

MATCHLINE SEE SHEET 2 OF 6

**NOTES:**

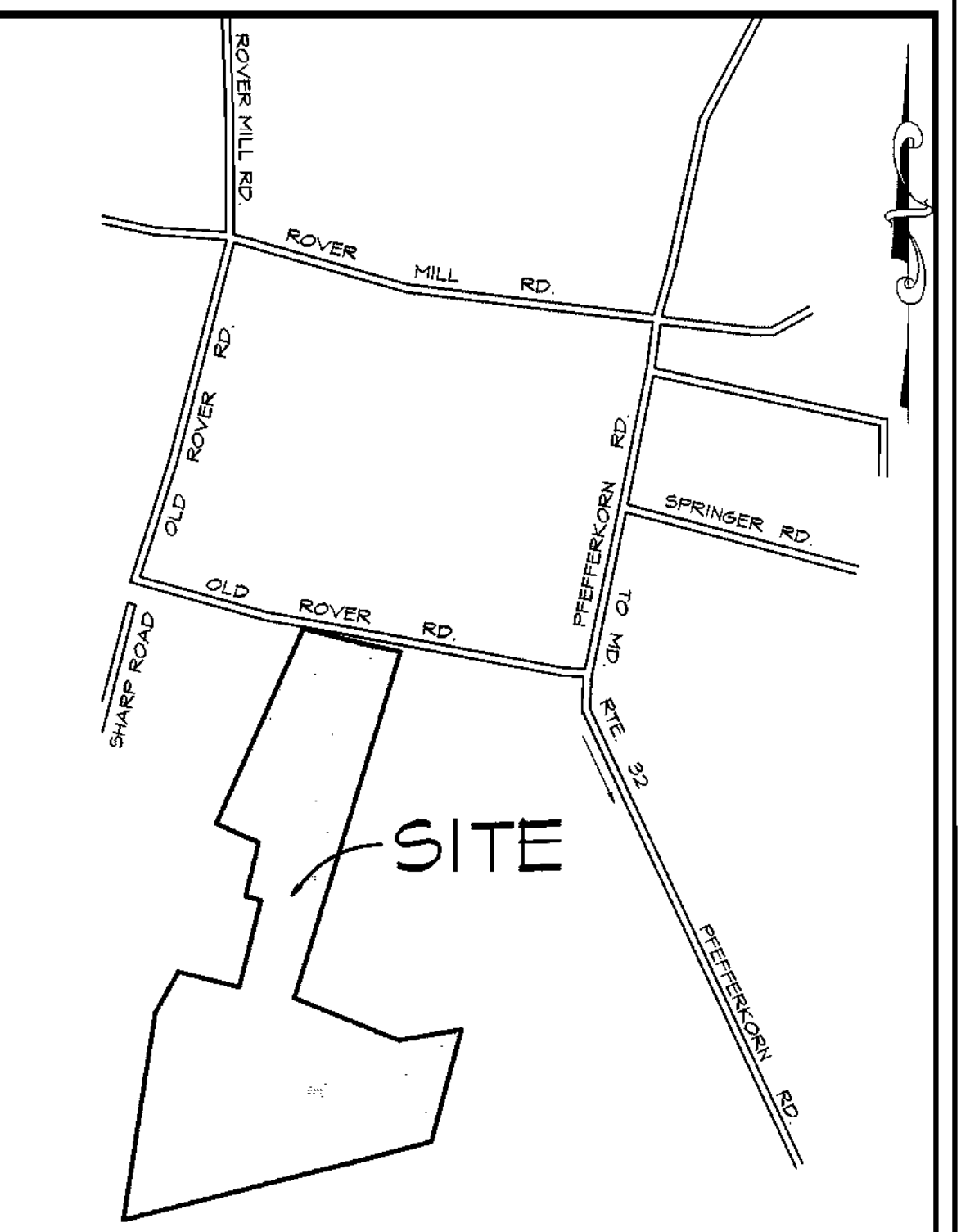
- A SEPTIC FEE IN THE AMOUNT OF \$180 PER LOT SERVICED BY THE COMMON SEPTIC SYSTEM SHALL BE PAID TO THE HOWARD COUNTY ENVIRONMENTAL HEALTH DEPARTMENT AT THE TIME OF THE SEPTIC CONSTRUCTION PERMIT ISSUANCE.
- WELLS ON THE LOTS SURROUNDING THE COMMON SHARED SEPTIC AREAS AND THE EXISTING WELLS SHALL BE TESTED FOR BACKGROUND LEVELS OF TOTAL COLIFORMS, TOTAL NITROGEN, PH, AND NITRATES PRIOR TO PUTTING THE SHARED SEPTIC SYSTEM IN SERVICE.
- THE WELLS TO BE TESTED AS FOLLOWS:  
 LOT 1 - 18728 OLD ROVER ROAD  
 LOT 2 - 3174 SHARP ROAD  
 LOT 3 - 3185 SHARP ROAD  
 LOT 4 - 3187 SHARP ROAD  
 LOT 5 - 3191 SHARP ROAD  
 LOT 6 - 3195 SHARP ROAD  
 LOT 7 - 3199 SHARP ROAD  
 LOT 8 - 3211 SHARP ROAD  
 LOT 9 - 3221 SHARP ROAD  
 18715 OLD ROVER ROAD
- COPIES OF ALL NOTIFICATIONS LETTERS TO HOMEOWNERS, ALL TEST RESULTS AND NON-RESPONSIVE ADDRESSES SHALL BE FORWARDED TO THE HOWARD COUNTY BUREAU OF UTILITIES PRIOR TO THE SYSTEM BEING PUT IN-SERVICE.
- THE BUILDER SHALL INSTALL BACKWATER VALVE AND RELIEF VENT ON THE SEWER SERVICE AT THE HOUSE AS REQUIRED BY THE PLUMBING INSPECTOR.
- INSTALLATION OF GRINDER PUMPS AND APPURTENANCES, AND THE 4" PVC SEWER HOUSE CONNECTIONS (SHC) ARE TO BE INSTALLED BY THE DEVELOPER. THE DEVELOPER SHALL BE REQUIRED TO PREPURCHASE THE SPECIFIED GRINDER PUMPS AND PROVIDE STORAGE AT THE MANUFACTURER'S FACILITY UNTIL SUCH TIME AS THEY ARE INSTALLED AND PLACED INTO SERVICE. NO PUMPS SHALL BE SET UNTIL THE HOUSE IS READY FOR U & O, AND ANY DEBRIS WHICH HAS ENTERED THE TANK PRIOR TO THE PUMP INSTALLATION SHALL BE PUMPED AT THE DEVELOPER'S EXPENSE. THE DEVELOPER WILL RETAIN RESPONSIBILITY FOR INSTALLATION OF THE GRINDER PUMPS AND SHALL CONTRACT WITH THE MANUFACTURER TO PROVIDE START UP SERVICES JUST PRIOR TO U & O. GRAVITY CONNECTION TO THE GRINDER PUMPS WILL NOT BE ALLOWED UNTIL ALL WORK INSIDE THE HOMES IS COMPLETE AND THE HOMES ARE READY FOR OCCUPANCY.
- SEWER FORCE MAIN SHALL BE SDR 21 PVC WITH PUSH ON GASKETED JOINTS. PRESSURE SEWER LATERALS MAY BE SDR 21 PVC WITH SOLVENT WELDED JOINTS. A 6 GAUGE TRACER WIRE SHALL BE WEAPED AROUND OR ATTACHED TO THE PVC PIPE.
- SEPTIC TANKS SHALL BE VACUUM OR WATER TESTED ON-SITE BY THE MANUFACTURER. SEPTIC TANK SHOP DRAWINGS FROM THE MANUFACTURER SHOULD BE SUBMITTED TO THE HOWARD COUNTY ENVIRONMENTAL HEALTH DEPARTMENT PRIOR TO ANY INSTALLATION OF THE SEPTIC TANKS.
- ALL PRESSURE SEWER IS TO BE PRESSURE TESTED ACCORDING TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
- OBSERVATION WELL TO BE INSTALLED AFTER TRENCH INSTALLATION IS COMPLETED SO THAT PH, TOTAL COLIFORMS, TOTAL NITROGEN, AND NITRATES CAN BE MONITORED.
- A STATE CONSTRUCTION PERMIT IS REQUIRED ON COLLECTION SYSTEM WHICH SERVES 10 OR MORE LOTS.
- THIS PLAN IS SUBJECT TO NATIONAL WETLANDS PERMIT NO. 97-NF-0104.
- ANY WELL WITHIN 50 FEET OF THE SEWER FORCE MAIN SHALL BE RELOCATED.

**GENERAL NOTES:**

- PART 1 - GENERAL
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND ANY UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
  - ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
  - ALL VERTICAL CONTROLS ARE BASED ON U.S.S. DATA.
  - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
  - CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR 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 OR DAMAGES SHOWN BEING REPAIRED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
  - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
  - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR FITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
  - CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 STATE HIGHWAY ADMINISTRATION 881-8988  
 BALTIMORE GAS & ELECTRIC CO. CONTRACTOR SERVICES 880-4620  
 BALTIMORE GAS & ELECTRIC CO. UNDERGROUND DAMAGE CONTROL 787-9068  
 MISS UTILITY 1-800-251-7111  
 COLONIAL PIPELINE CO. 745-1540  
 HOWARD CO. DEPT. OF PUBLIC WORKS BUREAU OF UTILITIES 918-4400  
 H.C. ENVIRONMENTAL HEALTH DEPT. 410-318-2640
  - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
  - CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
  - PLACE REGULATION "MEN WORKING" AND WARNING SIGNS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY MAINTENANCE OPERATIONS.
  - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 318-2450 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 DPM REQUIREMENTS PER SECTION 18.11(4A) OF THE HOWARD COUNTY CODE.

**PART 3 - SEWER**

- ALL SEWER MAINS SHALL BE DIP AND P.V.C. UNLESS OTHERWISE NOTED.
  - THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
  - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
  - FORCE MAINS SHALL BE SDR 21 PVC.
  - MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
  - MANHOLES DESIGNATED M.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL 6852 WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED. SET TOP OF FRAME 1'-0" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
  - HOUSE(S) WITH THE SYMBOL "C.N.S" INDICATES THAT CELLAR CANNOT BE SERVICE.
- TRENCH REQUIREMENTS:  
 THE FOLLOWING 5 LOTS ARE TO BE SERVED BY THE SHARED SYSTEM:  
 LOTS 11, 12, 13, 14 AND THE PRESERVATION PARCEL "A"  
 \*USE 4 BEDROOM/HOUSE.  
 600 GPD PER HOUSE  
 600 GPD/HOUSE X 5 HOUSES = 3,000 GPD  
 3,000 GPD / 3.33 GPM/INCH = 900 INCH  
 3,000 GPD / 3.33 GPM/INCH = 900 INCH  
 3,000 GPD / 3.33 GPM/INCH = 900 INCH  
 PROVIDED: 1045 L.F.



MATERIALS AND SEWER COUNTY CODE		TYPE OF BUILDINGS - SINGLE FAMILY DETACHED
WATER CODE	N/A	NUMBER OF BUILDABLE LOTS
SEWER CODE	N/A	NUMBER OF NON-BUILDABLE LOTS
TEST GRADIENT	N/A	NUMBER OF SHC'S
		DRAINAGE AREA

**VICINITY MAP**  
SCALE: 1"=600'

**NOTE:**

THE CONTRACTOR SHALL NOTIFY HOWARD COUNTY HEALTH DEPARTMENT AT (410) 318-2640 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY PRESSURE TEST OR PRESSURE SEWERS, AND ANY SEPTIC TANKS VACUUM OR WATER TESTING IS PERFORMED.

ITEMS	QUANTITIES ESTIMATED	AS-BUILT	
		QUANTITIES	TYPE
SIMPLEX GRINDER PUMP	1 EA.		
DUPLEX GRINDER PUMP	2 EA.		
1/2" HOUSE CONNECTION	22 LF		
2" FORCE MAIN	1220 LF		
TERMINAL FLUSHING CONNECTION	1 EA.		
EFFLUENT FILTER	1 EA.		
7000 GALLON SEPTIC TANK	1 EA.		
4" SEWER PIPE	1205 LF		
8" SEWER PIPE	20 LF		
SPLITTER BOX	1 EA.		
SEPTIC TRENCHES	1045 LF		

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

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*[Signature]*  
 COUNTY HEALTH OFFICER  
 DATE: 2/5/01

HOWARD SOIL CONSERVATION DISTRICT:  
 REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
*[Signature]* 2/5/01 DATE  
 NATURAL RESOURCES CONSERVATION SERVICE

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 2/5/01 DATE  
 HOWARD SOIL CONSERVATION DISTRICT

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 214 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER ROAD CONSTRUCTION PLANS 796-16 F-01-12

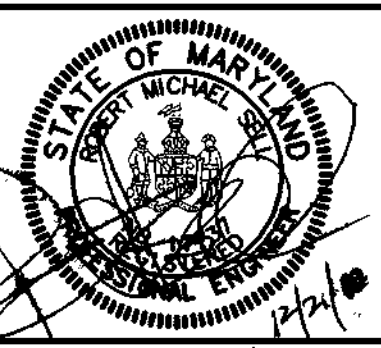
SHEET INDEX	
NO.	DESCRIPTION
1	SHARED SEPTIC SYSTEM PLAN
2	SHARED SEPTIC SYSTEM PLAN
3	PROFILES
4	DETAILS
5	DETAILS
6	DETAILS
7	DETAILS

SEWER MANHOLE LOCATION DATA	
SMH	LOCATION
1	N 590415.14 E 800623.05

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*[Signature]* 1-25-01 DATE  
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND  
*[Signature]* 2/5/01 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**McCRONE**  
 ENGINEERING & ENVIRONMENTAL SCIENCES  
 LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES  
 20 ROCKY HILL  
 ANNAPOLIS, MARYLAND 21401  
 (410) 293-9811  
 ANNAPOLIS-CENTREVILLE-SALISBURY-ELKTON-PRINCE FREDERICK



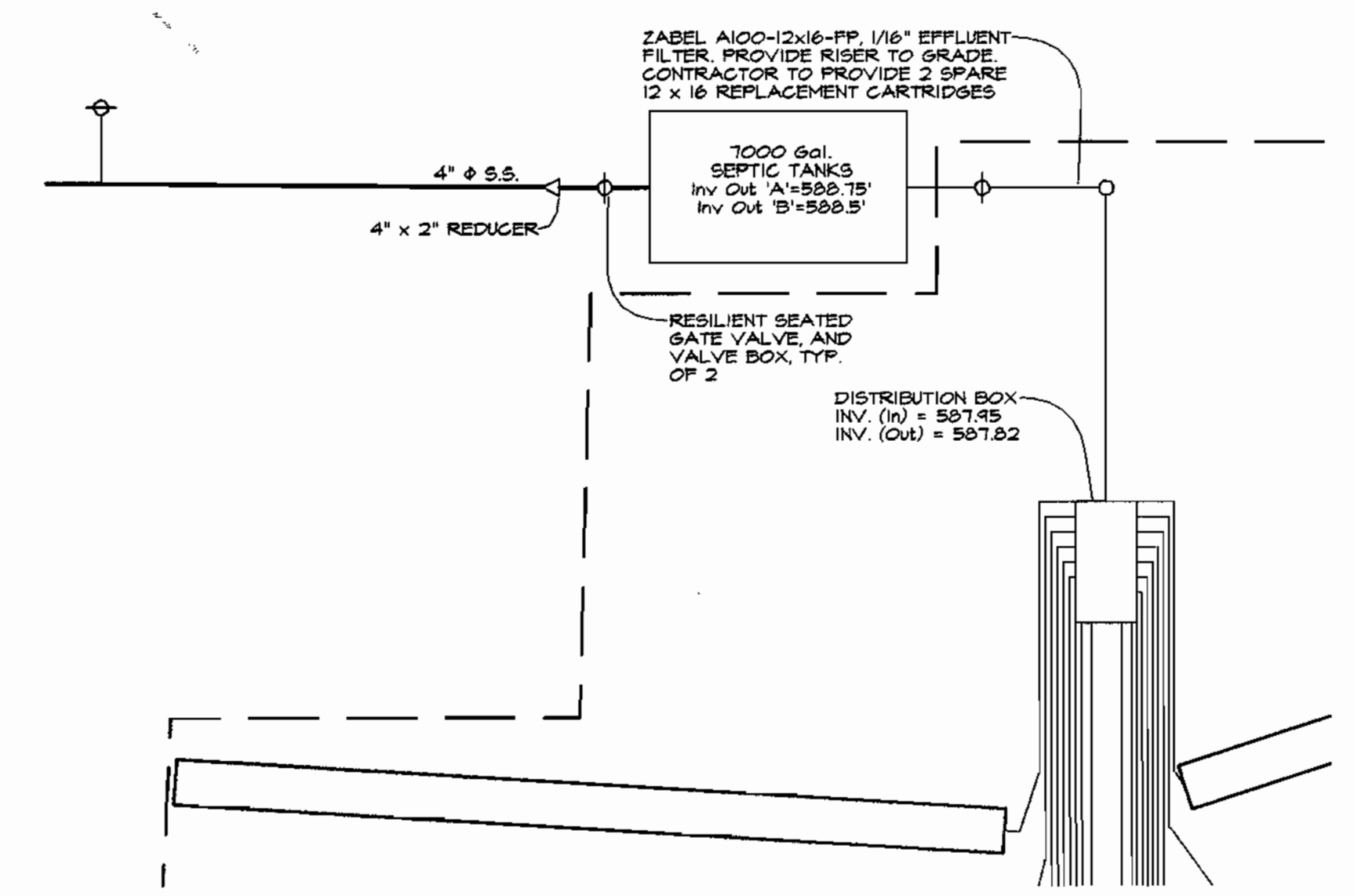
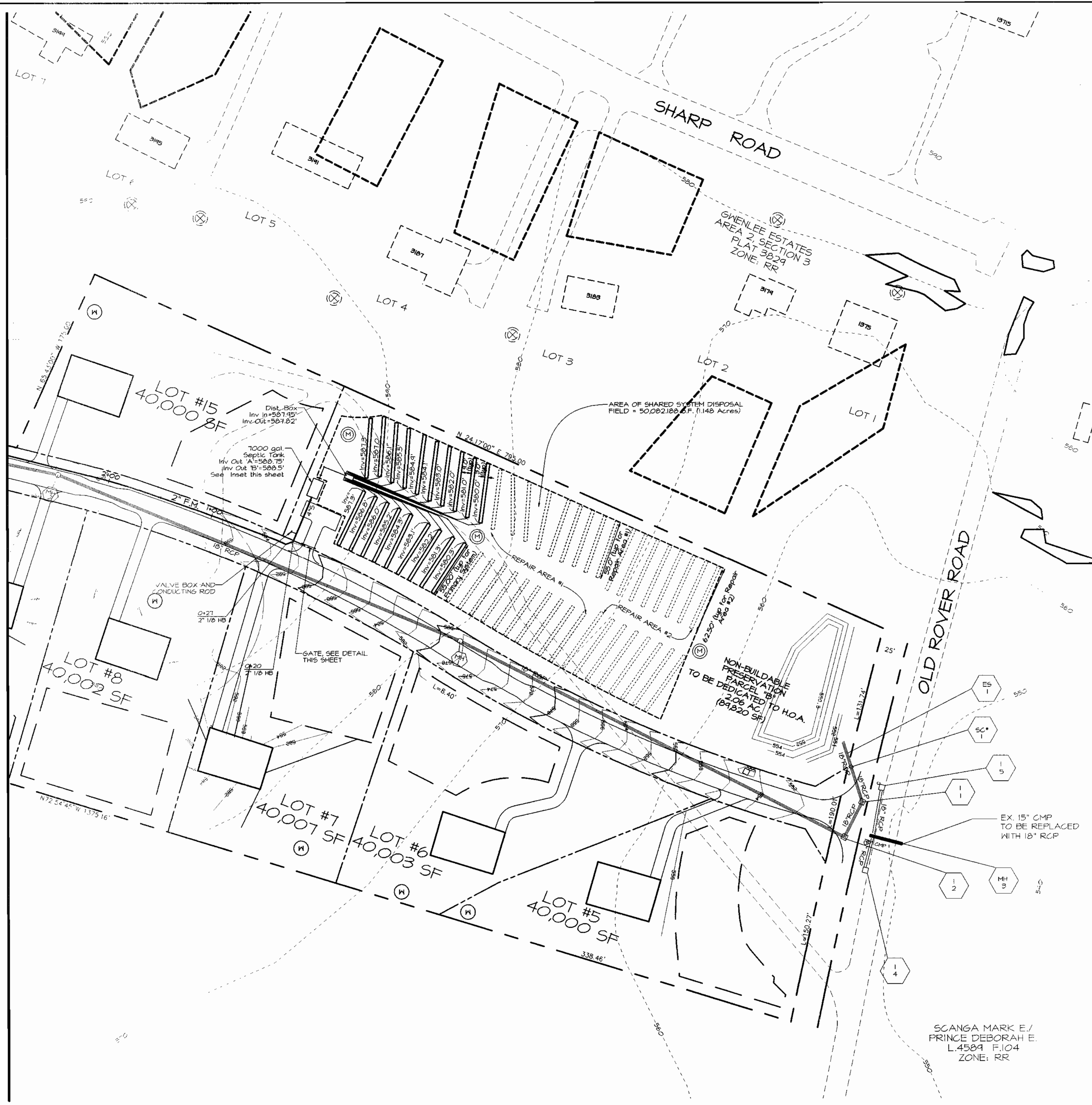
DES: R. Sell					
DRN: T. Price					
CHK: R. Sell					
DATE: Dec 2000	BY: No.	REVISION	DATE	JOB No. C1940484	FILE: 6194041 - Ekar Property/Drawings/Shared-Grinder-pro

**TITLE SHEET;  
 INDEX OF DRAWINGS,  
 GENERAL NOTES,  
 SHARED SEPTIC SYSTEM PLAN**

**FRIENDSHIP LAKE  
 SHARED SEPTIC SYSTEM**  
 CONTRACT No. 50-3871-D  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 7

MATCHLINE SEE SHEET 1 OF 6



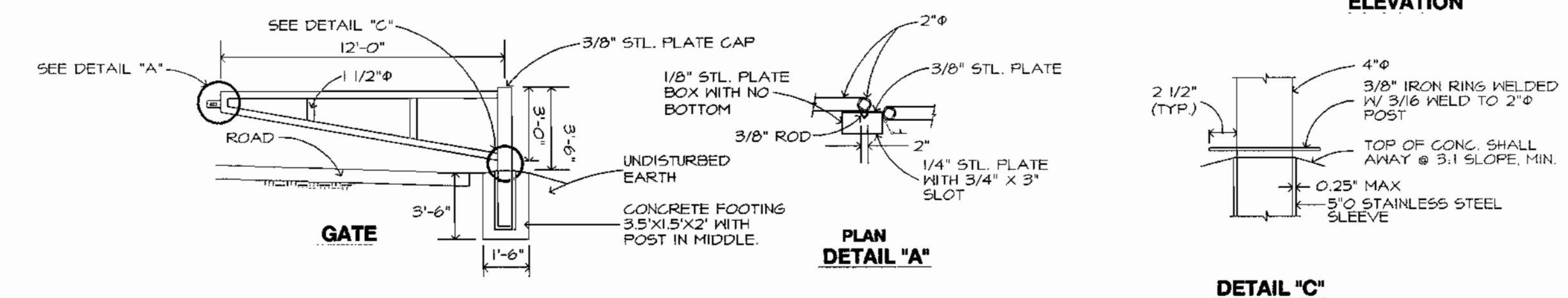
DISTRIBUTION SYSTEM LAYOUT  
SCALE: 1"=10'

**LEGEND**

- EXISTING TREELINE
- PROPOSED SEPTIC FIELD
- EXISTING SEPTIC FIELD
- PROPOSED WELL
- PROPOSED MONITORING WELL
- EXISTING WELL
- EXISTING HOUSE
- PROPOSED HOUSE

**NOTES:**

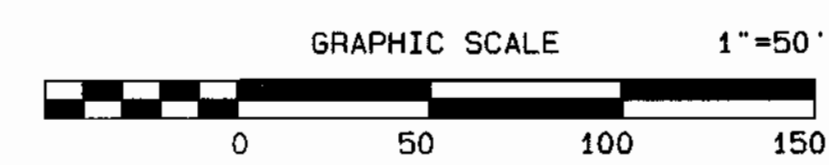
1. ALL METAL USED IN THE MANUFACTURE OF THE GATE TO BE HOT DIP GALVANIZED. ALL WELDS & PIPE TO BE PAINTED & TOUCHED UP IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
3. ALL PIPE TO BE SCHEDULE 40 STEEL. DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
4. CONTRACTOR SHALL PROVIDE ADDITIONAL 3" Ø POSTS WITH 5/8" ROD. LOCATE TO HOLD GATE IN AN OPEN POSITION 40" FROM THAT SHOWN BELOW.
5. GATE TO SHING OUTWARD TOWARDS EXISTING STEELIE DRIVE.
6. WIDTH OF GATE NOT TO EXCEED 12 FEET.



GATE DETAIL  
NOT TO SCALE

**NOTE**

SCREENING OF THE SHARED SEPTIC AREA IS SHOWN ON SHEET 11 OF THE PLANS PREPARED BY MILDENBERG, BOENDER & ASSOC., INC. TITLED "ROAD CONSTRUCTION PLANS- FRIENDSHIP LAKES, LOT 5 THRU 15 AND PRESERVATION PARCEL 'A' & 'B'. A RESUBDIVISION OF FRIENDSHIP LAKES LOTS 1,2 AND 4".



APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*Dina M. [Signature]* 1/10/01  
COUNTY HEALTH OFFICER

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*[Signature]* 1-25-01  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*[Signature]* 2/6/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**McCRONE**  
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LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES  
30 RIDGELY AVENUE  
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(410) 287-8821

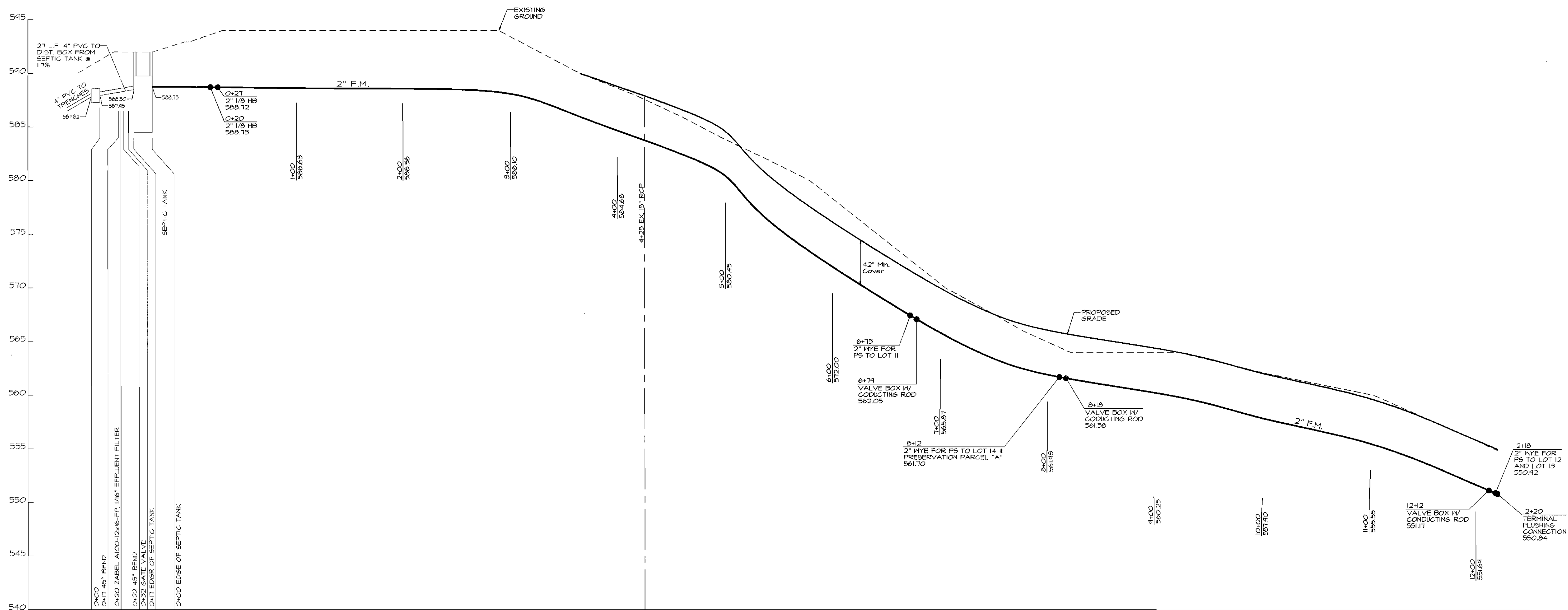


DES:	R. Sell				
DRN:	T. Price				
CHK:	R. Sell				
DATE:	Jan 2001	BY:	No.	REVISION	DATE

**SHARED SEPTIC SYSTEM PLAN**

**FRIENDSHIP LAKE SHARED SEPTIC SYSTEM**  
CONTRACT No. 60-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 2 OF 7



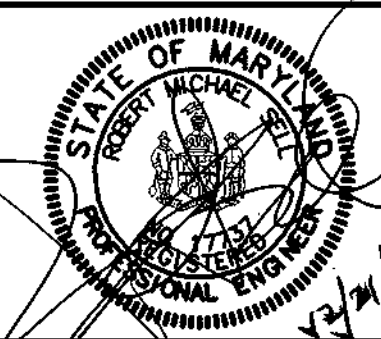
SEWER PROFILE  
SCALE: H 1"=50' V 1"=5'

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*Donna L. Matlock* 1/10/01  
COUNTY HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert Benjamin* 1-25-01  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*William D. ...* 2/6/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**McCRONE**  
ENGINEERING & ENVIRONMENTAL SCIENCES  
LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES  
20 BEECHY BEND  
ANNAPOLIS, MARYLAND 21401  
(410) 291-8827  
ANNAPOLIS-CENTREVILLE-SALISBURY-ELKTON-PRINCE FREDERICK

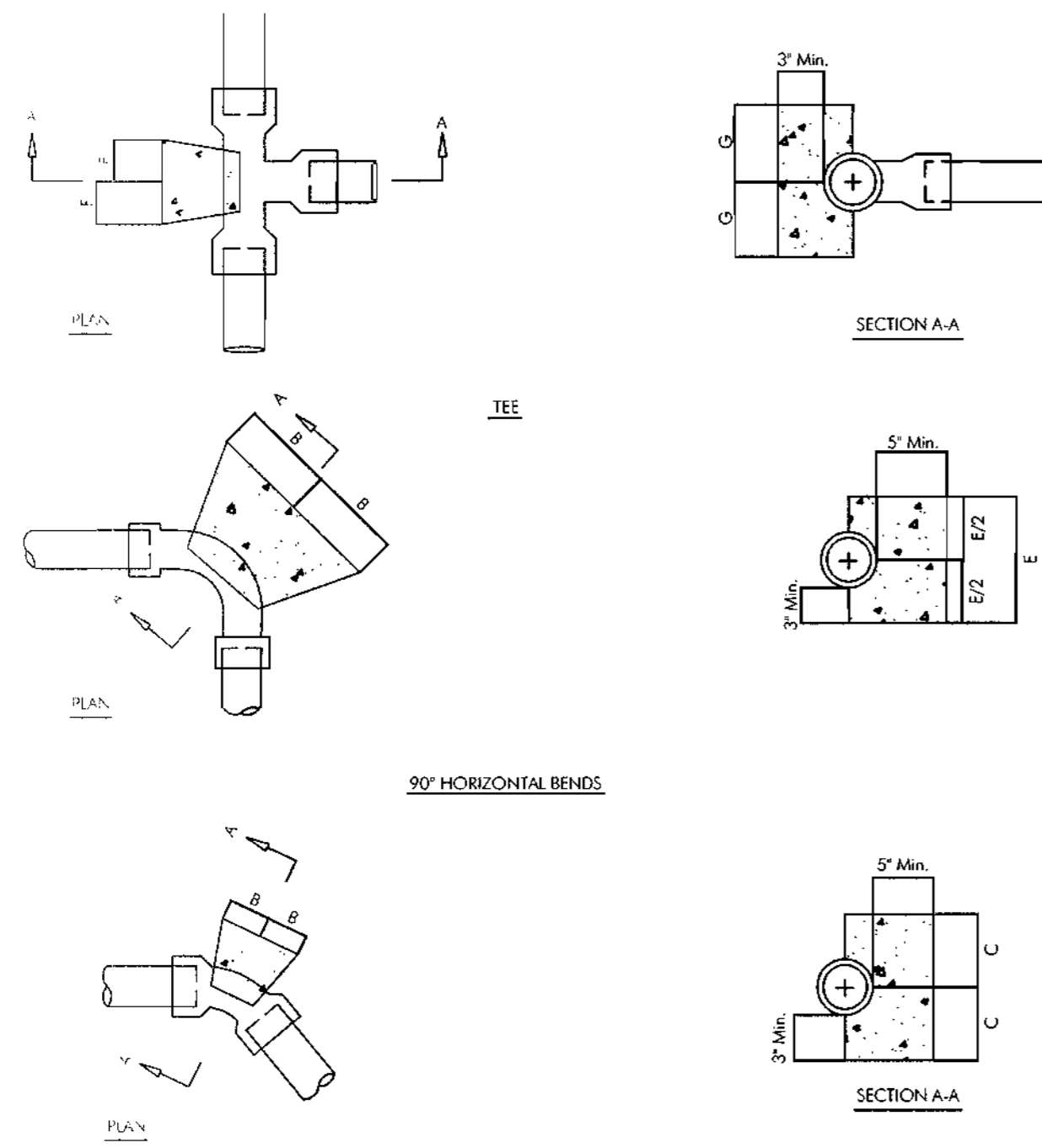


DES:	R. Sell
DRN:	T. Price
CHK:	R. Sell
DATE:	Dec 2000
BY:	No.
REVISION:	
DATE:	
JOB No.:	C190484
FILE:	6:\940484 - Eckar Property\Drawings\Friendship-grinders.pro

