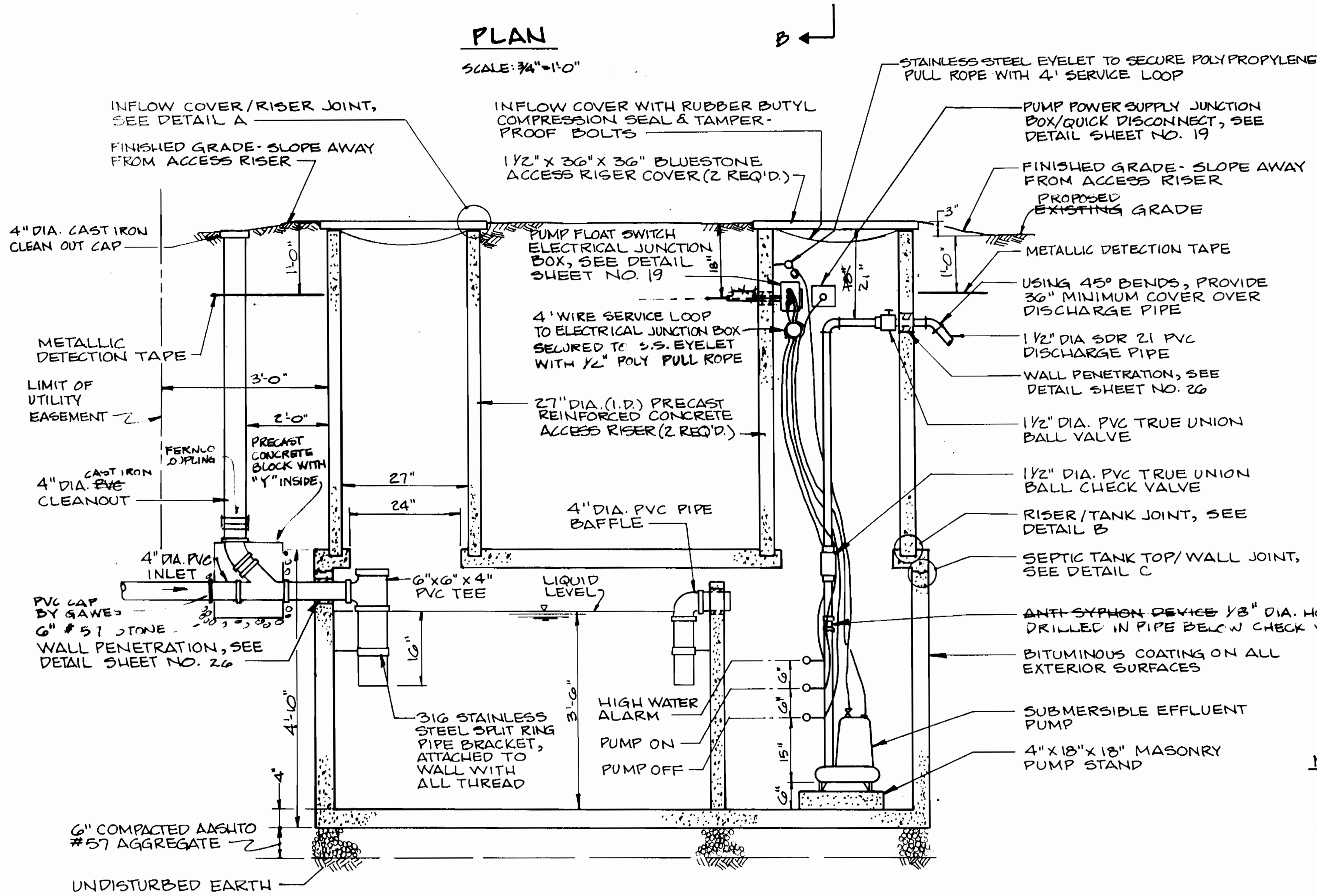
**DETAIL B  
RISER/TANK JOINT**

NOT TO SCALE



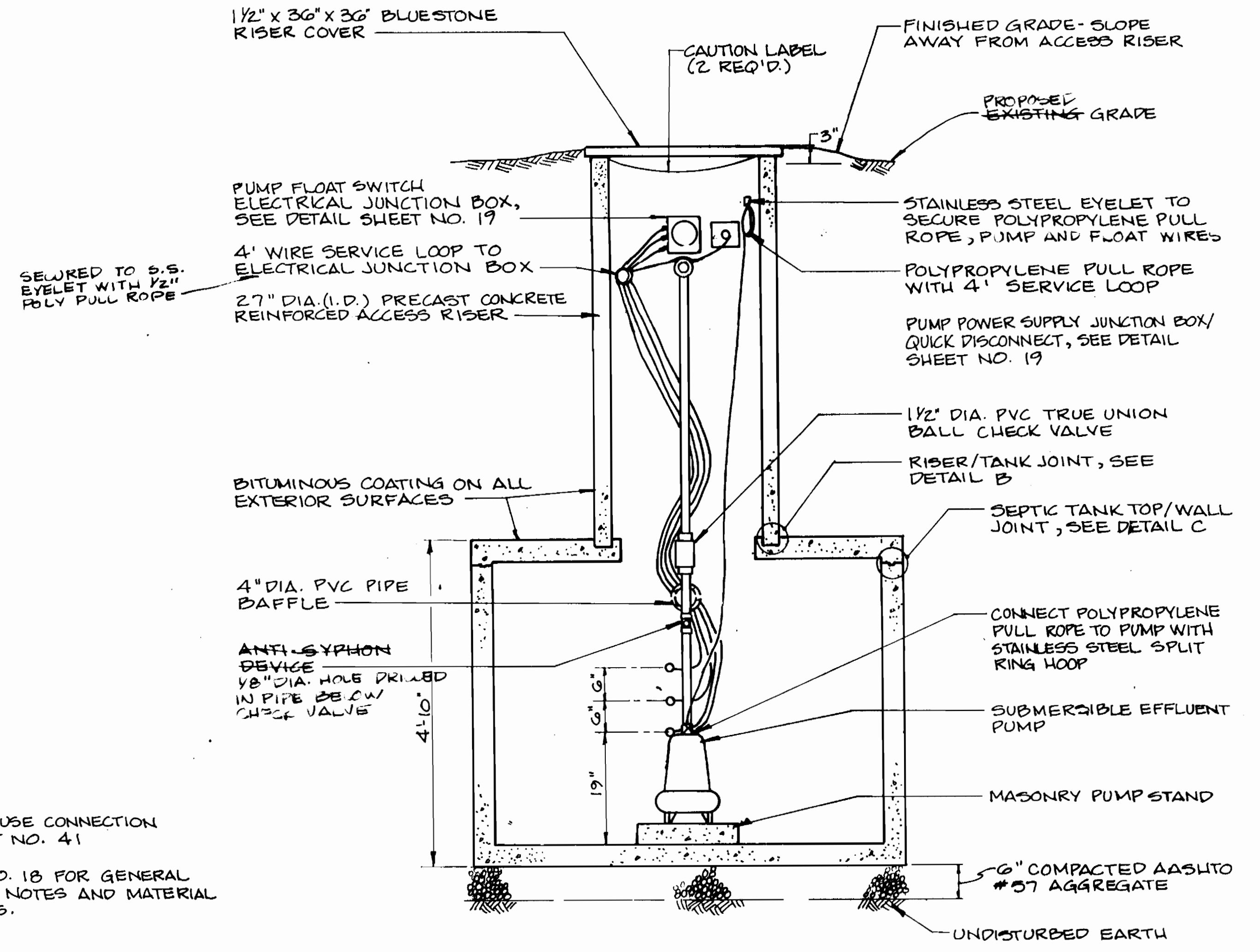
**DETAIL C  
SEPTIC TANK TOP/WALL JOINT**

NOT TO SCALE



**SECTION A-A**

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



**SECTION B-B**

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

- NOTES:**
- SEE SEWER HOUSE CONNECTION DETAIL SHEET NO. 41
  - SEE SHEET NO. 18 FOR GENERAL INSTALLATION NOTES AND MATERIAL SPECIFICATIONS.

3357 S/17

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert M. Berman</i> 9/14/94 CHIEF, BUREAU OF UTILITIES	DAMES & MOORE 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640		DES: VRC			<b>SEPTIC TANK PLAN &amp; SECTIONS</b>	ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN  SHEET 17 OF 34
			DRN: LCH	CHK: AJP	DATE: 12-93			

GENERAL NOTES

- All construction shall be accomplished in accordance with Howard County "Specifications for Construction" and "Standard Details" (September 1988 and amended) unless noted otherwise.
- 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.
- 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

- The tank shall be located so that the following minimum conditions are met:
  - 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.
  - 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.
  - Provide three feet (3'-0") minimum cover over the discharge pipe between the tank and the street.
- Excavate for new septic tank to undisturbed earth. Provide dewatering system so that excavation remains dry.
- Install six inch minimum leveling bed of AASHTO #57 stone or screened gravel.
- Install tank level, and at an elevation such that proper inlet elevation is established.
- 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.
- Install backfill to the invert of the inlet and outlet pipes.
- 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.
- Complete backfill operations and fill excavation to grade. Adjust septic tank risers to grade as shown on the drawings.
- Install all pump equipment for pump tank installations.
- Run pump through two complete operations to verify proper operation of floats and controls in the presence of the Engineer/Inspector.
- The design precast concrete tank shall be certified by a professional engineer licensed in the State of Maryland.
- 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.
- 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

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
1	Precast Concrete, 2 Compartment 1,500 gallon Septic Tank	1
2	6" Diameter Inlet Structure	1
3	4" Diameter Baffle Structure	1
4	Precast Concrete Riser 27" Inside Diameter	2
Items No. 1 through 4 are manufactured by Gillespie and Son, Inc., Chestertown, Maryland, (410) 778-0900.		
5	<del>Cor-N-Seal Boots</del> LINK SEALS Required for Septic Tank	
a.	Inlet	1
b.	Outlet	1
c.	Baffle	1
Item No. 5 is distributed by NPC, Inc., P.O. Box 301, Milford, New Hampshire 03055, (603) 628-2180.		
6	Inflow Protector Cover	2
Item No. 6 is manufactured by FRW Industries, Inc., Route 13, Box 1882, Conroe Texas 77303, (409) 756-1621.		
7	Tamper Proof Bolts	6

B. ELECTRICAL COMPONENTS - PRESSURE TANKS ONLY

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY				
8	Submersible Effluent Pump - 1/2 hp, <del>Grundfos Model 3883 VET1512H or Westinghouse Myers Model P31 or P1C</del>					
9	Simplex Pump Control Panel Polyester reinforced fiberglass enclosure, NEMA 4x, 11"Hx10"Hx7"D, Hoffman Cat. #A-14107JFGQR, or equal.	1				
(a)	Aluminum panel, .08-Inch thick. Protected by plastic film, 10.75"Hx8.88"W, Hoffman Cat. #A-12P10A2, or equal.					
(b)	Mini-alarm light, red acrylic lens, 120 vac with bulb, gasket and flasher button, Ohio Electric Control, Inc. #ML-2, or equal.					
(c)	Maintained selector switch, with SPDT contact blocks, 120 bolt, square D ZB2 BD3, or equal. Mount in item no. (d).					
(d)	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 wiring 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.					
(e)	Provide (1) 15 AMP, 120 volt, 1 pole breaker 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 QOU115 and QOU215, or equal. Provide spacer between circuit breakers and mounting pan so that breaker operator protrudes through dead front panel.					
(f)	Motor contactor: IEC type, 4 pole, 18 amp, 120vac coil, Square D #LC1 D 18 00G6, or equal.					
(g)	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.					
(h)	Provide min. (3) Box lug type terminals complete with mounting rail, end barrier, and labels, square D type GK, or equal.					
(i)	Pilot light, 120v/6v transformer type, NEMA 4X, red, square D #ZB2 BV3, or equal.					
(j)	Elapsed time meter, 2-1/2" round, 120 volt, resettable, 6 digit readout to include tenths of hours, Cramer #635G H&T, or equal. Fabricate neoprene gasket and install between meter flange and enclosure face.					
(k)	Universal time delay relay, DPDT, 120 volt, configured for off delay service, SSAC #TRU3 with matching 11-pin socket, or equal.					
(l)	Pushbutton, 120 volt, momentary, with N.O. contact block, Square D #B2 BZ2/ZB2 BZ101, or equal.					
(m)	Alarm horn, 120 volt, weatherproof, 95 DB @ 2 feet, Floyd Bell #MW-09-201Q, or equal.					
(n)	3/4"x3.5" White on black engraved phenolic nameplate to read: <table border="0"> <tr> <td><u>pump</u></td> <td><u>horn</u></td> </tr> <tr> <td><u>running</u></td> <td><u>silence</u></td> </tr> </table> with lettering centered over pilot light and pushbutton.	<u>pump</u>	<u>horn</u>	<u>running</u>	<u>silence</u>	
<u>pump</u>	<u>horn</u>					
<u>running</u>	<u>silence</u>					

ITEM NUMBER ITEM DESCRIPTION QUANTITY

- (o) Control panel sign shall be adhesive backed, non fading. Sign shall be 3" x 5" and shall read:  
 HOWARD COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 SEPTIC TANK EFFLUENT PUMP CONTROLS  
 IN CASE OF ALARM,  
 TELEPHONE 313-XXXX-4900  
 DO NOT OPEN PANEL
- (p) Transition rigid galvanized steel conduit to PVC conduit at end of 90 degree elbow. Use rigid galvanized steel conduit through tank wall in tank interior.
- (q) Corrosion resistant NEMA 4 Junction Box, as provided by Ames, Wesco, or Myers.
- (r) Corrosion resistant, 2-pin receptacle to match Float Switch Coupler. Float Switch manufacturer shall furnish. Crouse-Hinds, Mini-line, or equal.
- (s) 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.
- (t) Hazardous area receptacle, 30A, 120V, 3W, class 1. Group D, Division 1, factory sealed, with matching plug, Crouse-Hinds, or equal #CES2214, CPH7XXX. Verify plug cable O.D. For seal failure circuit.

10 20 AMP Main Circuit Breaker and Enclosure - NEMA Type 3R enclosure, lockable, rainproof, Model No. Q02100BNRB, with one pole circuit breaker. For 1/2 HP Pumps and two pole circuit breaker for 1 1/2 HP Pumps.

Item No. 10 is manufactured by Square D Manufacturing Company, Towson, Maryland (410) 252-6382.

11 Polypropylene Mini-Floats High Water Pump On Pump Off

Item No. 11 is manufactured by Anchor Scientific, Inc., Box 378, Long Lake, Minnesota 55256, (612) 473-7115.

12 3M Scotch Cast, Size B, #3 Insulation Resin As Required

Item No. 12 is distributed by Lokite, Inc., 9556 Deerco Road, Baltimore, Maryland 21093, (410) 252-6382.

13 Stainless Steel - Series 700 Main Breaker Box Pump Control Box

Item No. 13 is manufactured by the American Lock Company, Crete, Illinois.

C. PIPING AND VALVE COMPONENTS

14	1/2-Inch Diameter SDR 35 PVC Pipe	Length as Required
15	1/2-Inch Diameter SDR 21 PVC Pipe	Length as Required
16	Morrison Bleeder Valve - 1/2" φ HOLE Part #S20185, or equal.	1
Items No. 14 through 16 are distributed by Tate Engineering, Inc., 601 West Street, Baltimore, Maryland 21230, (410) 539-0787.		
17	1/2-Inch Diameter PVC True Union Ball Valve Hayward or equal.	1
18	1/2-Inch Diameter PVC True Union Ball Check Valve Hayward or equal.	1

ITEM NUMBER ITEM DESCRIPTION QUANTITY

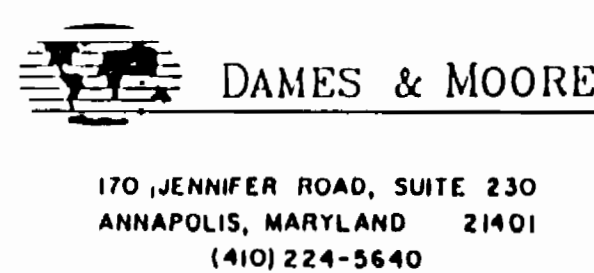
19	Weld On Primer P-70 or equal.	As Required
20	Weld On Pipe Cement 711 or equal.	As Required
21	Pipe Joint Lubricant (Sub Aqueous)	As Required
Items No. 17 through 21 are distributed by PPS (Plastic Piping Systems), McGraw Court, Columbia, Maryland 410) 995-6758.		
22	316 Stainless Steel Split Ring Pipe Support Brackets Gravity Pressure	3 2
Item No. 22 is manufactured by Penn Pipe Hangers, 4501 Aramingo Avenue, Philadelphia, Pennsylvania 19124, (800) 742-6437.		
23	Metallic Plastic Marker Tape	As Required
Item No. 23 is manufactured by Allan Co., Inc., 1803 McGowen Street, Houston, Texas 77004, (713) 659-5468.		
24	1 1/2-Inch Bronze Ball Curb Valve	1
25	Valve Stem Extension with two inch Operating Nut	Length as Required.
Items No. 24 and 25 are manufactured by Mueller Co., distributed by Water Pro, 8861 Culliton Road, Baltimore, Maryland 21221, (410) 574-4422.		
26	5/4-Inch Plastic Valve Box with Cast Iron Cover Marked "SEWER"	1
Item No. 26 is manufactured by Bingham and Taylor, P.O. Box 939, Culpeper, Virginia 22701, (703) 825-8334.		
27	4-Inch Diameter Cast Iron Cleanout Cap	1
Item No. 27 is distributed by Mid-Atlantic Industrial Products, Inc., 6149 Washington Blvd, Baltimore, Maryland, 410-796-4600.		

D. MISCELLANEOUS COMPONENTS

28	Rubber Butyl Compression Seal	As Required
Item No. 28 is manufactured and distributed by Press-Seal Gasket Corp., Concrete Products Supply Co., P.O. Box 10462, Fort Wayne, Indiana 46852, (800) 348-7325.		
29	Non Shrink Grout	As Required
Item No. 29 is manufactured and distributed by National Permacrete Co., Inc. P.O. Box 886, Devon, Pennsylvania 19333.		
30	Coal Tar Epoxy	As Required
Item No. 30 is manufactured by Tnemec Co., Inc. and distributed by C. Distler Co., Inc., 302 W. Cary Street, Richmond, Virginia 23220, Balt. Metro (301) 467-2435.		
31	Caution Label for Riser Cover "CAUTION: HAZARDOUS ATMOSPHERE DO NOT ENTER"	1
Item No. 31 is distributed by Lab Safety Supply, Inc., P.O. Box 1388, Jacksonville, Wisconsin (800) 356-2501.		
32	1/2-Inch Polypropylene Rope with Stainless Steel Split Rings Lifting Hoops at each end.	1
33	4"x18"x18" Masonry Pump Stand	1
Items No. 32 and 33 are distributed by Bowen Farm Supply, 2550 Riva Road, Annapolis, Maryland 21401, (410) 224-3340.		
34	AASHTO #57 Aggregate	As Required
Item No. 34 is distributed by Genstar Stone Products Co., Hunt Valley, Maryland (410) 527-4000.		
35	Pennsylvania Bluestone Riser Cover 36" x 36" x 1 1/4"	2
Item No. 35 is distributed by Piccirilli Quarry, Merrisville, Maryland (410) 442-1400.		

3357 5/18

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND



DES: VRC	
DRN: BGW	
CHK: AJP	CREATE PHASED PLANS 9-94
	FINAL SUBMITTAL 8-94
DATE: 12-73	BY NO. REVISION DATE

SEPTIC TANK NOTES

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

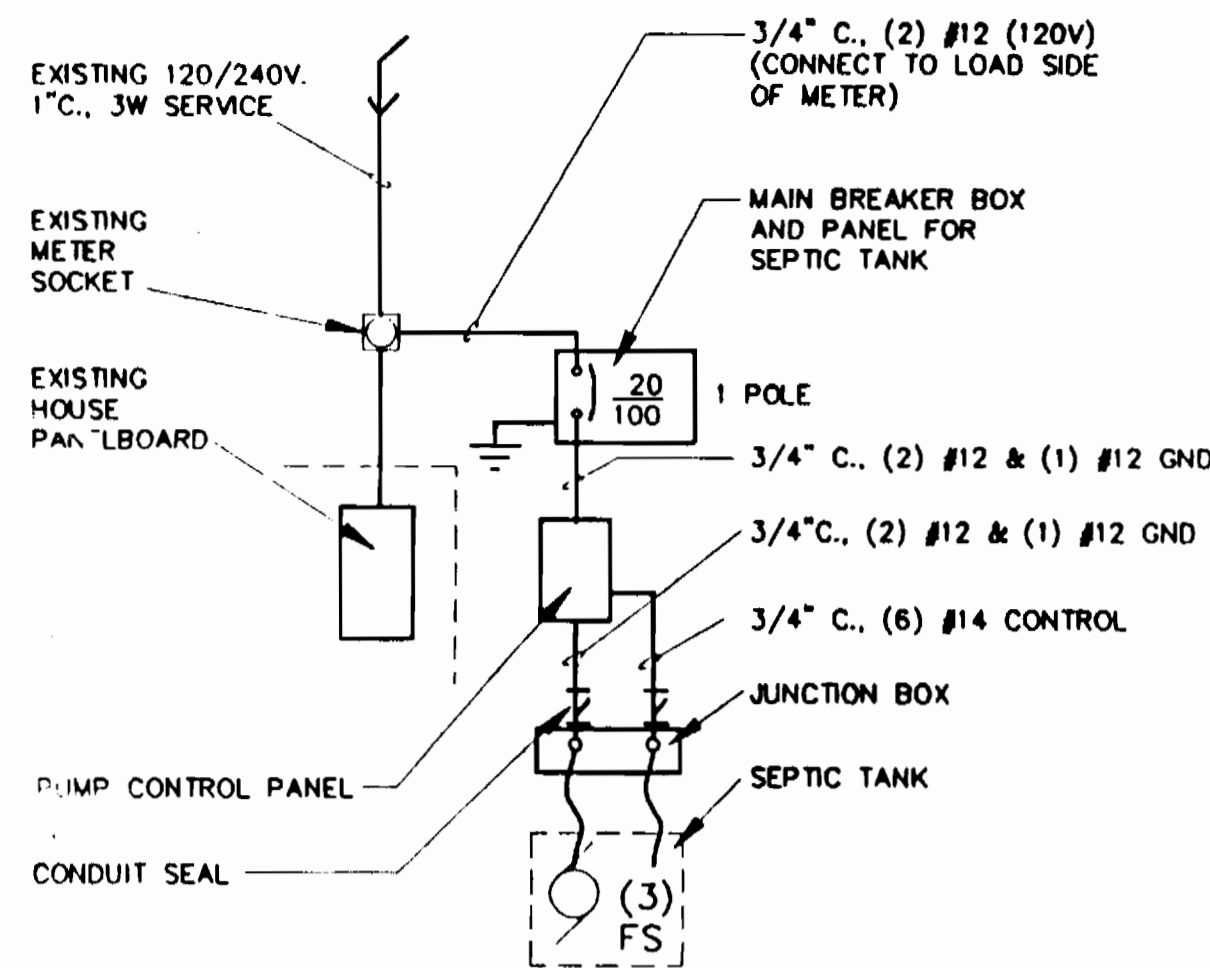
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5

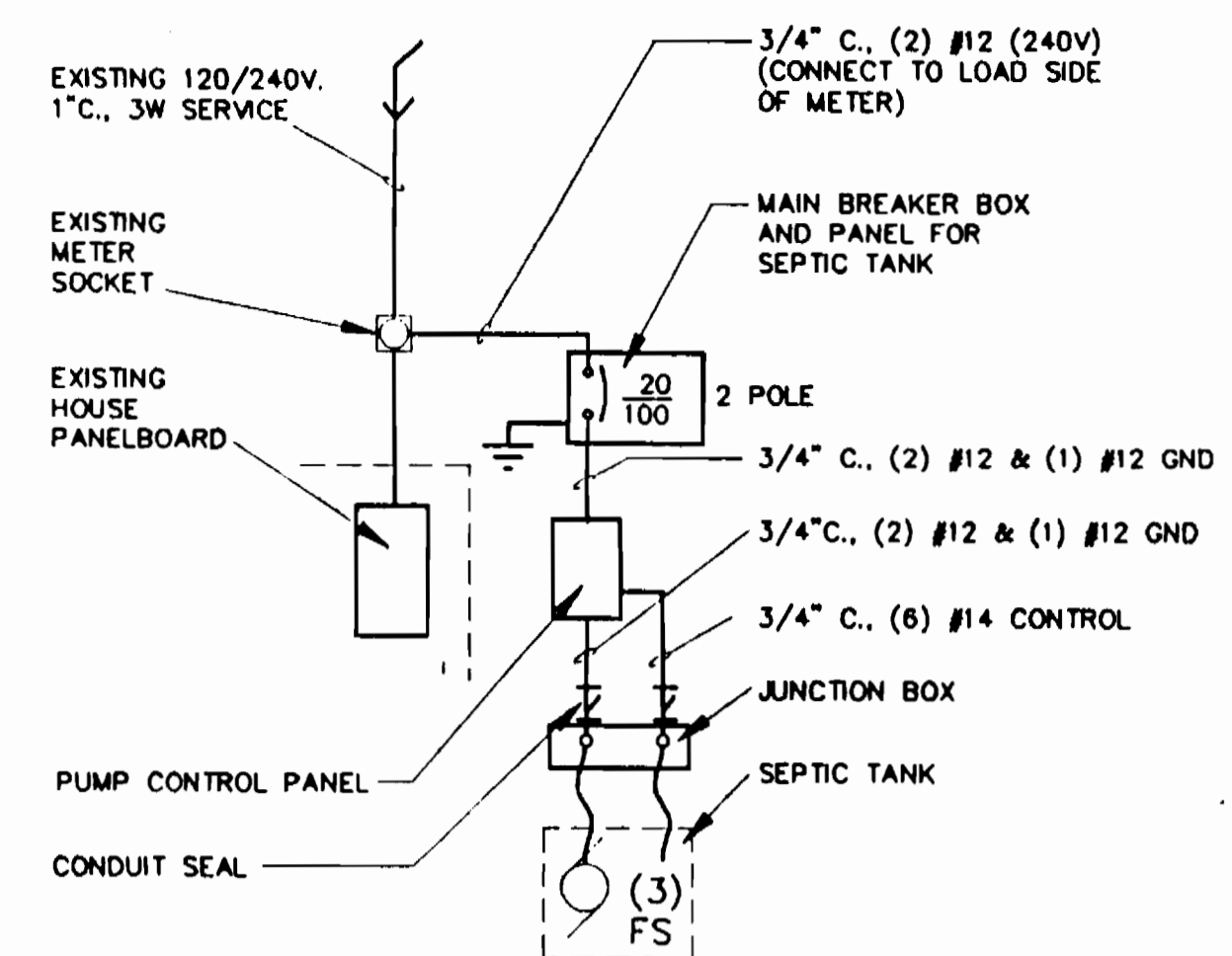
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

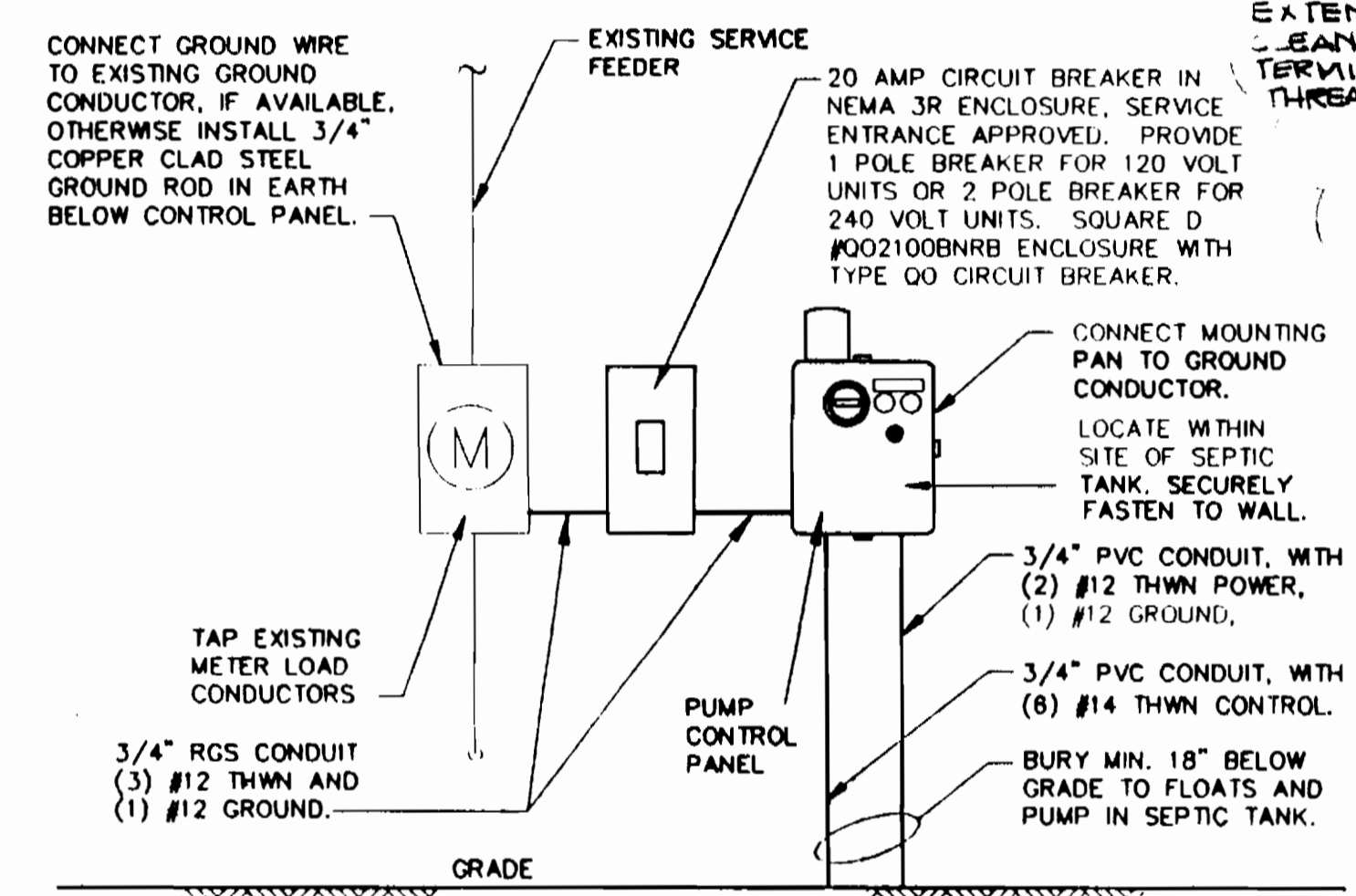
SHEET  
18 OF 54



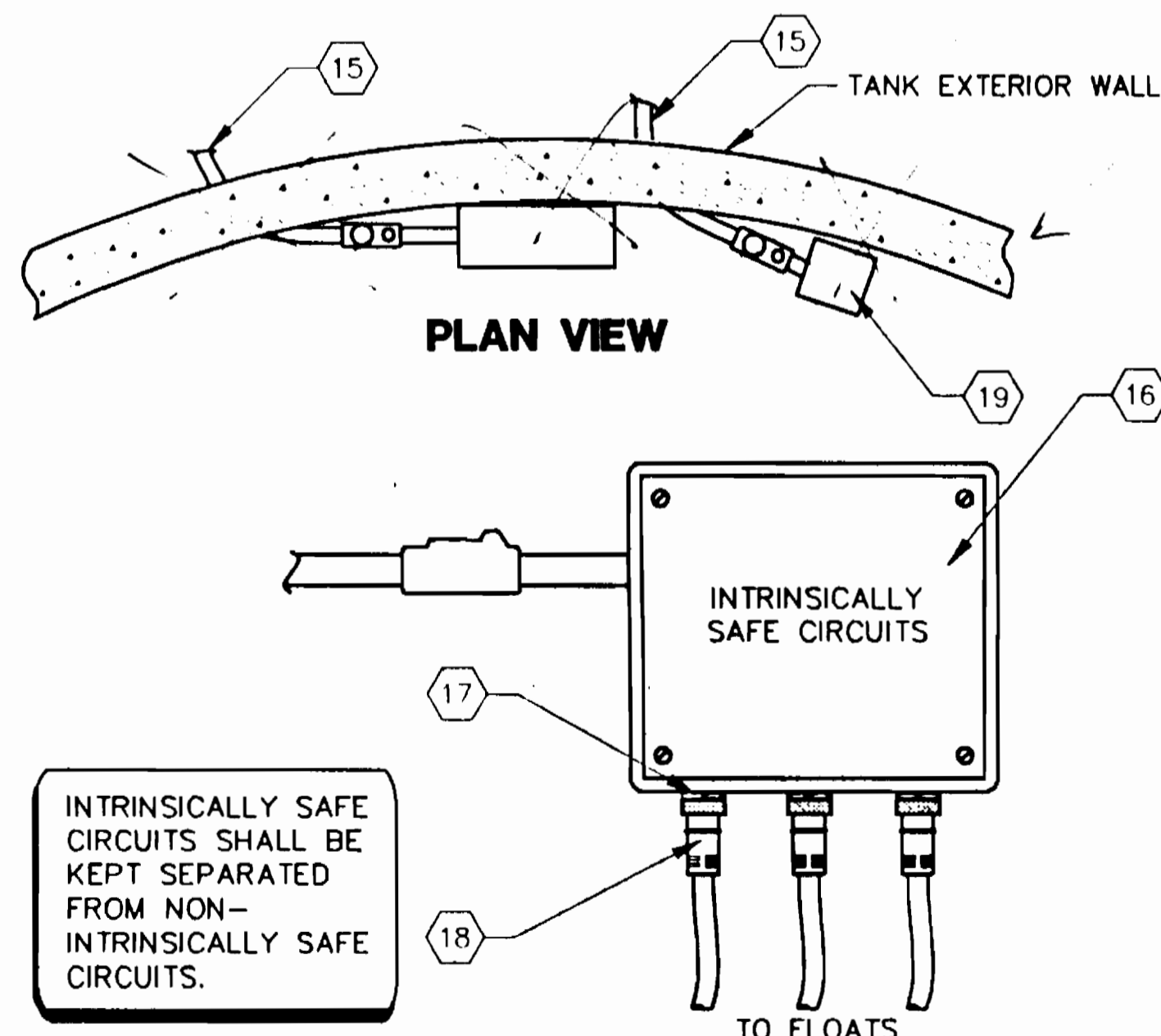
**ONE LINE DIAGRAM**  
FOR 1/2 HP PUMPS



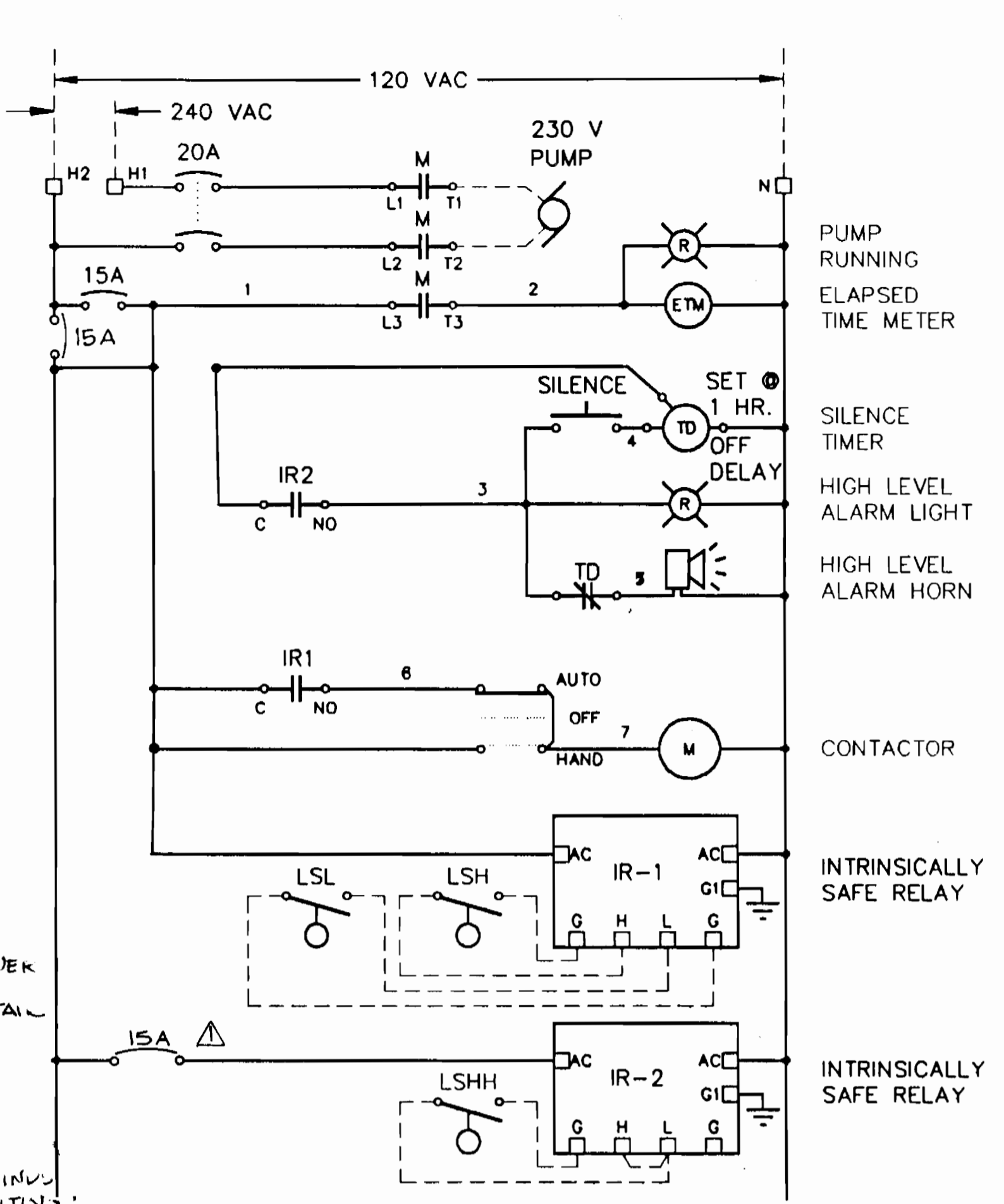
**ONE LINE DIAGRAM**  
FOR 1-1/2 HP PUMPS



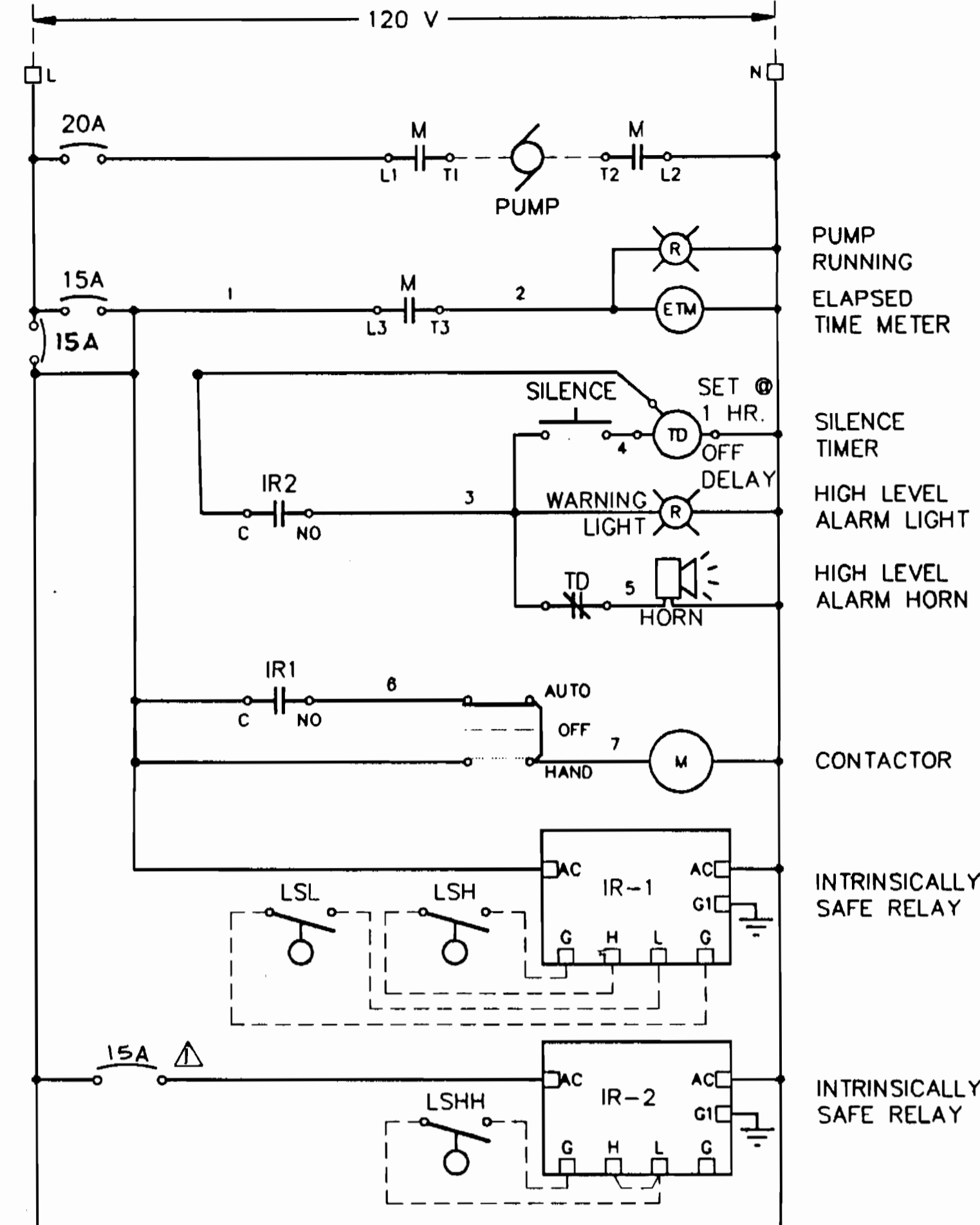
**PUMP ELECTRICAL ARRANGEMENT**  
TYPICAL AT RESIDENCE



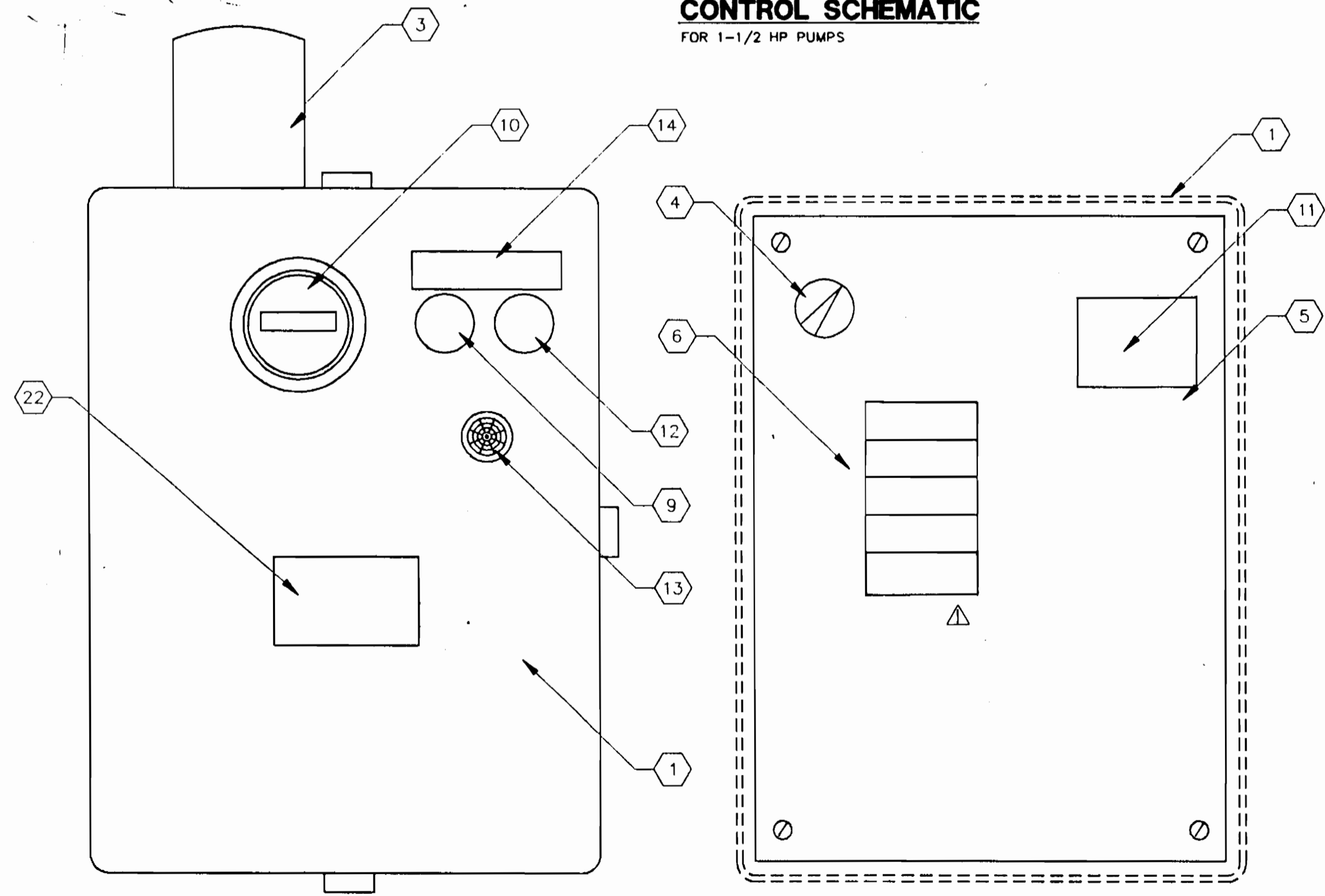
**FLOAT SWITCH JUNCTION BOX DETAIL**



**CONTROL SCHEMATIC**  
FOR 1-1/2 HP PUMPS



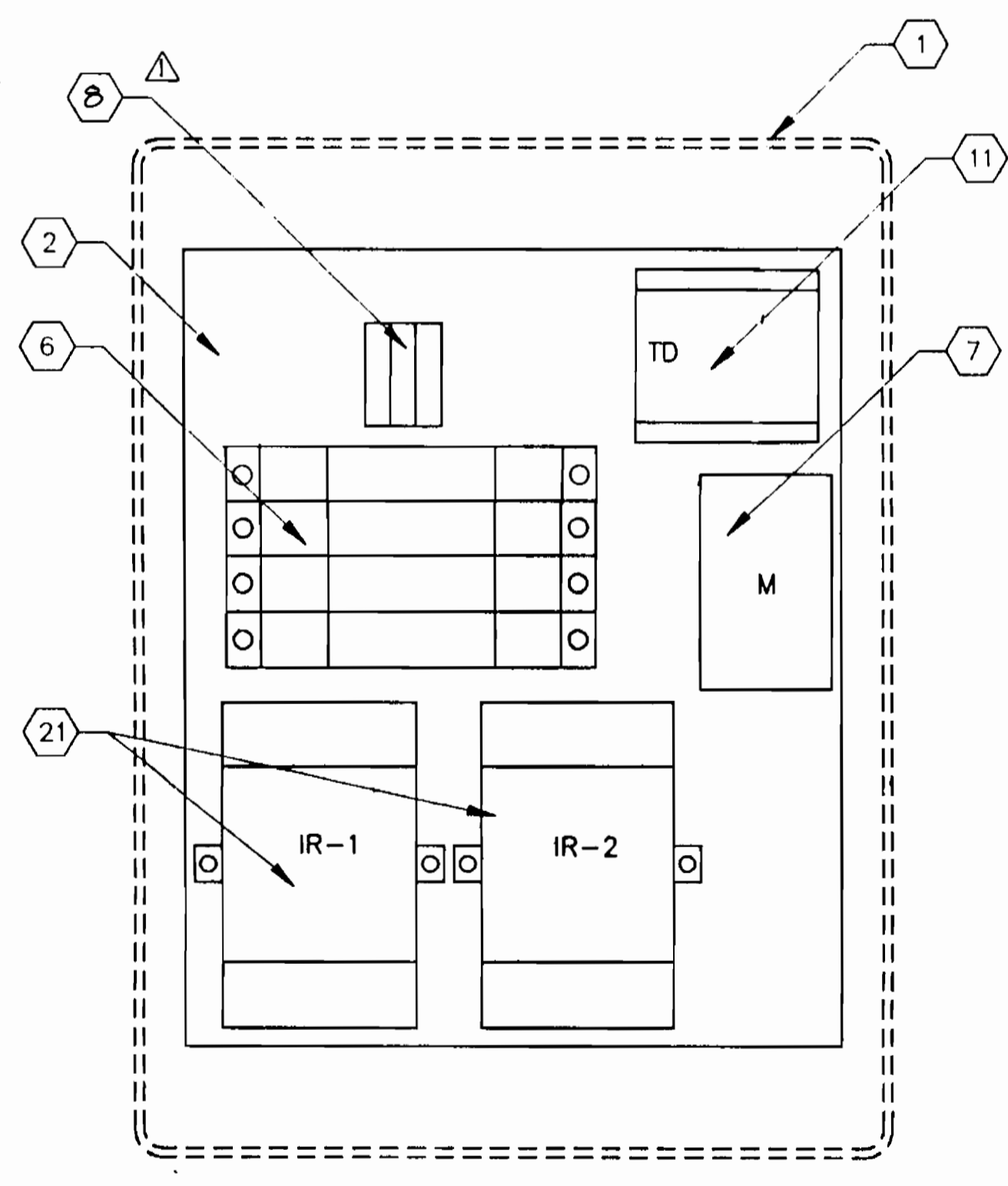
**CONTROL SCHEMATIC**  
FOR 1/2 HP PUMPS



**EXTERIOR**

**DEAD FRONT PANEL**

**PUMP CONTROL PANEL**



**INTERIOR**

- NOTES**
- 1 POLYESTER REINFORCED FIBERGLASS ENCLOSURE, NEMA 4X, 14"X10"X7.5", HOFFMAN CAT. #A-14107JFOQR, OR EQUAL.
  - 2 MOUNTING PAN, ALUMINUM, .08" THICK, PROTECTED BY PLASTIC FILM, 10.75"H X 8.88"W, HOFFMAN CAT. #A-12P10AL, OR EQUAL.
  - 3 MINI-ALARM LIGHT, RED ACRYLIC LENS, 120VAC WITH BUSH GASKET AND FLASHER BUTTON, OHIO ELECTRIC CONTROL, INC. #ML-2, OR EQUAL.
  - 4 MAINTAINED SELECTOR SWITCH, WITH SPOT CONTACT BLOCKS, 120 VOLT, SQUARE D #ZB B03, OR EQUAL. MOUNT IN ITEM NO. 5.
  - 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 WIRING 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.
  - 6 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 QO115 AND QO215, OR EQUAL. PROVIDE SPACER BETWEEN CIRCUIT BREAKERS AND MOUNTING PAN SO THAT BREAKER OPERATOR PROTRUDES THROUGH DEAD FRONT PANEL.
  - 7 MOTOR CONTACTOR, IEC TYPE, 4 POLE, 18 AMP, 120VAC COIL, SQUARE D #LC1 D18 00G6, OR EQUAL.
  - 8 PROVIDE MIN. (3) BOX LUG TYPE TERMINALS COMPLETE WITH MOUNTING RAIL, END BARRIER, AND LABELS, SQUARE D TYPE GK, OR EQUAL.
  - 9 PILOT LIGHT, 120V/6V TRANSFORMER TYPE, NEMA 4X, RED, SQUARE D #ZB2 BV3, OR EQUAL.
  - 10 ELAPSED TIME METER, 2-1/2" ROUND, 120 VOLT, RESETTABLE, 6 DIGIT DIGITAL READOUT TO INCLUDE TENTHS OF HOURS, GRAMER #350 H&T, OR EQUAL. FABRICATE NEOPRENE GASKET AND INSTALL BETWEEN METER FLANGE AND ENCLOSURE FACE.
  - 11 UNIVERSAL TIME DELAY RELAY, DPDT, 120 VOLT, CONFIGURED FOR OFF DELAY SERVICE, SSAC #TRU3 WITH MATCHING 11-PIN SOCKET, OR EQUAL.
  - 12 PUSHBUTTON, 120 VOLT, MOMENTARY, WITH N.O. CONTACT BLOCK, SQUARE D #ZB2 B22/ZB2 B2101, OR EQUAL.
  - 13 ALARM HORN, 120 VOLT, WEATHERPROOF, 95 dB @ 2 FEET, FLOYD BELL #AW-09-2010, OR EQUAL.
  - 14 3/4"x3.5" WHITE ON BLACK ENGRAVED PHENOLIC NAMEPLATE TO READ:  

PUMP RUNNING	HORN
SILENCE	SILENCE

 WITH LETTERING CENTERED OVER PILOT LIGHT AND PUSHBUTTON.
  - 15 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.
  - 16 CORROSION RESISTANT NEMA 4 JUNCTION BOX, AS PROVIDED BY MEYERS.
  - 17 CORROSION RESISTANT, 2-PIN RECEPTACLE TO MATCH FLOAT SWITCH COUPLER. FLOAT SWITCH MANUFACTURER SHALL FURNISH. CROUSE-HINDS, MINI-LINE, OR EQUAL.
  - 18 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.
  - 19 HAZARDOUS AREA RECEPTACLE, 30A, 120V, 3W, CLASS I, GROUP D, DIVISION 1, FACTORY SEALED, WITH MATCHING PLUG, CROUSE-HINDS, OR EQUAL, CES2214, CPH7XXX, VERIFY PLUG CABLE O.D. FOR SEAL FAILURE CIRCUIT.
  - 20 NOT USED
  - 21 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.
  - 22 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 313-4990  
 DO NOT OPEN PANEL

3357 5/19

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert M. Beninger* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Beninger* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Beninger* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

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



DES: VRC			
DRN: EGM			
CHK: AJP			
DATE: 12-93			
BY NO.	REVISION	DATE	
	ADD CIRCUIT BREAKER (HIGH WATER ALARM)	11-94	
	CREATE PHASED PLANS	9-94	
	FINAL SUBMITTAL	8-94	

**SEPTIC TANK ELECTRICAL DETAILS**

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

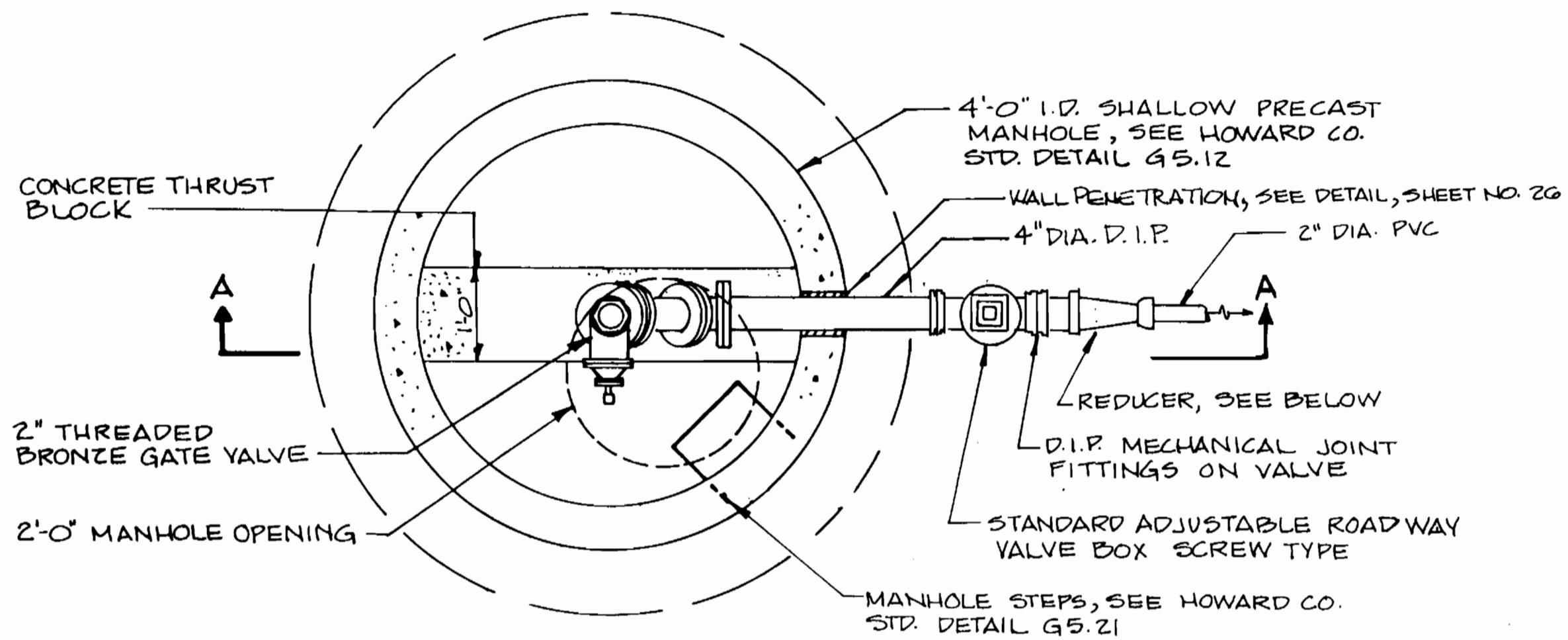
ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

CONTRACT NO. 50-5351

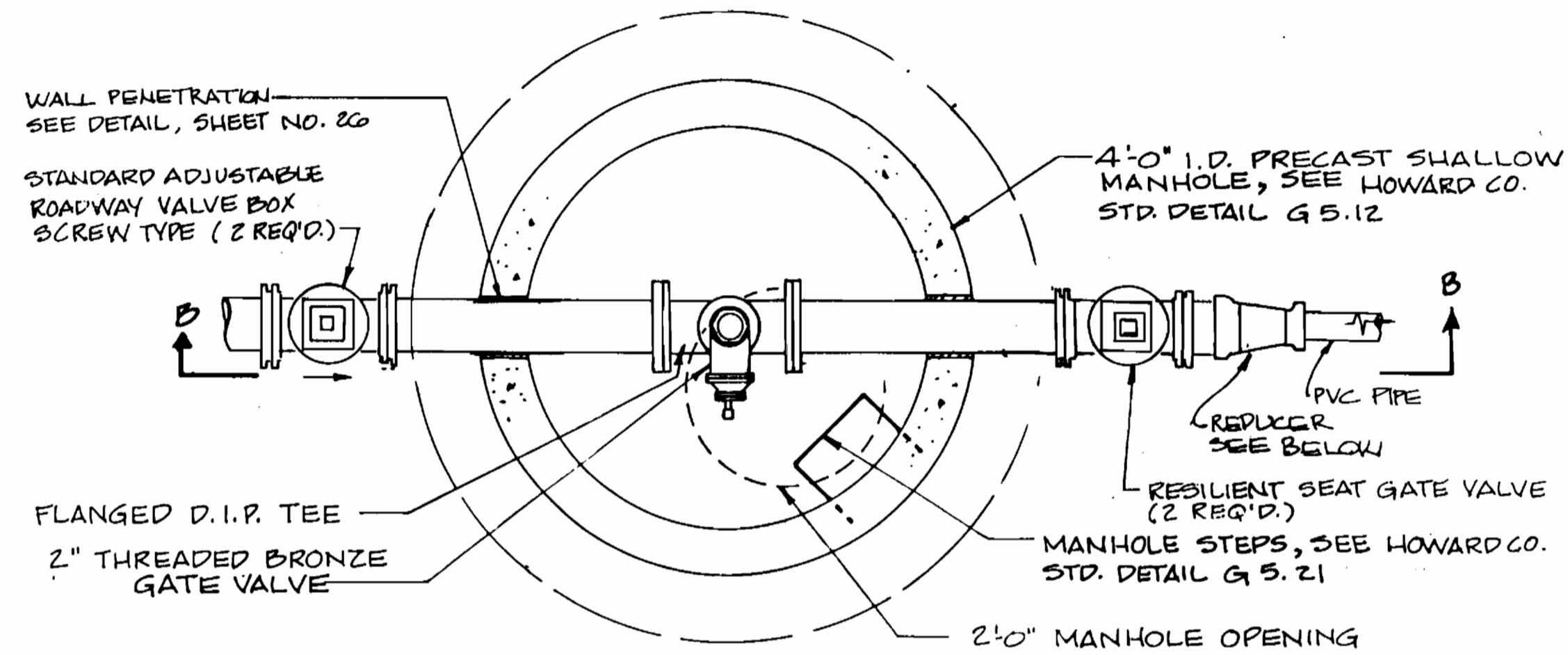
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

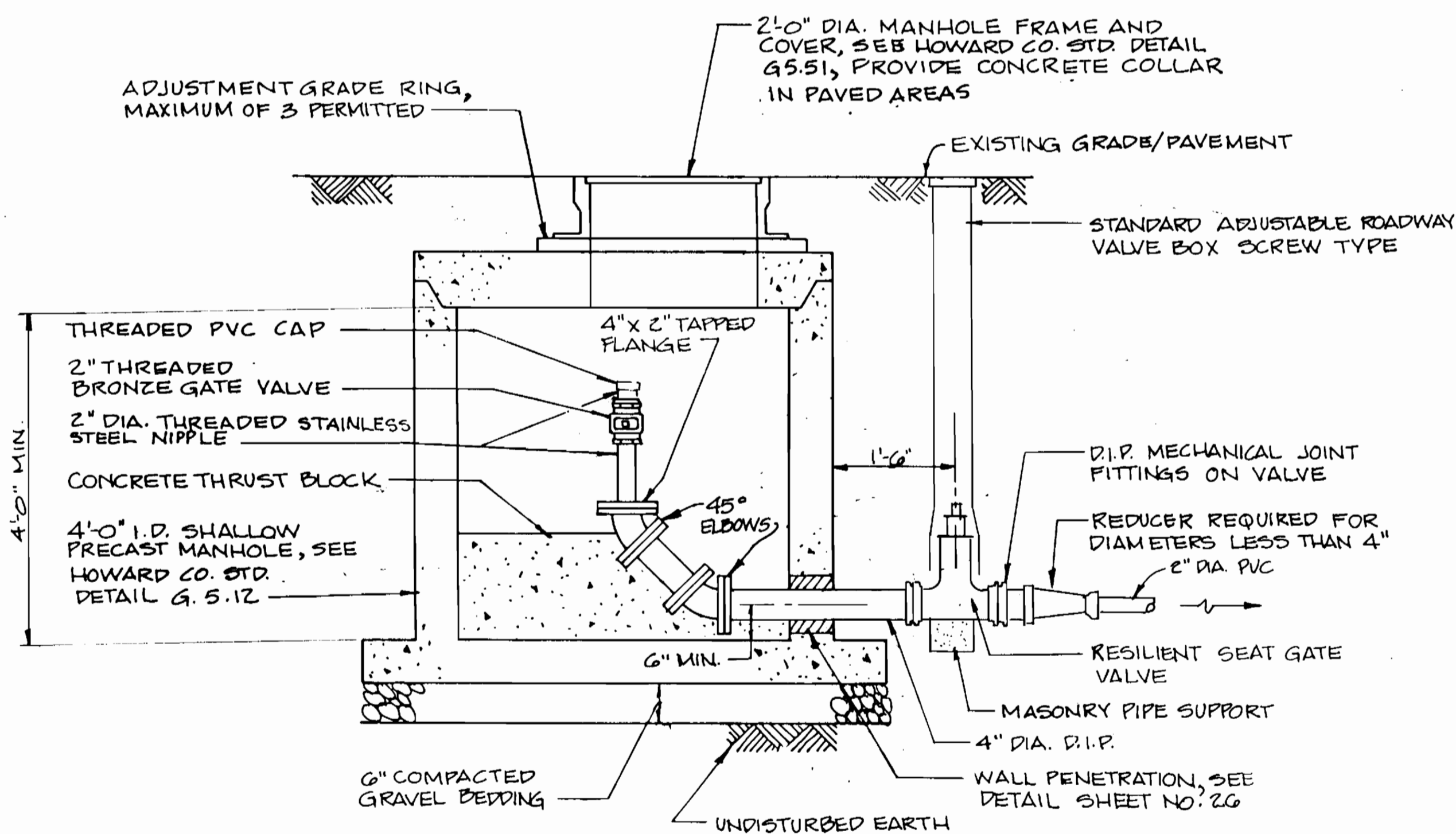
SHEET 17 OF 54



PLAN



PLAN

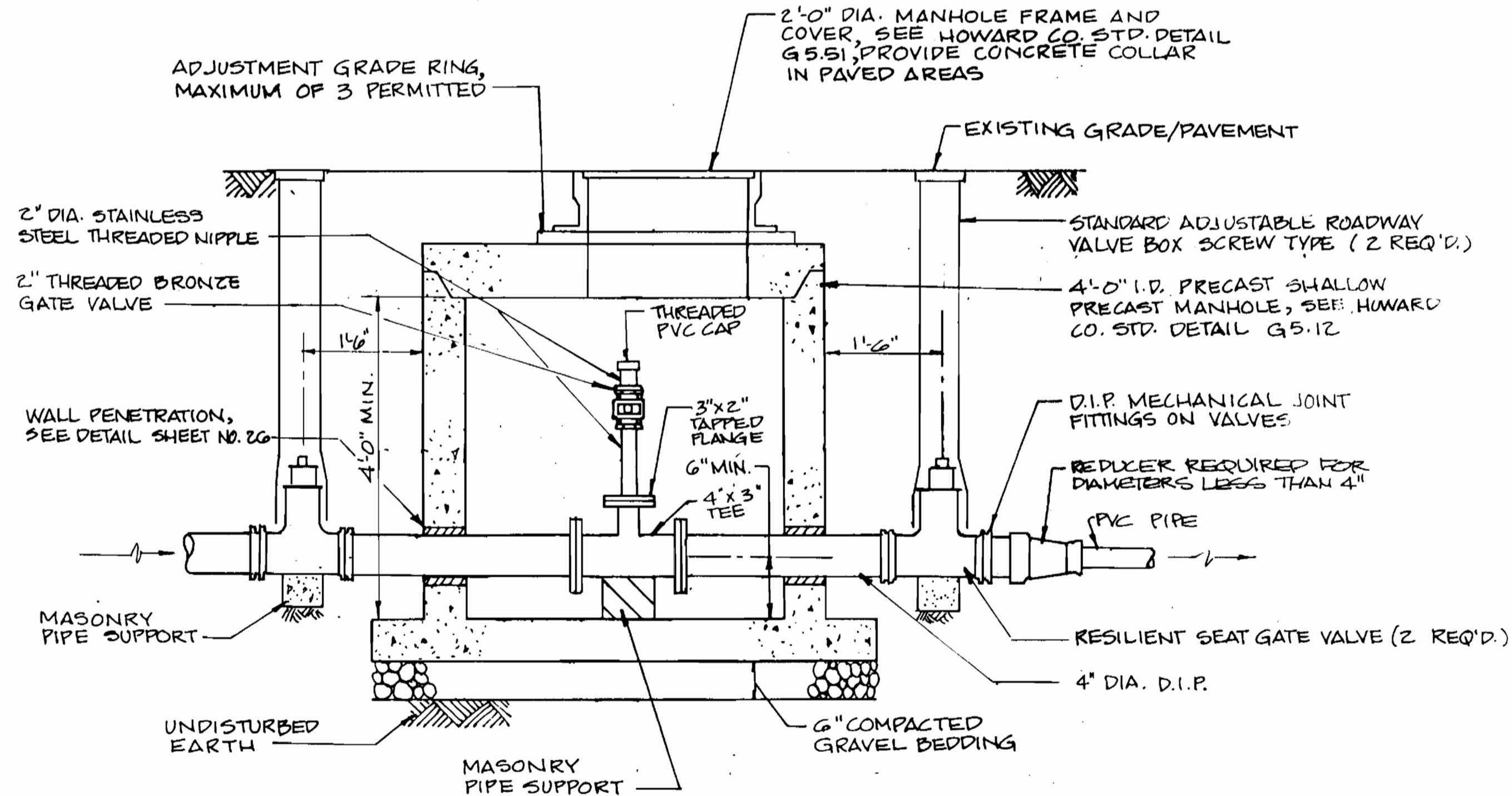


SECTION A-A

TERMINAL PRESSURE CLEANOUT

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

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



SECTION B-B

INLINE PRESSURE CLEANOUT

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

ALL PIPING, FITTINGS, AND VALVES IN THE MANHOLE, EXCLUDING THE CLEANOUT RISER SHALL BE 4 INCH DIA. DUCTILE IRON.

