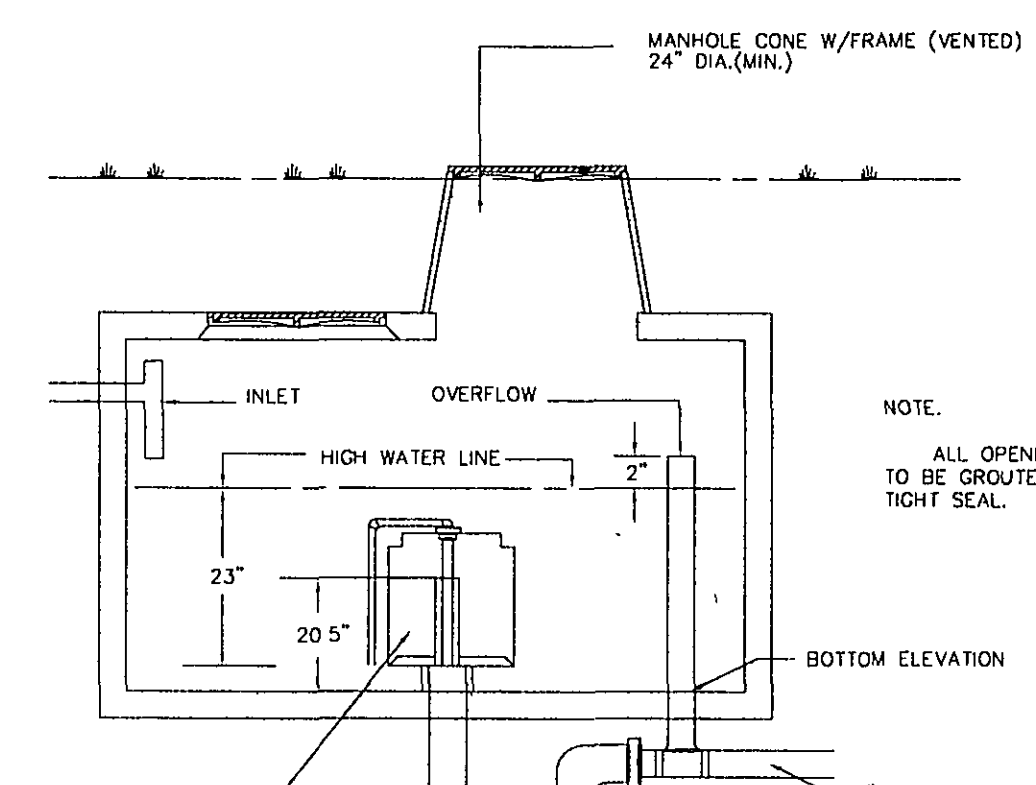
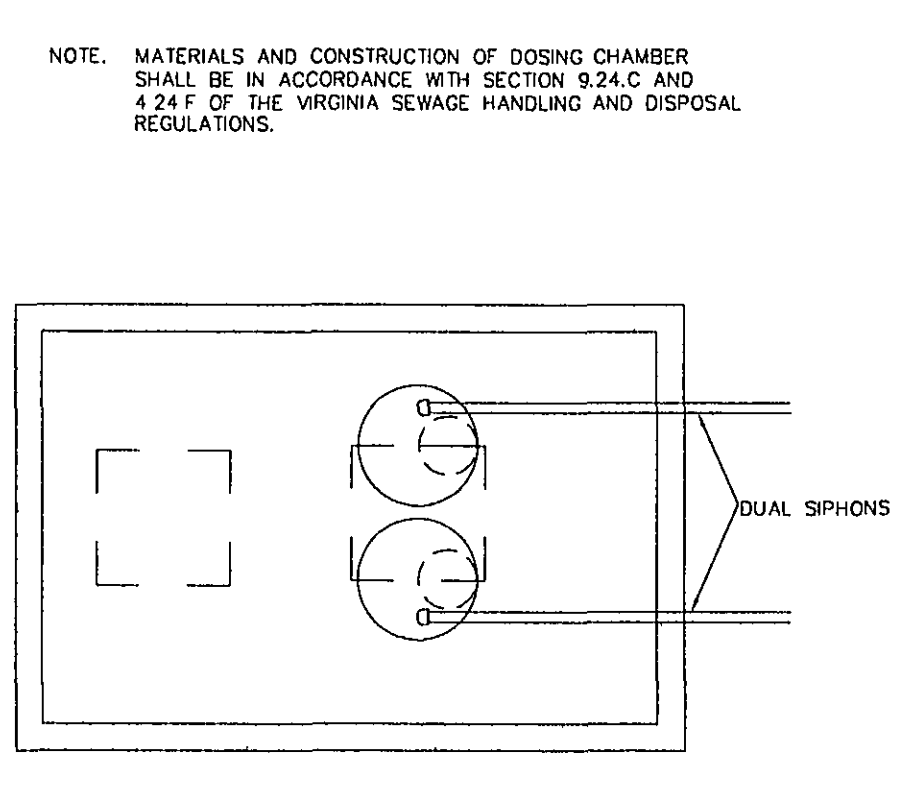


NOTES:
 1. MANHOLE OPENINGS AROUND INLET & OUTLET PIPES TO BE GROUDED TO INSURE WATER TIGHT SEAL.
 2. SEPTIC TANKS TO BE PLACED LEVEL ON UNDISTURBED SOIL OR BEDDED WITH 6 INCHES #57 AGGREGATE.