PROFILE

**FRIENDSHIP LAKE  
SHARED SEPTIC SYSTEM**  
CONTRACT No. 50-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

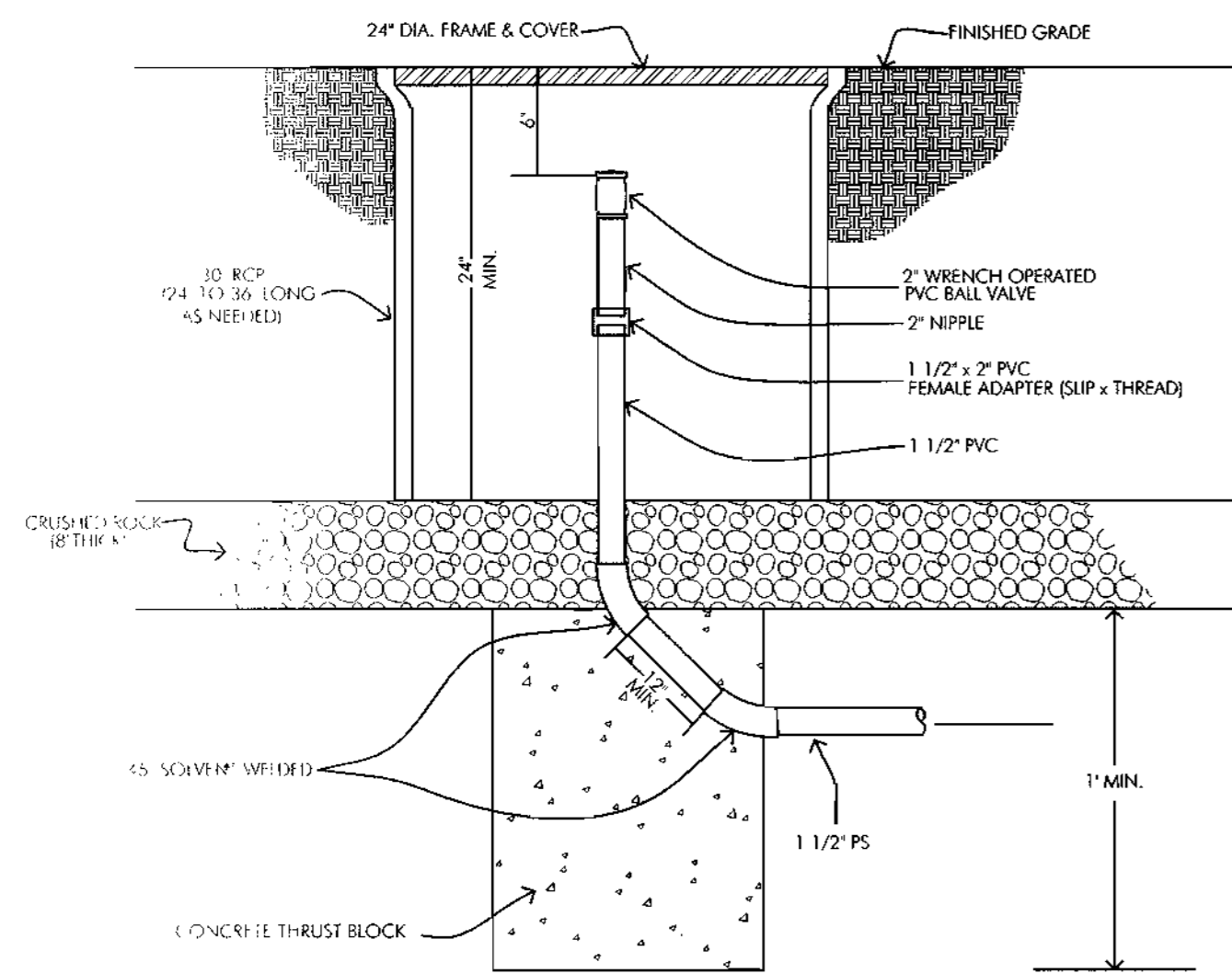
SCALE AS SHOWN  
SHEET 3 OF 7



BUTTRESS DIMENSIONS						
PIPE SIZE	B	C	D	E	F	G
1 1/2" OR 2"	4 1/2"	4 1/2"	5"	9"	4 1/2"	4"
3"	5"	5"	7"	7"	5"	5"

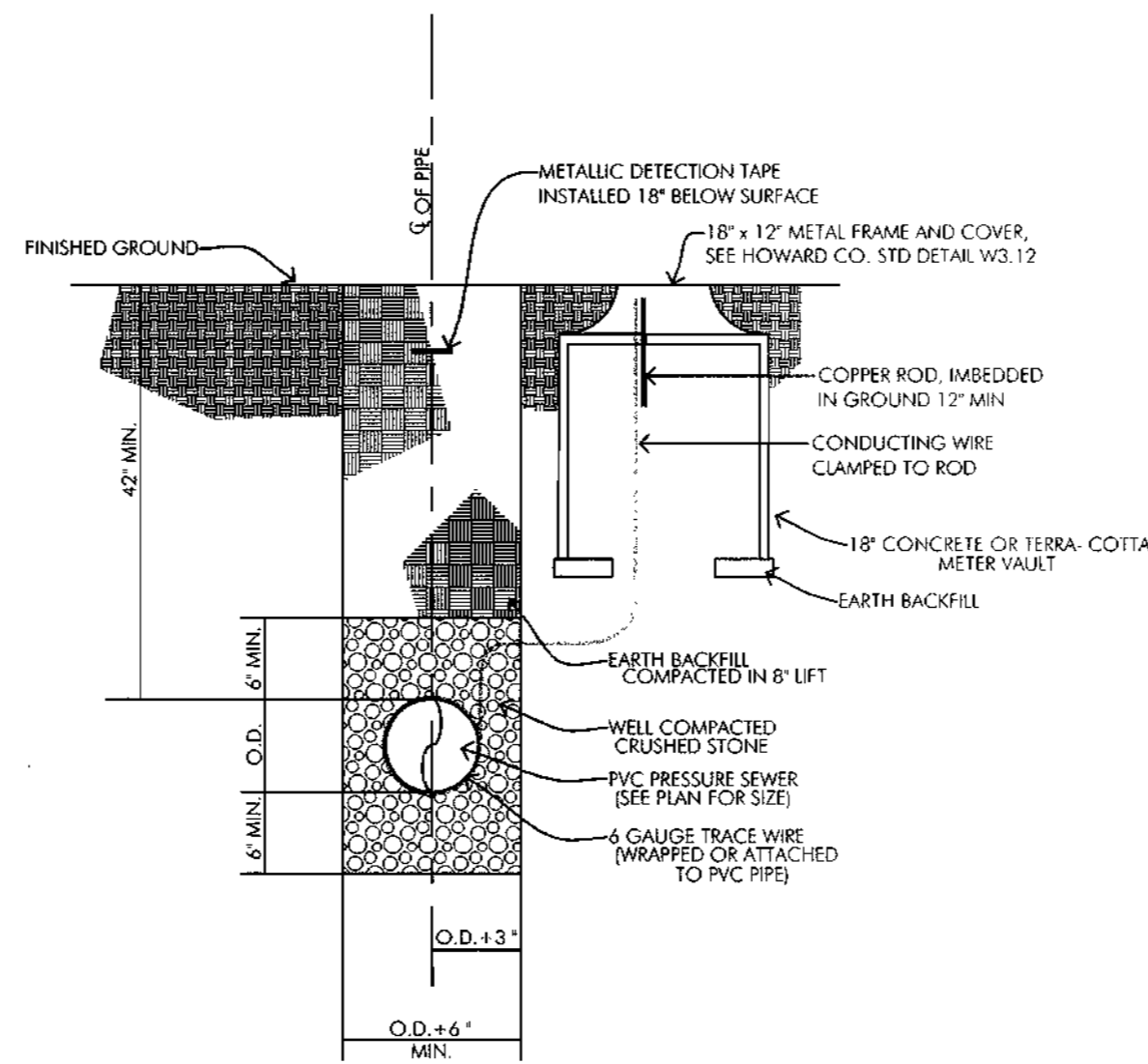
- NOTES:
1. Fc-3000 P.S.I. @ 28 DAYS
  2. CARRY ALL BEARING SURFACES TO UNDISTURBED GROUND OR FIRM SUBGRADE.
  3. BUTTRESS SIZED FOR 150 P.S.I. AND SOIL WITH CB3 = 2000 P.S.I.
  4. DO NOT ENCASE JOINTS

NOT TO SCALE



**TERMINAL FLUSHING CONNECTION**

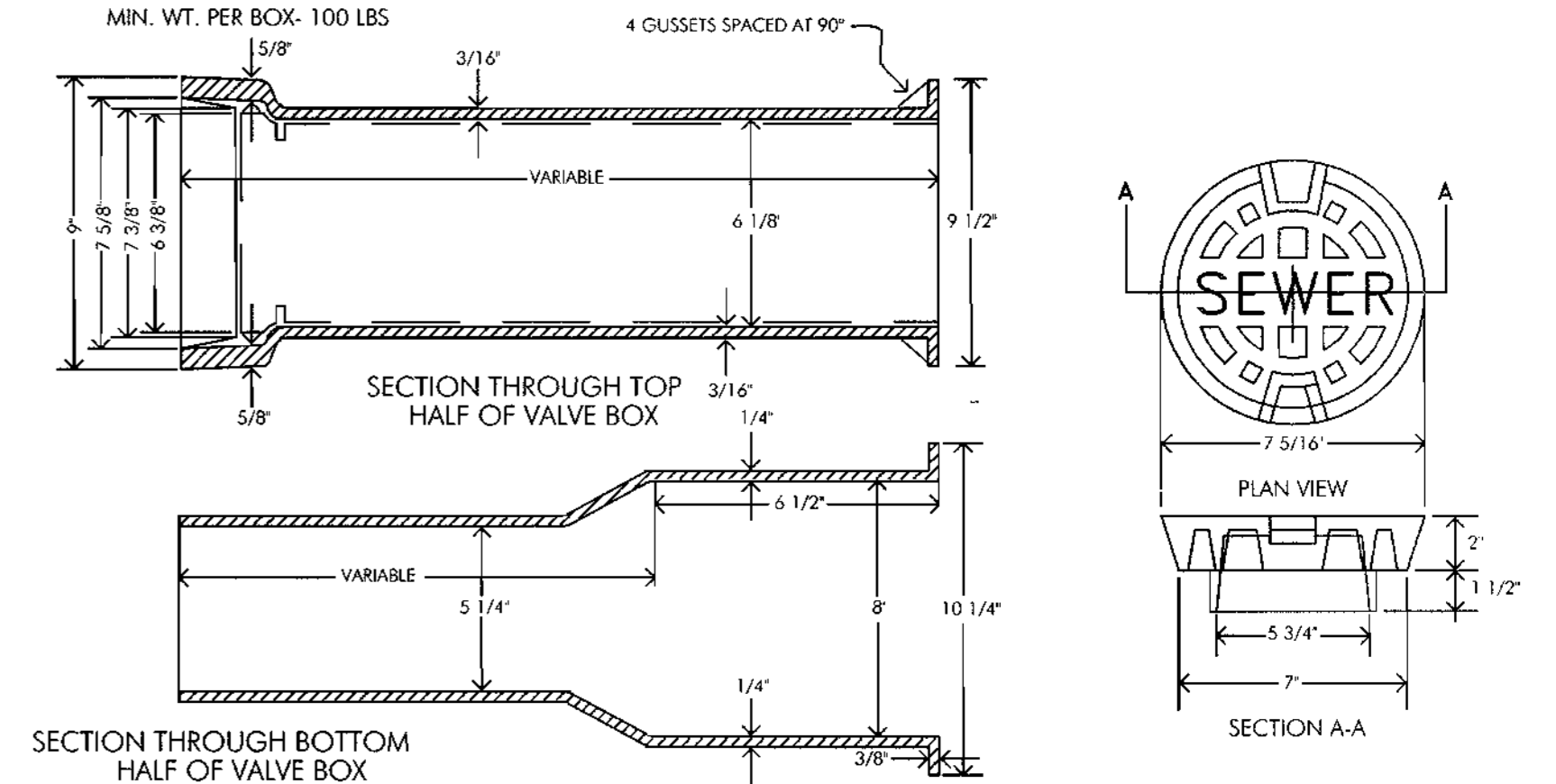
NOT TO SCALE



**PRESSURE SEWER TRENCH, BEDDING & CONDUCTING ROD CABLE BOX LOCATION DETAIL**

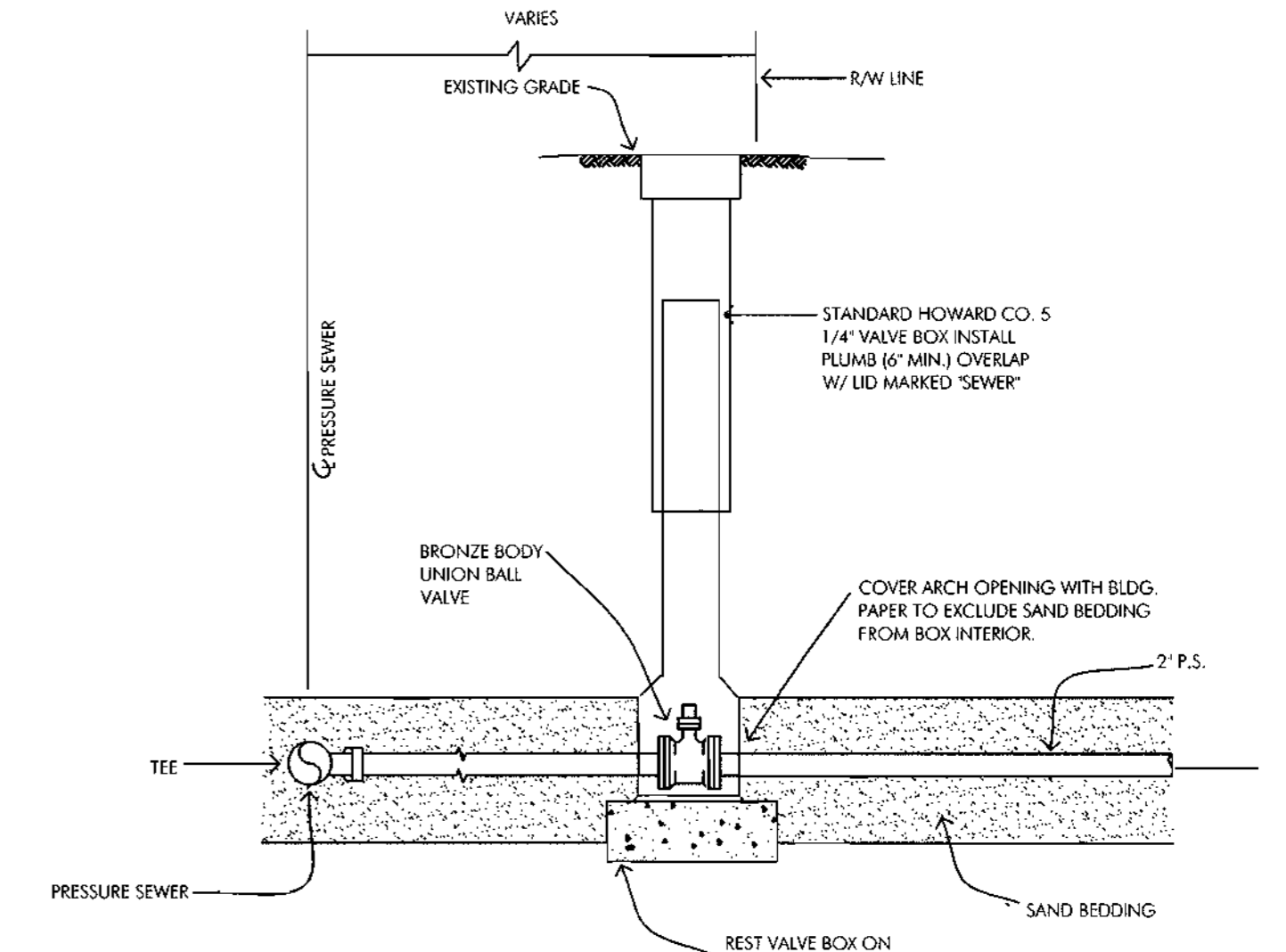
NOT TO SCALE

- SPECIFICATIONS:
1. CAST IRON-SLIDING TYPE  
MIN. T.S. 30,000 PSI
  2. TOP SECTION- 16"  
BOTTOM SECTION 18"
  3. BOXES ADJUSTABLE 34" TO 46"
  4. TOP SECTION- 16"  
BOTTOM SECTION 30"  
MIN. WT. PER BOX- 100 LBS



**ADJUSTABLE VALVE BOX  
ROUND HEAD SLIDING TYPE**

NOT TO SCALE



**UNION BALL VALVE ASSEMBLY**

NOT TO SCALE

- NOTES:
1. MAINTAIN 4\"/>

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.

*Donna Matuszak* 01/10/01  
COUNTY HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert J. Berman* 1-25-01  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Michael J. ...* 2/6/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**McCRONE**  
ENGINEERING ENVIRONMENTAL SCIENCES  
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30 HEDLEY AVENUE  
ANNAPOLIS, MARYLAND 21401  
(410) 267-0821  
ANNAPOLIS-CENTREVILLE-SALISBURY-ELKTON-PRINCE FREDERICK



DES: R. SELL					
DRN: R.J.R.					
CHK: R. SELL					
DATE: 1/00	BY	No.	REVISION	DATE	

**DETAIL SHEET**

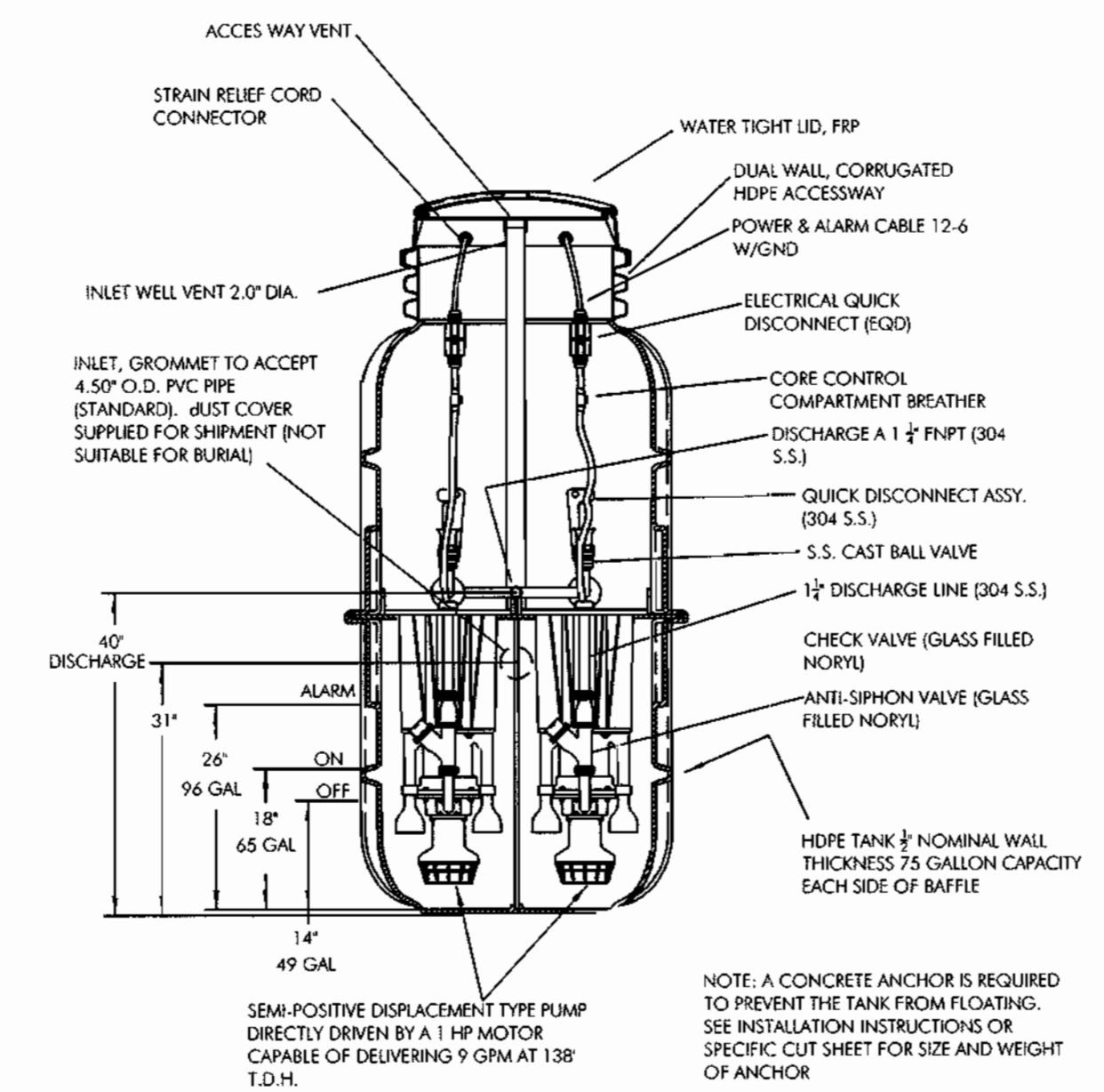
**FRIENDSHIP LAKE  
SHARED SEPTIC SYSTEM**

CONTRACT No. 60-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

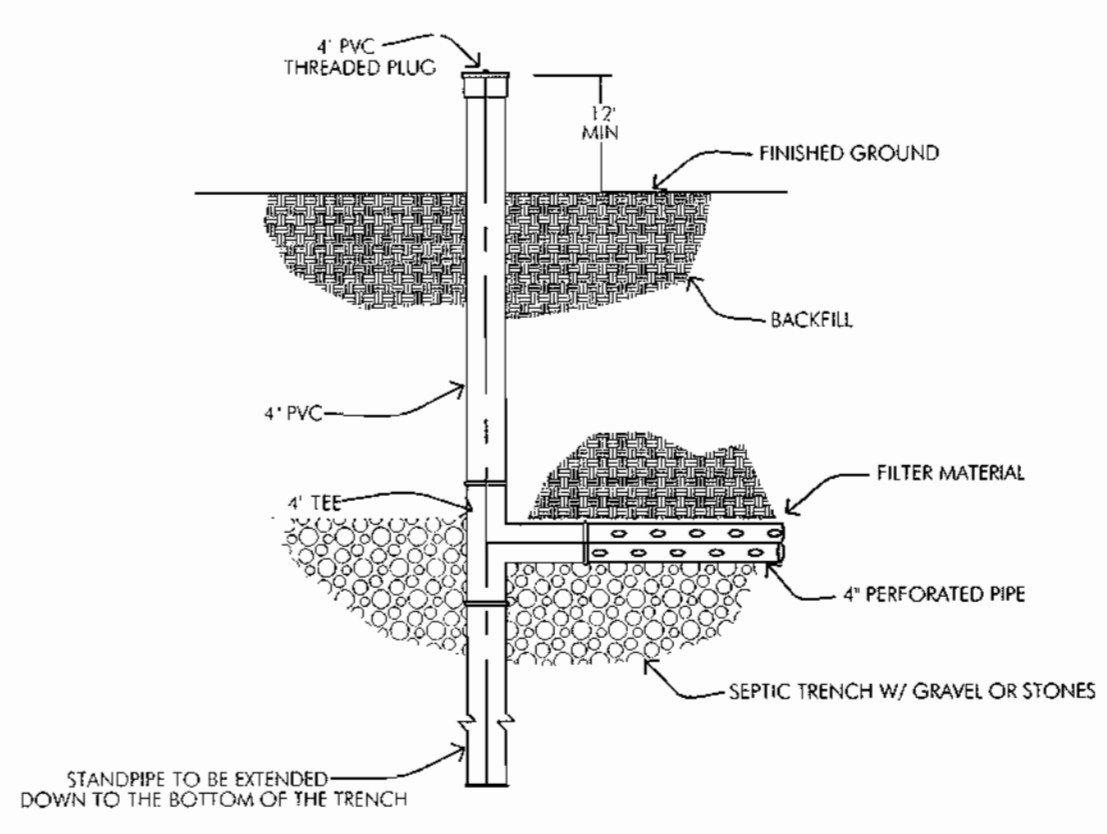
SCALE AS SHOWN

SHEET 4 OF 7

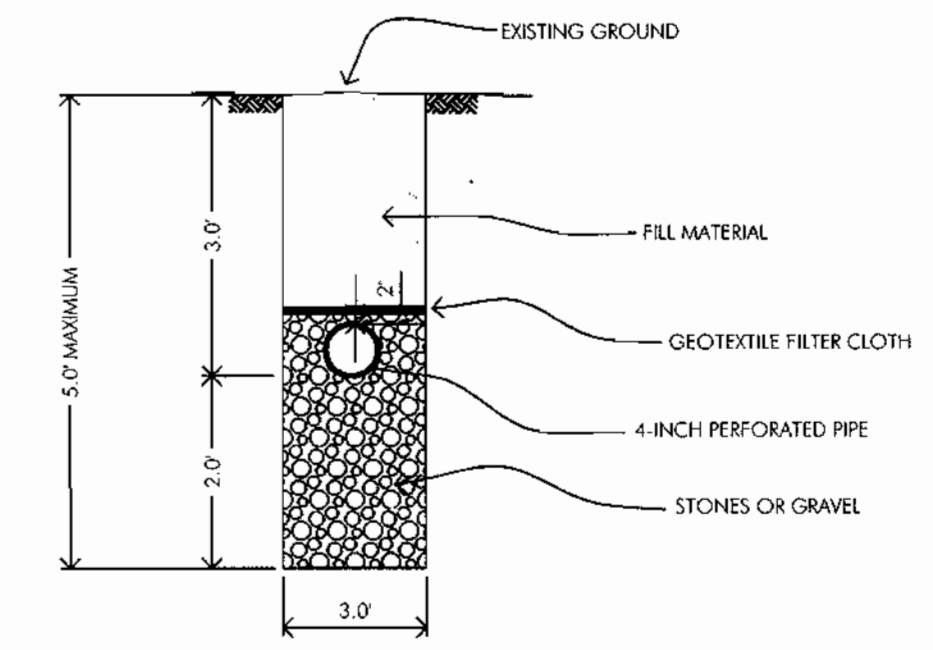
APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14: PRESERVATION PARCEL "A"  
 HOWARD COUNTY HEALTH DEPT.  
*Dawn K. [Signature]* 01/10/01  
 COUNTY HEALTH OFFICER DATE



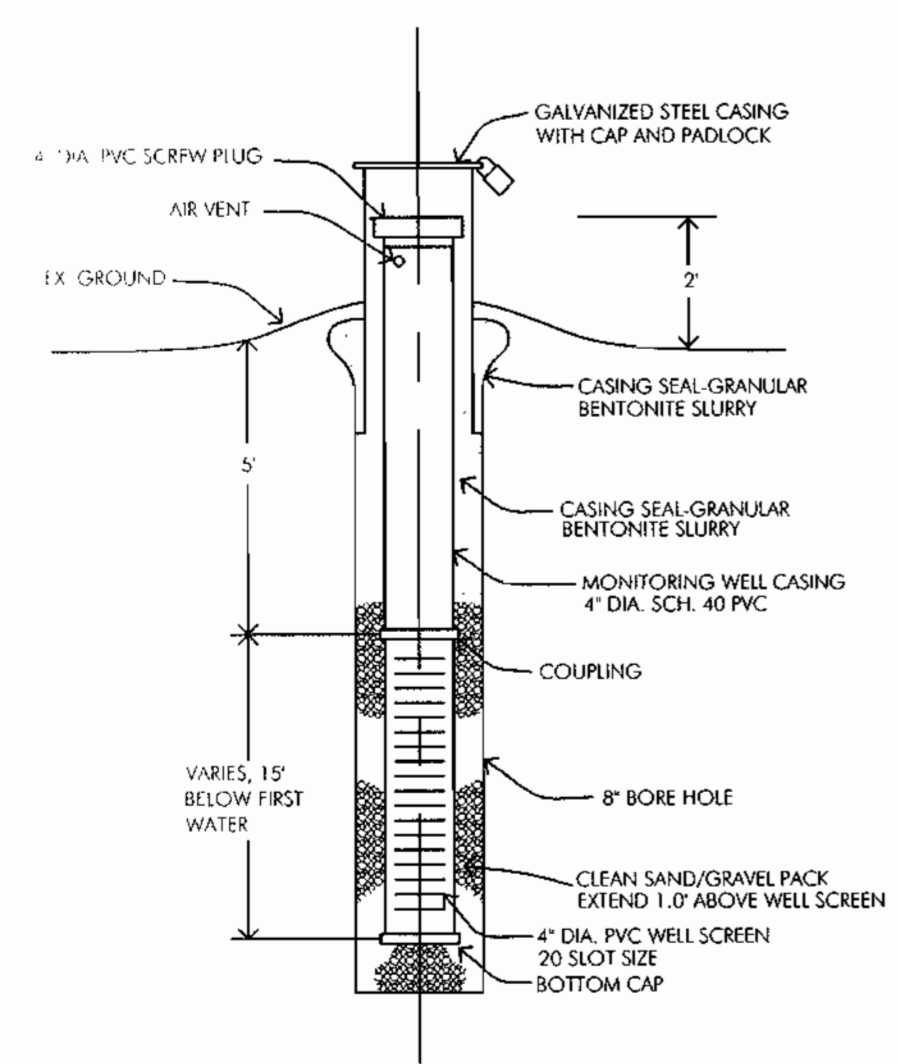
**DUPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2014-160**  
 NOT TO SCALE