3357 s/20 Ashleigh Knolls

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works DATE: 9-14-94  
 Chief, Bureau of Utilities DATE: 9/26/94  
 Chief, Land Development Division DATE: 9/26/94

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



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

TERMINAL PRESSURE CLEANOUT/  
INLINE PRESSURE CLEANOUT

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

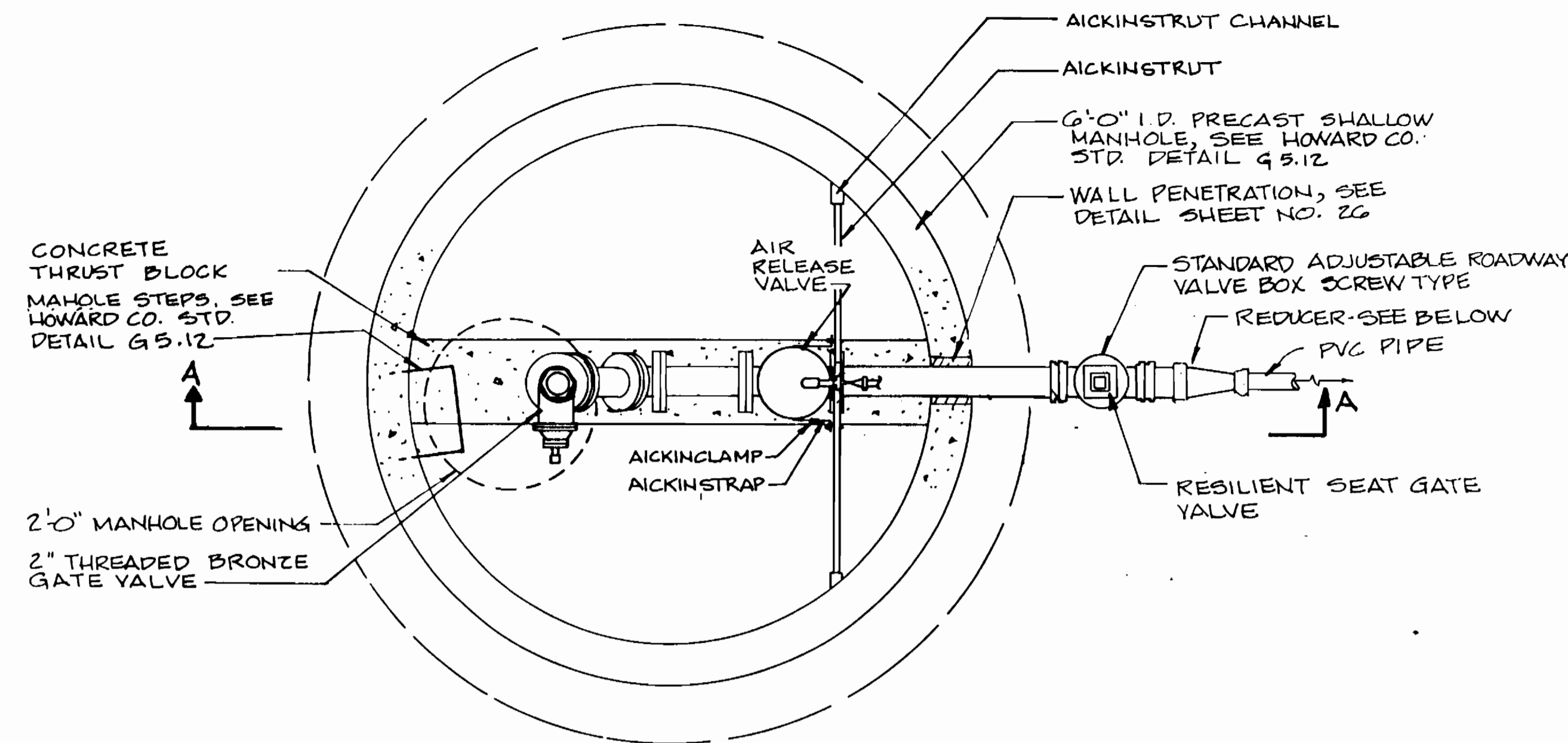
ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

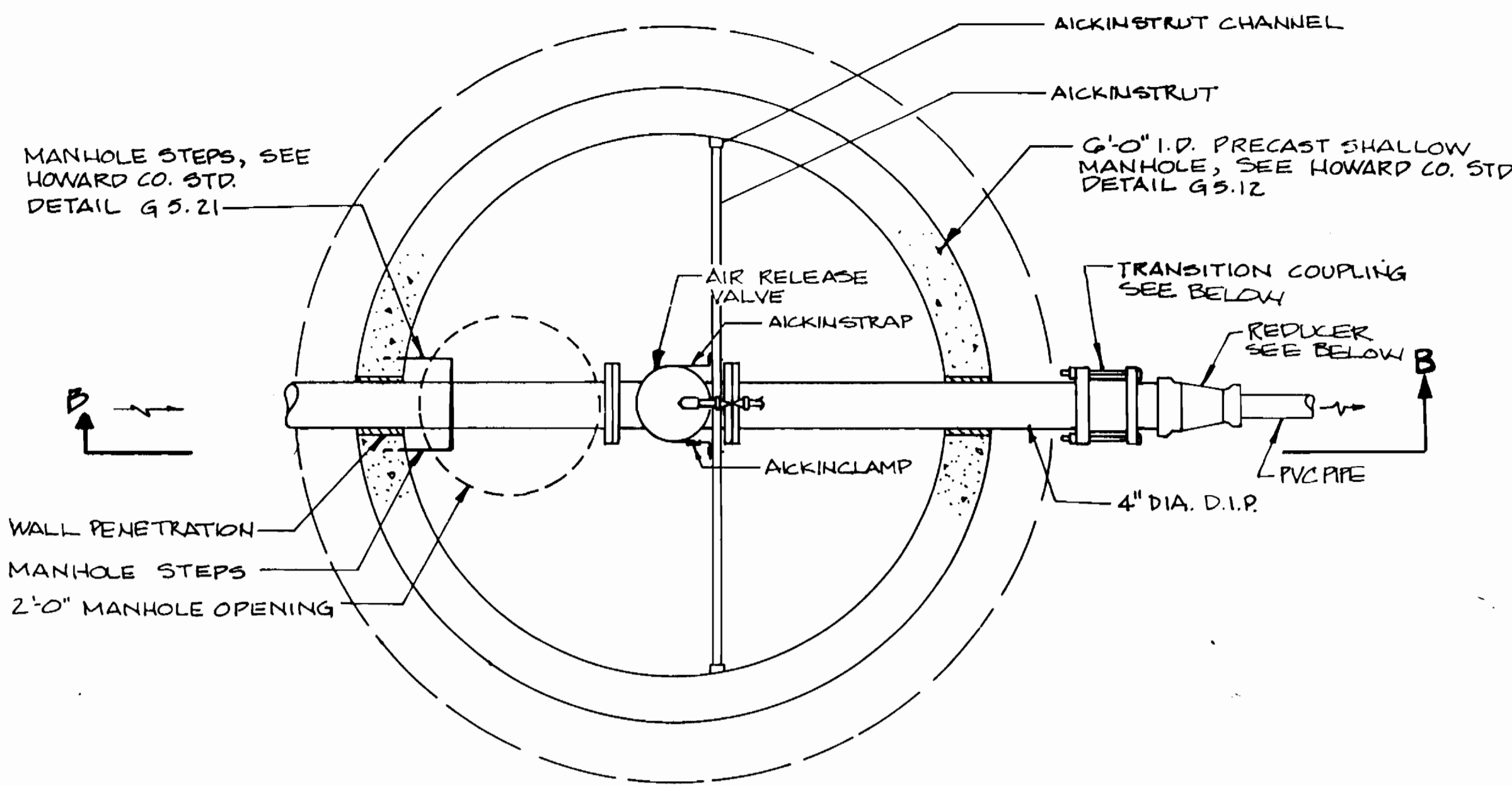
ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

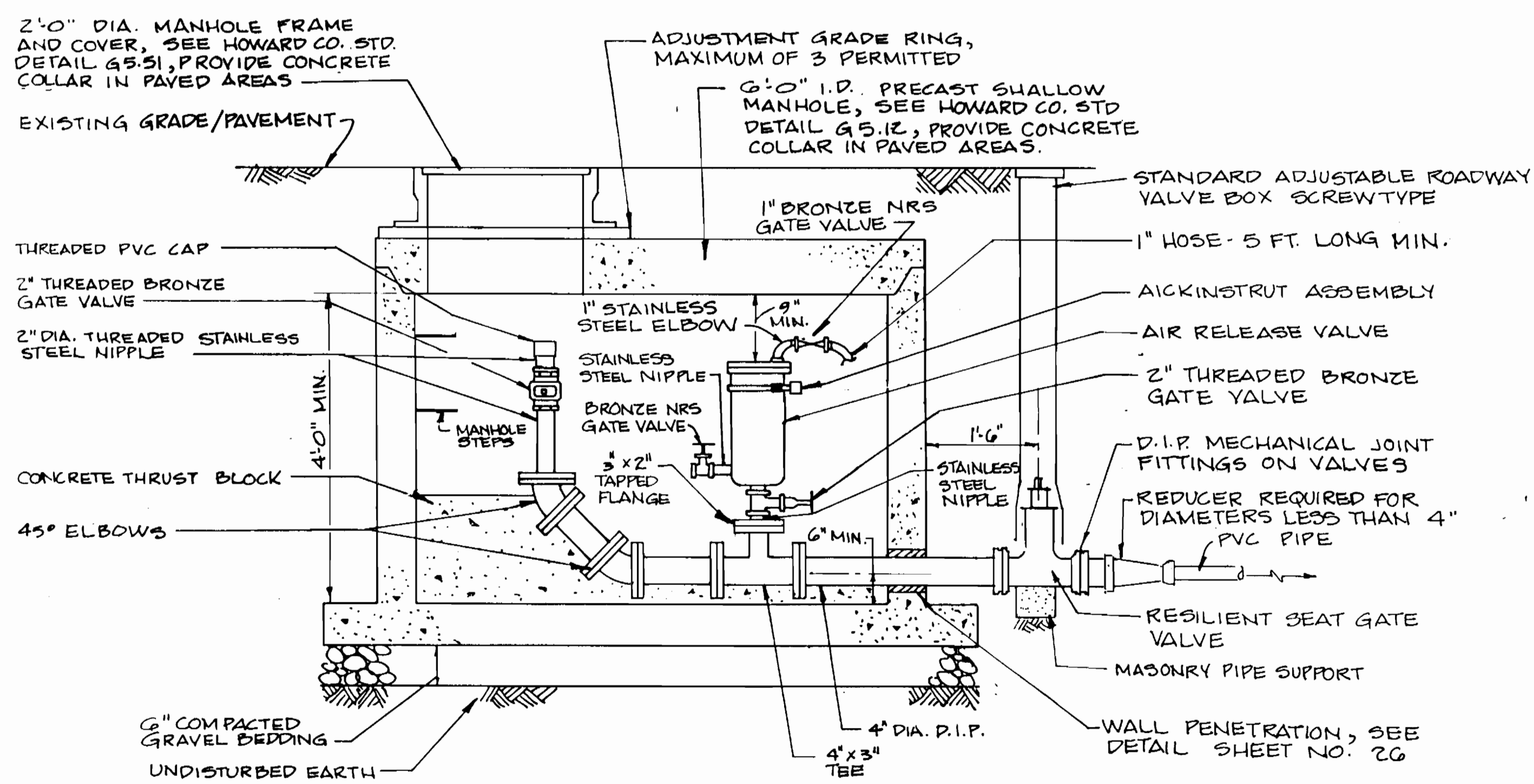
SCALE AS SHOWN  
 SHEET 20 OF 54



PLAN



PLAN

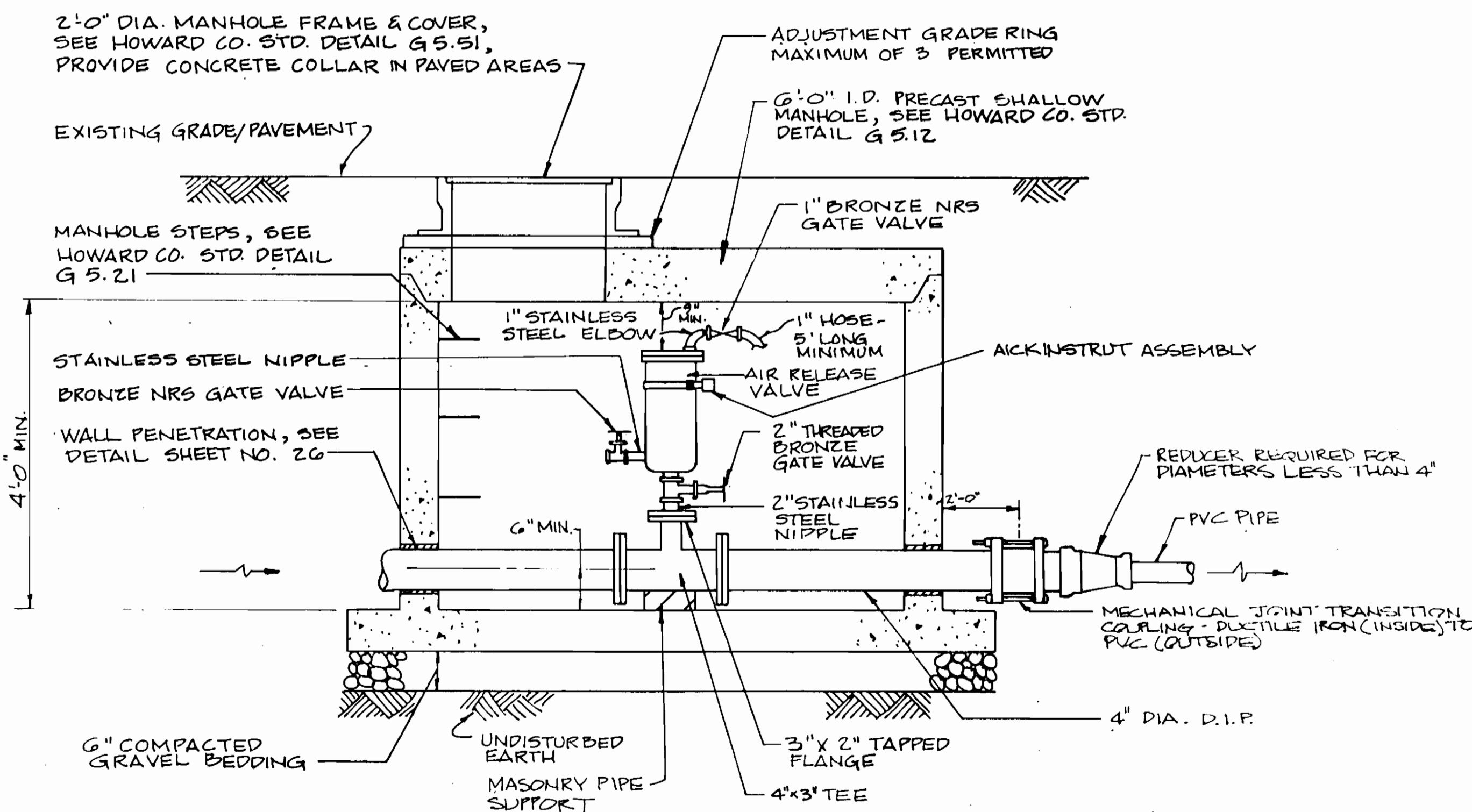


SECTION A-A

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 NIPPLES SHALL BE 4 INCH DIA. DUCTILE IRON.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DAMES & MOORE

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

DES: VRC

DRN: BGV

CHK: JTP

DATE: 12-73

DATE	BY	NO.	REVISION	DATE
9-94			CREATE PHASED PLANS	9-94
8-94			FINAL SUBMITAL	8-94
600' SCALE MAP NO. 40-41 BLOCK NO. 12				

AIR RELEASE VALVE/  
TERMINAL PRESSURE CLEANOUT  
WITH AIR RELEASE VALVE

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5

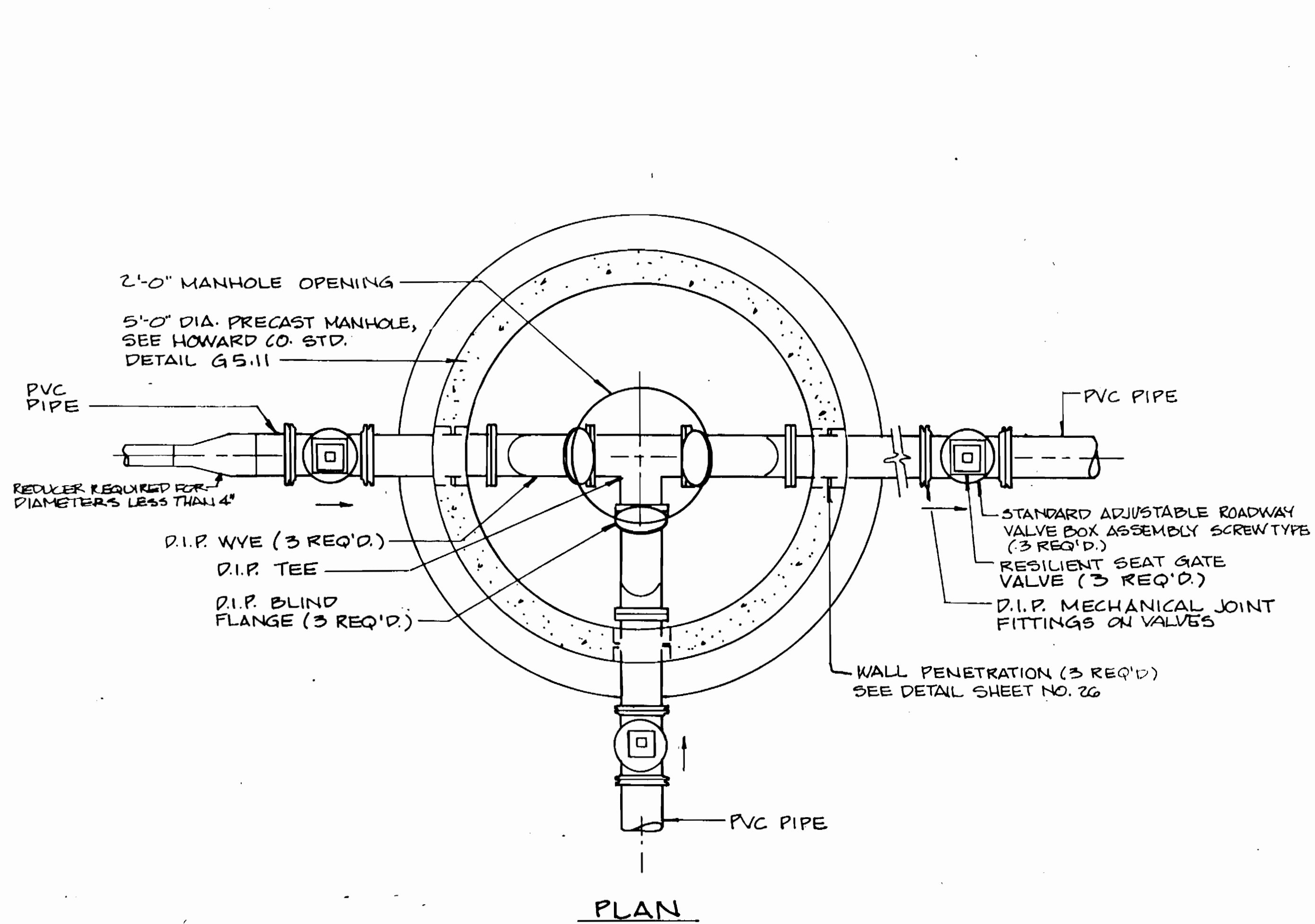
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

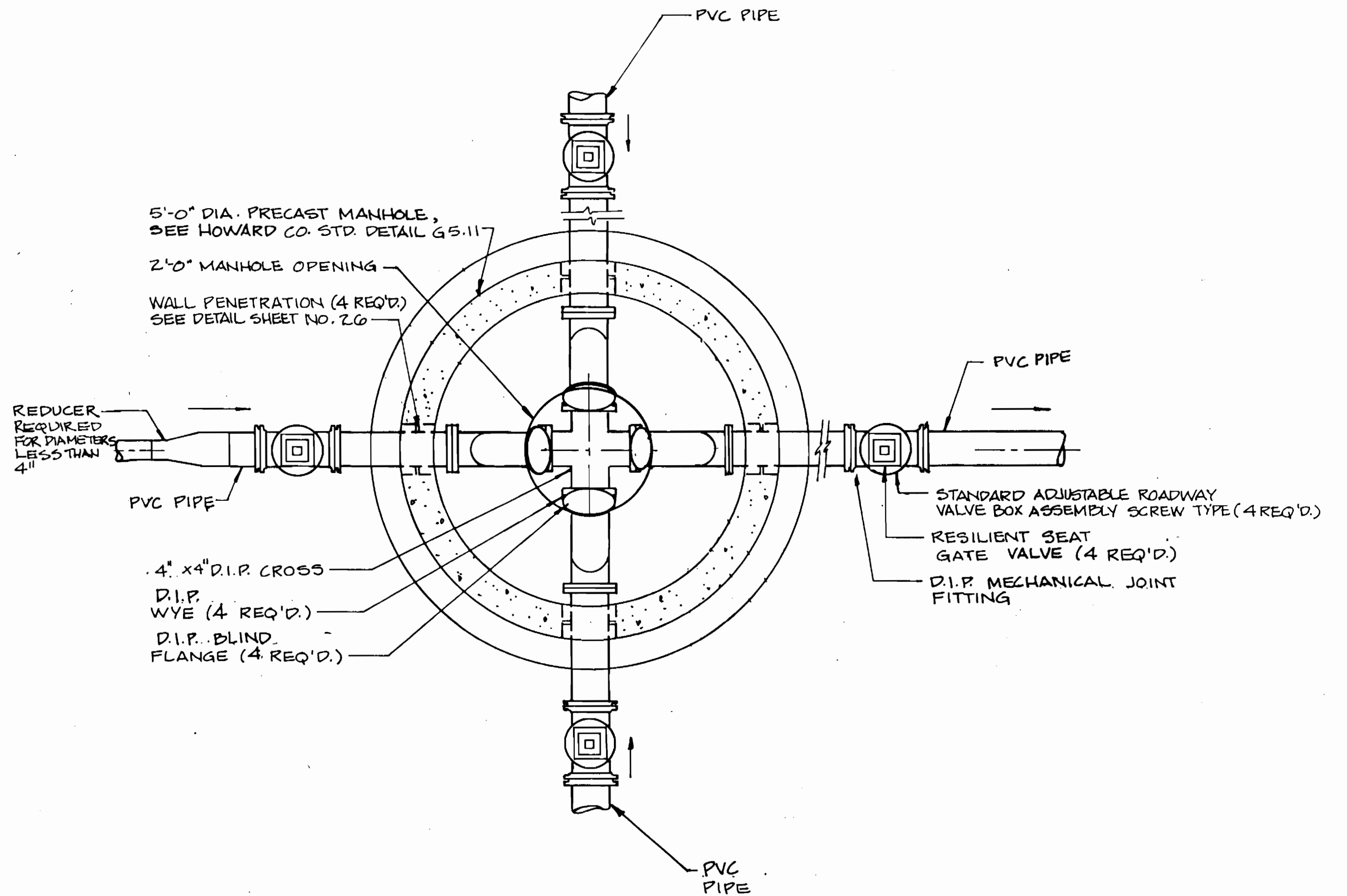
SHEET  
21 OF 54

12/21

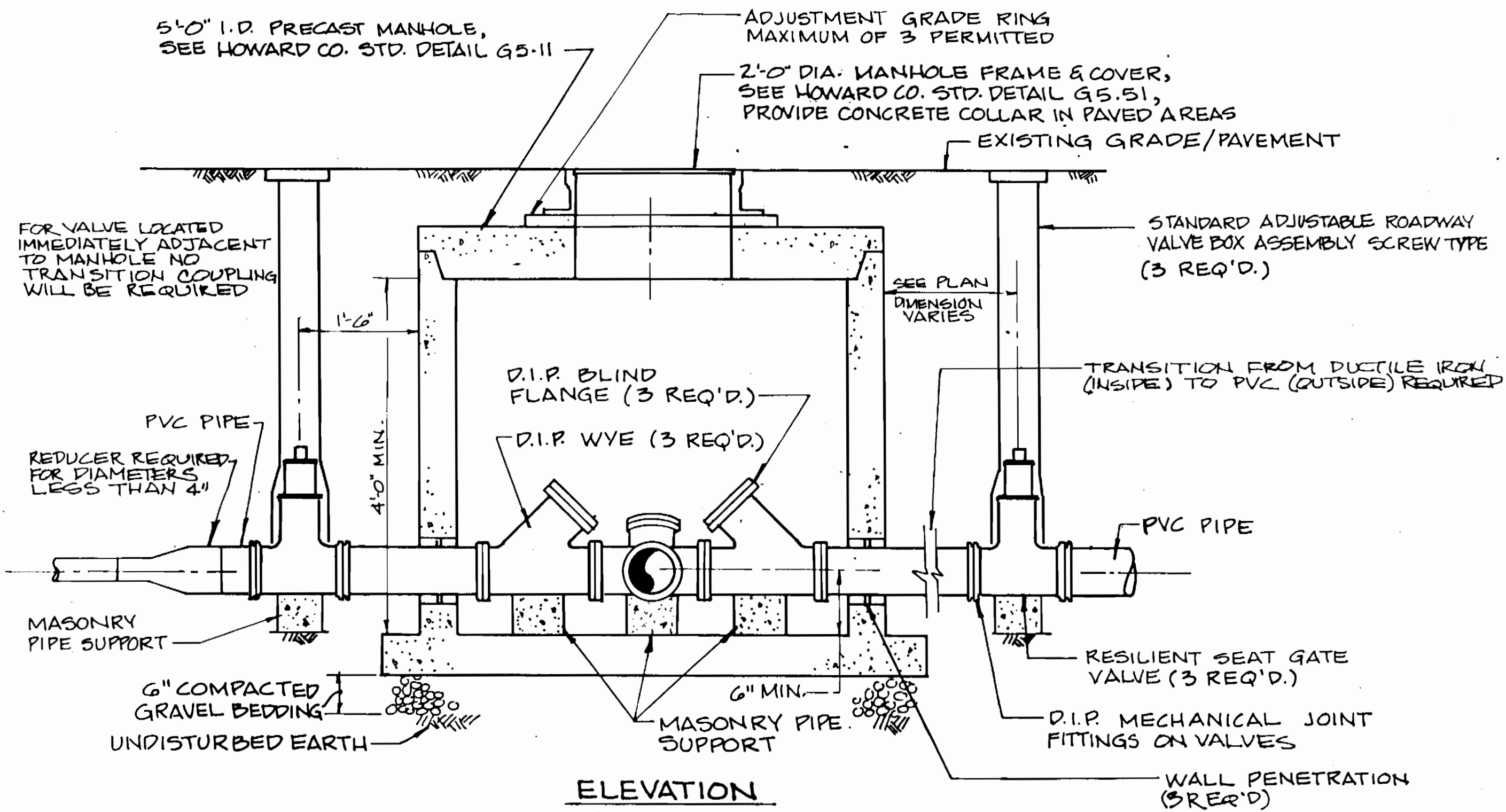
3357



PLAN



PLAN

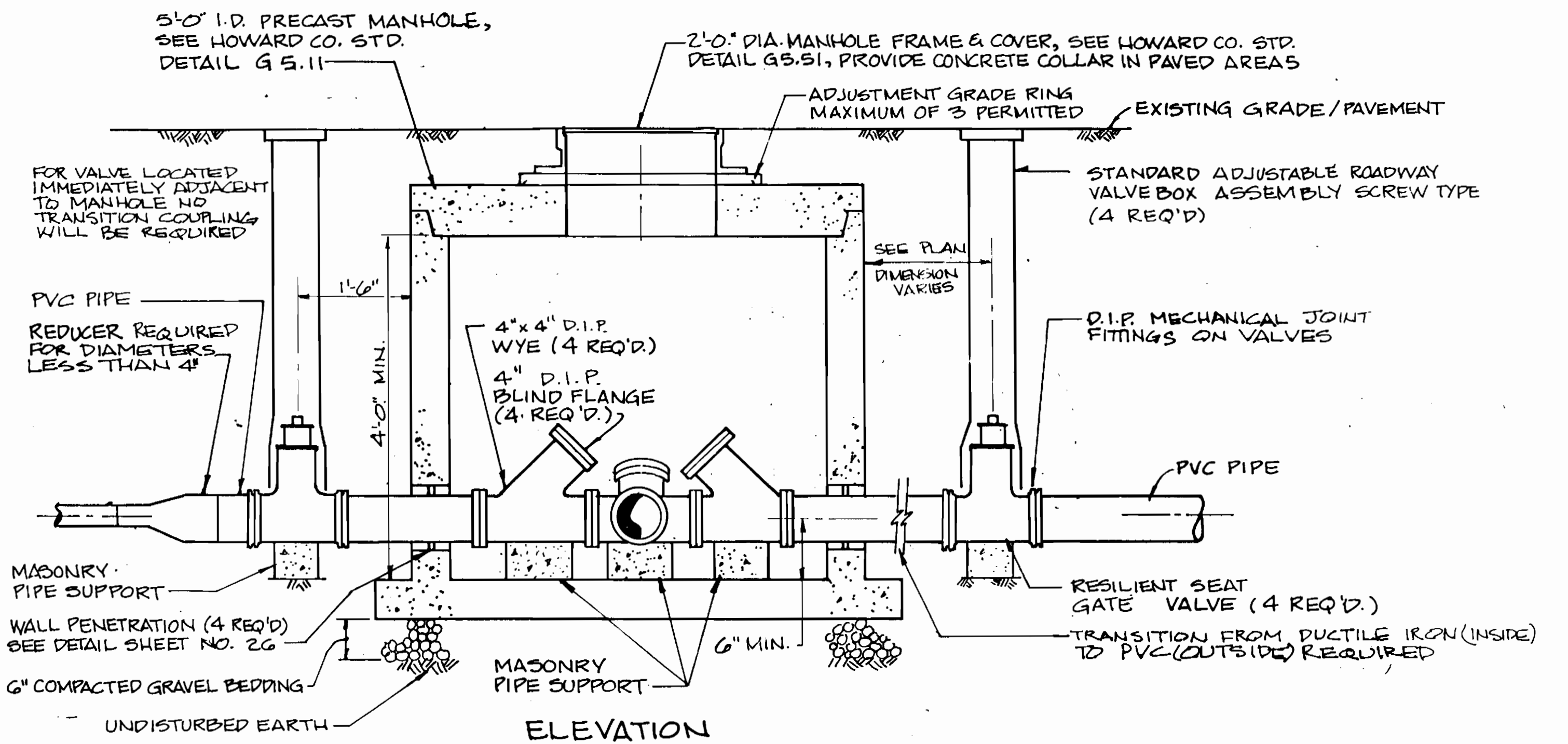


ELEVATION

**IN-LINE 3-WAY VALVE MANHOLE**

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

ALL PIPING AND FITTINGS INSIDE THE MANHOLE SHALL BE 4 INCH DIA. DUCTILE IRON



ELEVATION

**4-WAY VALVE MANHOLE**

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

ALL PIPING AND FITTINGS INSIDE THE MANHOLE SHALL BE 4 INCH DIA. DUCTILE IRON

3357 5/22

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

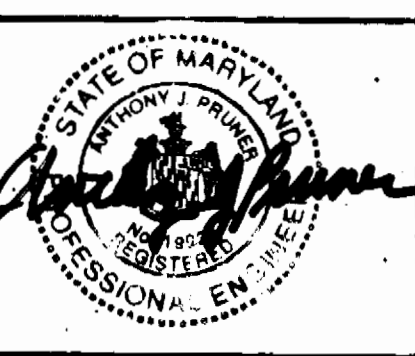
*[Signature]* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



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

**IN-LINE 3-WAY VALVE MANHOLE/  
IN-LINE 4-WAY VALVE MANHOLE**

800' SCALE MAP NO. 42-21 BLOCK NO. 12

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

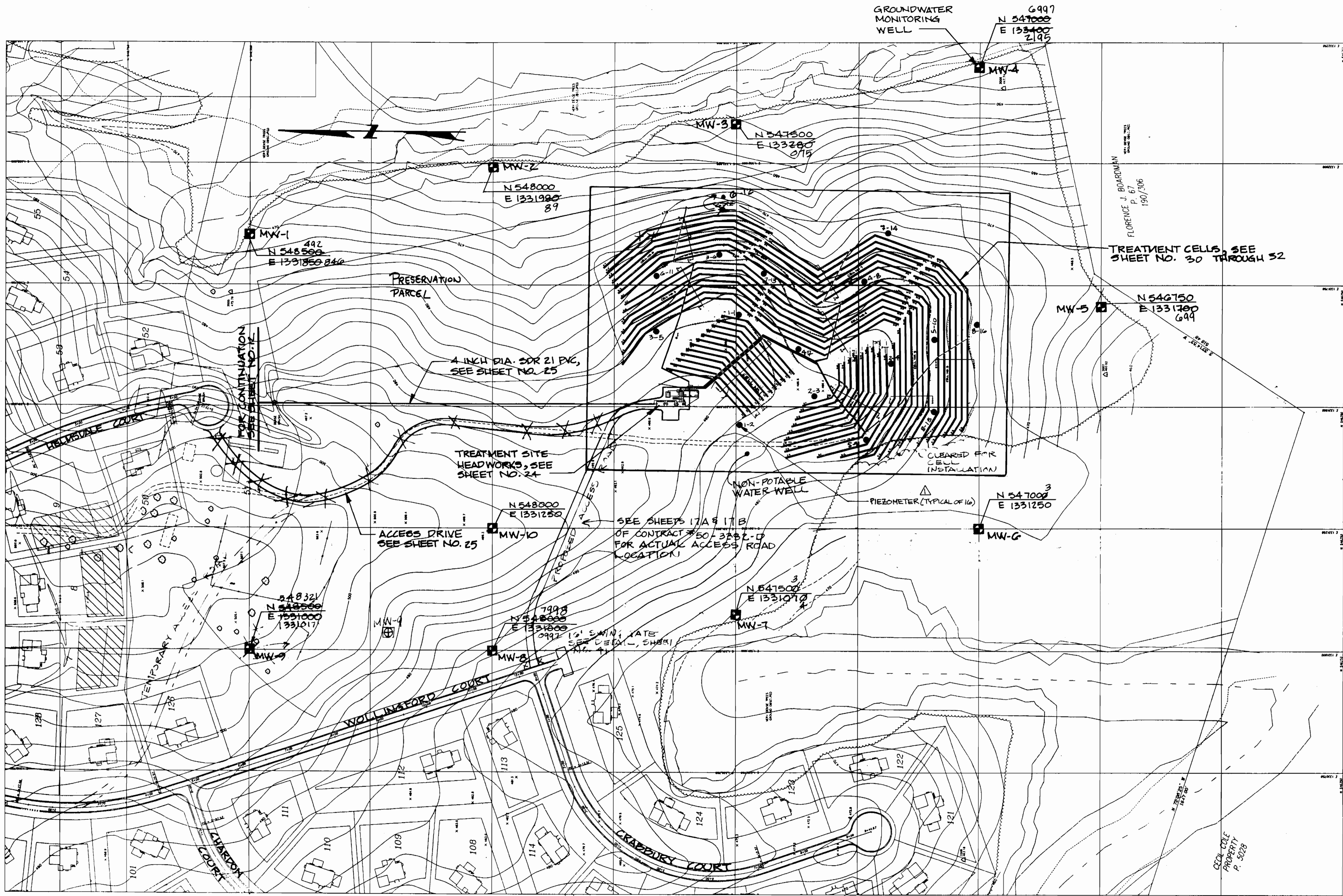
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 22 OF 54





TREATMENT FACILITY KEY SHEET

SCALE: 1"=100'

3357 S/23

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert M. Berry* 9/12/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Berry* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

**DAMES & MOORE**

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



DES: VRC			
DRN: BGM/H	AS BUILT	10/94	
CHK: AJP	ADD PIEZOMETERS	11-94	
DATE: 12-95	CREATE PHASED PLANS	3-94	
	FINAL SUBMITAL	8-94	
BY NO.	REVISION	DATE	

TREATMENT FACILITY  
KEY SHEET

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

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

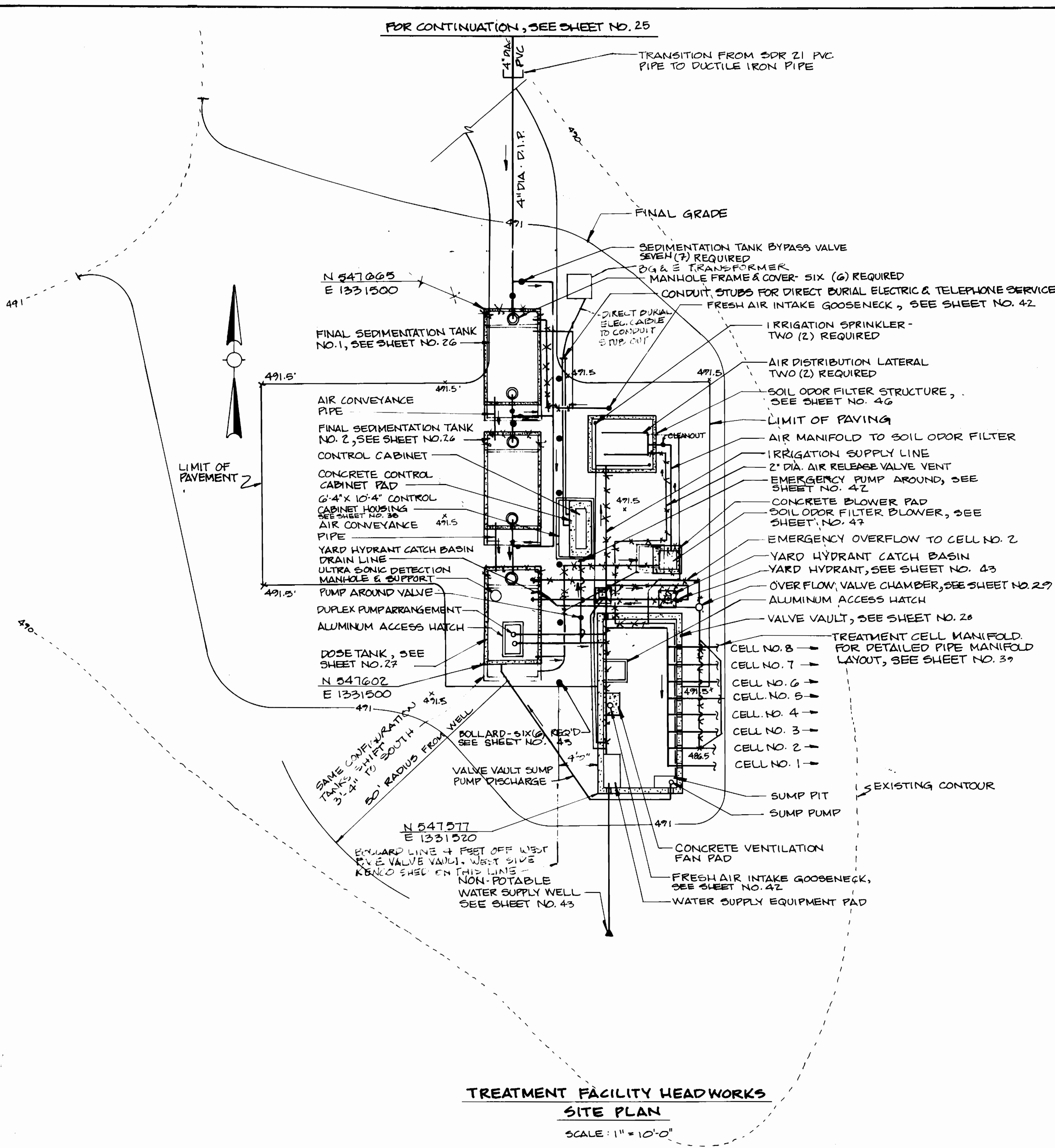
ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
23 OF 54

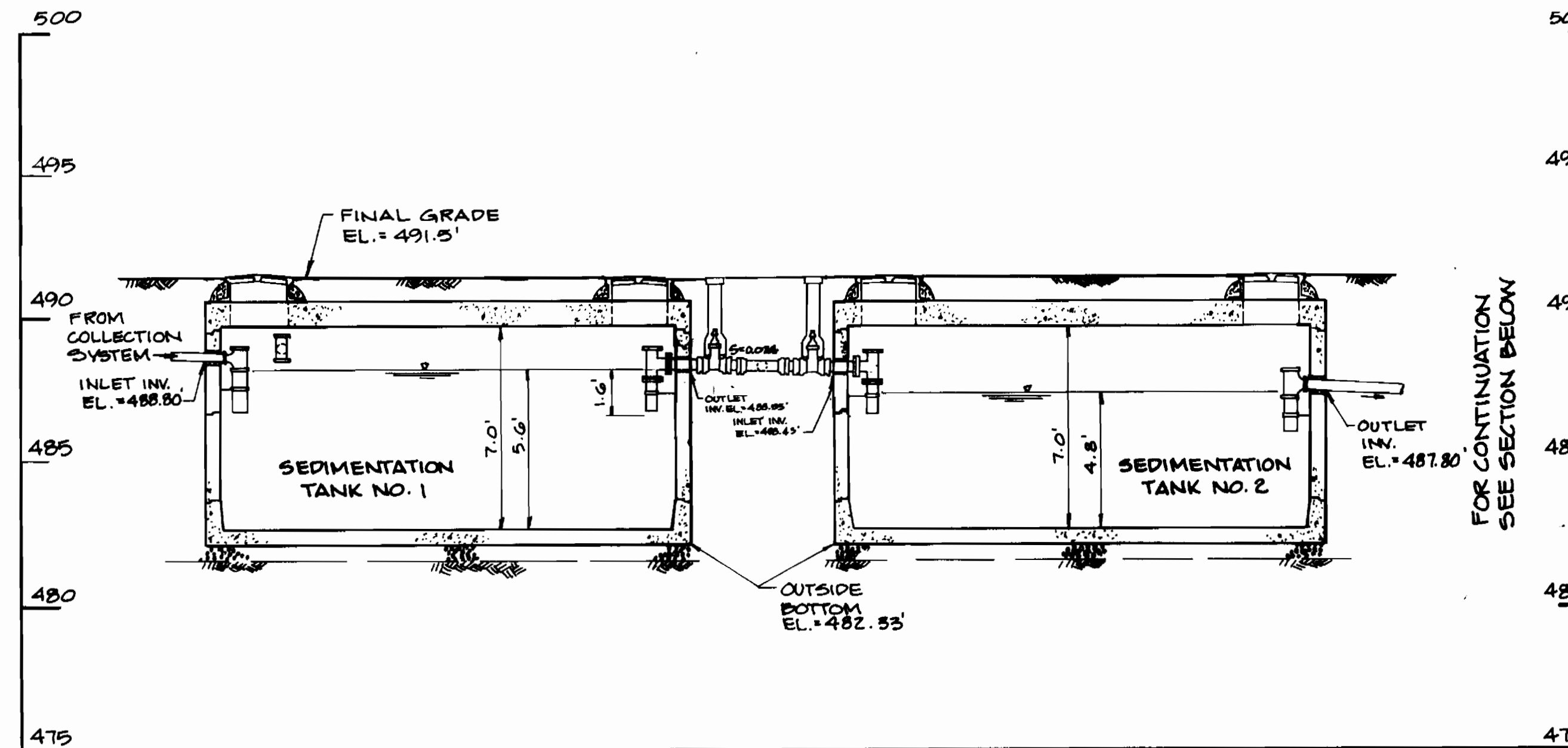
FOR CONTINUATION, SEE SHEET NO. 25



TREATMENT FACILITY HEADWORKS

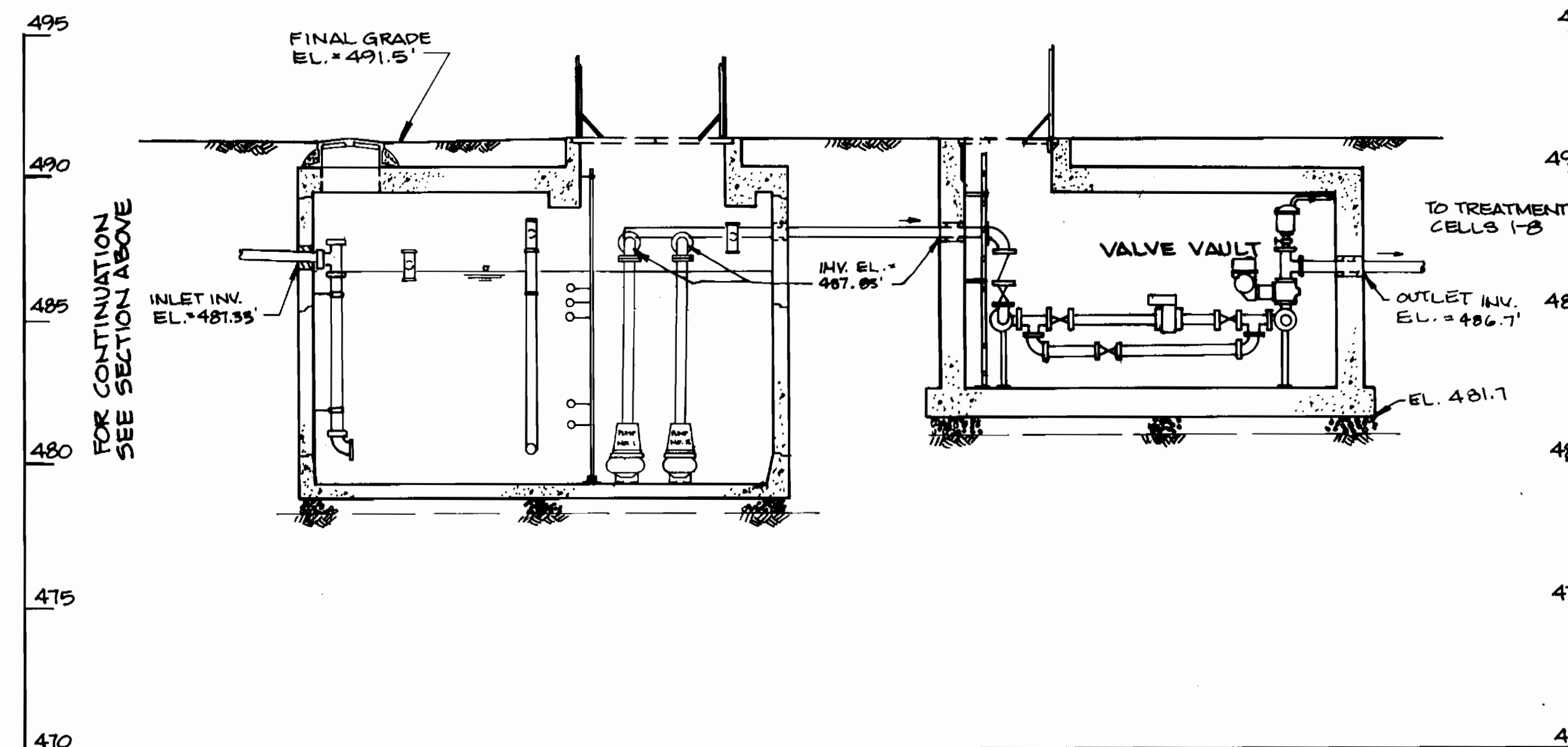
SITE PLAN

SCALE: 1" = 10'-0"



PROFILE - TREATMENT FACILITY HEADWORKS

SCALE: 1" = 4'-0"



PROFILE - TREATMENT FACILITY HEADWORKS

SCALE: 1" = 4'-0"

3357 S/24

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

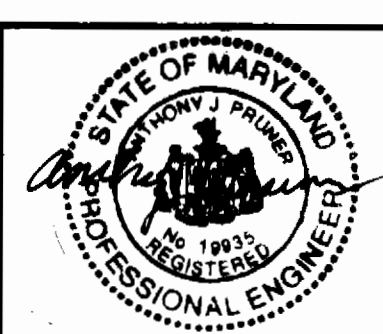
*Robert M. Bevington* 9/14/94  
 DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Bevington* 9/14/94  
 CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Bevington* 9/14/94  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES: VRK			
DRN: BCK			
CHK: AJP	CREATE PHASED PLANS	9-94	
	FINAL SUBMITTAL	8-94	
DATE: 12-95	BY NO.	REVISION	DATE

TREATMENT FACILITY  
 HEADWORKS, SITE PLAN  
 AND CROSS SECTION

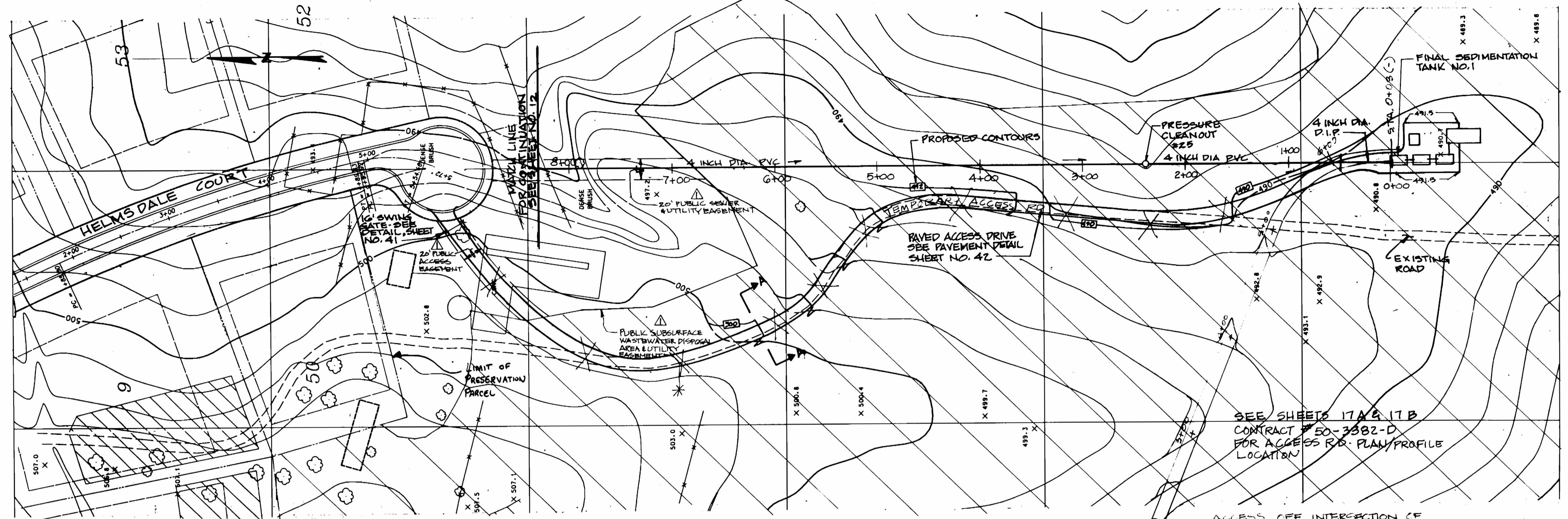
ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

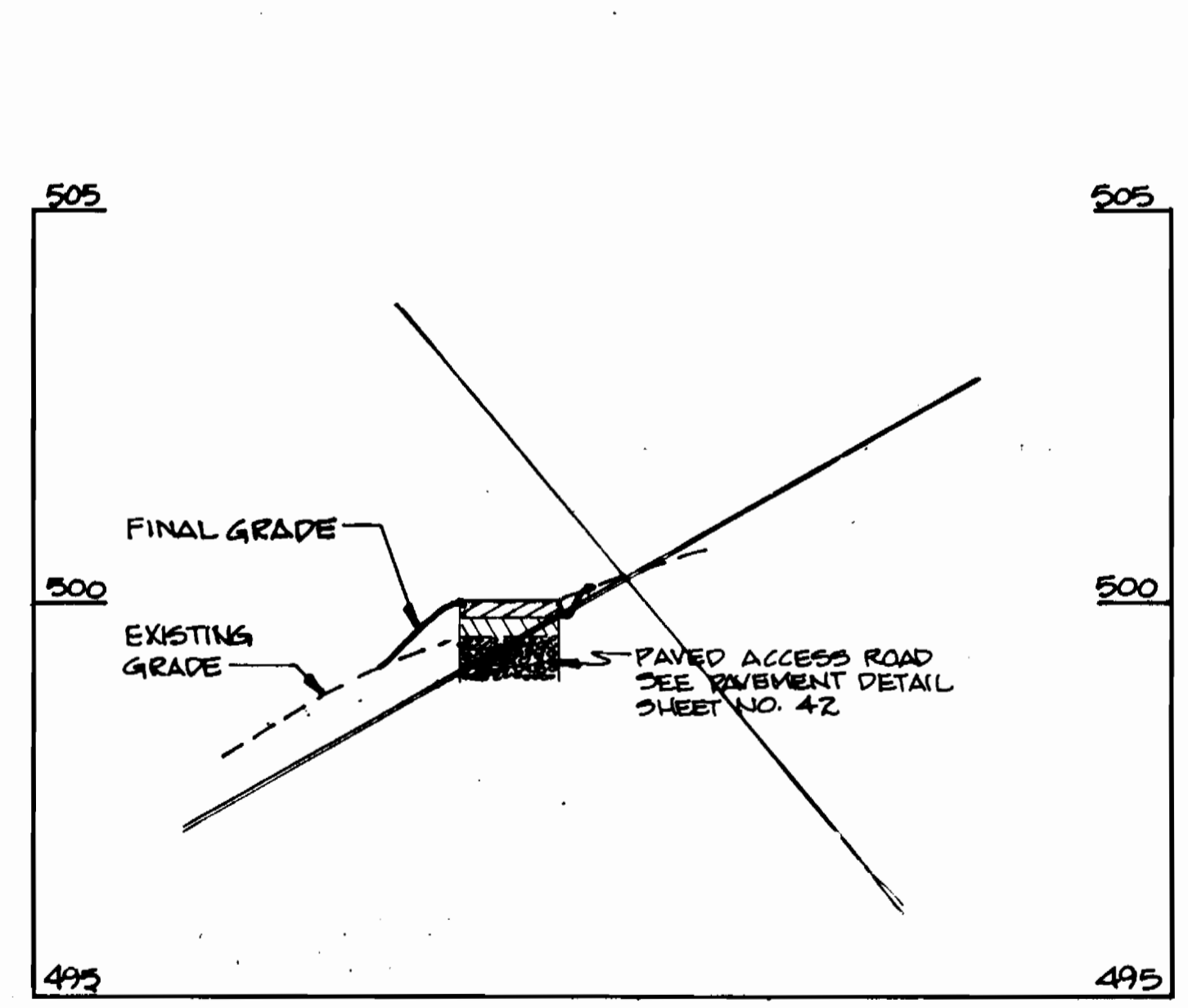
SHEET 23 OF 24



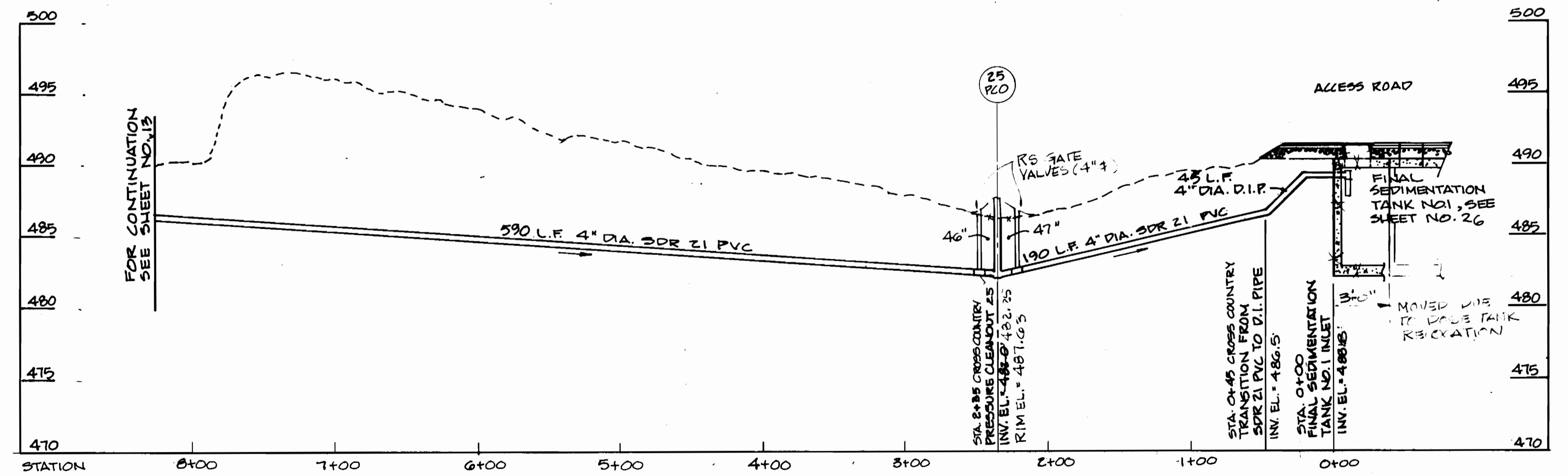
PLAN  
SCALE: 1" = 50'

SEE SHEETS 17A & 17B  
CONTRACT NO. 50-3382-D  
FOR ACCESS RD. PLAN/PROFILE  
LOCATION

ACCESS OFF INTERSECTION OF  
WILLINGFORD & GRABURY COURTS. (SEE SHEET 23)  
NOT YET INSTALLED AS OF 7/31/95



SECTION A-A  
TREATMENT FACILITY ACCESS ROAD  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'



PROFILE  
HELMSDALE COURT TO THE FINAL SEDIMENTATION FACILITY  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'

3357 5/25

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert M. Deane* 9/14/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Deane* 9/26/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Deane* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES:	URC		
DRN:	BGW		
CHK:	ASP		
DATE:	12-93		
BY:	NO.	REVISION	DATE
		AS BUILT	10/95
		ADD EASEMENTS	11-94
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

TREATMENT FACILITY  
ACCESS ROAD AND COLLECTION LINE  
PLAN AND PROFILE

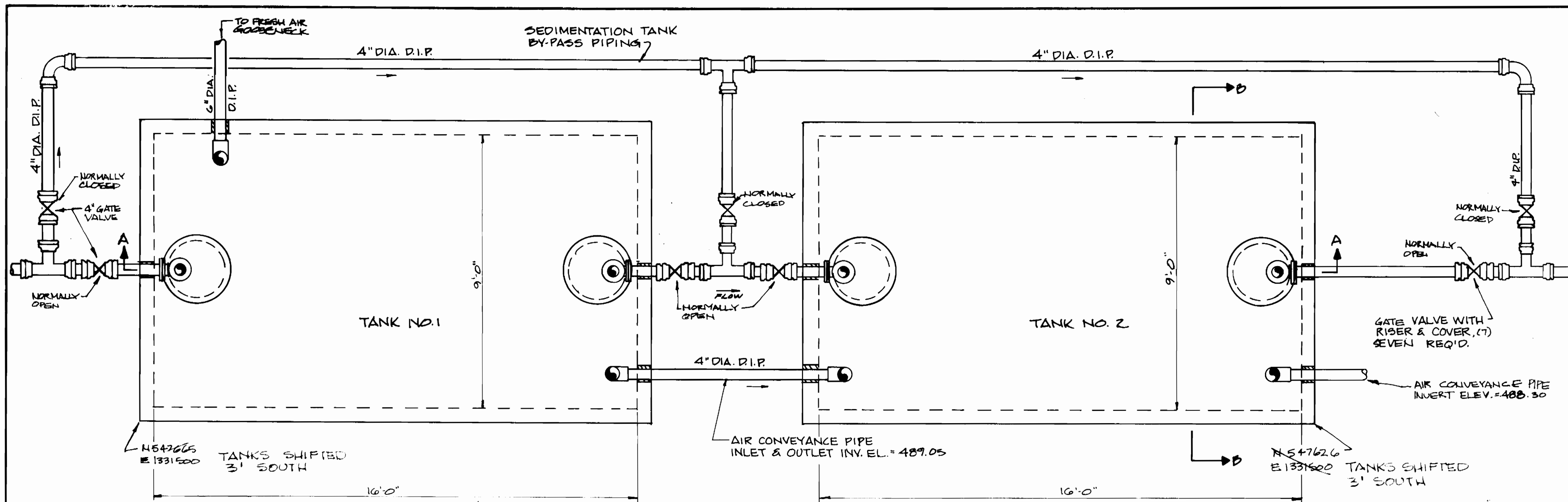
ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

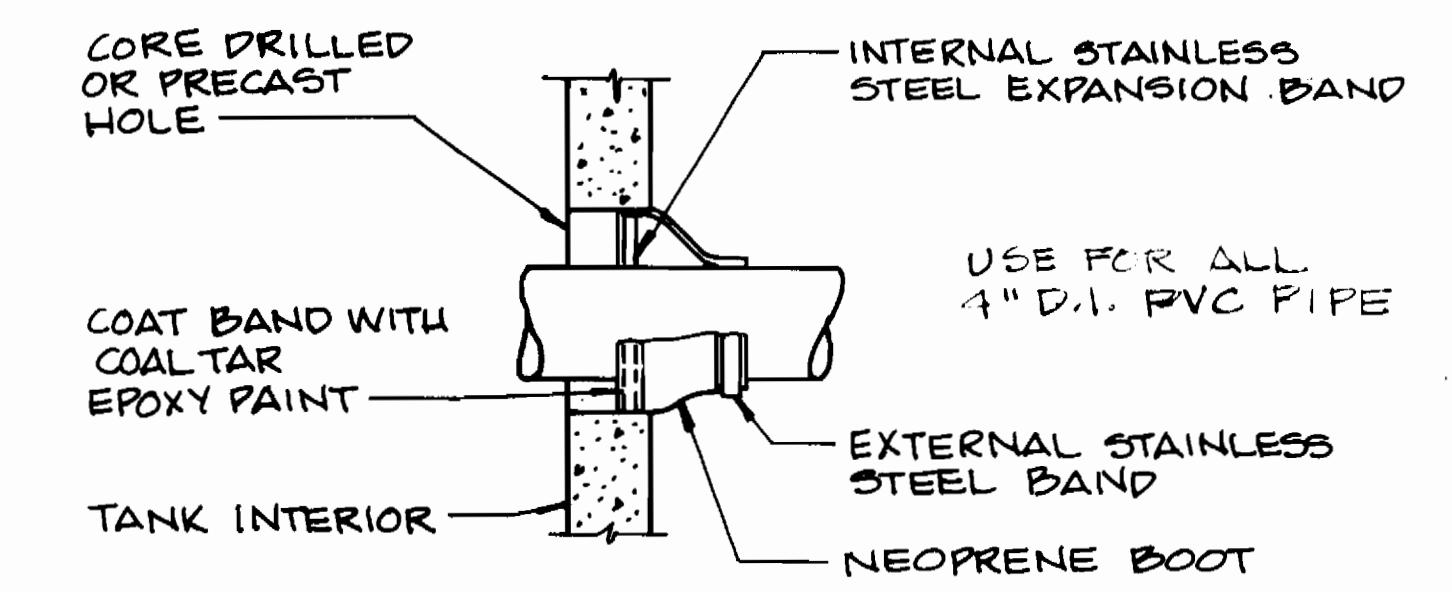
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

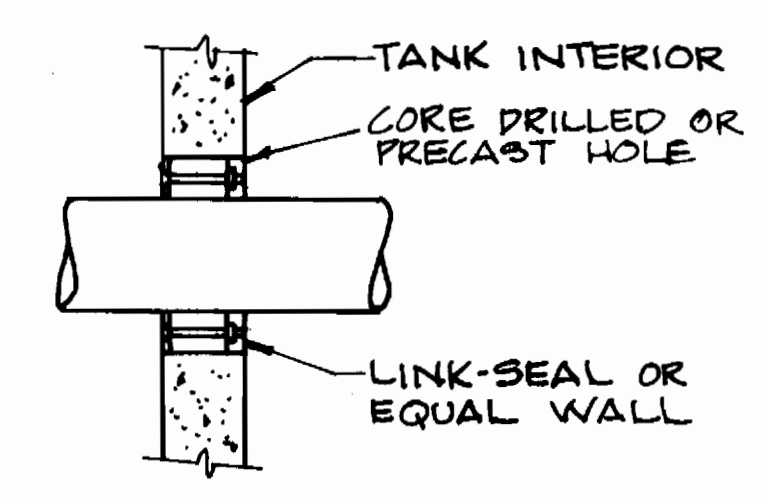
SHEET  
25 OF 26



**FINAL SEDIMENTATION FACILITY**  
**PLAN**  
 SCALE: 1/2" = 1'-0"

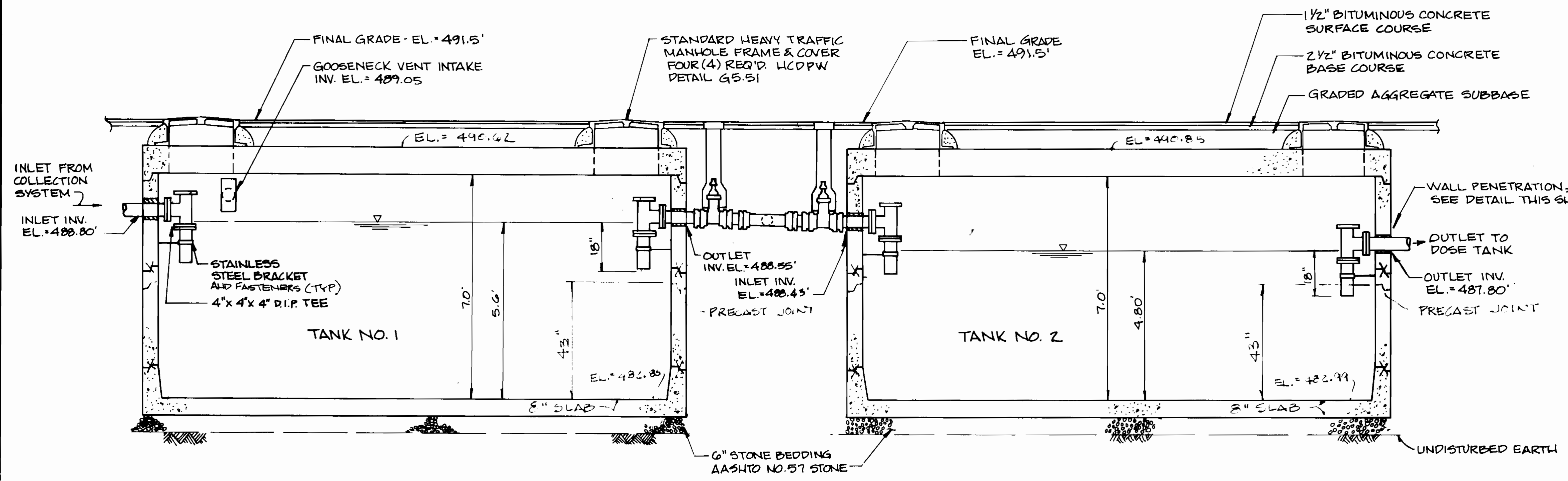


**NEOPRENE BOOT**  
 FOR PIPES 4" DIA. AND LARGER

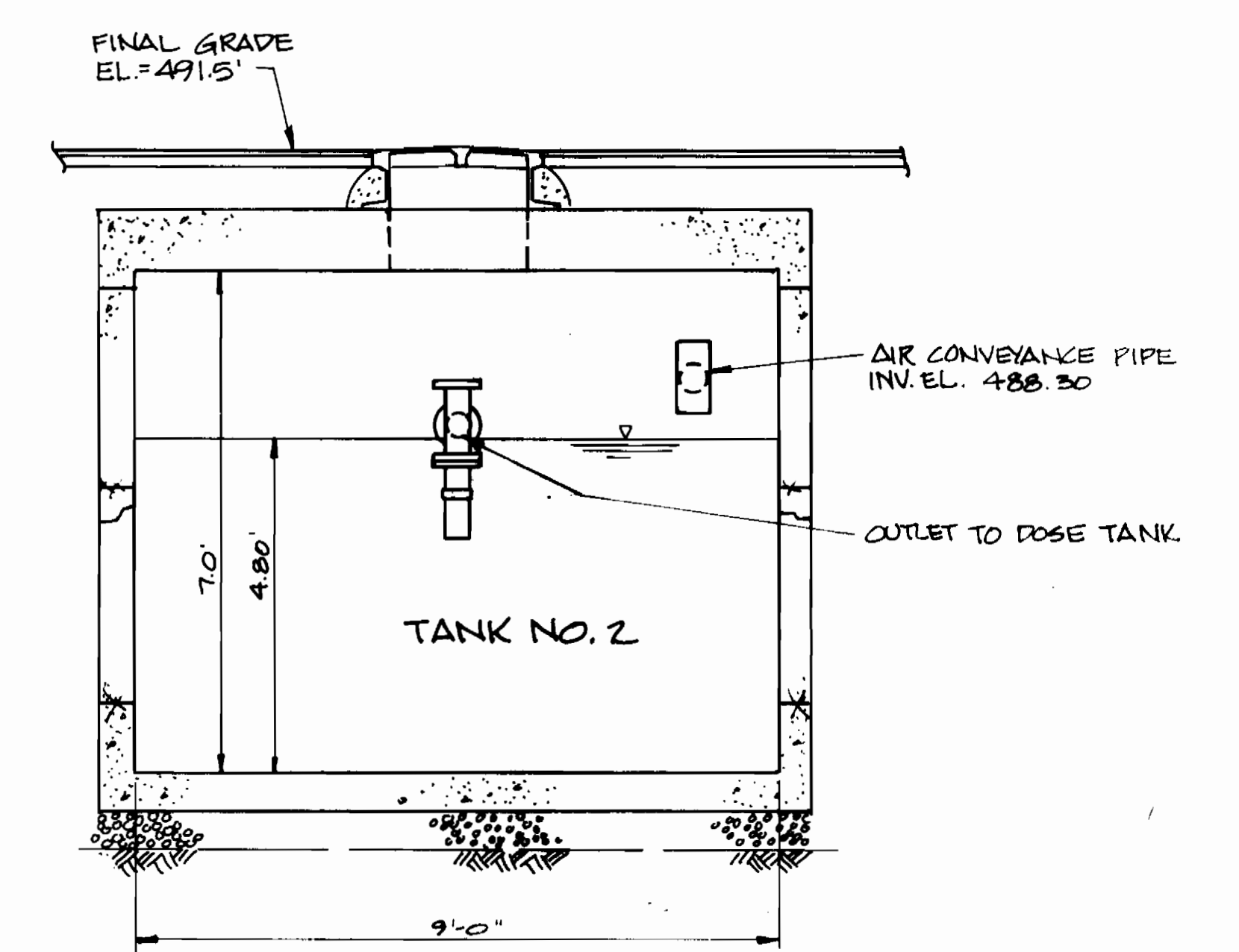


**LINK-SEAL**  
 FOR PIPES LESS THAN 4" DIA.  
**DETAIL - WALL PENETRATIONS**  
 NOT TO SCALE

- 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.