NOTE: ALL OPENINGS AROUND PIPES TO BE GROUDED TO INSURE WATER TIGHT SEAL.
 NOTE: SIPHON SHALL BE FLUID DYNAMICS MODEL 423 OR EQUAL.
 NOTE: FOR DESIGN PURPOSES THE 2000 GALLON DOSING CHAMBER WAS CALCULATED AS HAVING THE INSIDE DIMENSIONS OF 10.5' L X 5.0' W AND THE 1000 GALLON DOSING CHAMBER WAS CALCULATED AS HAVING THE INSIDE DIMENSIONS OF 8.0' L X 4.0' W, ALTHOUGH ACTUAL DIMENSIONS MAY VARY DEPENDING ON THE MANUFACTURER.

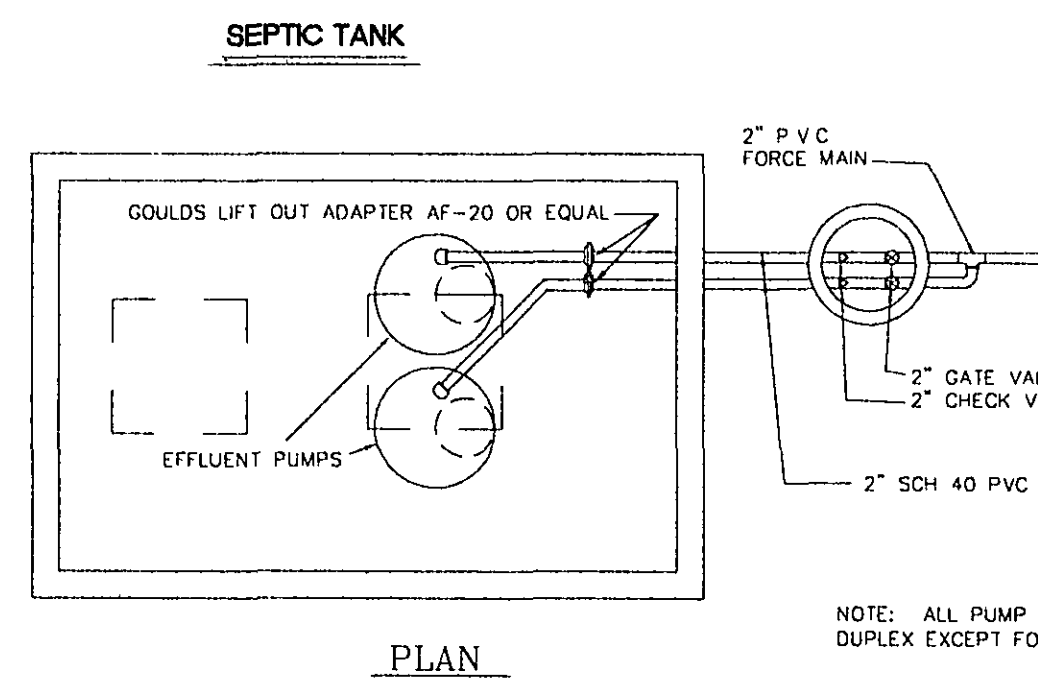


NOTE: WHEN ONLY SINGLE SIPHON IS REQUIRED, IT WILL BE CENTERED IN TANK.