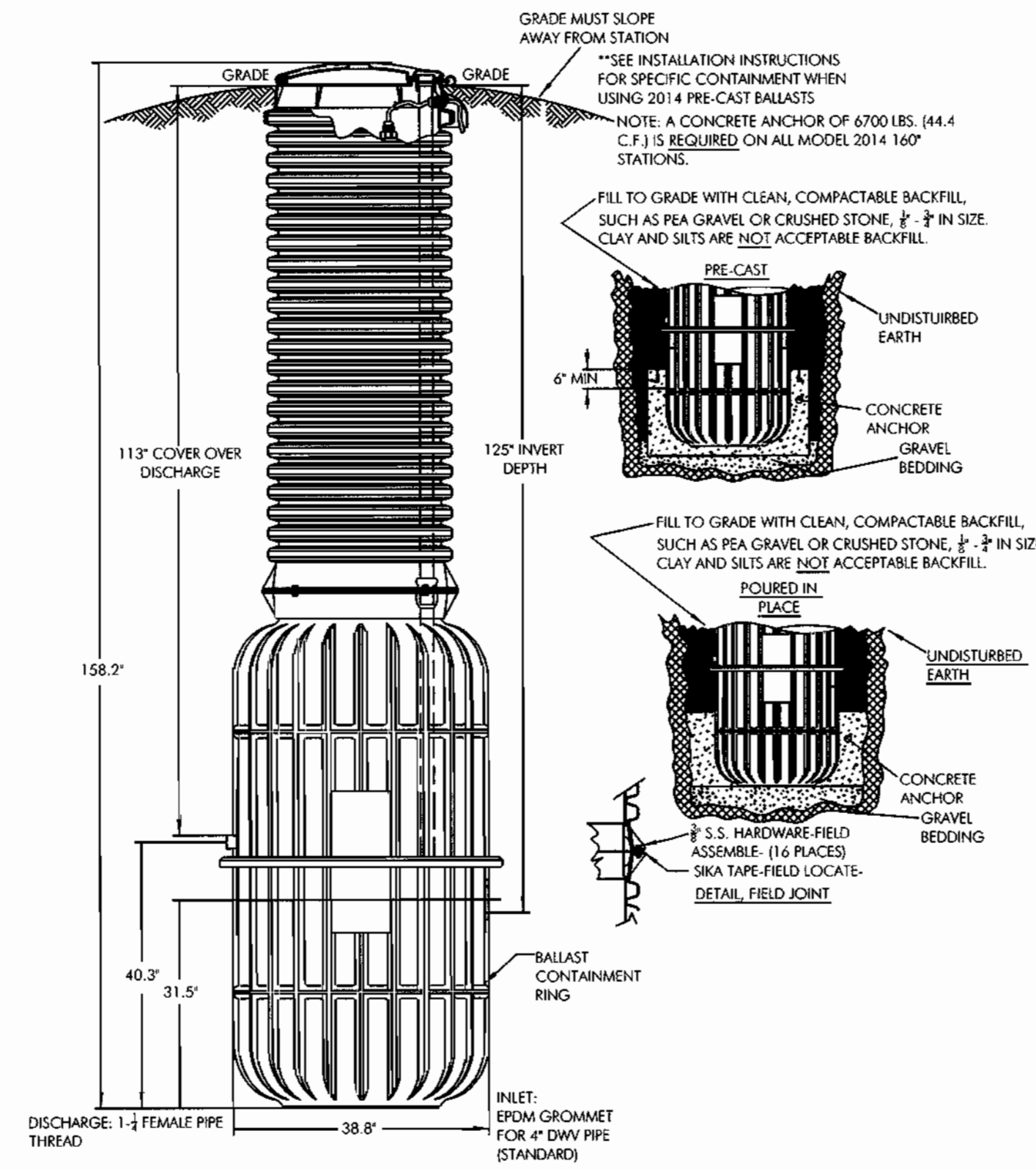
**DISTRIBUTION LATERAL TERMINATION DETAIL**  
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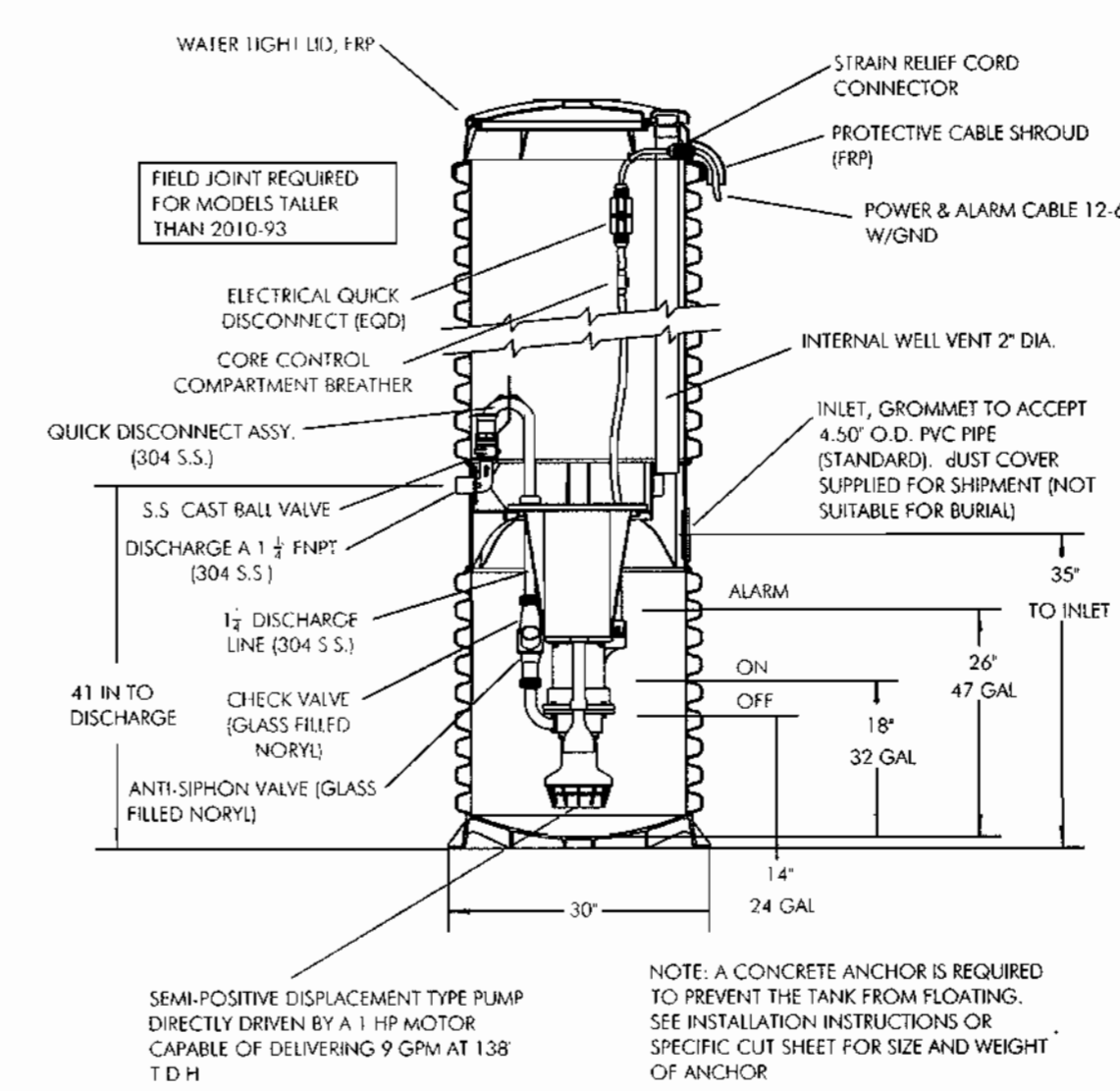
**SEPTIC TRENCH DETAIL**  
 NOT TO SCALE



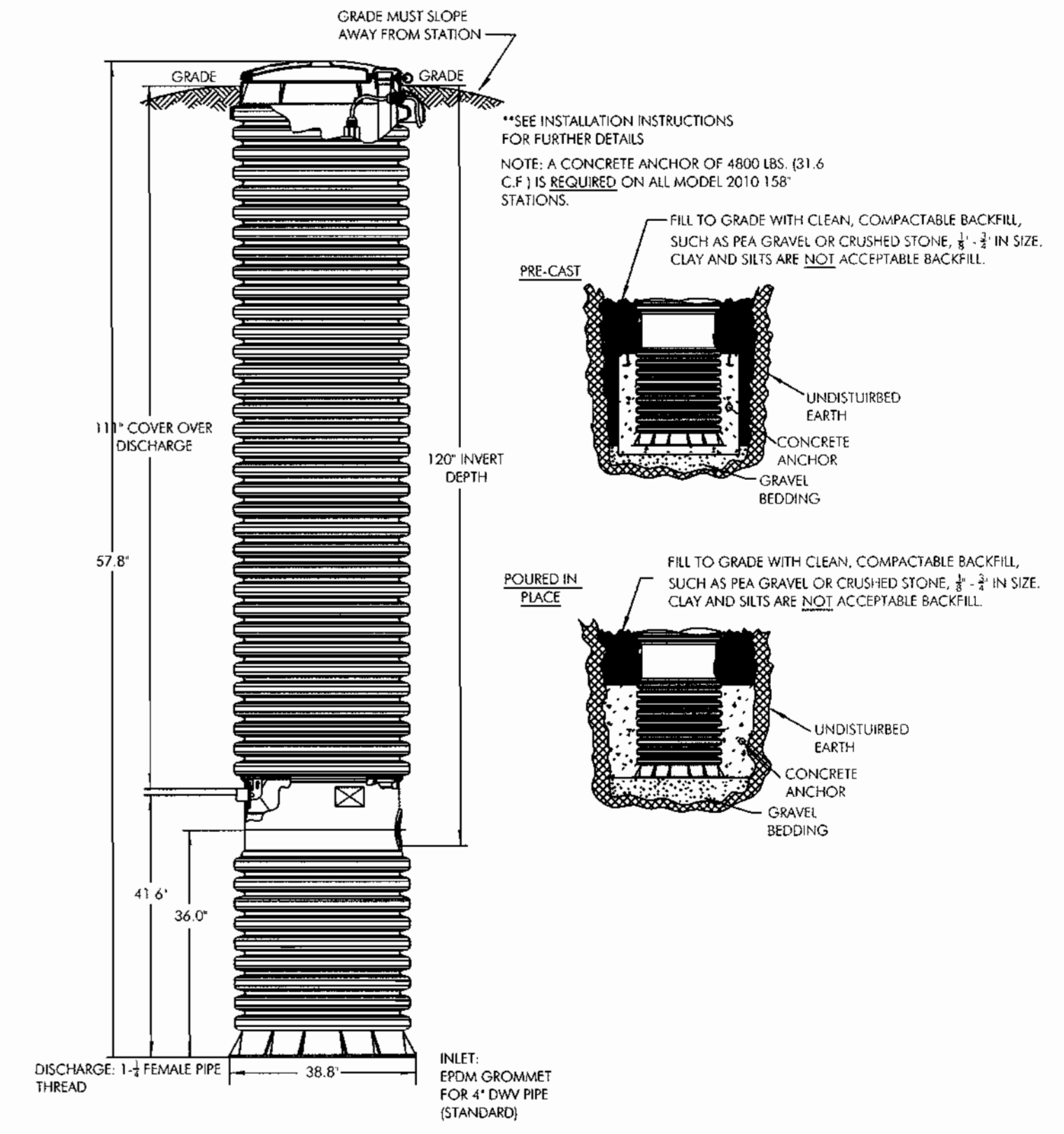
**MONITORING WELL DETAIL**  
 NOT TO SCALE



**DUPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2014-160**  
 NOT TO SCALE

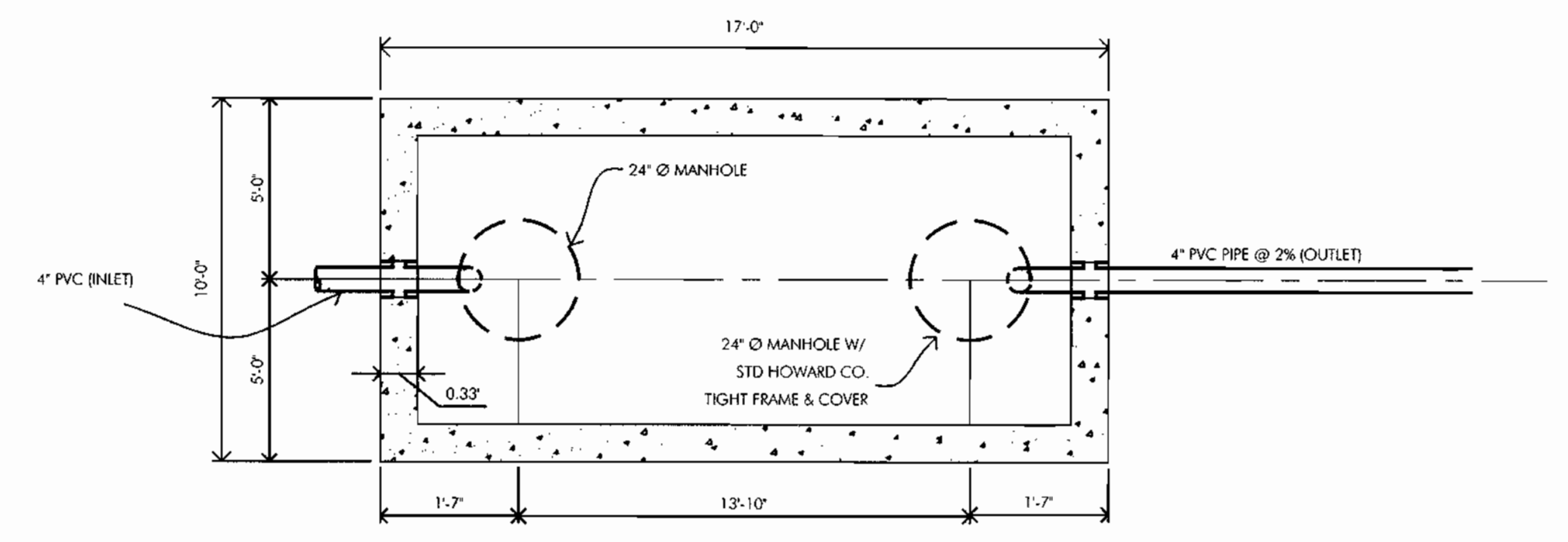
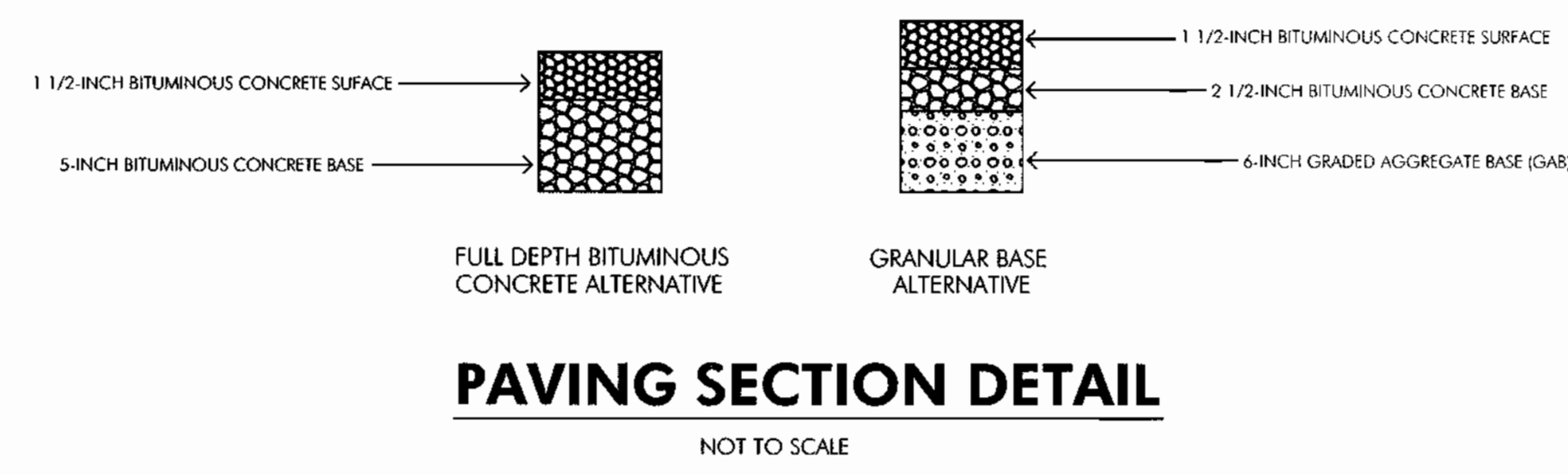
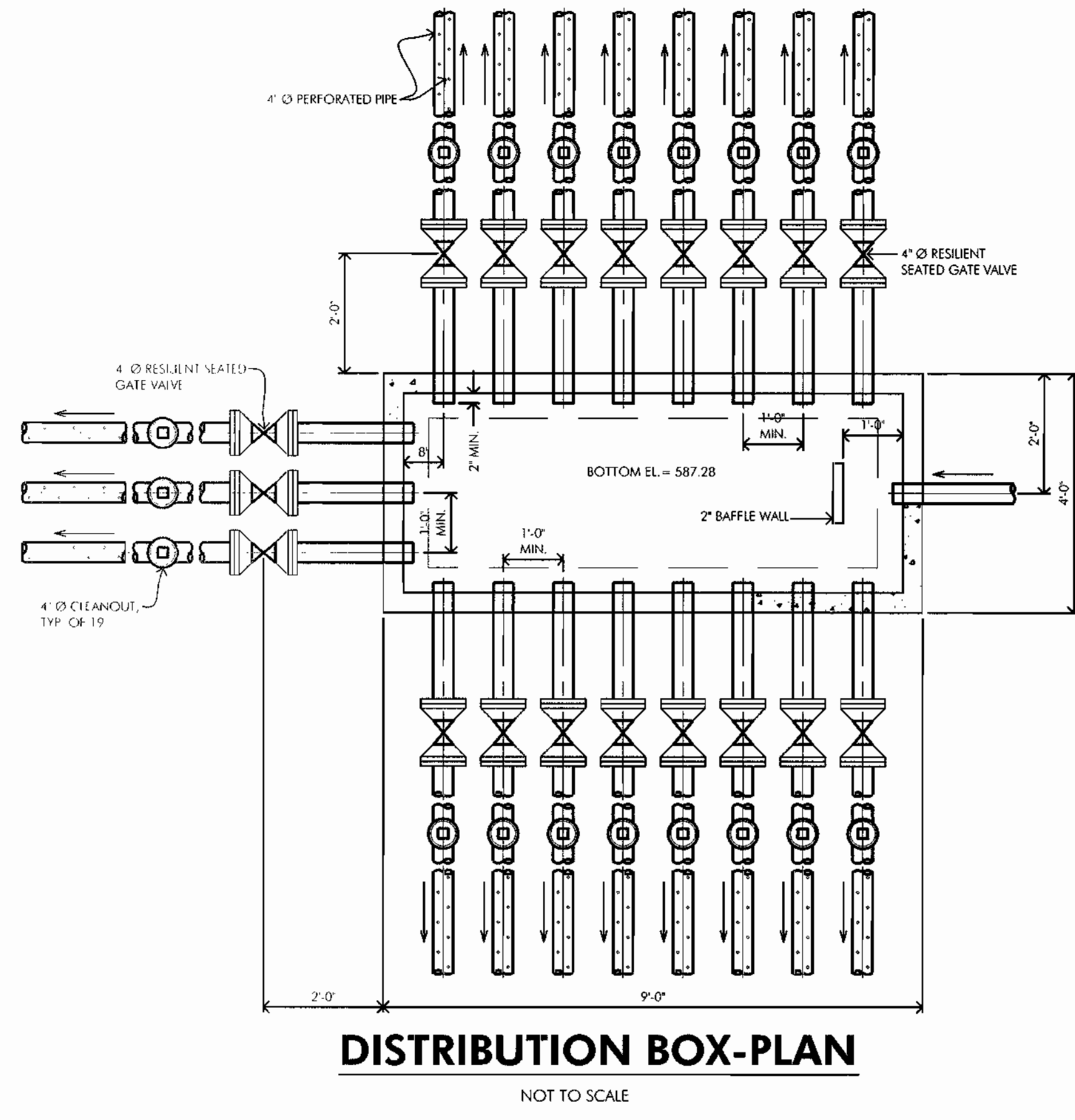
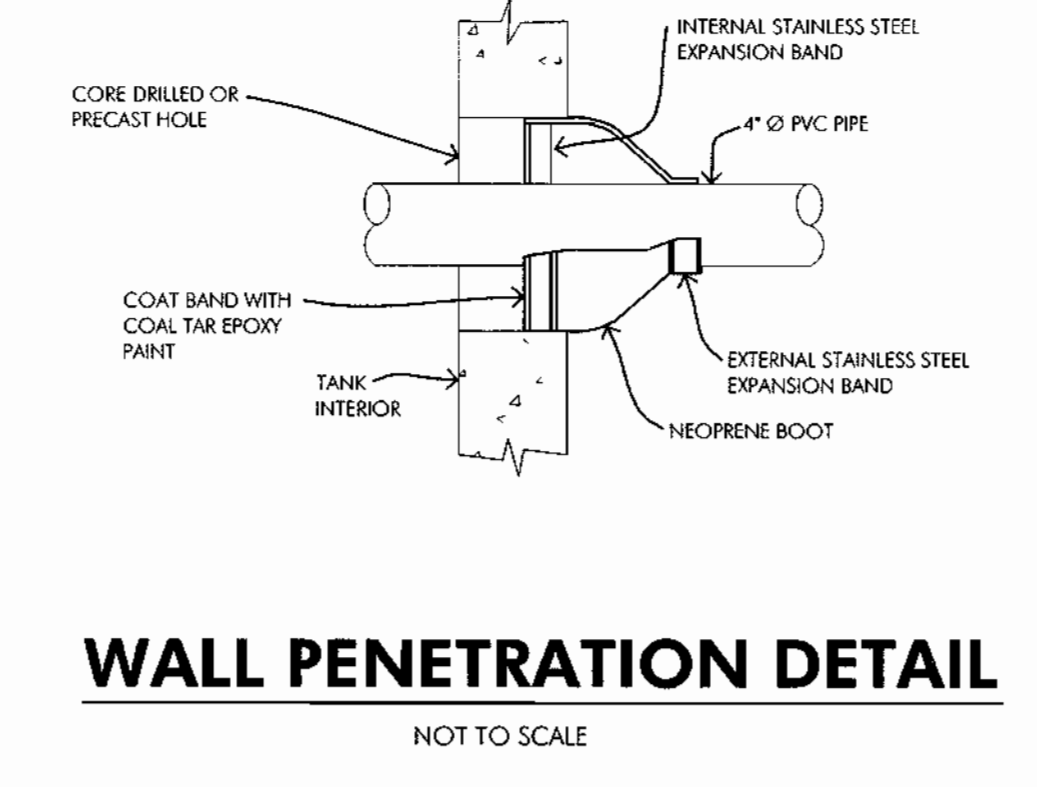
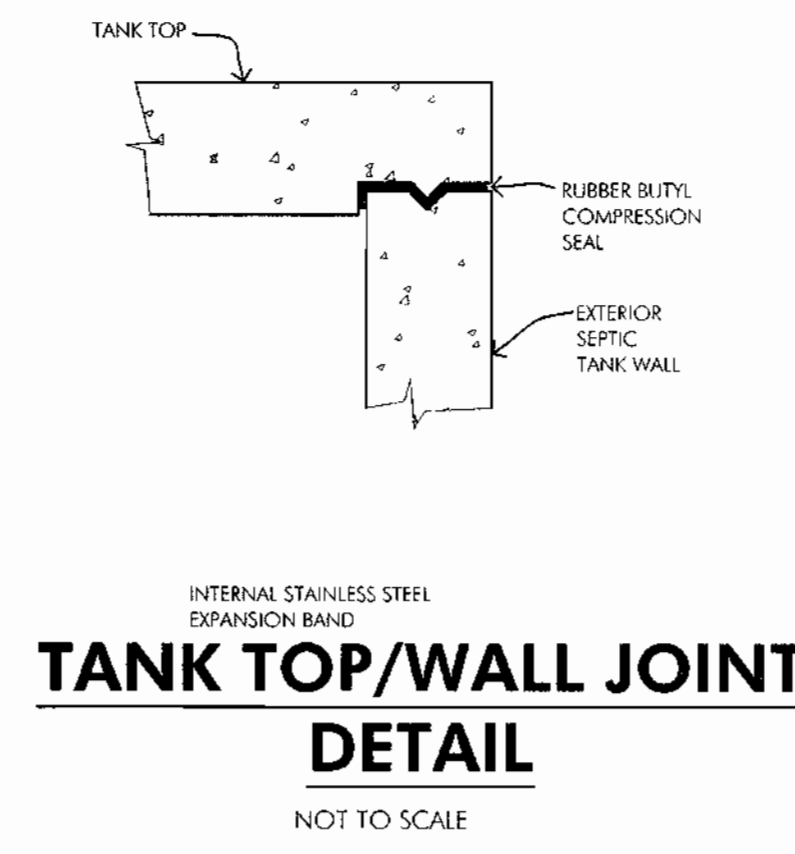
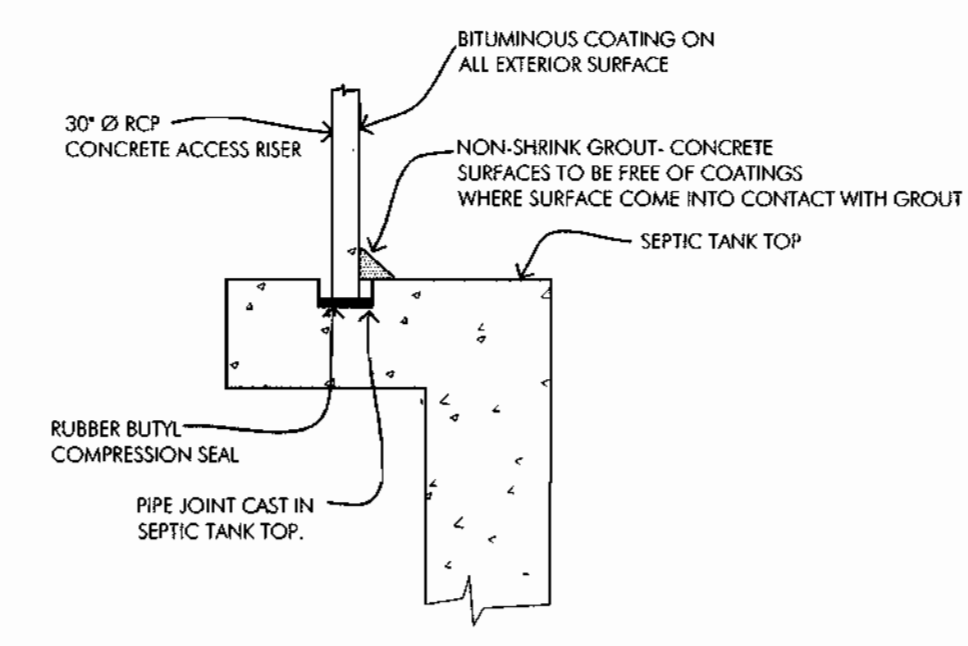
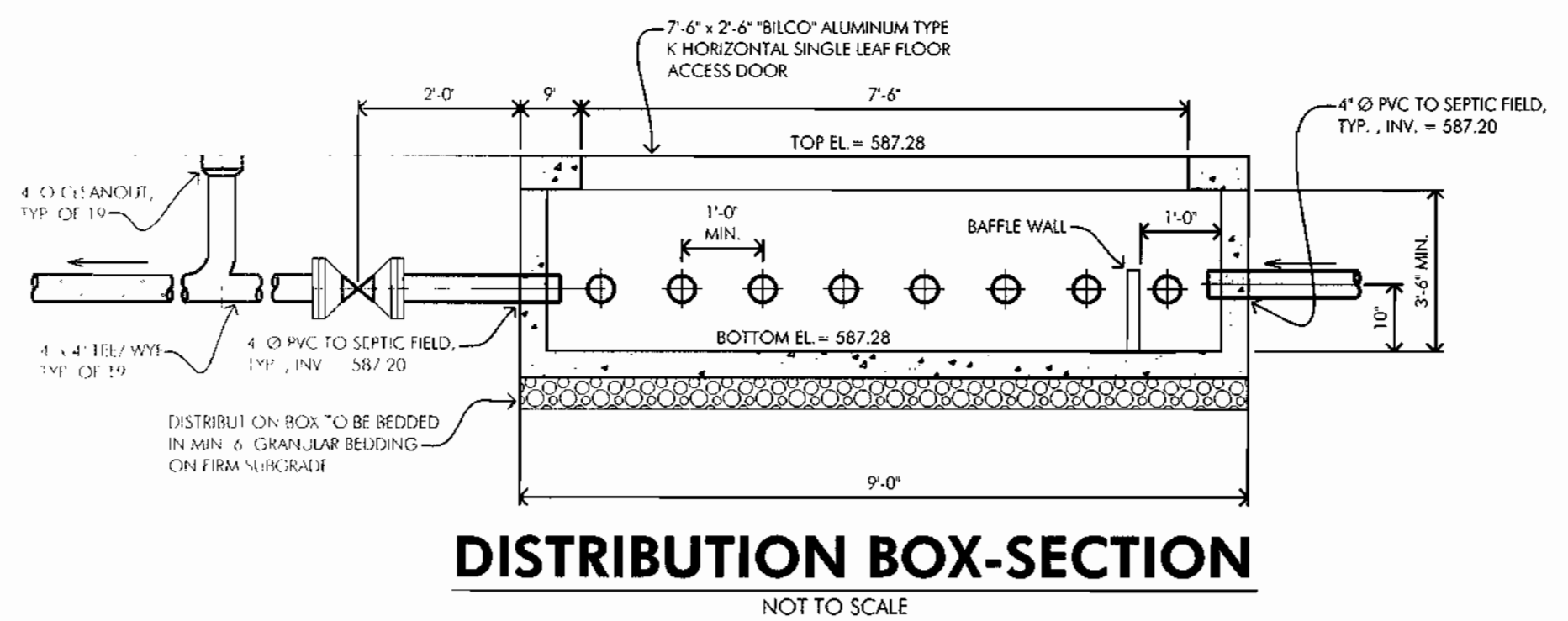


**SIMPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2010-158**  
 NOT TO SCALE



**SIMPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2010-158**  
 NOT TO SCALE

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14, PRESERVATION PARCEL 'A' HOWARD COUNTY HEALTH DEPT.  
*John H. Hester, Jr.*  
 COUNTY HEALTH OFFICER *JMH* 01/20/12  
 DATE



**DISTIBUTION BOX COORDINATES DATA**

BOX #	INLET SIDE	OUTLET SIDE
1	N 530455.24 E 800580.47	N 530462.63 E 800583.52

**SEPTIC TANK SUMMARY**

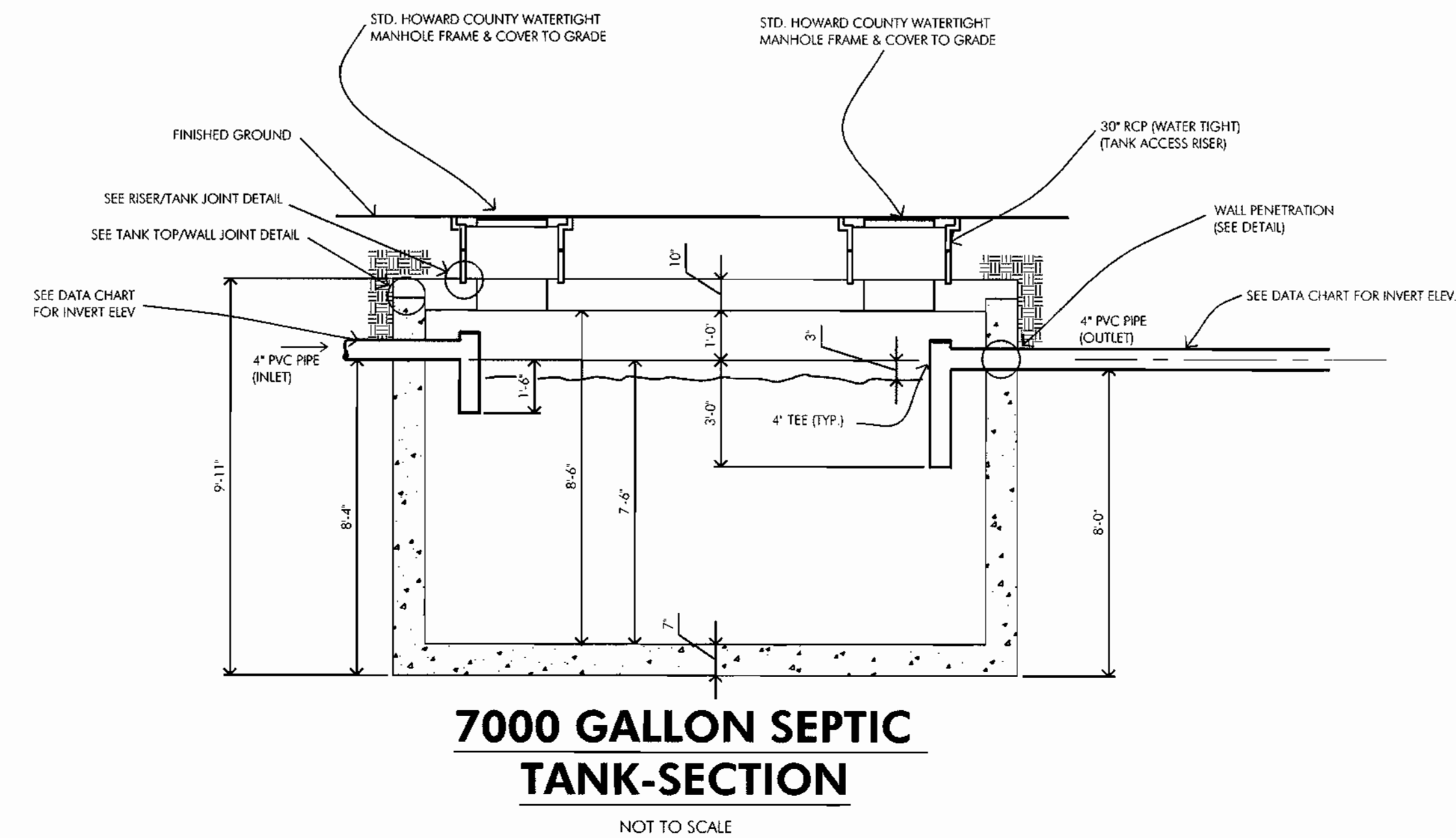
TANK	TANK ELEVATION	INVERT ELEVATION	TANK COORDINATES	MANHOLE RIM ELEVATION	REMARK
TANK A	590.17 TOP	588.75 IN	N 530428.88 E 800602.27	592.83	DIMENSIONS ARE BASED ON ROTUNDO & SONS, INC. MODEL ST 6414-35
	583.00 BTM	588.50 OUT	N 530433.46 E 800591.18	592.82	
TANK B	590.17 TOP	588.75 IN	N 530443.64 E 800608.38	591.99	DIMENSIONS ARE BASED ON ROTUNDO & SONS, INC. MODEL ST 6414-35
	583.00 BTM	588.50 OUT	N 530448.25 E 800580.47	591.90	

NOTES:  
 1. MANHOLE RIM ELEVATIONS SHOWN HEREON ARE AT THE CENTER OF THE RIM  
 2. TANK COORDINATES ARE AT THE MIDPOINT OF EACH END.