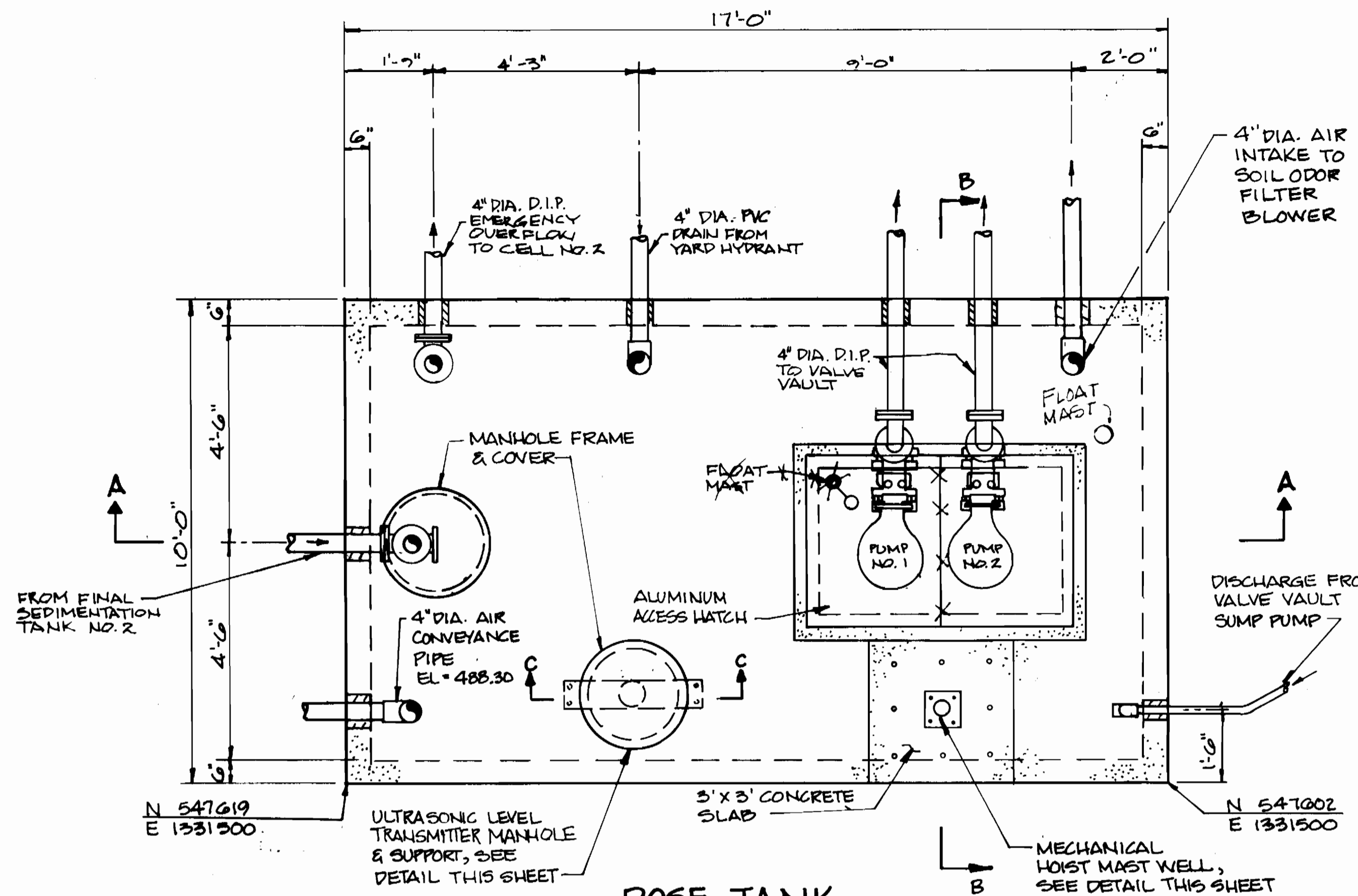
**FINAL SEDIMENTATION FACILITY**  
**SECTION A-A**  
 SCALE: 1/2" = 1'-0"



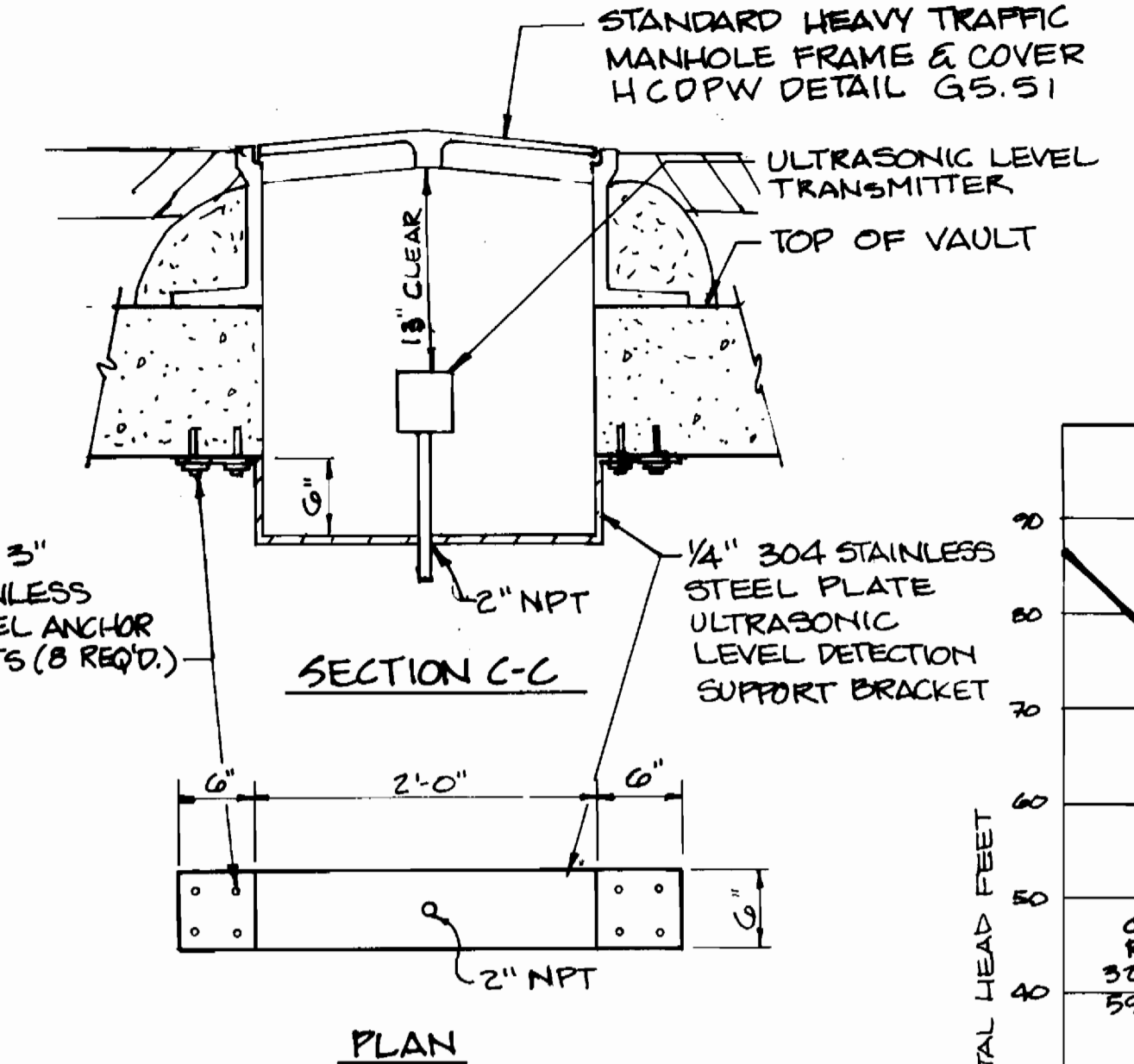
**FINAL SEDIMENTATION FACILITY**  
**SECTION B-B**  
 SCALE: 1/2" = 1'-0"

3357 5/26

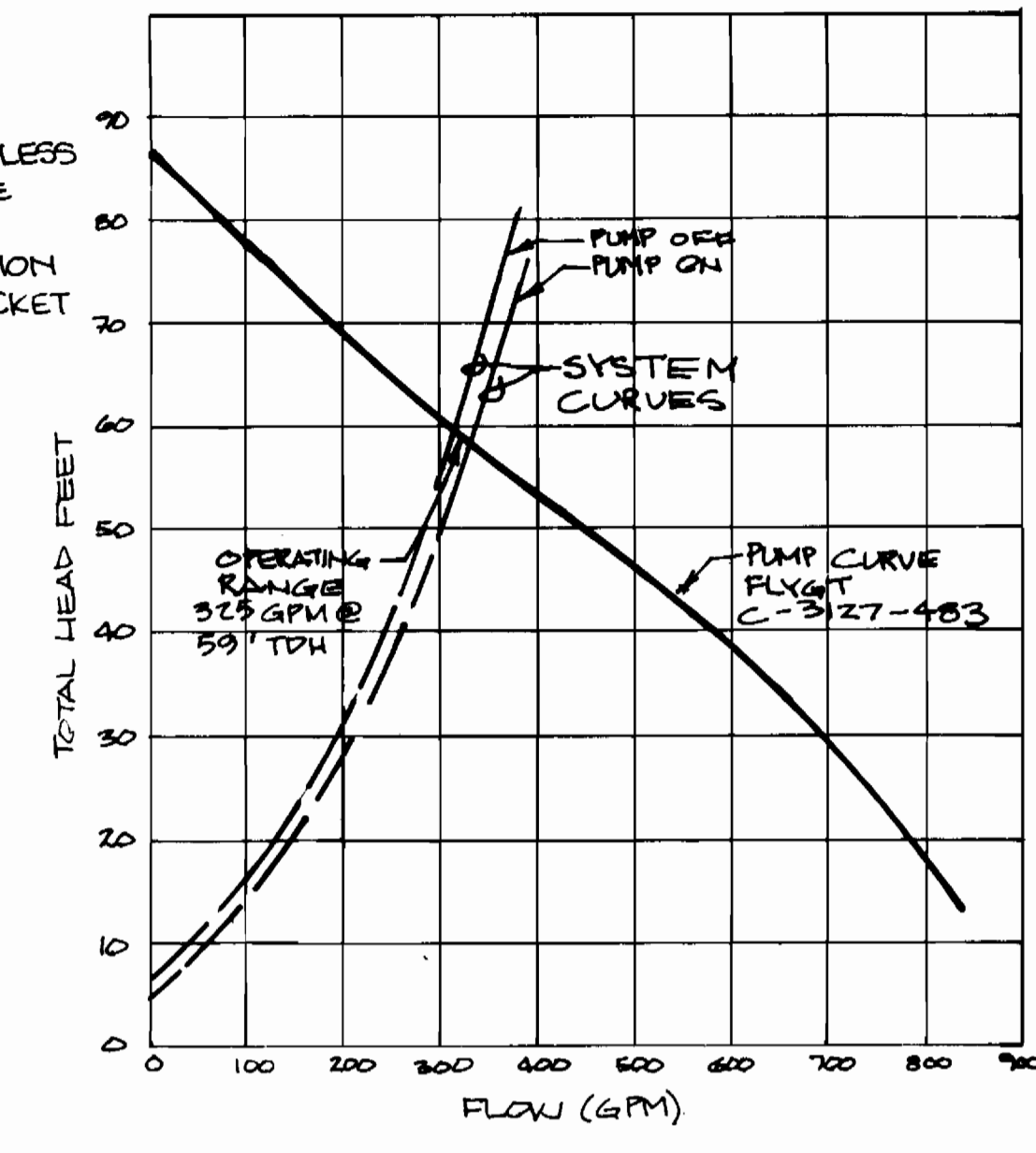
<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND Director of Public Works: [Signature] DATE: 9/26/94 Chief, Bureau of Engineering: [Signature] DATE: 9/26/94 Chief, Bureau of Utilities: [Signature] DATE: 9-14-94 Chief, Land Development Division: [Signature] DATE: 9/26/94		<b>DAMES &amp; MOORE</b> 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640				DES: VRC DRN: BGW CHK: ATP DATE: 12-93		CREATE PHASED PLANS 9-94 FINAL SUBMITTAL 8-94		<b>FINAL SEDIMENTATION FACILITY</b> ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 26 OF 28	
--	--	---	--	--	--	---	--	--	--	---	--	----------------------------------	--



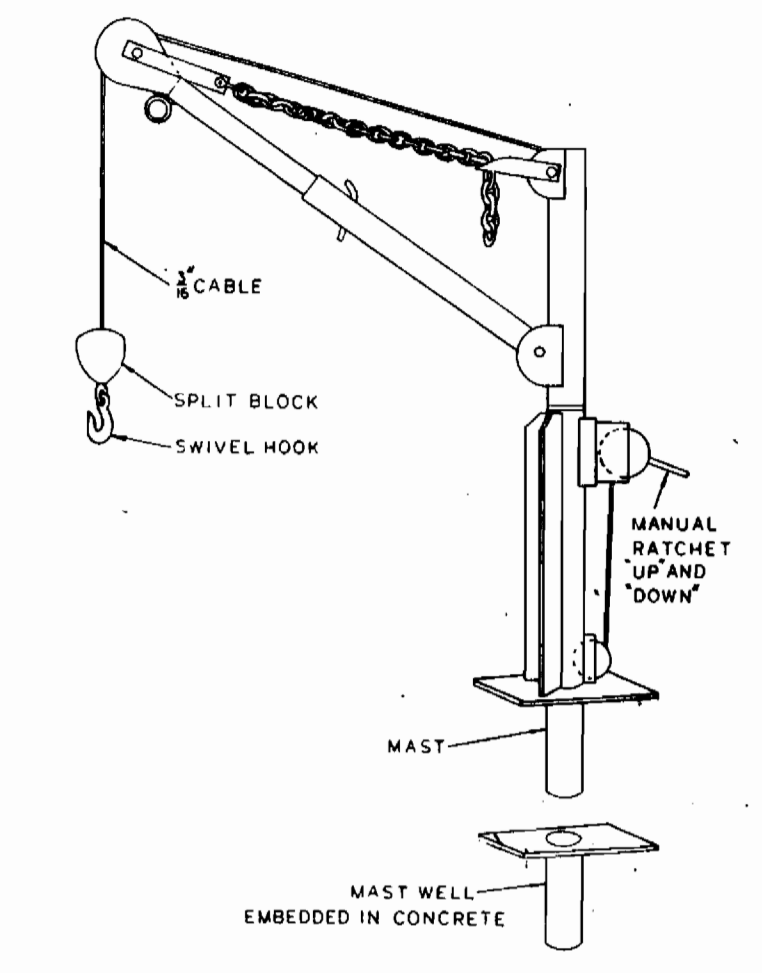
**DOSE TANK PLAN**  
SCALE: 1/2"=1'-0"



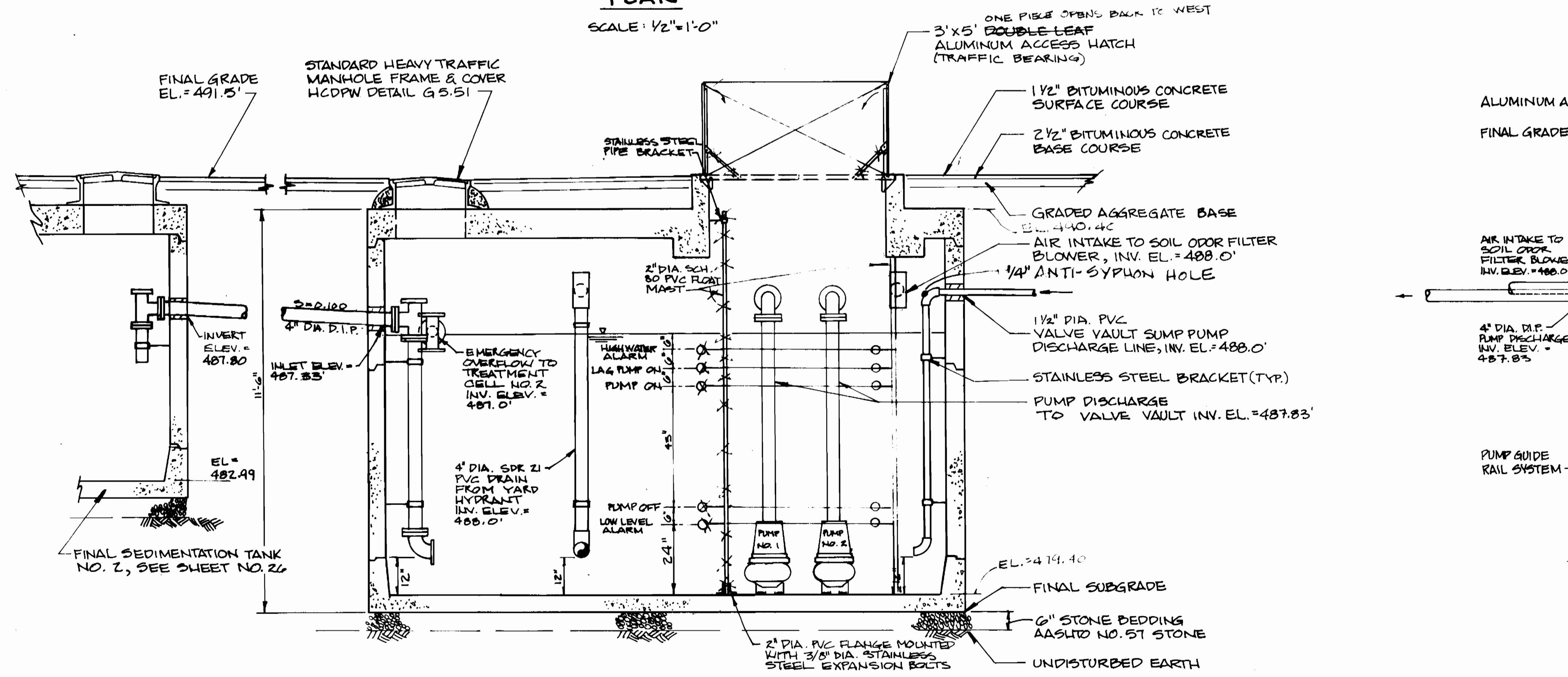
**ULTRASONIC LEVEL TRANSMITTER SUPPORT BRACKET**  
SCALE: 1"=1'-0"



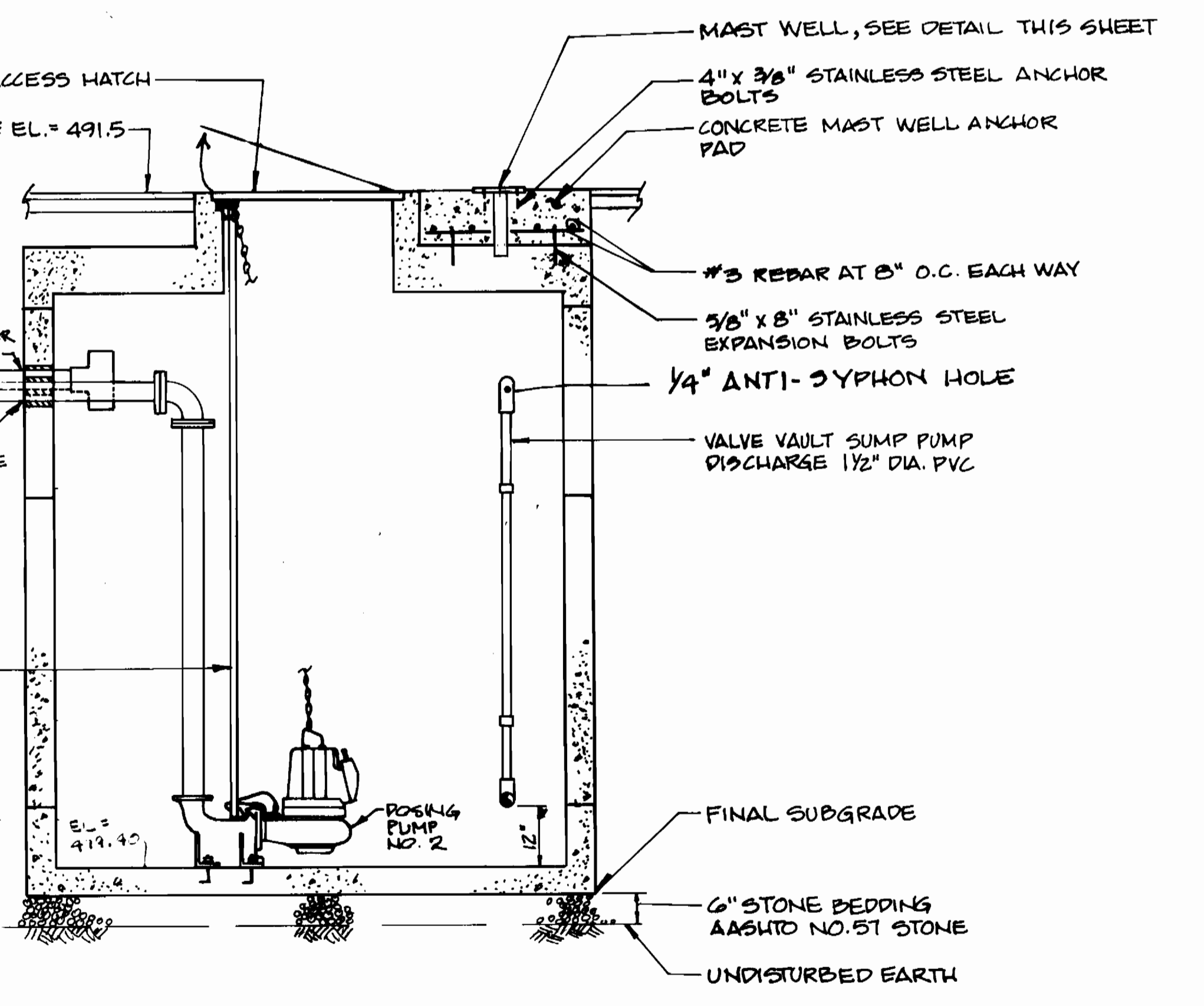
**PUMP CURVE DOSING PUMP**



**MECHANICAL HOIST DETAIL**  
NOT TO SCALE




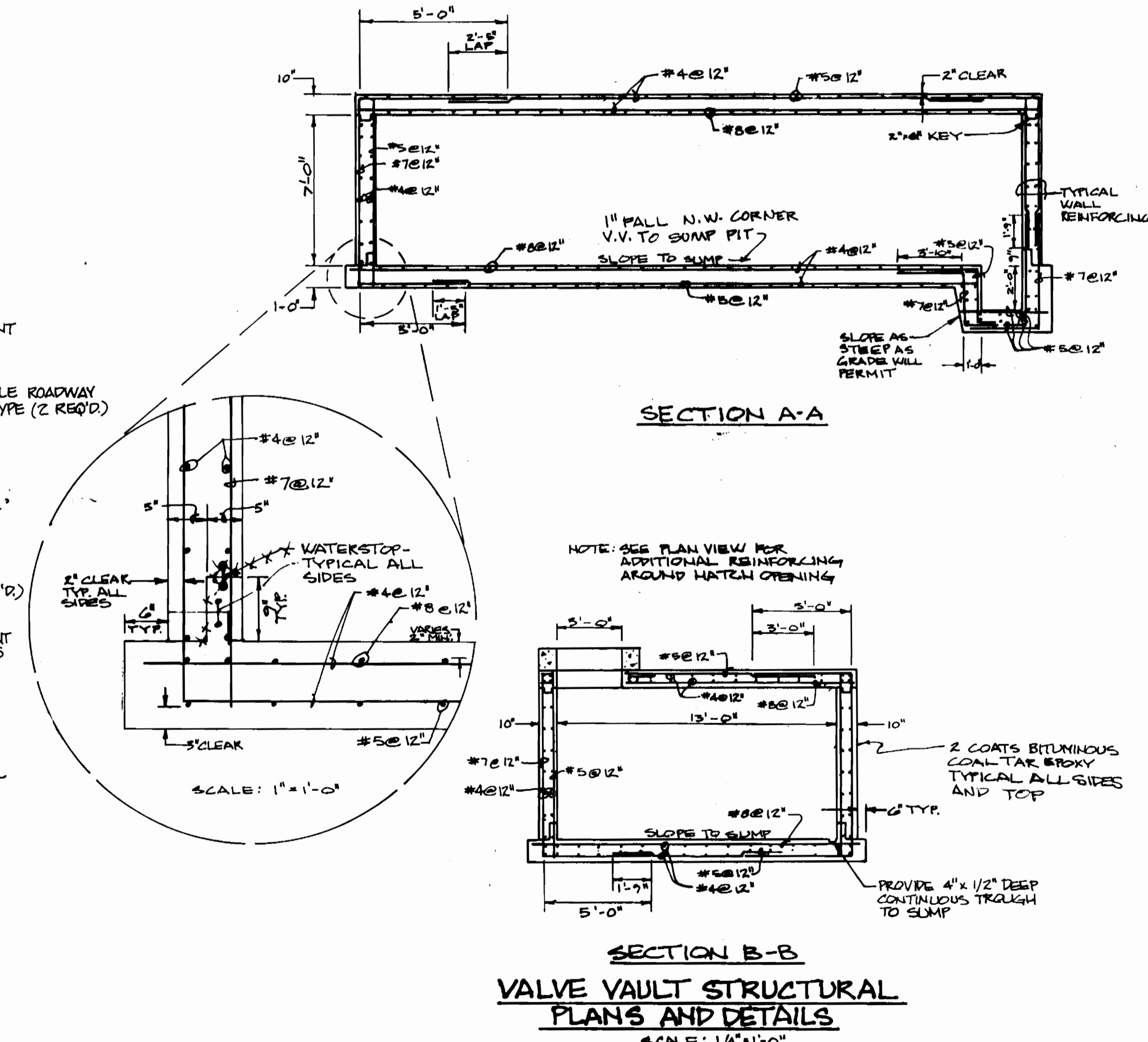
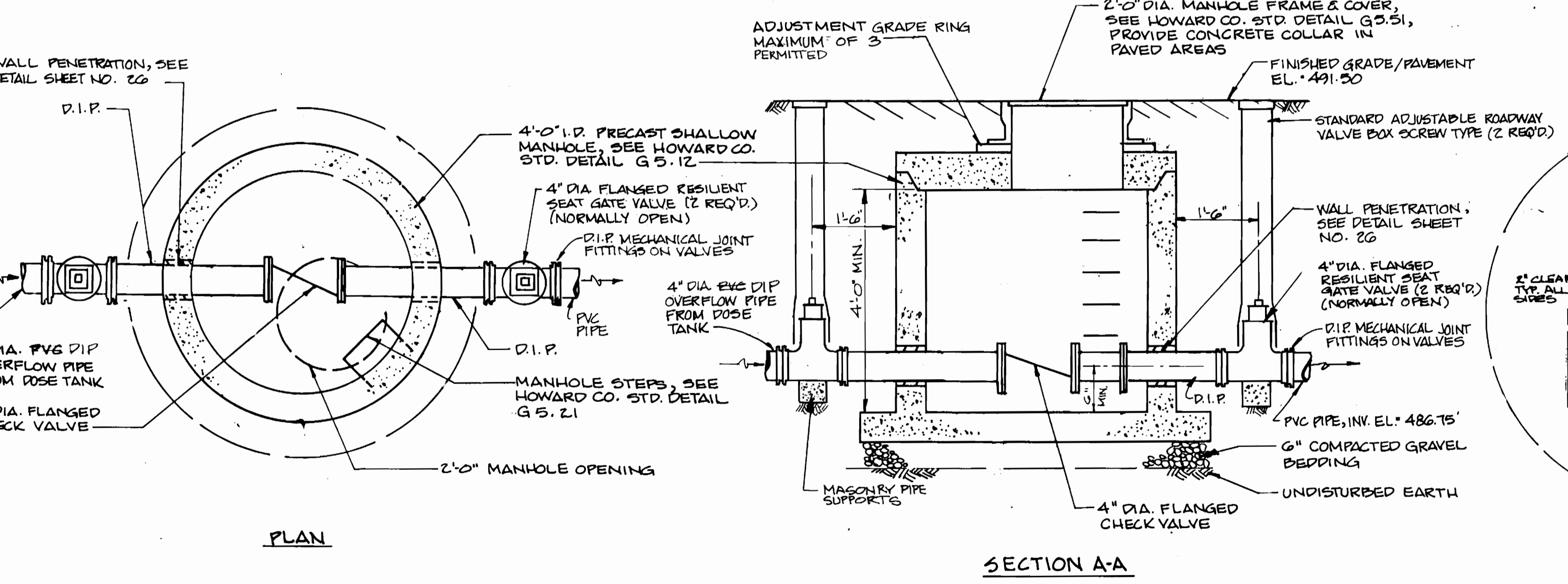
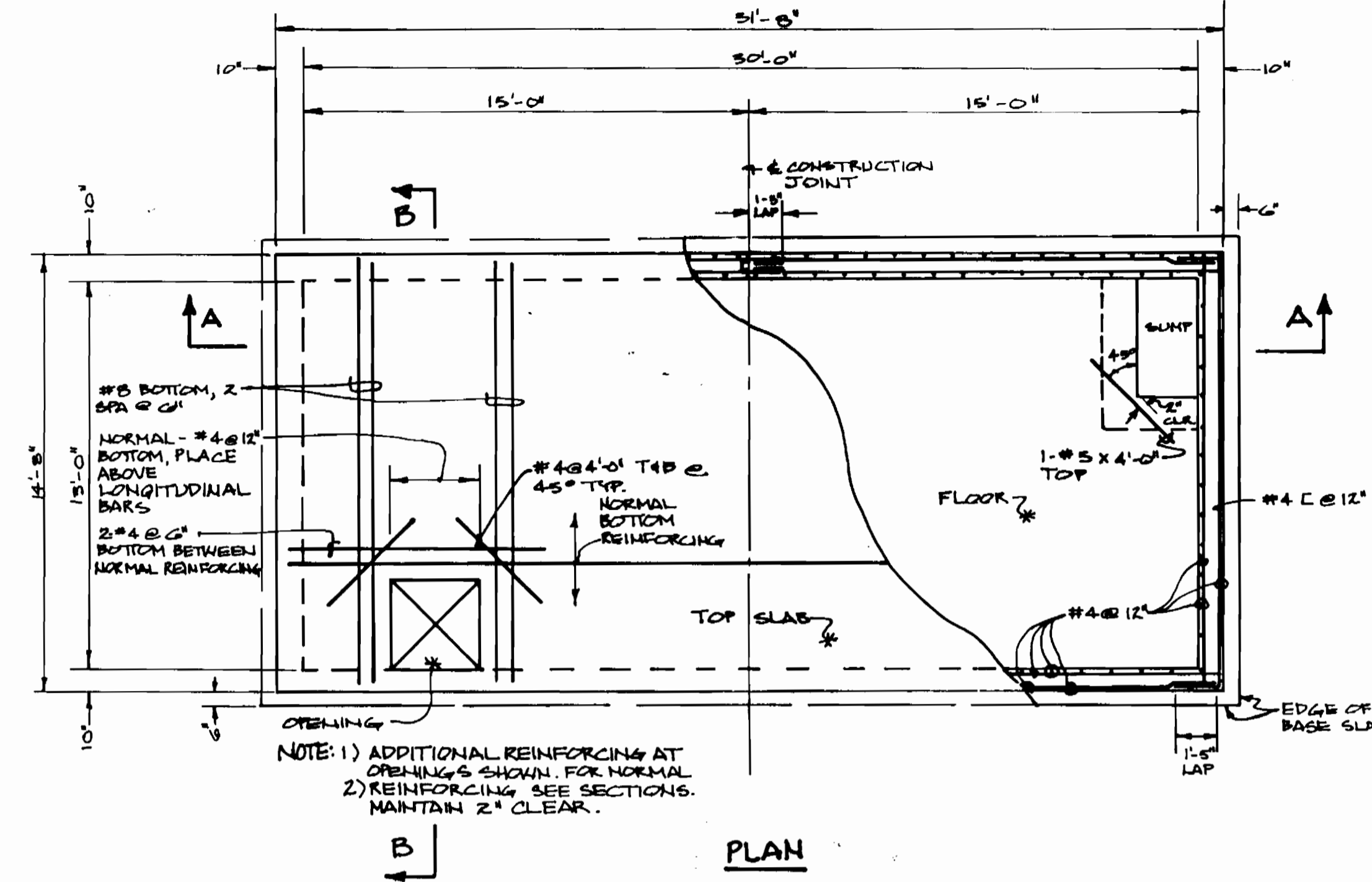
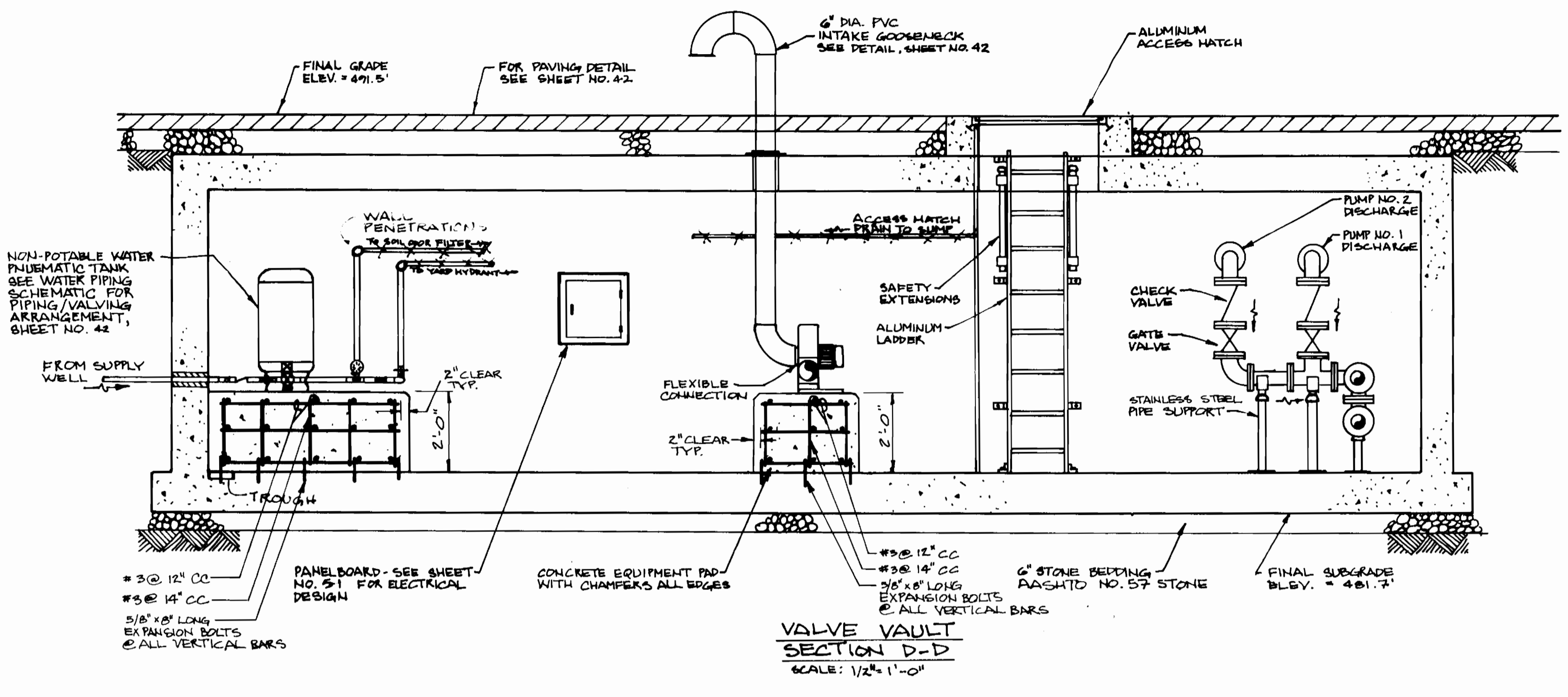
**DOSE TANK SECTION A-A**  
SCALE: 1/2"=1'-0"



**DOSE TANK SECTION B-B**  
SCALE: 1/2"=1'-0"

3357 9/27

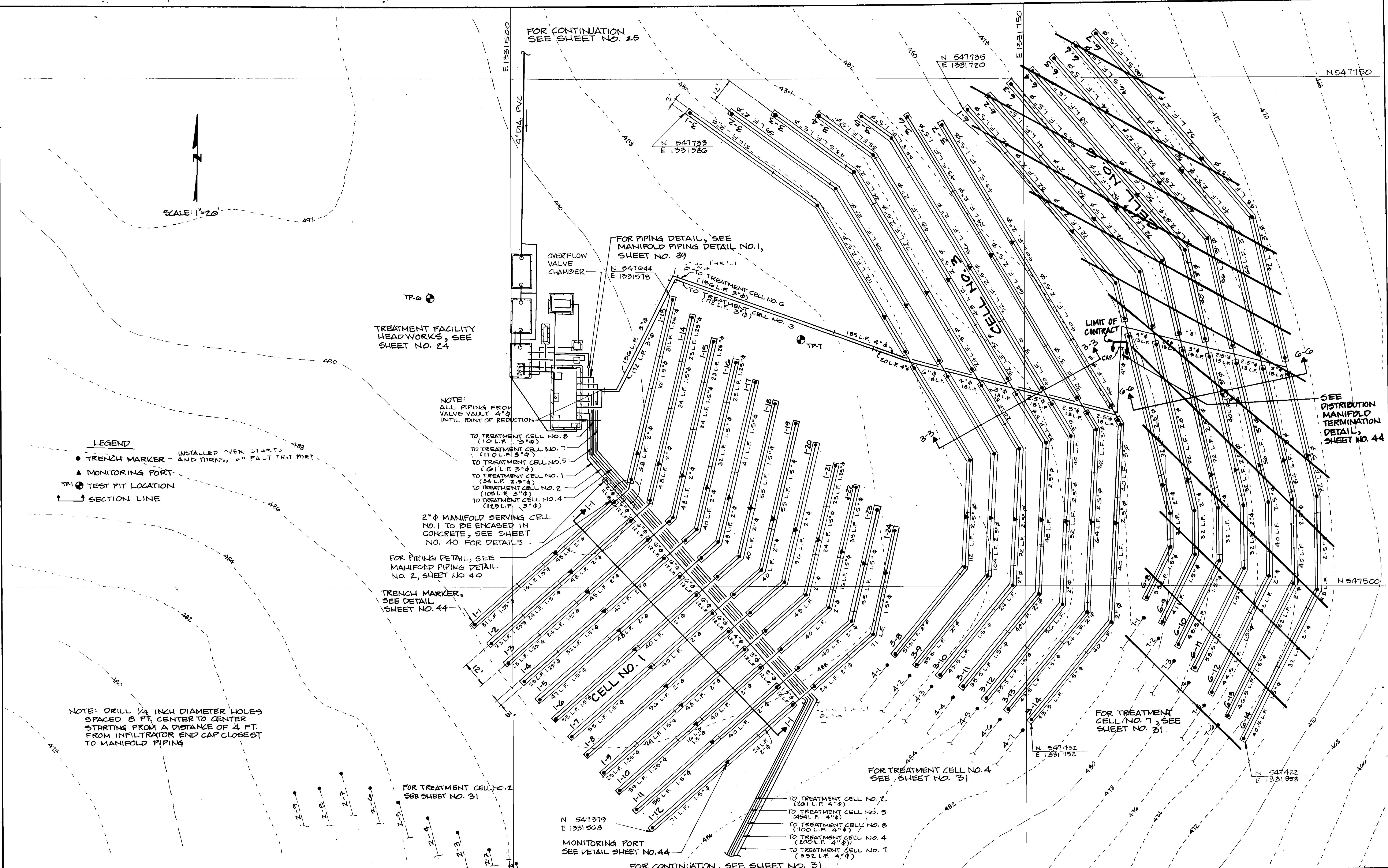
<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> DATE: 9/26/94 Chief, Bureau of Engineering: <i>[Signature]</i> DATE: 9/26/94 Chief, Land Development Division: <i>[Signature]</i> DATE: 9/26/94		<b>DAMES &amp; MOORE</b> 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-8640		 DES: VRC DRN: PLW CHK: ATP DATE: 12-95		<b>DOSE TANK</b> AS-BUILT CREATE PHASED PLANS FINAL SUBMITTAL 10/95 9/94 12/94		<b>ASHLEIGH KNOLLS</b> WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 22 OF 24
--	--	---	--	--	--	--	--	--	--	----------------------------------



3357 9/29

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>Robert M. Deane</i> 9/26/94 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Robert M. Deane</i> 9-14-94 CHIEF, BUREAU OF UTILITIES DATE</p>	<p><b>DAMES &amp; MOORE</b></p> <p>170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640</p>		<p>DES: VRC</p> <p>DRN: BSKU</p> <p>CHK: AJP</p> <p>DATE: 12-93</p> <p>BY NO. REVISION DATE</p>	<p><b>VALVE VAULT - SECTION AND STRUCTURAL / OVERFLOW VALVE CHAMBER</b></p> <p>CREATE PHASED PLANS 9-94</p> <p>FINAL SUBMITTAL 8-94</p> <p>600' SCALE MAP NO. 40-41 BLOCK NO. 12</p>	<p>ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-3357</p> <p>ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 22 OF 54</p>
---	--	--	---	--	---	---

3357 S/30 Ashleigh Knolls



**LEGEND**  
 ● TRENCH MARKER - INSTALLED OVER STARTS AND TURNS, 2" PA.T TEST PORT  
 ▲ 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 4"φ UNTIL POINT OF REDUCTION

TO TREATMENT CELL NO. 8 (10 L.F. 3"φ)  
 TO TREATMENT CELL NO. 7 (110 L.F. 3"φ)  
 TO TREATMENT CELL NO. 5 (61 L.F. 3"φ)  
 TO TREATMENT CELL NO. 1 (34 L.F. 2.5"φ)  
 TO TREATMENT CELL NO. 2 (109 L.F. 3"φ)  
 TO TREATMENT CELL NO. 4 (125 L.F. 3"φ)

2"φ MANIFOLD SERVING CELL NO. 1 TO BE ENCASED IN CONCRETE, SEE SHEET NO. 40 FOR DETAILS

FOR PIPING DETAIL, SEE MANIFOLD PIPING DETAIL NO. 2, SHEET NO. 40

TRENCH MARKER, SEE DETAIL SHEET NO. 44

FOR TREATMENT CELL NO. 2 SEE SHEET NO. 31

MONITORING PORT SEE DETAIL SHEET NO. 44

FOR CONTINUATION, SEE SHEET NO. 31.

FOR PIPING DETAIL, SEE MANIFOLD PIPING DETAIL NO. 1, SHEET NO. 39

FOR CONTINUATION SEE SHEET NO. 25

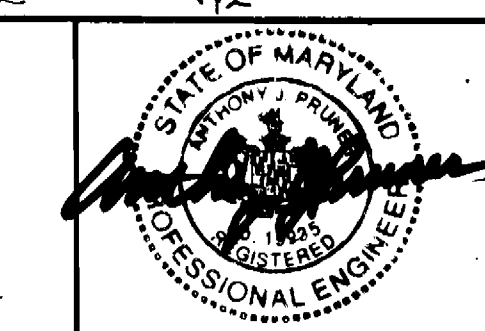
SEE DISTRIBUTION MANIFOLD TERMINATION DETAIL, SHEET NO. 44

FOR TREATMENT CELL NO. 7, SEE SHEET NO. 31

FOR TREATMENT CELL NO. 4 SEE SHEET NO. 31

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: Robert S. ... 9/26/94  
 Chief, Bureau of Engineering: ... 9/26/94  
 Chief, Bureau of Utilities: Robert S. ... 9/14/94  
 Chief, Land Development Division: ... 9/26/94

DAMES & MOORE  
 170 JENNIFER ROAD, SUITE 230  
 ANNAPOLIS, MARYLAND 21401  
 (410) 224-9640

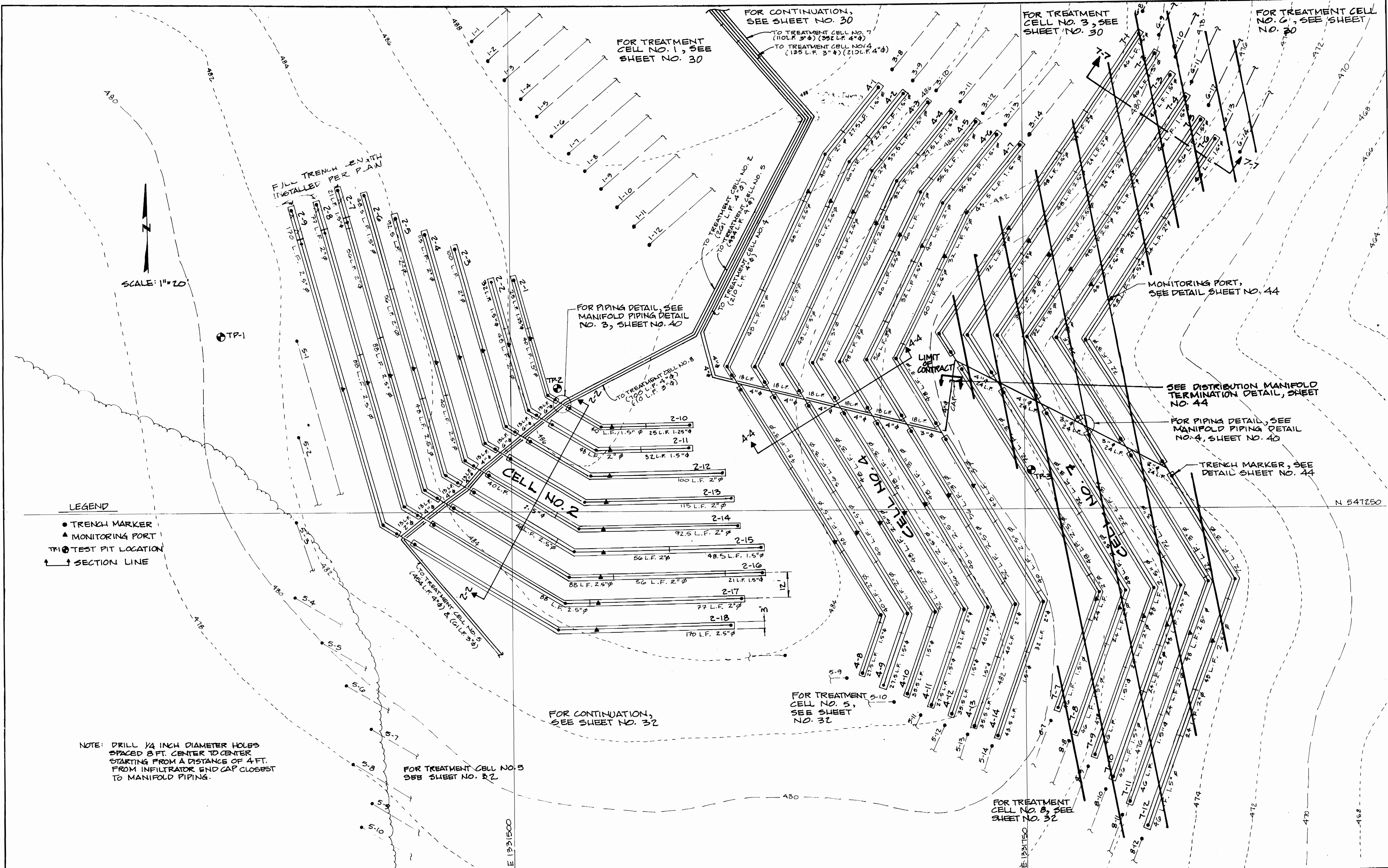


DES: VRC			
DRN: L24			
CHK: AJF			
DATE: 12-93	BY NO.	REVISION	DATE
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

TREATMENT SITE PLAN  
 SCALE: 1" = 20'  
 600' SCALE MAP NO. 60-41 BLOCK NO. 12

ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM  
 CONTRACT NO. 50-3357  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 30 OF 54



3357 5/31

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James H. ...* 9/20/94  
DIRECTOR OF PUBLIC WORKS DATE

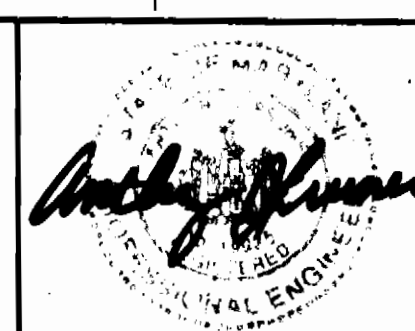
*Robert ...* 7/20/94  
CHIEF, BUREAU OF ENGINEERING DATE

*...* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*...* 7/20/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES: VRC			
DRN: LCH			
CHK: DJP		ADJUT	10/92
DATE: 12-93		CREATE PHASED PLANS	9-94
		FINAL SUBMITAL	8-94
BY NO.		REVISION	DATE

**TREATMENT SITE PLAN**

SCALE: 1" = 20'

600' SCALE MAP NO. 30-31 BLOCK NO. 12

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

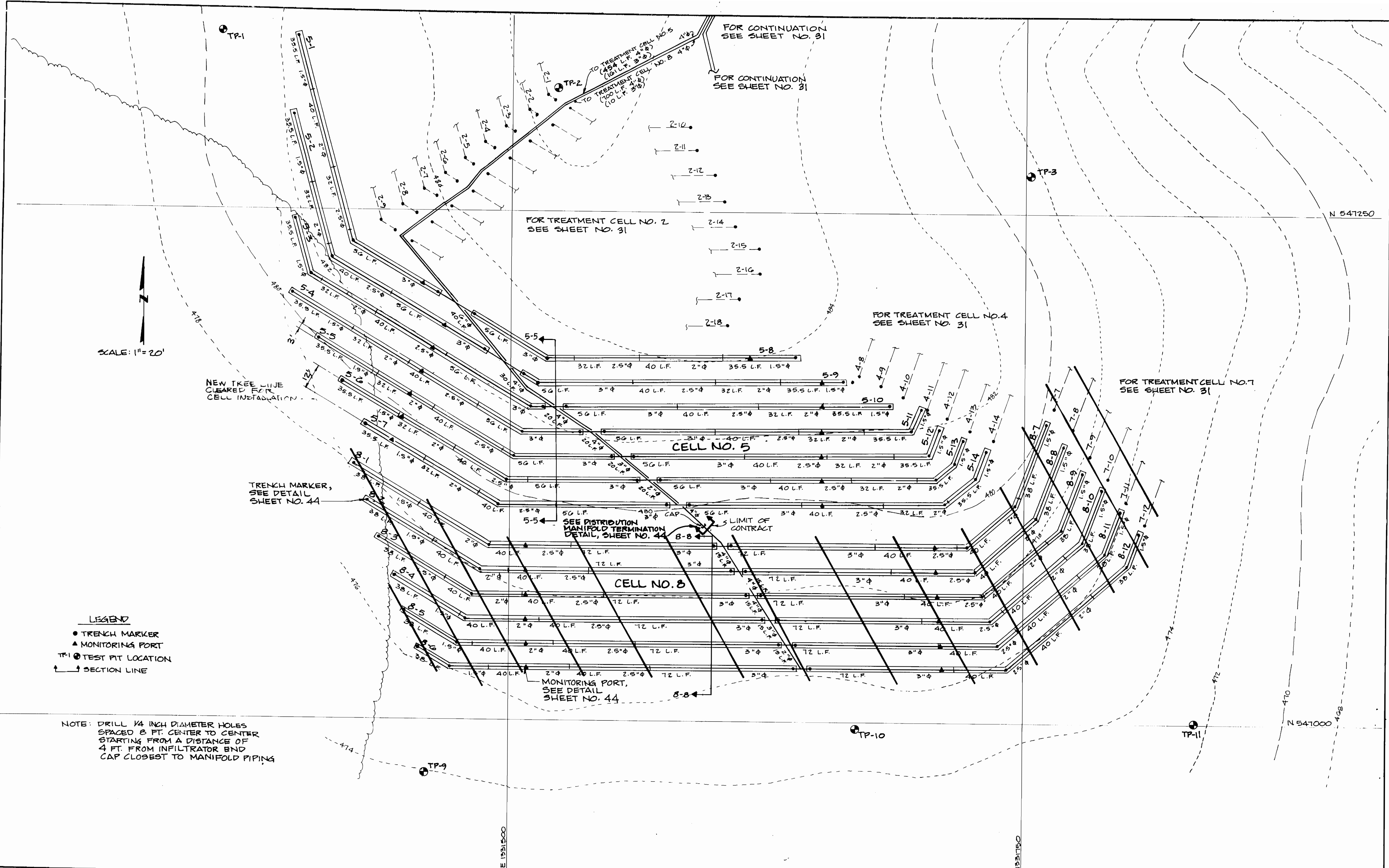
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 31 OF 31





SCALE: 1" = 20'

NEW TREE LINE  
CLEARED FOR  
CELL INSTALLATION

TRENCH MARKER,  
SEE DETAIL  
SHEET NO. 44

SEE DISTRIBUTION  
MANIFOLD TERMINATION  
DETAIL, SHEET NO. 44

MONITORING PORT,  
SEE DETAIL  
SHEET NO. 44

- 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

3357 S/32

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

*James M. Lee* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert H. Sawyer* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*William J. ...* 3/26/94  
CHIEF, BUREAU OF PLANNING DATE

*William J. ...* 3/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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

*Wesley ...*

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

**TREATMENT SITE PLAN**

SCALE: 1" = 20'

600' SCALE MAP NO. 42-4L BLOCK NO. 12

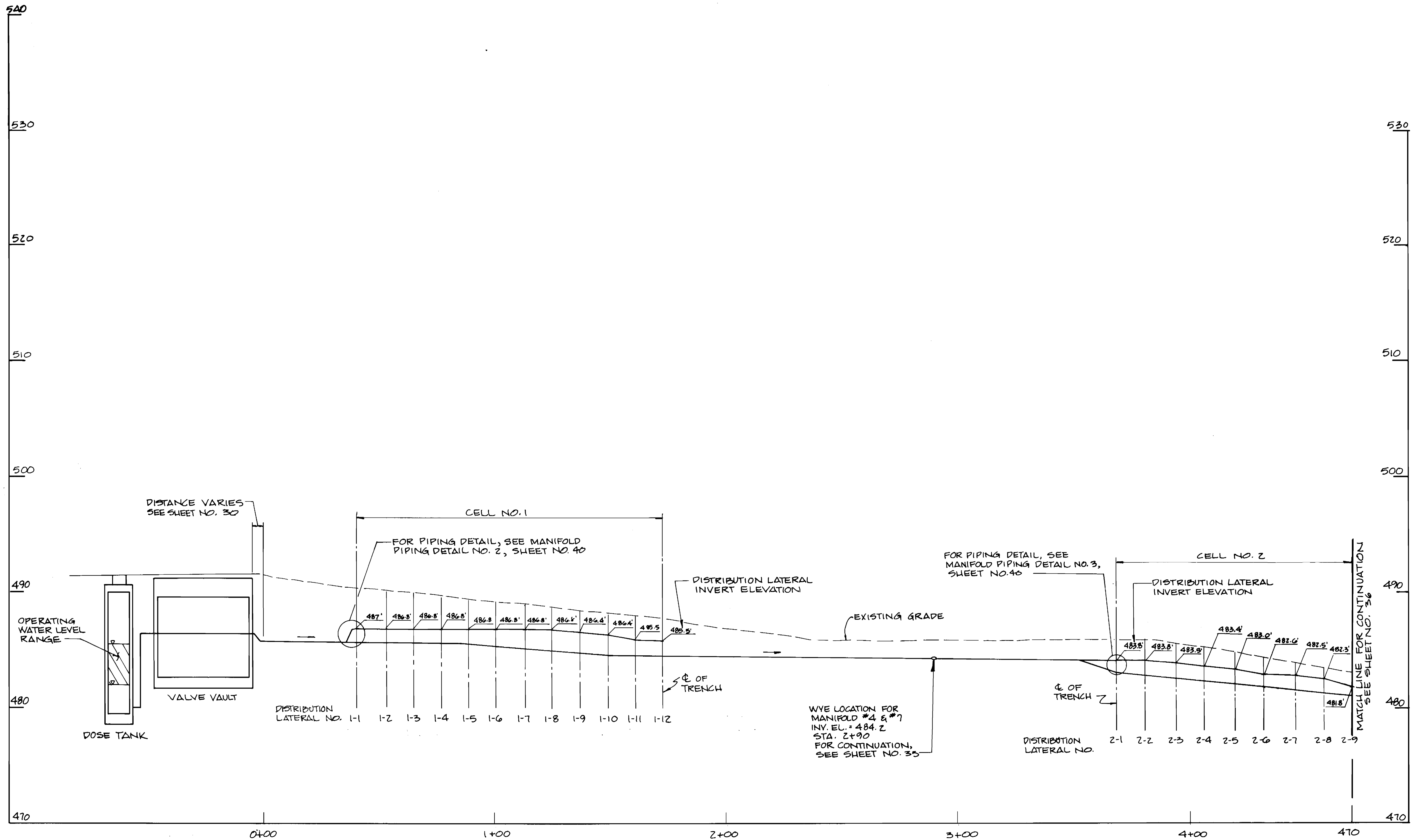
**ASHLEIGH KNOLLS**  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
32 OF 51

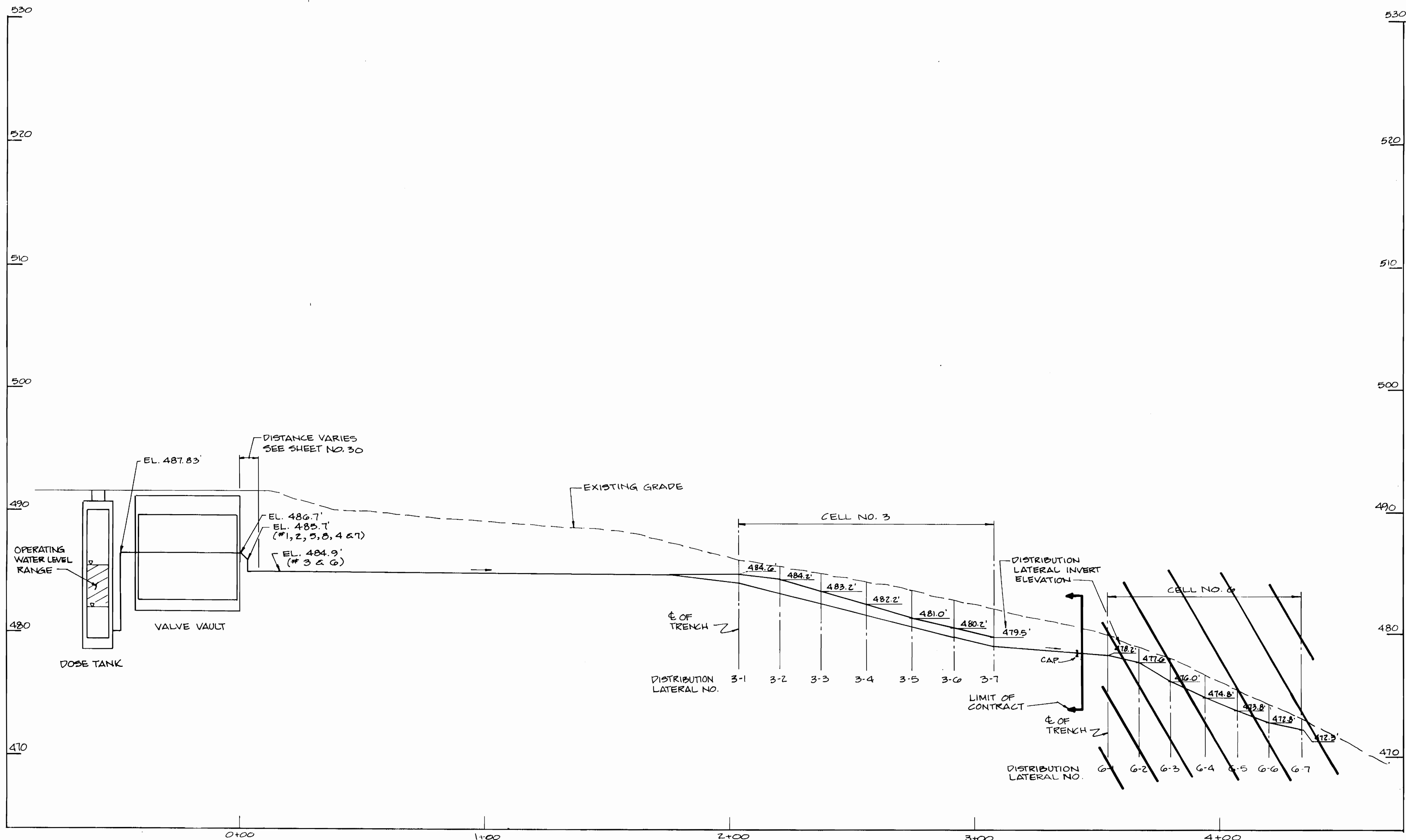


**TREATMENT CELL NO. 1 AND NO. 2  
PROFILE**

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

3357 5/33

<p><b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND</p> <p><i>[Signature]</i> 9/26/94 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>[Signature]</i> 9/14/94 CHIEF, BUREAU OF UTILITIES DATE</p>	<p><b>DAMES &amp; MOORE</b></p> <p>170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-8640</p>		<p>DES: VRC</p> <p>DRN: BGM</p> <p>CHK: AJP</p> <p>DATE: 12-93</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>CREATE PHASED PLANS</td> <td>9-94</td> </tr> <tr> <td>2</td> <td>FINAL SUBMITTAL</td> <td>8-94</td> </tr> </table>	NO.	REVISION	DATE	1	CREATE PHASED PLANS	9-94	2	FINAL SUBMITTAL	8-94	<p><b>MANIFOLD PROFILE CELL NO. 1 &amp; 2</b></p> <p>600' SCALE MAP NO. 40-41 BLOCK NO. 12</p>	<p><b>ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM</b></p> <p>CONTRACT NO. 50-5357</p> <p>ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 23 OF 54</p>
NO.	REVISION	DATE														
1	CREATE PHASED PLANS	9-94														
2	FINAL SUBMITTAL	8-94														



TREATMENT CELL NO. 3 AND NO. 6

PROFILE

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

3357 S/34

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James H. ...* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert ...* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert ...* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Michael ...*  
CHIEF, LAND DEVELOPMENT DIVISION DATE

DAMES & MOORE

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



DES: VRC			
DRN: Bgk			
CHK: NJP	CREATE PHASED PLANS	9-94	
DATE: 12-93	FINAL SUBMITTAL	8-94	
BY NO.	REVISION	DATE	

MANIFOLD PROFILE  
CELL NO. 3 & 6

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

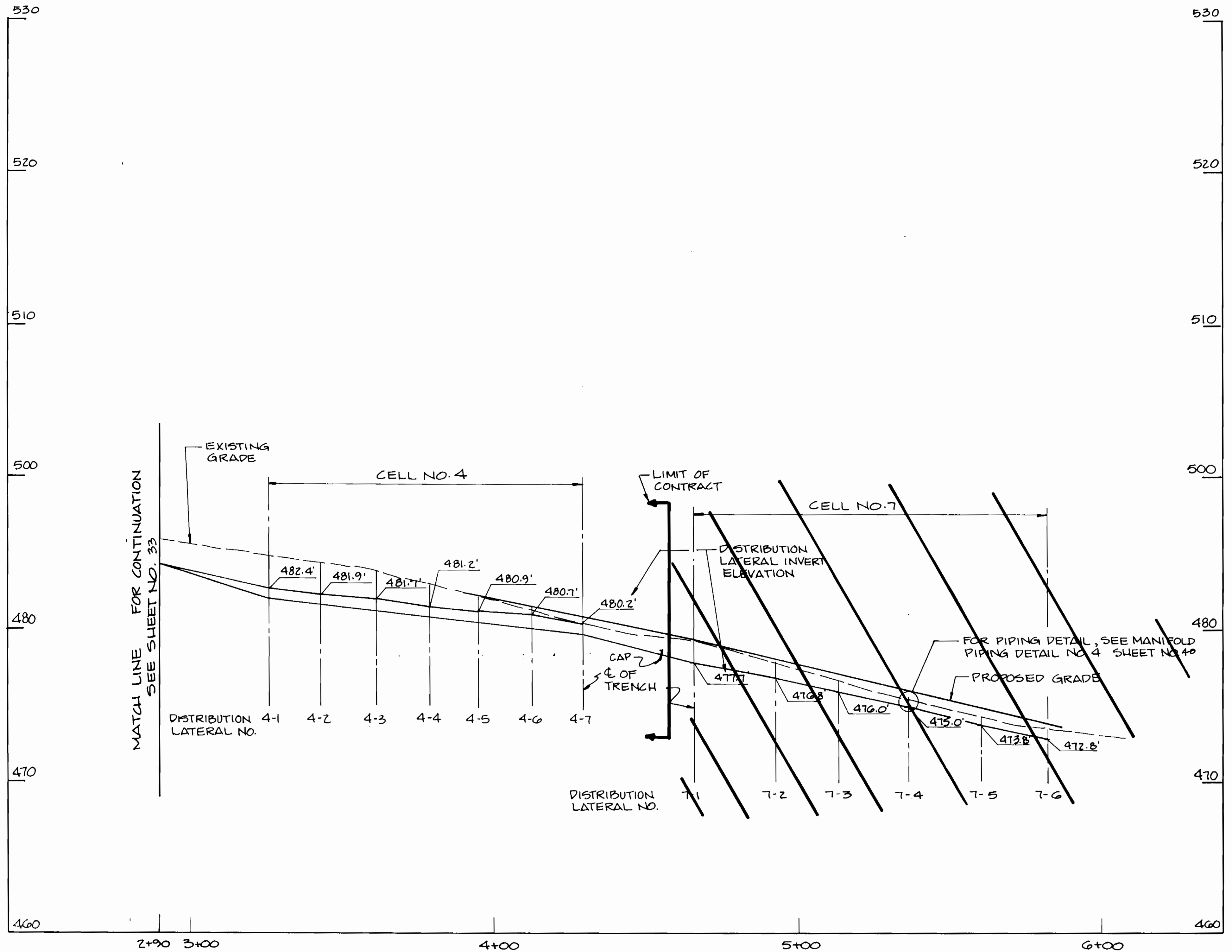
ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 34 OF 54



**TREATMENT CELL NO. 4 AND NO. 7  
PROFILE**

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

3357 5/35

<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND			
<i>Robert A. ...</i> DIRECTOR OF PUBLIC WORKS DATE: 9-14-94	<i>Paul ...</i> CHIEF, BUREAU OF ENGINEERING DATE: 9/26/94	170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-5640	

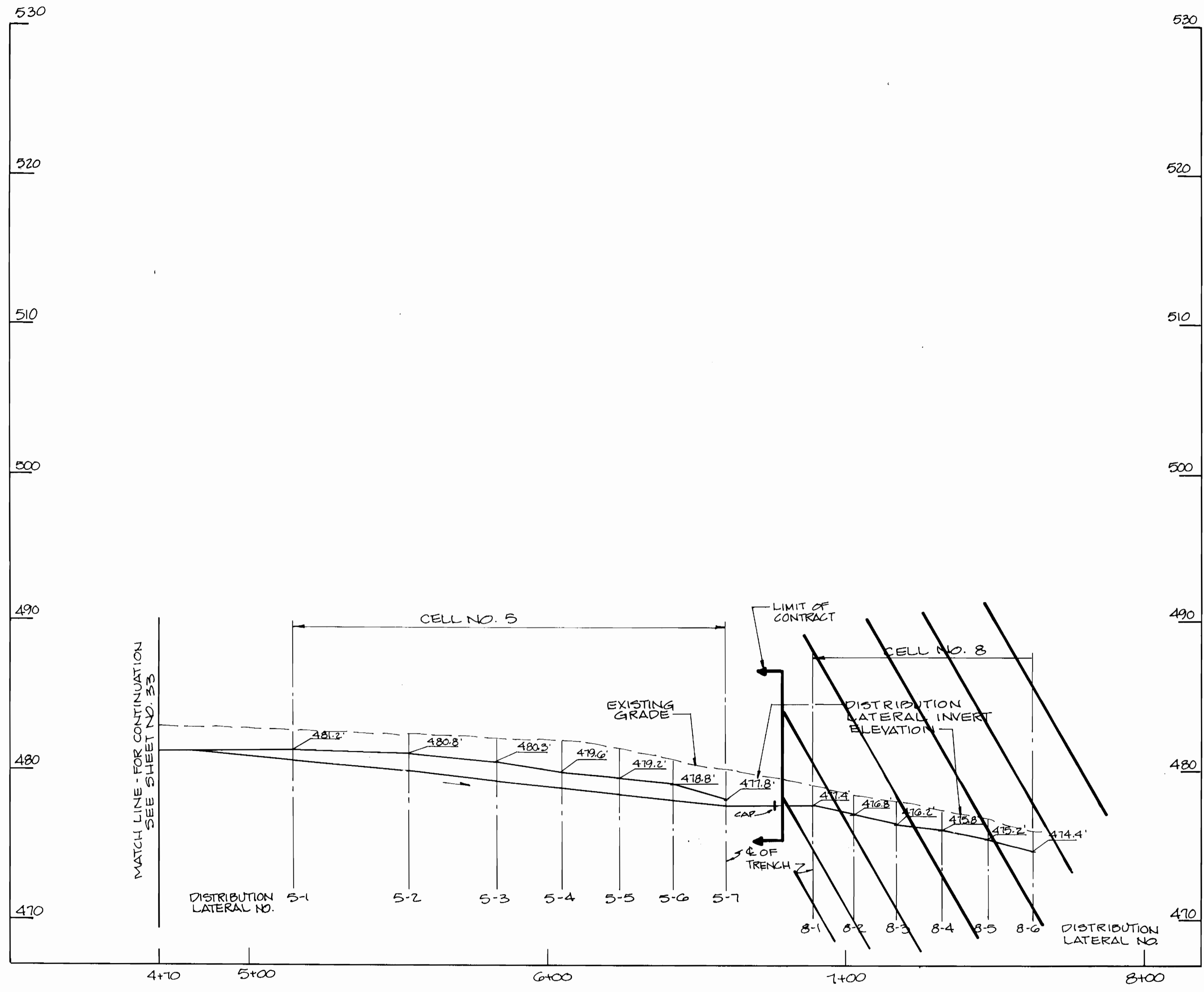
DES: VRL			
DRN: B&K			
CHK: AJP		CREATE PHASED PLANS	9-94
DATE: 12-93		FINAL SUBMITTAL	8-94
BY	NO.	REVISION	DATE

**MANIFOLD PROFILE  
CELL NO. 4 & 7**

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

**ASHLEIGH KNOLLS**  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM  
 CONTRACT NO. 50-3357  
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 35 OF 24



**TREATMENT CELL NO. 5 AND NO. 8  
PROFILE**

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

3357  
5/36

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Ramon A. Lim* 9-26-94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert Berman* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert Berman* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert Berman* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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