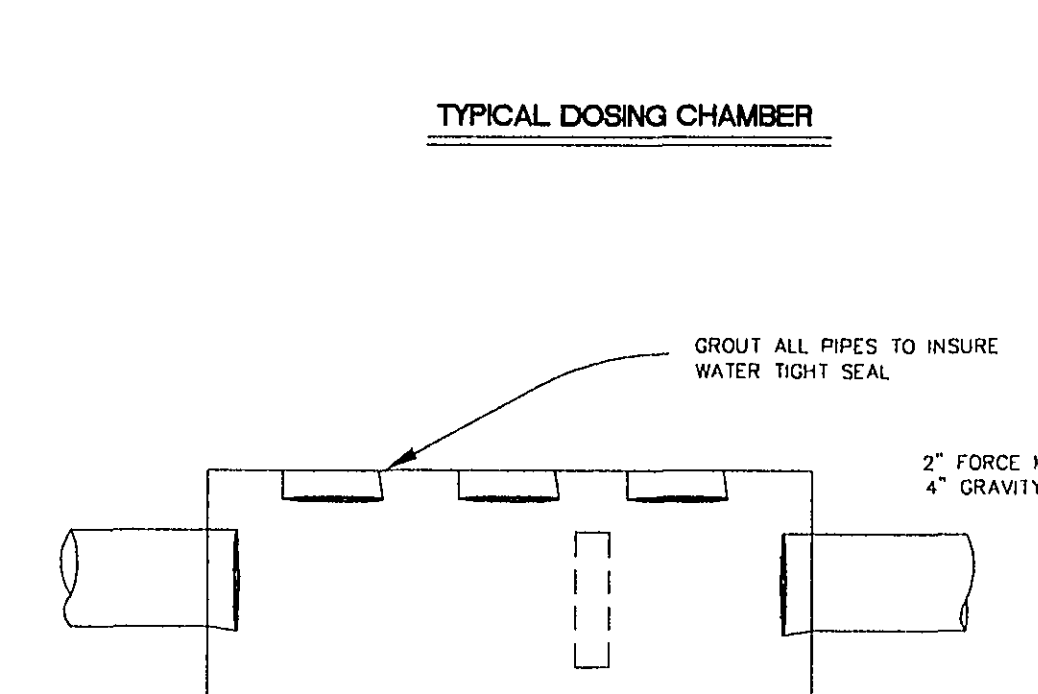
DESIGN DATA AND SPECIFICATIONS

PUMP STATION OR SEPTIC TANK NUMBER	1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BUILDINGS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
LOWEST FLOOR ELEVATION	826.0	820.0	803.0	803.0	803.0	803.0	803.0	803.0	803.0	803.0	844.0	844.0	848.0	851.0	838.0	803.0	814.0
NUMBER OF BEDROOMS	3	6	24	18	12	12	3	12	6	6	6	6	6	6	6	6	6
DESIGN FLOW (GPD)	450	900	3600	2700	1800	1800	450	1800	900	900	900	900	900	900	900	900	1800
SEPTIC TANK VOLUME (GAL)	1-1000	1-2000	4-2000	3-2000	2-2000	2-2000	1-1000	2-2000	1-1000	1-2000	1-2000	1-2000	1-2000	1-2000	1-2000	1-2000	2-2000
PUMP STATION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL VOLUME (GAL)	2000	2000	2000	2000	2000	2000	1000	2000	1000	2000	2000	2000	2000	2000	2000	2000	2000
BOTTOM ELEVATION	807.5	791.5	793.5	793.5	793.5	793.5	795.0	795.0	795.0	795.0	795.0	795.0	795.0	795.0	795.0	795.0	803.0
PUMP DELIVERY (GPM)	3.7	7.5	28.8	21.6	14.4	14.4	3.6	14.4	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	14.4
VELOCITY (FPS)	3.8	2.6	2.6	3.4	3.8	3.8	4.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
TOTAL DYNAMIC HEAD (FT)	85	100	102	92	84	72	91	89	89	89	89	89	89	89	89	89	89
DIST. BOX/DOSING ELEVATION	862.0	848.0	861.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	868.0
WORKING VOLUME (AS DESIGNED) (GAL)	470	160	200	470	470	470	235	470	235	470	470	470	470	470	470	470	470
DEPTH OF WORKING VOLUME (FT)	1.2	0.4	0.5	1.2	1.2	1.2	0.6	1.2	0.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
PUMP MODEL	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
DOSING CHAMBER TOTAL VOL.		1000	2000														
WORKING VOL.		461	760														
SYPHON MODEL		423	423														
DUAL/SINGLE		D	S														

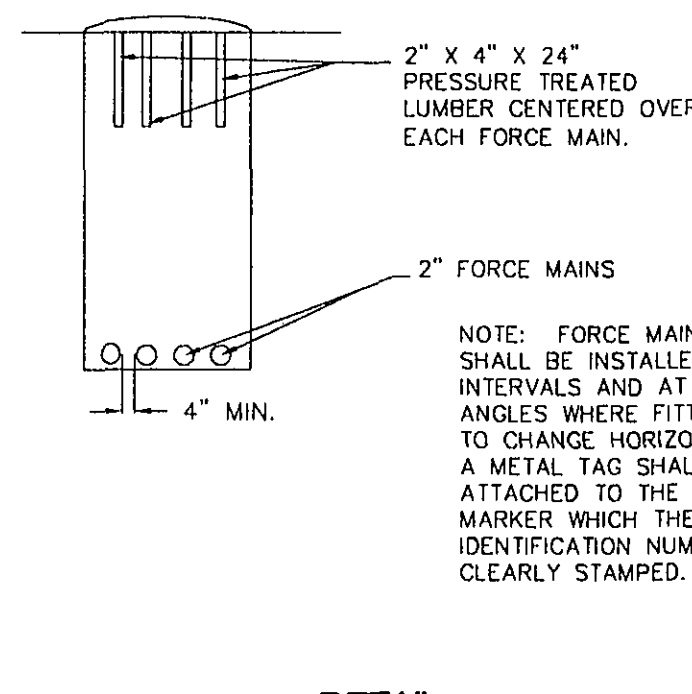
* = PLUS FLOW FROM PUMP STATION #6.