NOTE: TO INSURE EQUAL DISTRIBUTION TO LATERALS, PROVIDE "DIAL-A-FLOW" WHICH FITS IN THE OUTLET PORTS OF EACH LATERAL LEAVING THE DISTRIBUTION BOX. "DIAL-A-FLOW" SHALL BE AS MANUFACTURED BY AMERICAN MANUFACTURING COMPANY, INC., MANASSAS, VA.

**GRINDER PUMP SUMMARY**

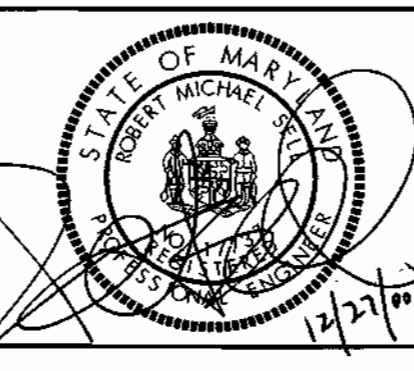
LOT NO.	TOP ELEVATION	BOTTOM ELEVATION	TOTAL LENGTH	INLET ELEVATION	DISCHARGE ELEVATION	VOL. OF CONCRETE FOR CONCRETE ANCHOR (C.F.)	REMARK
11/14	566.50	553.17	160	555.83	556.42	44.03	MODEL 214-160
12	554.50	541.33	158	544.25	544.75	32.92	MODEL 214-158
13	560.50	547.33	158	550.25	550.75	32.92	MODEL 214-158



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Robert W. Berman* 1-25-01  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND  
*John H. Hester, Jr.* 2/2/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**McCRONE**  
 ENGINEERING ENVIRONMENTAL SCIENCES  
 LAND PLANNING & SURVEYING CONSTRUCTION SERVICES  
 30 RIDGELY AVENUE  
 ANNAPOLIS, MARYLAND 21401  
 (410) 287-0621  
 ANNAPOLIS-CENTREVILLE-SALISBURY-ELKTON-PRINCE FREDERICK

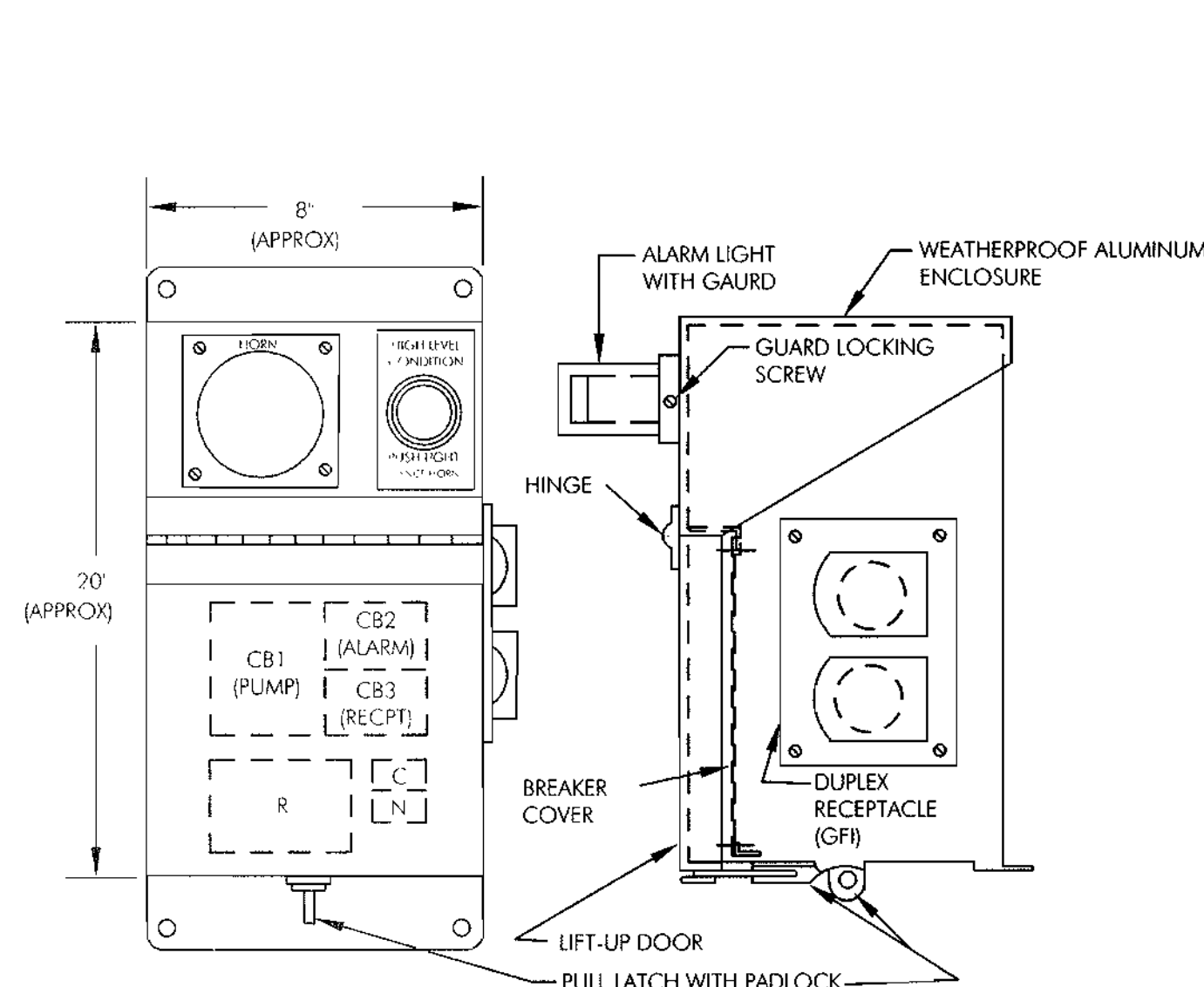


DES:	DRN:	CHK:	DATE:	BY	No.	REVISION	DATE
R.SELL	RJR	R.SELL	1/00				

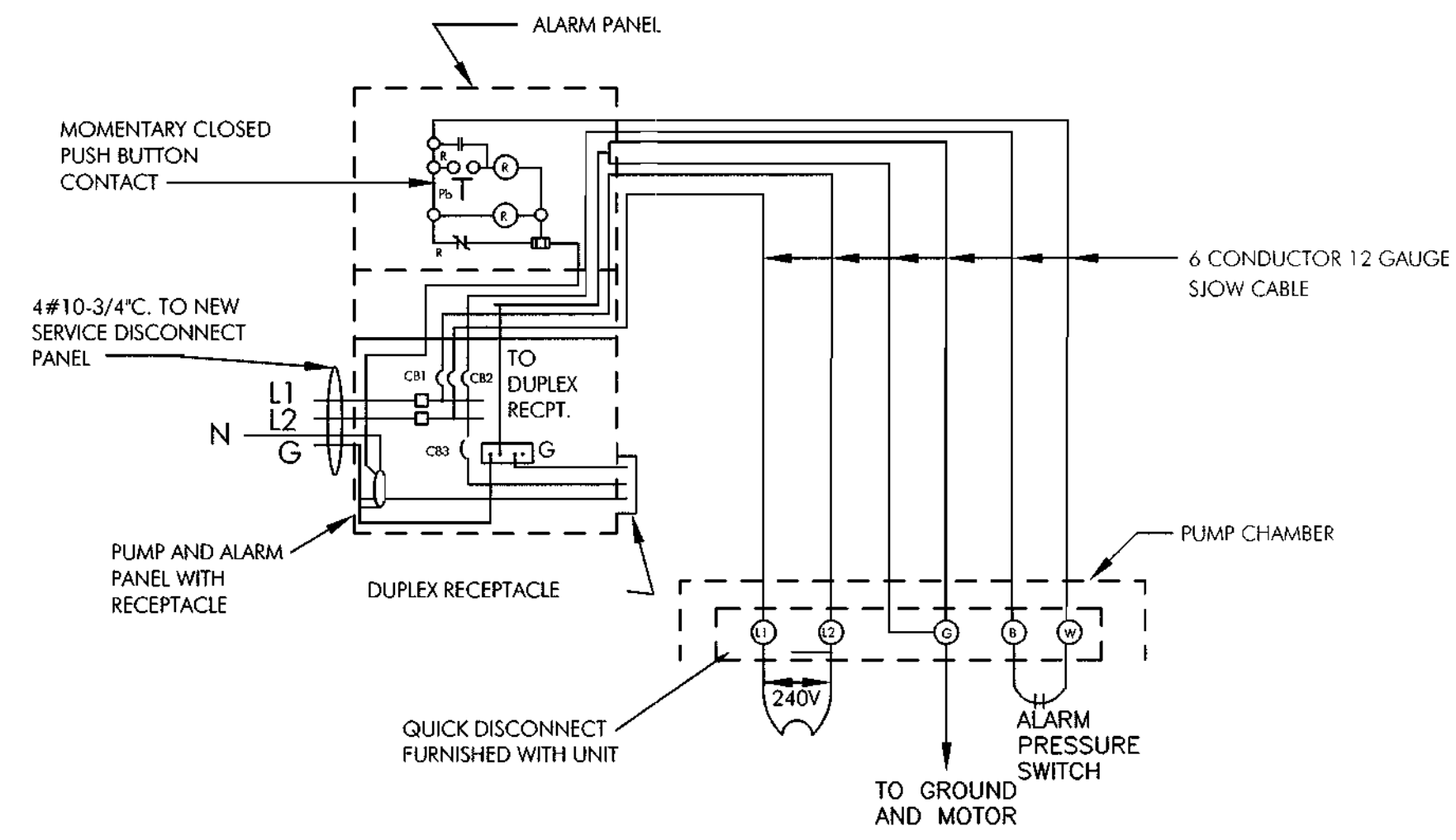
**DETAIL SHEET**

**FRIENDSHIP LAKE SHARED SEPTIC SYSTEM**  
 CONTRACT No. 60-3871-D  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

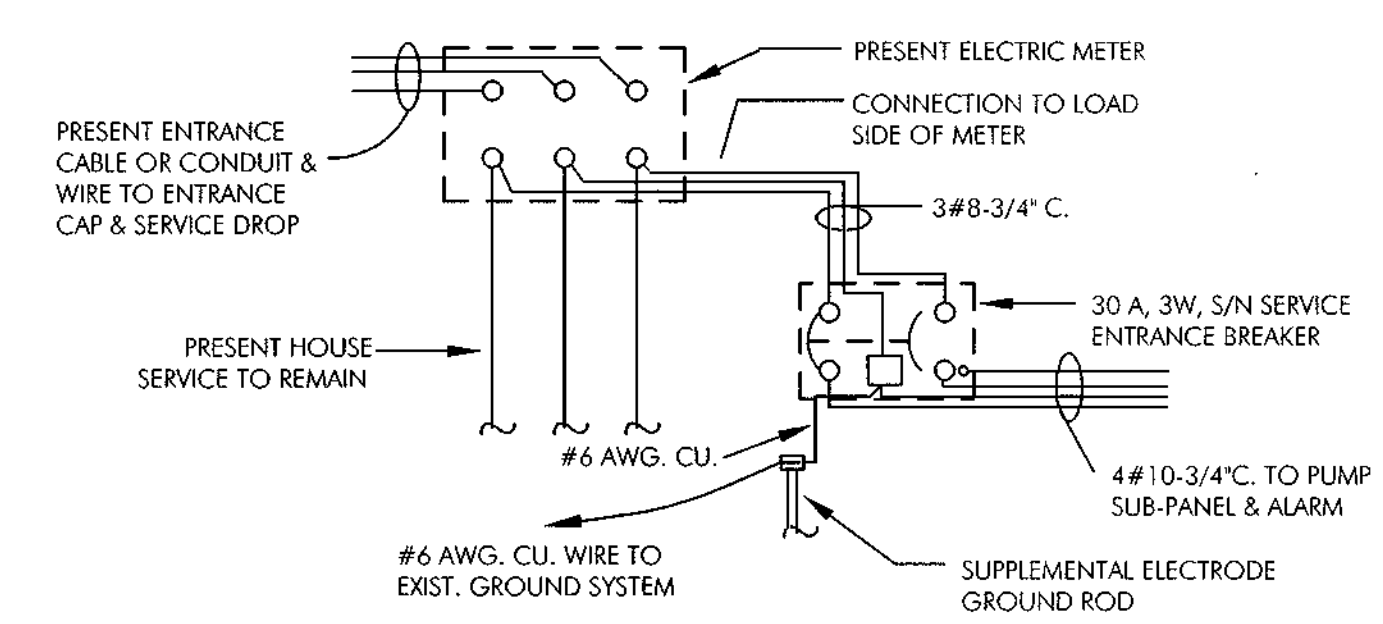
SCALE AS SHOWN  
 SHEET 6 OF 7



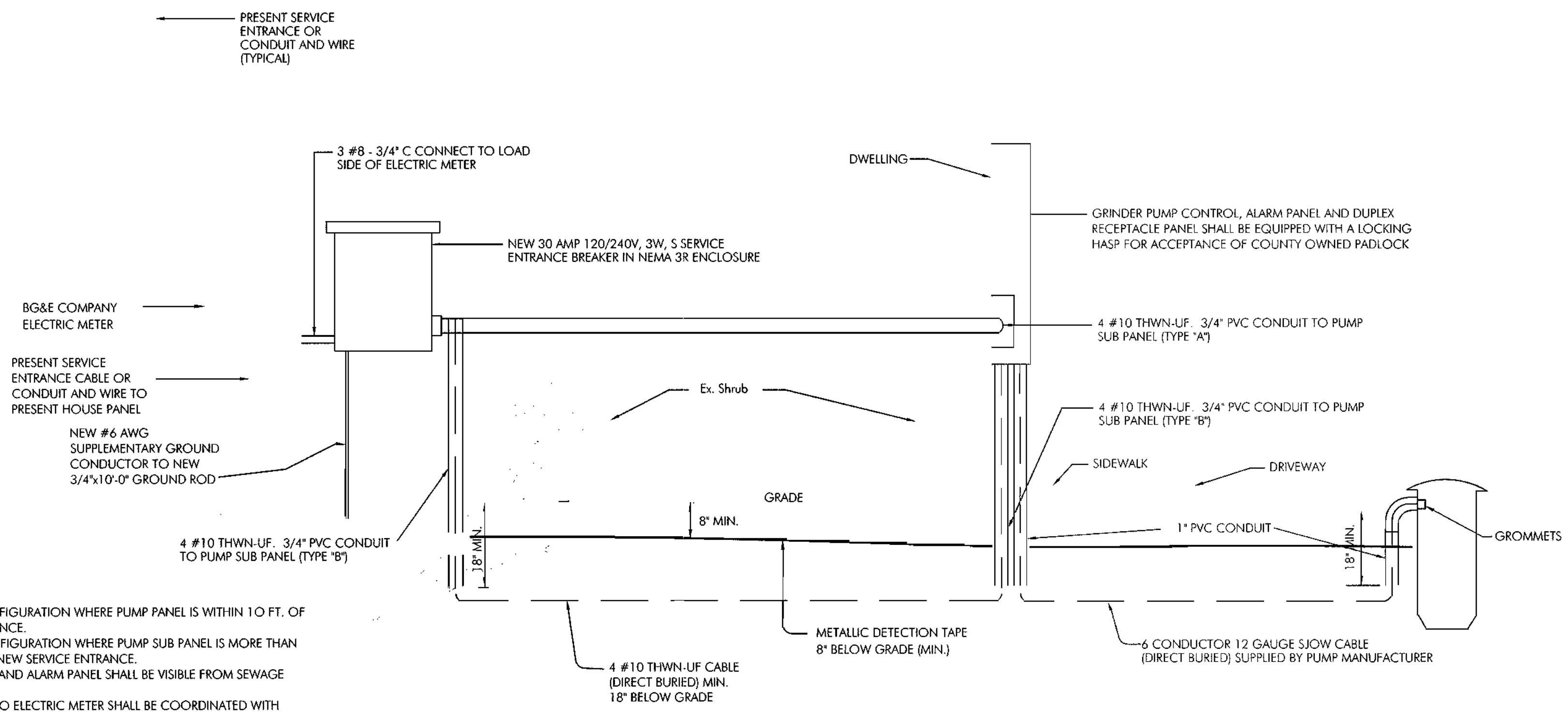
**GRINDER PUMP CONTROL & ALARM PANEL**  
NOT TO SCALE



**SEWAGE GRINDER PUMP WIRING DIAGRAM (240 v) TYPICAL EACH PUMP UNIT**  
NOT TO SCALE



**NEW SERVICE ENTRANCE WIRING DIAGRAM**  
NOT TO SCALE



1. USE TYPE "A" CONFIGURATION WHERE PUMP PANEL IS WITHIN 10 FT. OF NEW SERVICE ENTRANCE.
2. USE TYPE "B" CONFIGURATION WHERE PUMP SUB PANEL IS MORE THAN 10 FT. AWAY FROM NEW SERVICE ENTRANCE.
3. PUMP SUB PANEL AND ALARM PANEL SHALL BE VISIBLE FROM SEWAGE GRINDER PUMP.
4. CONNECTIONS TO ELECTRIC METER SHALL BE COORDINATED WITH POWER COMPANY.
5. ALL PVC CONDUIT SHALL TERMINATE 18" BELOW GROUND.
6. PROVIDE LOCKING HASP ON SERVICE BREAKER FOR ACCEPTANCE OF COUNTY OWNED LOCK.

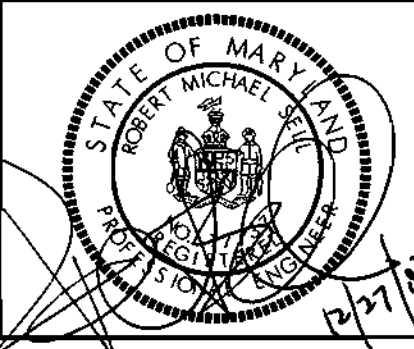
**TYPICAL GRINDER PUMP ELECTRIC POWER**  
NOT TO SCALE

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14: PRESERVATION PARCEL "A"  
HOWARD COUNTY HEALTH DEPT.  
*Dianna Hester*  
COUNTY HEALTH OFFICER *JML* 01/18/01 DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert Benjamin* 1-25-01  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*John Dammann* 2/6/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**McCRONE**  
ENGINEERING ENVIRONMENTAL SCIENCES  
LAND PLANNING & SURVEYING CONSTRUCTION SERVICES  
30 BOWLEY AVENUE  
ANNAPOLIS, MARYLAND 21401  
(410) 287-9821  
ANNAPOLIS-CENTREVILLE-SALISBURY-ELICOTT-PRINCE FREDERICK



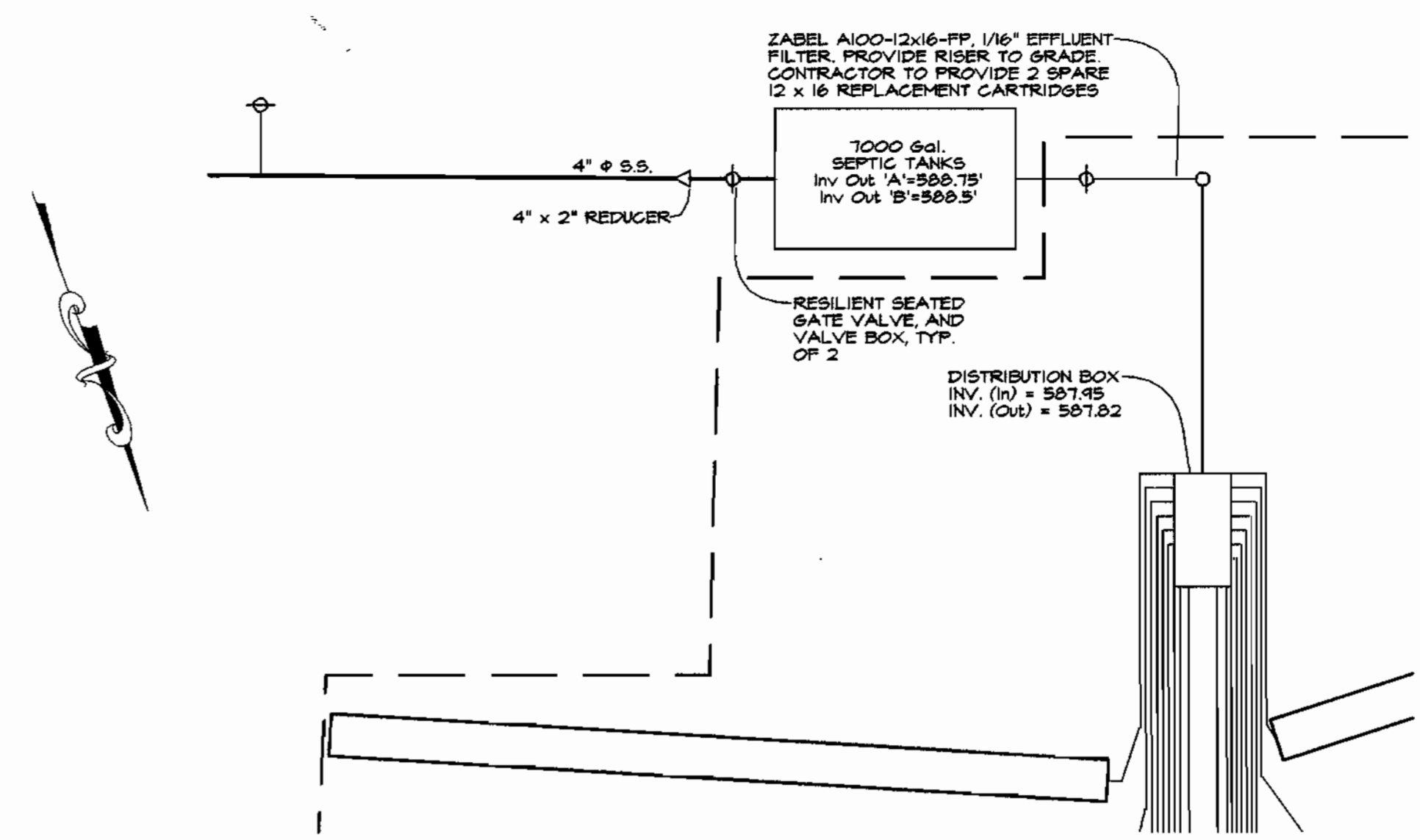
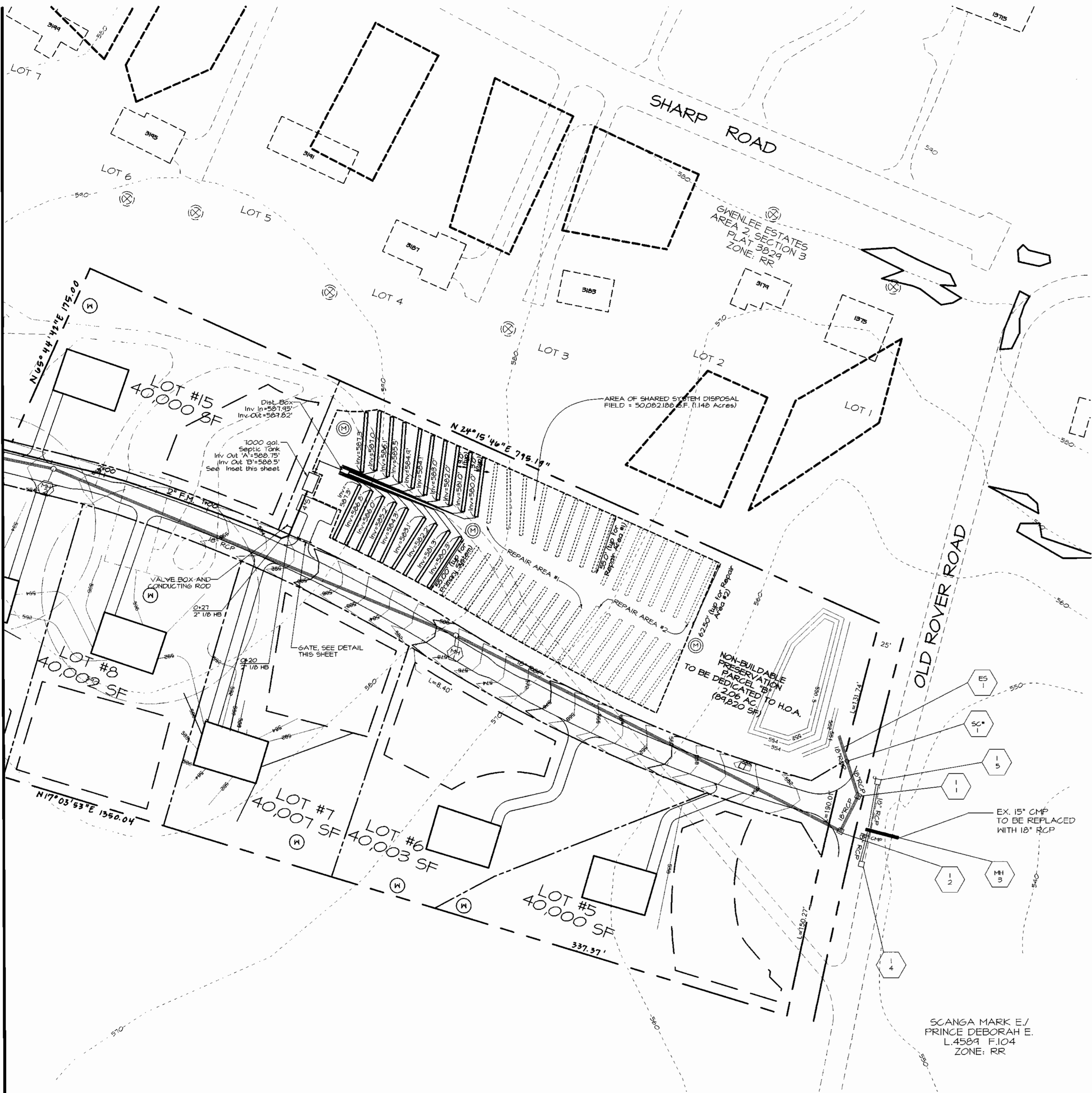
DES: R.SELL					
DRN: RJR					
CHK: R.SELL					
DATE: 7/00	BY	No.	REVISION	DATE	

**DETAIL SHEET**

**FRIENDSHIP LAKE SHARED SEPTIC SYSTEM**  
CONTRACT No. 50-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 7 OF 7

MATCHLINE SEE SHEET 1 OF 6



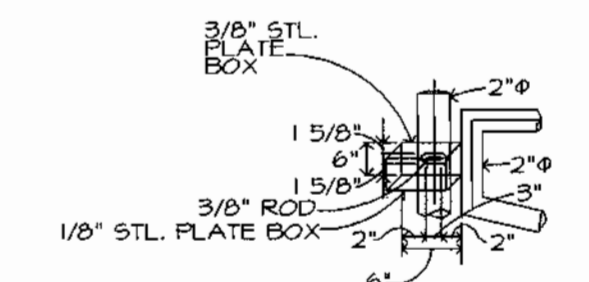
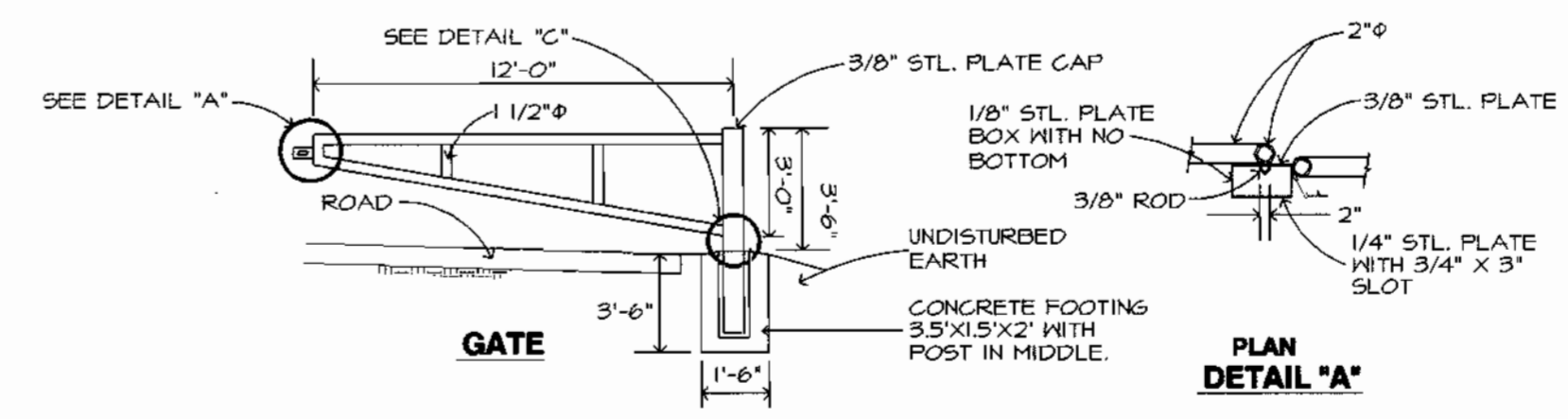
DISTRIBUTION SYSTEM LAYOUT  
 SCALE: 1"=10'

**LEGEND**

- EXISTING TREELINE
- PROPOSED SEPTIC FIELD
- EXISTING SEPTIC FIELD
- PROPOSED WELL
- PROPOSED MONITORING WELL
- EXISTING WELL
- EXISTING HOUSE
- PROPOSED HOUSE

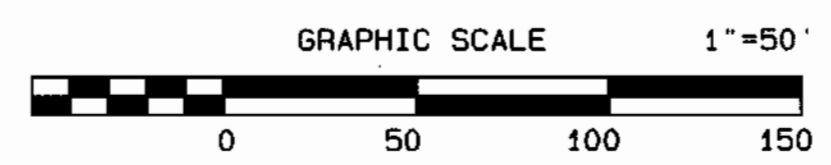
**NOTES:**

1. ALL METAL USED IN THE MANUFACTURE OF THE GATE TO BE HOT DIP GALVANIZED. ALL WELDS & PIPE TO BE PAINTED & TOUCHED UP IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
3. ALL PIPE TO BE SCHEDULE 40 STEEL. DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
5. CONTRACTOR SHALL PROVIDE ADDITIONAL 3" Ø POSTS WITH 3/8" ROD TO HOLD GATE IN AN OPEN POSITION 90° FROM THAT SHOWN BELOW.
6. GATE TO SWING OUTWARD TOWARDS EXISTING STEEL LIKE DRIVE.
7. WIDTH OF GATE NOT TO EXCEED 12 FEET.



**NOTE**

SCREENING OF THE SHARED SEPTIC AREA IS SHOWN ON SHEET II OF THE PLANS PREPARED BY MILDENBERG, BOENDER & ASSOC., INC. TITLED "ROAD CONSTRUCTION PLANS- FRIENDSHIP LAKES, LOT 5 THRU 15 AND PRESERVATION PARCEL 'A' & 'B'. A RESUBDIVISION OF FRIENDSHIP LAKES LOTS 1,2 AND 4".



APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.