*Handwritten signature*

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

**MANIFOLD PROFILE  
CELL NO. 5 & 8**

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

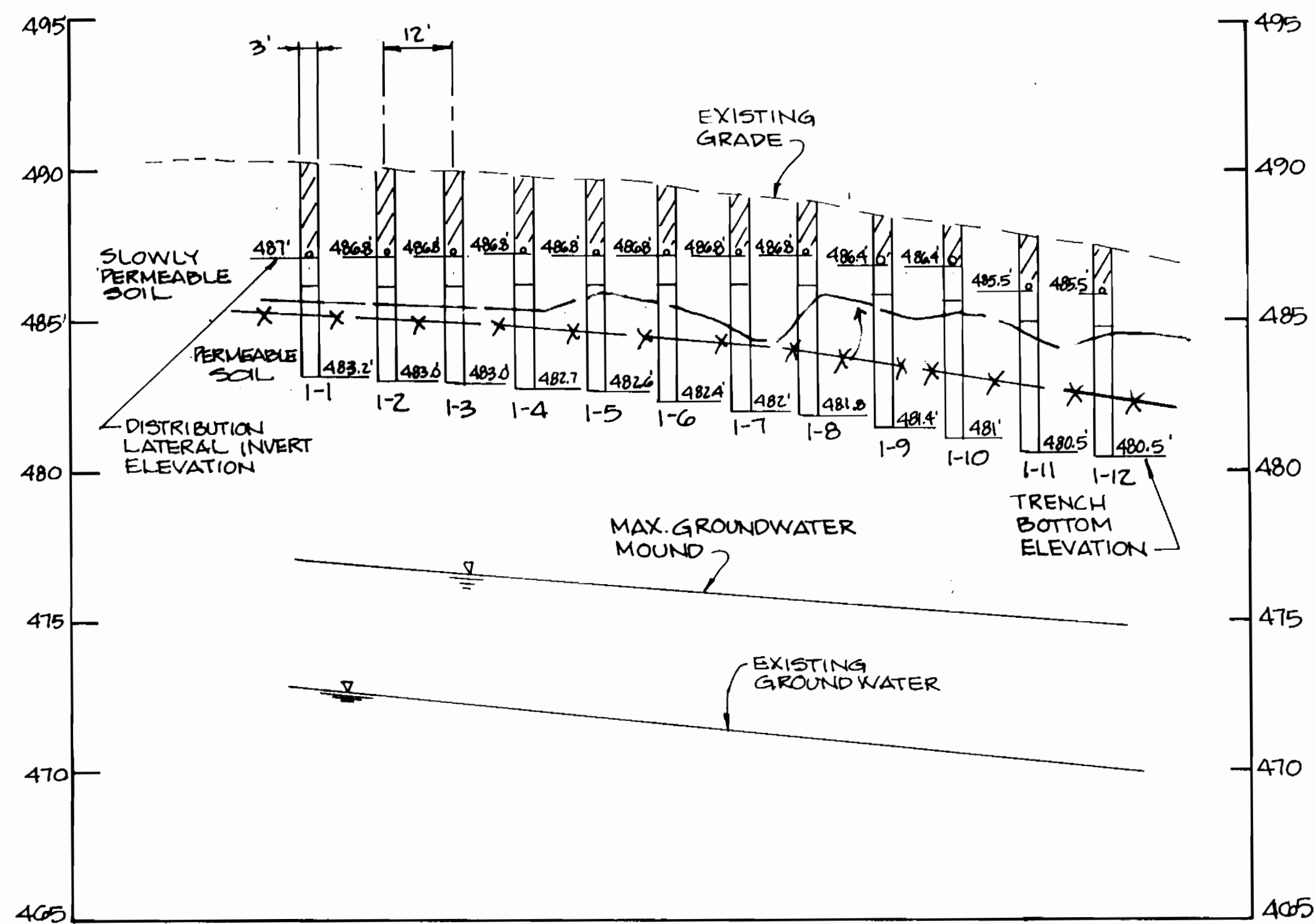
**ASHLEIGH KNOLLS**  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

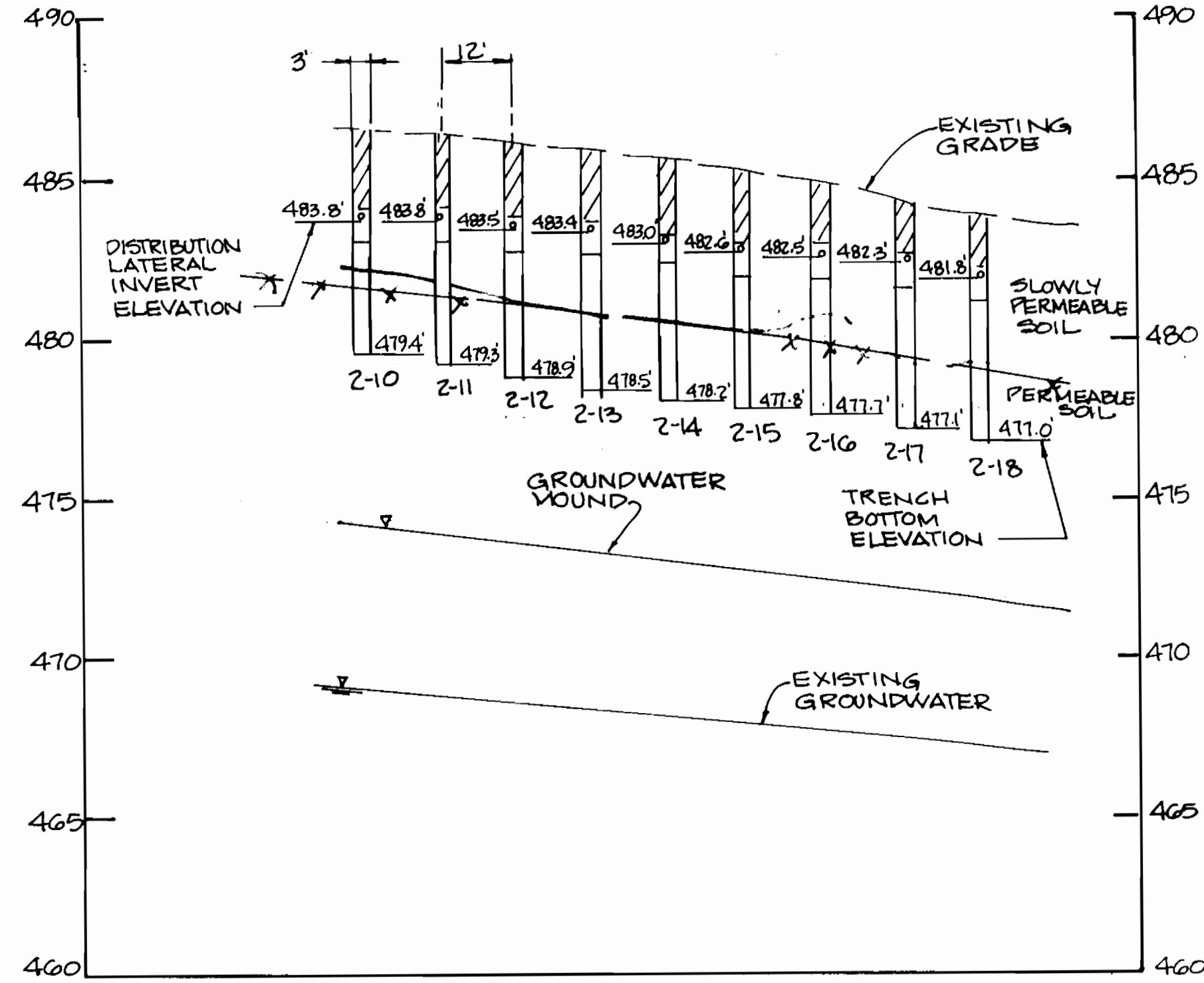
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

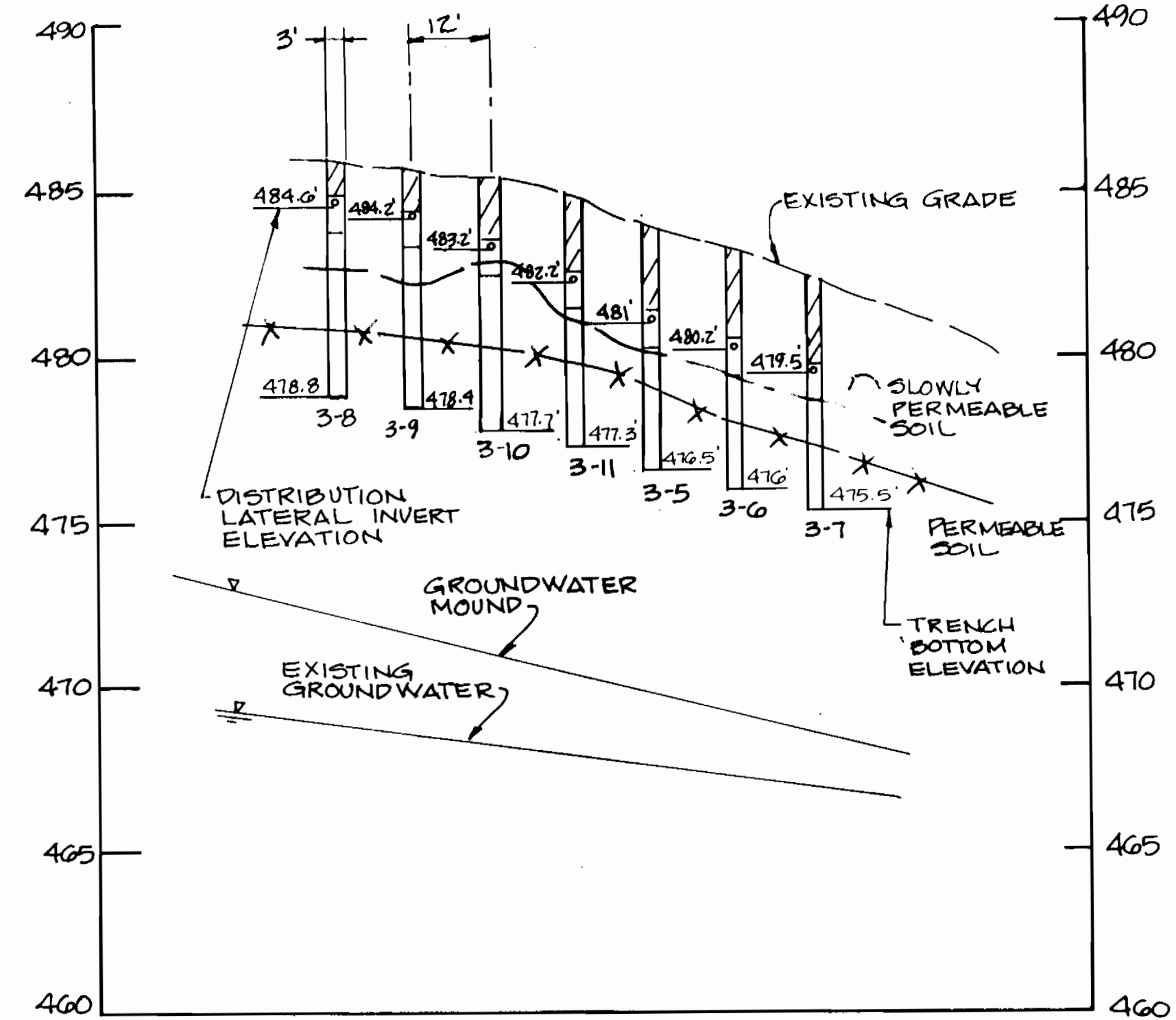
SHEET 2 OF 54



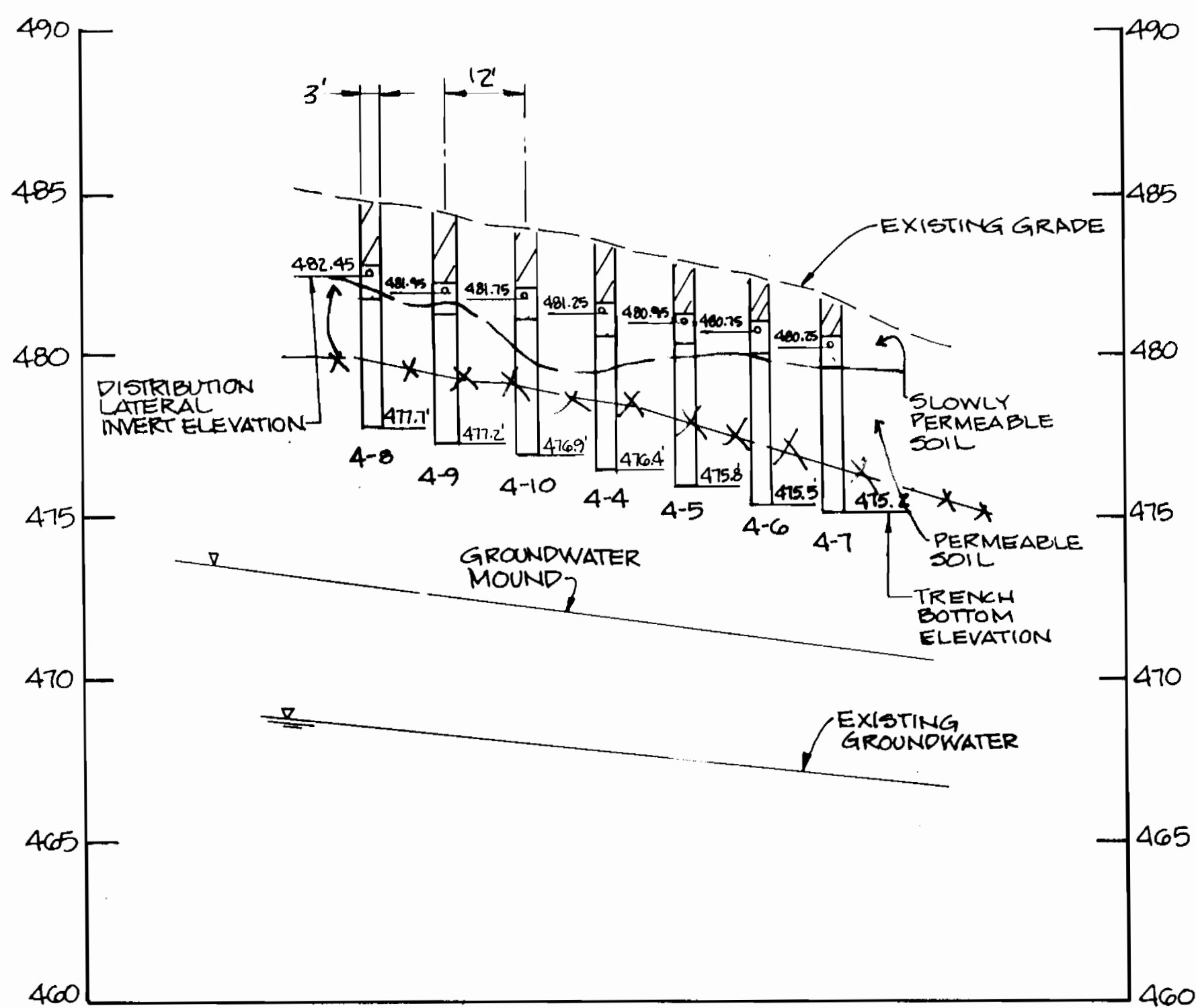
SECTION 1-1



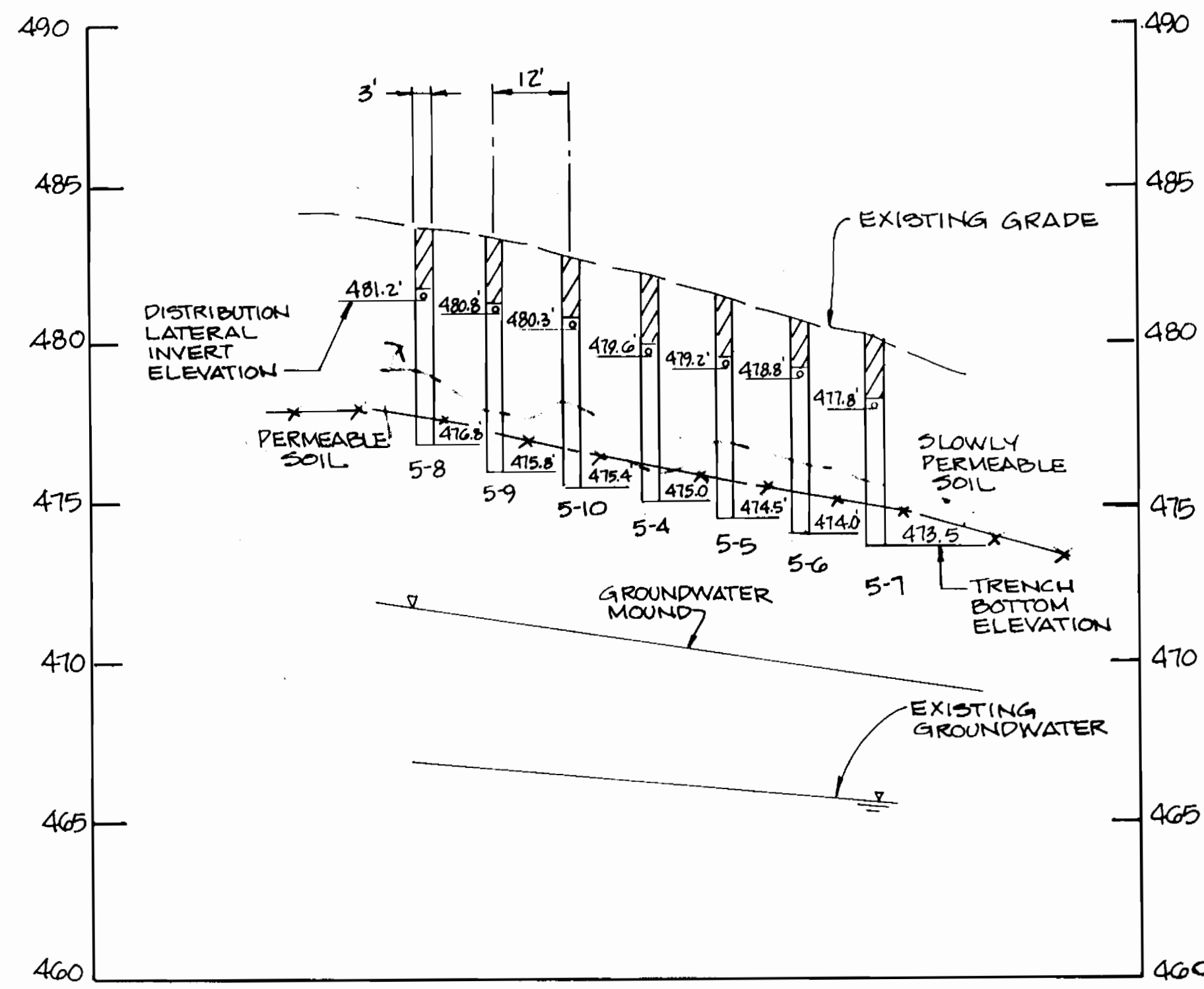
SECTION 2-2



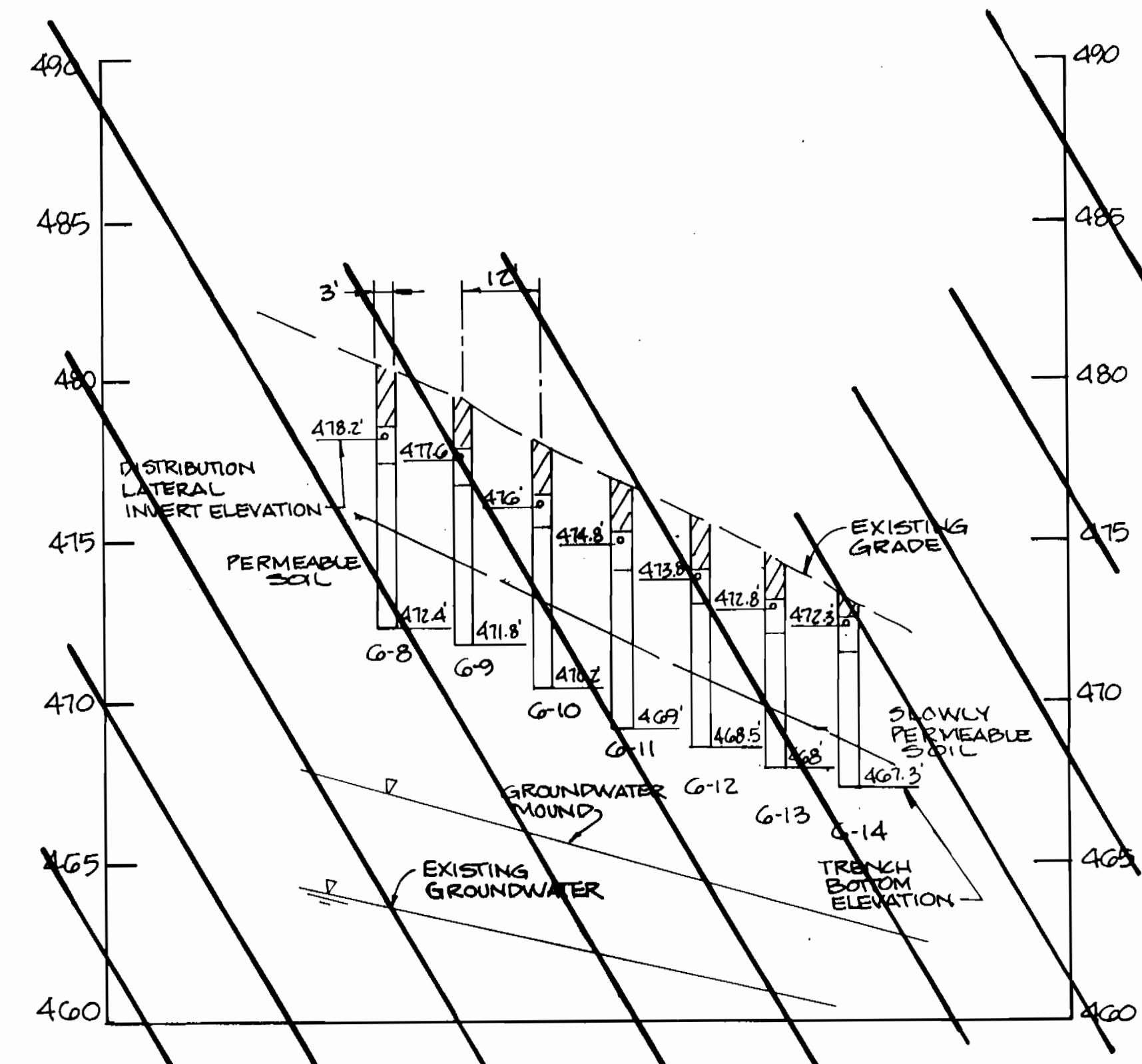
SECTION 3-3



SECTION 4-4



SECTION 5-5



SECTION 6-6

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 9/26/94  
 Chief, Bureau of Engineering: *[Signature]* 9/26/94  
 Chief, Bureau of Utilities: *[Signature]* 9-14-94  
 Chief, Land Development Division: *[Signature]* 9/26/94

DAMES & MOORE

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



DES: VRC			
DRN: BGM			
CHK: PJP	AS BUILT	10/95	
DATE: 12-93	CREATE PHASED PLANS	9-94	
BY: NO.	FINAL SUBMITTAL	8-94	
	REVISION	DATE	

TREATMENT CELL SECTIONS

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

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

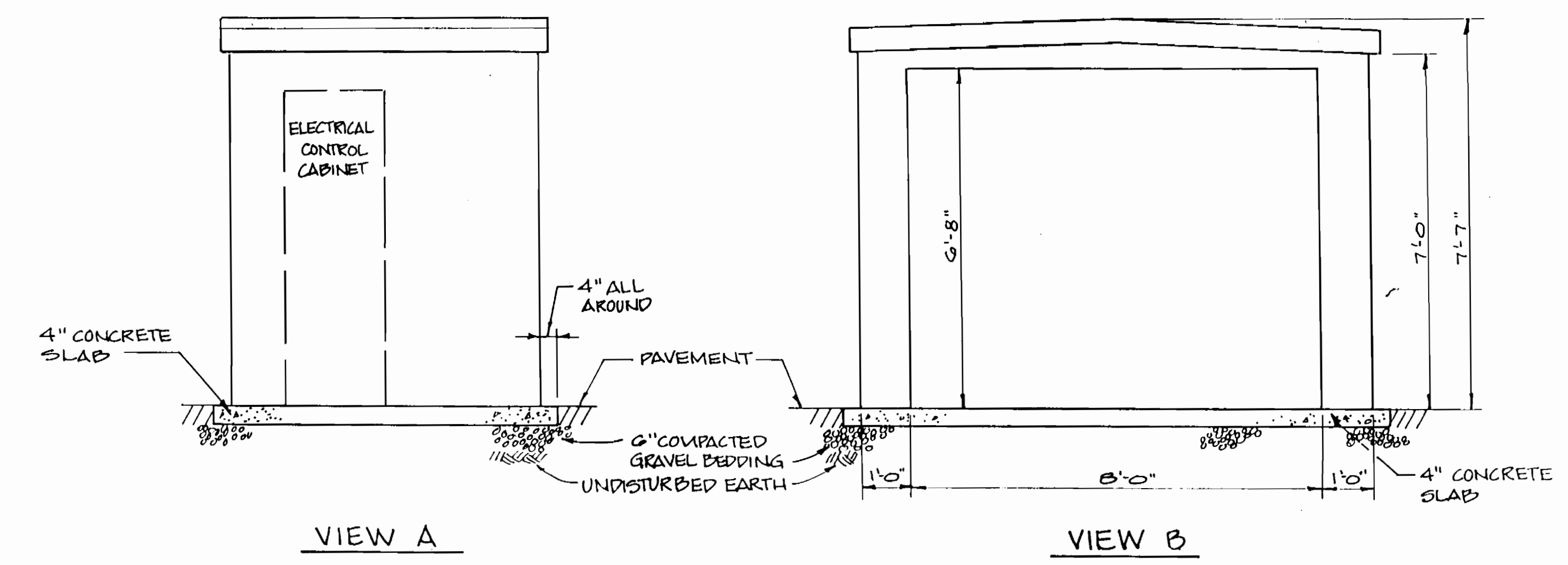
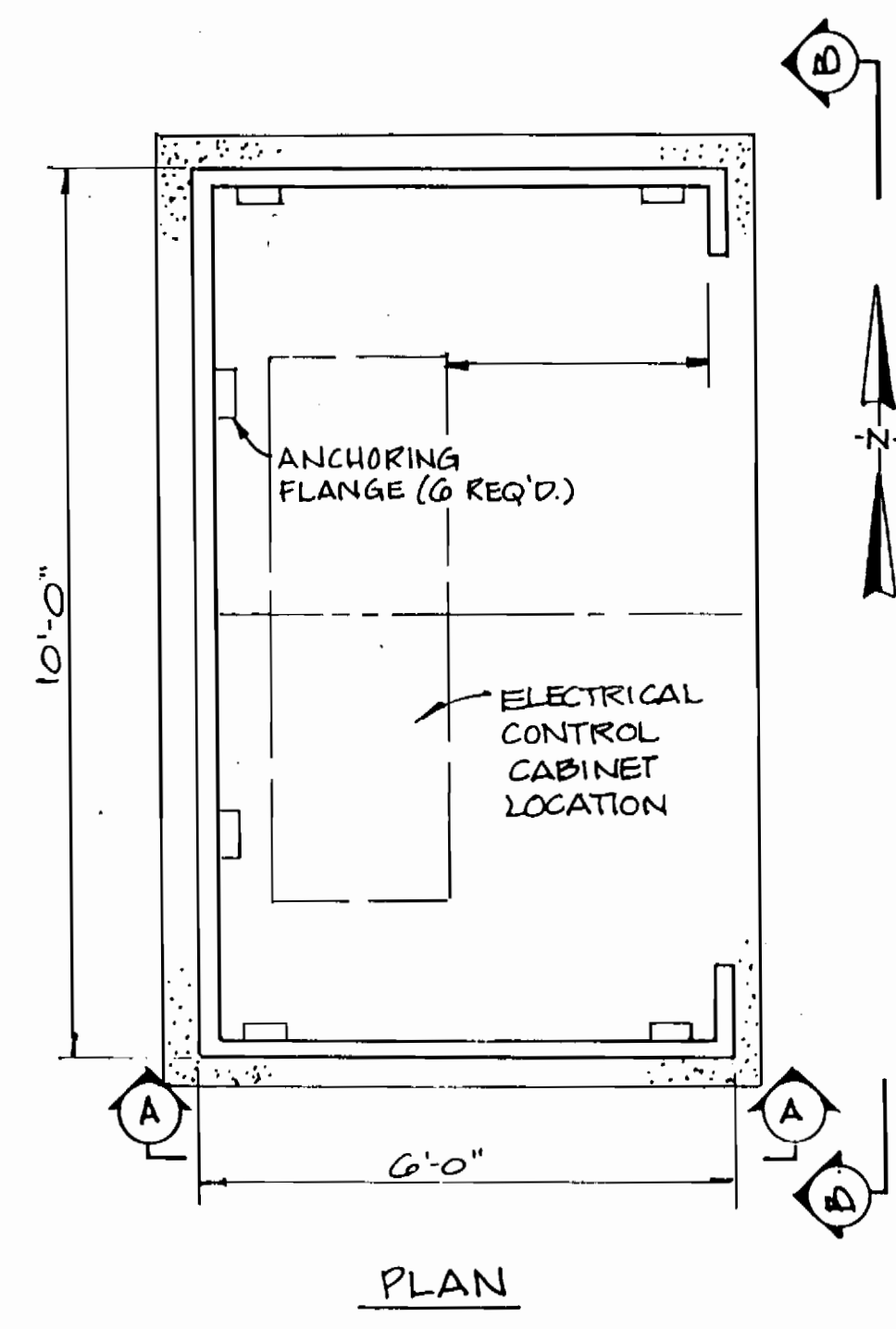
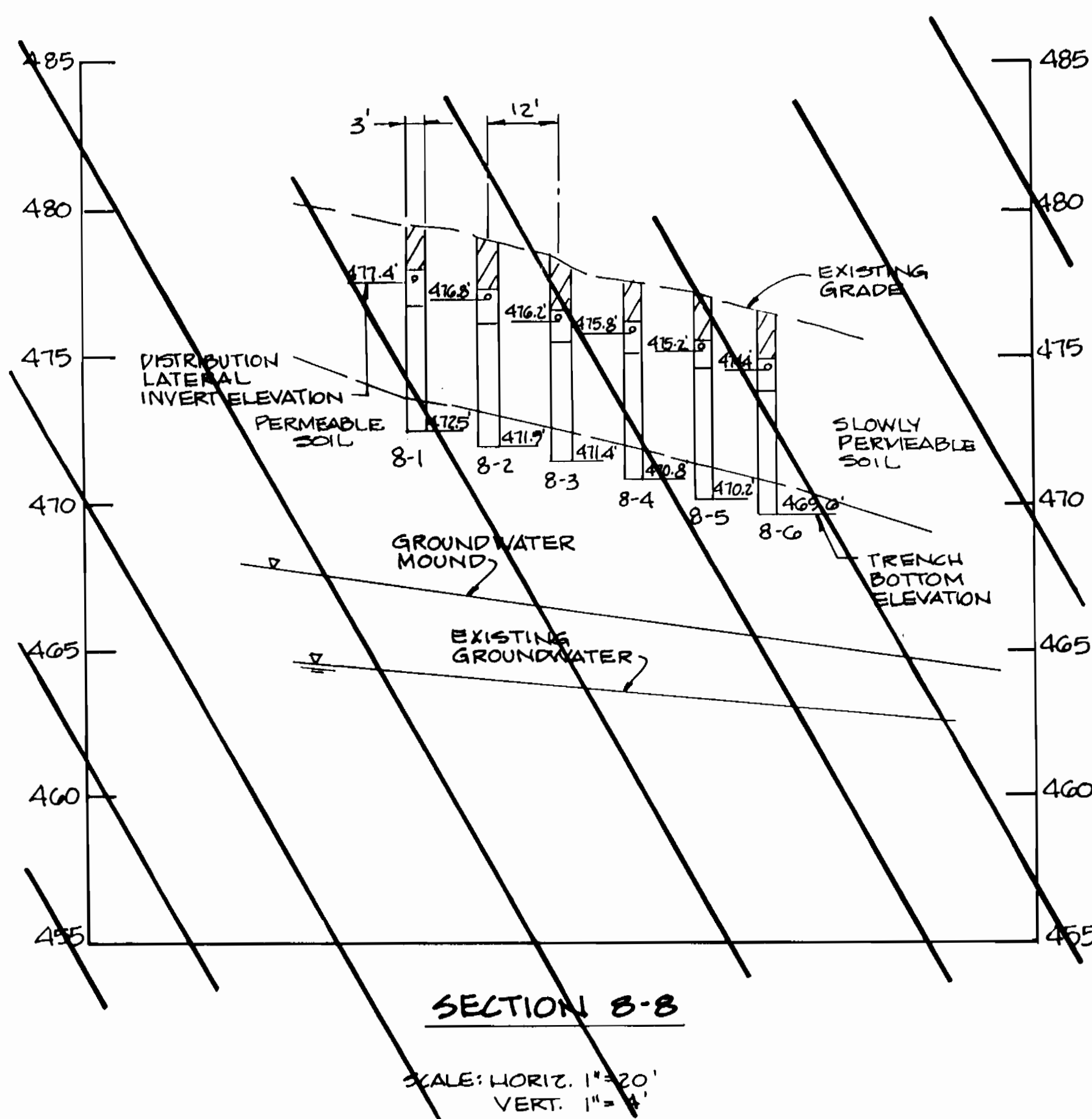
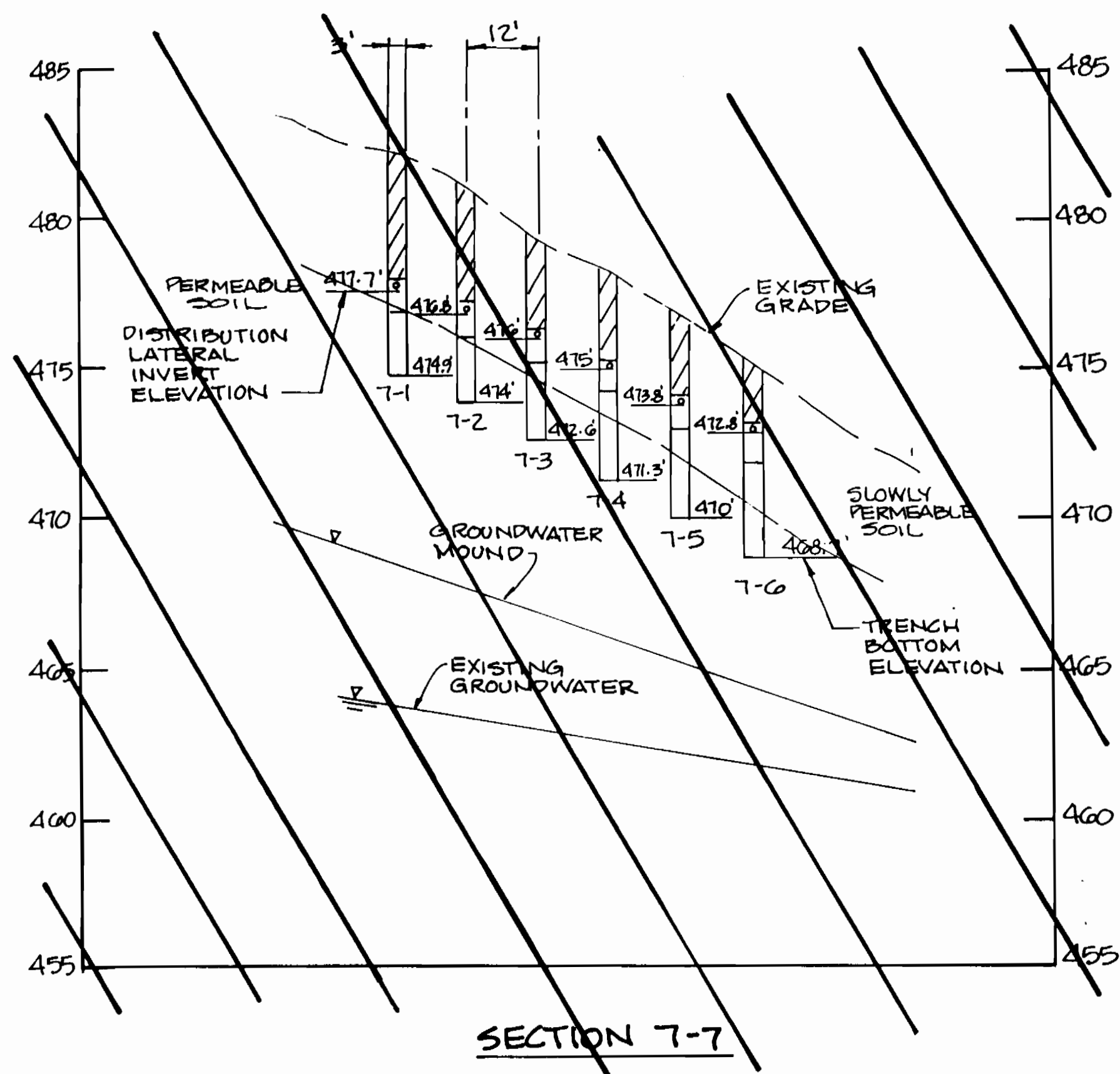
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

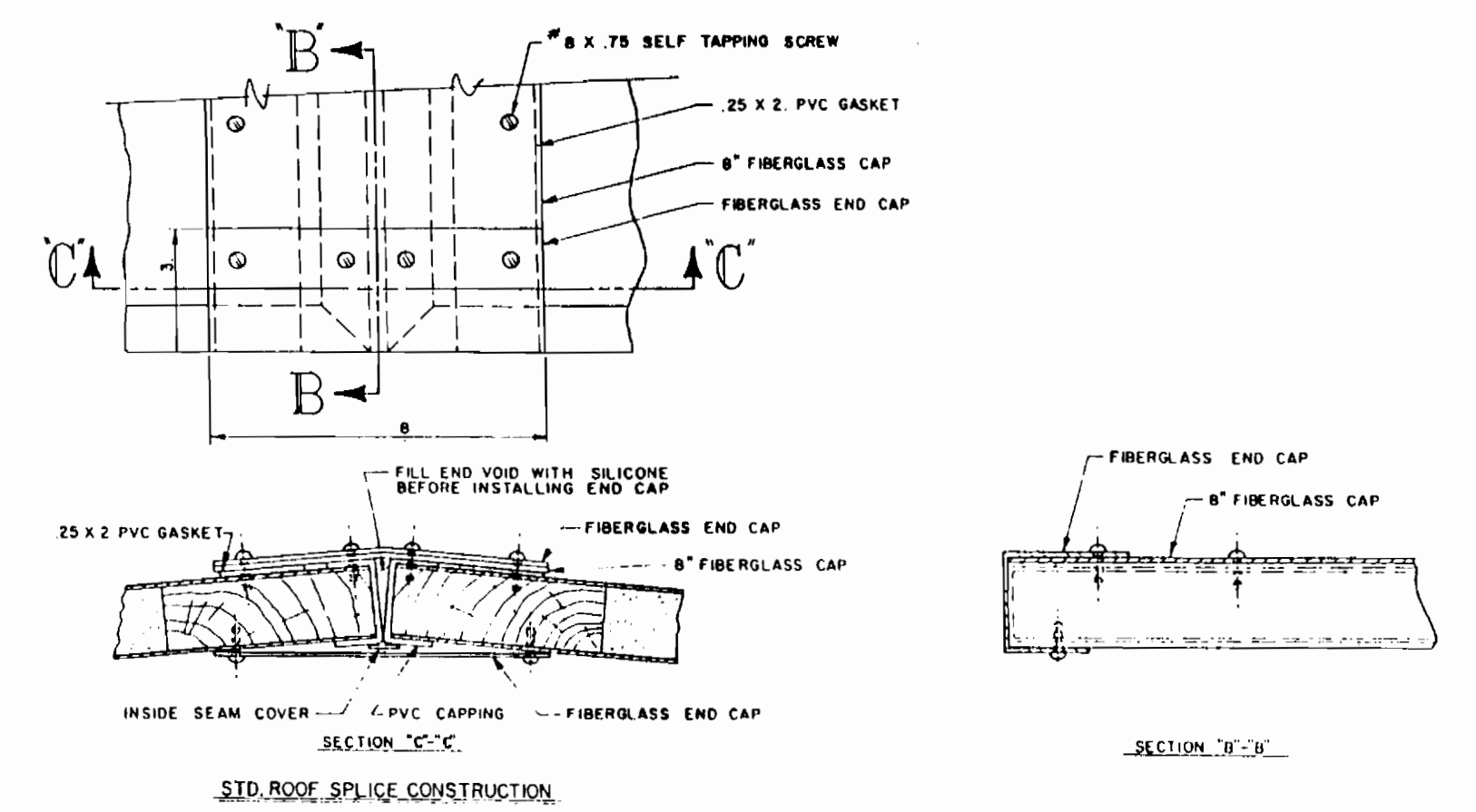
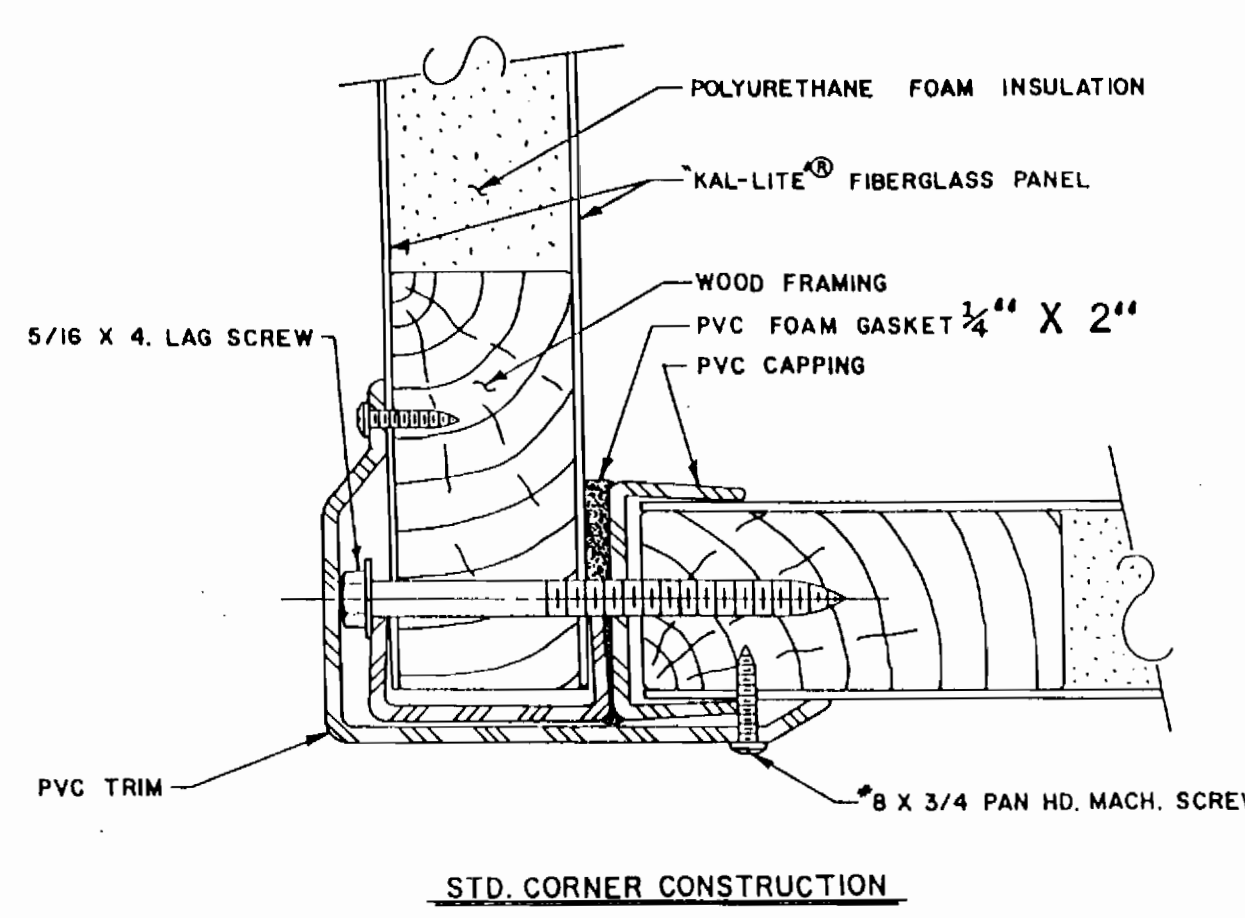
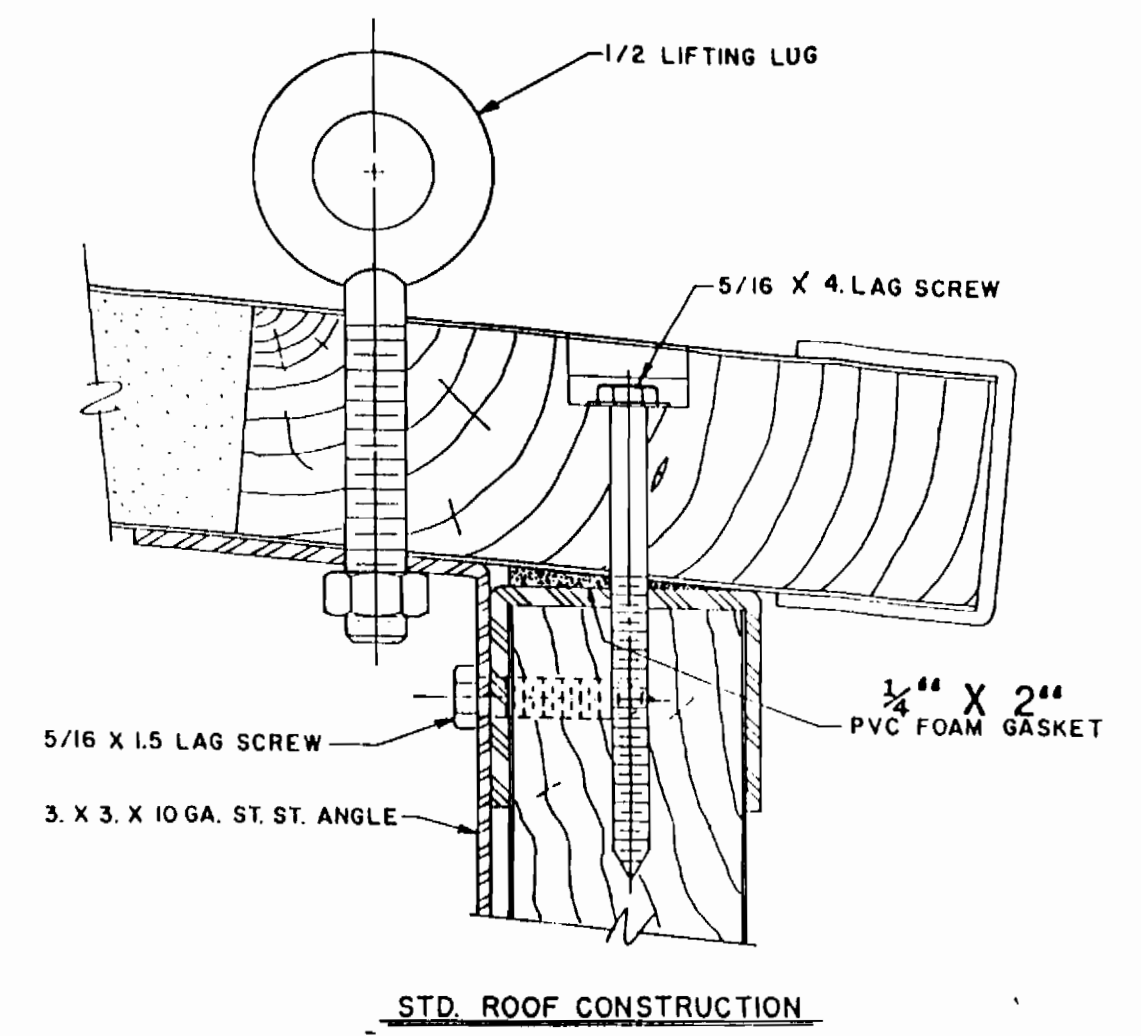
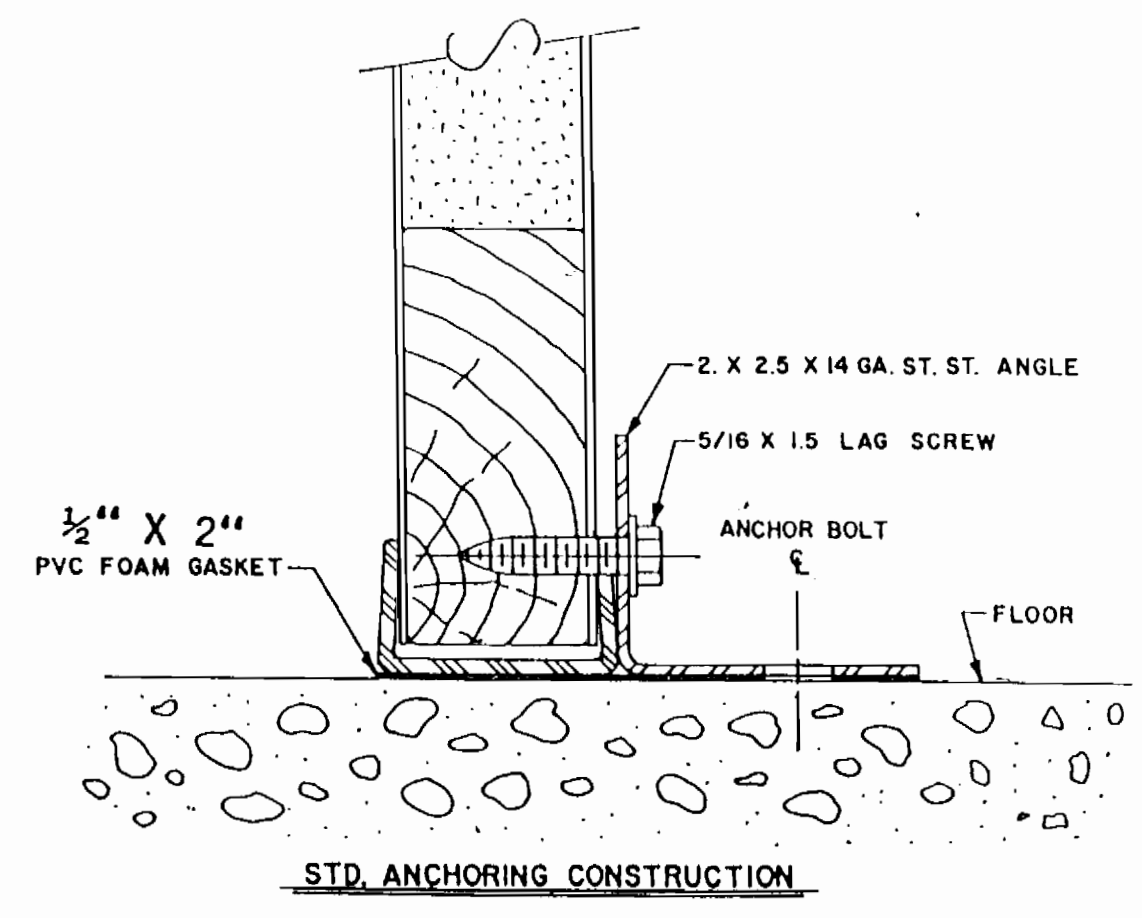
SCALE  
AS  
SHOWN

SHEET  
27 OF 51

3357 5/97



ELECTRICAL CONTROL CABINET ENCLOSURE  
SCALE: 1/2" = 1'-0"



ELECTRICAL CONTROL CABINET ENCLOSURE DETAILS  
NOT TO SCALE

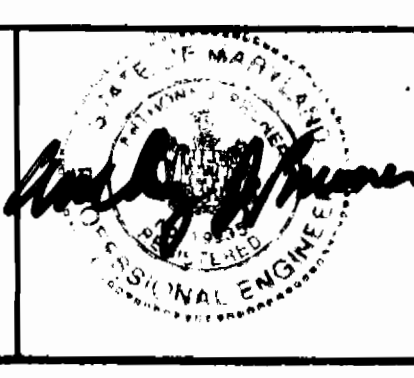
3357 5/38

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DATE: 9-26-94  
DATE: 9-14-94

DAMES & MOORE

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



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

TREATMENT CELL SECTIONS AND ELECTRICAL CONTROL CABINET ENCLOSURE

600' SCALE MAP NO. 40-31 BLOCK NO. 12

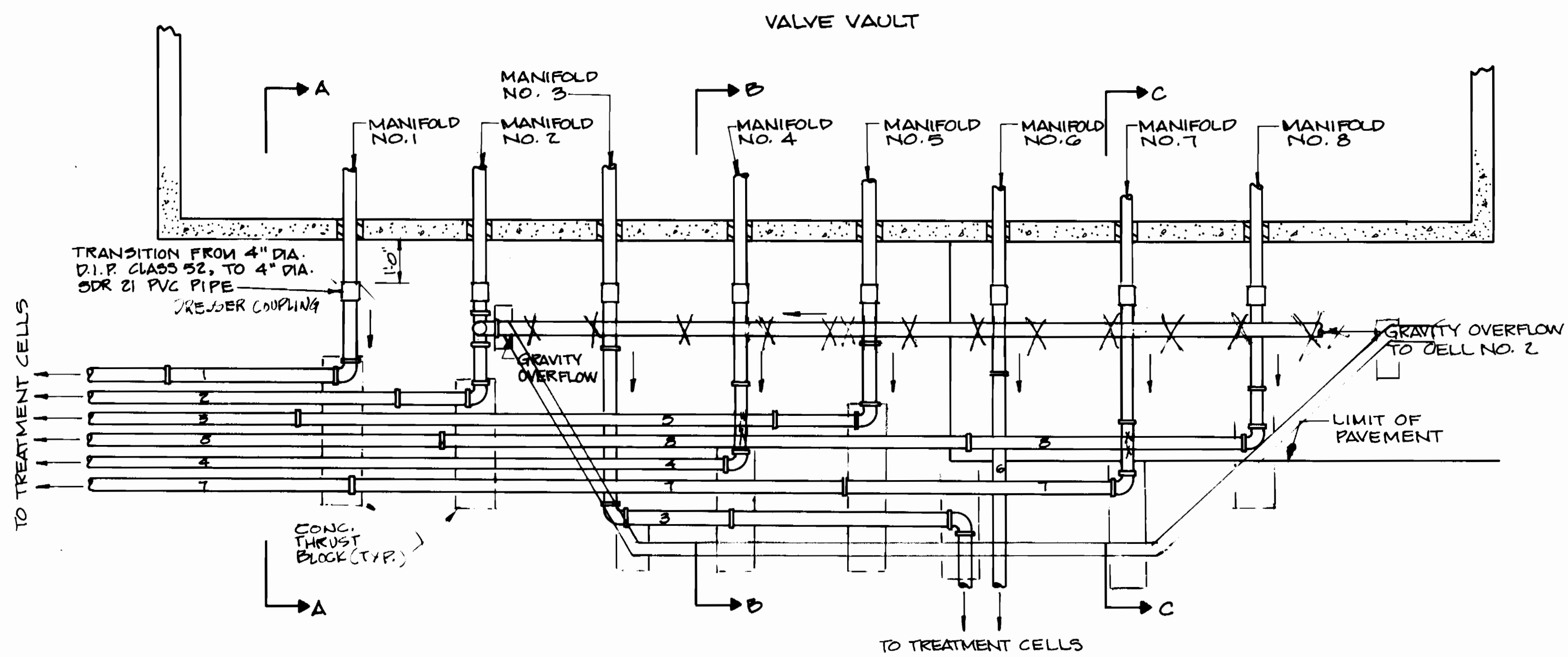
ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

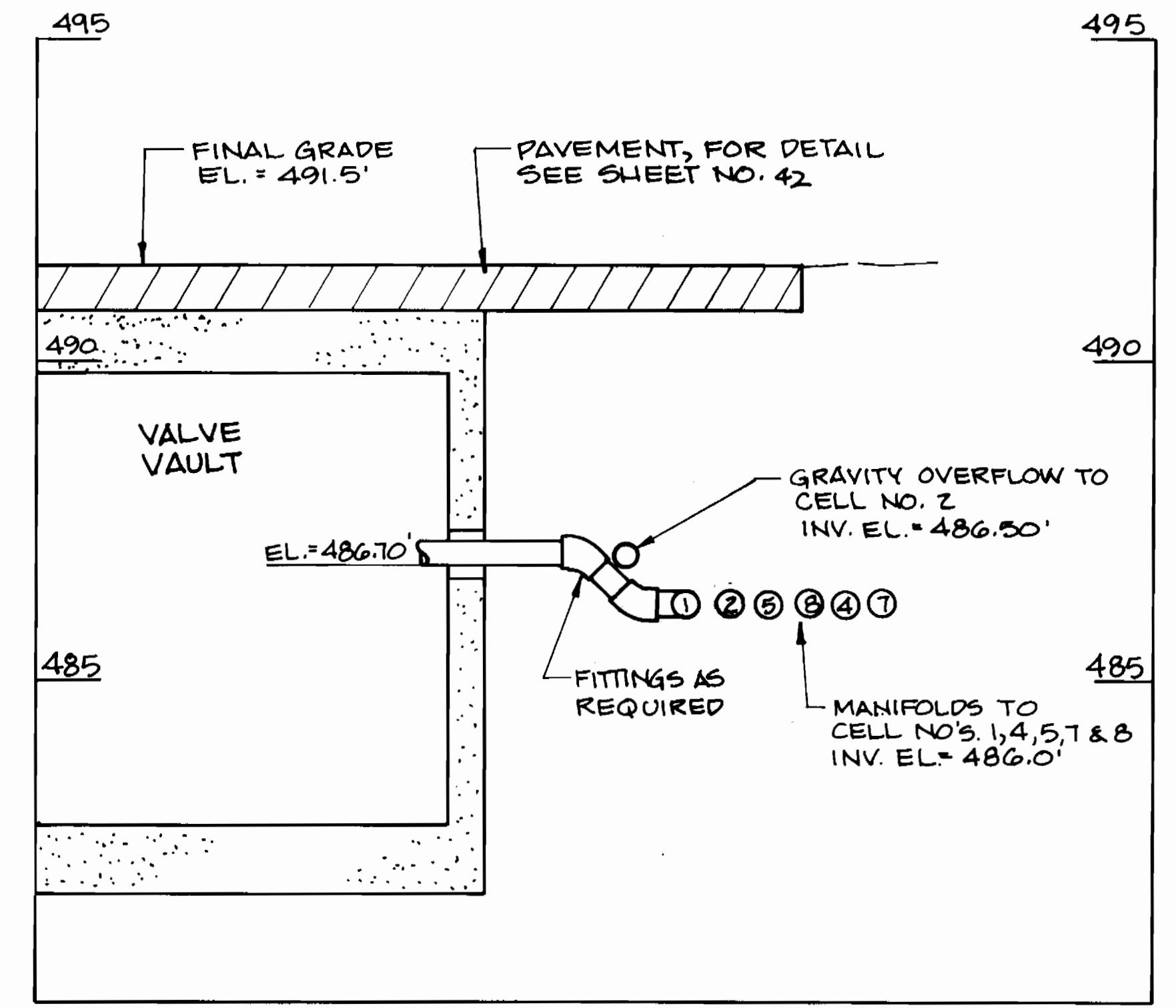
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

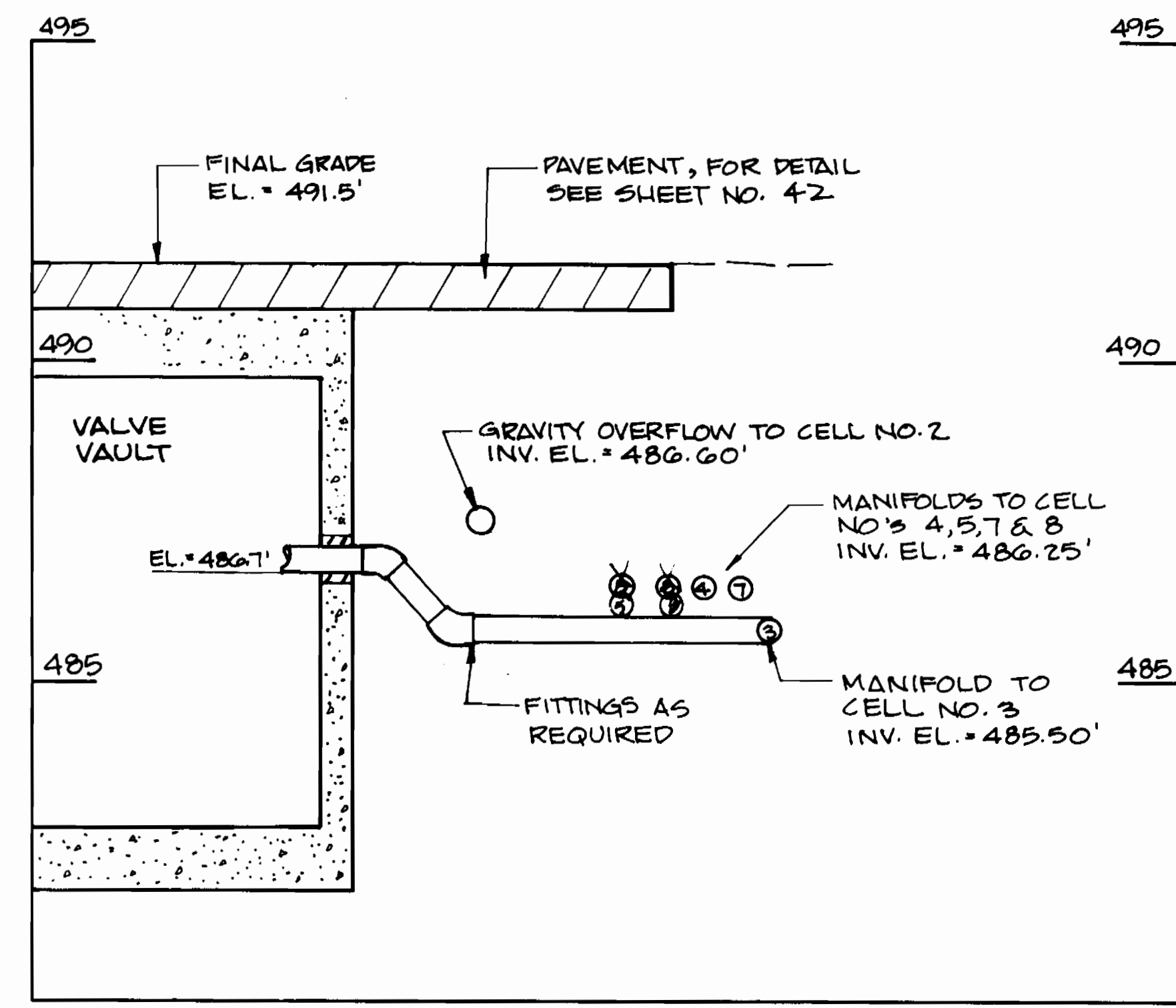
SHEET 32 OF 32



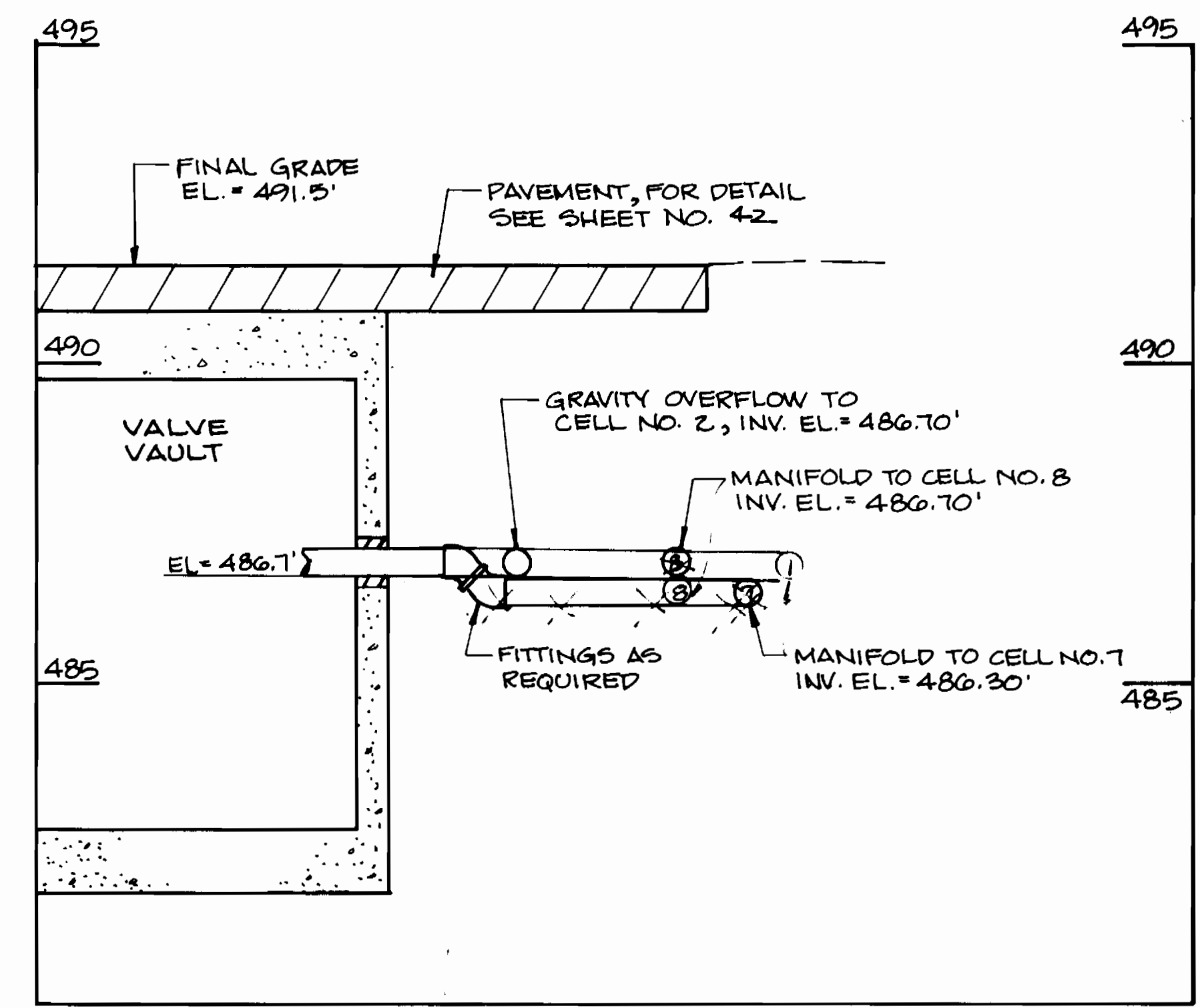
**MANIFOLD PIPING DETAIL NO. 1**  
SCALE: 1"=2'



**SECTION A-A**  
**MANIFOLD PIPING DETAIL**  
SCALE: 1"=2'



**SECTION B-B**  
**MANIFOLD PIPING DETAIL**  
SCALE: 1"=2'



**SECTION C-C**  
**MANIFOLD PIPING DETAIL**  
SCALE: 1"=2'

3357 5/39

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

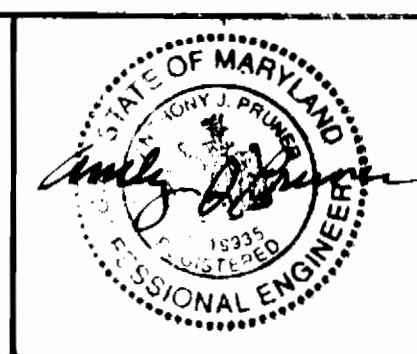
*Robert M. Berman* 9/14/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert M. Berman* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert M. Berman* 9/14/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES: VRC			
DRN: BGM			
CHK: AJF			
DATE: 12-93	BY: NO.	REVISION	DATE
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