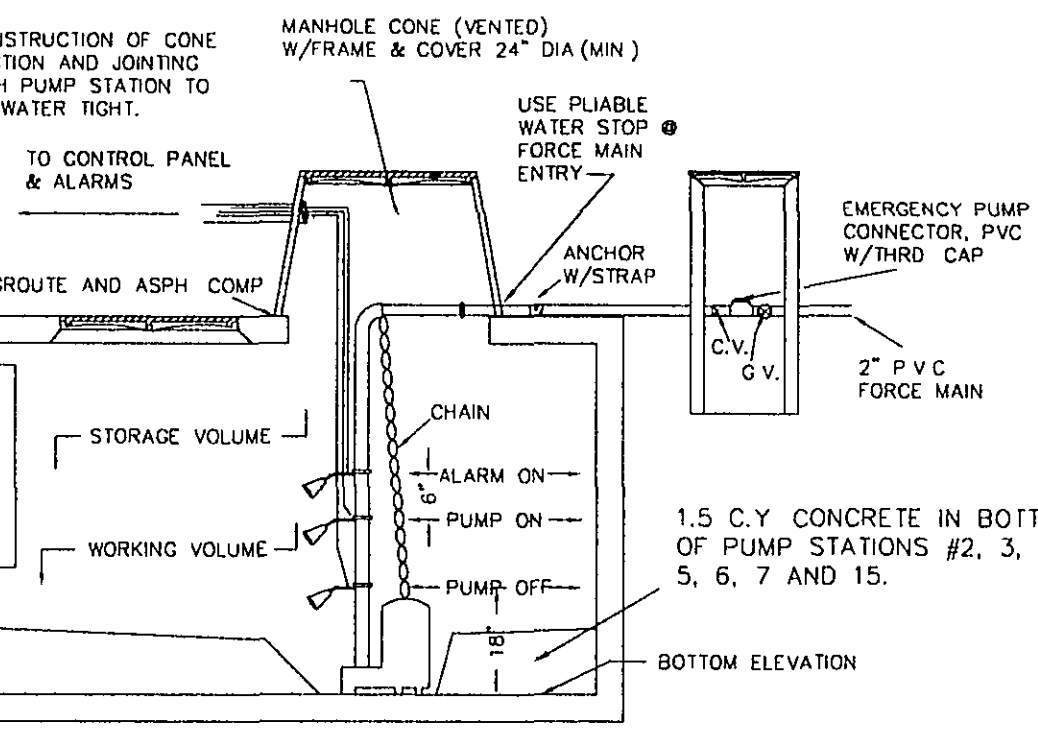
NOTE: ALL PUMP STATIONS TO BE DUPLEX EXCEPT FOR PUMP STATION #6



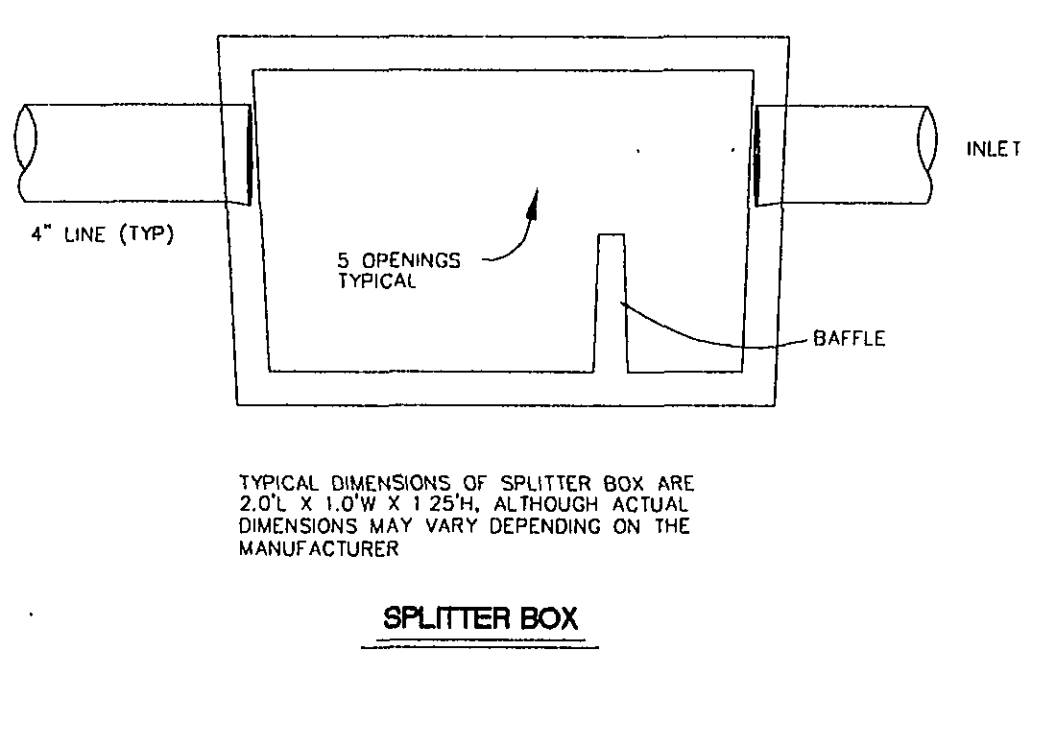
NOTE: GROUDED ALL PIPES TO INSURE WATER TIGHT SEAL.