*Don Kellerman*  
 COUNTY HEALTH OFFICER

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Robert Berman* 1-25-01  
 CHIEF, BUREAU OF UTILITIES

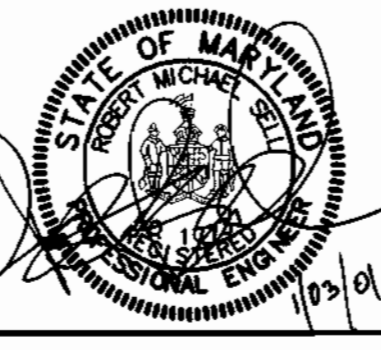
DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

*Chris ...* 2/8/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**McCRONE**  
 ENGINEERING & ENVIRONMENTAL SCIENCES  
 LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES

30 ROOSEVELT AVENUE  
 ANNAPOLIS, MARYLAND 21401  
 (410) 287-8821

ANNAPOLIS-CENTREVILLE-SALESBURY-ELKTON-PRINCE FREDRICK



DES:	R. Sell				
DRN:	T. Price				
CHK:	R. Sell				
DATE:	Jan 2001	BY:	No.	REVISION	DATE

**SHARED SEPTIC SYSTEM PLAN**

DATE: Jan 2001

JOB No. C1990484 FILE: G:\1990484 - Essex Property\Drawings\Friendship-graders.pro

**FRIENDSHIP LAKE SHARED SEPTIC SYSTEM**

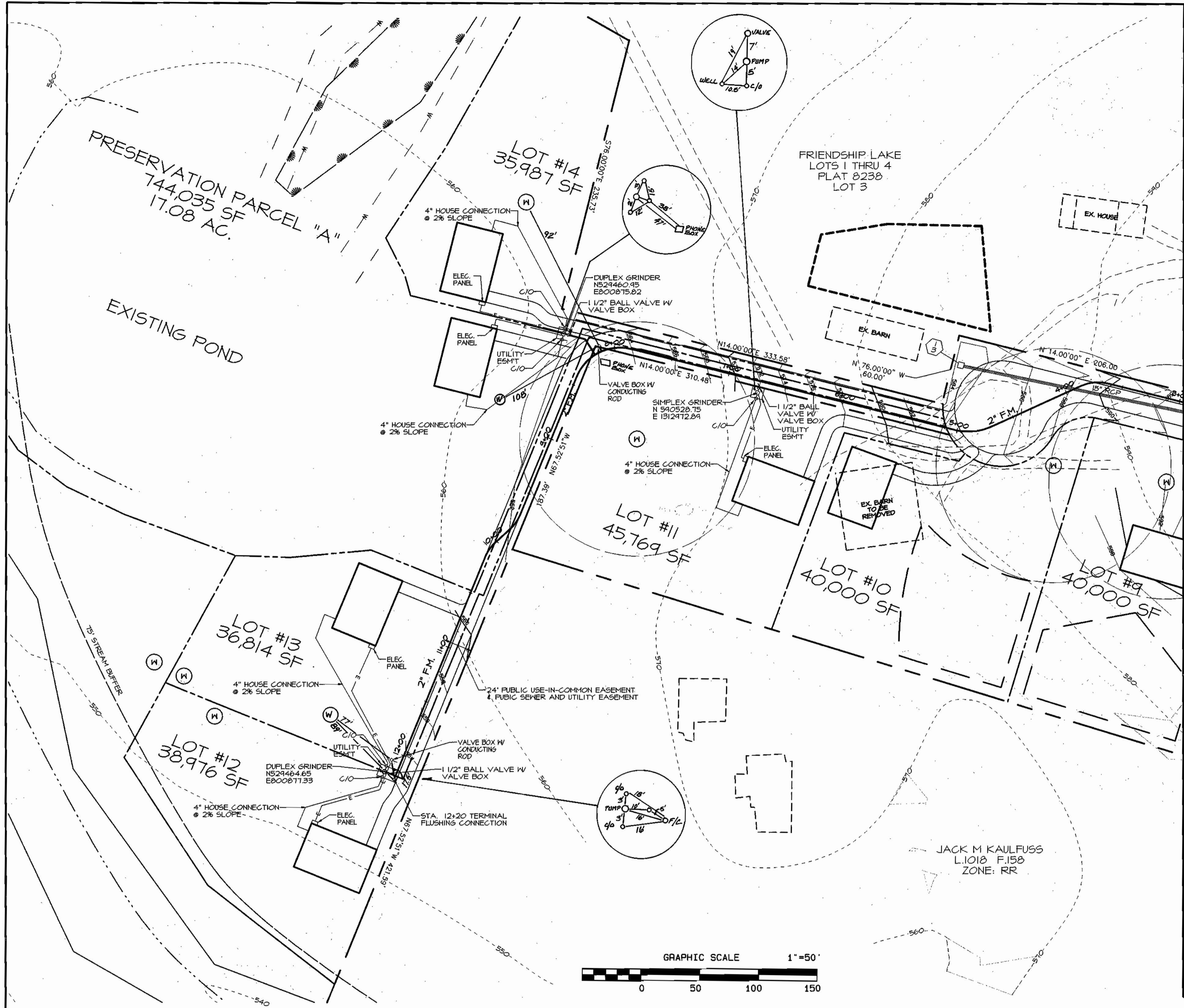
CONTRACT No. 50-3871-D

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 7





MATCHLINE SEE SHEET 2 OF 6

**NOTES:**

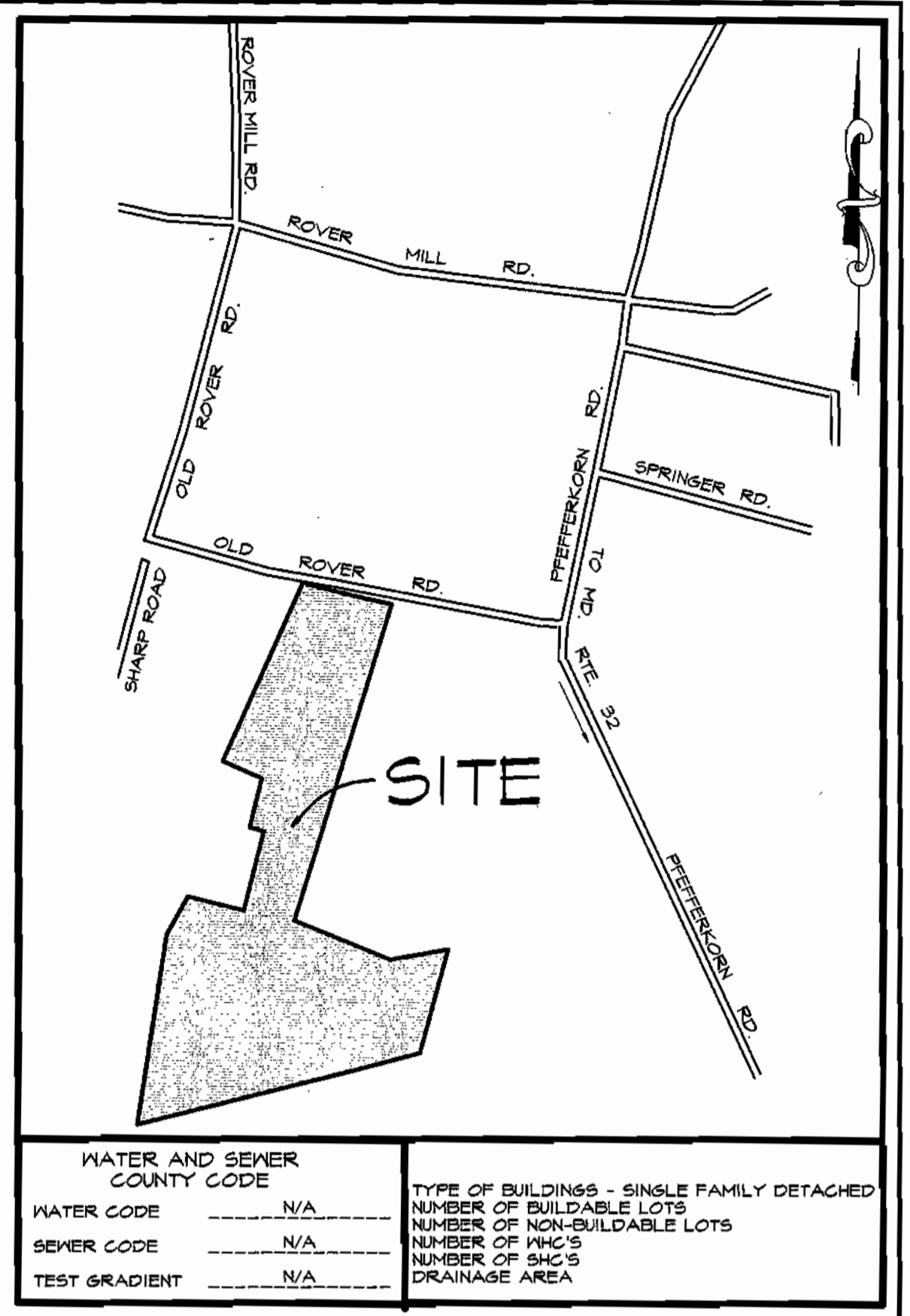
- A SEPTIC FEE IN THE AMOUNT OF \$100 PER LOT SERVICED BY THE COMMON SEPTIC SYSTEM SHALL BE PAID TO THE HOWARD COUNTY ENVIRONMENTAL HEALTH DEPARTMENT AT THE TIME OF THE SEPTIC CONSTRUCTION PERMIT ISSUANCE.
- WELLS ON THE LOTS SURROUNDING THE COMMON SHARED SEPTIC AREAS AND THE EXISTING WELLS SHALL BE TESTED FOR BACKGROUND LEVELS OF TOTAL DISSOLVED SOLIDS, AMMONIA NITROGEN, PHOSPHORUS, AND NITRATES PRIOR TO PUTTING THE SHARED SEPTIC SYSTEM IN SERVICE.
- THE WELLS TO BE TESTED AS FOLLOWS:  
 LOT 1 - 15725 OLD ROVER ROAD  
 LOT 2 - 8174 SHARP ROAD  
 LOT 3 - 8183 SHARP ROAD  
 LOT 4 - 8181 SHARP ROAD  
 LOT 5 - 8181 SHARP ROAD  
 LOT 6 - 8181 SHARP ROAD  
 LOT 7 - 8184 SHARP ROAD  
 LOT 8 - 8217 SHARP ROAD  
 LOT 9 - 8221 SHARP ROAD  
 15715 OLD ROVER ROAD
- COPIES OF ALL NOTIFICATIONS LETTERS TO HOMEOWNERS, ALL TEST RESULTS AND NON-RESPONSIVE ADDRESSES SHALL BE FORWARDED TO THE HOWARD COUNTY BUREAU OF UTILITIES PRIOR TO THE SYSTEM BEING PUT IN-SERVICE.
- THE BUILDER SHALL INSTALL BACKWATER VALVE AND RELIEF VENT ON THE SEWER SERVICE AT THE HOUSE AS REQUIRED BY THE PLUMBING INSPECTOR.
- INSTALLATION OF GRINDER PUMPS AND APPURTENANCES, AND THE 4" P.V.C. SEWER HOSE CONNES ARE TO BE INSTALLED BY THE DEVELOPER. THE DEVELOPER SHALL BE REQUIRED TO PREPURCHASE THE SPECIFIED GRINDER PUMPS AND PROVIDE STORAGE AT THE MANUFACTURER'S FACILITY UNTIL SUCH TIME AS THEY ARE INSTALLED AND PLACED TO DETAIL. NO PUMPS SHALL BE SET UNTIL THE HOUSE IS READY FOR U & O, AND ANY DEBRIS WHICH HAS ENTERED THE TANK PRIOR TO THE PUMP INSTALLATION SHALL BE PUMPED OUT AT THE DEVELOPER'S EXPENSE. THE DEVELOPER WILL RETAIN RESPONSIBILITY FOR INSTALLATION OF THE GRINDER PUMPS AND SHALL CONTRACT WITH THE MANUFACTURER TO PROVIDE START UP SERVICES, JUST PRIOR TO U & O. GRAVITY CONNECTION TO THE GRINDER PUMPS WILL NOT BE ALLOWED UNTIL ALL WORK INSIDE THE HOMES IS COMPLETE AND THE HOMES ARE READY FOR OCCUPANCY.
- SEWER FORCE MAIN SHALL BE SDR 21 P.V.C. WITH RUSH ON GASKETED JOINTS. PRESSURE SEWER LATERALS MAY BE SDR 21 P.V.C. WITH SOLVENT WELDED JOINTS. A 6 GAUGE TRACER WIRE SHALL BE WRAPPED AROUND OR ATTACHED TO THE P.V.C. PIPE.
- SEPTIC TANKS SHALL BE VACUUM OR WATER TESTED ON-SITE BY THE MANUFACTURER. SEPTIC TANK SHOP DRAWINGS FROM THE MANUFACTURER SHOULD BE SUBMITTED TO THE HOWARD COUNTY ENVIRONMENTAL HEALTH DEPARTMENT PRIOR TO ANY INSTALLATION OF THE SEPTIC TANKS.
- ALL PRESSURE SEWER IS TO BE PRESSURE TESTED ACCORDING TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
- OBSERVATION WELL TO BE INSTALLED AFTER TRENCH INSTALLATION IS COMPLETED SO THAT PH, TOTAL COLIFORMS, TOTAL NITROGEN, AND NITRATES CAN BE MONITORED.
- A STATE CONSTRUCTION PERMIT IS REQUIRED ON COLLECTION SYSTEM WHICH SERVES 10 OR MORE LOTS.
- THIS PLAN IS SUBJECT TO NATIONAL WETLANDS PERMIT NO. 41-NW-0104.
- ANY WELL WITHIN 50 FEET OF THE SEWER FORCE MAIN SHALL BE RELOCATED.

**GENERAL NOTES:**

- PART 1 - GENERAL**
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
  - ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
  - ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
  - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
  - CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR 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 OR DAMAGES SHD BE DEDUCTED FROM MONEY OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
  - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
  - WHERE TEST FITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL  $\odot$  AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR FITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST FITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
  - CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 STATE HIGHWAY ADMINISTRATION 581-8888  
 BALTIMORE GAS & ELECTRIC CO. CONTRACTOR SERVICES 850-4620  
 BALTIMORE GAS & ELECTRIC CO. UNDERGROUND DAMAGE CONTROL 787-9068  
 MIES UTILITY 1-800-854-7711  
 COLONIAL PIPELINE CO. 745-1540  
 HOWARD CO. DEPT OF PUBLIC WORKS BUREAU OF UTILITIES 915-4400  
 HOWARD CO. ENVIRONMENTAL HEALTH DEPT. 410-511-2640
  - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
  - CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
  - PLACE REGULATION "MEN WORKING" AND WARNING SIGNS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY MAINTENANCE OPERATIONS.
  - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 815-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR SPRINGS/JACKING OPERATION IN COLONY AREAS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPM REQUIREMENTS PER SECTION 15.14(A) OF THE HOWARD COUNTY CODE.

**PART 3 - SEWER**

- ALL SEWER MAINS SHALL BE DIP AND P.V.C. UNLESS OTHERWISE NOTED.
  - THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
  - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
  - FORCE MAINS SHALL BE SDR 21 P.V.C.
  - MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
  - MANHOLES DESIGNATED "I.T." IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND GROUND DETAIL 5852 HUBBER WATER TIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
  - HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVICE.
- TRENCH REQUIREMENTS:**  
 THE FOLLOWING 5 LOTS ARE TO BE SERVED BY THE SHARED SYSTEM: LOTS 11, 12, 13, 14 AND THE PRESERVATION PARCEL "A"  
 \*USE 4 BEDROOM/HOUSE  
 600 GPD PER HOUSE  
 600 GPD/HOUSE X 5 HOUSES = 3000 GPD  
 3000 GPD / 50 FT. = 60 GPD/FT. X 30 FT. = 1800 L.F. EFFECTIVE AREA  
 3000 SQ. FT. / 3 FT. WIDE TRENCH = 1000 L.F. (REQUIRED)  
 PROVIDED: 1045 L.F.



**VICINITY MAP**  
SCALE: 1"=600'

**NOTE:**  
THE CONTRACTOR SHALL NOTIFY HOWARD COUNTY HEALTH DEPARTMENT AT (410) 815-2640 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY PRESSURE TEST OR PRESSURE SEWERS, AND ANY SEPTIC TANKS VACUUM OR WATER TESTING IS PERFORMED.

ITEMS	QUANTITIES ESTIMATED	QUANTITIES AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
SIMPLEX GRINDER PUMP	1 EA.			
DUPLEX GRINDER PUMP	2 EA.			
1 1/2" HOUSE CONNECTION	22 LF			
2" FORCE MAIN	1220 LF			
TERMINAL FLUSHING CONNECTION	1 EA.			
EFFLUENT FILTER	1 EA.			
7000 GALLON SEPTIC TANK	1 EA.			
4" SEWER PIPE	1205 LF			
8" SEWER PIPE	20 LF			
SPLITTER BOX	1 EA.			
SEPTIC TRENCHES	1045 LF			

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

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14, PRESERVATION PARCEL "A"  
 HOWARD COUNTY HEALTH DEPT.  
*Dr. Michael...*  
 COUNTY HEALTH OFFICER  
 DATE: 2/5/01

HOWARD SOIL CONSERVATION DISTRICT.  
 REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
*Jim Morales* 2/5/01 DATE  
 NATURAL RESOURCES CONSERVATION SERVICE  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Shelly...* 2/5/01 DATE  
 HOWARD SOIL CONSERVATION DISTRICT  
 SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 214 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER ROAD CONSTRUCTION PLANS 1776-BE P-01-12

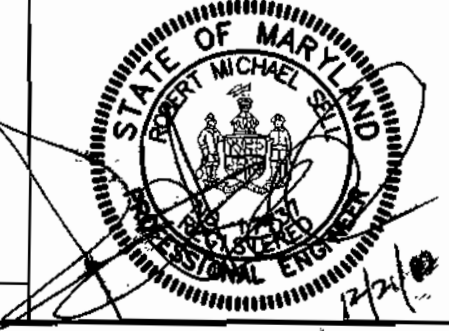
SHEET INDEX	
NO.	DESCRIPTION
1	SHARED SEPTIC SYSTEM PLAN
2	SHARED SEPTIC SYSTEM PLAN
3	PROFILES
4	DETAILS
5	DETAILS
6	DETAILS
7	DETAILS

SEWER MANHOLE LOCATION DATA	
SH#	LOCATION
1	N 890415.14 E 800623.05

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Ruth...* 1-25-01  
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND  
*...* 2/6/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

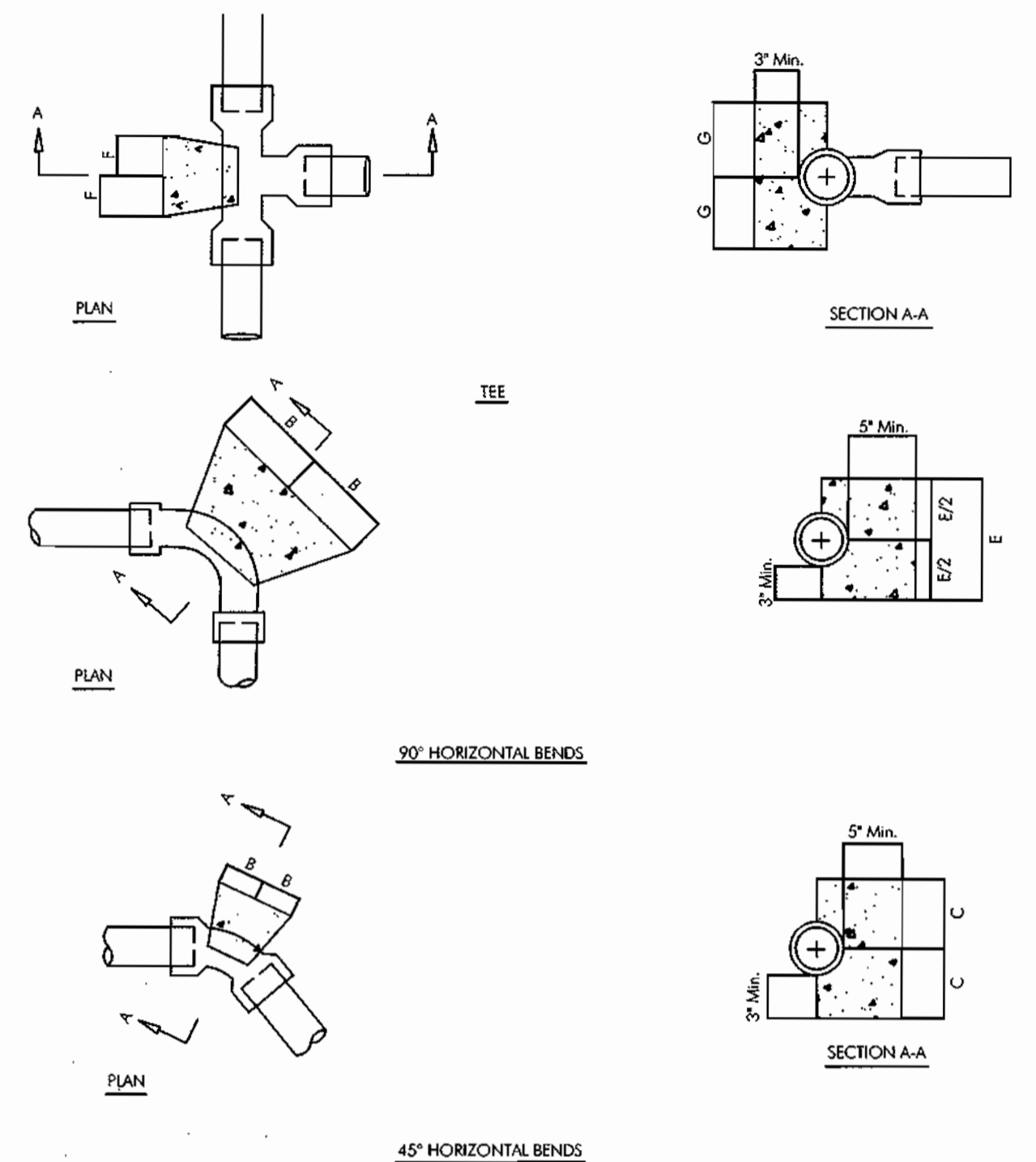
**McCRONE**  
 ENGINEERING & ENVIRONMENTAL SCIENCES  
 LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES  
 20 RIDGEWAY  
 ANNAPOLIS, MARYLAND 21403  
 (410) 267-8621  
 ANNAPOLIS-CENTREVILLE-SALISBURY-ELKTON-PRINCE FREDERICK



DES:	R. Sell				
DRN:	T. Price				
CHK:	R. Sell				
DATE:	Dec 2000	BY:	No.	REVISION	DATE

**TITLE SHEET;**  
**INDEX OF DRAWINGS,**  
**GENERAL NOTES,**  
**SHARED SEPTIC SYSTEM PLAN**

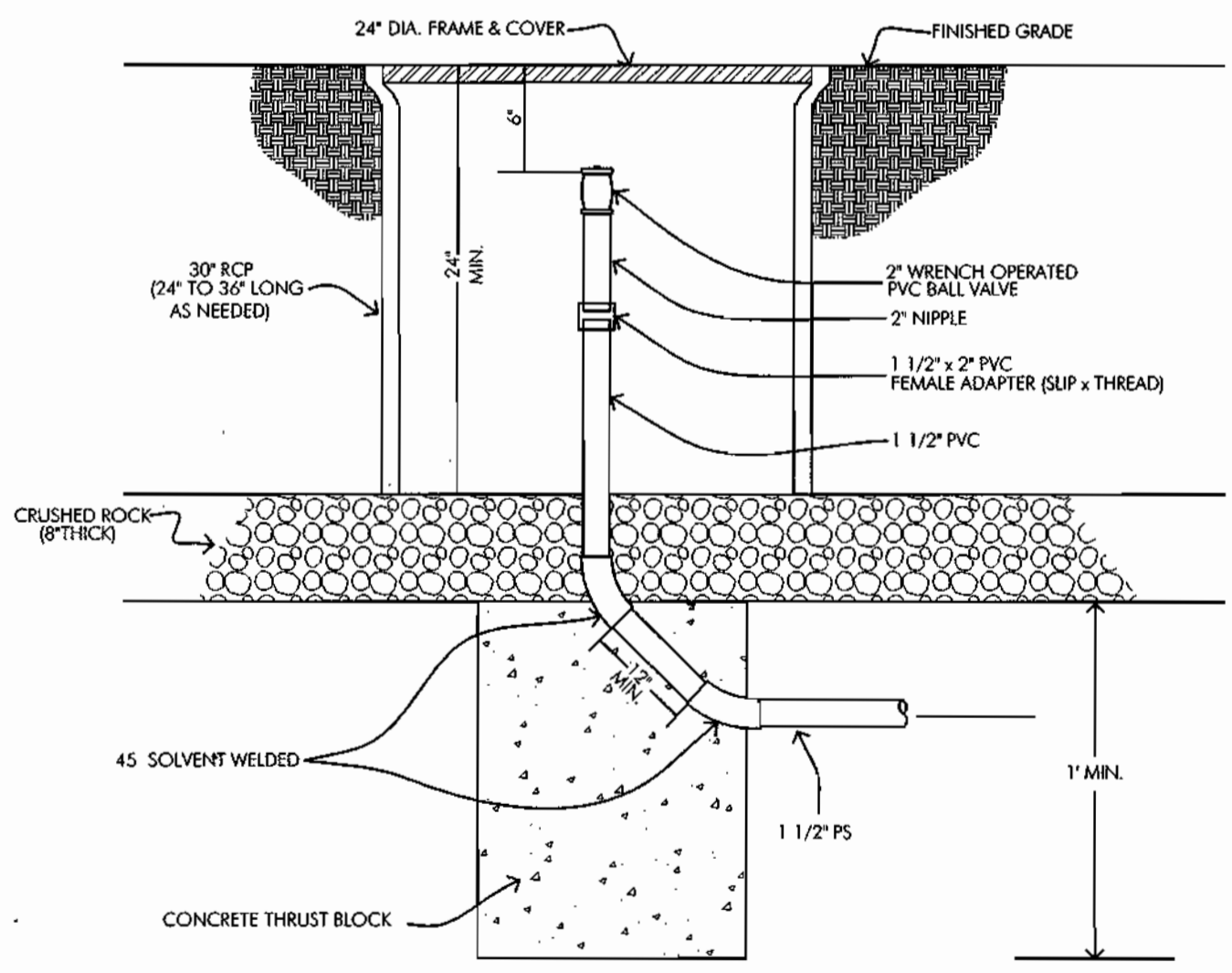
**FRIENDSHIP LAKE**  
**SHARED SEPTIC SYSTEM**  
 CONTRACT No. 50-3871-D  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 1 OF 7  
 PLOTTED Fri 22 Dec 2000 0:15:05PM



PIPE SIZE	B	C	D	E	F	G
1 1/2" OR 2"	4 1/2"	4 1/2"	5"	5"	4 1/2"	4"
2"	5"	5"	7"	7"	5"	5"

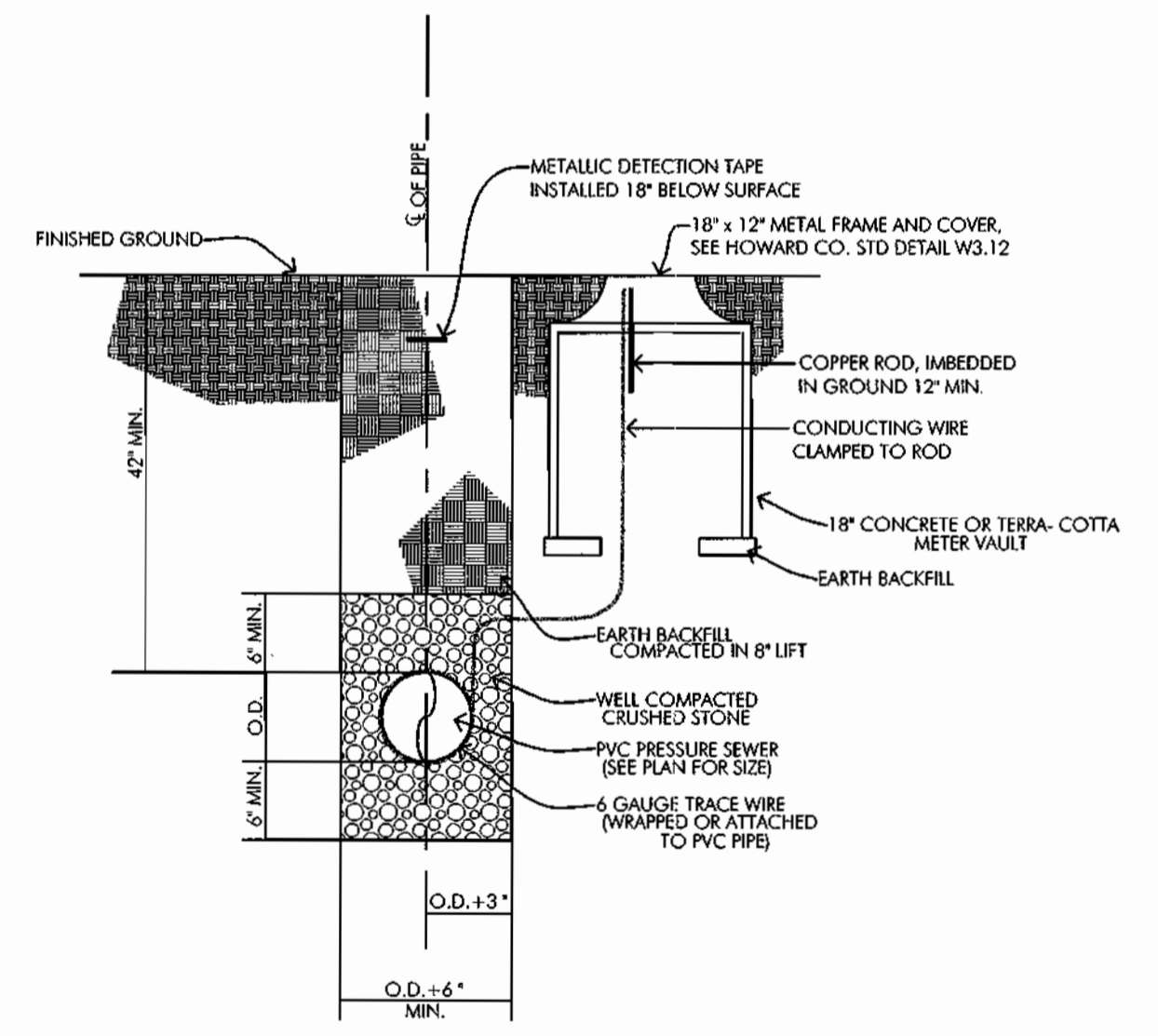
- NOTES:
1. Fc=3000 P.S.I. @ 28 DAYS
  2. CARRY ALL BEARING SURFACES TO UNDISTURBED GROUND OR FIRM SUBGRADE.
  3. BUTTRESS SIZES FOR 150 P.S.I. AND SOIL WITH C(3) = 2000 P.S.I.
  4. DO NOT ENCASE JOINTS