**TREATMENT CELL PIPING DETAILS**

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

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

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

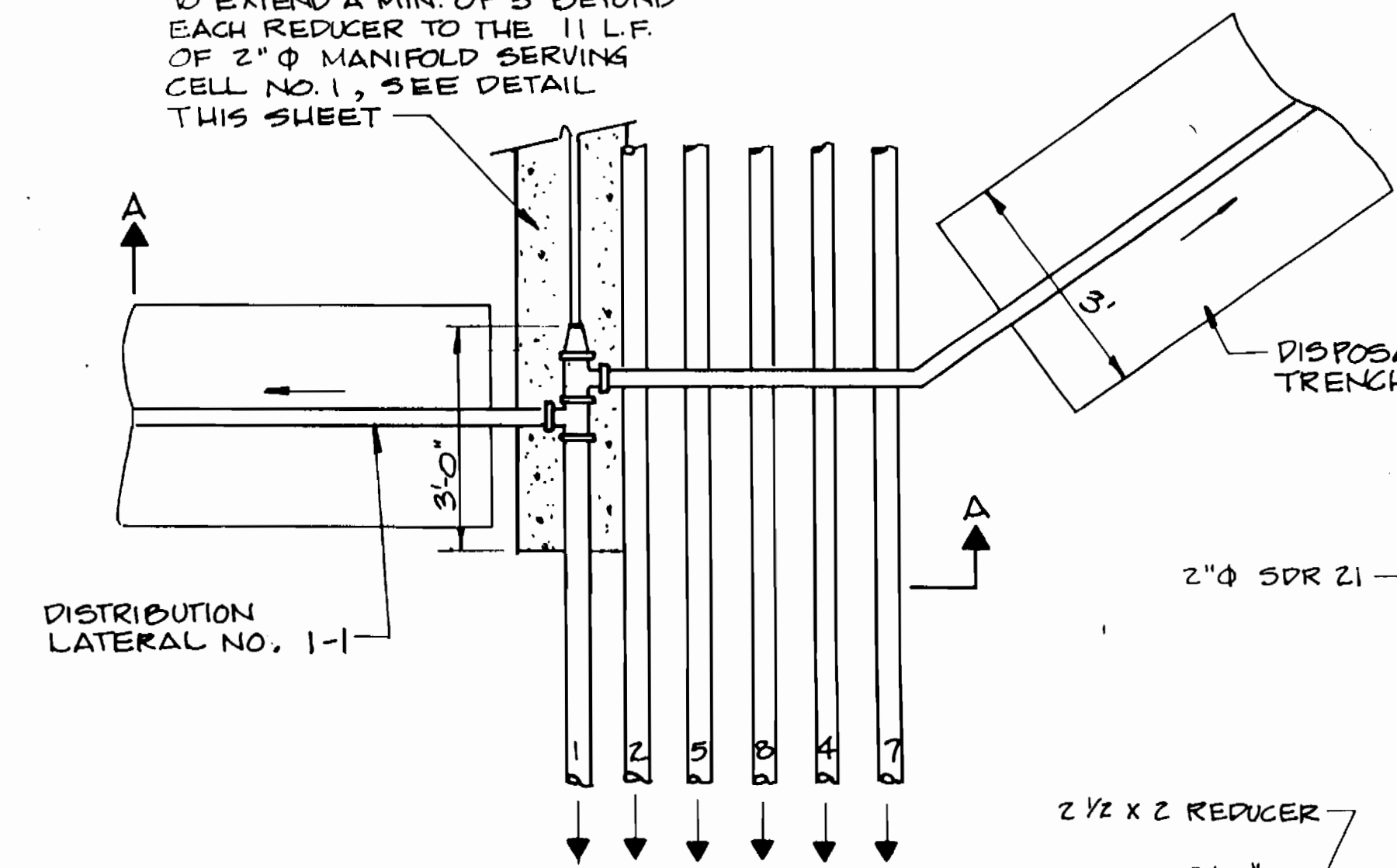
SCALE AS SHOWN

SHEET 27 OF 31

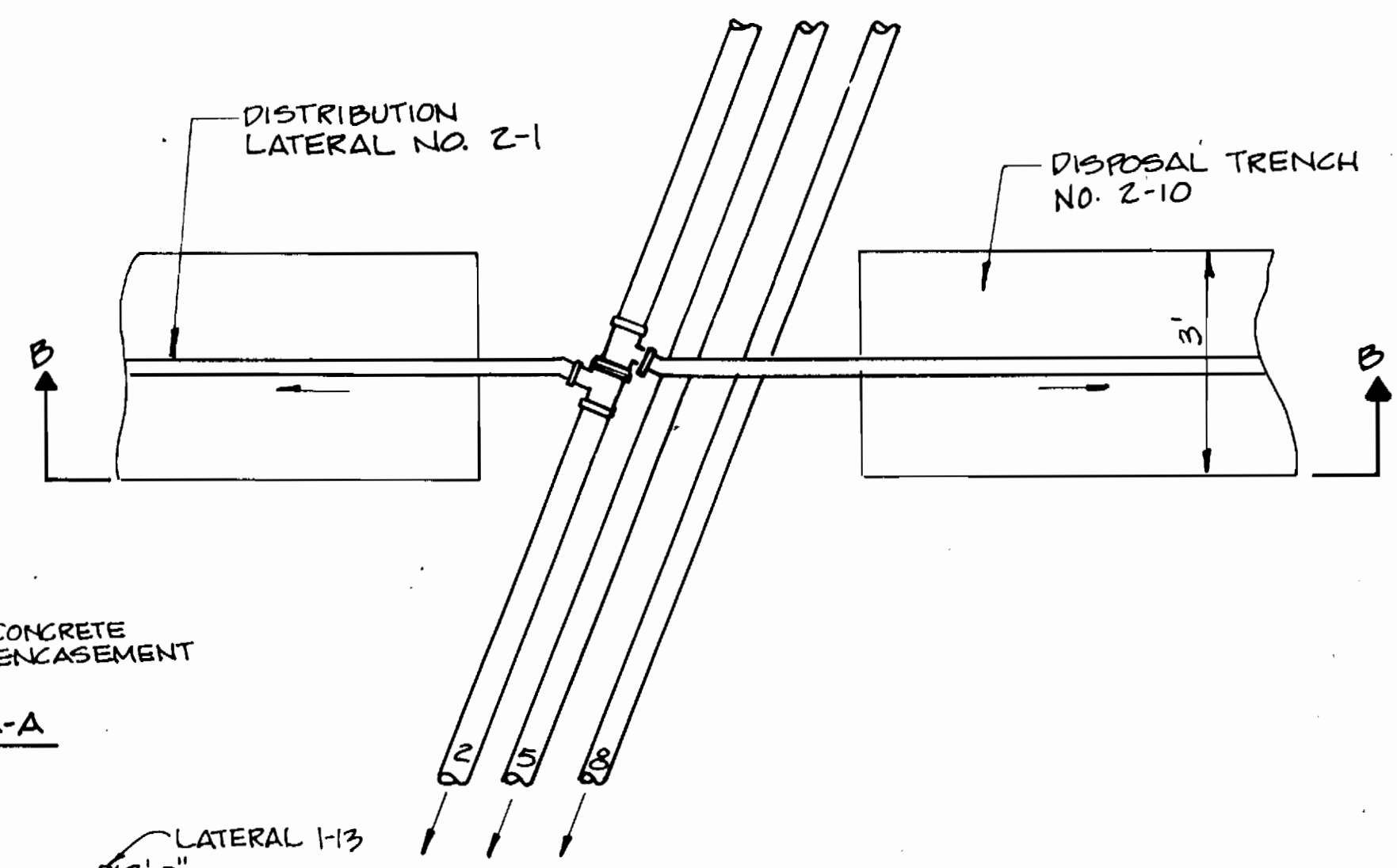


3357 S/40 Ashleigh Knolls

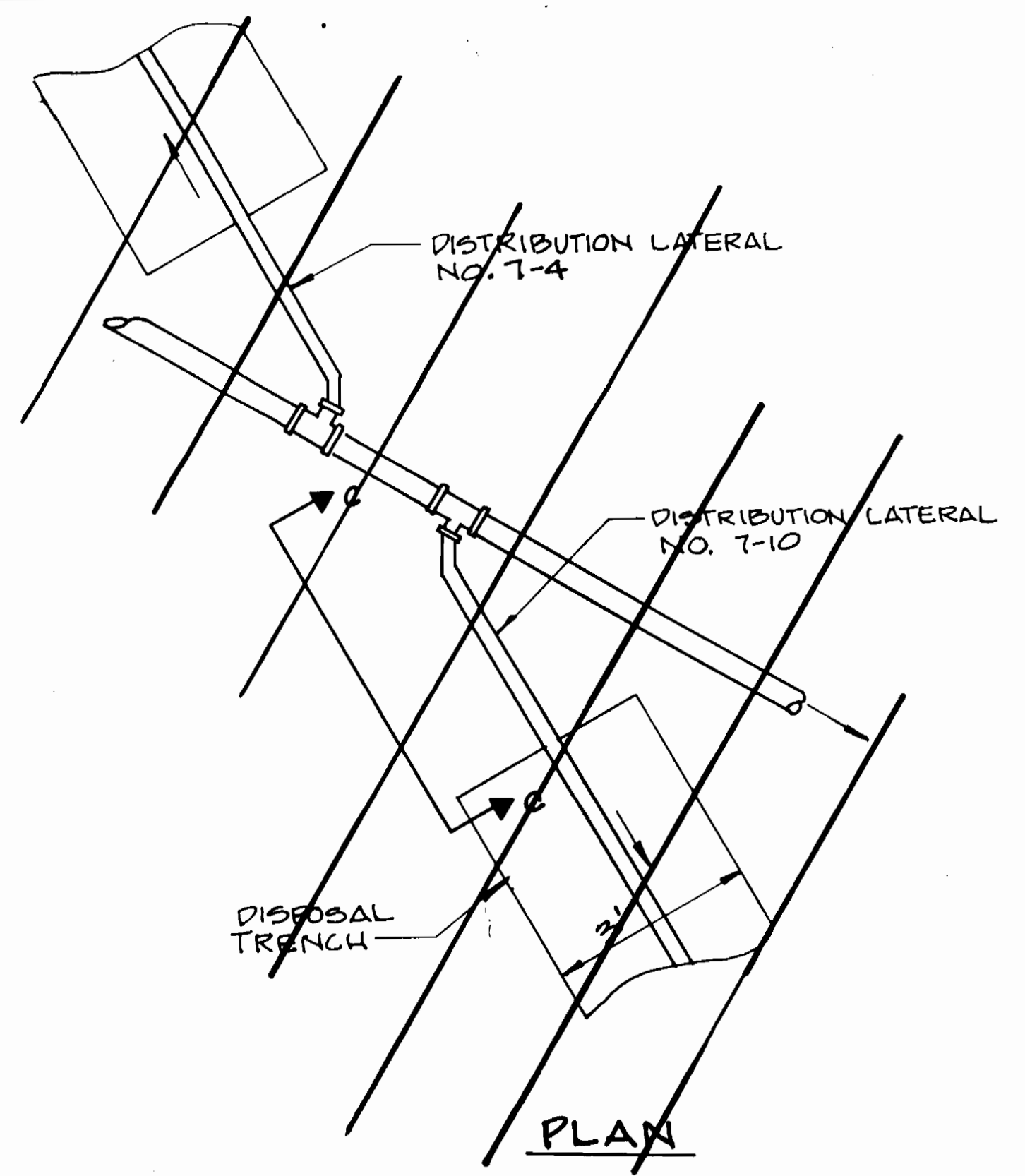
CONCRETE PIPE ENCASMENT TO EXTEND A MIN. OF 3' BEYOND EACH REDUCER TO THE 11 L.F. OF 2" Ø MANIFOLD SERVING CELL NO. 1, SEE DETAIL THIS SHEET



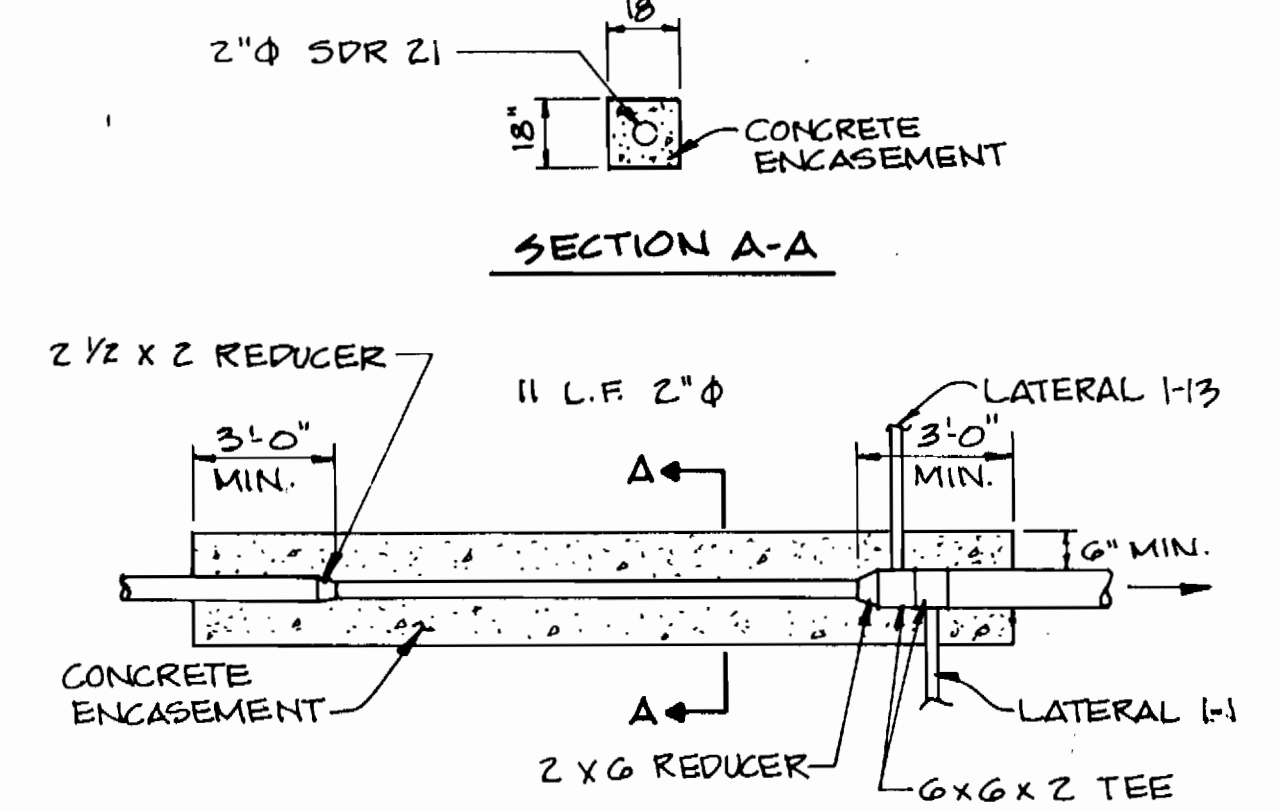
PLAN



PLAN

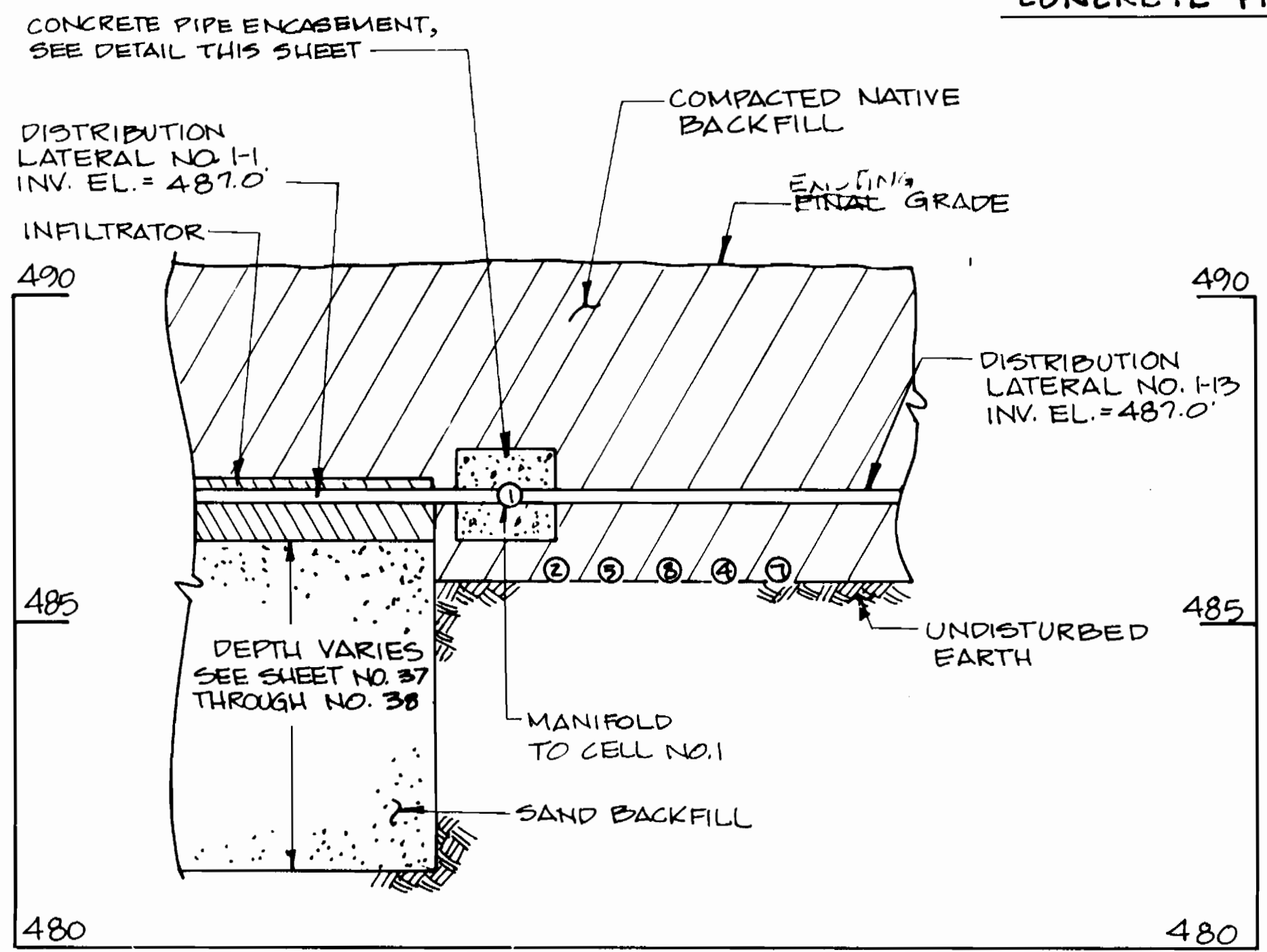


PLAN



SECTION A-A

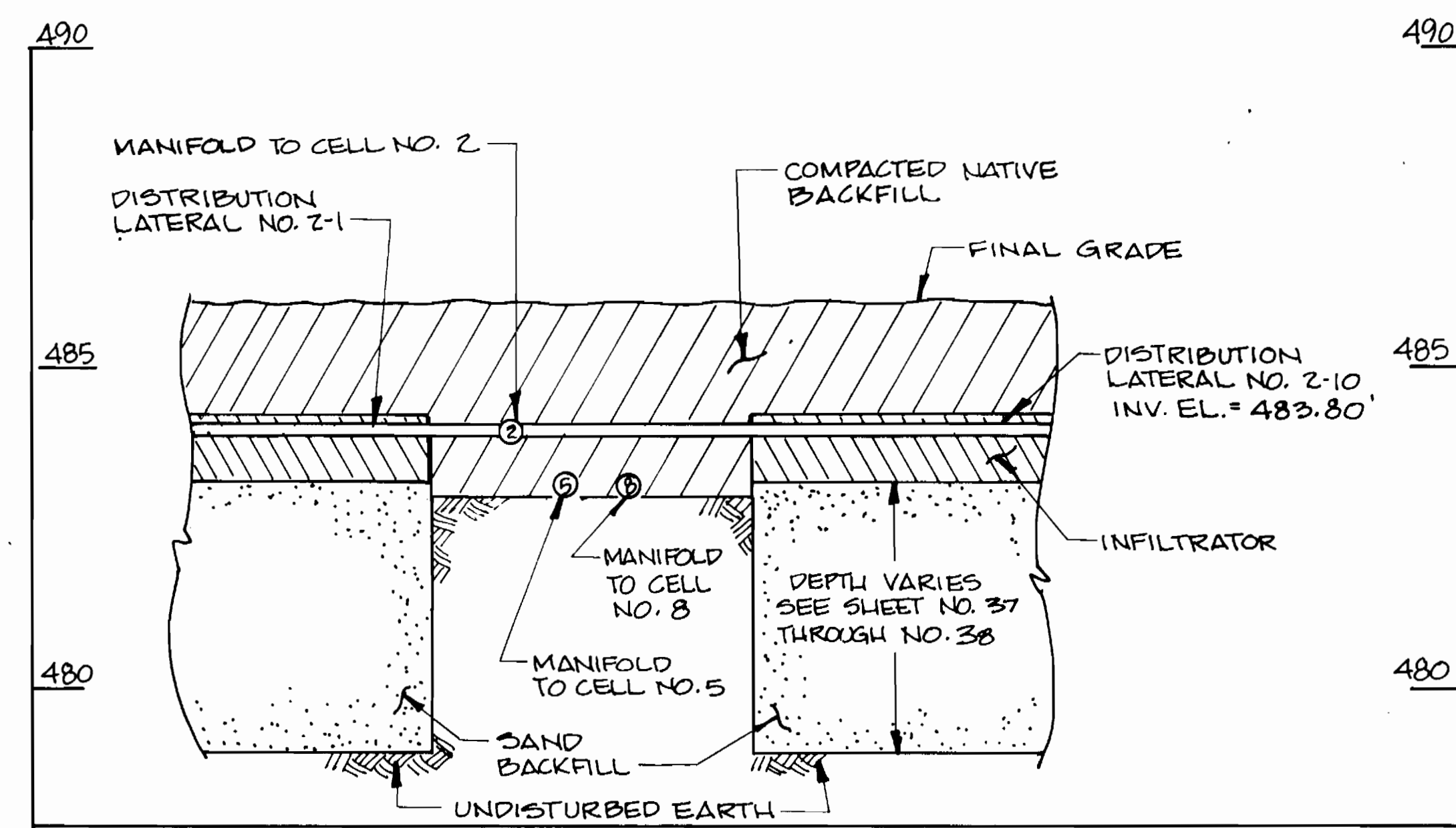
CONCRETE PIPE ENCASMENT DETAIL NOT TO SCALE



SECTION A-A

MANIFOLD PIPING DETAIL NO. 2

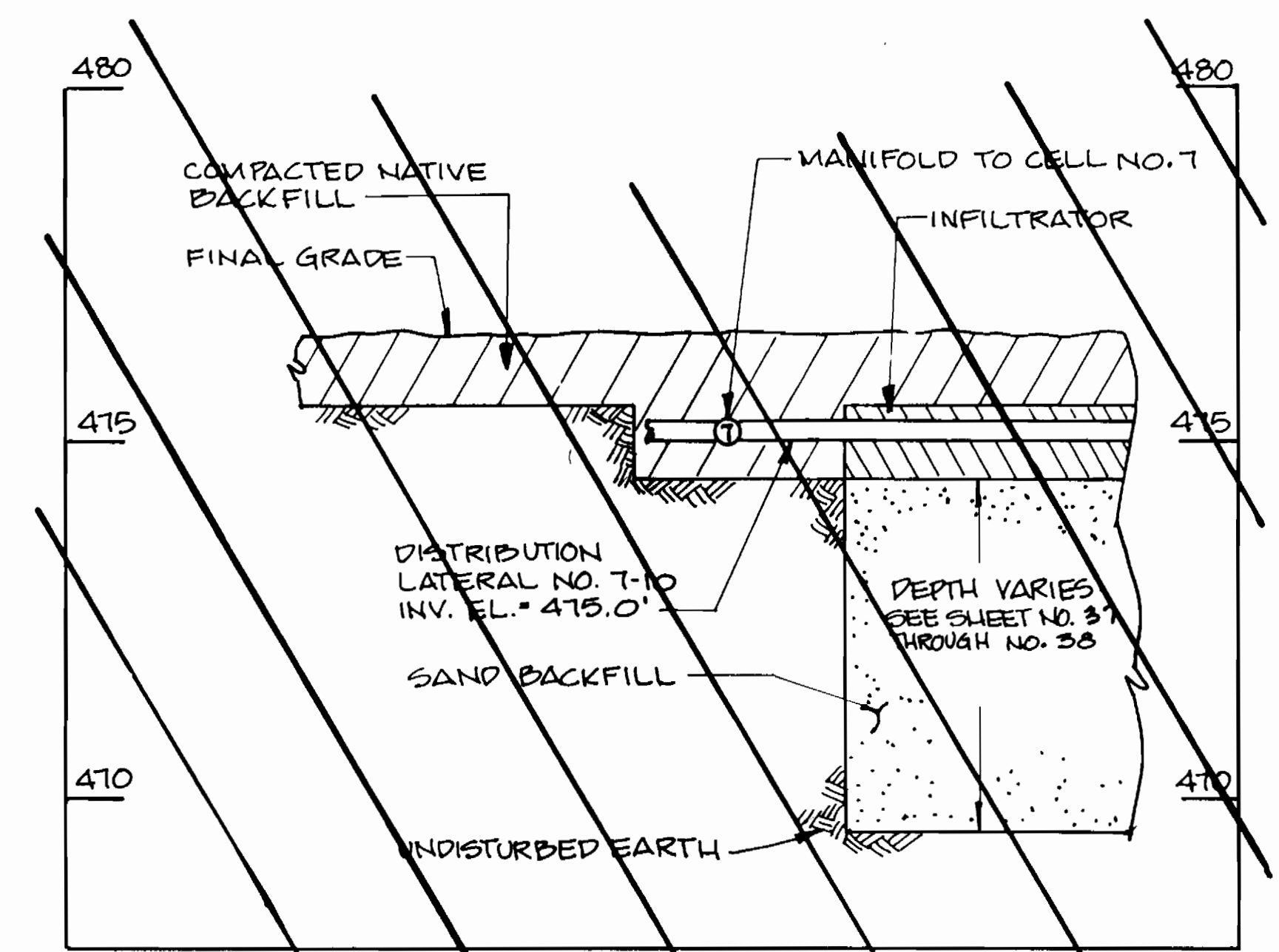
SCALE: 1" = 2'



SECTION B-B

MANIFOLD PIPING DETAIL NO. 3

SCALE: 1" = 2'



SECTION C-C

MANIFOLD PIPING DETAIL NO. 4

SCALE: 1" = 2'

NOTES:

- FOR PIPE DIAMETERS, SEE SHEET NO. 30, 31 & 32
- INSTALL PIPE FITTINGS AS NEEDED TO ACHIEVE THE PROPER ALIGNMENT FROM MANIFOLD TO DISTRIBUTION TRENCH.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE  
*Robert M. Ramsey* 9-14-94  
 CHIEF, BUREAU OF UTILITIES DATE

CHIEF, BUREAU OF ENGINEERING DATE  
*Robert M. Ramsey* 2/16/94  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

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



DES: VRC			
DRN: BSK/K			
CHK: AJP			
DATE: 12-93			
BY	NO.	REVISION	DATE
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

TREATMENT CELL PIPING DETAILS

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

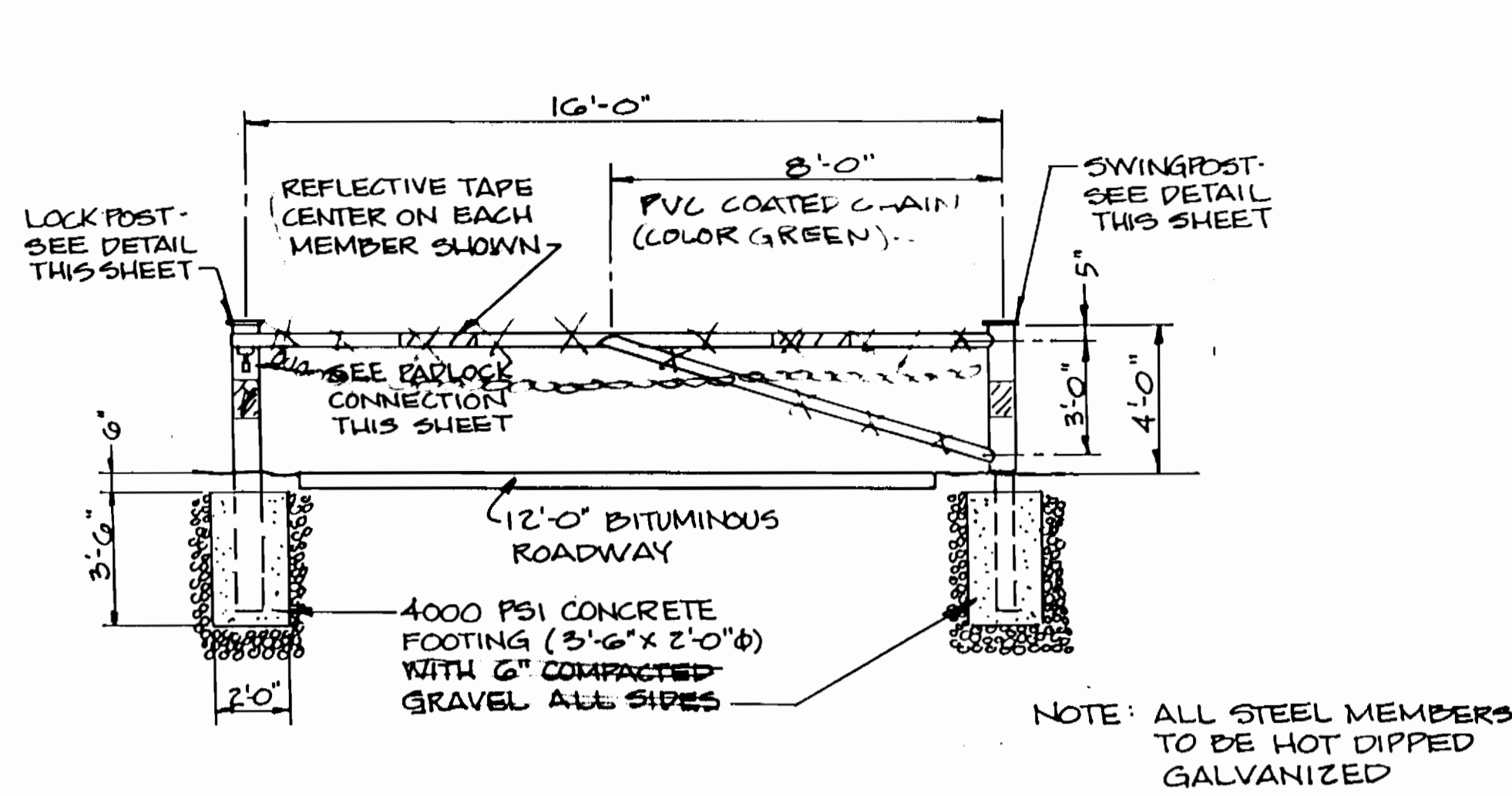
ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

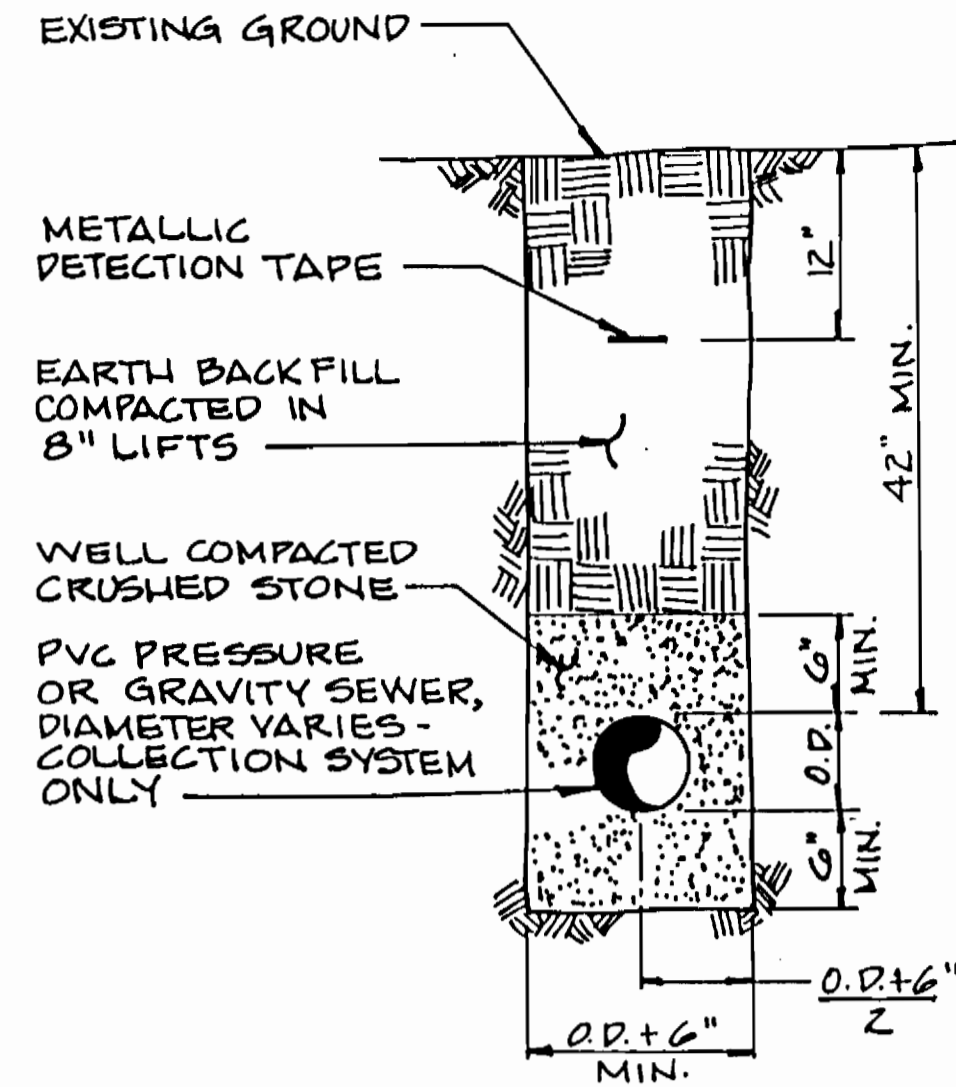
SCALE AS SHOWN

SHEET 40 OF 54



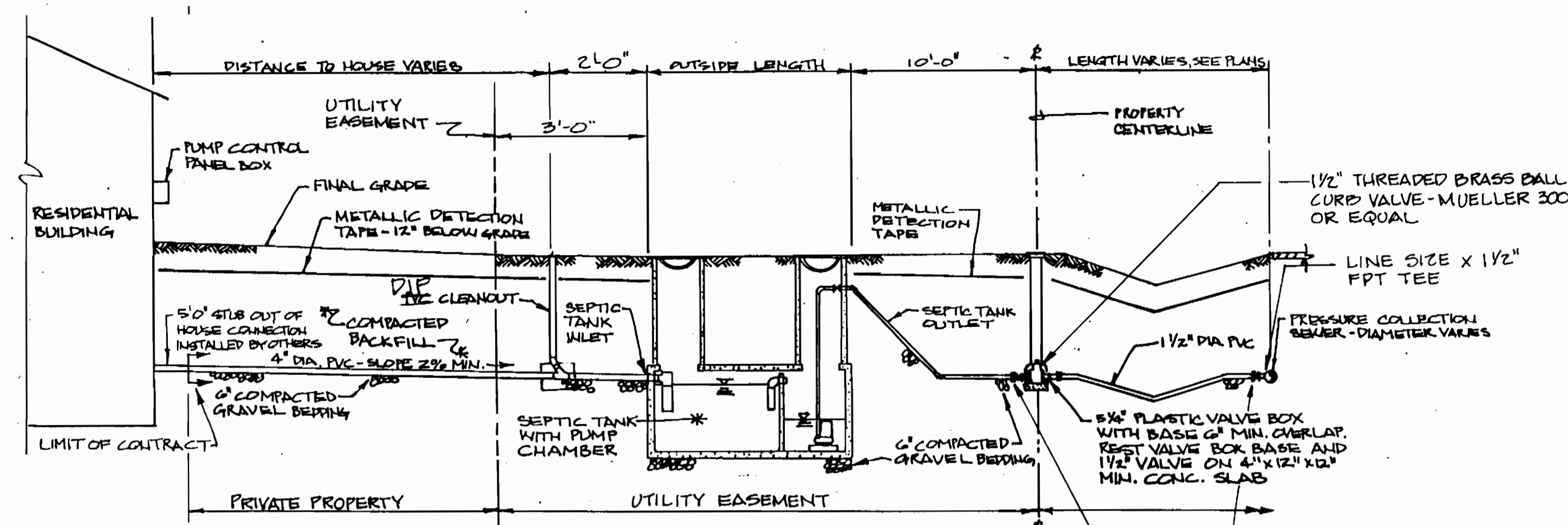
**SWING GATE**

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



**PIPE TRENCH & BEDDING DETAIL**

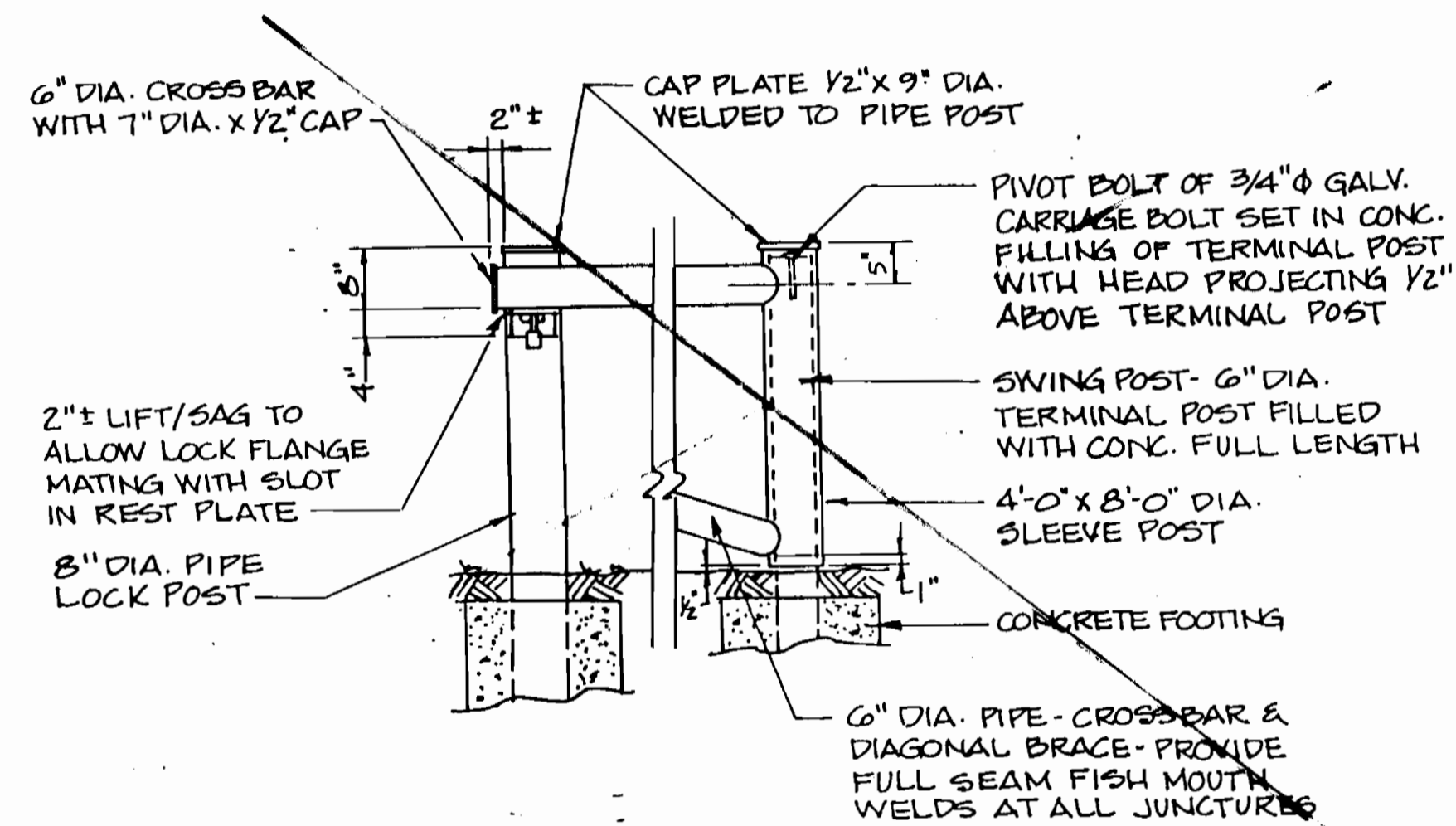
NOT TO SCALE



**SEWER HOUSE CONNECTION DETAIL**

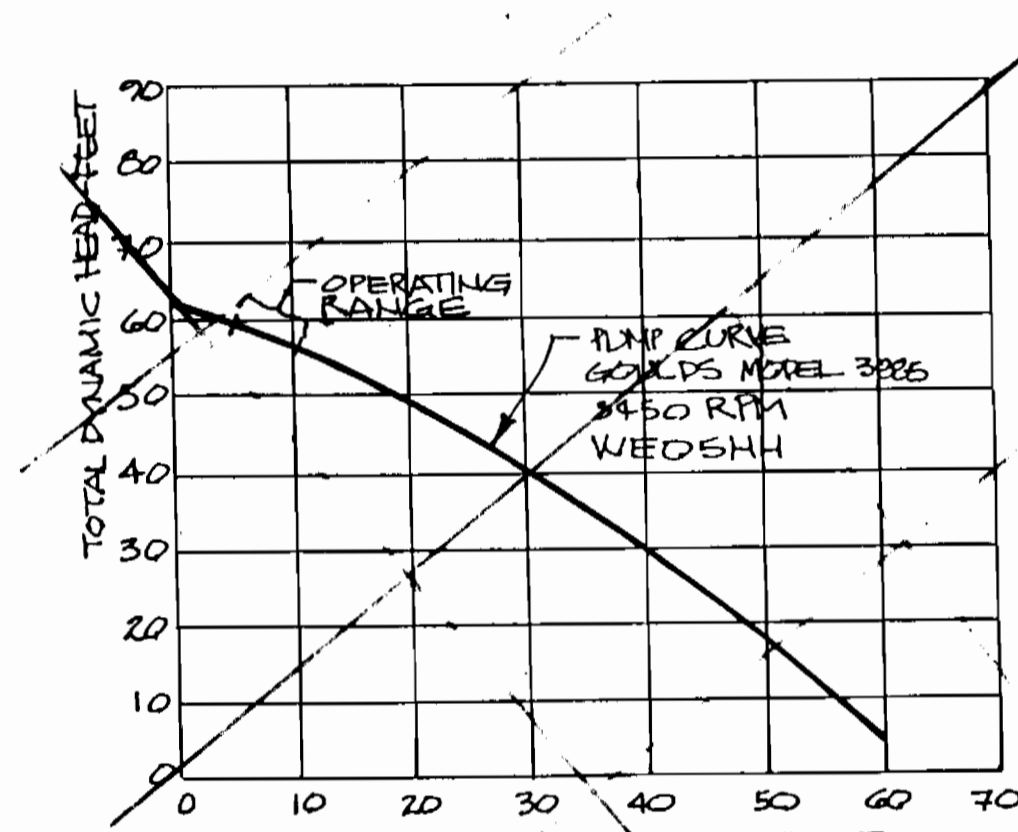
NOT TO SCALE

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

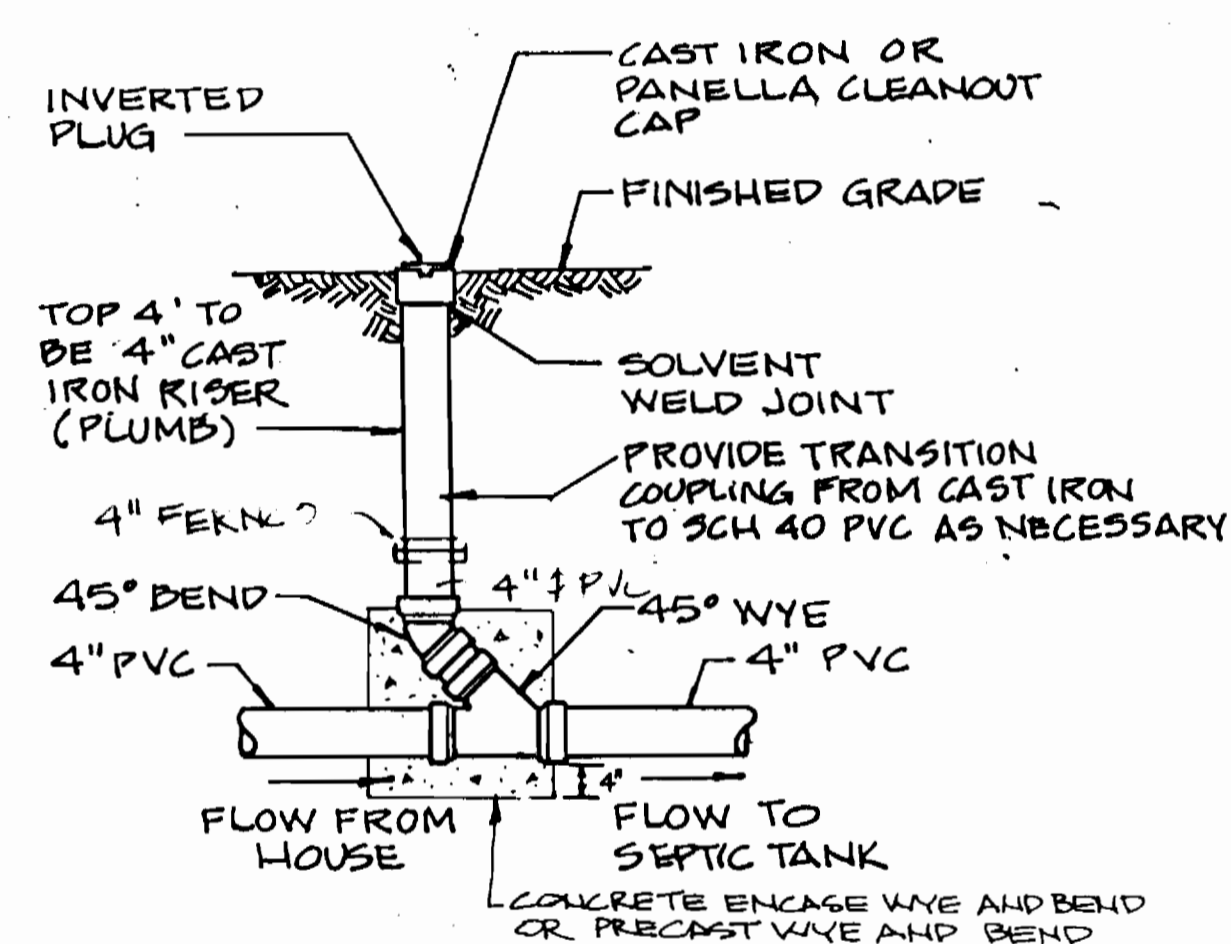


**GATE POSTS**

NOT TO SCALE

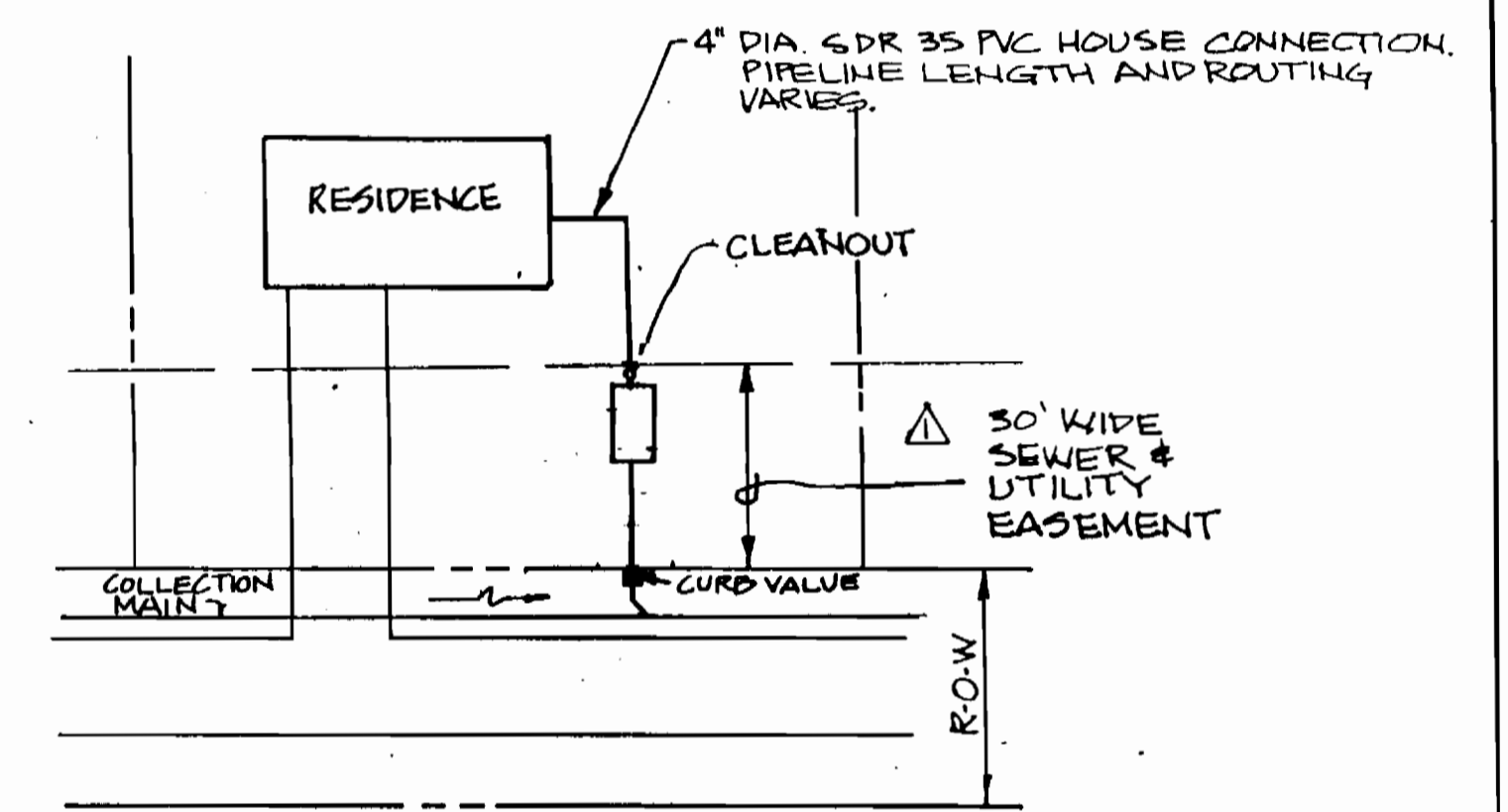


**PUMP CURVE**  
1/2 H.P. SEPTIC TANK EFFLUENT PUMP



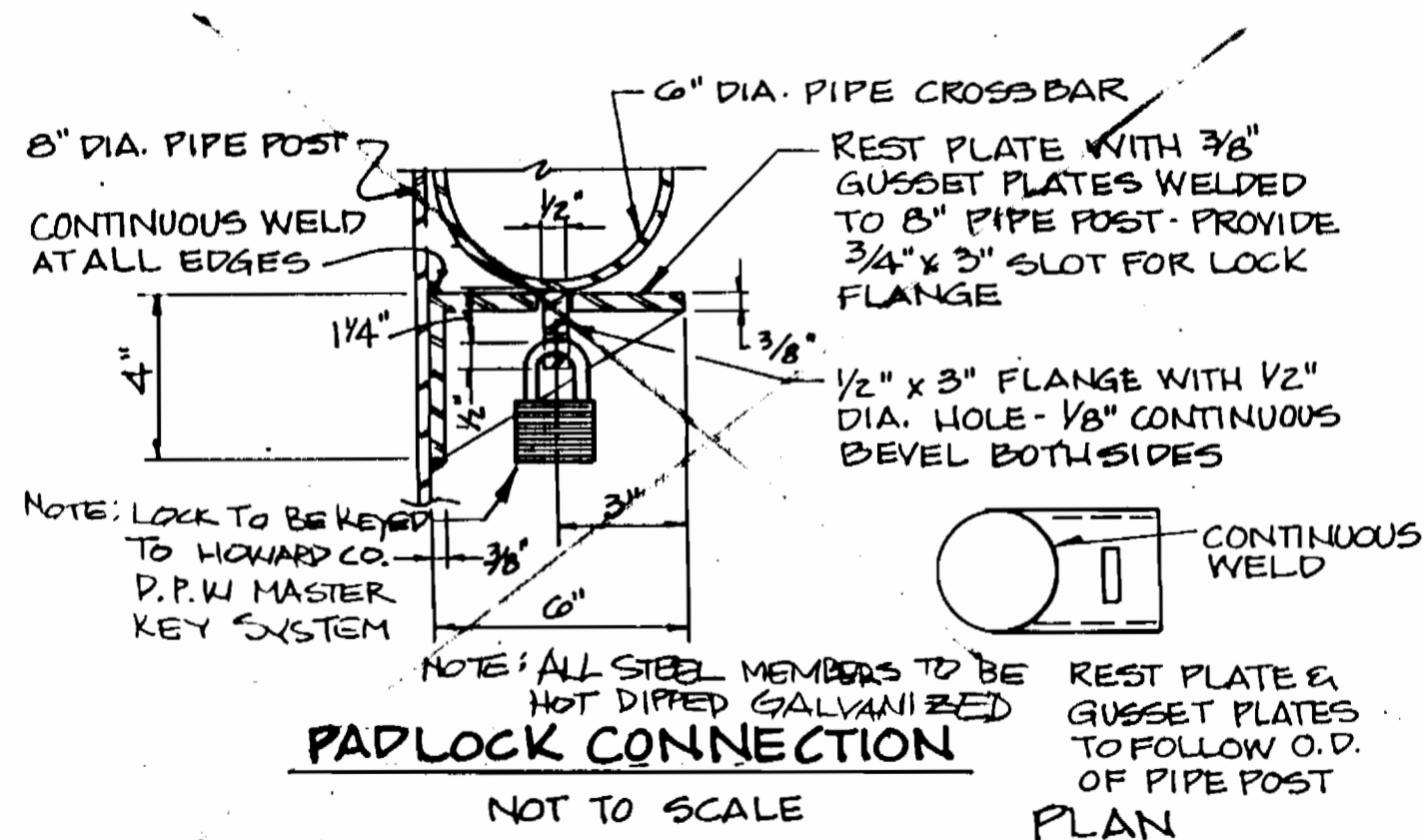
**GRAVITY CLEANOUT**

NOT TO SCALE



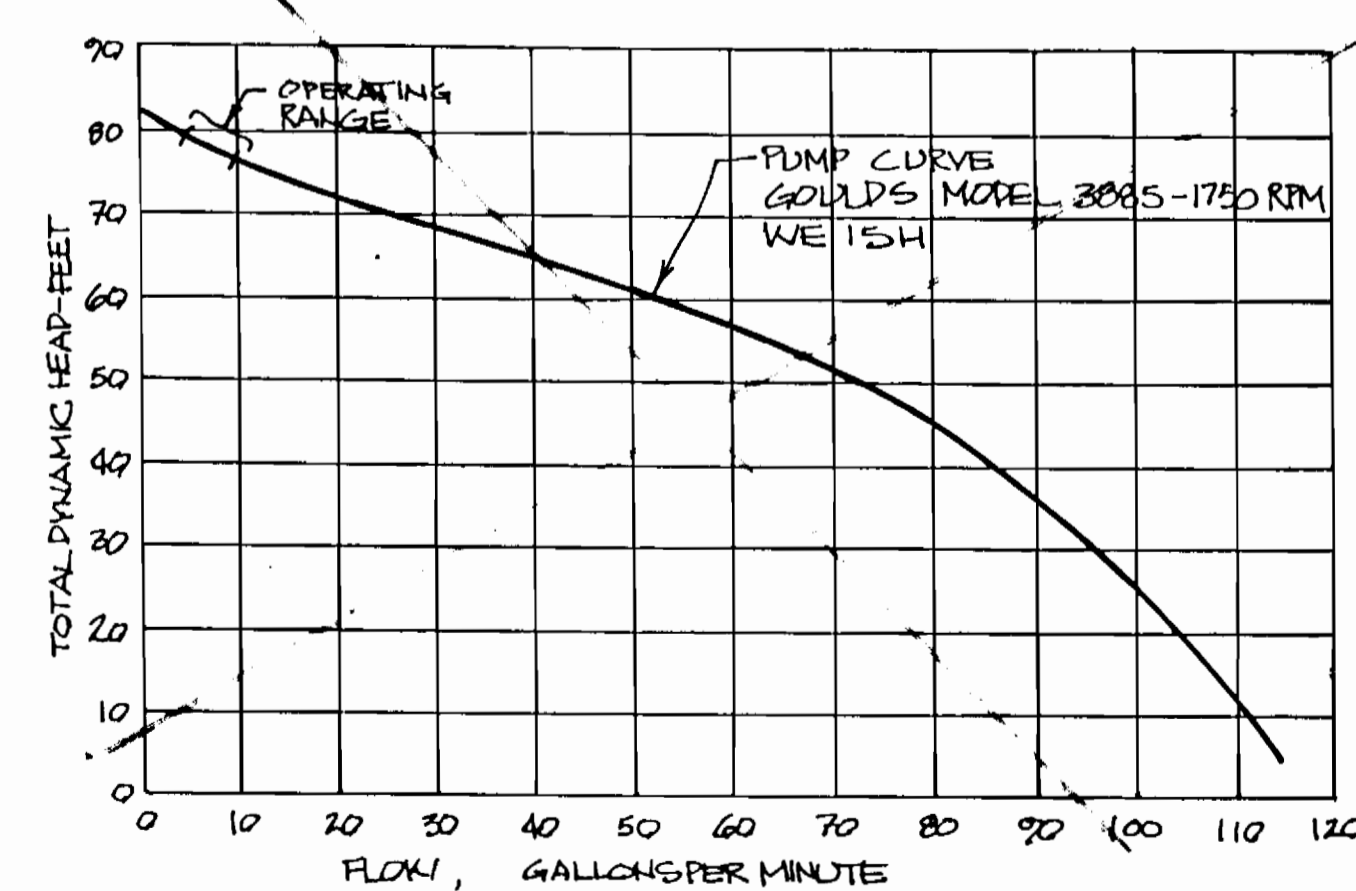
**TYPICAL SEWER & UTILITY EASEMENT**

NOT TO SCALE

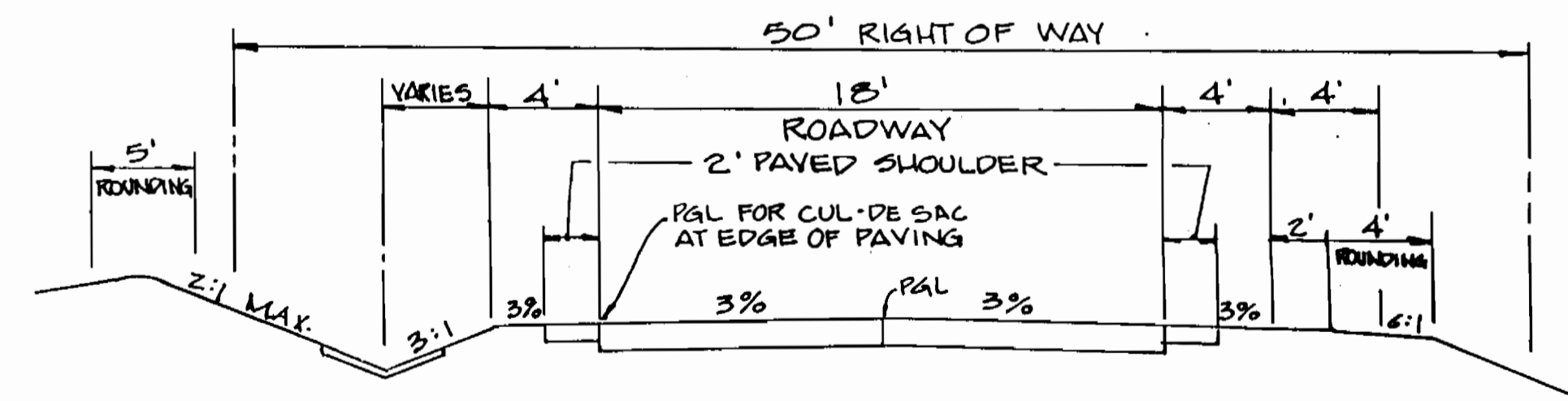


**PADLOCK CONNECTION**

NOT TO SCALE



**PUMP CURVE**  
1 1/2 H.P. SEPTIC TANK EFFLUENT PUMP



**TYPICAL ROADWAY SECTION**

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DAMES & MOORE



DES: VRC			
DRN: BGM			
CHK: AJP			
DATE: 12-93	BY NO.	REVISION	DATE
		REVISE EASEMENT DETAIL	11-94
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94

**MISCELLANEOUS DETAILS**

600' SCALE MAP NO. 42-91 BLOCK NO. 12

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

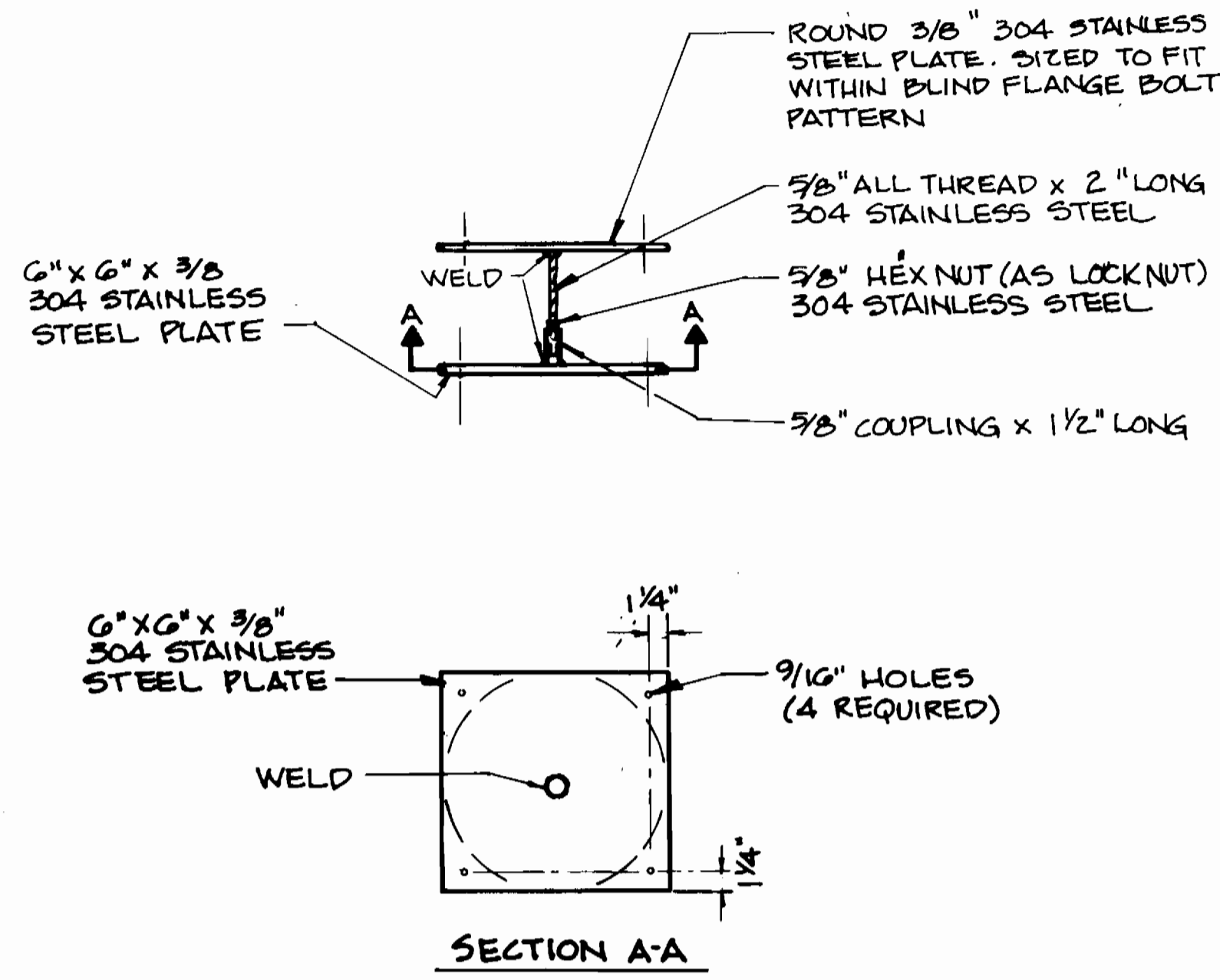
ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