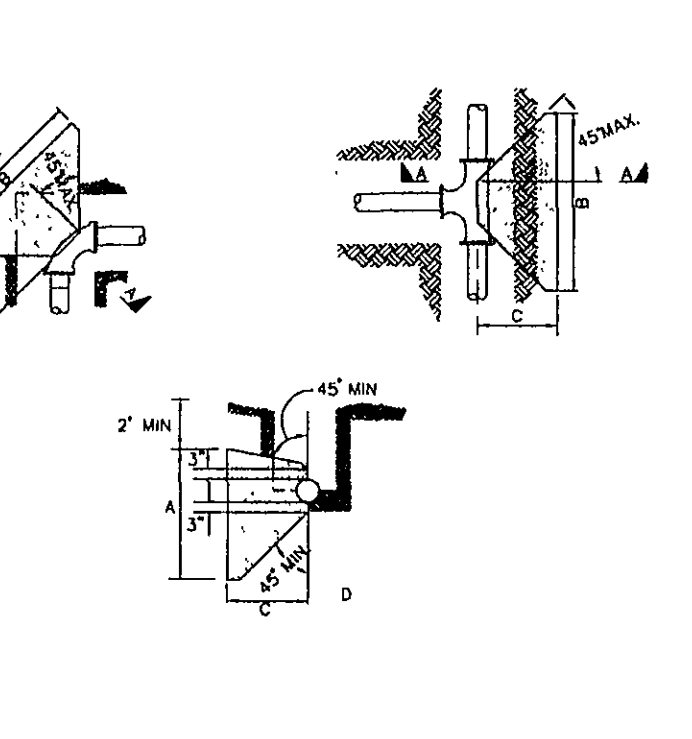
NOTE: FORCE MAIN MARKERS SHALL BE INSTALLED AT 100' INTERVALS AND AT ALL DEFLECTION ANGLES WHERE FITTINGS ARE USED TO CHANGE HORIZONTAL ALIGNMENT. A METAL TAG SHALL BE FIRMLY ATTACHED TO THE TOP OF EACH MARKER WHICH THE FORCE MAIN IDENTIFICATION NUMBER HAS BEEN CLEARLY STAMPED.



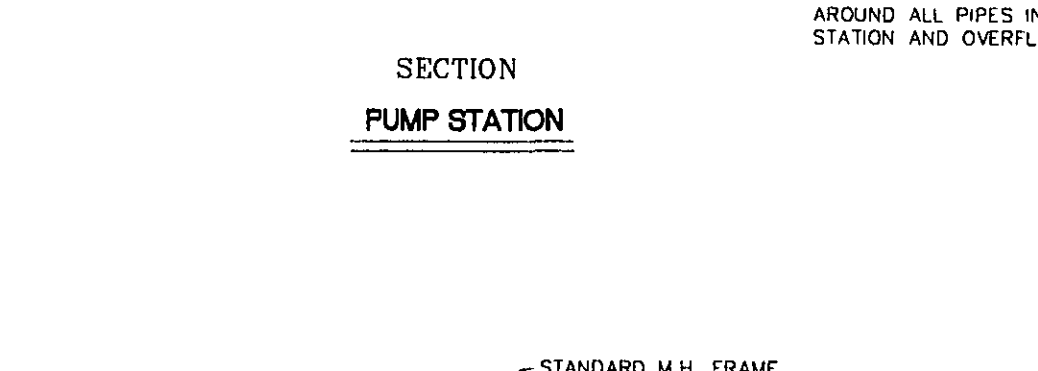
NOTE: PLUMBABLE WATER STOPS MUST BE PROVIDED AROUND ALL PIPES IN BOTH THE PUMP STATION AND OVERFLOW TANK.



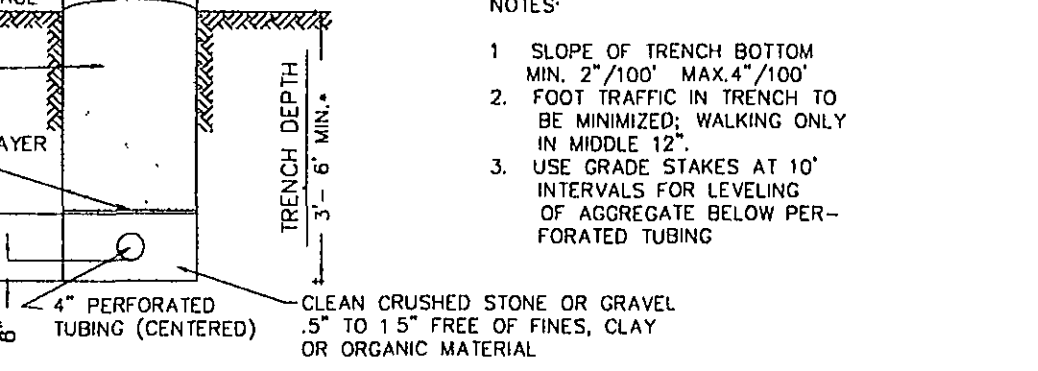
TYPICAL DIMENSIONS OF SPLITTER BOX ARE 20" L X 10" W X 12" H, ALTHOUGH ACTUAL DIMENSIONS MAY VARY DEPENDING ON THE MANUFACTURER.