NOT TO SCALE



**TERMINAL FLUSHING CONNECTION**

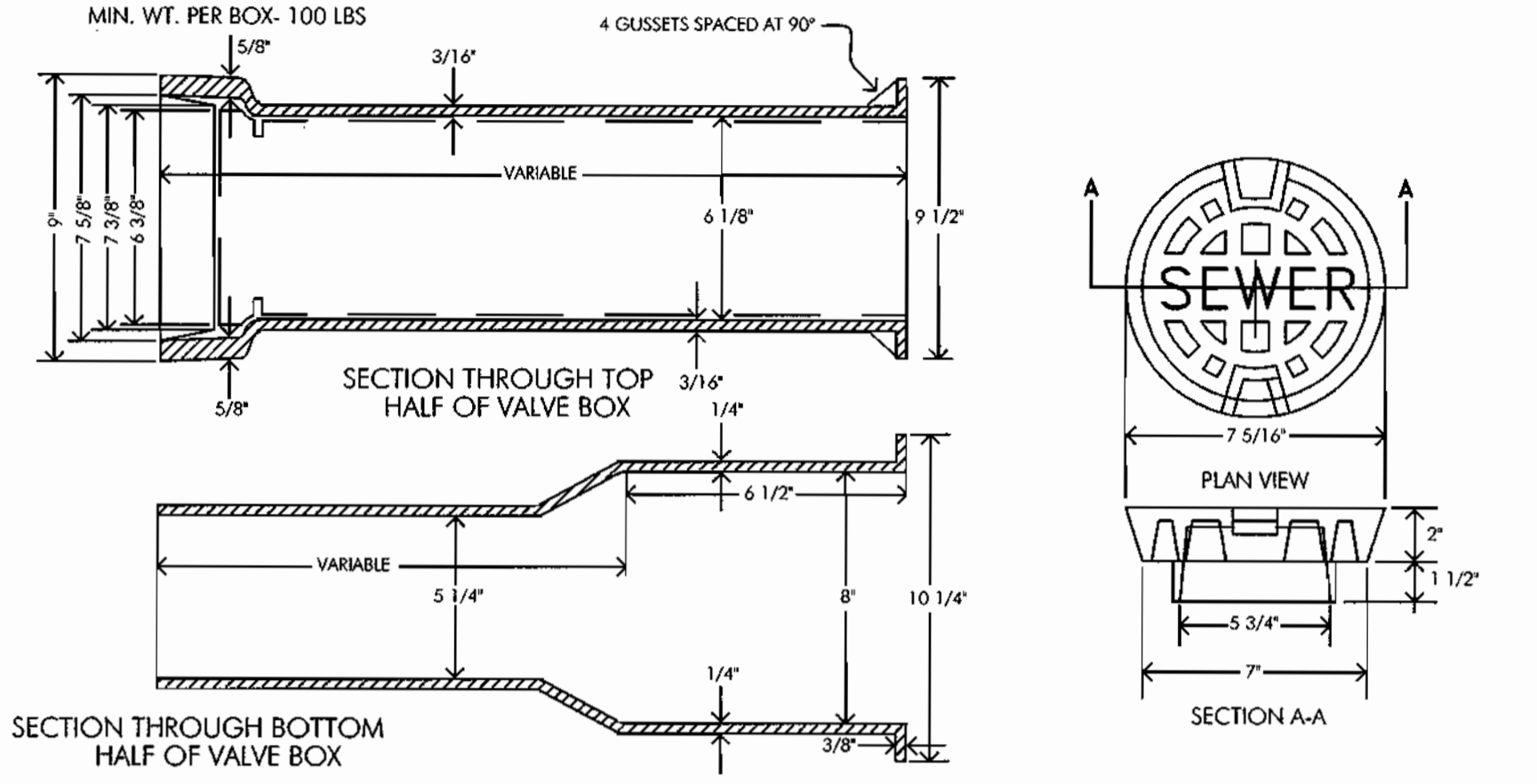
NOT TO SCALE



**PRESSURE SEWER TRENCH, BEDDING & CONDUCTING ROD CABLE BOX LOCATION DETAIL**

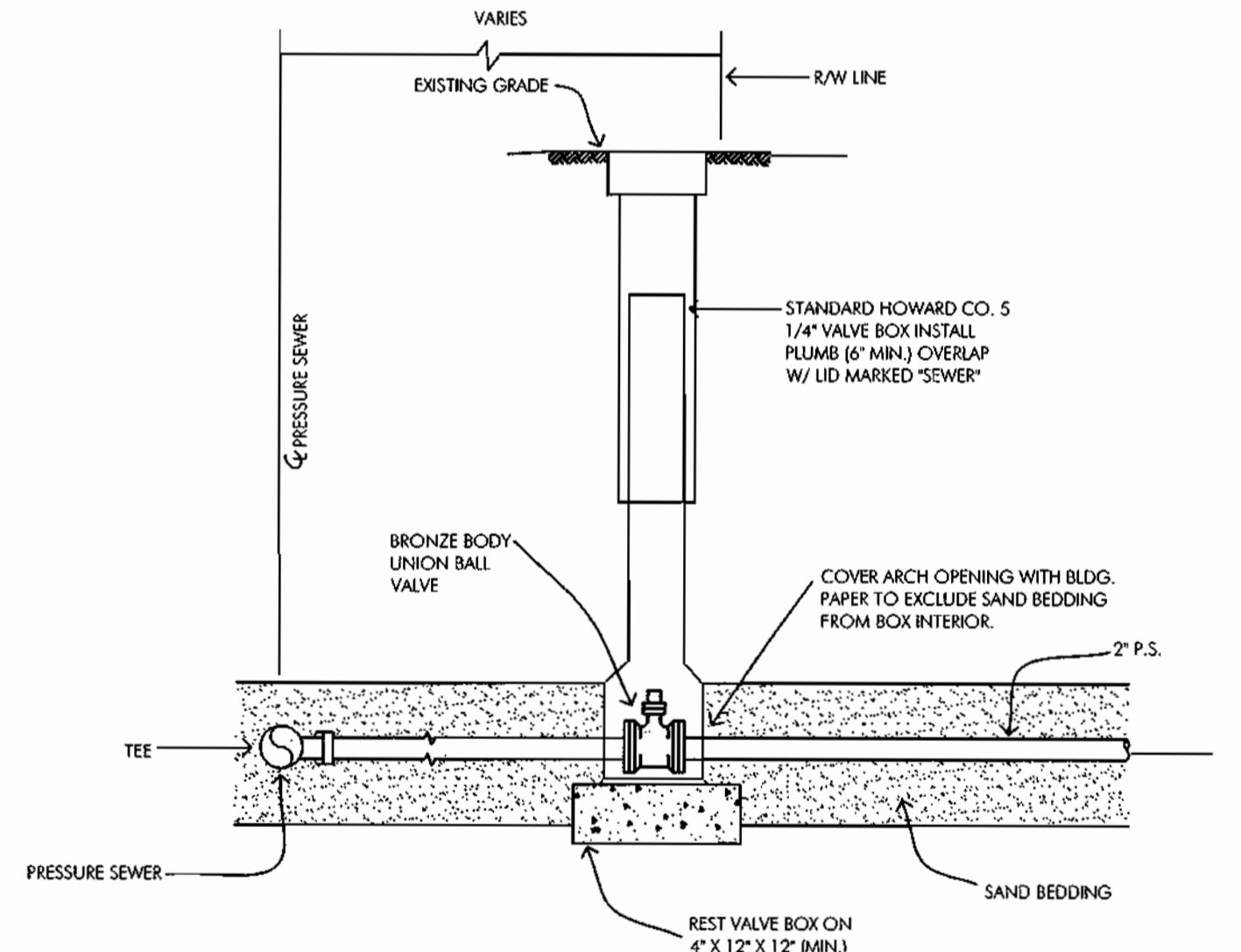
NOT TO SCALE

- SPECIFICATIONS:
1. CAST IRON-SLIDING TYPE
  - MIN. T.S. 30,000 PSI
  - TOP SECTION- 16"
  - BOTTOM SECTION 18"
  - BOXES ADJUSTABLE 34" TO 44"
  - TOP SECTION- 16"
  - BOTTOM SECTION 30"
  - MIN. WT. PER BOX- 100 LBS



**ADJUSTABLE VALVE BOX ROUND HEAD SLIDING TYPE**

NOT TO SCALE



**UNION BALL VALVE ASSEMBLY**

NOT TO SCALE

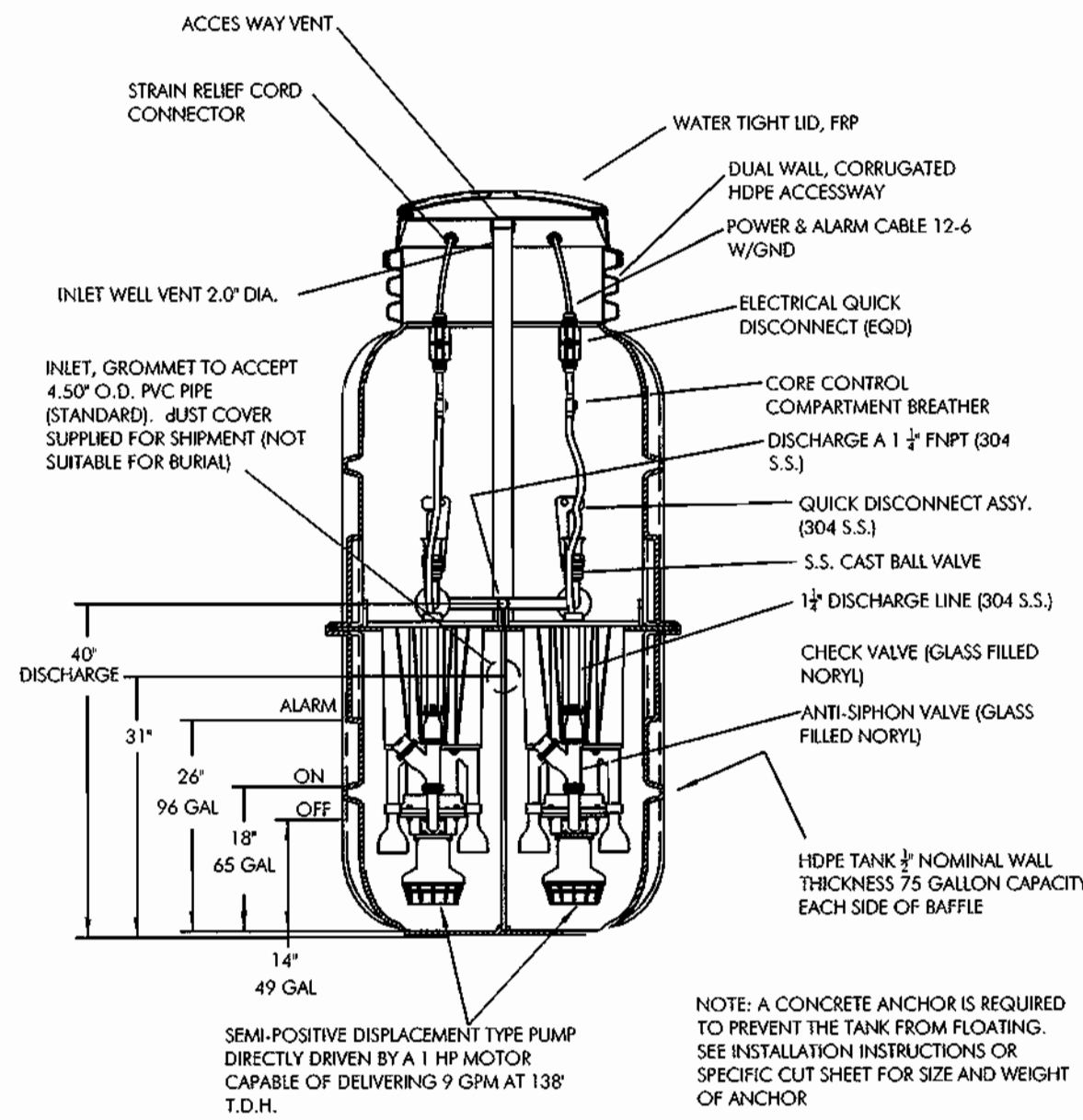
- NOTES:
1. MAINTAIN 4" MIN. COVER OVER PRESSURE SEWER.
  2. CONCRETE SLAB ON UNDISTURBED EARTH OR FIRM SUBGRADE.

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.

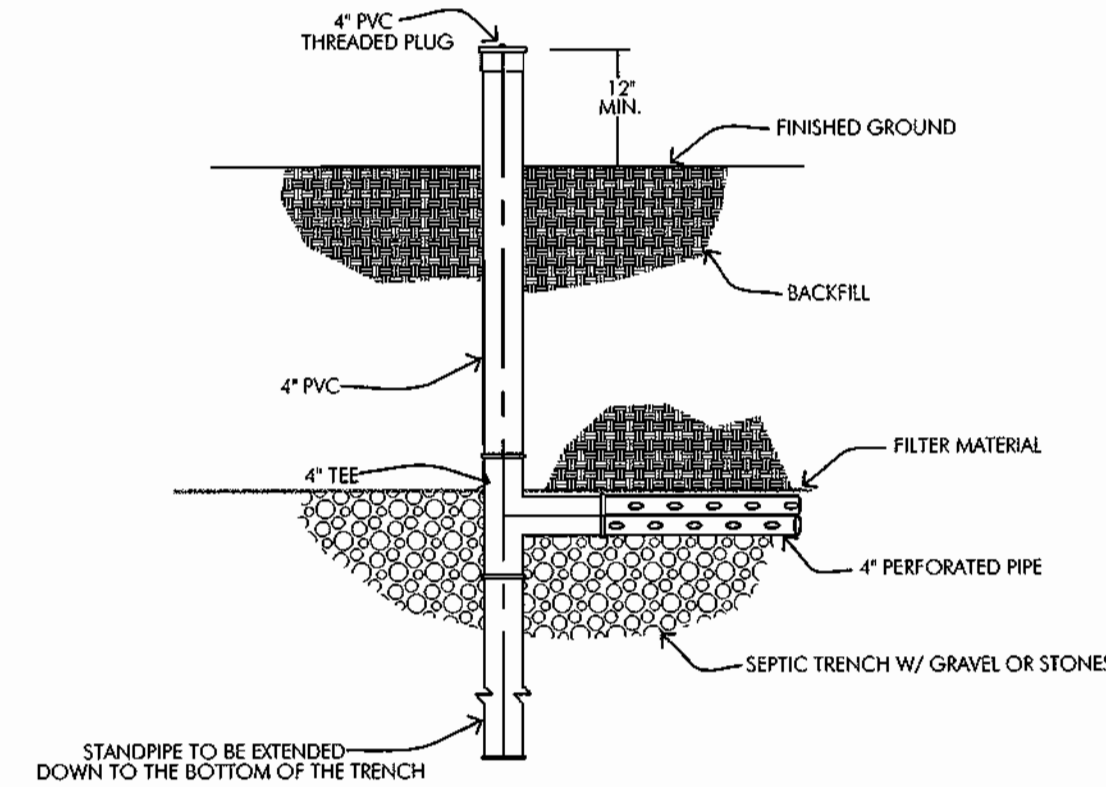
*David M. ...* 01/10/01  
COUNTY HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert ...</i> 1-25-01 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND <i>...</i> 2/10/01 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	<b>McCRONE</b> ENGINEERING ENVIRONMENTAL SCIENCES LAND PLANNING & SURVEYING CONSTRUCTION SERVICES 20 HOSLEY AVENUE ANNAPOLIS, MARYLAND 21401 (410) 297-9021 ANNAPOLIS-COCTRILLE-SALESBURY-ELIXTON-PRINCE FREDERICK	DES: R. SELL DRN: R.J.R. CHK: R. SELL DATE: 1/00	<table border="1"> <tr> <th>BY</th> <th>No.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	BY	No.	REVISION	DATE					<b>DETAIL SHEET</b>	<b>FRIENDSHIP LAKE SHARED SEPTIC SYSTEM</b> CONTRACT No. 60-3871-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 4 OF 7
BY	No.	REVISION	DATE												

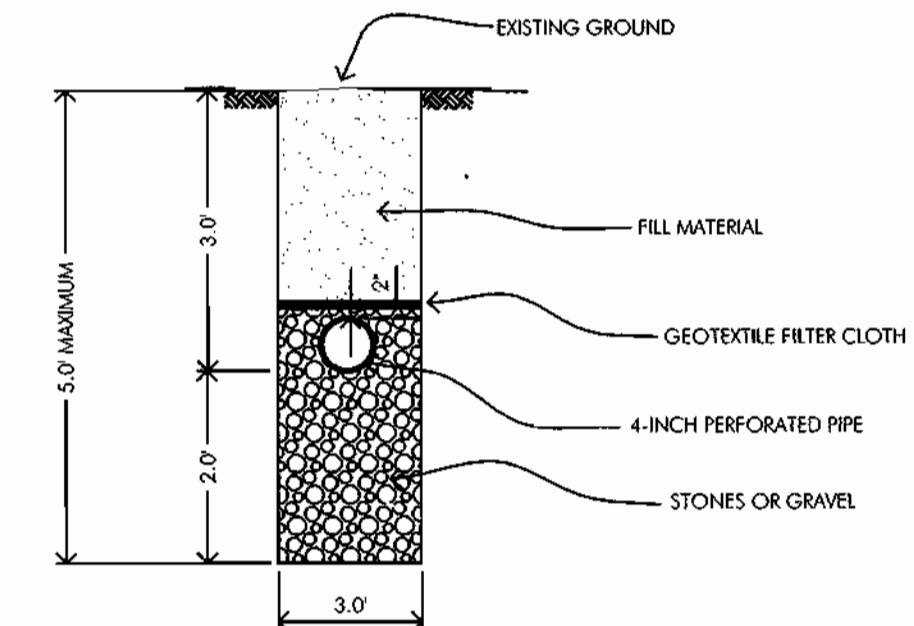
APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14; PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*Dan L. Waters* 01/10/01  
 COUNTY HEALTH OFFICER (M.D.) DATE



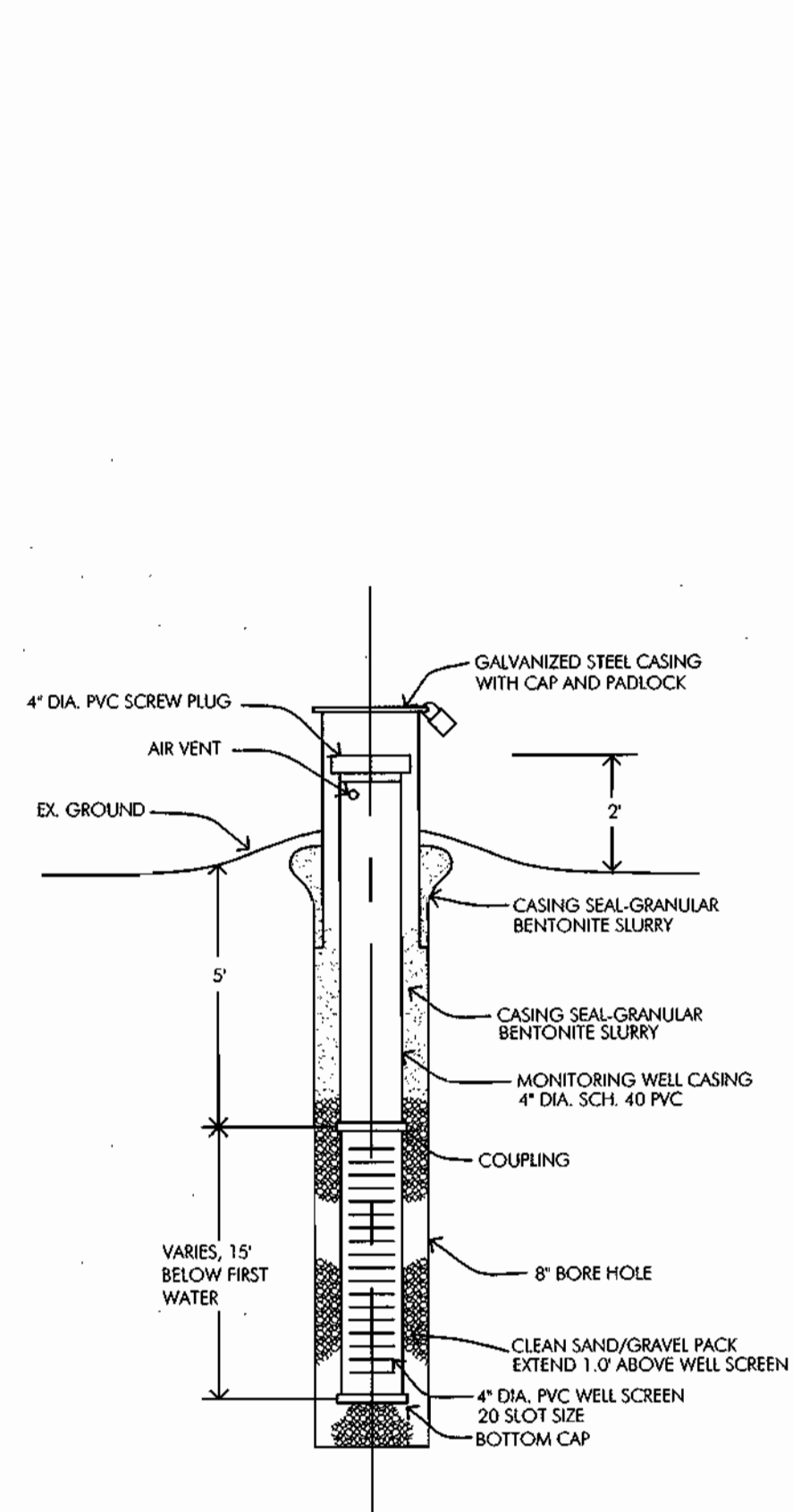
**DUPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2014-160**  
 NOT TO SCALE



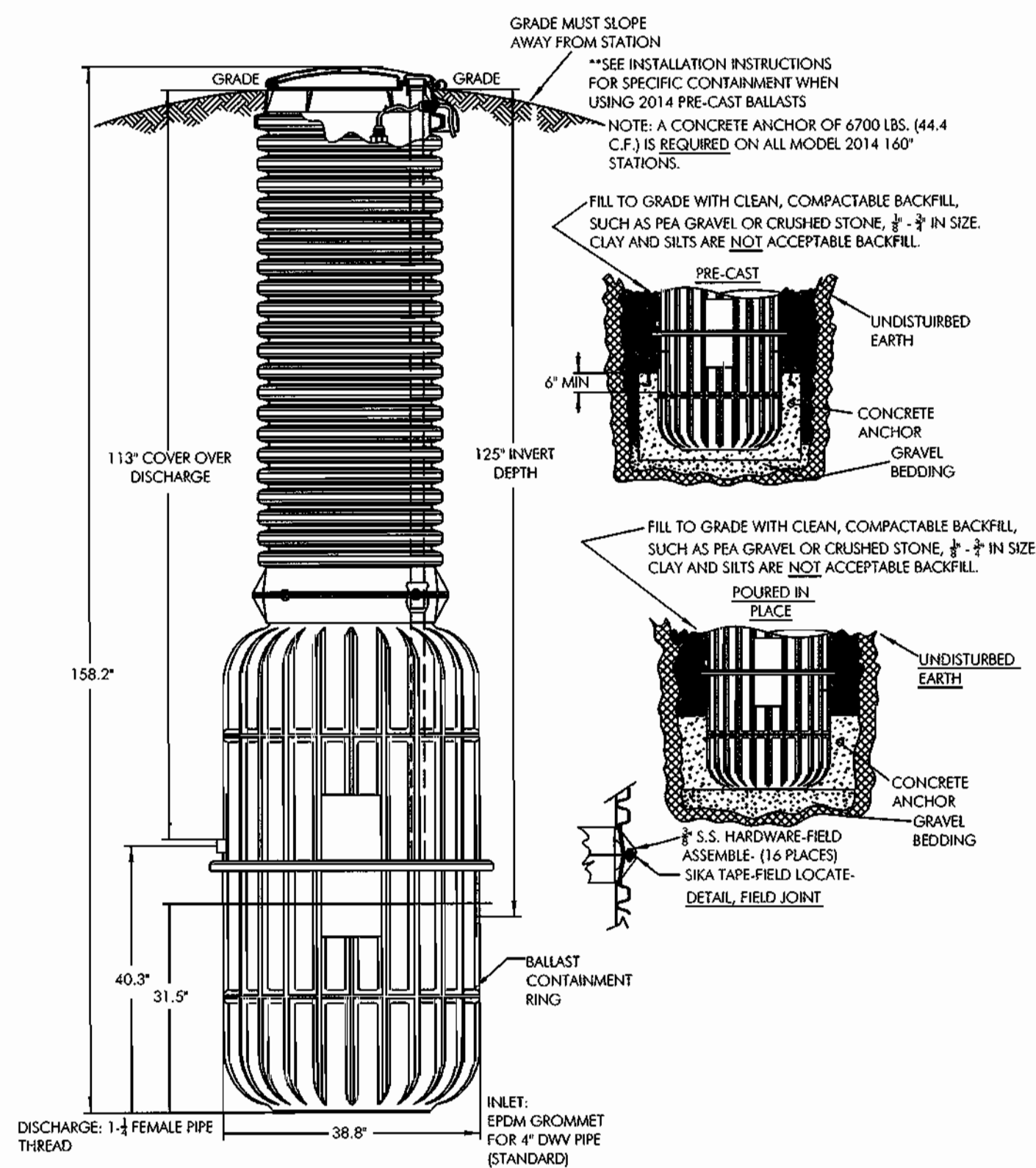
**DISTRIBUTION LATERAL TERMINATION DETAIL**  
 NOT TO SCALE



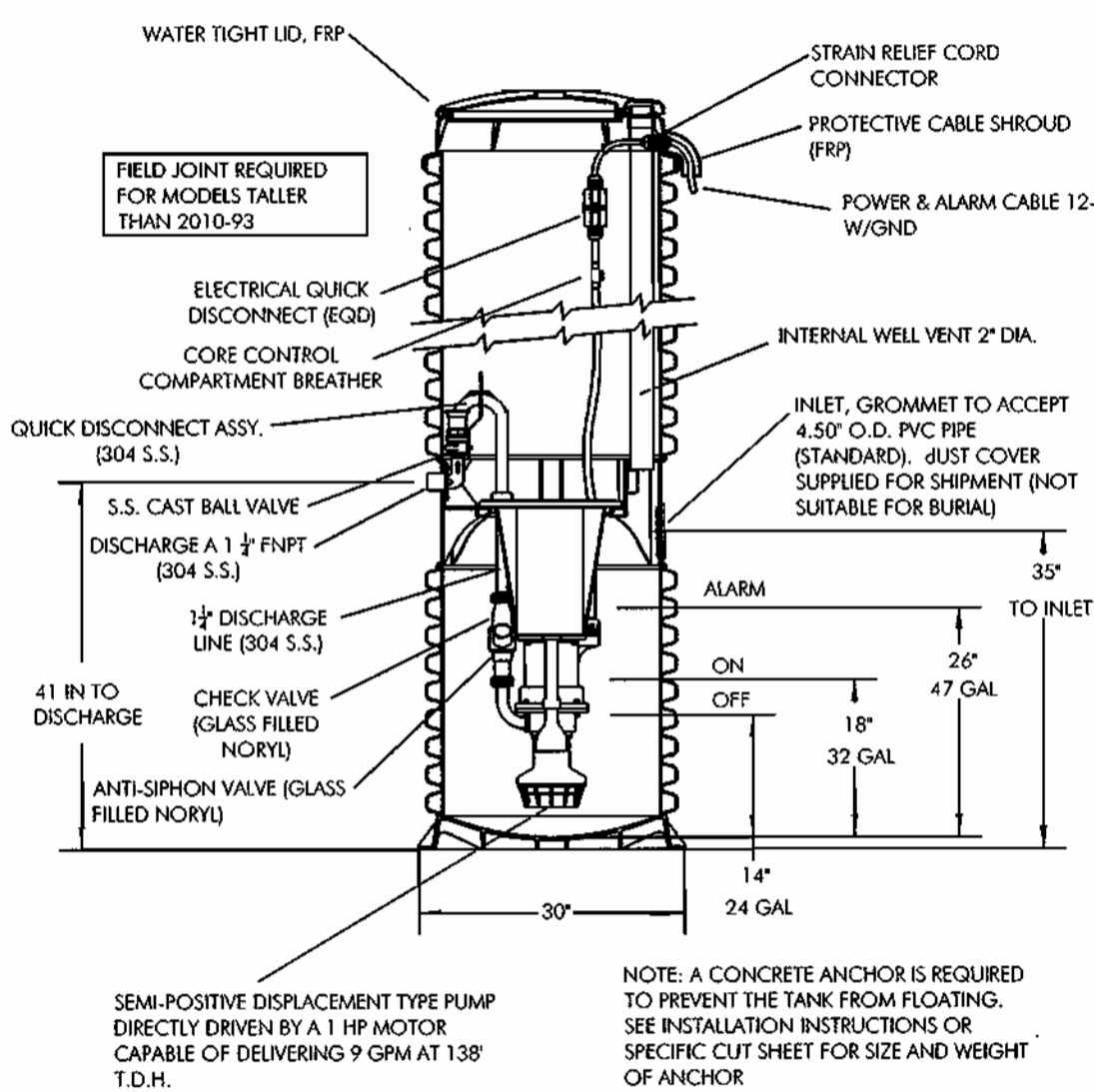
**SEPTIC TRENCH DETAIL**  
 NOT TO SCALE



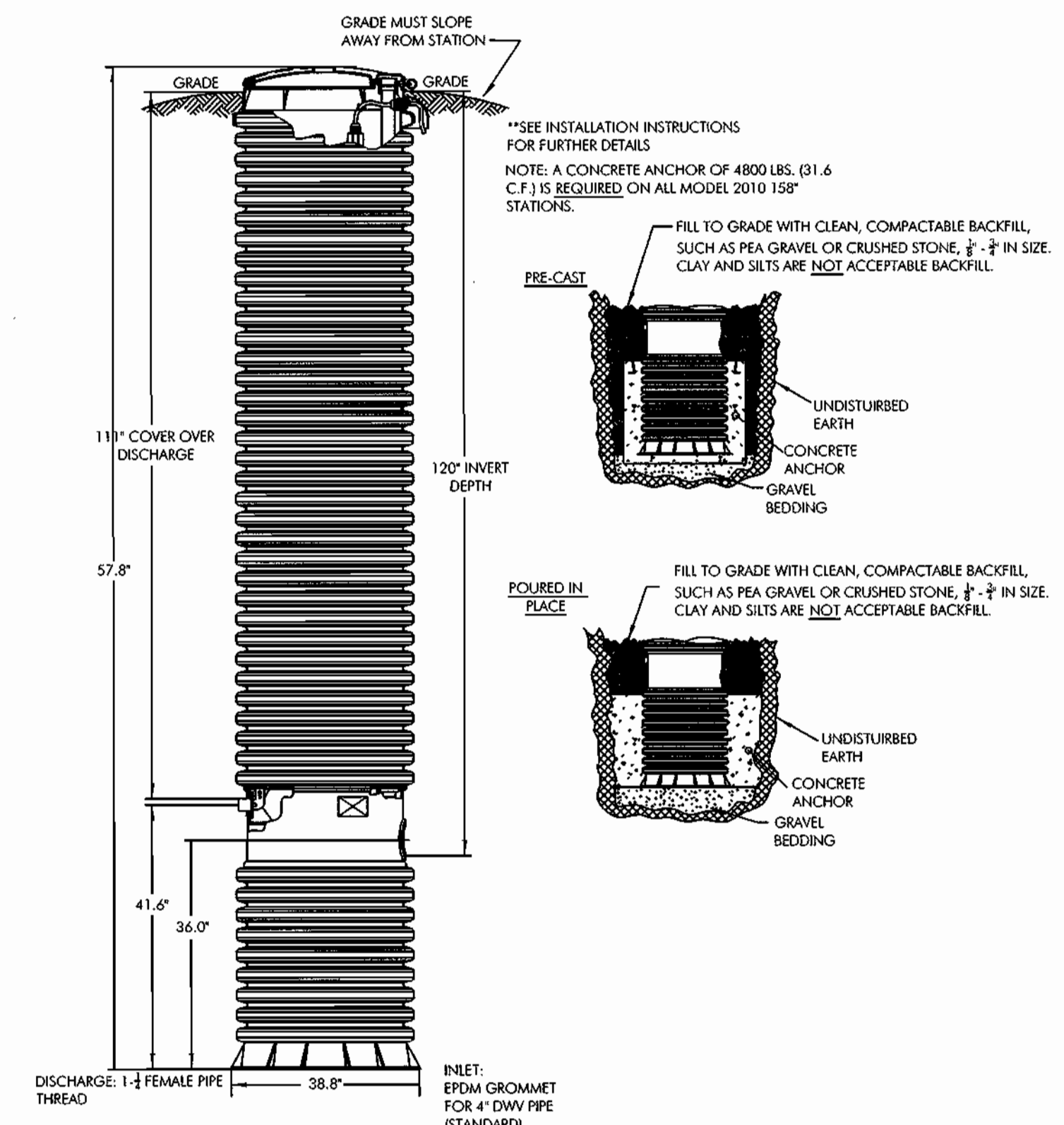
**MONITORING WELL DETAIL**  
 NOT TO SCALE