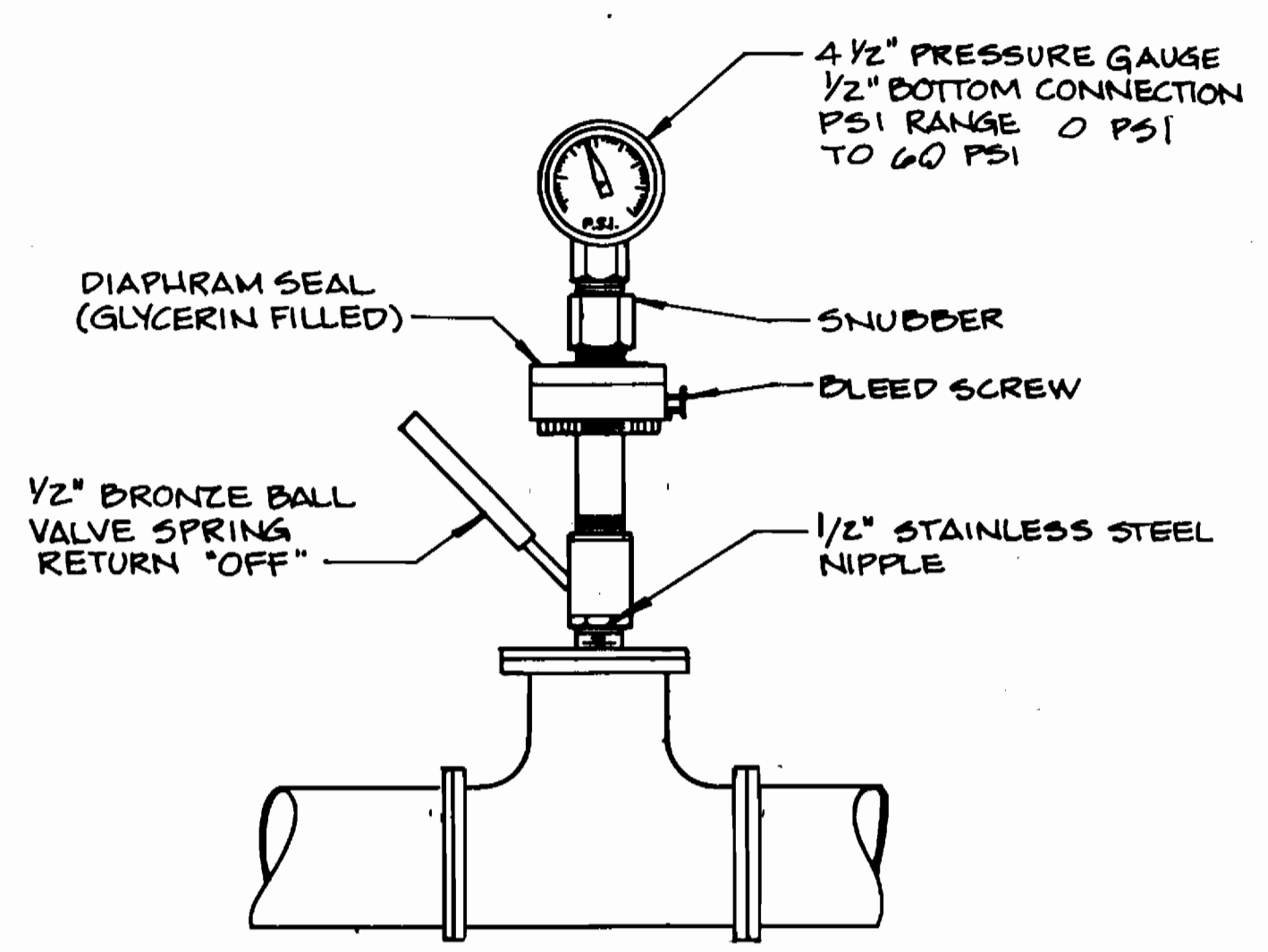
SCALE  
AS  
SHOWN

SHEET  
41 OF 54

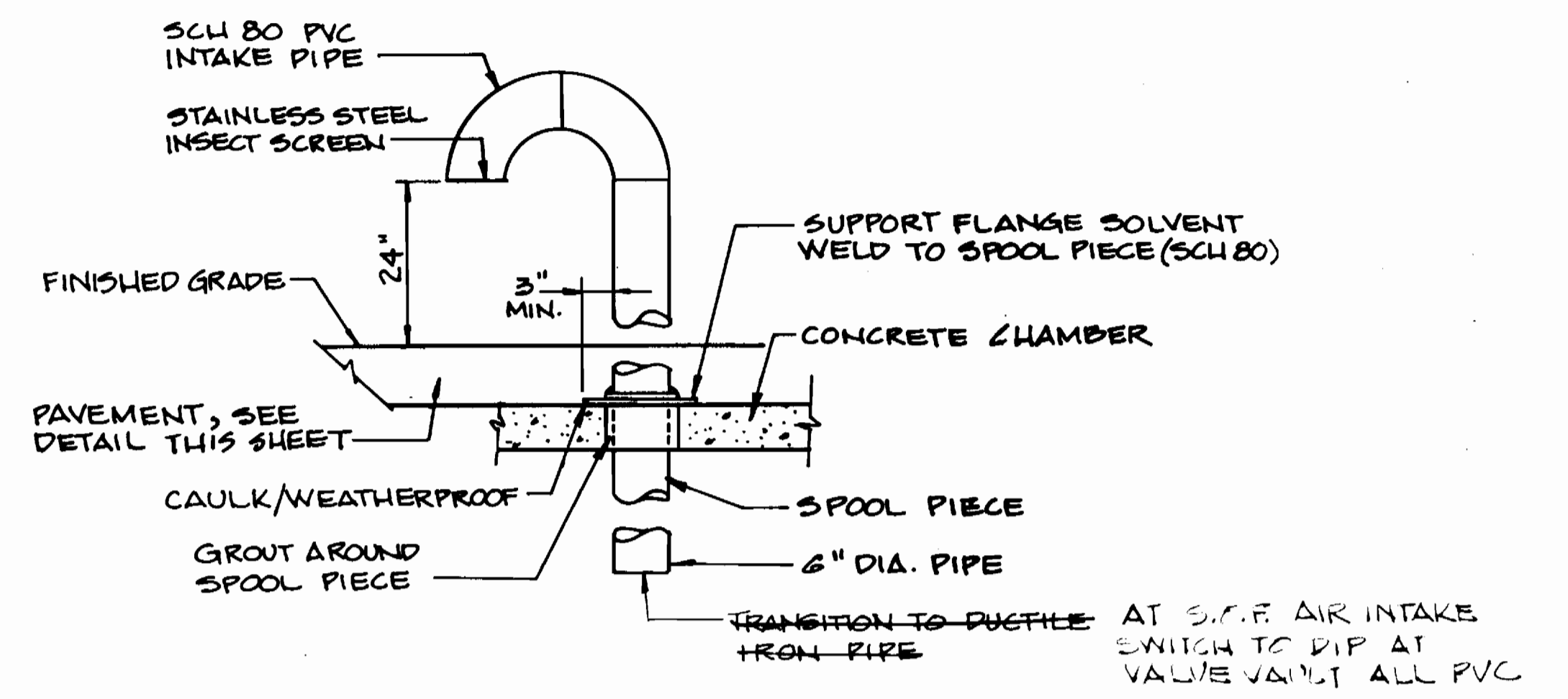
3357 5/41



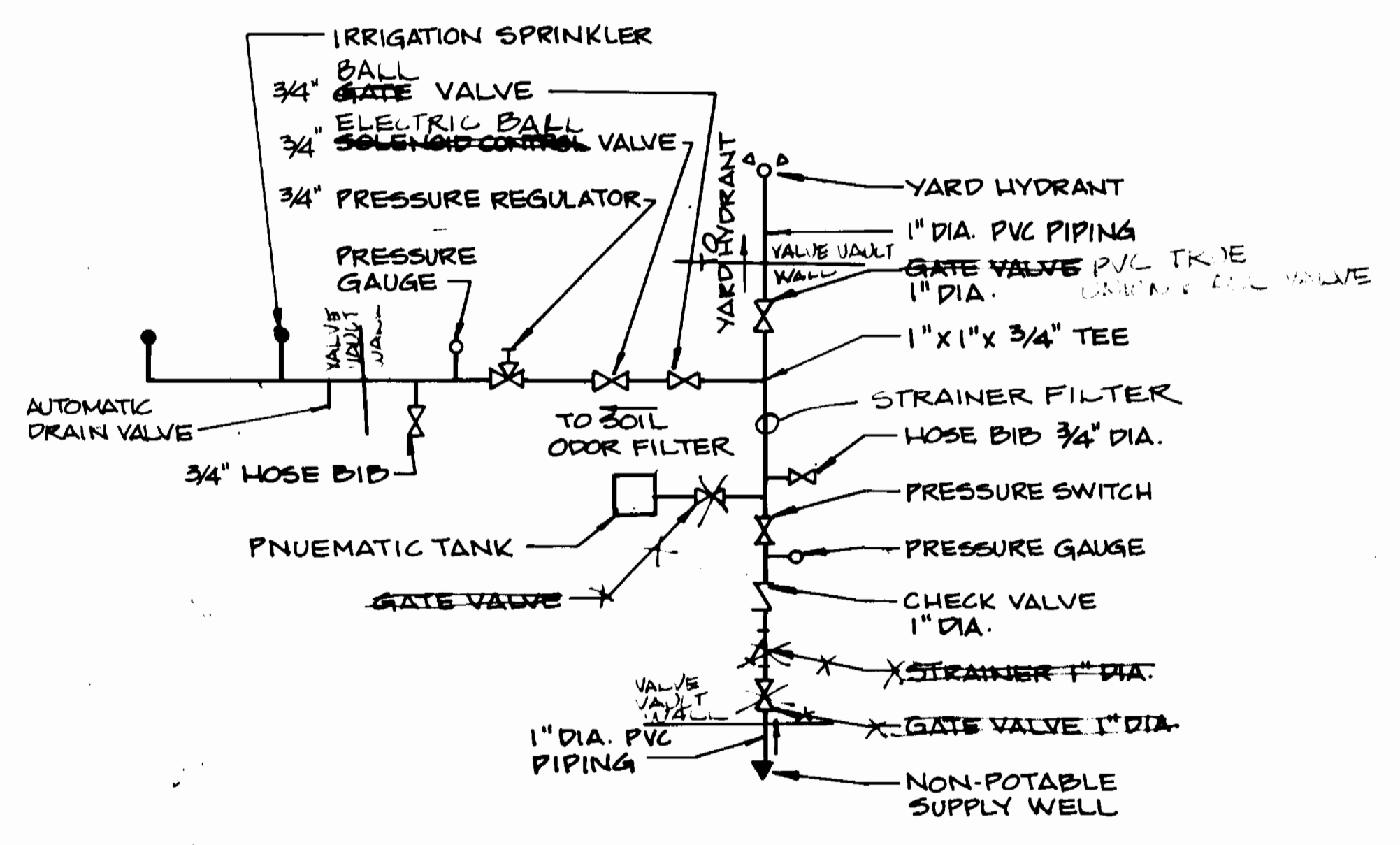
**THREADED HORIZONTAL THRUST BLOCK ASSEMBLY**  
NOT TO SCALE



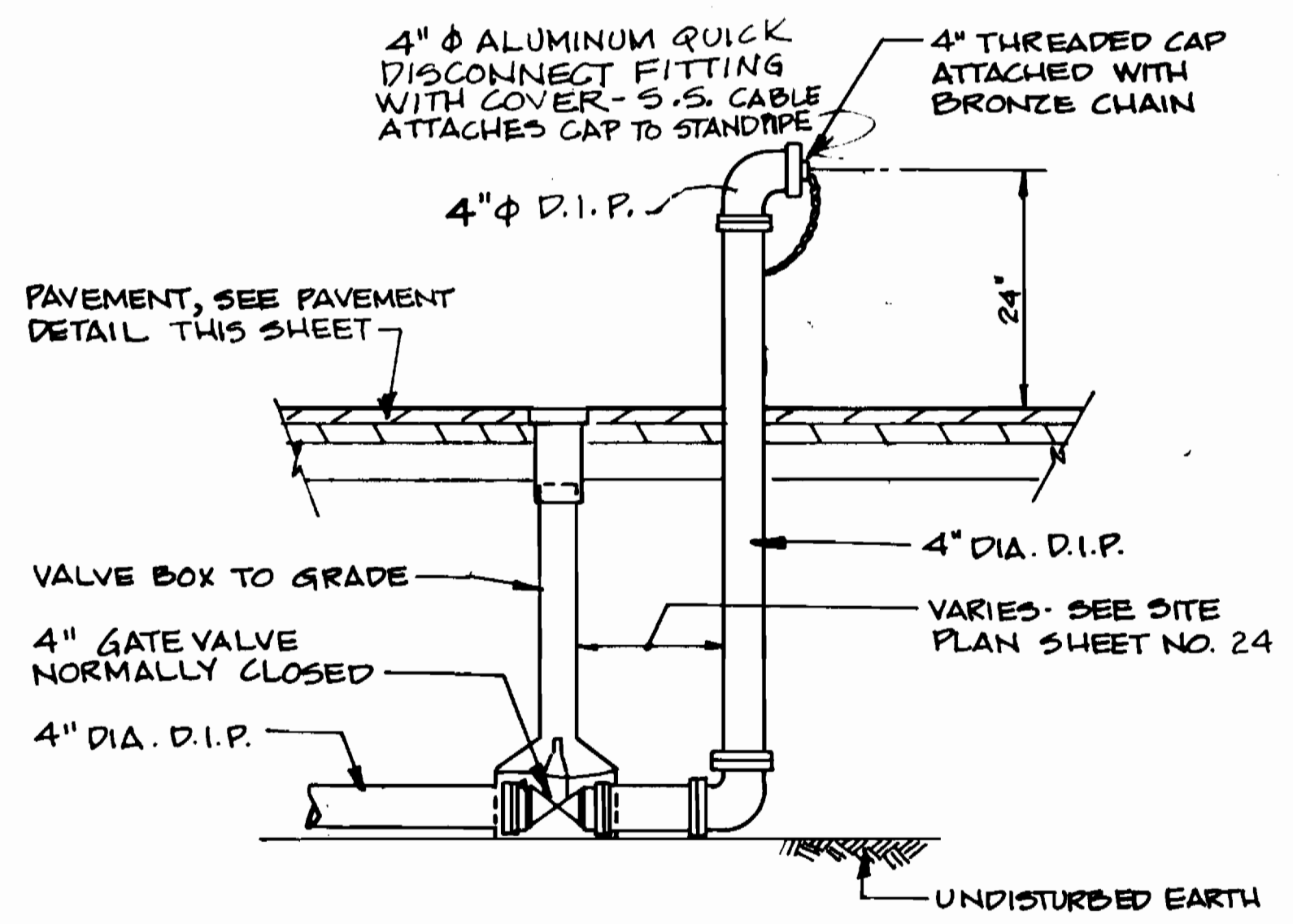
**PRESSURE GAUGE ASSEMBLY FOR VALVE VAULT**  
NOT TO SCALE



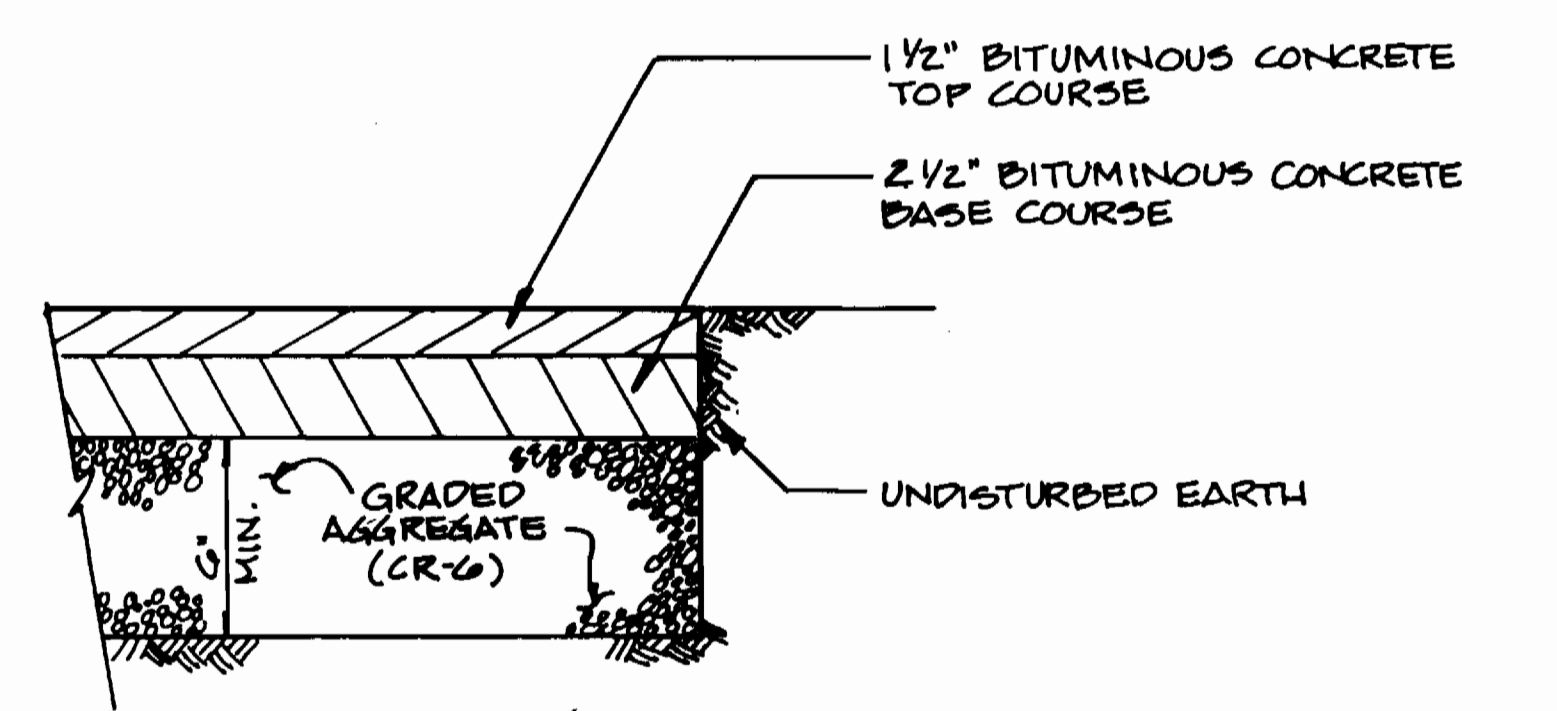
**INTAKE GOOSENECK DETAIL**  
NOT TO SCALE



**NON-POTABLE WATER PIPING SCHEMATIC**  
NOT TO SCALE



**PUMP AROUND STANDPIPE DETAIL**  
NOT TO SCALE



**TREATMENT FACILITY PAVEMENT DETAIL**  
NOT TO SCALE

3357 S/42

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James A. Lewis* 9/16/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. Brown* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert J. Brown* 9/20/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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

STATE OF MARYLAND  
ENGINEER

*Michael J. Brown*  
Professional Engineer

DES: VRC			
DRN: BGM			
CHK: AJT			
DATE: 12-93	BY	NO.	REVISION

<b>MISCELLANEOUS DETAILS</b>	
AS BUILT	10/95
CREATE PHASED PLANS	9/94
FINAL SUBMITTAL	8/94

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

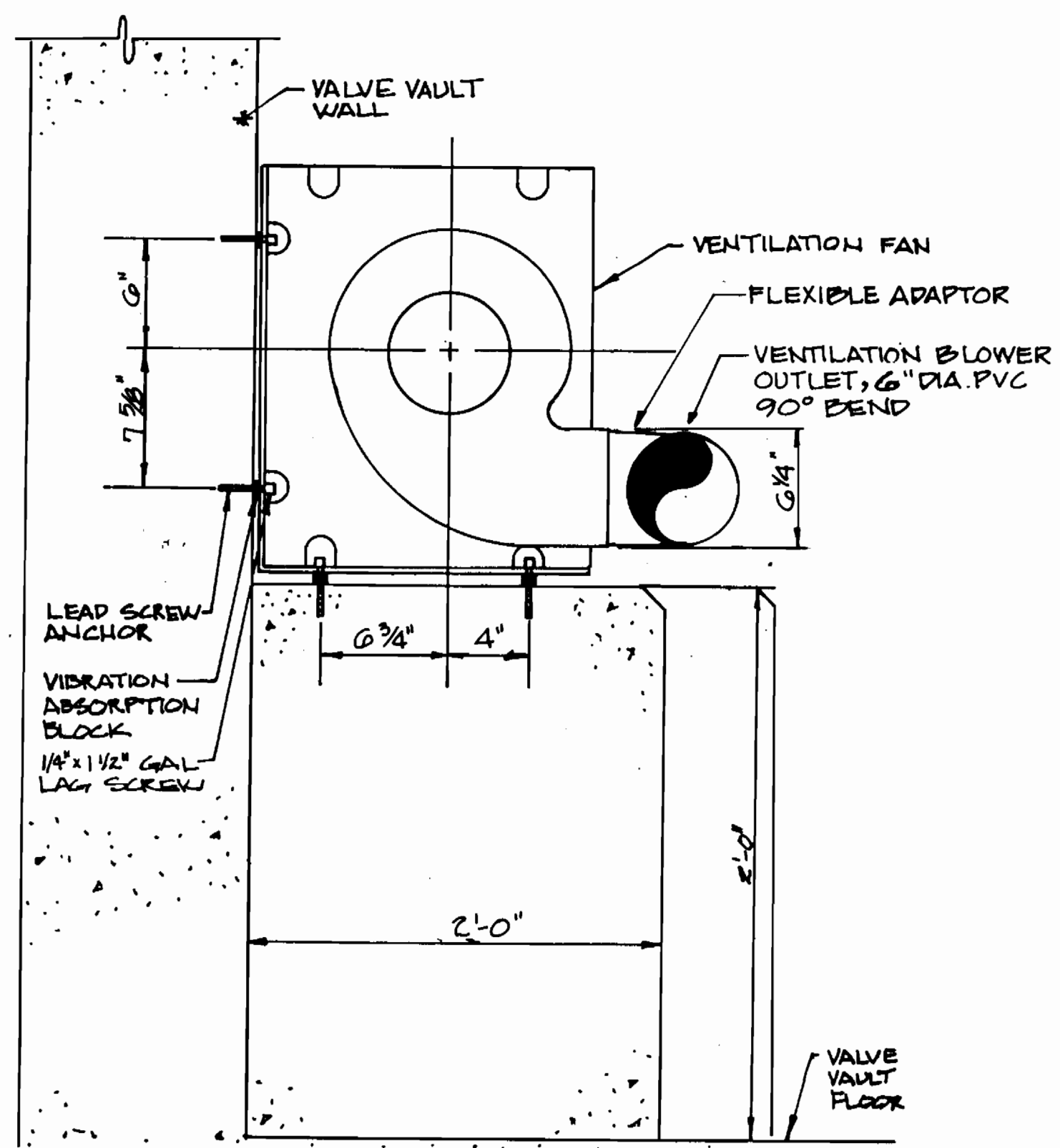
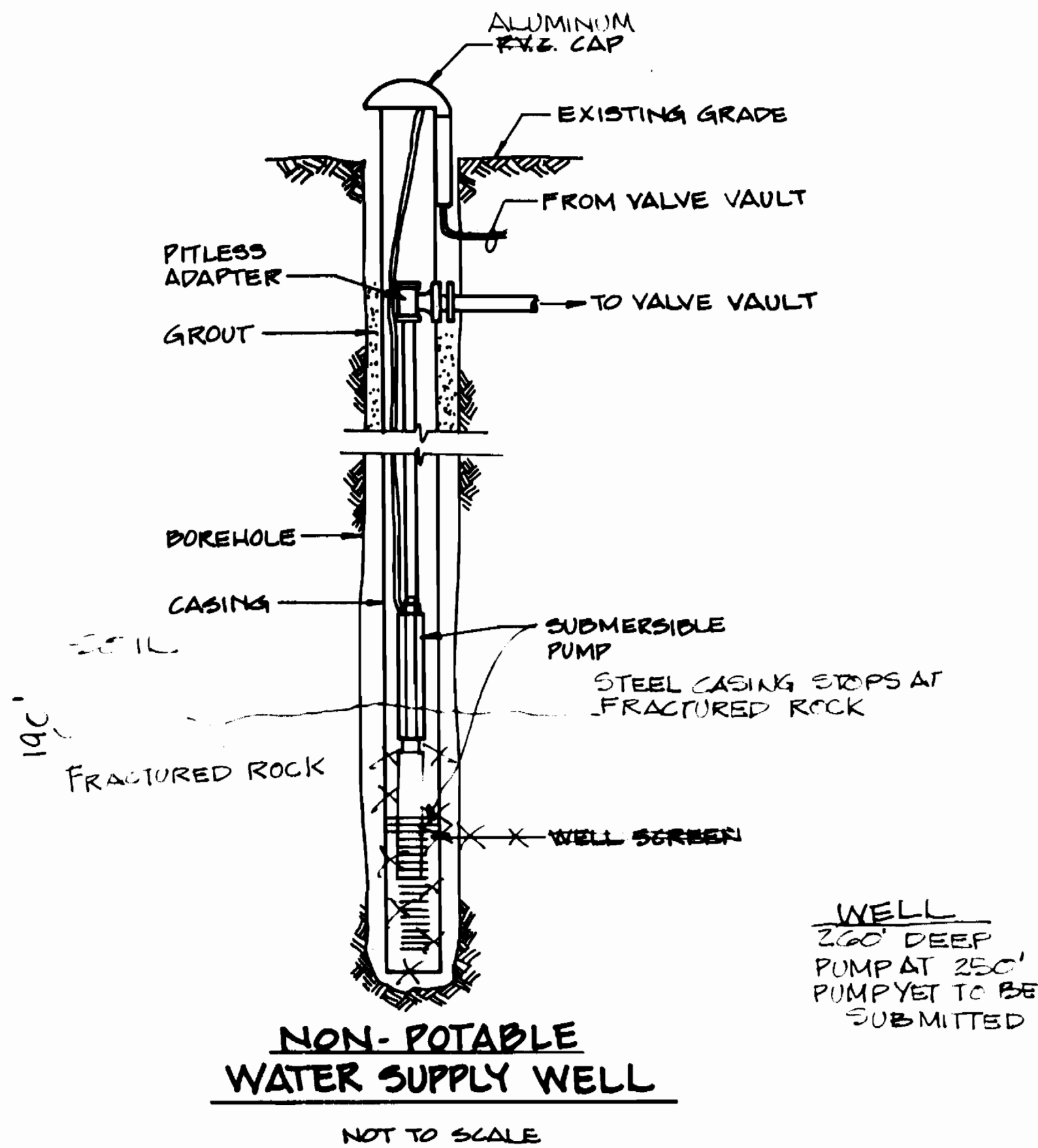
CONTRACT NO. 50-3257

ELECTION DISTRICT NO. 5

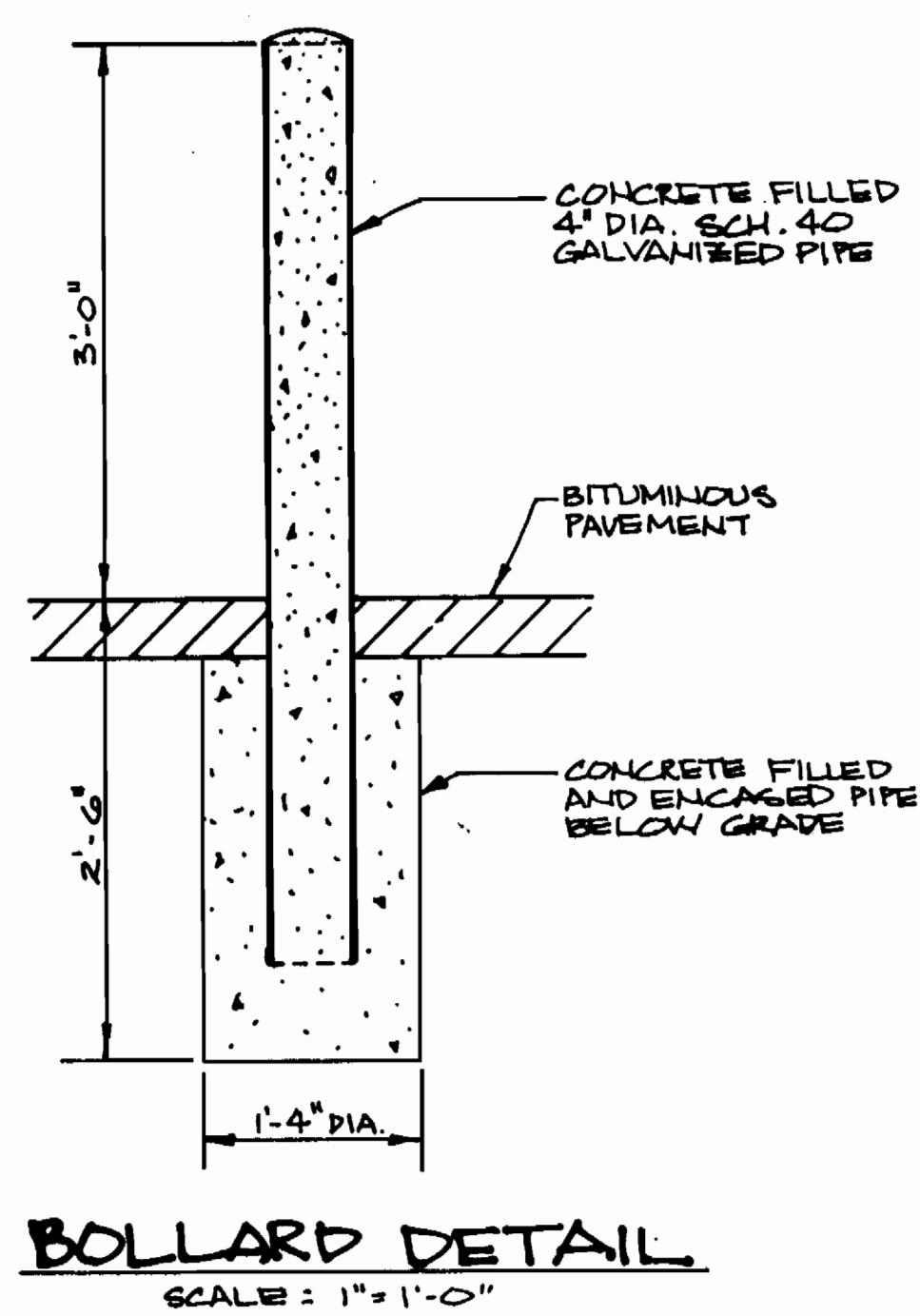
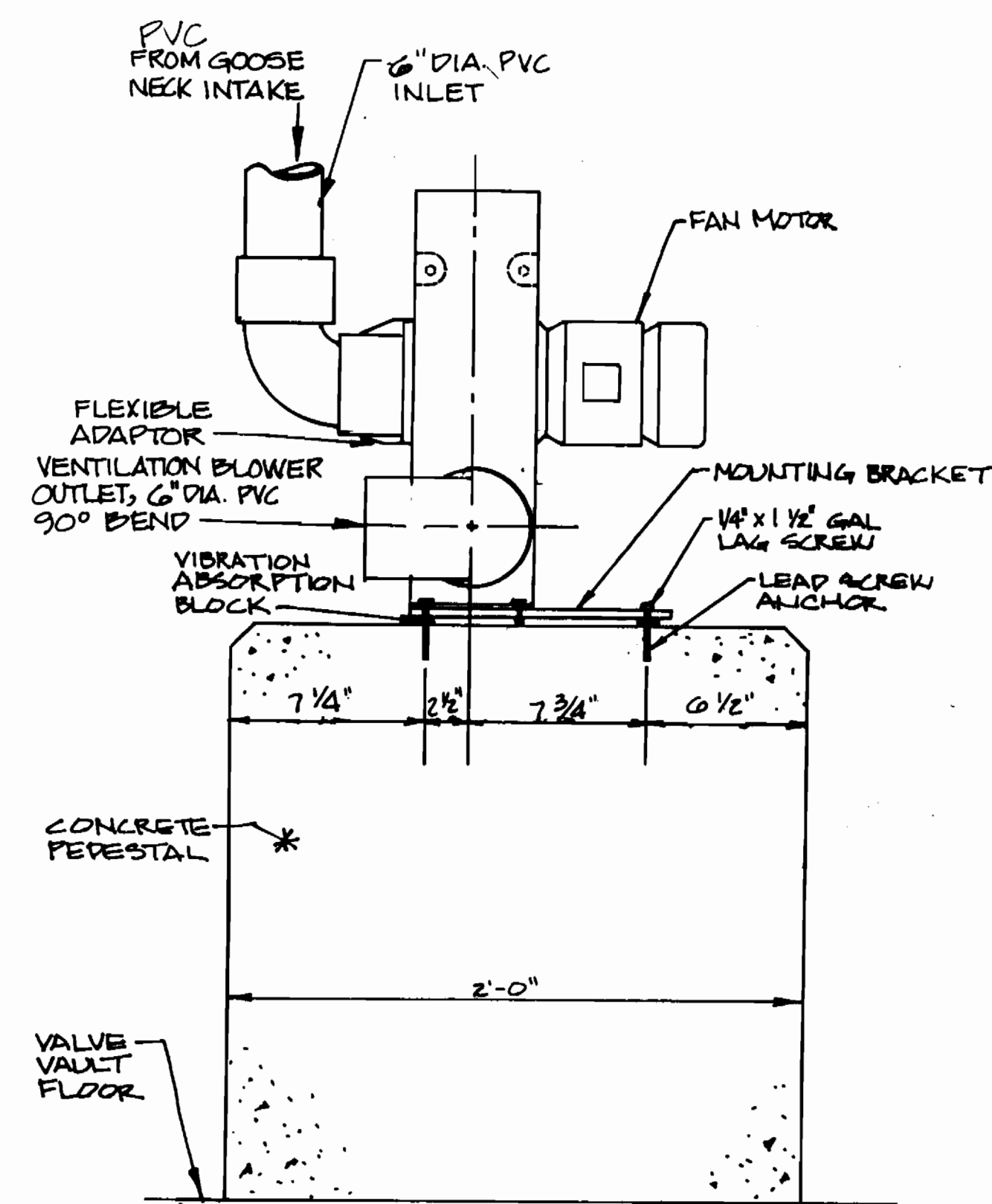
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

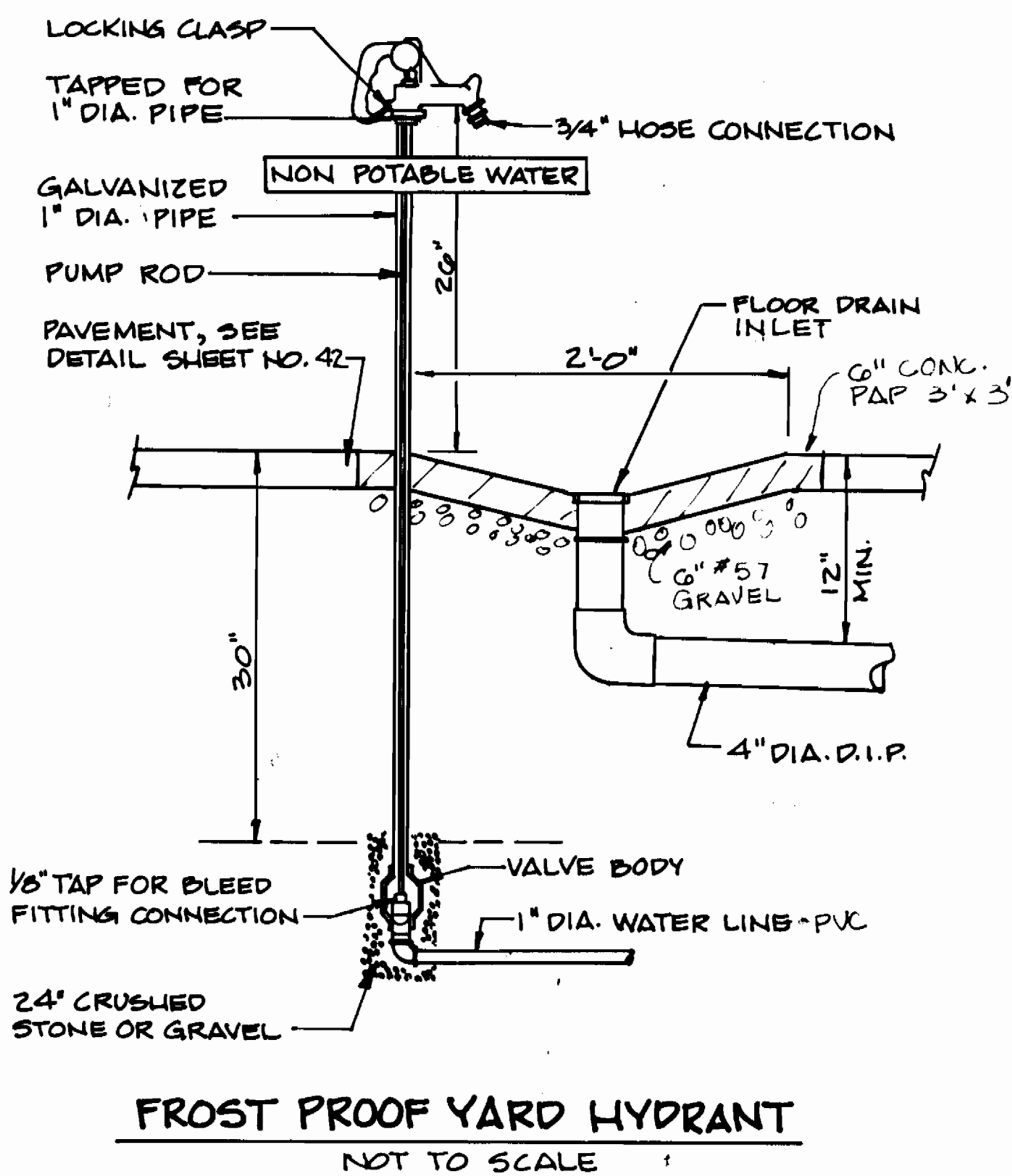
SHEET 42 OF 54



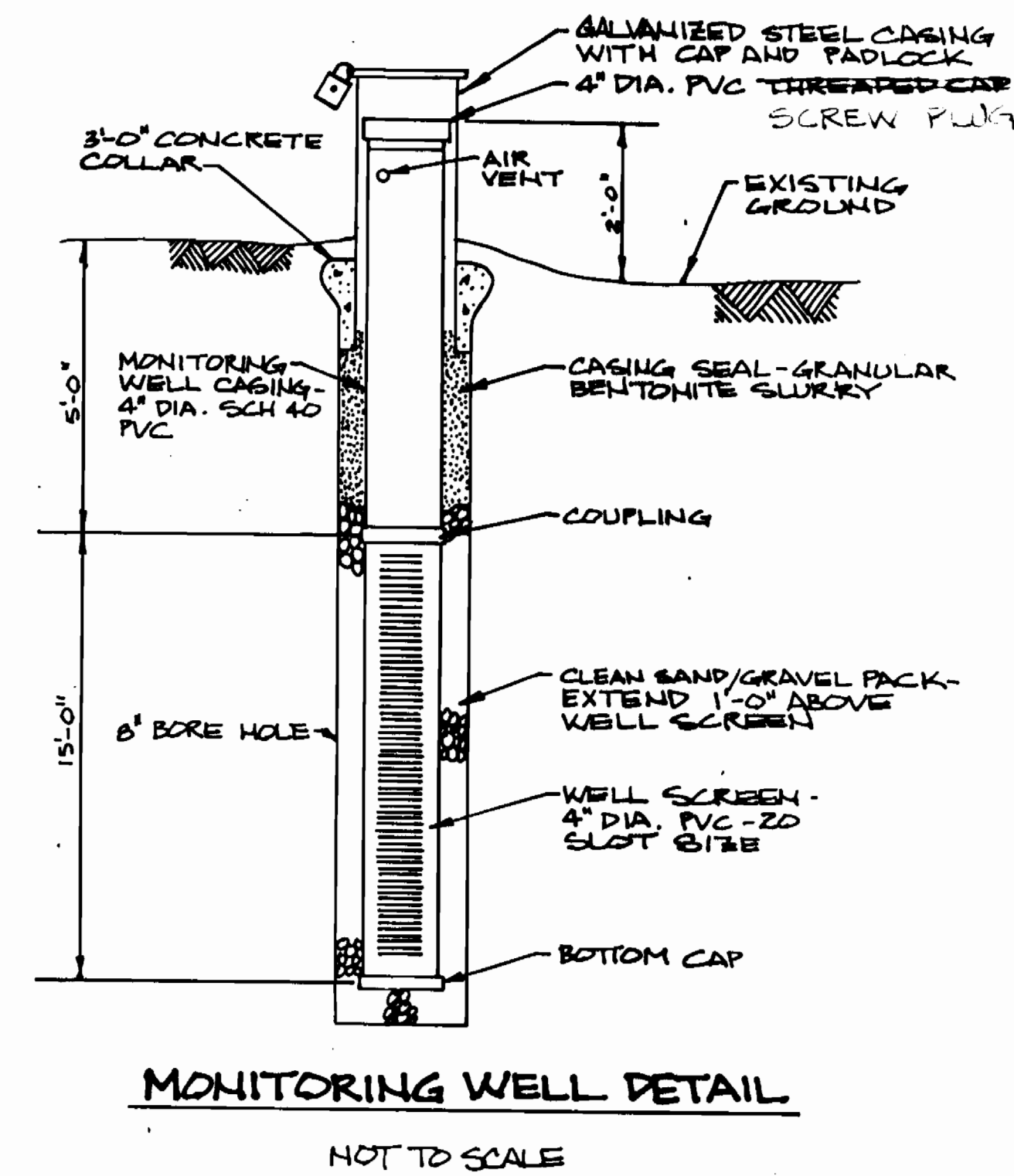
**VENTILATION FAN DETAIL**  
NOT TO SCALE



**BOLLARD DETAIL**  
SCALE: 1" = 1'-0"



**FROST PROOF YARD HYDRANT**  
NOT TO SCALE



**MONITORING WELL DETAIL**  
NOT TO SCALE

3357 2/43

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

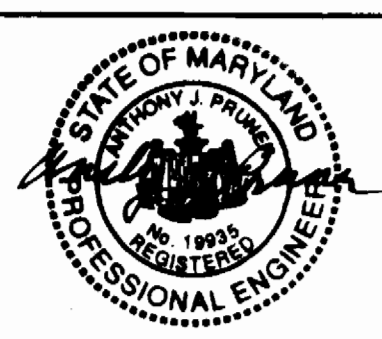
*Robert W. Bauman* 9-14-94  
DIRECTOR OF PUBLIC WORKS DATE  
CHIEF, BUREAU OF UTILITIES

*Robert W. Bauman* 2/16/94  
DATE  
CHIEF, BUREAU OF ENGINEERING

*Robert W. Bauman* 2/16/94  
DATE  
CHIEF, LAND DEVELOPMENT DIVISION

**DAMES & MOORE**

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



DES: VRC			
DRN: BGW			
CHK: AJP	AS BUILT	10/95	
DATE: 12-93	CREATE PHASED PLANS	9-94	
	FINAL SUBMITTAL	8-94	
BY NO.	REVISION	DATE	

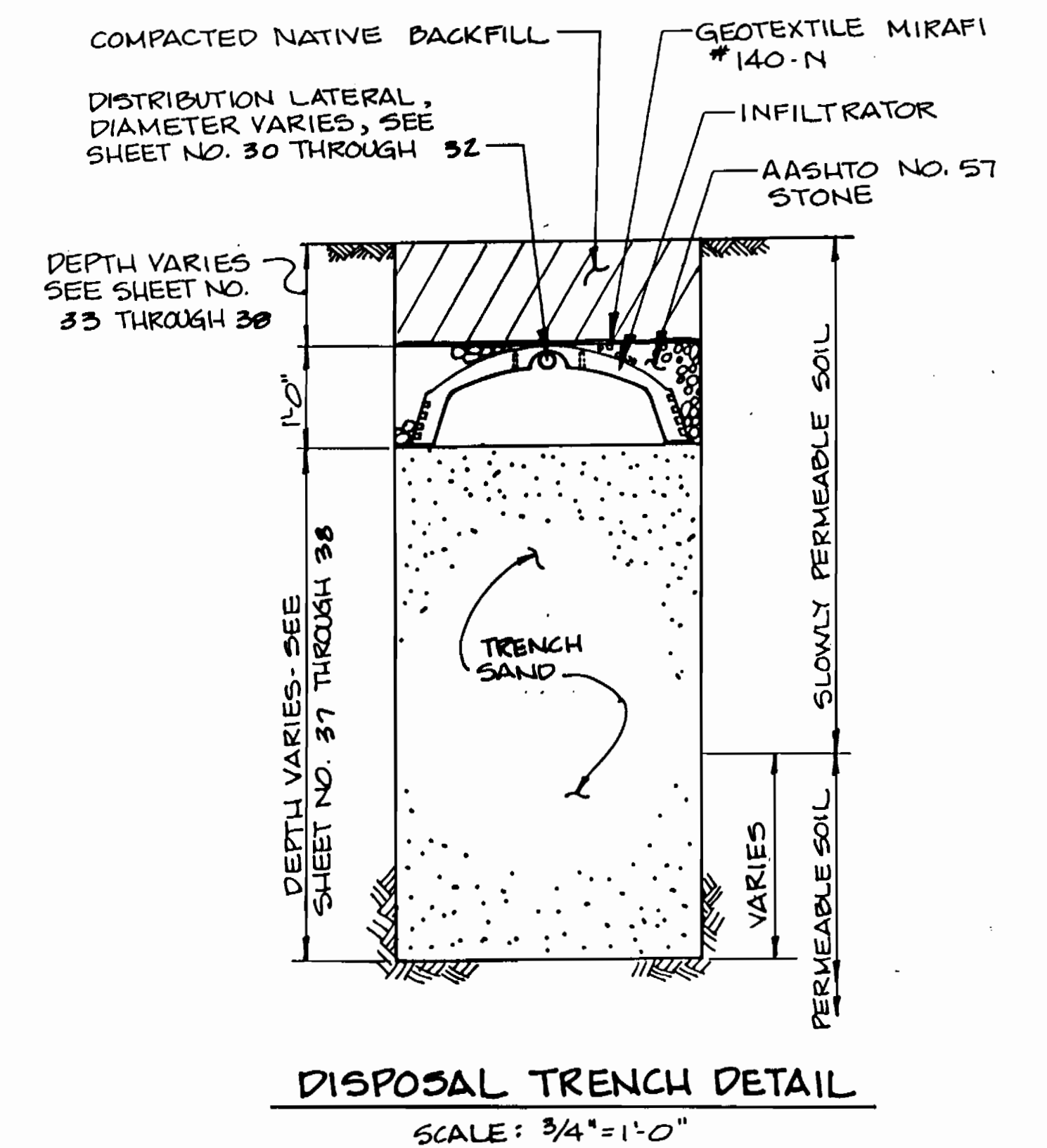
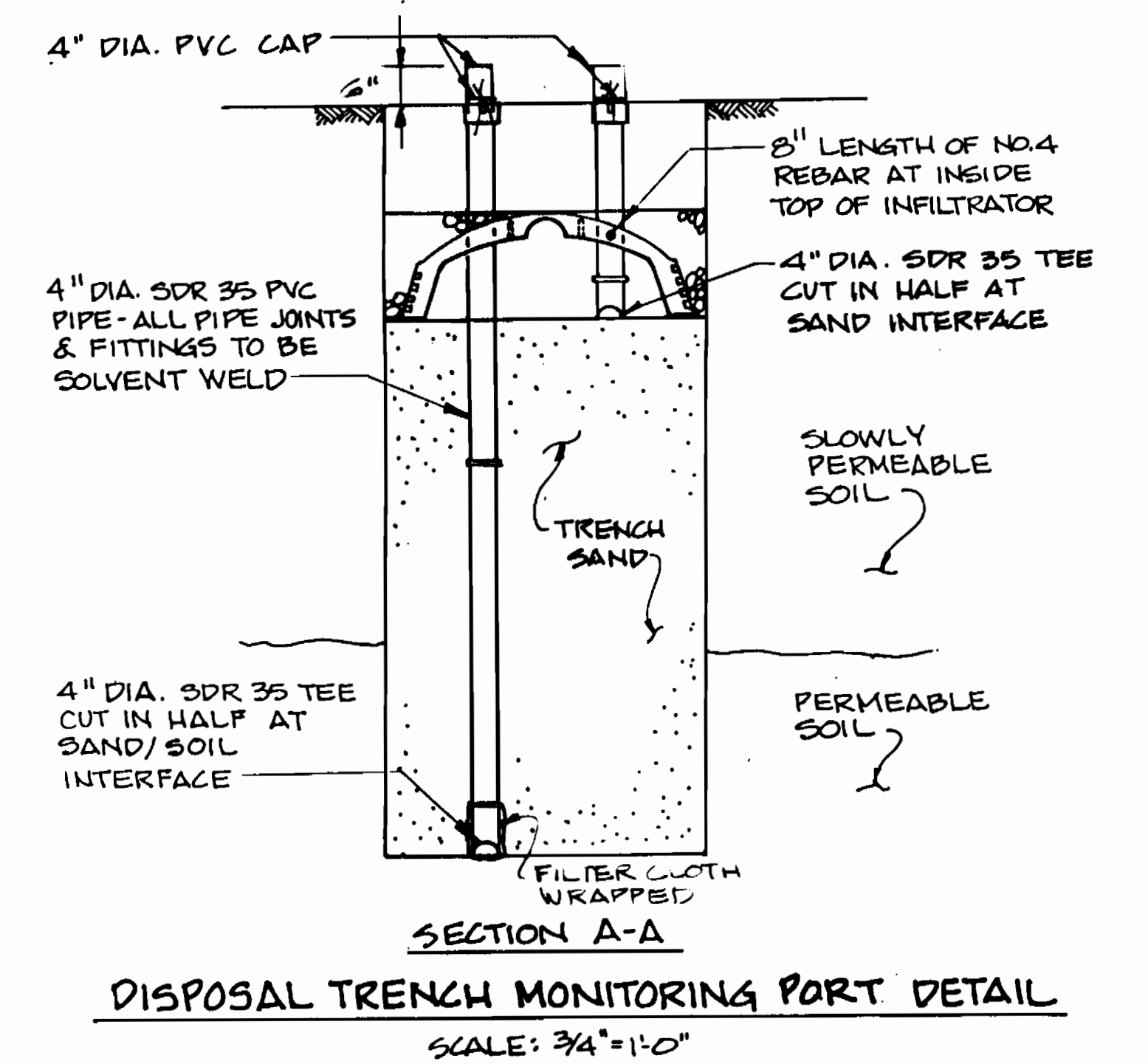
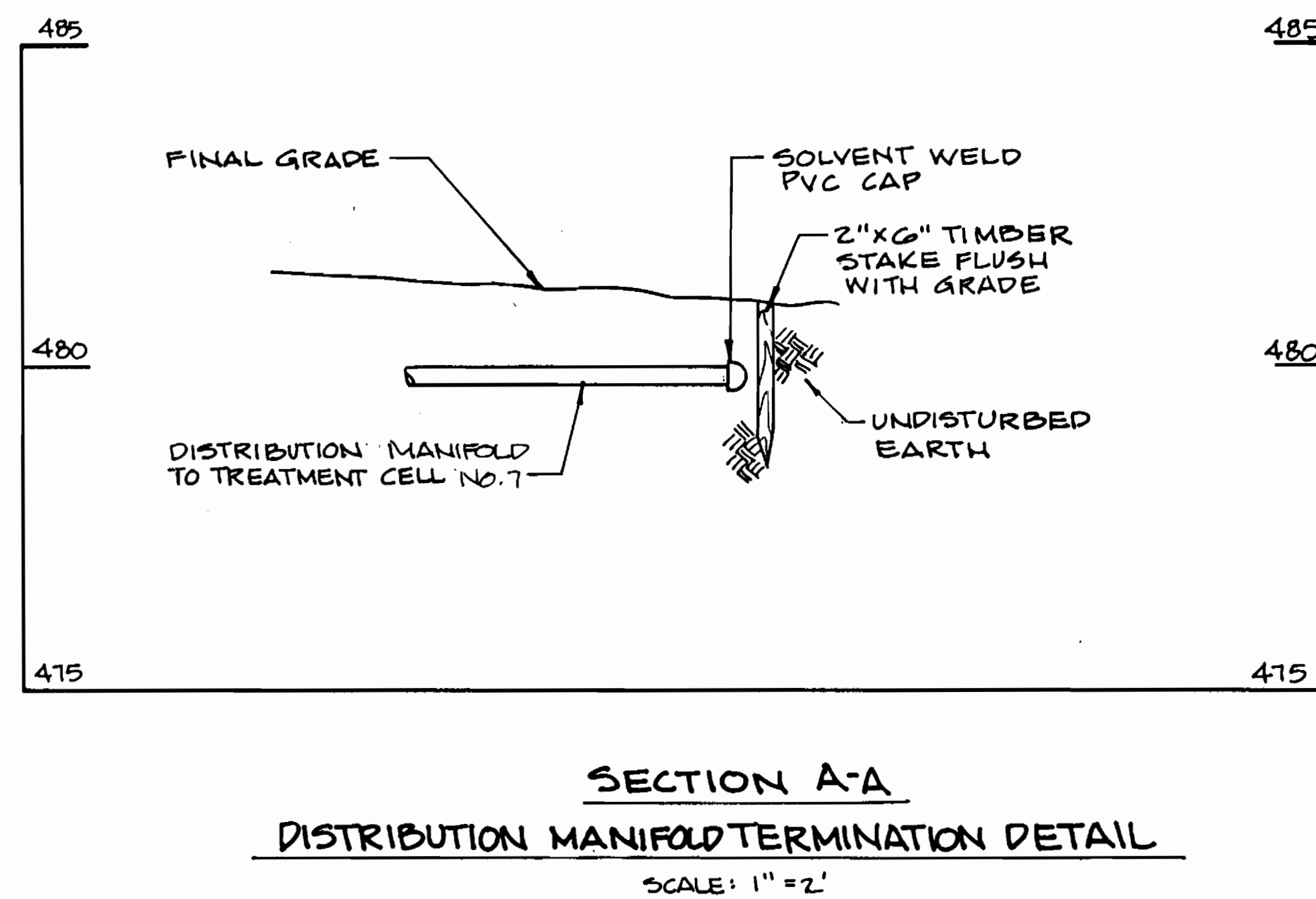
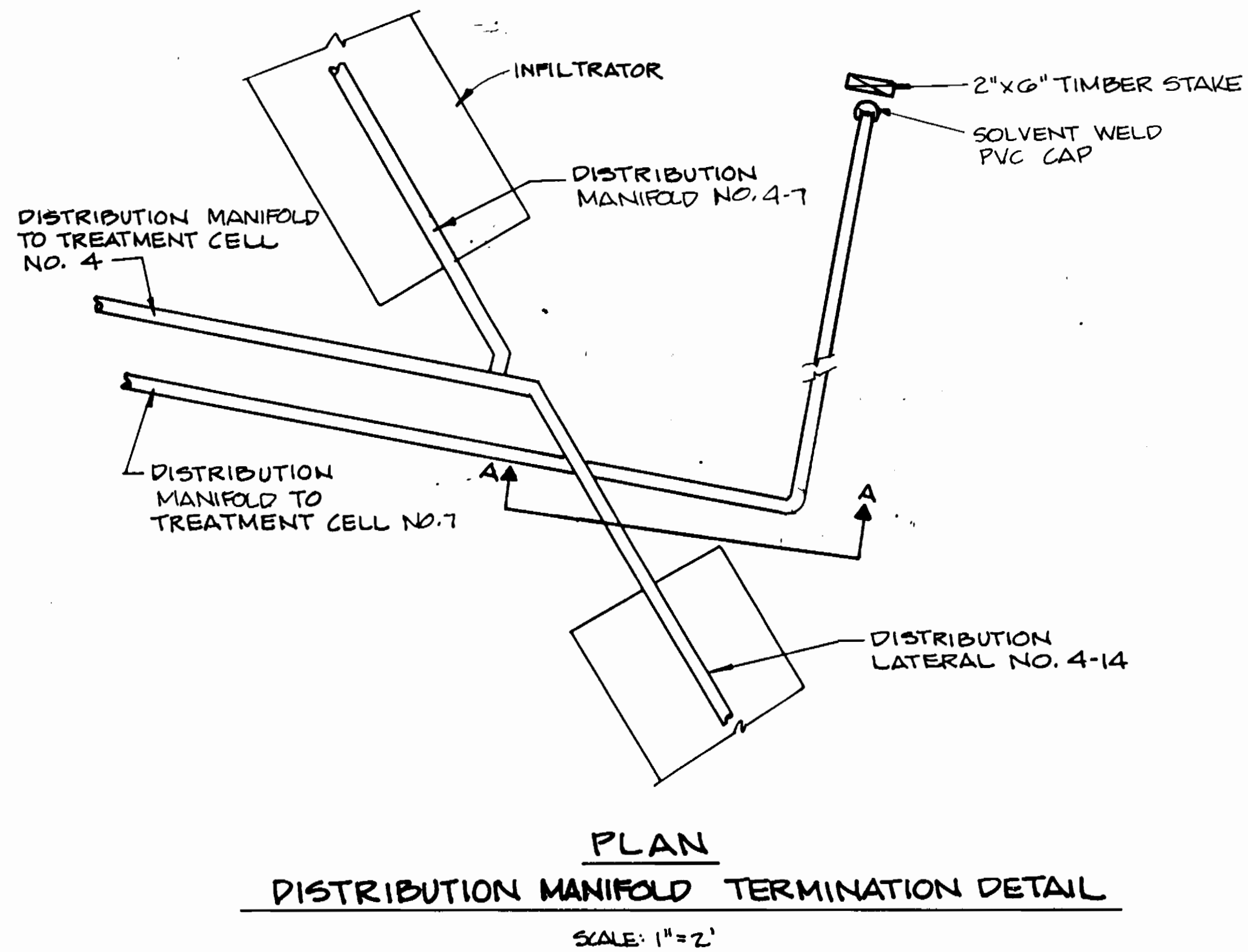
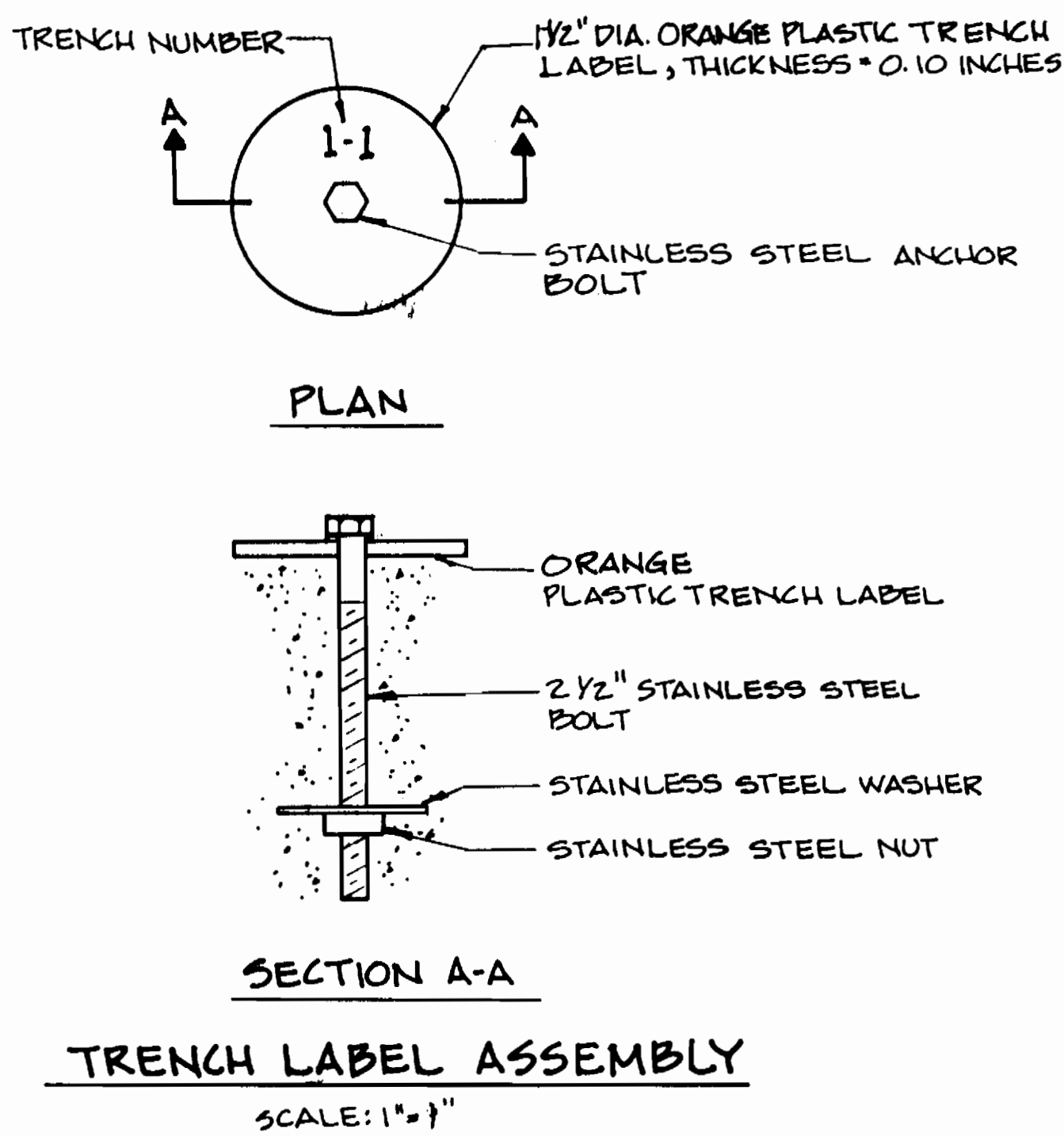
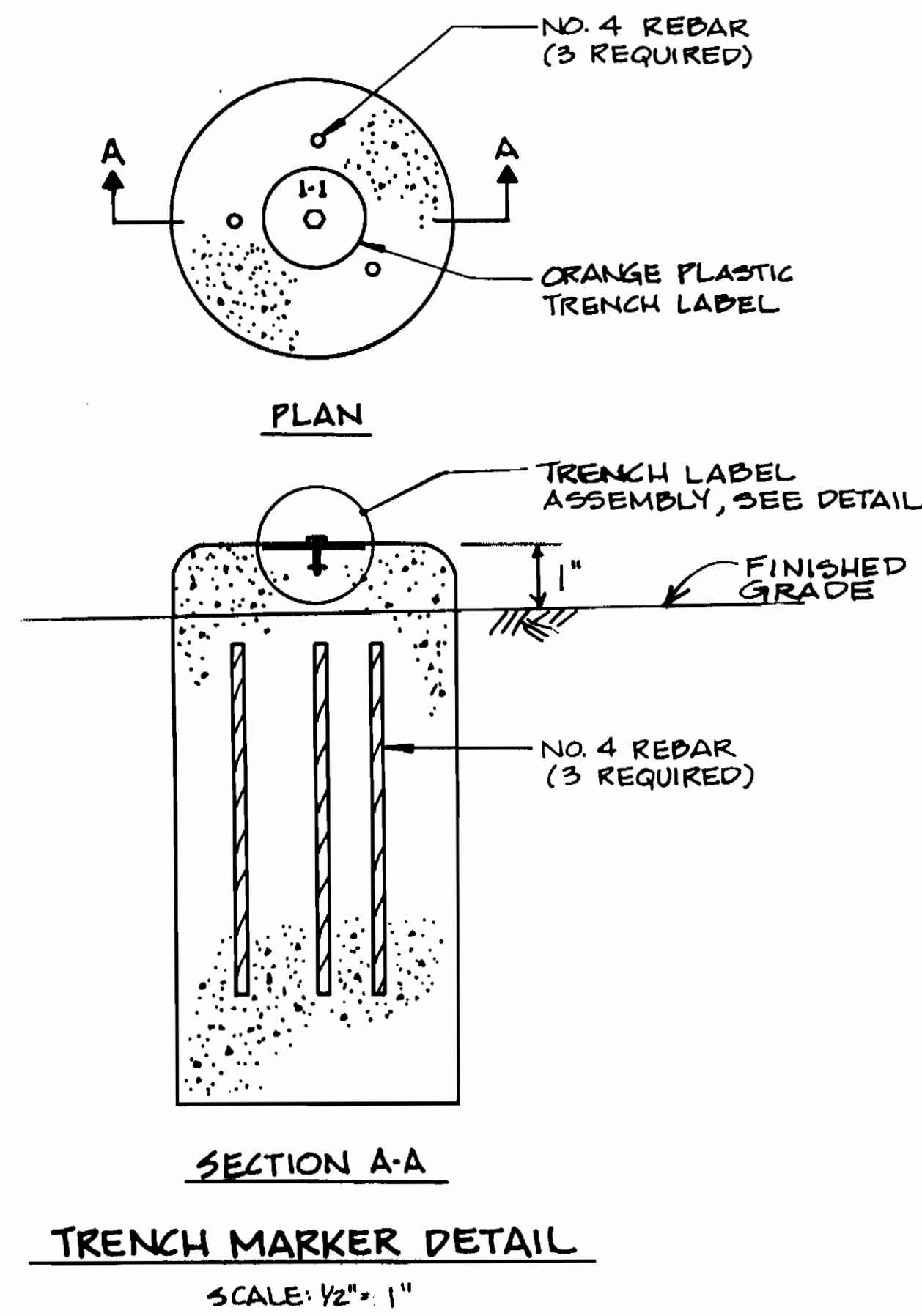
**MISCELLANEOUS DETAILS**

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

**ASHLEIGH KNOLLS**  
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM  
CONTRACT NO. 50-3351

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 43 OF 54



NOTE: DISTRIBUTION MANIFOLD TERMINATION DETAIL IS TYPICAL OF CELLS G, 7, & B

3357 5/44

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
9/26/94  
9-14-94

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

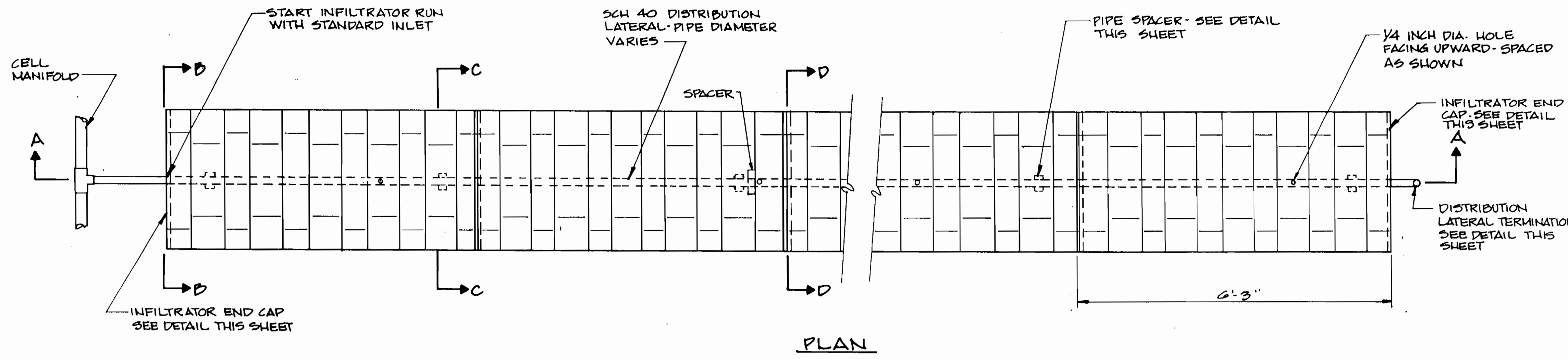
DES: VRG  
DRN: B&W  
CHK: AJP  
DATE: 12-93

AS BUILT	10/95
CREATE PLASSED PLANS	9-94
FINAL SUBMITAL	8-94
BY NO.	REVISION
DATE	600' SCALE MAP NO. 42-41 BLOCK NO. 12

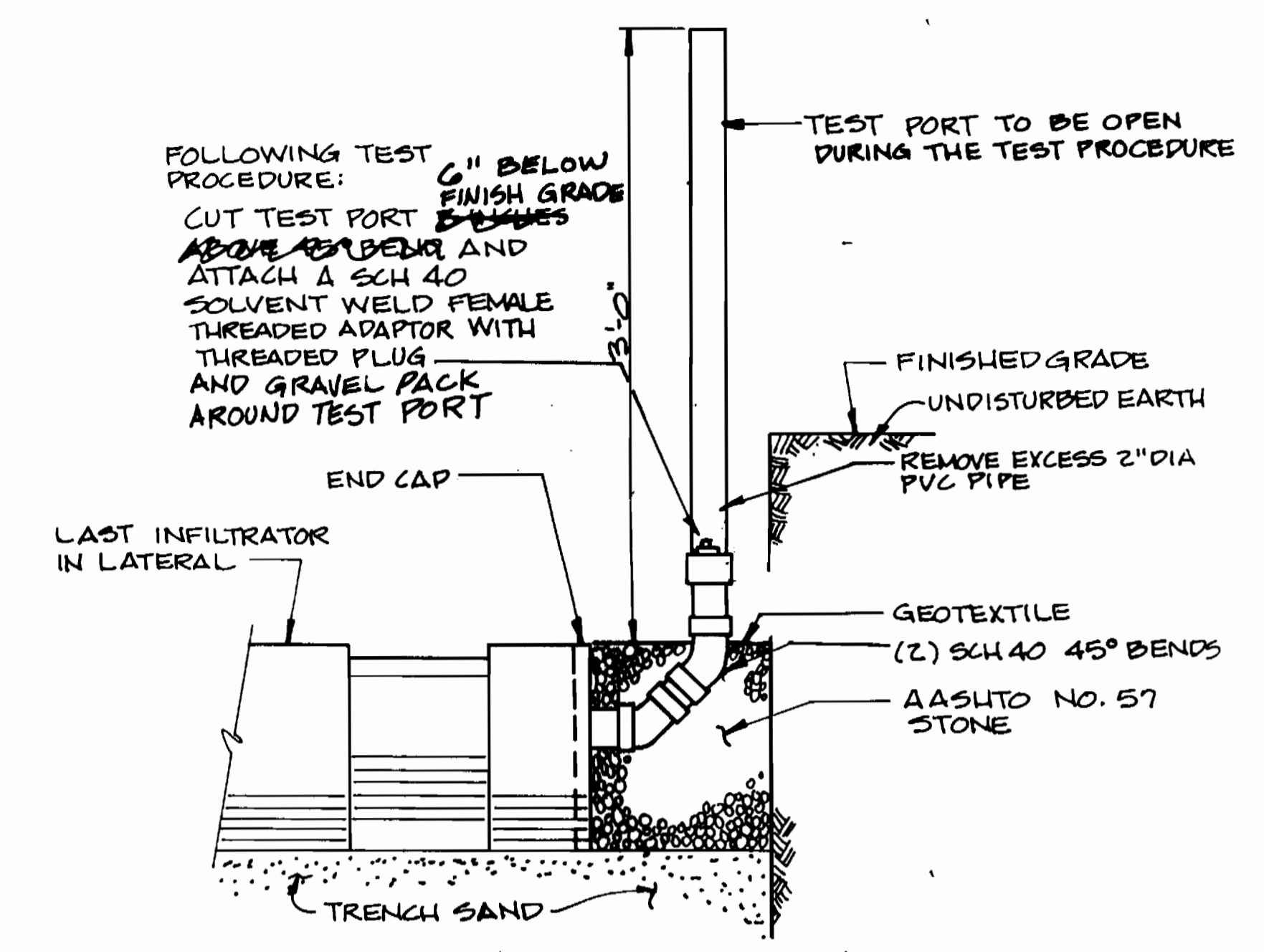
MISCELLANEOUS DETAILS

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM  
CONTRACT NO. 50-3357  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 44 OF 54

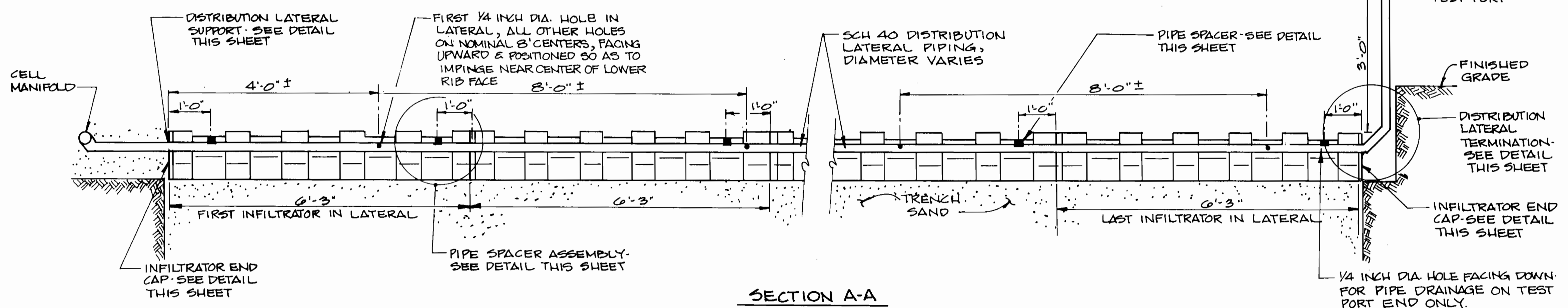


PLAN



DISTRIBUTION LATERAL TERMINATION DETAIL

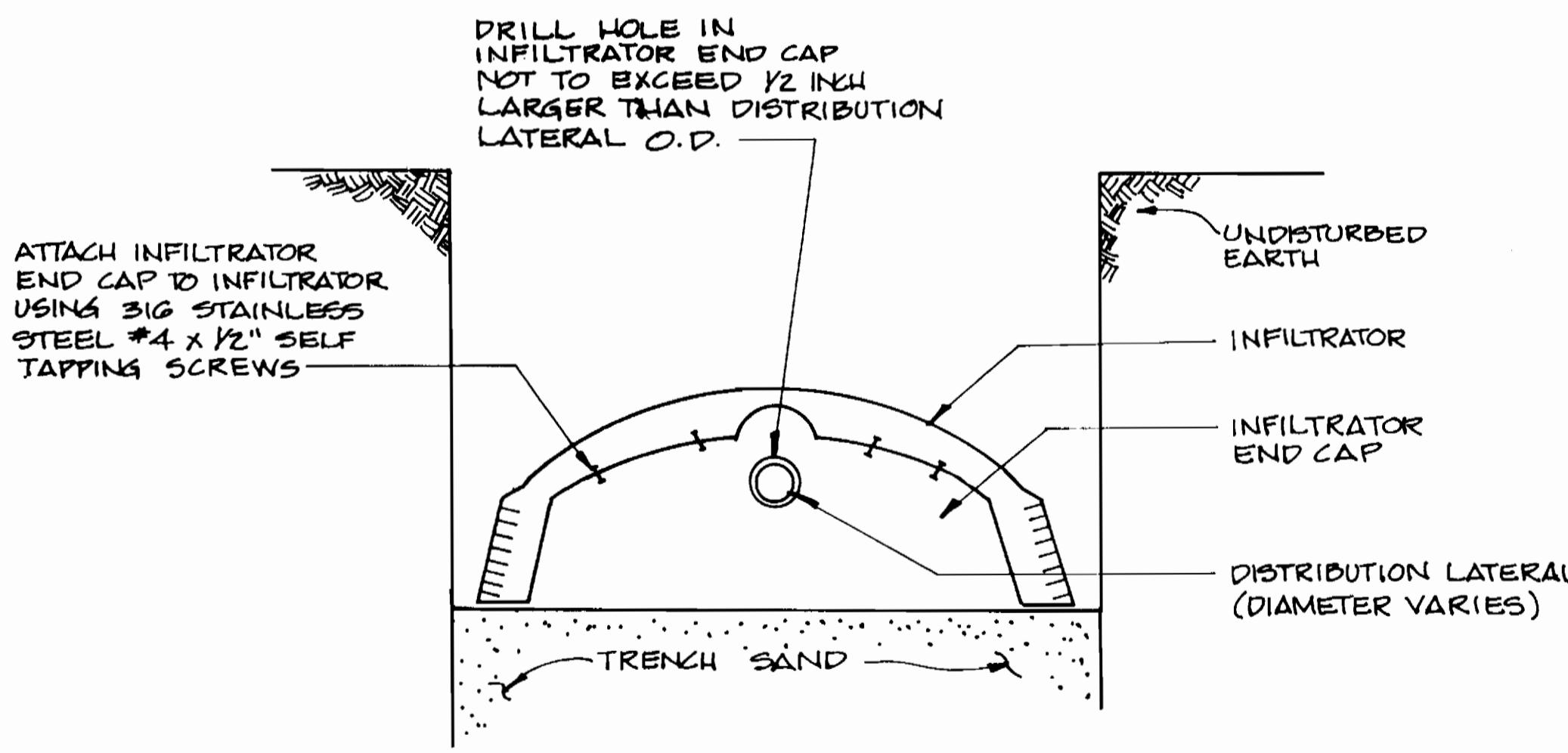
SCALE: 1/2" = 1'-0"