THRUST BLOCK FOR HORIZONTAL & LOWER VERTICAL BENDS



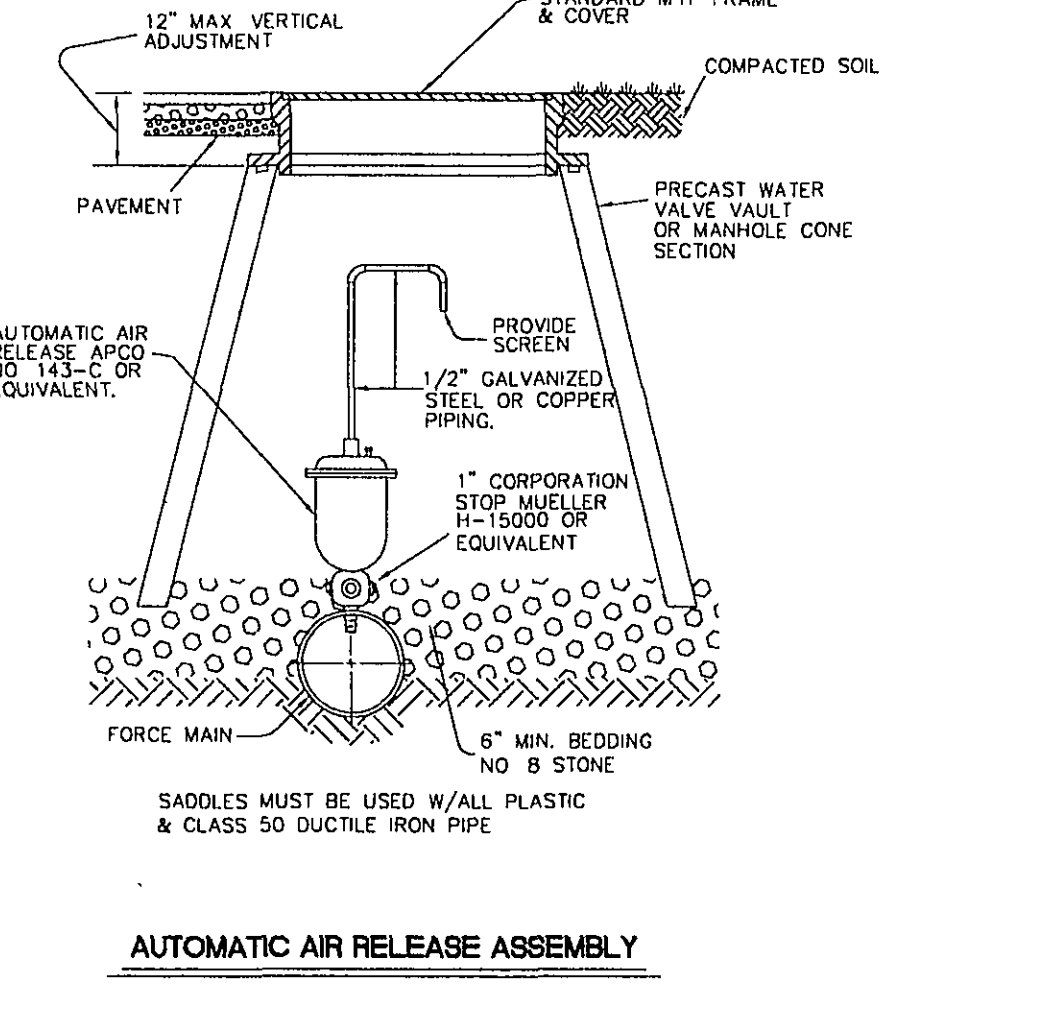
NOTE: DEPTHS MUST BE AS REQUIRED FOR THE DRAIN LINES TO BE IN THE PERMEABLE ZONE AS APPROVED BY THE ENGINEER AND LOCAL HEALTH DEPARTMENT.



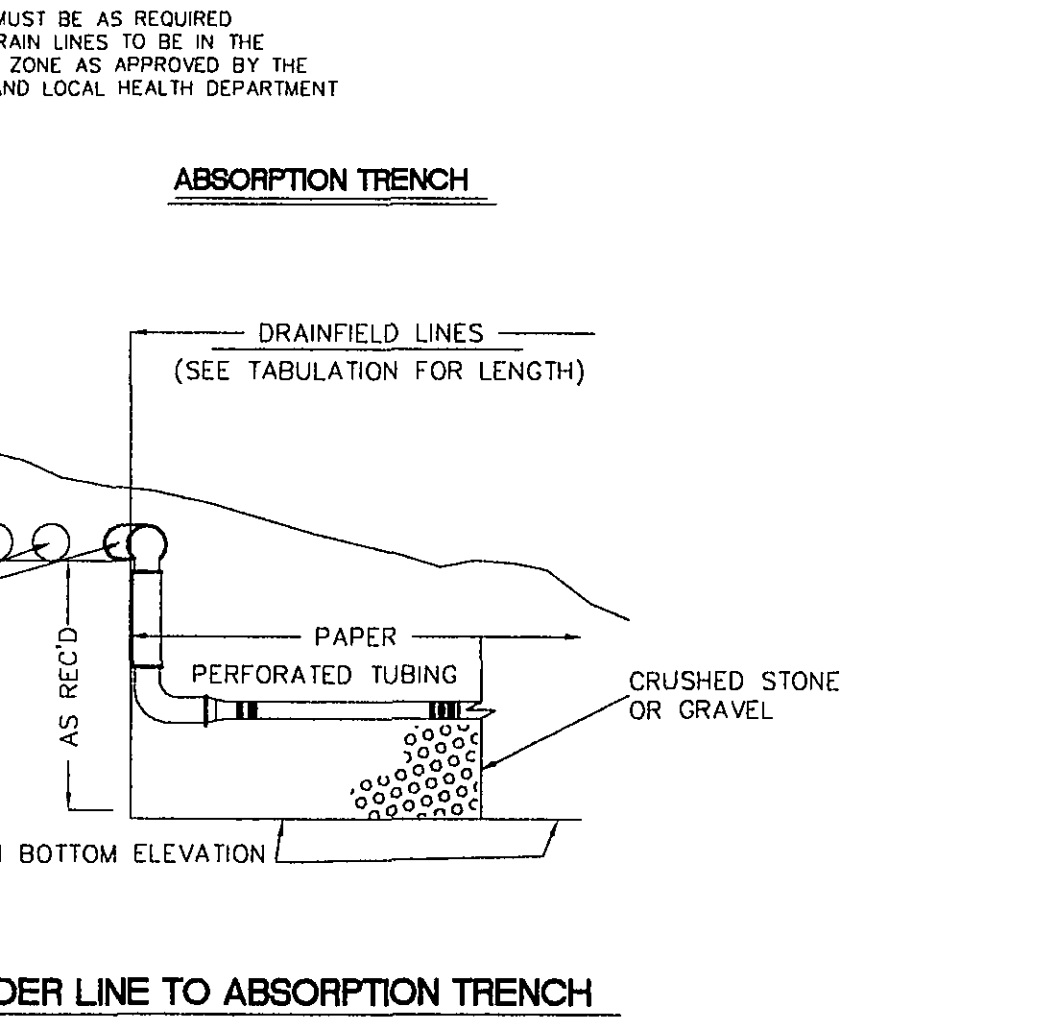
NOTE: SADDLES MUST BE USED W/ ALL PLASTIC & CLASS 50 DUCTILE IRON PIPE.