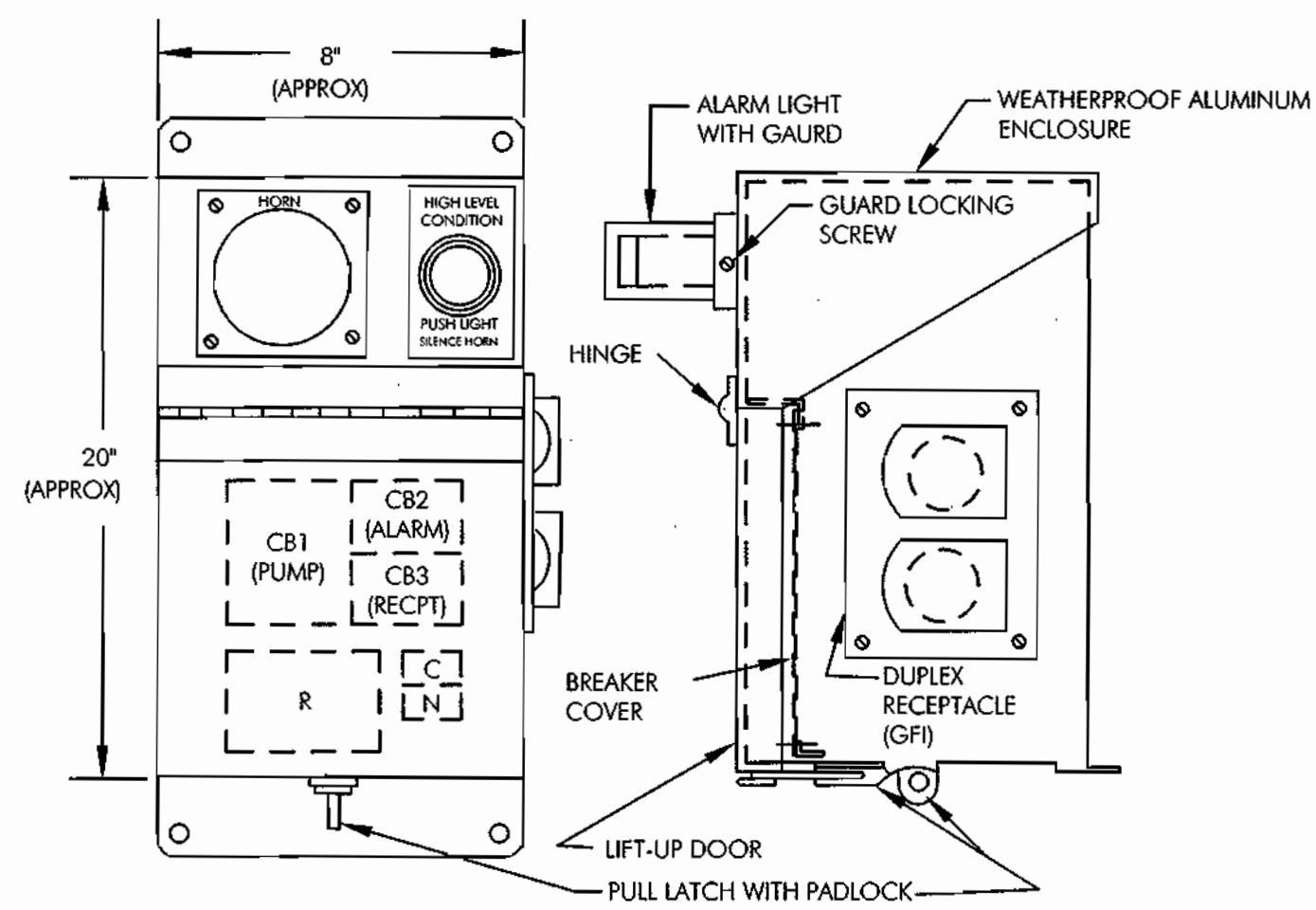
**DUPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2014-160**  
 NOT TO SCALE



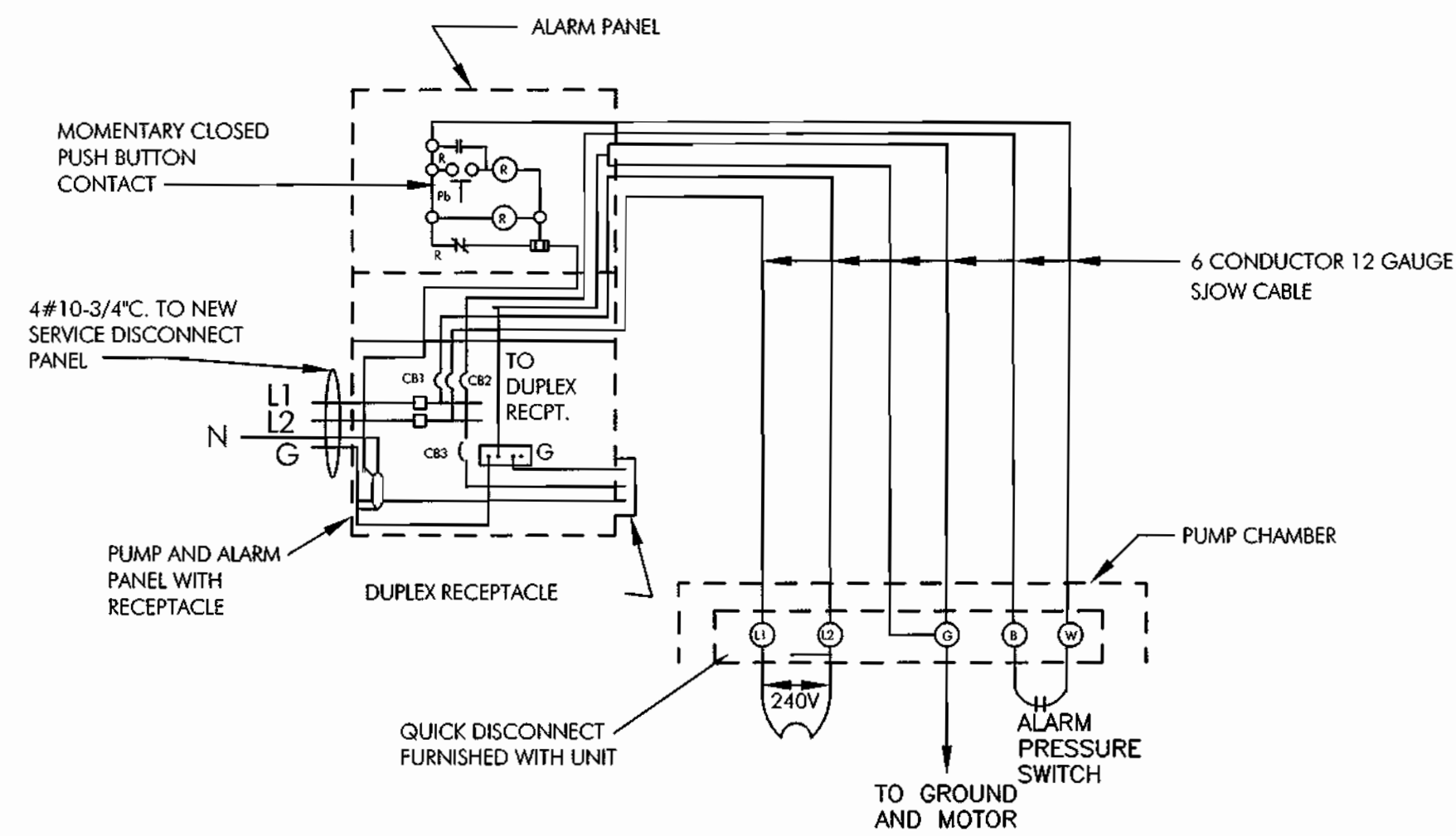
**SIMPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2010-158**  
 NOT TO SCALE



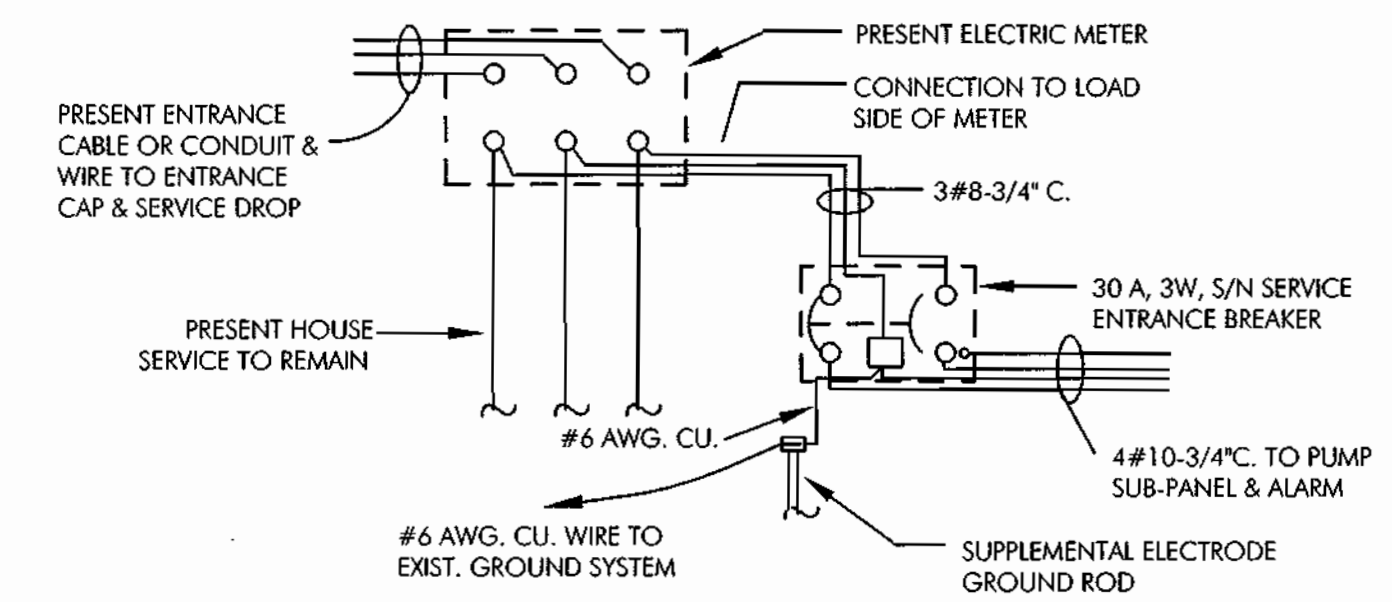
**SIMPLEX ENVIRONMENT ONE GRINDER PUMP MODEL 2010-158**  
 NOT TO SCALE



**GRINDER PUMP CONTROL & ALARM PANEL**  
NOT TO SCALE

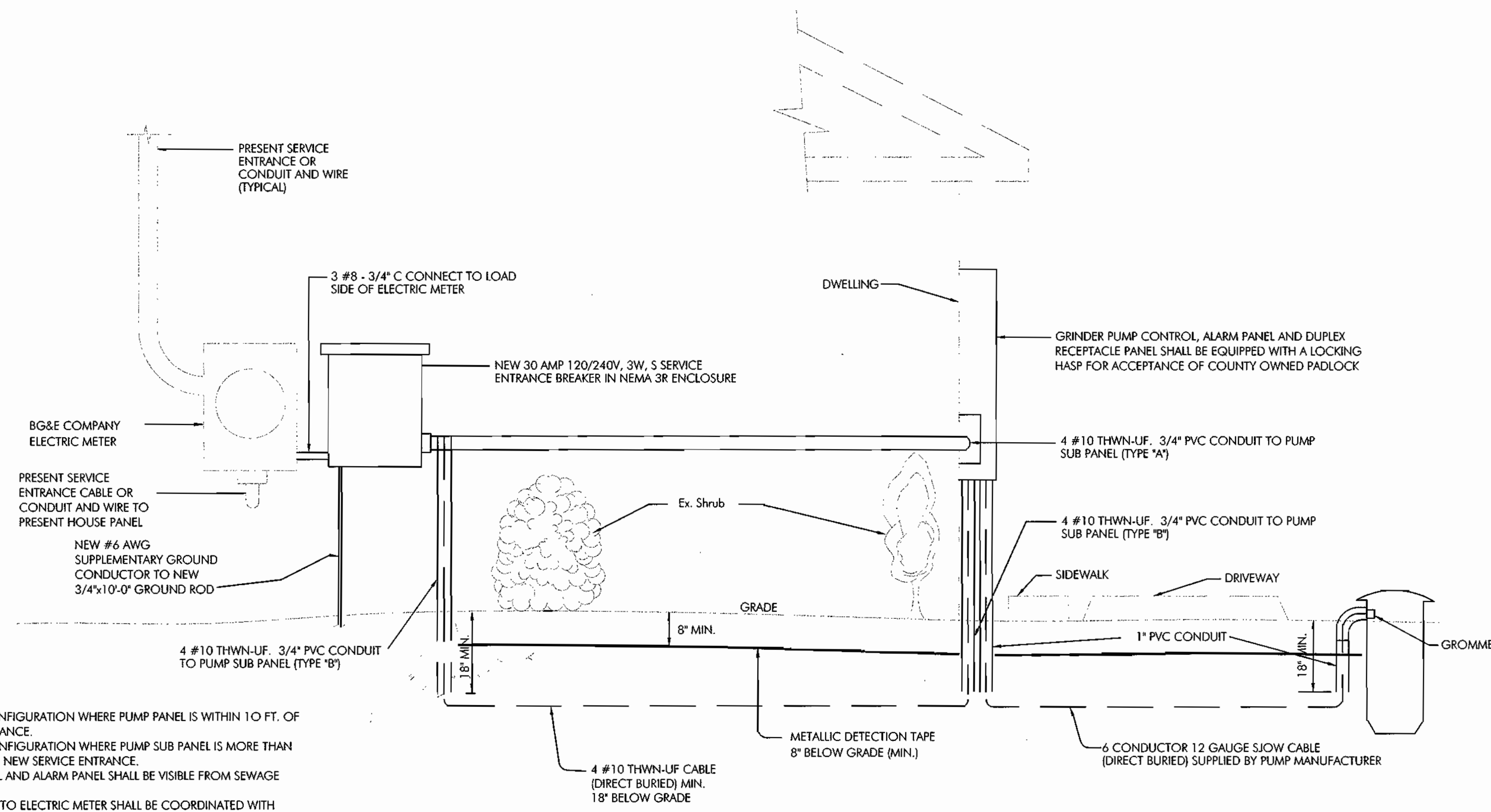


**SEWAGE GRINDER PUMP WIRING DIAGRAM (240 v) TYPICAL EACH PUMP UNIT**  
NOT TO SCALE



NOTE:  
30A BREAKER TO BE EQUIPPED WITH A NON-CASE HARDENED PADLOCK THAT CAN BE CUT WITH "BOLT CUTTERS".

**NEW SERVICE ENTRANCE WIRING DIAGRAM**  
NOT TO SCALE



1. USE TYPE "A" CONFIGURATION WHERE PUMP PANEL IS WITHIN 10 FT. OF NEW SERVICE ENTRANCE.
2. USE TYPE "B" CONFIGURATION WHERE PUMP SUB PANEL IS MORE THAN 10 FT. AWAY FROM NEW SERVICE ENTRANCE.
3. PUMP SUB PANEL AND ALARM PANEL SHALL BE VISIBLE FROM SEWAGE GRINDER PUMP.
4. CONNECTIONS TO ELECTRIC METER SHALL BE COORDINATED WITH POWER COMPANY.
5. ALL PVC CONDUIT SHALL TERMINATE 18" BELOW GROUND.
6. PROVIDE LOCKING HASP ON SERVICE BREAKER FOR ACCEPTANCE OF COUNTY OWNED LOCK.

**TYPICAL GRINDER PUMP ELECTRIC POWER**  
NOT TO SCALE

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS II THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*Dianna Harty* 01/19/01  
COUNTY HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert B. Berman* 1-25-01  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*John J. ...* 2/6/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**McCRONE**  
ENGINEERING ENVIRONMENTAL SCIENCES  
LAND PLANNING & SURVEYING CONSTRUCTION SERVICES  
200 REGENCY AVENUE  
ANNAPOLIS, MARYLAND 21401  
(410) 287-0821  
ANNAPOLIS-CENTREVILLE-SALISBURY-ELKTON-PRINCE FREDERICK



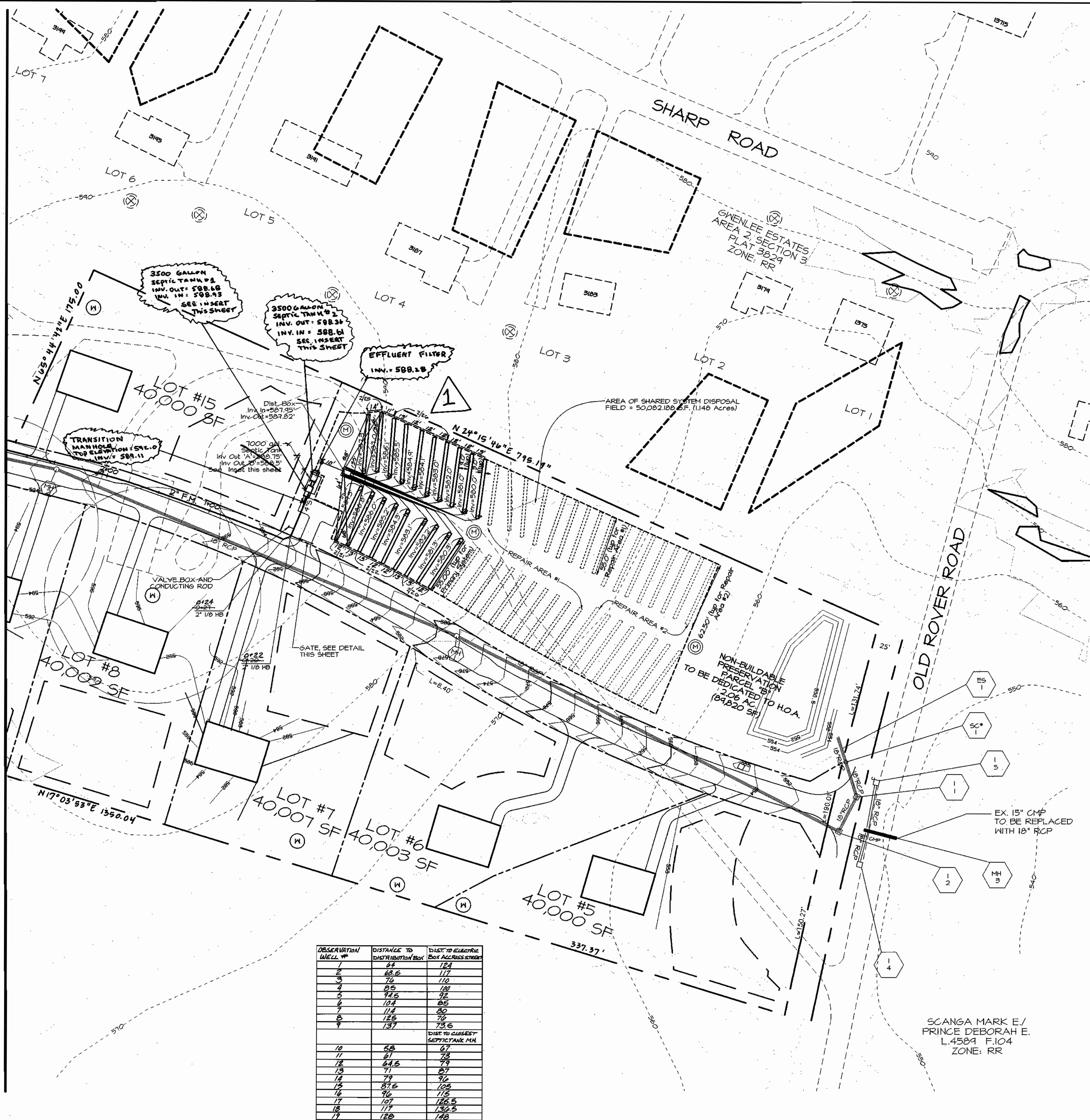
DES: R.SELL					
DRN: R.R					
CHK: R.SELL					
DATE: 7/00	BY	No.	REVISION	DATE	

**DETAIL SHEET**

**FRIENDSHIP LAKE SHARED SEPTIC SYSTEM**  
CONTRACT No. 60-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

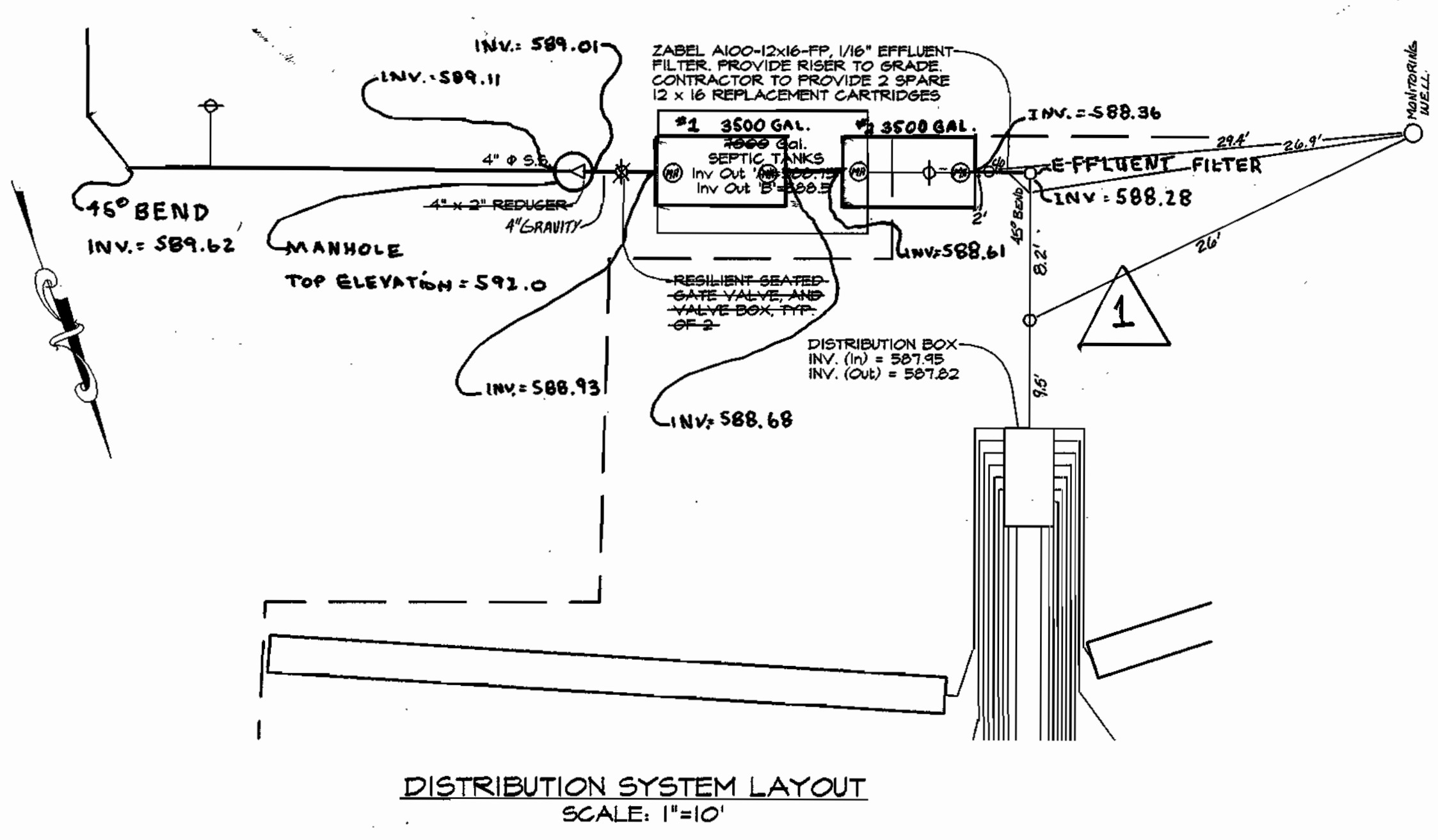
SCALE AS SHOWN  
SHEET 7 OF 7

MATCHLINE SEE SHEET 1 OF 6



OBSERVATION WELL #	DISTANCE TO DISTRIBUTION BOX	DIST. TO ELECTRICAL BOX ACCESS STREET
1	84	124
2	88.6	127
3	76	110
4	85	110
5	72.4	105
6	114	80
7	125	76
8	137	73.5
9		
10	58	87
11	81	78
12	64.5	79
13	71	87
14	74	96
15	87.5	108
16	96	115
17	107	126.5
18	116	132.5
19	129	148

DIST. TO CLOSEST SEPTIC TANK MH

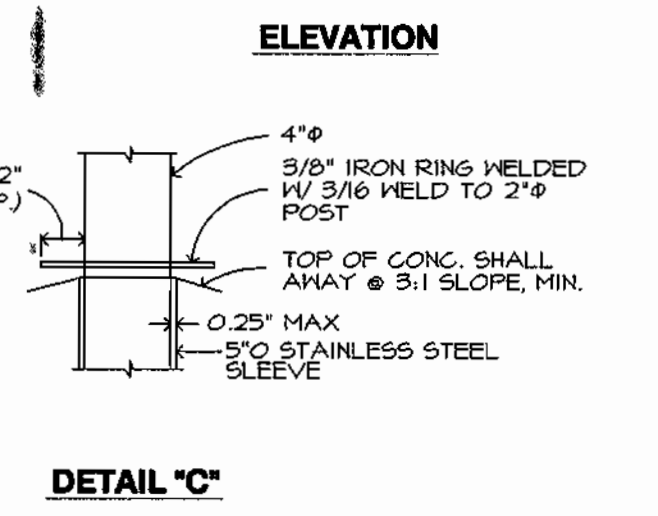
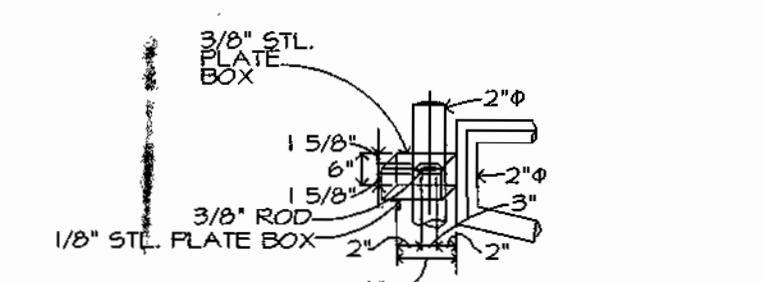
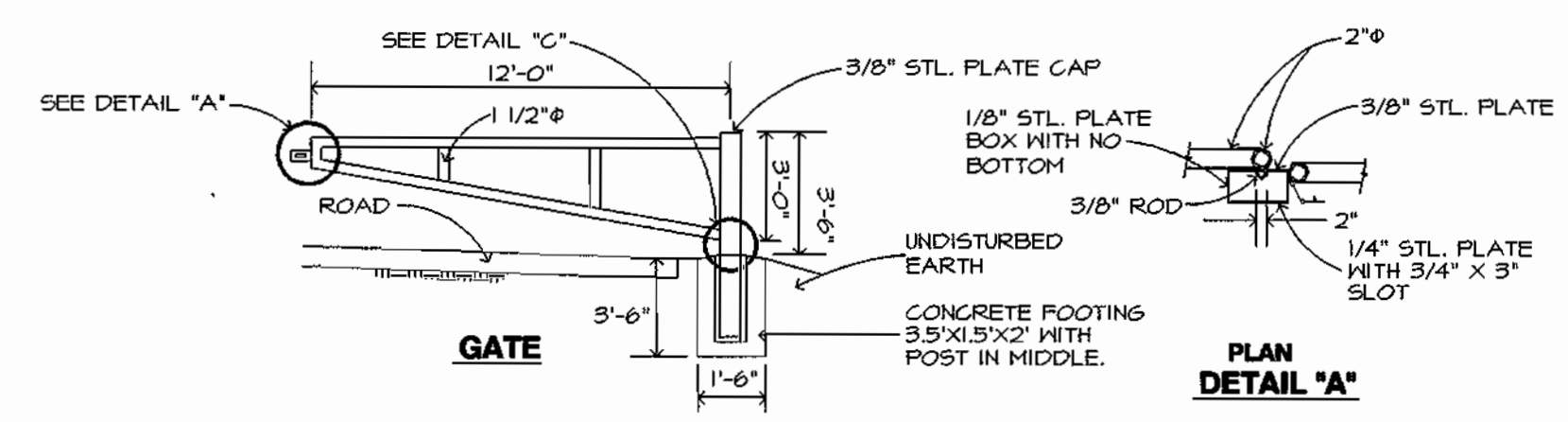


**LEGEND**

- EXISTING TREELINE (H)
- EXISTING SEPTIC FIELD (M)
- EXISTING HOUSE (X)
- EXISTING WELL (H)
- PROPOSED WELL (H)
- PROPOSED MONITORING WELL (M)
- EXISTING WELL (H)
- PROPOSED SEPTIC FIELD (M)
- EXISTING HOUSE (X)
- PROPOSED HOUSE (X)

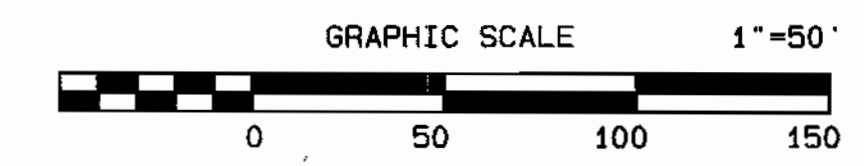
**NOTES:**

1. ALL METAL USED IN THE MANUFACTURE OF THE GATE TO BE HOT DIP GALVANIZED. ALL WELDS & PIPE TO BE PAINTED & TOUCHED UP IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
3. ALL PIPE TO BE SCHEDULE 40 STEEL. DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
4. CONTRACTOR SHALL PROVIDE ADDITIONAL 3" Ø POSTS WITH 3/8" ROD. LOCATE TO HOLD GATE IN AN OPEN POSITION 90° FROM THAT SHOWN BELOW.
5. GATE TO SWING OUTWARD TOWARDS EXISTING STEELIE DRIVE.
6. WIDTH OF GATE NOT TO EXCEED 12 FEET.



**NOTE**

SCREENING OF THE SHARED SEPTIC AREA IS SHOWN ON SHEET II OF THE PLANS PREPARED BY MILDENBERG, BOENDER & ASSOC., INC. TITLED "ROAD CONSTRUCTION PLANS- FRIENDSHIP LAKES, LOT 5 THRU 15 AND PRESERVATION PARCEL 'A' & 'B'. A RESUBDIVISION OF FRIENDSHIP LAKES LOTS 1, 2 AND 4".



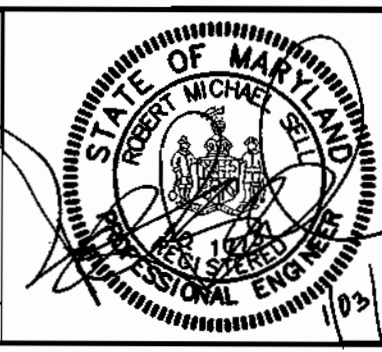
APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.

*Don Kellerman*  
COUNTY HEALTH OFFICER *1/26/01*  
DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert Bump* 1-25-01  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*Chris Dorman* 2/6/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

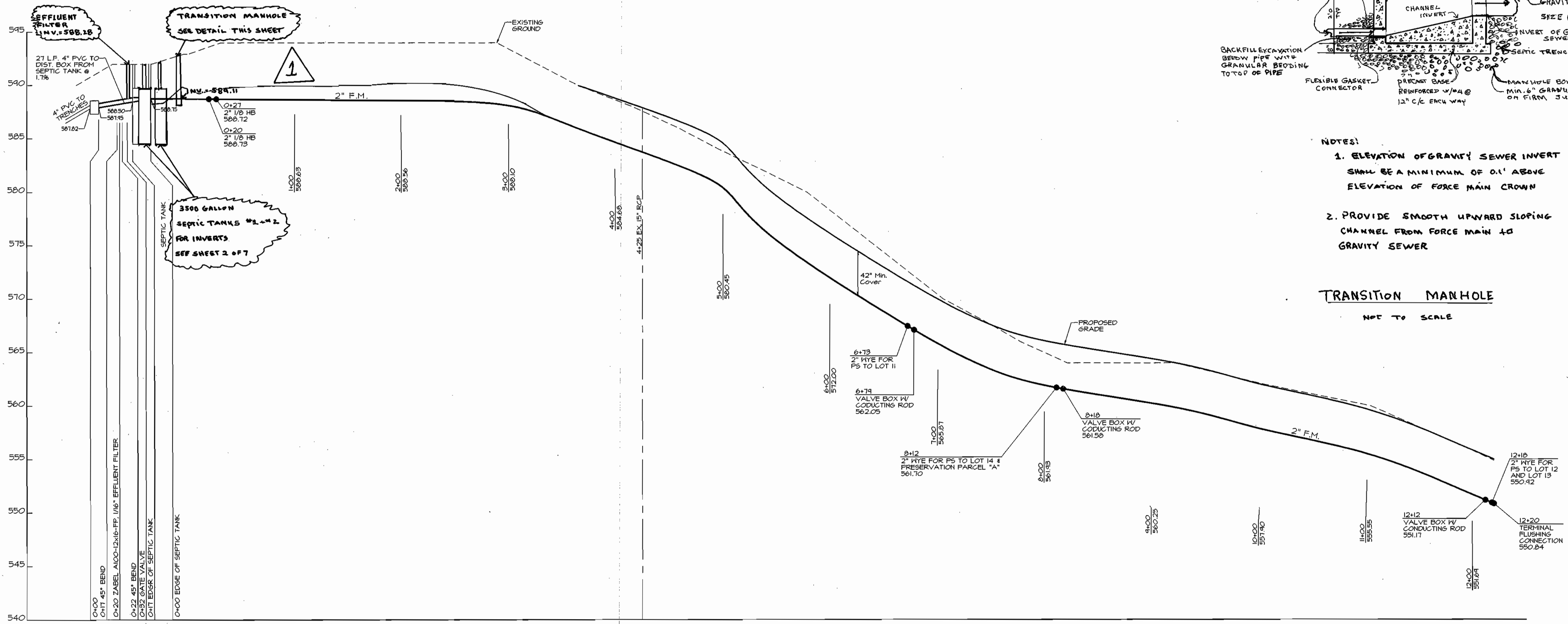
**McCRONE**  
ENGINEERING & ENVIRONMENTAL SCIENCES  
LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES  
BY ORDER: ANNE ARDRE  
ANNAPOLIS, MARYLAND 21401  
(410) 387-8821



DES:	R. Sell	REV. 4	ADD 2x3500 GAL. SEPTIC TANKS
DRN:	T. Price		
CHK:	R. Sell	KC1	1 ASBUILT DATA
DATE:	Jan 2001	BY	No.