SECTION A-A

INFILTRATOR AND LATERAL PIPING ASSEMBLY DETAIL

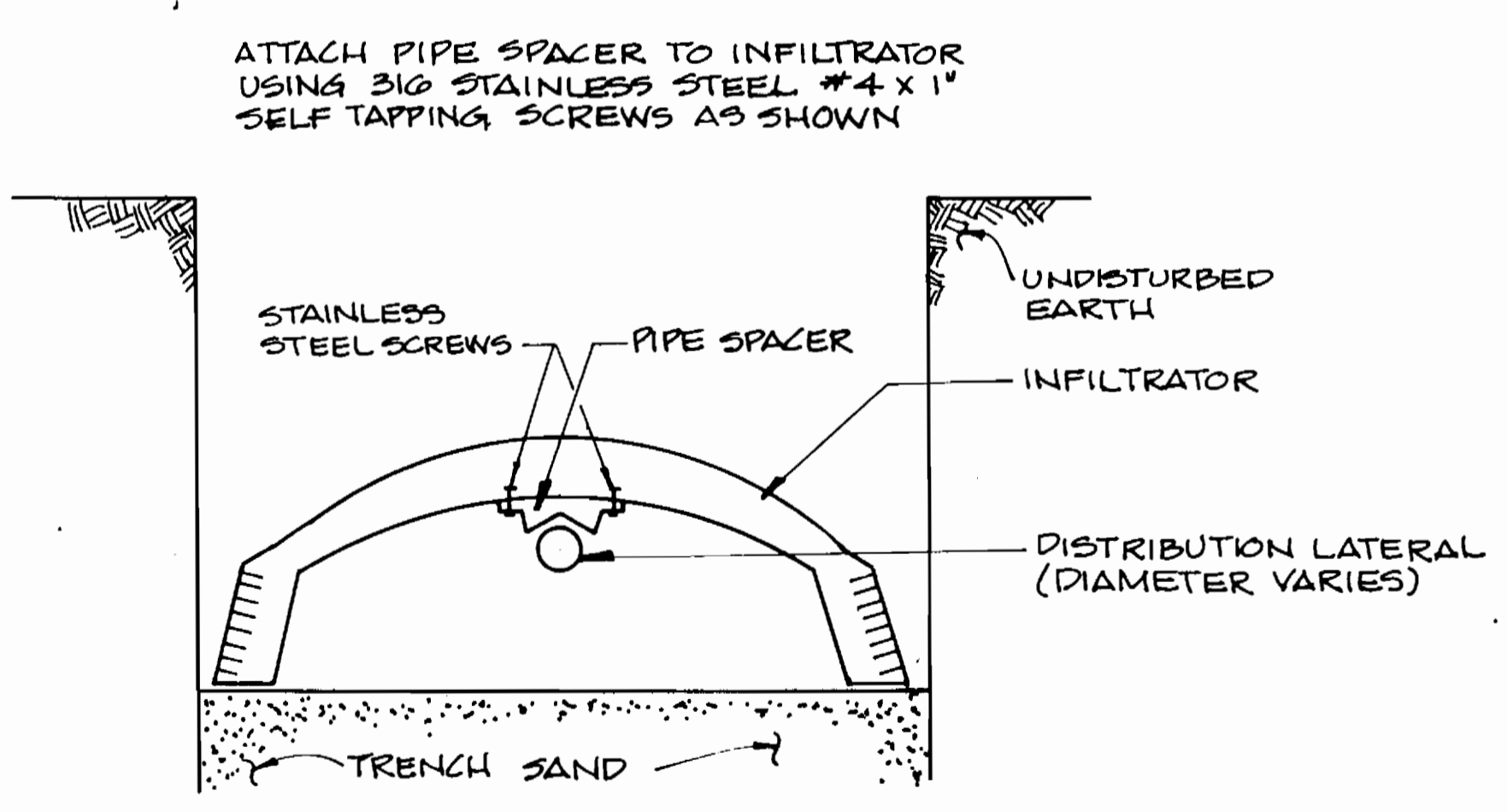
SCALE: 3/4" = 1'-0"



SECTION B-B

INFILTRATOR END CAP DETAIL

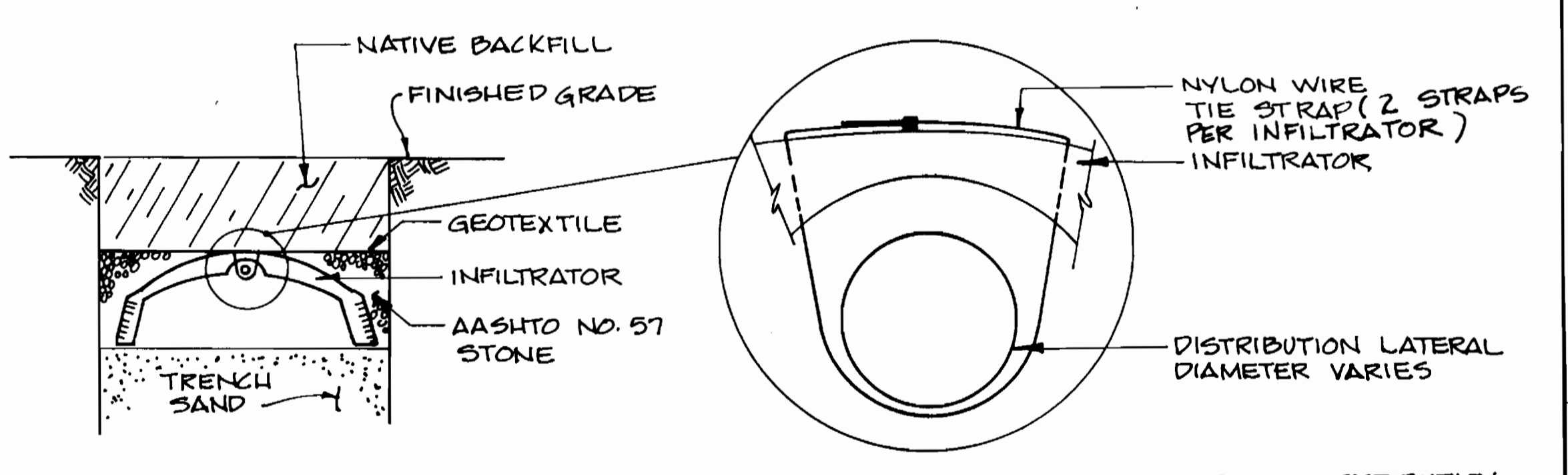
SCALE: 1/2" = 1'-0"



SECTION C-C

PIPE SPACER ASSEMBLY DETAIL

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



SECTION D-D

DISTRIBUTION LATERAL SUPPORT DETAIL

NOT TO SCALE

NOTE: SUPPORT DISTRIBUTION LATERAL AT EACH END OF THE FIRST INFILTRATOR AND AT THE LEADING END OF THE REMAINING INFILTRATORS

3357 5/45

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. Stein* 9-26-94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. ...* 9-14-94  
CHIEF, BUREAU OF UTILITIES DATE

*...* 9-14-94  
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
		AS BUILT	10/95
		CREATE PHASSED PLANS	9-94
		FINAL SUBMITTAL	8-94

**MISCELLANEOUS DETAILS**

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

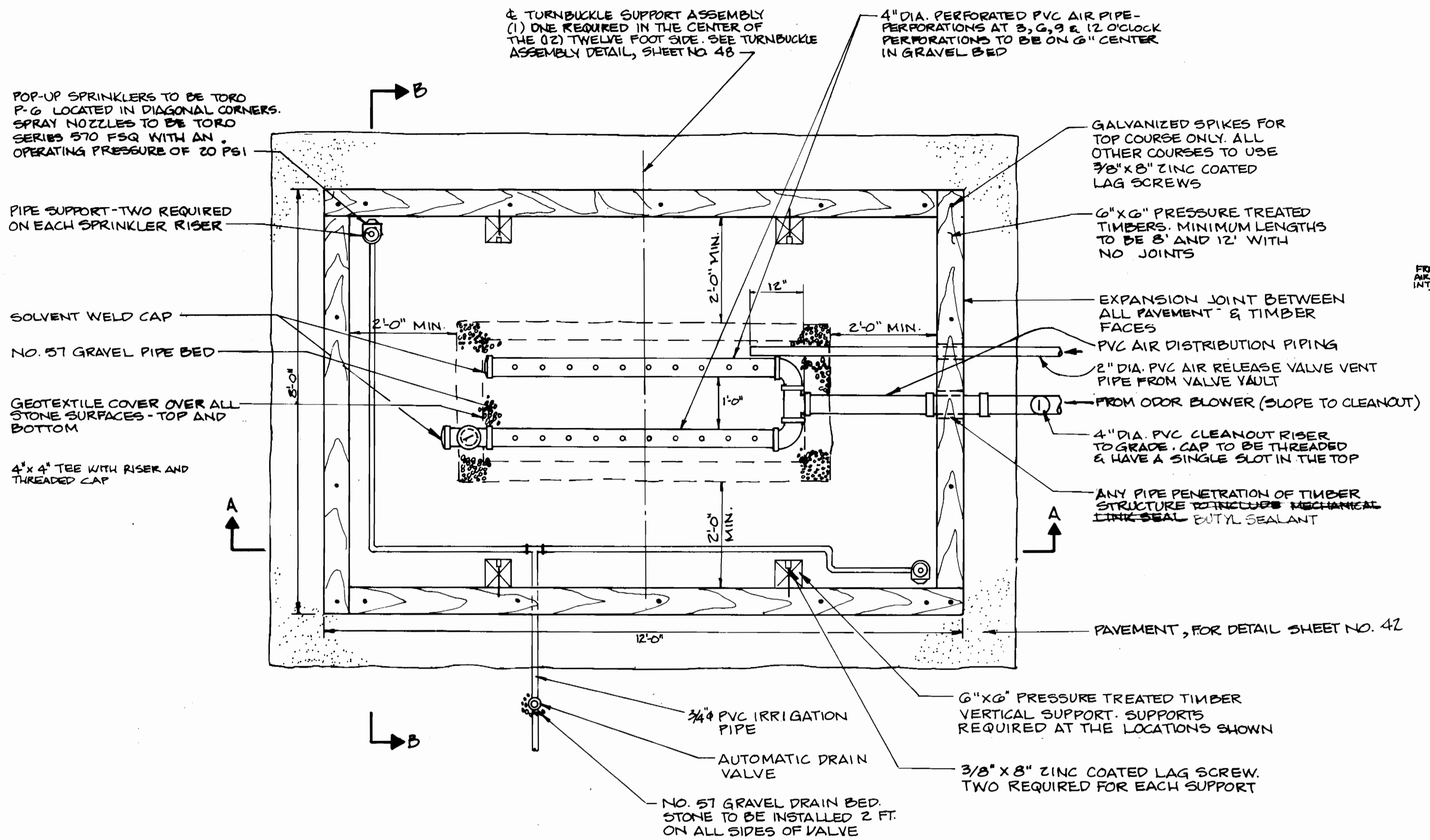
**ASHLEIGH KNOLLS**  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

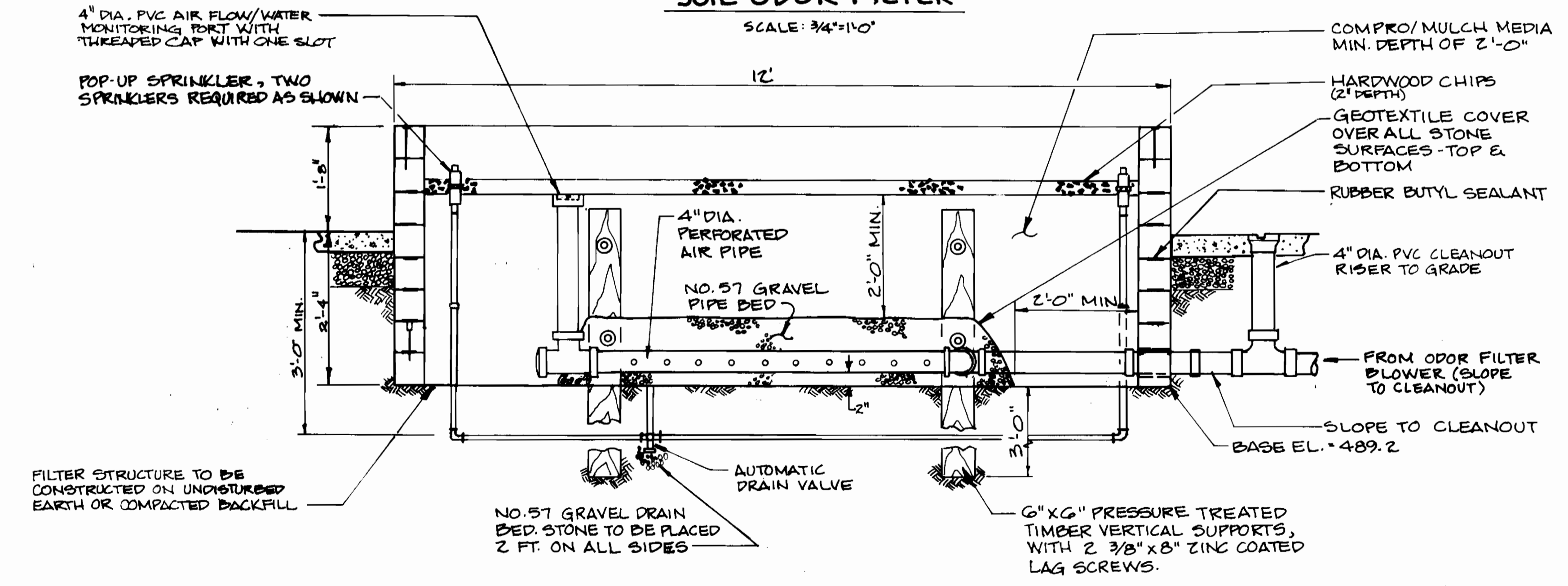
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

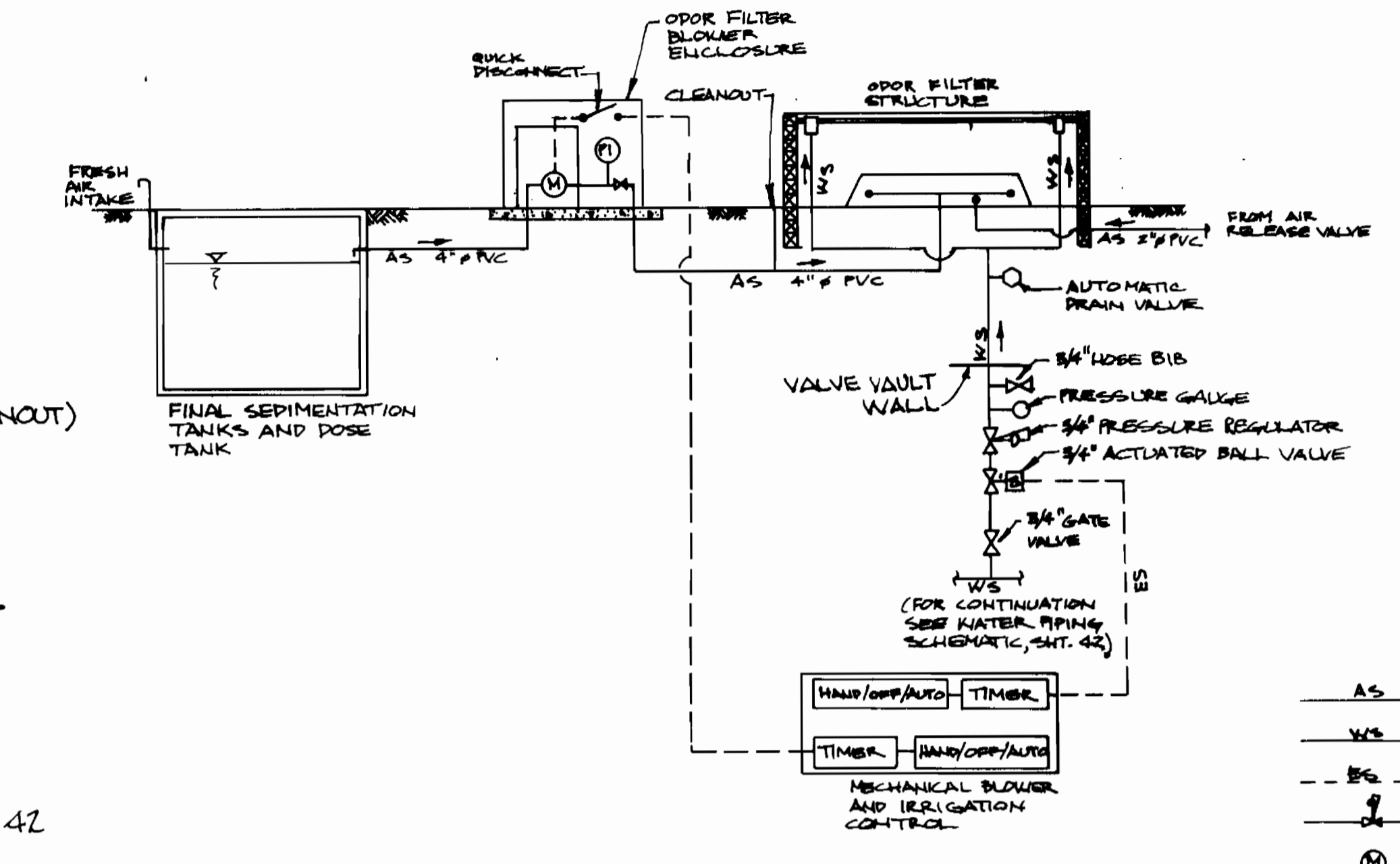
SHEET 45 OF 51



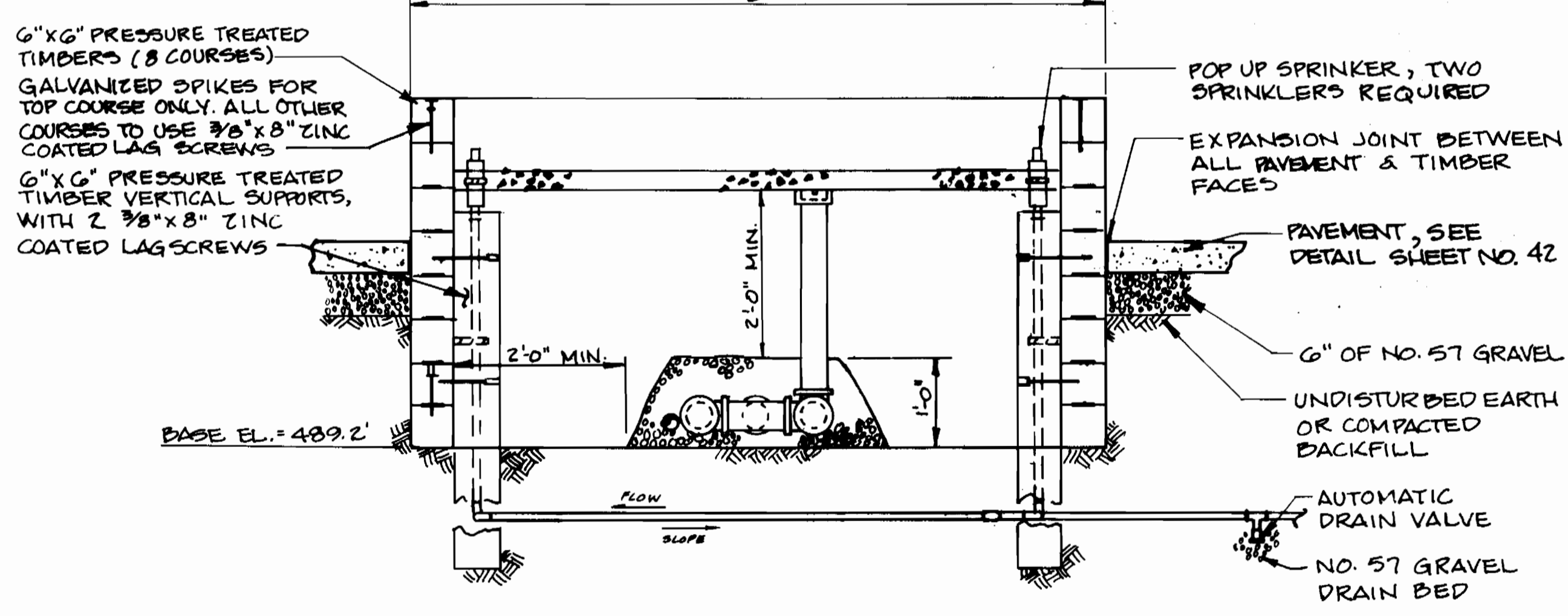
**PLAN**  
**SOIL ODOR FILTER**  
SCALE: 3/4"=1'-0"



**SECTION A-A**



**PROCESS & INSTRUMENTATION DIAGRAM**



**SECTION B-B**

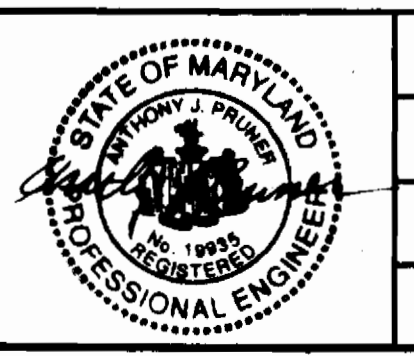
**SOIL ODOR FILTER**  
**BELOW GRADE INSTALLATION**  
SCALE: 3/4"=1'-0"

SEE SOIL ODOR FILTER STRUCTURE NOTES, SHEET NO. 48

3357 S/46

**DEPARTMENT OF PUBLIC WORKS**  
**HOWARD COUNTY, MARYLAND**  
 Director of Public Works: Robert J. [Signature] 2/26/94  
 Chief, Bureau of Engineering: [Signature] 9/26/94  
 Chief, Bureau of Utilities: [Signature] 9-14-94  
 Chief, Land Development Division: [Signature]

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

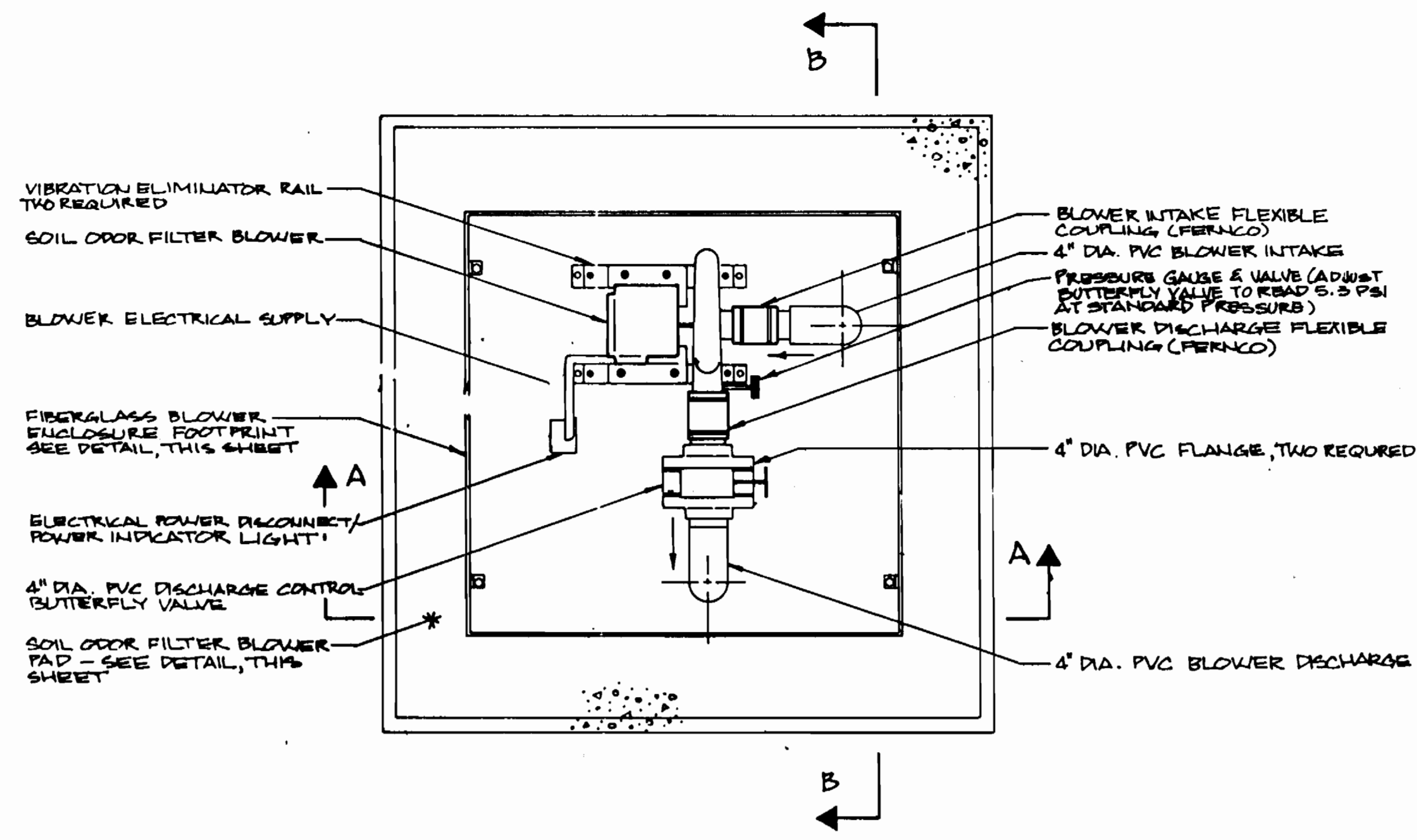


DES: VRC			
DRN: BGL			
CHK: ASP	CREATE PHASED PLANS	9-94	
	FINAL SUBMITTAL	8-94	
DATE: 12-93	BY NO.	REVISION	DATE

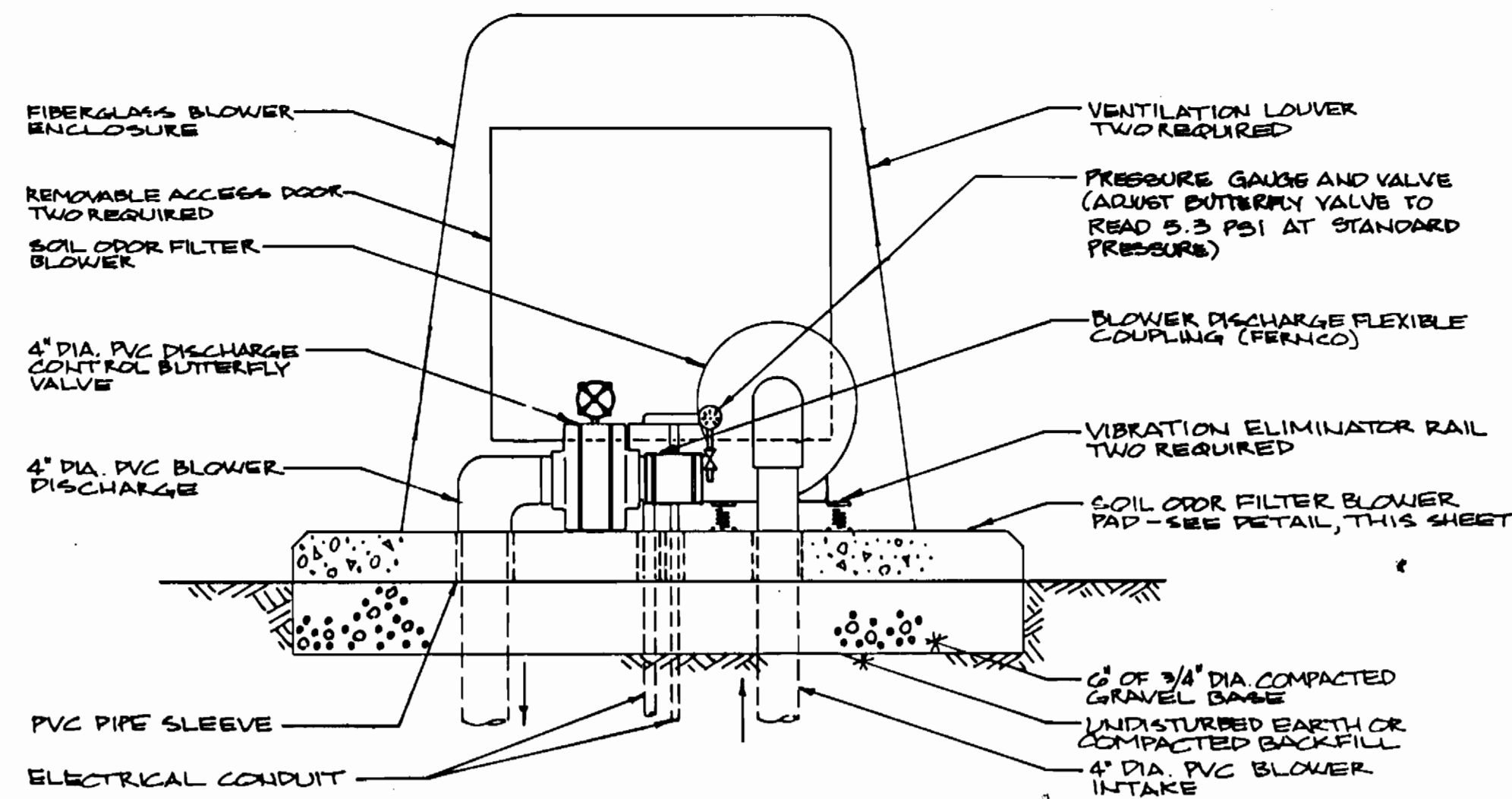
**SOIL ODOR FILTER STRUCTURE**  
 600' SCALE MAP NO. 42-41 BLOCK NO. 12

**ASHLEIGH KNOLLS**  
**WASTEWATER COLLECTION, TREATMENT**  
**AND DISPOSAL SYSTEM**  
 CONTRACT NO. 50-3357  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND

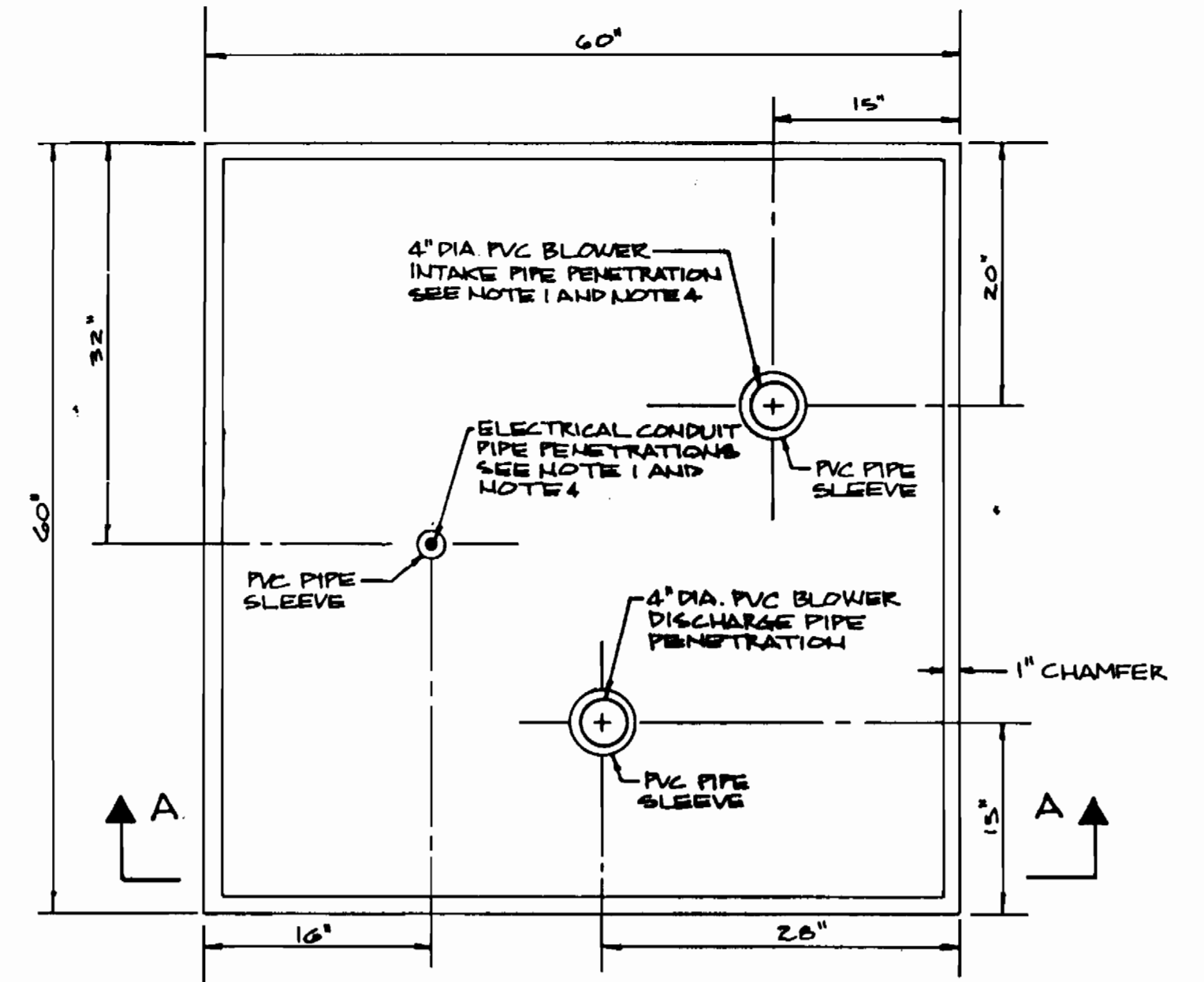
SCALE AS SHOWN  
 SHEET 46 OF 54



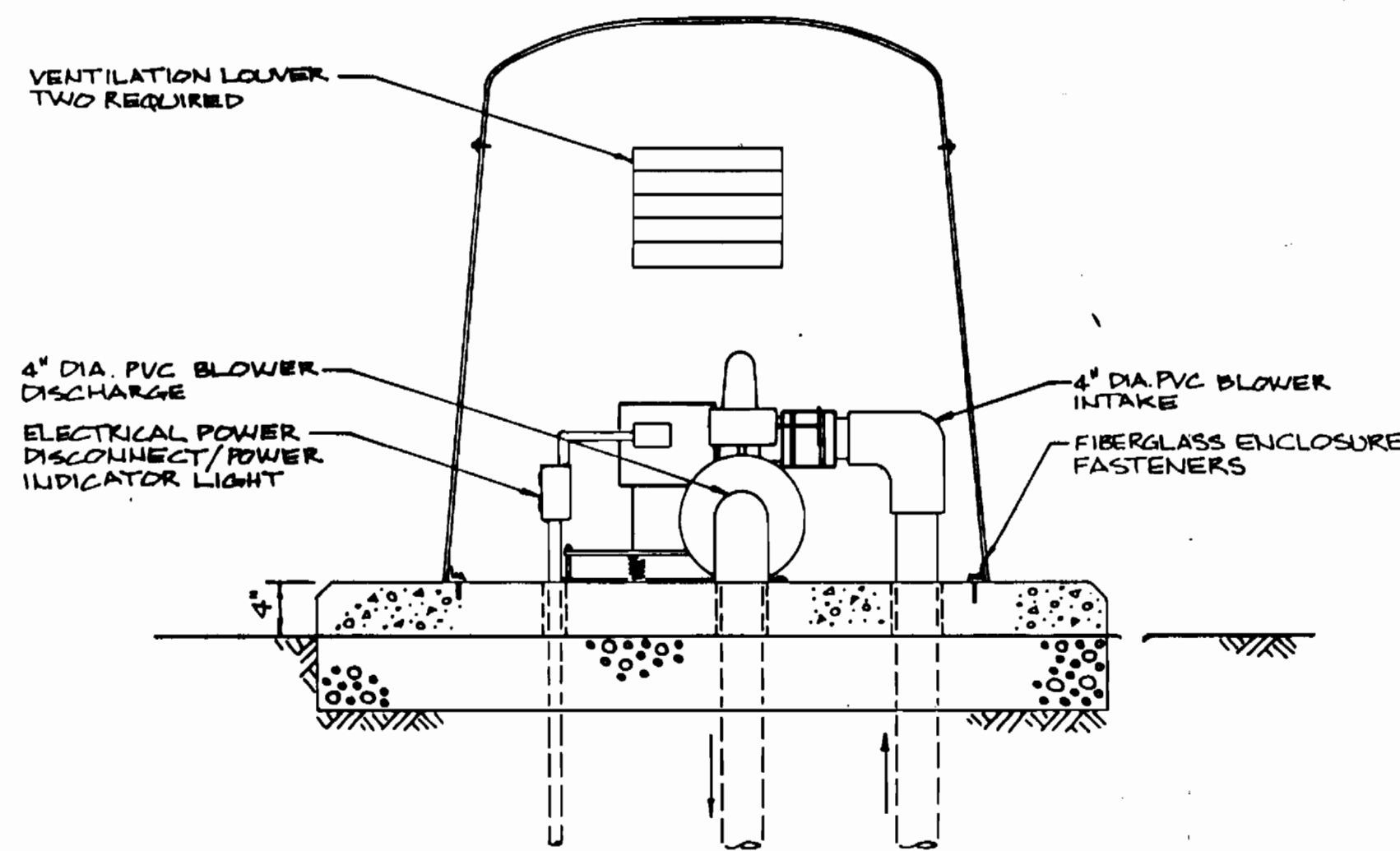
**PLAN**  
SOIL ODOR FILTER BLOWER ASSEMBLY  
SCALE: 1" = 1'-0"



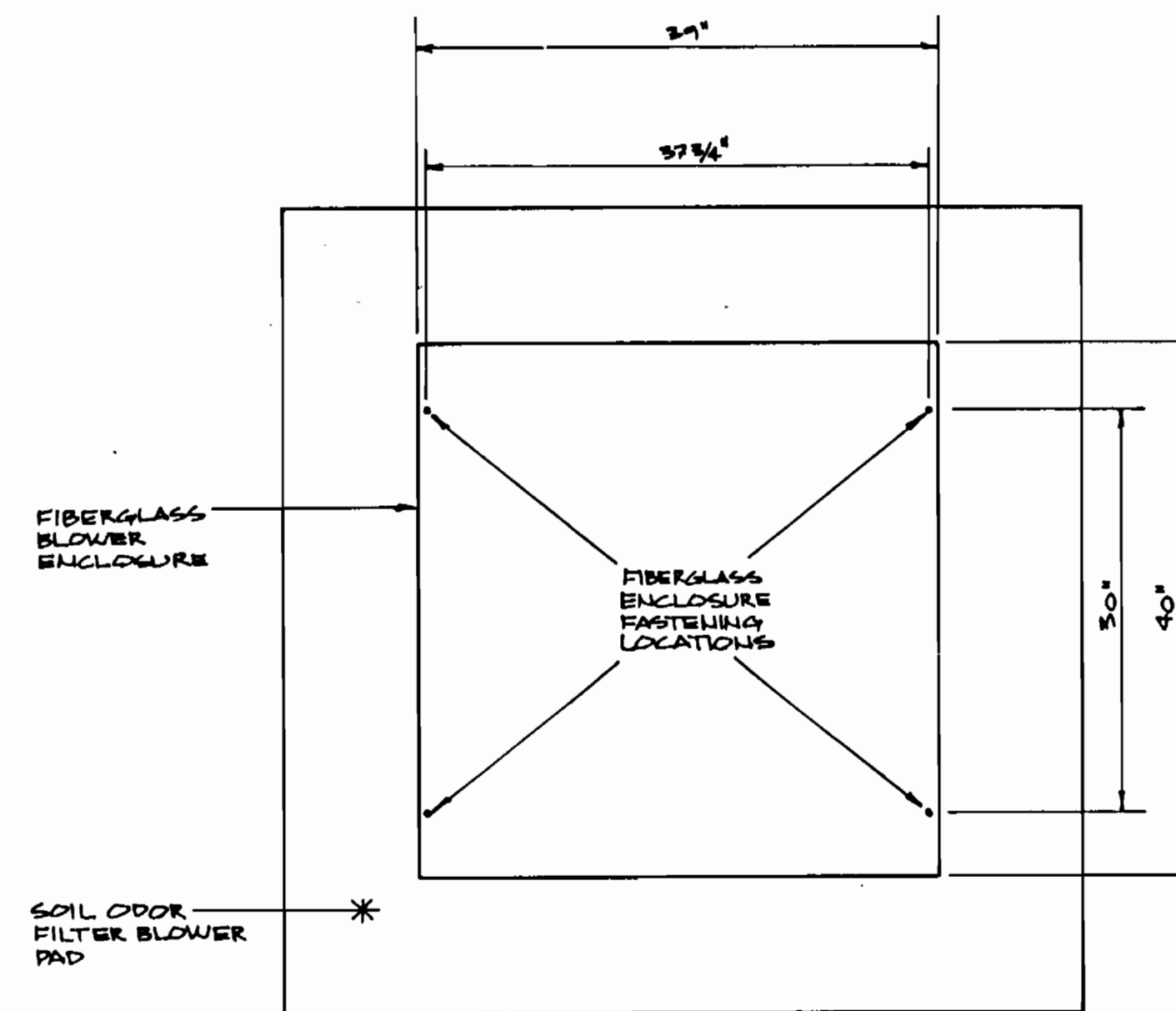
**SECTION B-B**  
SOIL ODOR FILTER BLOWER ASSEMBLY  
SCALE: 1" = 1'-0"



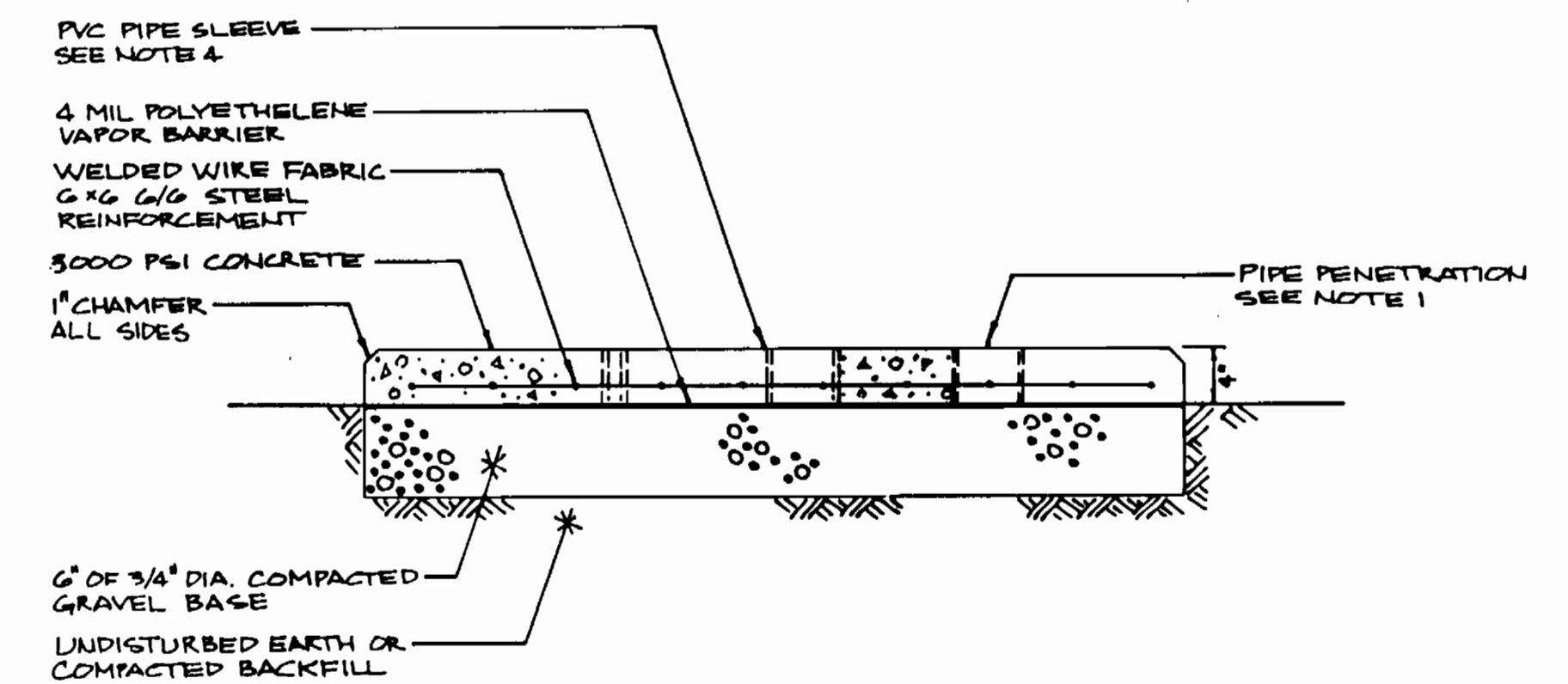
**PLAN**  
SOIL ODOR FILTER BLOWER PAD DETAIL  
SCALE: 1" = 1'-0"



**SECTION A-A**  
SOIL ODOR FILTER BLOWER ASSEMBLY  
SCALE: 1" = 1'-0"



**PLAN**  
BLOWER ENCLOSURE ANCHOR BOLT DETAIL  
SCALE: 1" = 1'-0"



**SECTION A-A**  
SOIL ODOR FILTER BLOWER PAD DETAIL  
SCALE: 1" = 1'-0"

**NOTES**

- 1) PIPE PENETRATIONS AND ELECTRICAL CONDUIT ENTRANCE LOCATIONS SHOWN ARE APPROXIMATE AND HAVE BEEN LOCATED TO AVOID ANY PIPE PENETRATION OF THE FIBERGLASS ENCLOSURE. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL SLAB PENETRATIONS AND ENTRANCES TO ACCOMMODATE THE INSTALLED EQUIPMENT.
- 2) BLOWER ENCLOSURE INTERIOR TO INCLUDE SOUND PROOFING AS SPECIFIED.
- 3) PIPE PENETRATIONS THROUGH THE FIBERGLASS ENCLOSURE WILL NOT BE PERMITTED.
- 4) ALL PIPE PENETRATIONS THROUGH THE CONCRETE SOIL ODOR FILTER PAD TO PASS THROUGH PVC PIPE SLEEVE 1" DIAMETER LARGER THAN THE PIPE PENETRATION REQUIRED. SPACE BETWEEN SLEEVE AND PENETRATING PIPE TO REMAIN OPEN.

- NOTES**
- 1) DIMENSIONS PROVIDED ARE APPROXIMATE LOCATIONS. ALL FASTENING LOCATIONS SHOULD BE FIELD DETERMINED BASED ON DELIVERED EQUIPMENT.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

**DAMES & MOORE**

170 JENNIFER ROAD, SUITE 250  
ANNAPOLIS, MARYLAND 21401  
(410) 224-5640



DES: VRC			
DRN: BGM			
CHK: AJP		CREATE PHASE PLANS	444
		FINAL SUBMITTAL	844
DATE: 12-93	BY NO.	REVISION	DATE

**SOIL ODOR FILTER BLOWER**

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

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

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 6

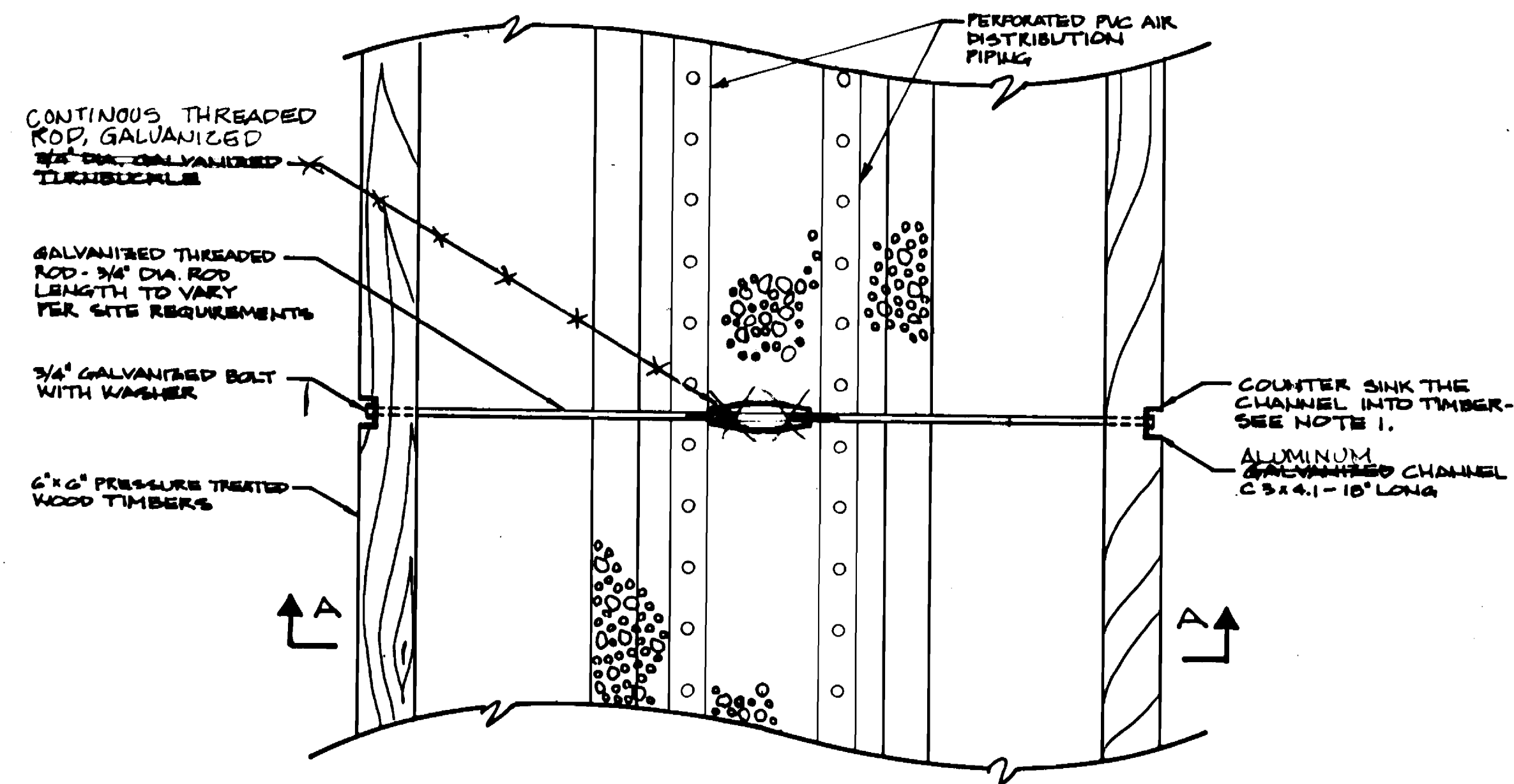
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

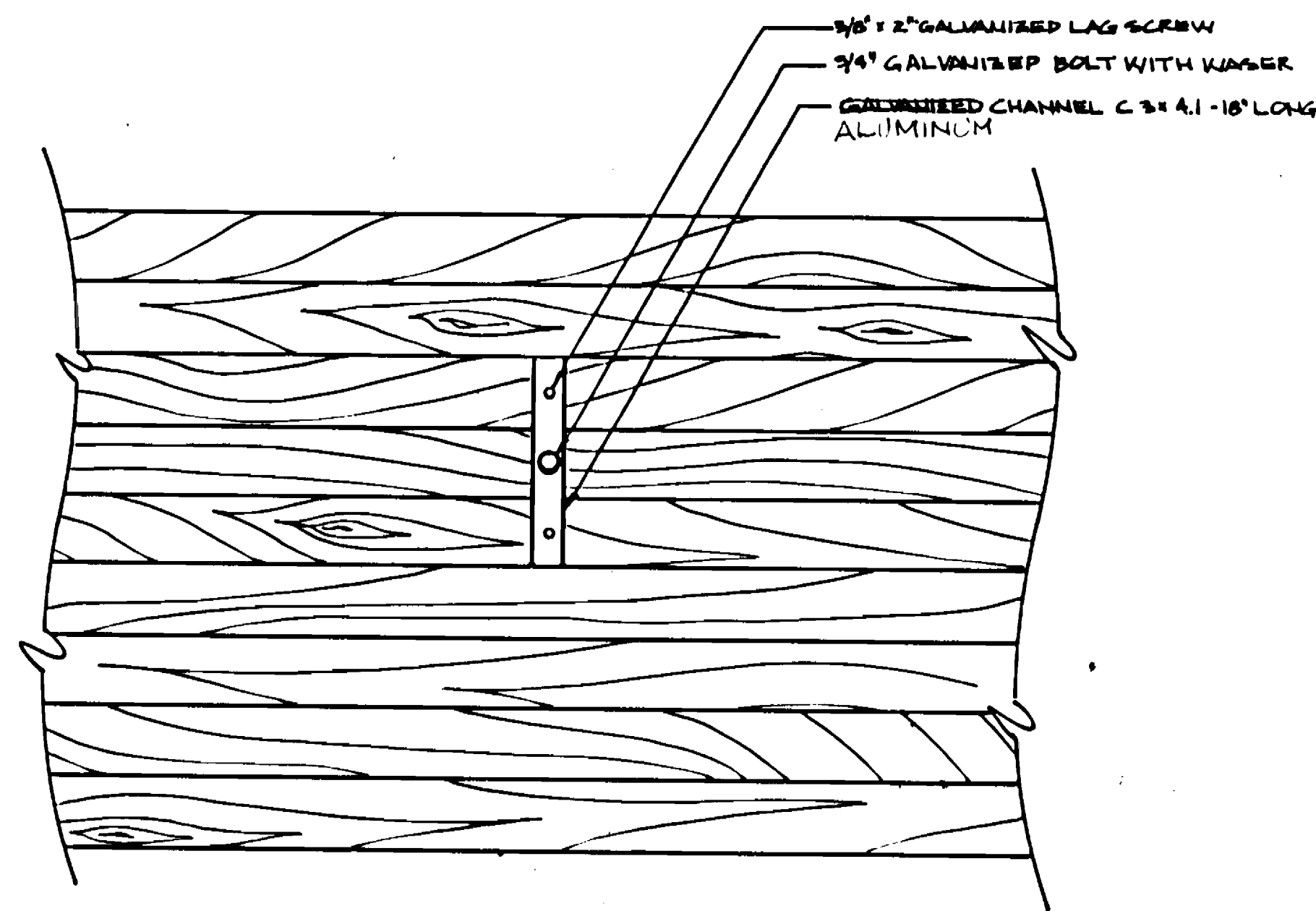
SHEET  
42 OF 54

3357 S/47

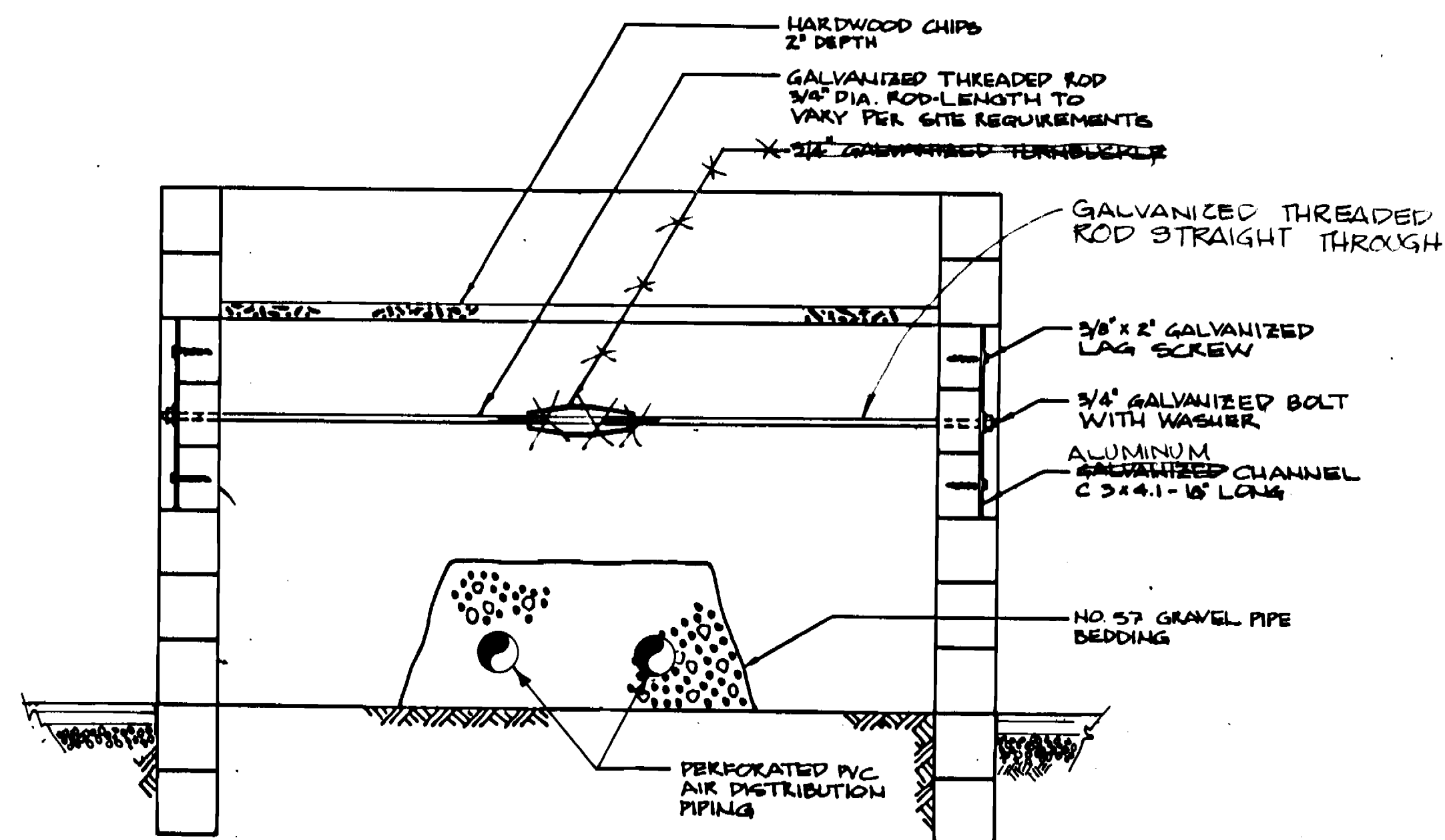




PLAN  
TURNBUCKLE SUPPORT ASSEMBLY  
NOT TO SCALE



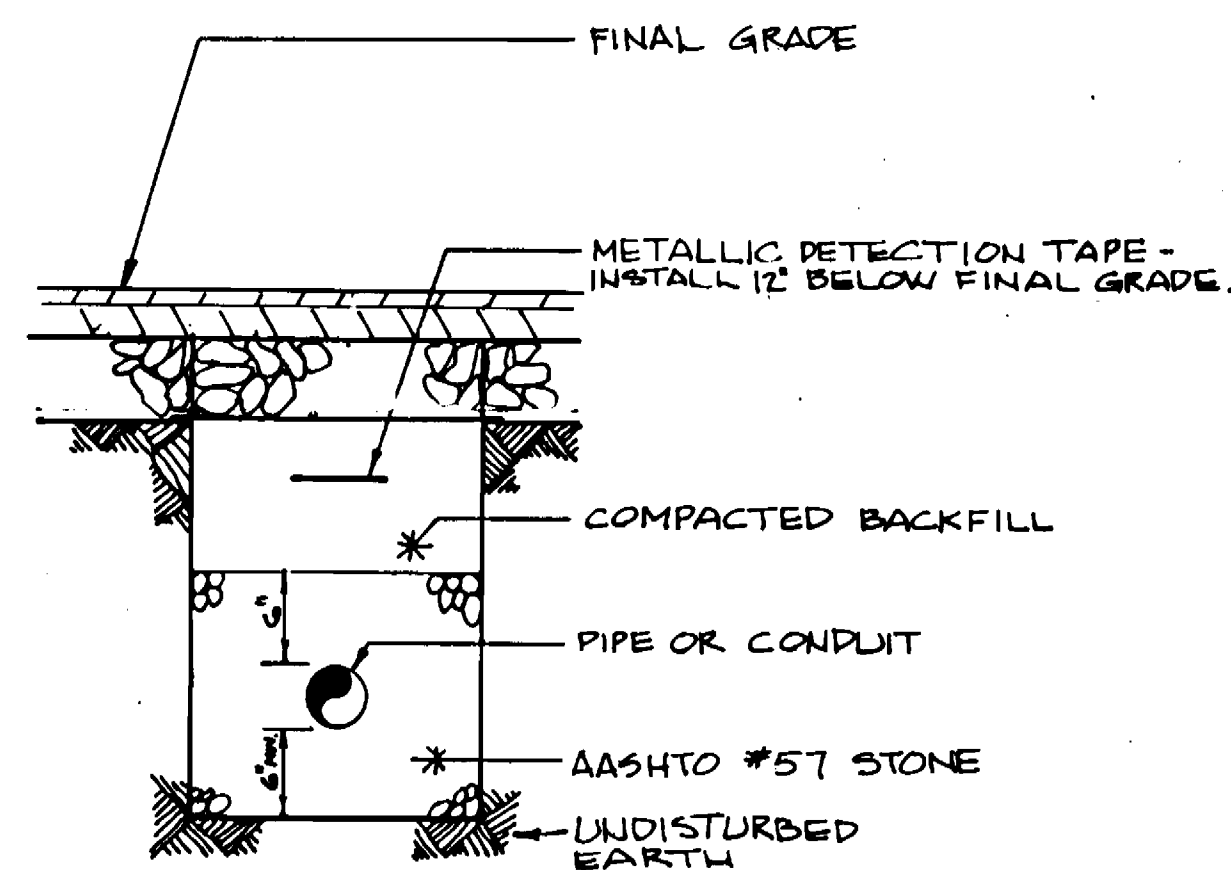
SIDE VIEW  
TURNBUCKLE SUPPORT ASSEMBLY  
NOT TO SCALE



SECTION A-A  
TURNBUCKLE SUPPORT ASSEMBLY  
NOT TO SCALE

NOTES

- The Contractor shall countersink the galvanized C-channel into the pressure treated timbers as shown on the plans. The width and depth of the countersunk groove shall be made to within 1/2-inch of the C-channel's width and depth. Grooves constructed exceeding this tolerance will not be approved and the timbers will be removed from the project.



SOIL ODOR FILTER PIPE  
NOT TO SCALE

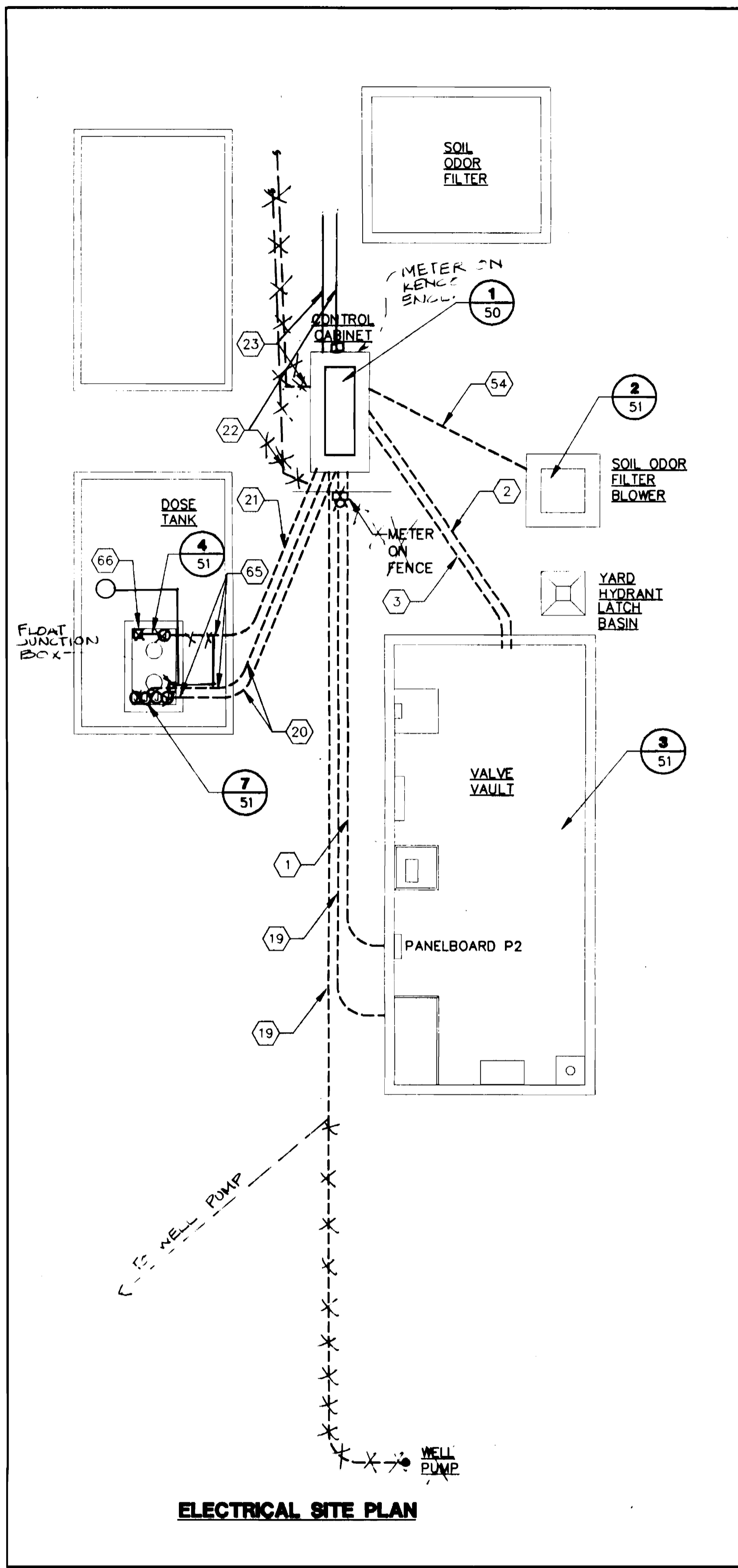
SOIL ODOR FILTER STRUCTURE

- The pressure treated timbers shall be marine grade and be treated with 100 percent pure oxide form of chromate copper arsenate (CCA) at a rate of 2.5 lbs. CCA per cubic foot of wood. Common grade, ground contact, pressure treated timbers will not be approved for use in constructing the filter structure. For detailed information see Specification.
- During construction of the timber filter structure, individual timbers shall be placed such that the "best side" is facing out.
- For the specific location of the soil odor filter with respect to grade, see the main profile shown on each site plan.
- All irrigation piping shall maintain positive slope and drain to either the automatic drain valve or the curb valve. Piping between the solenoid valve and the sprinklers shall drain to the auto drain. Piping between the curb valve and the solenoid valve shall drain to the curb valve.
- The irrigation control box shall be installed 2 inches below the top of the hardwood chips.
- The rubber butyl sealant shall be placed between the timber courses in one continuous strip. Where it is necessary to join multiple strips of sealant the ends shall be overlapped sufficiently so that during compression the sealant material will form a single, continuous bond.
- The rubber butyl sealant shall be placed such that during compression any excess sealant is pushed towards the inside of the filter structure. Any material pushed past the outside face of the filter structure shall be neatly removed. During removal of any excess sealant the individual timbers shall be protected from damage. Damaged timbers shall not be approved and will be removed from the project.
- The rubber butyl sealant and lag screw assemblies shall be used to fasten all timber courses except the top course. The top course of timbers shall be fastened using galvanized spikes and will not require the rubber butyl sealant.
- During installation of the timbers all necessary precautions shall be made to ensure that individual timbers are not split. This includes drilling all pilot and countersink holes. All split timbers shall be removed from the project.
- There shall be one lag screw assembly or spike located at the end of each timber. Lag screw assemblies shall be spaced a minimum of 2 feet on center.
- All lag screw assemblies shall be tightened to ensure full compression of the rubber butyl seal. Prior to constructing the first timber structure the Contractor shall field demonstrate his/her proposed method for fastening two timbers with the rubber butyl sealant. The Contractor shall be prepared to demonstrate up to 3 different methods for assembling and tightening the timbers. It is the intent of this project to tighten the timbers so that inspection of the outside face of the timbers reveals less than a 1/8-inch space. Based on the results of the demonstration, the proposed timber assembly method will be reviewed for approval.