DRAIN FIELD DATA

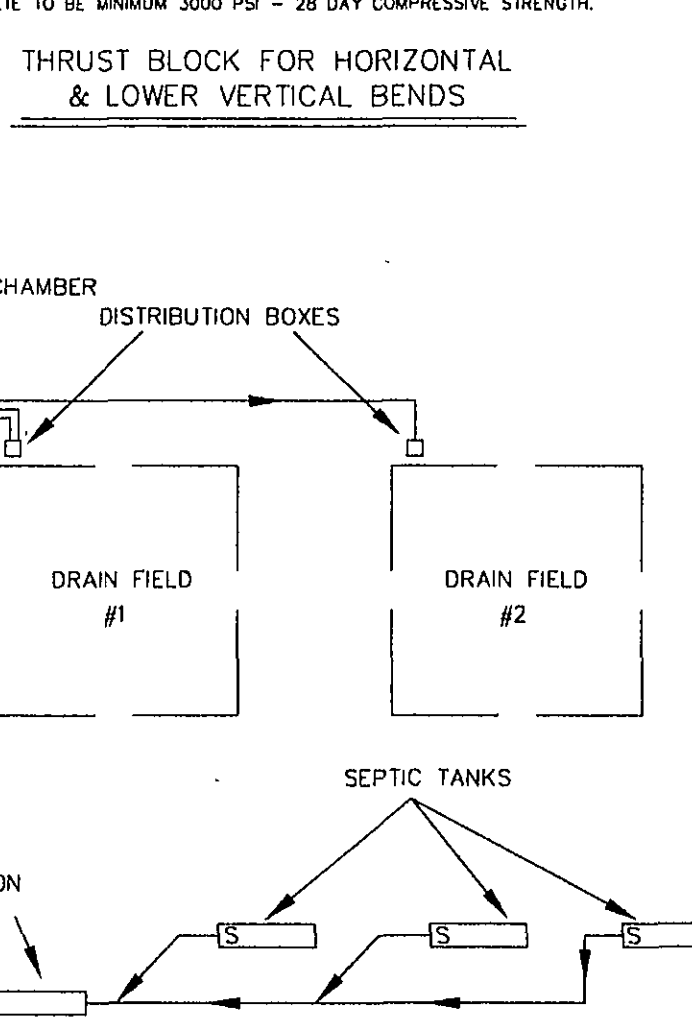
DRAIN FIELD NUMBER	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	7A	7B	8	9	10	11A	12A	13A	14A	15	16	
NUMBER OF LINES	8	9	12	12	10	12	12	10	12	12	10	12	8	7	9	7	10	12	10	12	10	12
LENGTH OF LINES (FT)	100	107	100	100	60	60	66	66	66	66	60	60	60	60	60	60	60	60	60	60	60	60
DEPTH OF LINES (IN)	60	60	66	66	54	60	60	60	60	66	60	60	60	60	54	60	48	48	48	48	60	60



NOTE: SADDLES MUST BE USED W/ ALL PLASTIC & CLASS 50 DUCTILE IRON PIPE.



NOTE: SADDLES MUST BE USED W/ ALL PLASTIC & CLASS 50 DUCTILE IRON PIPE.