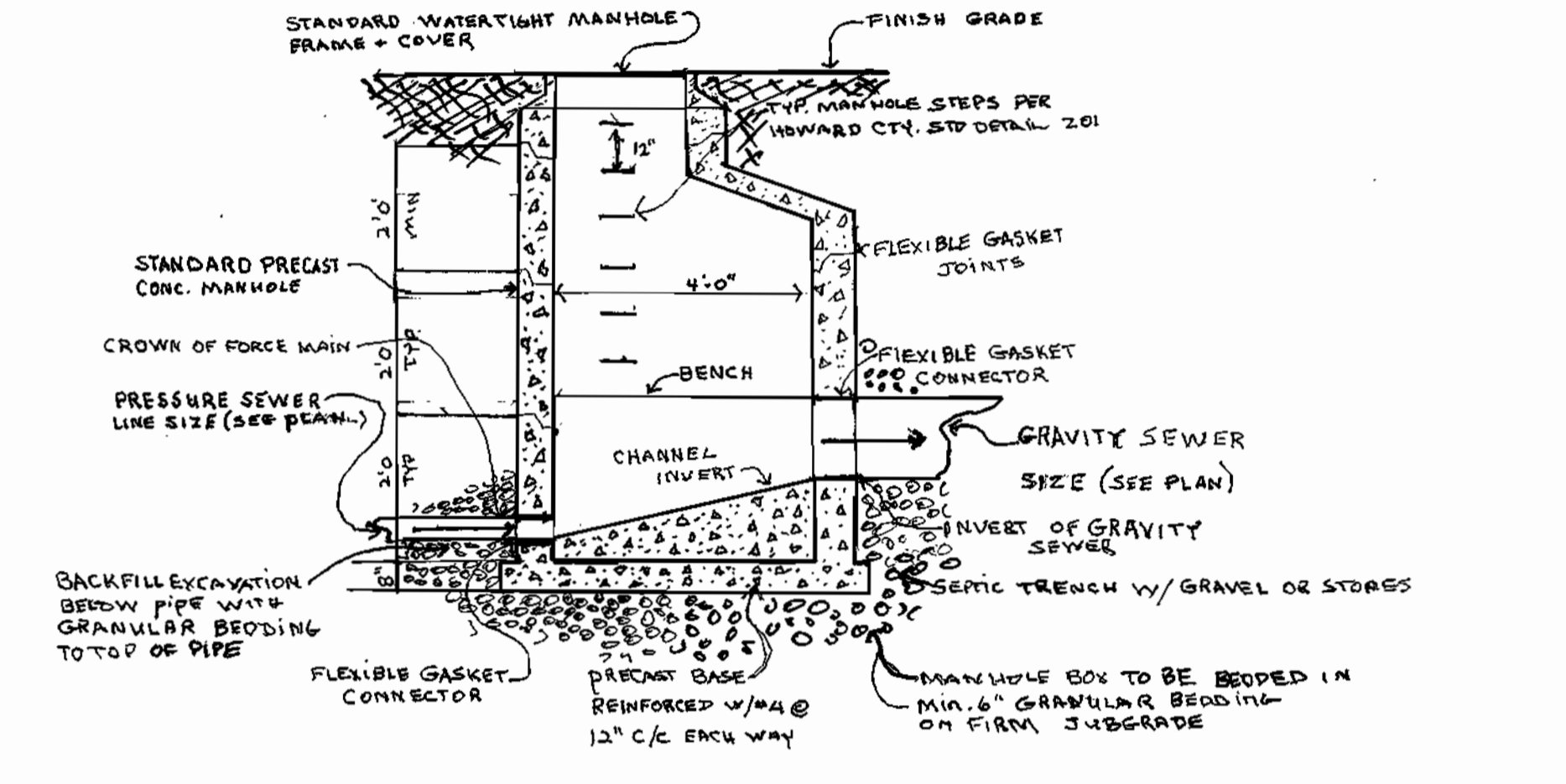
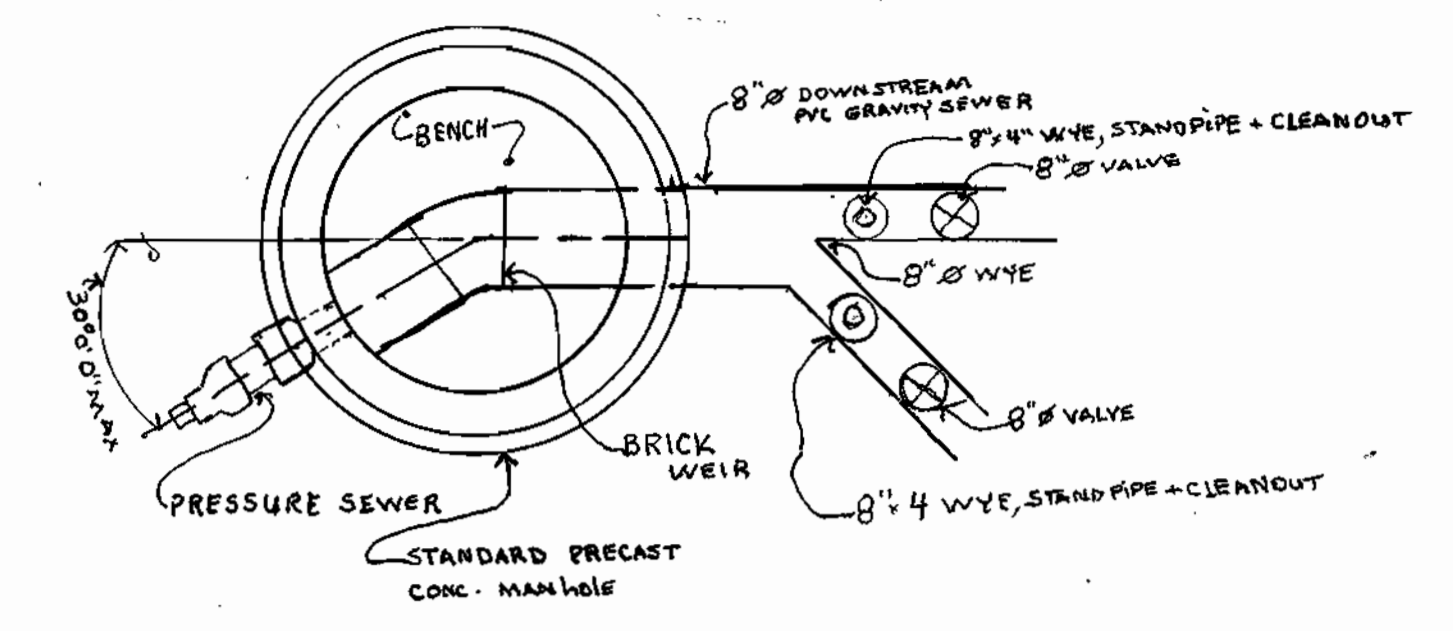
**SHARED SEPTIC SYSTEM PLAN**  
DATE: JOB No. C1490484 FILE: G:\PROJ04 - Ecker Property\Drawings\Friendship-grades.pro

**FRIENDSHIP LAKE SHARED SEPTIC SYSTEM**  
CONTRACT No. 50-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 2 OF 7



SEWER PROFILE  
SCALE: H 1"=50' V 1"=5'

1



- NOTES:
- ELEVATION OF GRAVITY SEWER INVERT SHALL BE A MINIMUM OF 0.1' ABOVE ELEVATION OF FORCE MAIN CROWN
  - PROVIDE SMOOTH UPWARD SLOPING CHANNEL FROM FORCE MAIN TO GRAVITY SEWER

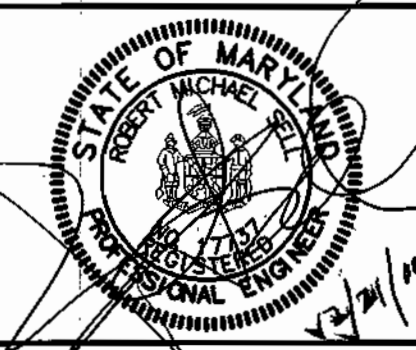
TRANSITION MANHOLE  
NOT TO SCALE

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14, PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*Dr. Michael J. Matusoff* 1/10/06  
COUNTY HEALTH OFFICER

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert J. ...* 1-25-01  
DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*William ...* 2/10/01  
DATE

**McCRONE**  
ENGINEERING & ENVIRONMENTAL SCIENCES  
LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES  
30 RIDGELY AVENUE  
ANNAPOLIS, MARYLAND 21401  
(410) 267-8821  
ANNAPOLIS-CENTRALE-SALISBURY-ELKTON-FREDERICK

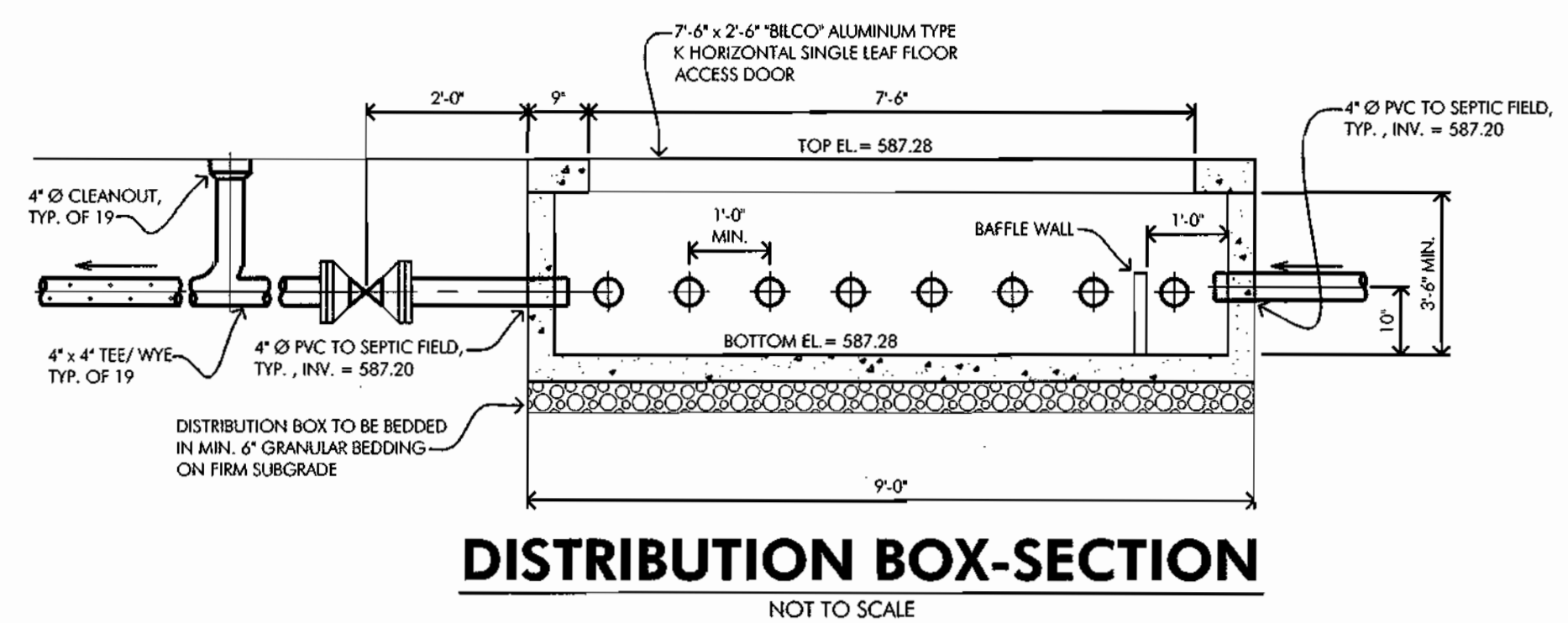


DES:	R. Sell	DL	1	ADD 3x 3500 GAL SEPTIC TANKS
DRN:	T. Price			
CHK:	R. Sell			
DATE:	Dec 2000	BY:	No.	REVISION
				10/08/06
				ASBUILT DATA

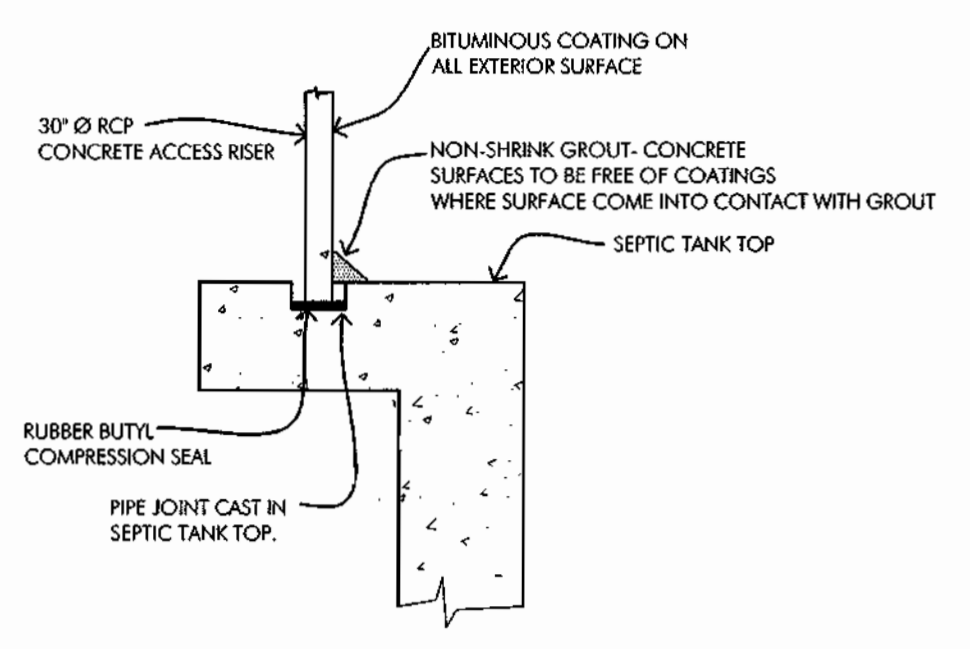
DATE JOB No. C190469 FILE: 6\190469 - Eckar Property\Drawings\Friendship-grinders-pro

PROFILE  
**FRIENDSHIP LAKE  
SHARED SEPTIC SYSTEM**  
CONTRACT No. 60-3871-D  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 3 OF 7  
PLOTTED Fri 22 Dec 2000 @ 0:15:49PM

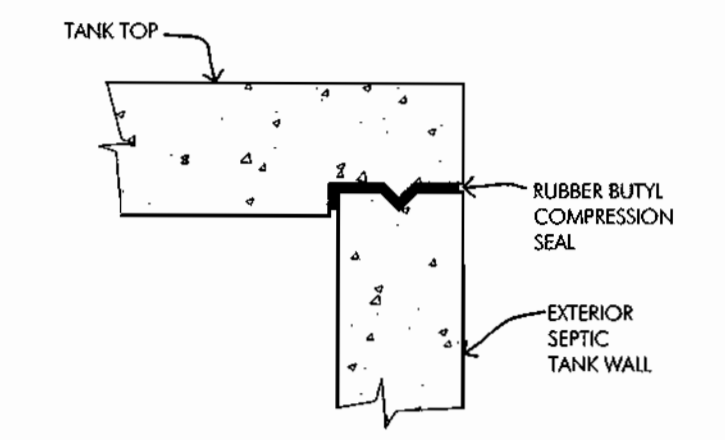
APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS ON LOTS 11 THRU 14; PRESERVATION PARCEL "A" HOWARD COUNTY HEALTH DEPT.  
*John H. [Signature]*  
 COUNTY HEALTH OFFICER  
 01/20/01  
 DATE



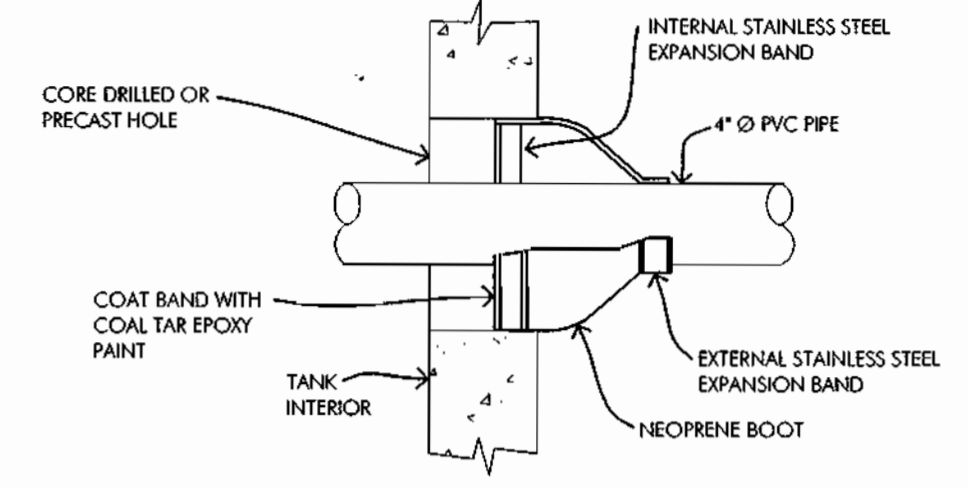
**DISTRIBUTION BOX-SECTION**  
NOT TO SCALE



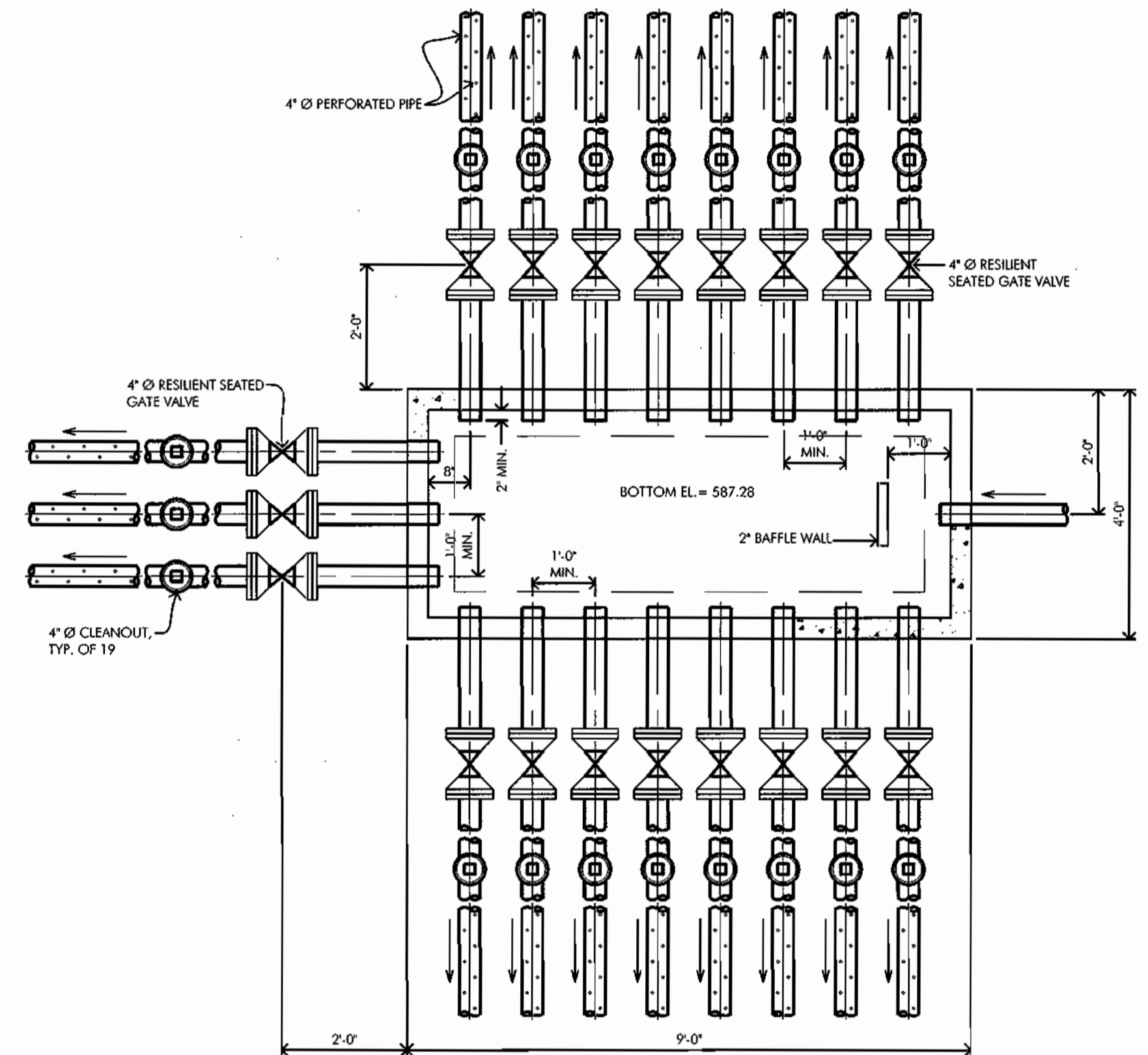
**RISER/TANK JOINT DETAIL**  
NOT TO SCALE



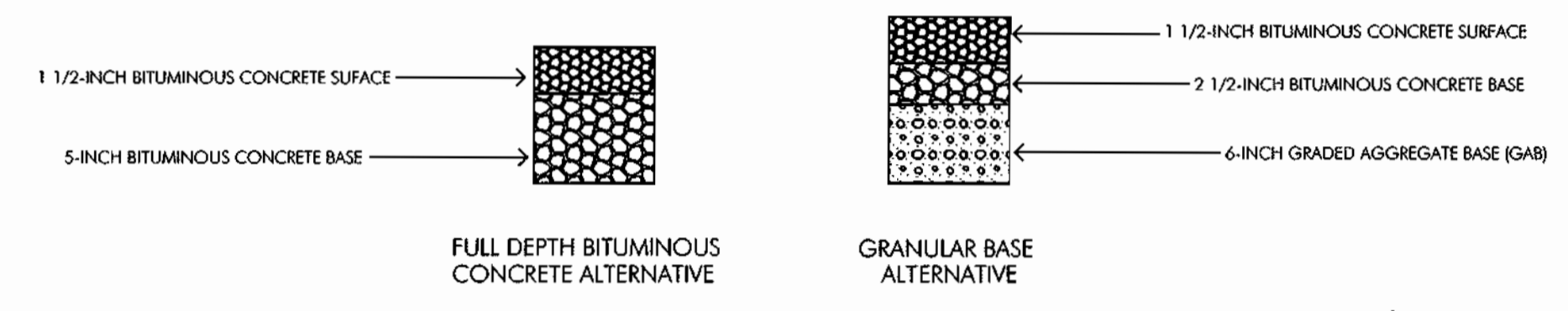
**TANK TOP/WALL JOINT DETAIL**  
NOT TO SCALE



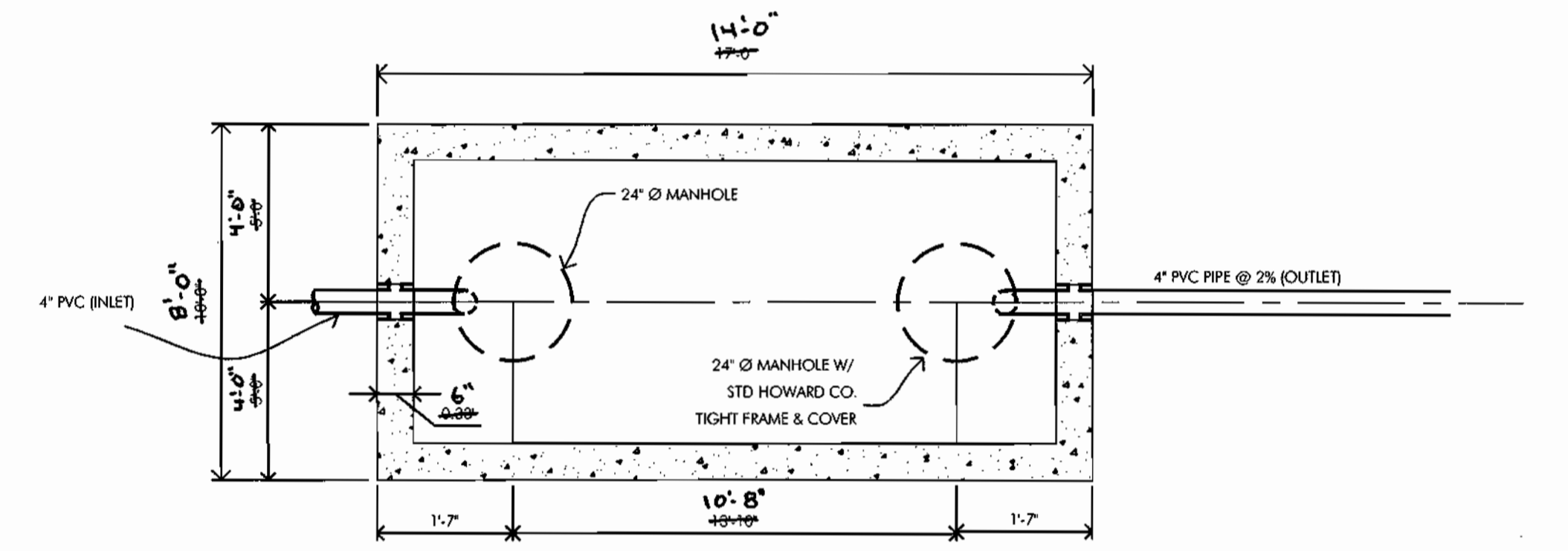
**WALL PENETRATION DETAIL**  
NOT TO SCALE



**DISTRIBUTION BOX-PLAN**  
NOT TO SCALE



**PAVING SECTION DETAIL**  
NOT TO SCALE



**7000 GALLON SEPTIC TANK-PAN**  
NOT TO SCALE

**DISTRIBUTION BOX COORDINATES DATA**

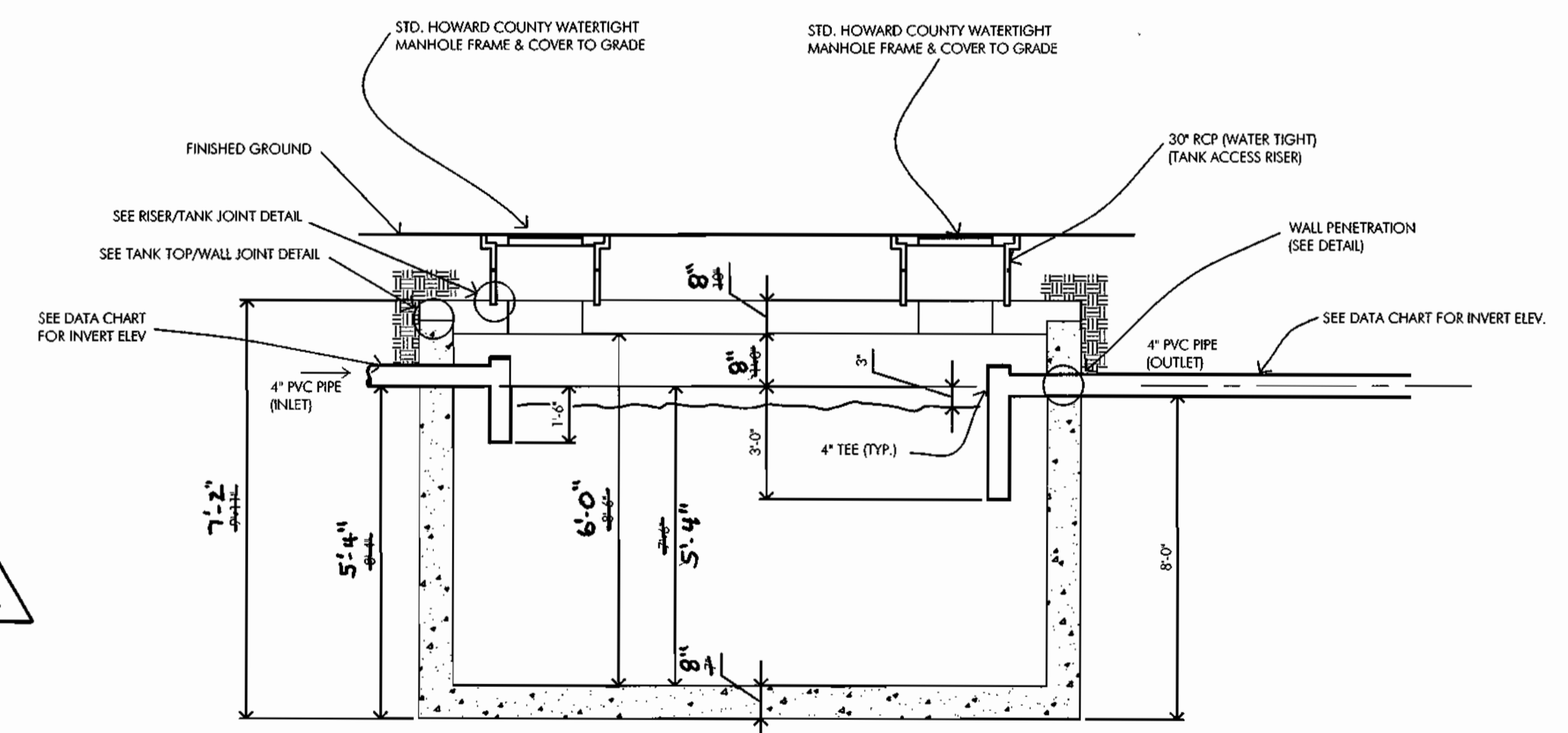
BOX #	INLET SIDE	OUTLET SIDE
1	N 530455.24 E 800580.47	N 530462.63 E 800583.52

NOTE: TO INSURE EQUAL DISTRIBUTION TO LATERALS, PROVIDE "DIAL-A-FLOW" WHICH FITS IN THE OUTLET PORTS OF EACH LATERAL LEAVING THE DISTRIBUTION BOX. "DIAL-A-FLOW" SHALL BE AS MANUFACTURED BY AMERICAN MANUFACTURING COMPANY, INC., MANASSAS, VA.

**SEPTIC TANK SUMMARY**

TANK	TANK ELEVATION	INVERT ELEVATION	TANK COORDINATES	MANHOLE RIM ELEVATION	REMARK
TANK A	590.17 TOP	588.75 IN	N 530428.88 E 800402.27	592.83	DIMENSIONS ARE BASED ON ROTUNDO & SONS, INC. MODEL ST 6414-35
	583.00 BTM	588.50 OUT	N 530433.46 E 800591.18	592.82	
TANK B	590.17 TOP	588.75 IN	N 530443.64 E 800608.38	591.99	DIMENSIONS ARE BASED ON ROTUNDO & SONS, INC. MODEL ST 6414-35
	583.00 BTM	588.50 OUT	N 530448.25 E 800580.47	591.90	

NOTES:  
 1. MANHOLE RIM ELEVATIONS SHOWN HEREON ARE AT THE CENTER OF THE RIM.  
 2. TANK COORDINATES ARE AT THE MIDPOINT OF EACH END.



**3,500 GALLON SEPTIC TANK-SECTION**  
NOT TO SCALE

**GRINDER PUMP SUMMARY**

LOT NO.	TOP ELEVATION	BOTTOM ELEVATION	TOTAL LENGTH	INLET ELEVATION	DISCHARGE ELEVATION	VOL. OF CONCRETE FOR CONCRETE ANCHOR (C.F.)	REMARK
11/14	566.50	553.17	160	555.83	556.42	44.03	MODEL 214-160
12	554.50	541.33	158	544.25	544.75	32.92	MODEL 214-158
13	560.50	547.33	158	550.25	550.75	32.92	MODEL 214-158

**GRINDER PUMP SUMMARY**