3357 5/98

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>James J. Shaw</i> 9/26/94 Chief, Bureau of Utilities: <i>Robert J. ...</i> 9/14/94		DAMES & MOORE 170 JENNIFER ROAD, SUITE 230 ANNAPOLIS, MARYLAND 21401 (410) 224-8640 Chief, Land Development Division: <i>Michael ...</i> 9/26/94		DES: VRC DRN: BGW CHK: ATP DATE: 12-93		SOIL ODOR FILTER DETAILS AS BUILT 10/95 CREATE PHASED PLANS 9-94 FINAL SUBMITTAL 8-94		ASHLEIGH KNOLLS WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM CONTRACT NO. 50-2357 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 12 OF 54
---	--	--	--	---	--	--	--	--	--	---

3357 S/49



**ELECTRICAL SITE PLAN**

- 1 1-1/2" C., (4) #3 THWN, (1) #8G
- 2 2" C., (3) 19c #16 THWN, PVC OUTER JACKET, ANIXTER #2A-1619, OR EQUAL
- 3 3/4" C., (2) #16 TWISTED PAIR, 100% SHIELD, PVC JACKET, BELDON #8719, OR EQUAL. ONE CABLE IS SPARE.
- 4 8 FOOT FLUORESCENT STRIP, WET LOCATION LISTED, GASKETED FIBERGLASS HOUSING, ACRYLIC LENS, WITH (2) 75 WT, COOL WHITE LAMPS, ~~W.E. WILLIAMS #3636-A, OR EQUAL.~~ MOUNT 12" BELOW CEILING. LITHONIA # DMW 29C 120 ES
- 5 125 VOLT, 20 AMP, 2 POLE, 3 WIRE STRAIGHT BLADE RECEPTACLE, NEMA 5-20R, MOUNTED IN THREADED CAST METAL ENCLOSURE WITH WET LOCATION COVER. ~~HUBBELL #3362/S208WD, OR EQUAL.~~ MOUNT 12-INCHES ABOVE FLOOR. ~~ARROW HART #5362/W WR 100C COVER.~~
- 6 3/4" C., (2) #12 THWN, (1) #12G, (2) #14 CONTROL.
- 7 RAIN TIGHT WIREWAY, 4"x4"x10", COMPLETE WITH CLOSING PLATES, SQUARE D #DR40/ADR40P, OR EQUAL. INSTALL GROUNDING BUS IN WIREWAY FOR DISTRIBUTING GROUND WIRES TO VALVES AND PUMP. ~~RAIN TIGHT THROUGH 4"x4"x10" SQD RD 41C.~~
- 8 3/4" C., (2) #12 THWN, (1) #12G, (7) #14 CONTROL. USE MAX. 36" LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO VALVE OPERATOR.
- 9 PANELBOARD "P2", 208Y/120V, 3 PHASE, 100 AMP MAIN CIRCUIT BREAKER, 22K A.I.C., NEMA 12 ENCLOSURE, COMPLETE WITH CIRCUIT BREAKERS AS INDICATED ON PANELBOARD SCHEDULE. ~~SQUARE D #NOOD, OR EQUAL.~~ CUTLER HAMMER #DAB
- 10 EMERGENCY LIGHTING UNIT, (2) 12 VOLT, 18 WT LAMPS, LEAD CALCIUM BATTERIES FOR MIN. 90 MINUTE OPERATION DURING POWER OUTAGE, NEMA 4X, AMMETER, VOLTMETER, LITHONIA #ELM3X, OR EQUAL. CONNECT TO UNSWITCHED LEG OF CIRCUIT FEEDING NORMAL LIGHTS.
- 11 3/4" C., (2) #14 THWN, AND (1) #14G.
- 12 EMERGENCY ALARM PUSHBUTTON, MAINTAINED CONTACT, CONTACT OPENS WHEN BUTTON IS PRESSED, NEMA 4X, MOUNT PUSHBUTTON IN ONE-HOLE, NEMA 4X, ENCLOSURE, ~~CROUSE-HINDS #N2S2110-MSR1, MARKED "EMERGENCY".~~ MOUNT PUSHBUTTON ADJACENT TO LADDER, 60-INCHES ABOVE FLOOR. ~~CUTLER HAMMER TYPE H 4234~~
- 13 LIGHT SWITCH, NEMA 4X, CROUSE-HINDS, 3/4" HUB, DEAD END, CROUSE-HINDS, NSS-D22, MARKED "ON OFF".
- 14 LIMIT SWITCH, HEAVY DUTY, NEMA 4 ENCLOSURE, 120 VOLT, MIN. 100 AMP BREAK, 10 AMP MAKE CONTACTS, ~~SQUARE D #9007 TYPE T, SECURELY MOUNT BELOW HATCH DOOR SO THAT CONTACTS OPEN WHEN HATCH IS OPEN AND CLOSE WHEN HATCH DOOR IS CLOSED.~~ ~~CUTLER HAMMER #E5CAR1~~
- 15 125 VOLT, 20 AMP, 2 POLE, 3 WIRE GFI STRAIGHT BLADE RECEPTACLE, NEMA 5-20R, MOUNTED IN THREADED CAST METAL ENCLOSURE WITH WET LOCATION COVER. ~~HUBBELL #3362/S208WD, OR EQUAL.~~ MOUNT 48-INCHES ABOVE FLOOR. ~~ARROW HART #5362/W WR 100C COVER.~~
- 16 TERMINAL BOX, NEMA 4, 16"Hx14"Wx6"D, HINGED, MOUNTING PAN, HOFFMAN #A-1614CHNF/A-16P14. INSTALL (76) SOLDERLESS BOX LUG TERMINALS, 600 VOLT, 60A, ON RAIL IN THREE ROWS AND LABEL AS SHOWN OF (20) EA., SQUARE D SERIES GR6, OR EQUAL.
- 17 1" C., (30) #14 THWN CONTROL.
- 18 MANUAL MOTOR STARTER, NEMA 4X, 115 VOLT, 1-POLE, RATED FOR MIN. 1HP AC, FEED THROUGH, CROUSE-HINDS #NFSC-D21, OR EQUAL. SIZE OVERLOAD HEATER FOR MOTOR ACTUAL NAMEPLATE FULL LOAD AMPS. MOUNT 48-INCHES ABOVE FLOOR.
- 19 3/4" C., (2) #12 THWN AND (1) #12G.
- 20 1" C., (3) #6 THWN, (1) #10G., (2) #14 THWN CONTROL.
- 21 1" C., (10) #14 THWN AND (2) 2/C #16 100% SHIELDED. (INTRINSICALLY SAFE CIRCUITS, ONLY.)
- 22 STUB OUT 3" C. FROM METER SOCKET TO ACCESSIBLE AREA FOR UTILITY CO. WIRING. COORDINATE WITH UTILITY COMPANY.
- 23 3/4" C., STUB-OUT FOR TELEPHONE CABLE TO TELEMETERING UNIT. COORDINATE WITH TELEPHONE COMPANY.
- 24 NEMA 4 FREESTANDING ENCLOSURE, DOUBLE DOORS HINGED ON OPPOSITE SIDES, 74"Hx72"Wx24"D PLUS 12" HIGH FLOOR STAND, ~~HOFFMAN #A-74H72JULP, OR EQUAL.~~ INCLUDE 68"x68" INTERIOR MOUNTING PAN, HOFFMAN #A-72P72, OR EQUAL. ~~J.M. GILLIAN CUSTOM MODEL WITH CUSTOM BACK BOARD.~~
- 25 FLUORESCENT LIGHTING PACKAGE, 115 VAC, 2', LIGHT ACTIVATES WITH REMOTE MOUNTED DOOR SWITCH, HOFFMAN #A-LFDA21, OR EQUAL.
- 26 METERING SOCKET, MIN. 225 AMP, 208-VOLT, 3-PHASE, COORDINATE WITH UTILITY COMPANY FOR EXACT MODEL AND INSTALLATION INSTRUCTIONS.
- 27 PANELBOARD "P1", 208 VOLT, 3 PHASE, 4 WIRE, 225 AMP MAIN CIRCUIT BREAKER, 30 CIRCUIT, NEMA 12 ENCLOSURE, PROVIDE CIRCUIT BREAKERS AS INDICATED ON PANELBOARD SCHEDULE, PANELBOARD SHALL BE SERVICE ENTRANCE APPROVED AND HAVE ADEQUATE INTERRUPTING CAPACITY FOR AVAILABLE FAULT CURRENT. ~~SQUARE D #MODEL NOOD, OR EQUAL.~~ ~~CUTLER HAMMER #F5H~~
- 28 DUPLEX PUMP CONTROL PANEL, FURNISHED BY DOSE PUMP VENDOR. REFER TO SPECIFICATIONS AND SCHEMATIC DIAGRAM, (SHEET 52), FOR ADDITIONAL REQUIREMENTS. ENCLOSURE SHALL INCLUDE MAIN DISCONNECT SWITCH.
- 29 SPRINKLER CONTROLLER, 120V, 5A CONTACTS, ON-OFF AND MANUAL-AUTOMATIC SWITCHES, 24-HOUR TIME DIAL, 14 DAY SKIPPER FEATURE, ~~INTERNATIONAL #ST41, OR EQUAL.~~ ~~PARAGON EL 1000~~
- 30 TELEMETERING TRANSMITTER SYSTEM CONSISTING OF, CABINET, POWER SUPPLY, RACK, AND TRANSMITTER. SYSTEM TO OPERATE ON DEDICATED TELEPHONE LINE. QEI EQUIPMENT #QT 30. ALSO FURNISH AND INSTALL MATCHING RECEIVER CONSISTING OF RECEIVER CARD, SOCKET AND POWER SUPPLY, ONLY AT ALL SAINTS WATER PUMPING STATION. QEI EQUIPMENT #QR 30.
- 31 PLASTIC WIREWAY, SIZED AS NEEDED, PANDUIT, OR EQUAL.
- 32 NEMA 12 ENCLOSURE, 36"Hx30"Wx16"D, HINGED ON RIGHT SIDE, HOFFMAN, D-3L36H3016LPB, OR EQUAL. PROVIDE FULL MOUNTING PAN 33"x27", HOFFMAN A-36P30, OR EQUAL.
- 33 STRIP CHART RECORDER, 120 VOLT POWER INPUT, 4-20mA 2 INPUT CAPABILITY, TOTALIZING FUNCTIONS, 3 TRACES, DIGITAL DISPLAY, ABB KENT-TAYLOR #PR102/BO/300000/111. CONTRACTOR SHALL CONFIGURE TO PROVIDE CONTINUOUS FLOW RATE, TOTAL FLOW, AND TANK LEVEL. SCALES SHALL PRINT ON CHART. ALL VALUES SHALL BE AVAILABLE ON DIGITAL READOUT.
- 34 DATA TABLE ACCESS MODULE (KEYPAD) FOR READOUT OF PLC ELAPSED TIME REGISTERS. REFER TO SPECIFICATION SECTION 16, "PROGRAMMABLE LOGIC CONTROLLER" FOR ADDITION REQUIREMENTS.
- 35 ENGRAVED PHEONLIC NAMEPLATE, BLACK WITH 1/4" WHITE LETTERING. REFER TO SPECIFICATIONS FOR ENGRAVING LEGEND. SCREW MOUNT TO ENCLOSURE.
- 36 PUSHBUTTON, 120 VOLT, WITH PHENOLIC NAMEPLATE TO READ "RESET", SQUARE D #9001, KR SERIES, OR EQUAL.
- 37 PUSHBUTTON, 120 VOLT, WITH PHENOLIC NAMEPLATE TO READ "LAMP TEST", SQUARE D #9001, KR SERIES, OR EQUAL.
- 38 SELECTOR SWITCH, 120 VOLT, WITH PHENOLIC NAMEPLATE TO READ "FILTER BLOWER" "HAND OFF AUTO" SQUARE D #9001, KR SERIES, OR EQUAL.
- 39 PROGRAMMABLE LOGIC CONTROLLER, REFER TO SECTION 16 SPECIFICATIONS FOR REQUIREMENTS.
- 40 RECYCLE TIME FOR SOIL ODOR FILTER BLOWER CONTROL, 2-DPDT 1/3 HP RATED CONTACTS, 120 V, 2 TO 60 MINUTE INDEPENDENTLY ADJUSTABLE ON AND OFF TIME RANGES, DUAL KNOBS, AGASTAT #SRC72AIIA, OR EQUAL.
- 41 CONTROL RELAY, 120VAC, (2) DPDT CONTACTS, 8-PIN SOCKET TYPE, WITH PILOT LIGHT, SOCKET AND RETAINER CLIP, SQUARE D #KP12P14V24, NRS1, FOR POWER FAILURE ALARM.
- 42 LAMP CABINET CONSISTING OF 24 VDC LAMPS BEHIND (36) WHITE TRANSLUCENT ENGRAVED WNDWS. EACH WINDOW SHALL BE ENGRAVED AS INDICATED ON DETAIL 6 WITH 3/16 INCH CHARACTERS. ENGRAVING SHALL BE PROVIDED BY LAMP CABINET MANUFACTURER, PANALARM MODEL #90CL23LB1WH, OR EQUAL.
- 43 REMOTE POWER SUPPLY FOR LAMP CABINET, 120 VAC INPUT, 24 VDC OUTPUT, 80 WATTS, REMOTE MOUNTED, PROVIDE ENCLOSURE, PANALARM #90PIX120AC24FC80W, OR EQUAL.
- 44 MANUAL MOTOR STARTER, 120V, 1P, 1/2HP, WITH OVERLOAD PROTECTION, NEMA 1 ENCLOSURE, ~~SQUARE D CLASS 2510, OR EQUAL.~~ SERVES WELL PUMP. ~~CUTLER HAMMER #Q10~~
- 45 1-1/2" C., (2) #2 GND. ROUTE TO PANELBOARD GROUND BUS.
- 46 3/4"x8' COPPER CLAD GROUND ROD. ATTACH GROUND WIRE WITH ~~TERMINAL~~ BOLT ON CONNECTORS.
- 47 3/4" LIQUID TIGHT FLEXIBLE METALLIC CONDUIT, WITH (2) #12 THWN AND (1) #12G.
- 48 NEMA 4 MANUAL STARTER WITH OVERLOAD PROTECTION AND PILOT LIGHT, 115 VOLT, RATED 2HP MINIMUM, SQUARE D #2510-FW1PHG, OR EQUAL, PROVIDE CONDUIT OPENINGS TOP AND BOTTOM.
- 49 CONDUIT SEAL, CROUSE-HINDS #EYS216, OR EQUAL, INSTALL CLASS 1, GROUP D HAZARDOUS AREA APPROVED SEALING COMPOUND IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS (SM SCOTCHCAST). LOCATE SEAL BETWEEN CONDUIT PENETRATION OF TANK AND BOX WITH NO FITTINGS OR COUPLINGS BETWEEN SEAL AND TANK PENETRATION.
- 50 CORROSION RESISTANT NEMA 4 JUNCTION BOX, FURNISHED BY FLOAT SWITCH MANUFACTURER.
- 51 CORROSION RESISTANT, 2-PIN RECEPTACLE TO MATCH FLOAT SWITCH COUPLER. FLOAT SWITCH MANUFACTURER SHALL FURNISH. CROUSE-HINDS, MINI-LINE, OR EQUAL.
- 52 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.
- 53 HAZARDOUS AREA RECEPTACLE, 60A, 208V, 4W, CLASS 1, GROUP D, DIVISION 1, DEAD FRONT INTERLOCKED, ~~WITH MATCHING PLUG, CROUSE-HINDS, #SD0654-NW, #SD058X-NW, VERIFY PLUG CABLE O.D. PART #~~
- 54 3/4" C., (3) #12 THWN, (1) #12G.
- 55 MAGNETIC CONTACTOR, OOPEN TYPE, 120V, 1P, 1HP, SIZE 0, SQUARE D #8502-SB05V02, OR EQUAL. FOR SOIL ODOR BLOWER.
- 56 (20) TERMINALS, 600V, 60A, RAIL MOUNT, SQUARE D SERIES GR6, OR EQUAL. (6) CHANNEL MOUNTED THERMAL-MAGNETIC CIRCUIT PROTECTORS, 120 VOLT, 1P, SQUARE D #GCB100, OR EQUAL, FOR UPS POWER DISTRIBUTION.
- 57 UNINTERRUPTIBLE POWER SUPPLY, 950KVA, 120 VOLT INPUT, 120 VOLT OUTPUT, 20 MINUTE BATTERY BACKUP AT 65% LOAD, TRUE "NO-BREAK" TYPE, BEST FORTRESS MODEL LI950, OR EQUAL
- 58 4-20MA INTRINSICALLY SAFE BARRIER COMPATABLE WITH DOSING TANK LEVEL TRANSMITTER.
- 59 WATCHDOG TIMER, OFF DELAY, SSAC #TRU2, SET AT FASTEST TIME SETTING.
- 60 RECEPTACLE, 120-VOLT, 20-AMP, 2 POLE, 3 WIRE, GFI STAIHT BLADE, NEMA 5-20R, MOUNTED IN THREADED CAST METAL BOX, HUBBELL #GF5362.
- 61 3" C., WITH (4) #4/0 THWN, AND (1) #4 GND.
- 62 HAZARDOUS AREA RECEPTACLE, 30A, 120V/3W, CLASS 1, GROUP D, DIVISION 1, FACTORY SEALED, WITH MATCHING PLUG, CROUSE-HINDS, #CES2213, CPH7XXX, VERIFY PLUG CABLE O.D. FOR SEAL FAILURE CIRCUIT.
- 63 3/4" C., (2) #14 THWN CONTROL
- 64 FLOAT SWITCH JUNCTION BOX, CORROSION RESISTANT RECEPTACLE MOLDED COUPLING WITH FLOAT SWITCH. ALL FURNISHED BY FLOAT SWITCH MANUFACTURER. RECEPTACLE AND COUPLING SHALL BE CROUSE-HINDS MINI-LINE, OR EQUAL.
- 65 PROVIDE CONDUIT SEAL IN EACH CONDUIT PENETRATING TANK WALL. LOCATE SEAL WITH 18" OF PENETRATION WITH NO COUPLINGS BETWEEN SEAL AND WALL. PROVIDE ANOTHER SEAL WITHIN 18" OF POWER RECEPTACLE JUNCTION BOX. SEAL SHALL BE CROUSE-HINDS EYS SERIES, OR EQUAL.
- 66 ULTRASONIC LEVEL TRANSMITTER, 4-20MA OUTPUT SIGNAL, LOOP POWERED, INTRINSICALLY SAFE WHEN CONNECTED THROUGH APPROVED BARRIER, 2" TO 24" ADJUSTABLE SPAN, 14" TO 25" RANGE, NON-VOLATILE MEMORY, NEMA 4X, ENCLOSURE, AUTO-MATIC TEMPERATURE COMPENSATION, MAGNETROL #352-8021-05G.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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

DES: VRK			
DRN: B6XV			
CHK: AJP		AS BUILT	10/92
		CREATE PHASED PLANS	9-94
		FINAL SUBMITTAL	8-94
DATE: 12-93	BY	NO.	REVISION

**ELECTRICAL SITE PLAN AND NOTES**

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

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

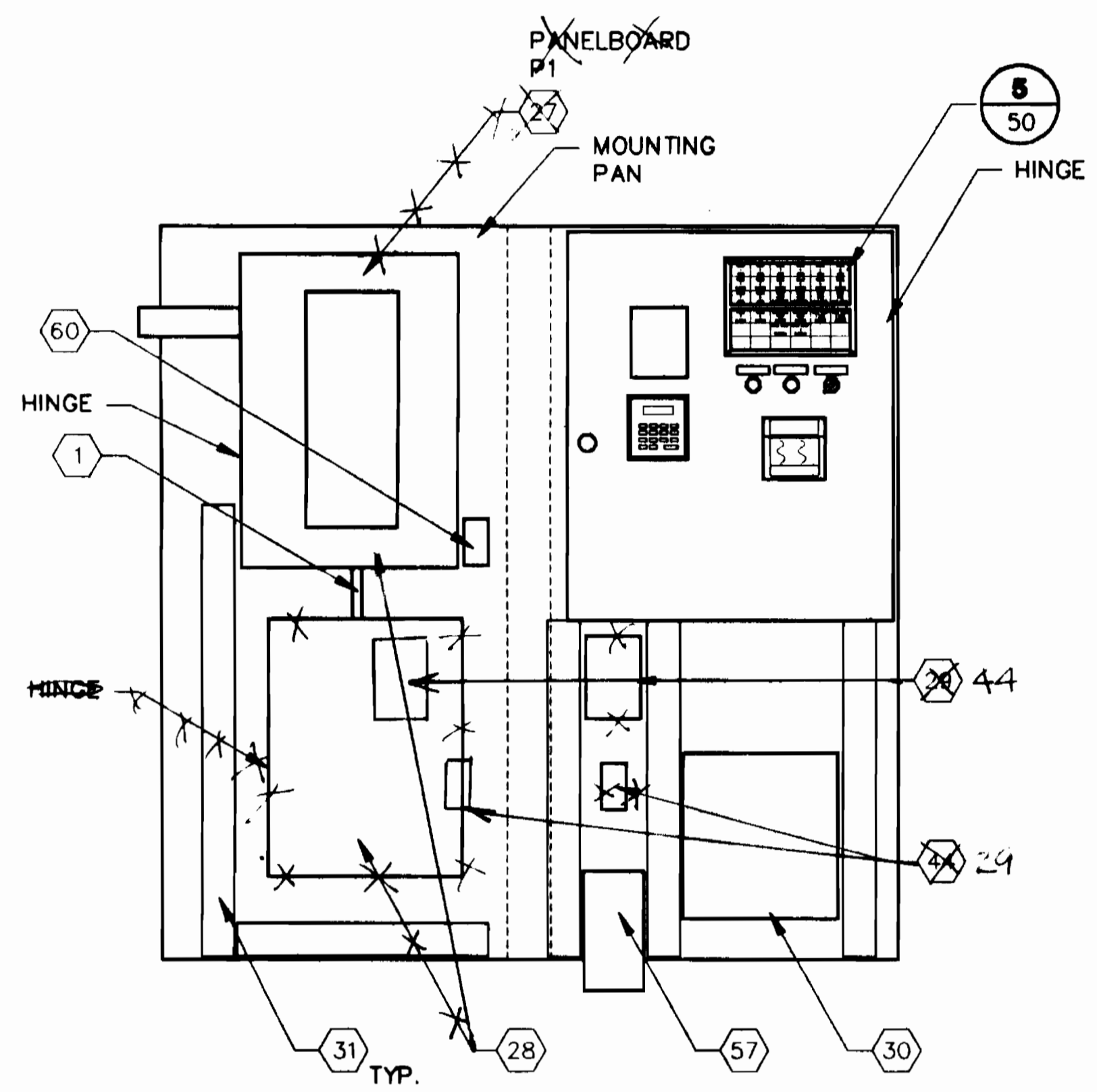
CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

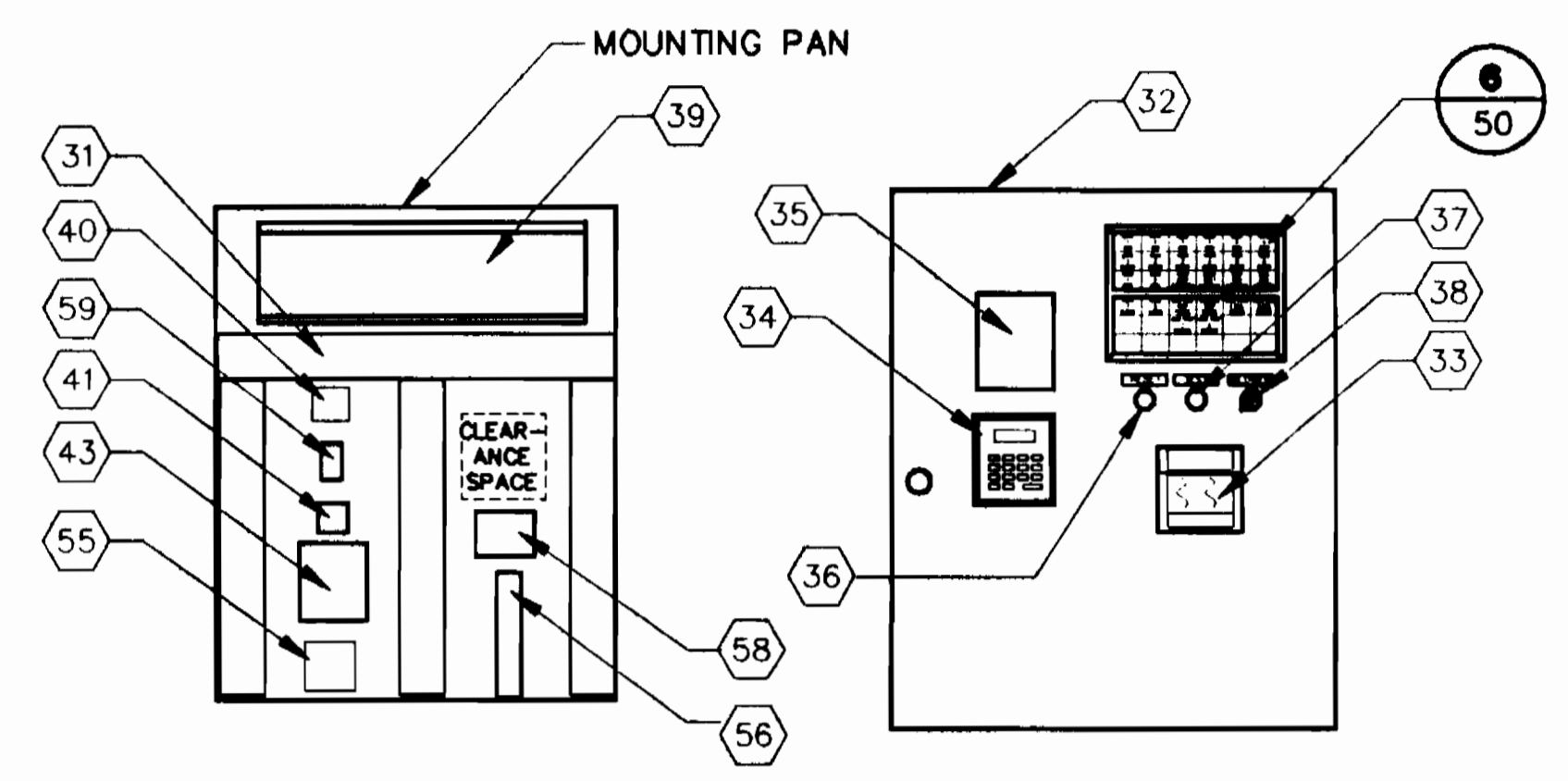
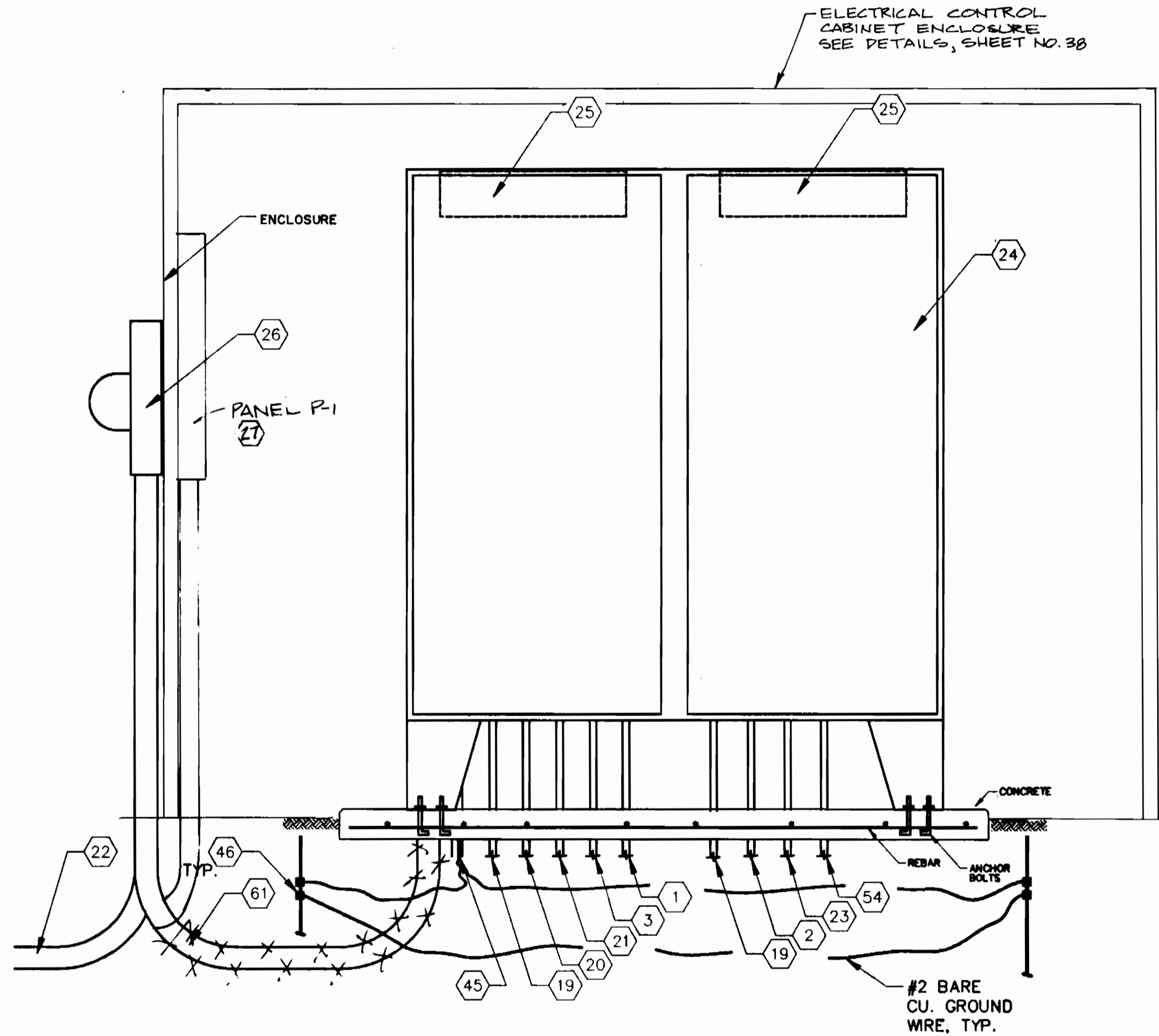
SCALE AS SHOWN

SHEET 41 OF 54

3357 S/50 Ashleigh Knolls



**1 CONTROL CABINET**  
49 N.T.S.



**5 INSTRUMENT CABINET**  
50 N.T.S.

VALVE 1 OPEN	VALVE 2 OPEN	VALVE 3 OPEN	VALVE 4 OPEN	VALVE 5 OPEN	VALVE 6 OPEN
VALVE 1 CLOSED	VALVE 2 CLOSED	VALVE 3 CLOSED	VALVE 4 CLOSED	VALVE 5 CLOSED	VALVE 6 CLOSED
VALVE 7 OPEN	VALVE 8 OPEN	VALVE VAULT EMERGENCY	VALVE VAULT HIGH LEVEL	DOSING TANK HIGH LEVEL	DOSING TANK LOW LEVEL
VALVE 7 CLOSED	VALVE 8 CLOSED	LEAD DOSE PUMP FAILURE	LAC DOSE PUMP FAILURE	DOSE PUMP 1 SEAL FAILURE	DOSE PUMP 2 SEAL FAILURE
	POWER FAILURE	DOSE PUMP 1 RUNNING	DOSE PUMP 2 RUNNING		

**6 LAMP CABINET**  
50 N.T.S.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert J. Brown* 9/26/94  
DIRECTOR OF PUBLIC WORKS DATE

*Robert J. Brown* 9/14/94  
CHIEF, BUREAU OF UTILITIES DATE

*Robert J. Brown* 9/26/94  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. Brown* 9/26/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



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

**CONTROL PANEL**

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

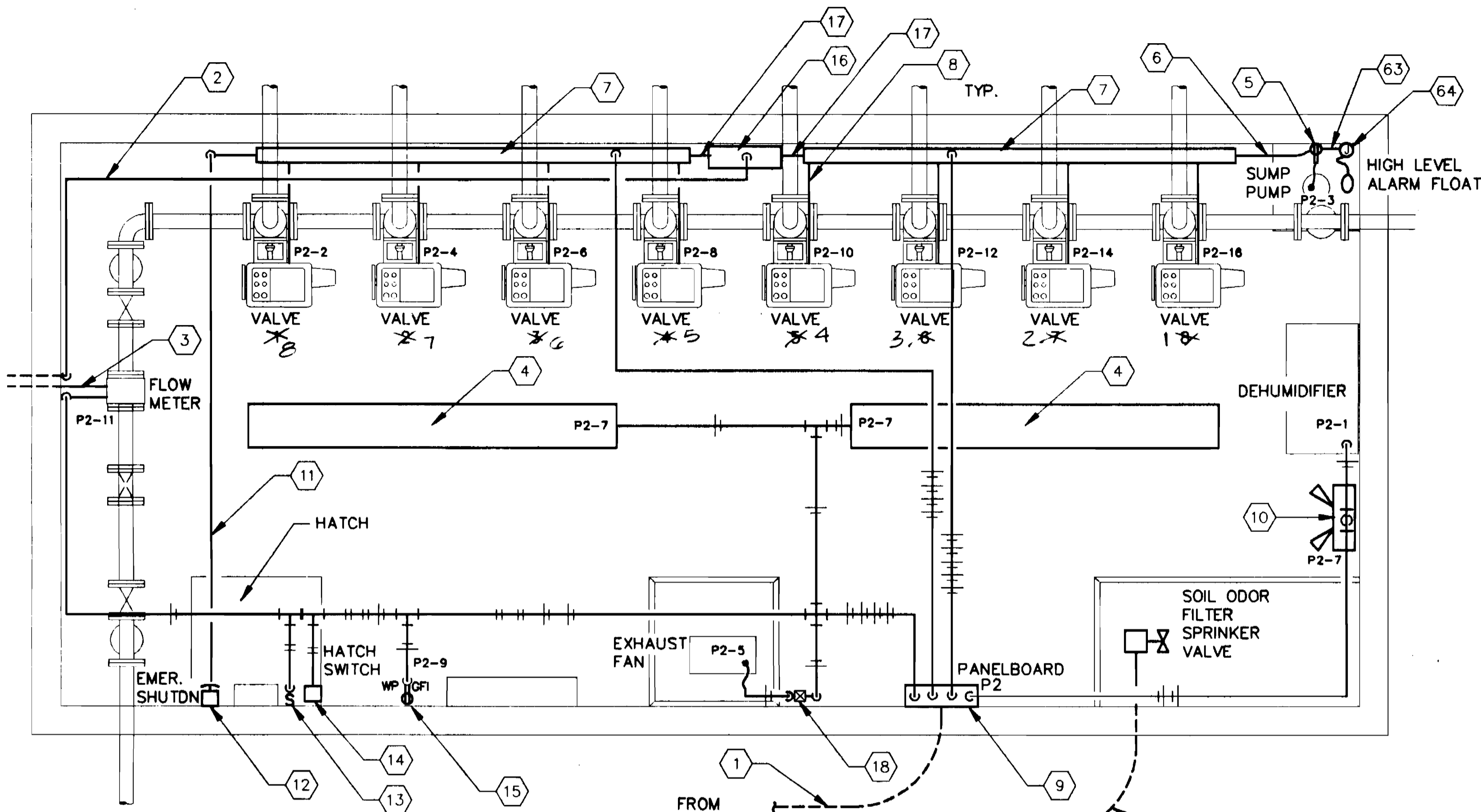
**ASHLEIGH KNOLLS**  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-2357

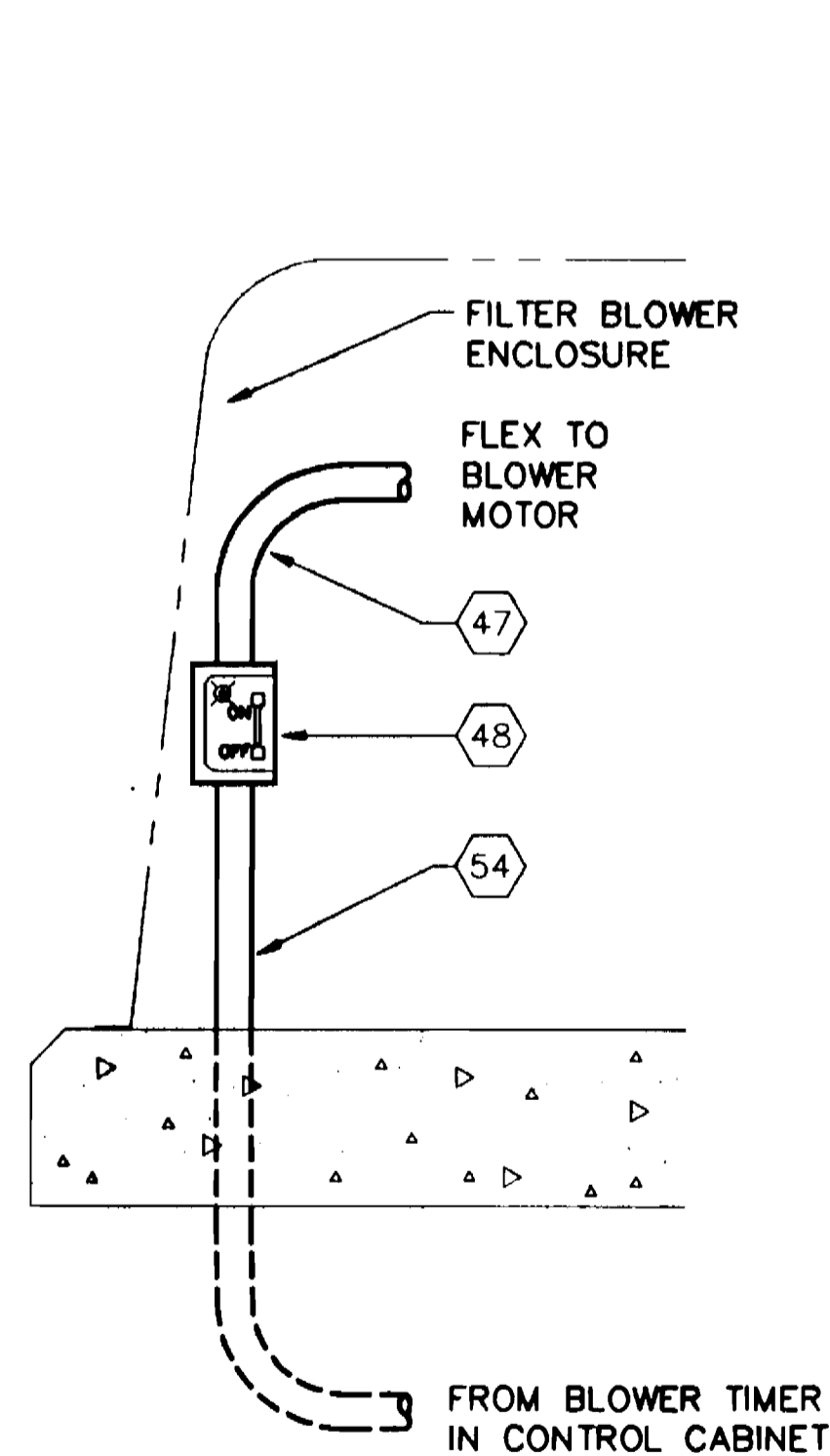
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

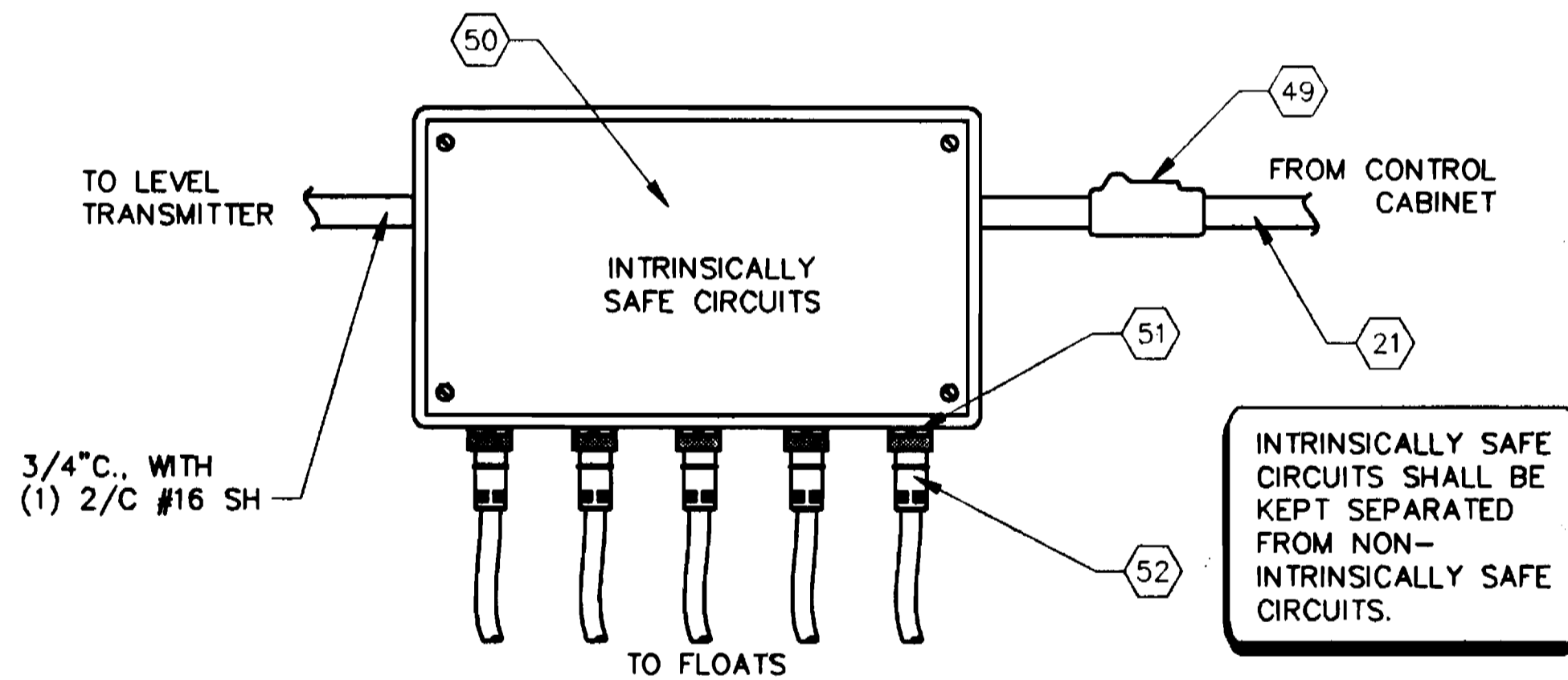
SHEET 52 OF 54



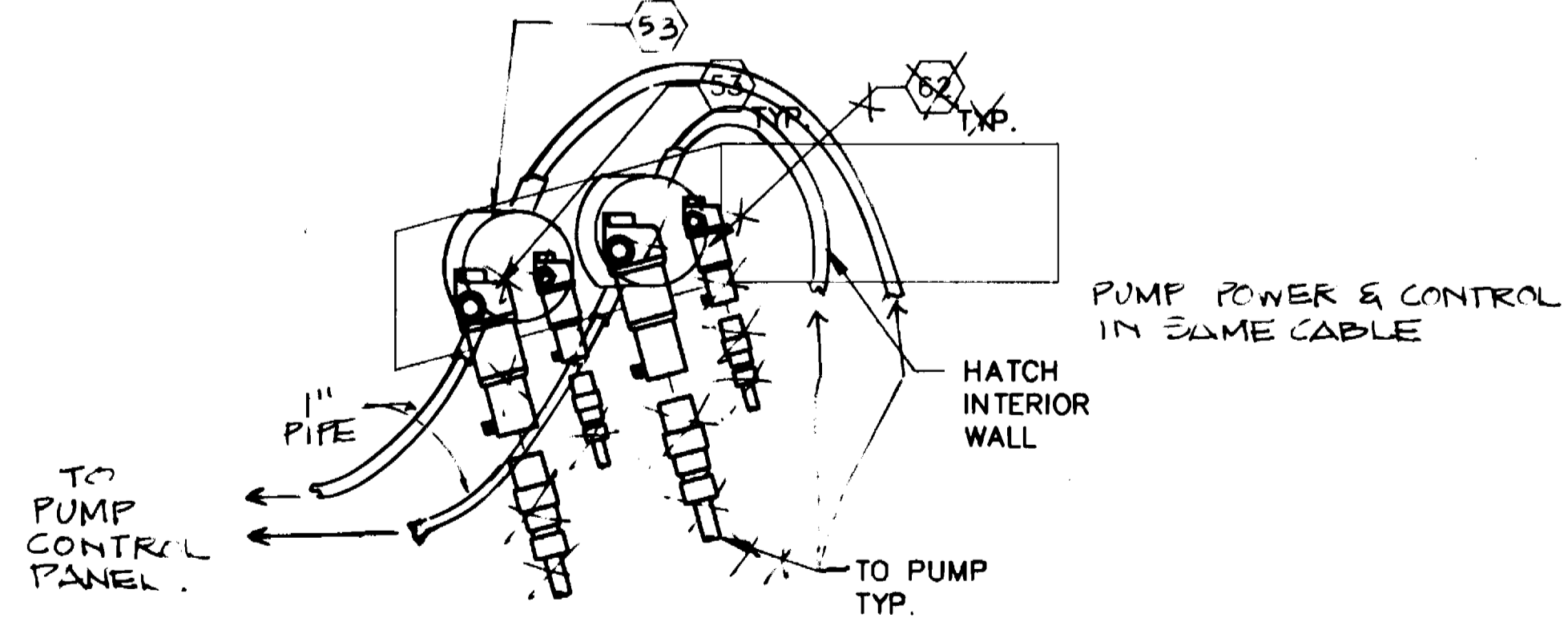
**3 VALVE VAULT**  
49 SCALE: 1/2" = 1'-0"



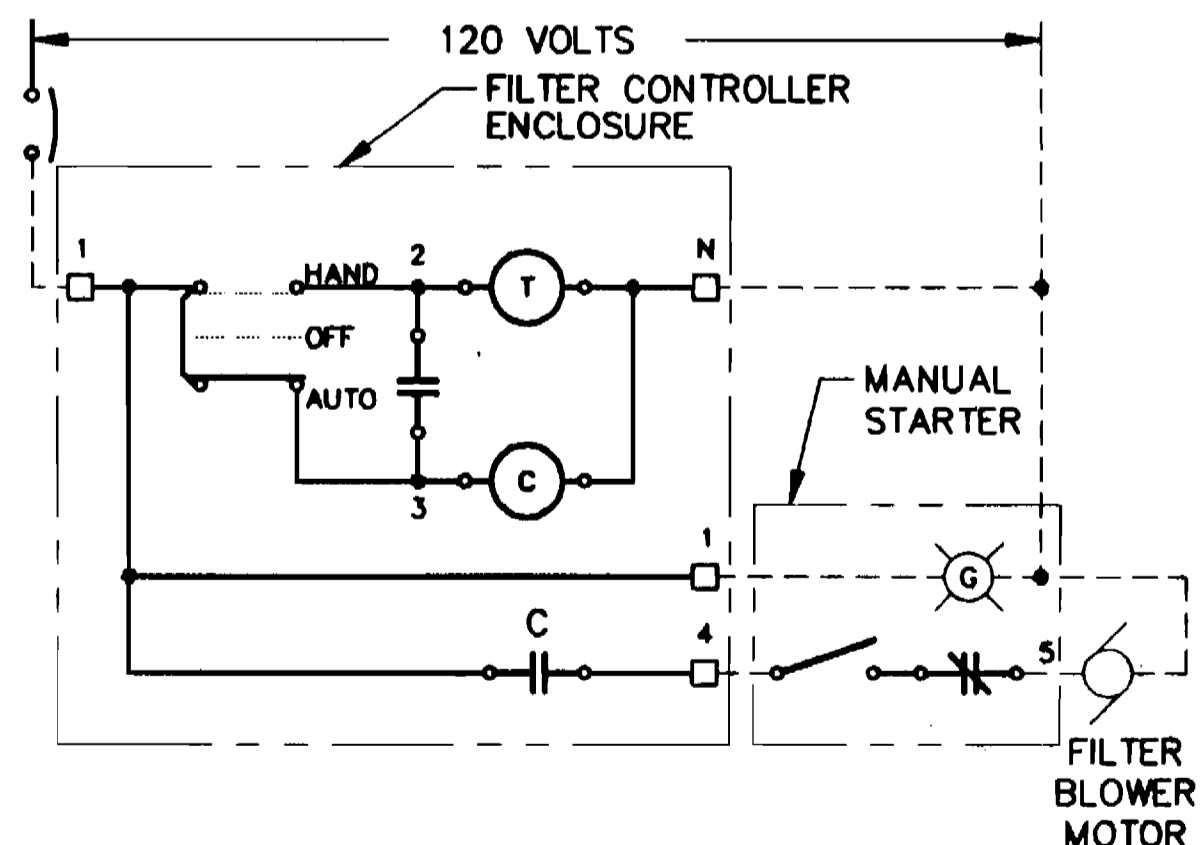
**2 BLOWER CONNECTION**  
49 N.T.S.



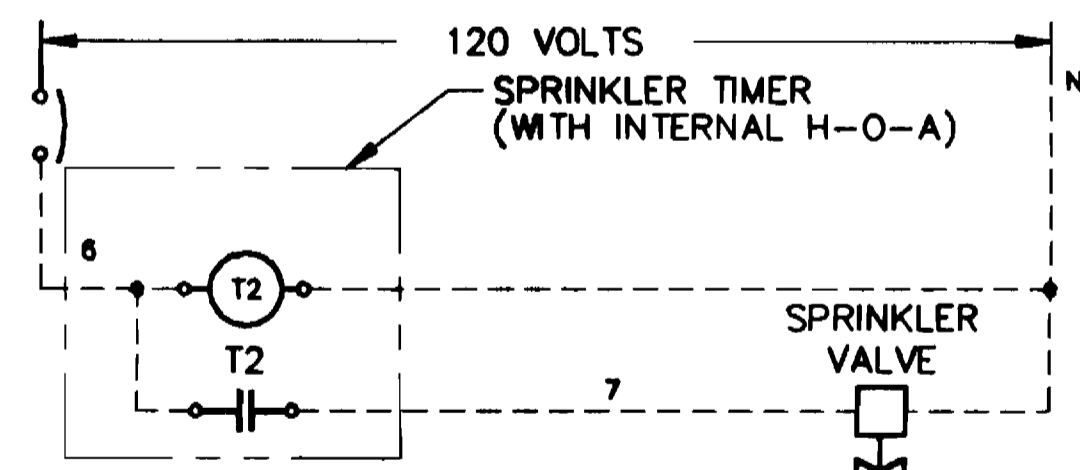
**4 FLOAT SWITCH JUNCTION BOX DETAIL**  
49 N.T.S.



**7 PUMP CONNECTION DETAIL**  
49 N.T.S.



**SOF BLOWER SCHEMATIC**



**SOF SPRINKLER SCHEMATIC**

REFER TO SHEET 49 FOR NUMBERED NOTES

P1									
120/208 VOLT		225 AMP MCB	25K A.I.C.			SURFACE		TOP FEED	
CKT	BKR	DESCRIPTION	A	B	C	DESCRIPTION	BKR	CKT	
1	20	WELL PUMP	-	-		SPARE		20	2
3	20	SOF BLOWER				SPARE		20	4
5	20	SOF SOLENOID VALVE				SPARE		20	6
7	20	SPARE				SPARE		20	8
9	20	UPS				SPARE		20	10
11	20	POWER FAILURE RELAY				SPARE		20	12
13	20	SPARE				SPARE		-	14
15	100	DOSE PUMP PANEL				SPACE		-	16
17	100	DOSE PUMP PANEL				SPACE		-	18
19	100	DOSE PUMP PANEL				SPACE		-	20
21	20	SPARE				SPACE		-	22
23	20	SPARE				SPACE		-	24
25	100	PANELBOARD P2				SPACE		-	26
27	100	PANELBOARD P2				SPACE		-	28
29	100	PANELBOARD P2				SPACE		-	30

P2									
120/208 VOLT		100 AMP MCB	25K A.I.C.			SURFACE		TOP FEED	
CKT	BKR	DESCRIPTION	A	B	C	DESCRIPTION	BKR	CKT	
1	20	DEHUMIDIFIER	-	-		VALVE 1		15	2
3	20	SUMP PUMP				VALVE 2		15	4
5	20	EXHAUST FAN				VALVE 3		15	6
7	20	LIGHTS	-	-		VALVE 4		15	8
9	20	RECEPTACLE				VALVE 5		15	10
11	15	FLOW METER				VALVE 6		15	12
13	20	SPARE				VALVE 7		15	14
15	20	SPARE				VALVE 8		15	16
17	20	SPARE				SPARE		15	18
19	20	SPARE				SPARE		15	20
21	20	SPARE				SPARE		15	22
23	20	SPARE				SPARE		15	24
25	20	SPARE				SPARE		20	26
27	20	SPARE				SPARE		20	28
29	20	SPARE				SPARE		20	30

3357 WS/51

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] 9/24/94  
 Chief, Bureau of Engineering: [Signature] 9/24/94  
 Chief, Bureau of Utilities: [Signature] 9-14-94  
 Chief, Land Development Division: [Signature] 9/24/94

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

DES: VRC  
 DRN: BGM  
 CHK: AJP  
 DATE: 12-93

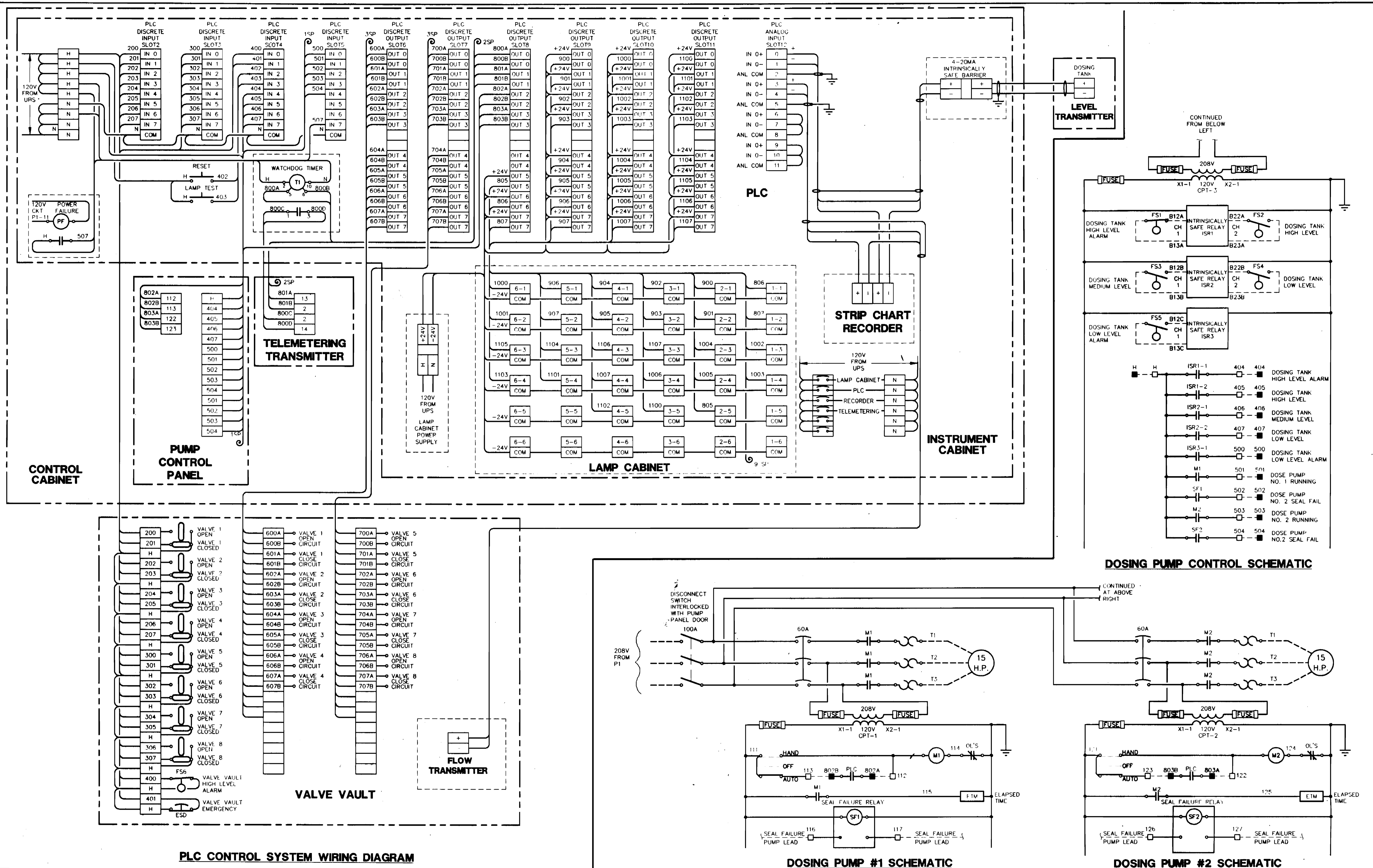
CREATE PHASED PLANS 9-94  
 FINAL SUBMITTAL 8-94

VALVE VAULT AND PANELBOARD  
 600' SCALE MAP NO. 40-41 BLOCK NO. 12

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL SYSTEM  
 CONTRACT NO. 50-3357  
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 51 OF 54

3357 WS/52



PLC CONTROL SYSTEM WIRING DIAGRAM

DOSING PUMP #1 SCHEMATIC

DOSING PUMP #2 SCHEMATIC

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DAMES & MOORE



DES: VRC	
DRN: LCH	
CHK: ATP	CREATE PHASED PLAN 9-94
DATE: 12-93	FINAL SUBMITTAL 8-94
BY NO.	REVISION

ELECTRICAL SCHEMATICS

ASHLEIGH KNOLLS  
WASTEWATER COLLECTION, TREATMENT  
AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

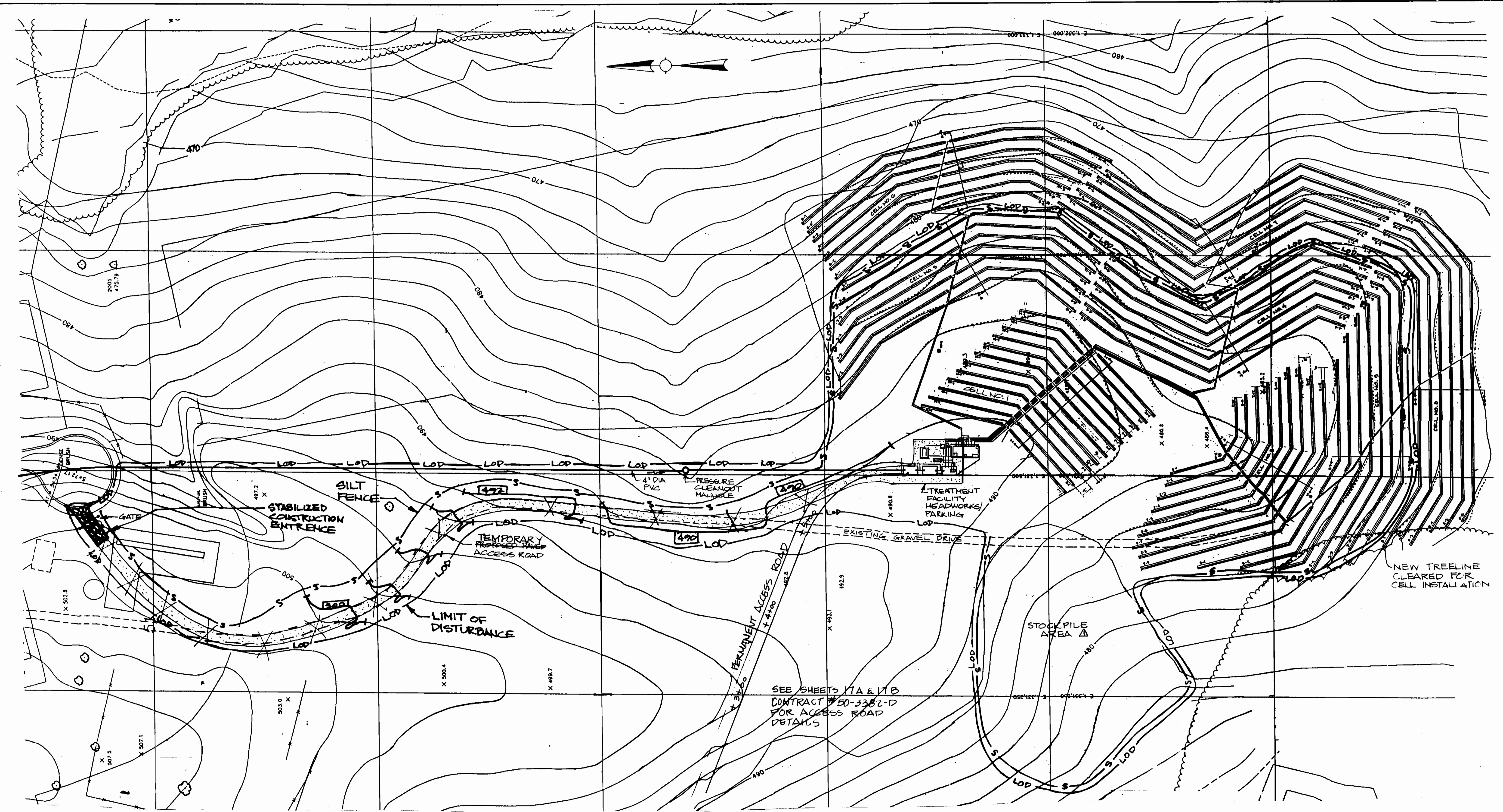
SHEET 52 OF 54

Director of Public Works: *[Signature]* 9/26/94  
 Chief, Bureau of Engineering: *[Signature]* 9/26/94  
 Chief, Bureau of Utilities: *[Signature]* 9/26/94

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

600' SCALE MAP NO. 42-4-L BLOCK NO. 12

3357 ws/53



**PLAN**  
SCALE: 1" = 60'

REVIEW FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS  
*Walter Guder* 9/16/94  
 U.S. SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
*Frank K. Korman* 9/21/94  
 HOWARD S.C.D. DATE

- NOTES:
1. SEE HOWARD COUNTY DEPT. OF PLANNING AND ZONING, FILE NOS. F-70-01, 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. NO STOCKPILING WILL BE PERMITTED AT THE TREATMENT FACILITY GATE.
  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 NOS. 1, 2, 3, 4 & 5 ONLY.
  7. PROVIDE STOCKPILE AREA FOR TEMPORARY STORAGE OF TRENCH EXCAVATED MATERIAL.

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

*Robert J. Danner* 9/26/94  
 DIRECTOR OF PUBLIC WORKS DATE

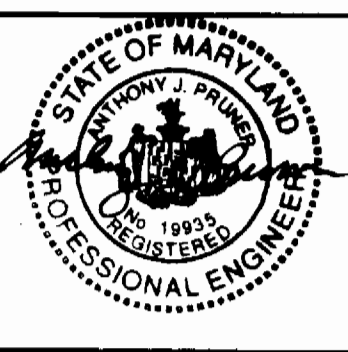
*Robert J. Danner* 9/26/94  
 CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. Danner* 9/26/94  
 CHIEF, BUREAU OF UTILITIES DATE

*Robert J. Danner* 9/26/94  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

**DAMES & MOORE**

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



DES:	VRC				
DRN:	LCH				10/95
CHK:	ATP	AG	Δ	STOCKPILE/NOTE	3-95
				CREATE PHASED PLANS	9-94
				FINAL SUBMITTAL	8-94
DATE:	12-93	BY	NO.	REVISION	DATE

**SEDIMENT AND EROSION CONTROL PLAN**

600' SCALE MAP NO. 30-91 BLOCK NO. 12

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

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 5 OF 54

**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 redisturbance, 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	7.56 Acres
Area to be roofed or paved	0.55 Acres
Area to be vegetatively stabilized	2.23 Acres
Total Cut	7400 Cu. Yds.
Total Fill	7400 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.
- Seeded 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 (0.5 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 reseedings.

**III. TEMPORARY SEEDING NOTES**

- Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.
- Seeded 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 (0.7 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**

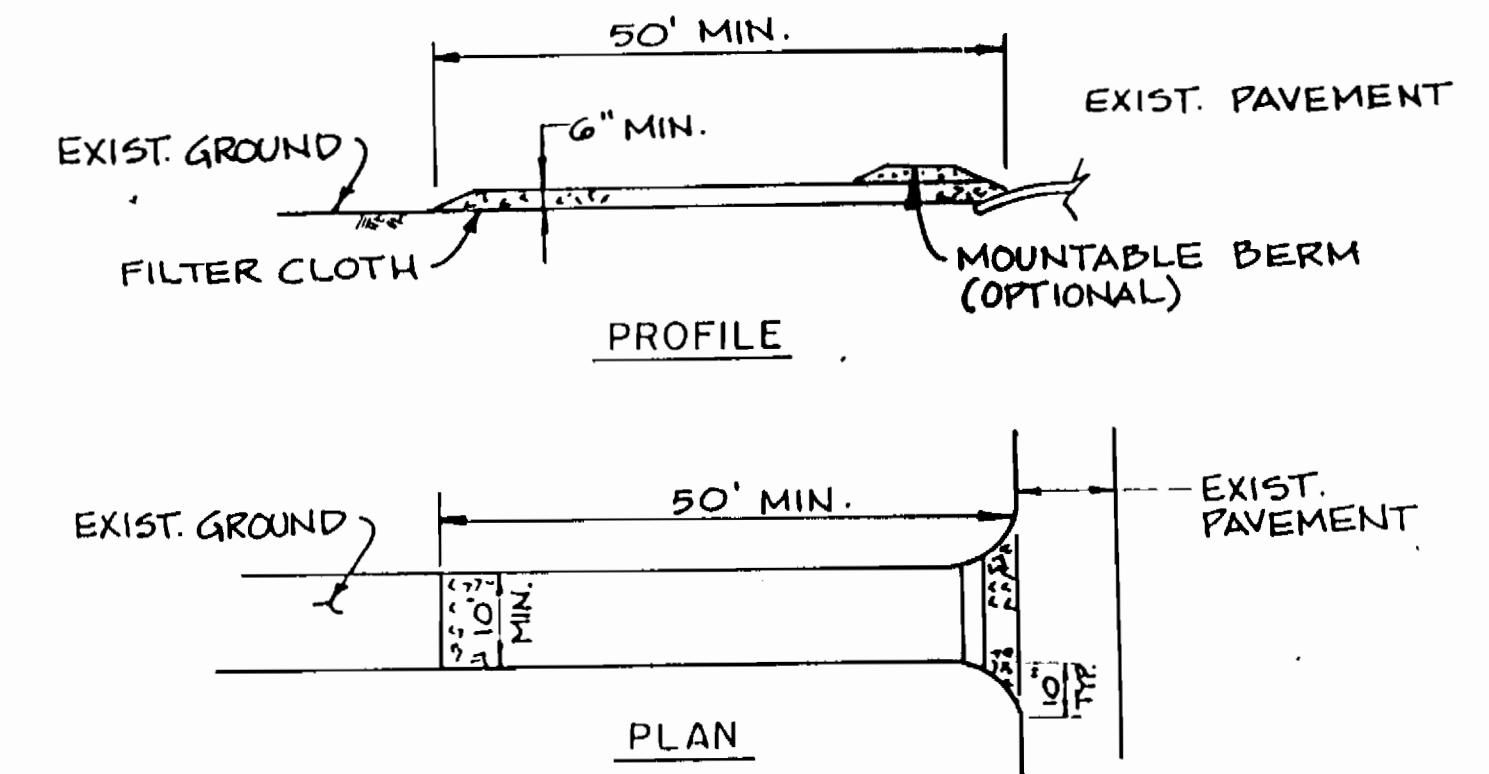
- Obtain a grading permit.
- Notify Inspections and Permits (313-1855) a minimum of 48 hours prior to the start of any construction.
- Install stabilized construction entrance and silt fence as shown and detailed.
- Upon approval of the Howard County Sediment Control Inspector rough grade and construct the treatment facility headworks and the wastewater disposal trenches.
- Construct access roadway.
- 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  
 MPE'S TECHNICAL REQUIREMENTS  
*Patricia Engler 9/21/94*  
 U.S. SOIL CONSERVATION SERVICE DATE

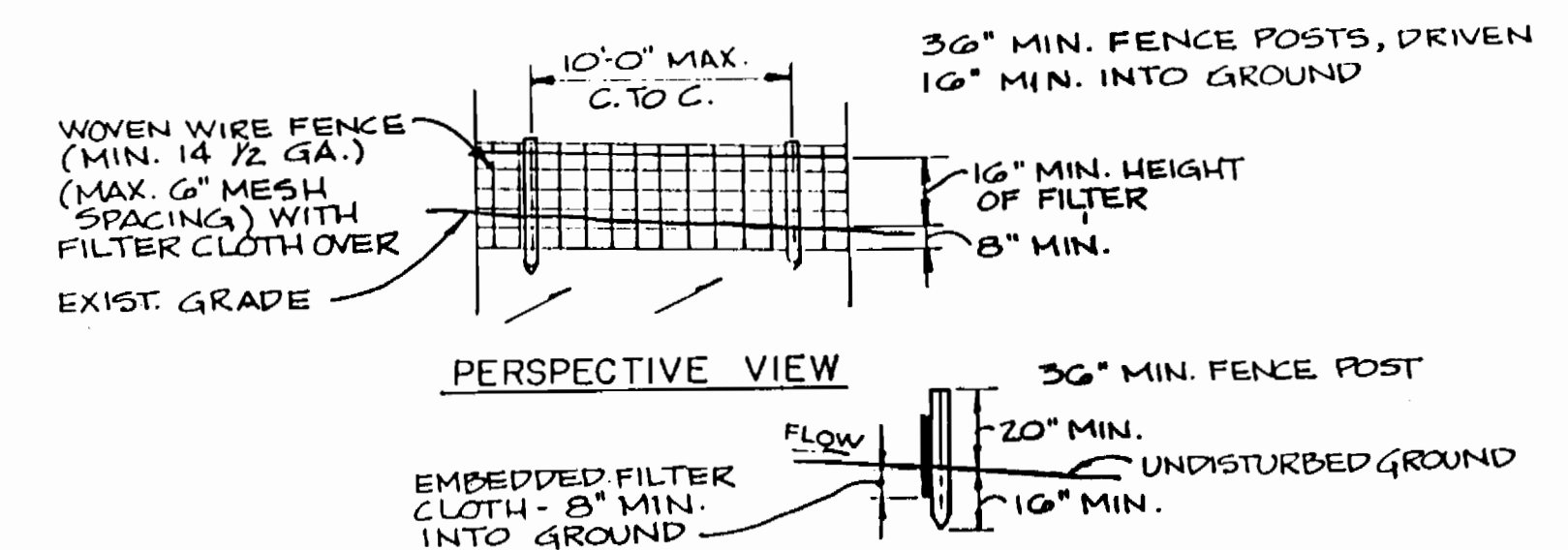
THIS DEVELOPMENT PLAN IS APPROVED FOR  
 SOIL EROSION AND SEDIMENT CONTROL BY  
 THE HOWARD SOIL CONSERVATION DISTRICT  
*John L. ... 9/21/94*  
 HOWARD S.C.D. DATE



**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.



**SECTION**

**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

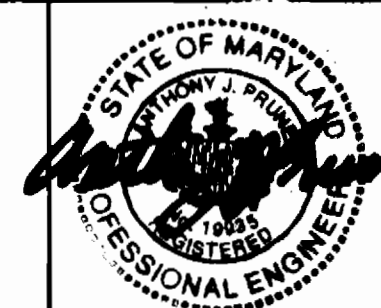
POSTS:	STEEL, EITHER T OR U TYP.
FENCE:	WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING
FILTER CLOTH:	FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL
REFABRICATED UNIT:	GEOPAB ENVIROFENCE OR APPROVED EQUAL

3357 WS/54

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*James J. ... 9/26/94*  
 DIRECTOR OF PUBLIC WORKS DATE  
*Robert ... 9-14-94*  
 CHIEF, BUREAU OF UTILITIES DATE  
*Paul ... 9/26/94*  
 CHIEF, BUREAU OF ENGINEERING DATE  
*John ... 9/26/94*  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

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



DES:	VRC				
DRN:	BGW				
CHK:	ASP	CREATE PHASED PLANS	999		
DATE:	3-94	FINAL SUBMITTAL	899		
BY:	NO	REVISION	DATE		

EROSION CONTROL DETAILS

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

ASHLEIGH KNOLLS  
 WASTEWATER COLLECTION, TREATMENT  
 AND DISPOSAL SYSTEM

CONTRACT NO. 50-3357

ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 54 OF 54