SCHEMATIC LAYOUT DRAIN FIELD

- NOTES TO DESIGN DATA AND SPECIFICATIONS:
- PUMPS: A. GOULDS 3885 WEOSH#1 SUBMERSIBLE EFFLUENT PUMPS - 240 VOLT - SINGLE PHASE - 1/2 HP. B. GOULDS 3885 WE15WH SUBMERSIBLE EFFLUENT PUMP - 240 VOLT - SINGLE PHASE - 1 1/2 HP.
 - CONTROLS: GOULDS AS DUPLEX WITH AUDIO VISUAL ALARM, 4 EA. A2-3 MERCURY TYPE FLOAT SWITCHES OR EQUAL. THIS UNIT WILL BE MOUNTED ON EXTERIOR OF APPROPRIATE UNIT. THEREFORE, A COMPLETE NEMA111 ENCLOSURE MUST BE PROVIDED. AUTOMATIC ALTERATION OF THE PUMPS FOR THE DUAL PUMP STATIONS SHALL BE PROVIDED. SEE NOTE #16.
 - PIPING AND VALVES: ALL GRAVITY LINES AND FORCE MAINS OUTSIDE PUMP STATIONS TO BE SCHEDULE 40 PVC WITH WELDED SLEEVES (WATERTIGHT) PIPE AND FITTING INSIDE PUMP STATIONS TO BE SCHEDULE 40 GALVANIZED STEEL PERCOLATION LINES TO BE ADS #402 (ADVANCED DRAINAGE SYSTEMS), ASTM F-481 OR EQUAL. CHECK VALVES TO BE 2" BRONZE BODY CHECK VALVES. ALL FORCE MAINS PIPING SHALL BE TESTED TO 50 PSI FOR ONE HOUR WITH NO LEAKAGE PERMITTED.
 - SET BACK DISTANCES FOR SEPTIC TANKS, PUMPING STATIONS, DISTRIBUTION BOXES, HEADER LINES AND DRAINFIELD TRENCHES FROM PROPERTY LINES - 5'; BUILDING FOUNDATIONS - 10'; UTILITY LINES - 10'.
 - FOR DESIGN PURPOSES THE 2,000 GAL. PUMP STATION WAS CALCULATED AS HAVING INSIDE DIMENSIONS OF 10.5' L X 5.0' W X 6.00' H AND THE 1,000 GAL. PUMP STATION WAS CALCULATED AS HAVING INSIDE DIMENSIONS OF 8.0' L X 4.0' W X 5.0' H. THESE DIMENSIONS WILL VARY DEPENDING ON MANUFACTURER. WHEN THE DIMENSIONS VARY THE CONTRACTOR MUST ADJUST PUMP ON/OFF AND ALARM THE PUMPS OPERATION IS IN ACCORDANCE WITH THE SEWAGE HANDLING AND DISPOSAL REGULATIONS DIMENSIONS OF TANK USED MUST BE PROVIDED TO THE DESIGN ENGINEER DURING FINAL INSPECTION.
- GENERAL NOTES:
- LOCATIONS OF DRAIN FIELDS, SEPTIC TANKS, PUMP STATIONS, PIPE LINES AND DISTRIBUTION BOXES ARE APPROXIMATE AND ARE SUBJECT TO MINOR ADJUSTMENTS DURING CONSTRUCTION. HOWEVER, SEPTIC TANKS, PUMP STATIONS AND DISTRIBUTION BOXES MUST BE SET AT THE ELEVATION SHOWN. ANY DEVIATIONS MUST BE APPROVED BY THE ENGINEER AND LOCAL HEALTH DEPARTMENT.
 - ALL CONSTRUCTION OF THESE SEWERAGE SYSTEMS TO BE IN ACCORDANCE WITH STATE BOARD OF HEALTH SEWAGE HANDLING AND DISPOSAL REGULATIONS. EXCAVATION PRACTICES MUST FOLLOW OSHA REQUIREMENTS.
 - HEAVY WHEELED VEHICLES ARE PROHIBITED FROM DRAINFIELD AREAS AFTER CONSTRUCTION.

DRAIN FIELD DATA

DRAIN FIELD NUMBER	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	7A	7B	8	9	10	11A	12A	13A	14A	15	16	
NUMBER OF LINES	8	9	12	12	10	12	12	10	12	12	10	12	8	7	9	7	10	12	10	12	10	12
LENGTH OF LINES (FT)	100	107	100	100	60	60	66	66	66	66	60	60	60	60	60	60	60	60	60	60	60	60
DEPTH OF LINES (IN)	60	60	66	66	54	60	60	60	60	66	60	60	60	60	54	60	48	48	48	48	60	60

THE SEWERAGE SYSTEMS PLANS WERE DEVELOPED IN CONSULTATION WITH MR. FRANK DAVIS, 290 LAKEWOOD COURT, ROCKY MOUNT, VA 24151, WHO PROVIDED THE FOLLOWING:

- GENERAL LAYOUT OF THE SYSTEMS.
- LOCATION, SIZE AND DEPTH OF DRAIN FIELDS.

CONSTRUCTION NOTES:
 SEPTIC TANKS, PUMP STATIONS, OVERFLOW TANKS AND DOSING CHAMBERS SHALL BE BEDDED WITH AT LEAST 6" OF SAND OR FINE GRAVEL WHERE ROCK OR OTHER UNDESIRABLE CONDITIONS ARE ENCOUNTERED. BACKFILLING OF THE EXCAVATION SHALL BE DONE IN LAYERS WITH SUFFICIENT TAMPING TO AVOID SETTLING. BACKFILL MATERIAL SHALL BE FREE OF LARGE STONES AND DEBRIS.

REVISION DATE DESCRIPTION

DESIGNED CDA

DRAWN CDA

CHECKED MSW

SANITARY SEWER NOTES & DETAILS FOR "GOLFER'S CROSSING" OF THE WATERS EDGE PREPARED FOR WILLARD CONSTRUCTION OF ROANOKE VALLEY, INC. UNION HALL MAGISTERIAL DISTRICT FRANKLIN COUNTY, VIRGINIA

NO. 012856 8-19-97 PROFESSIONAL ENGINEER

SCALE: NONE COMM: #84-66590

DATE: 19 AUG. 1997 SHEET 10 OF 13