

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
DUPLEX GRINDER PUMP	5 EA.			
TERMINAL FLUSHING CONNECTION	3 EA.			
5000g SEPTIC TANKS	2 EA.			
CONC. DISTRIBUTION BOX	2 EA.			
LEACHING FIELD	1240 L.F.			
VALVE BOX WITH CONDUCTING ROD	6 EA.			
1.5" HDPE SDR 11 SEWER	1874 L.F.			
TRANSITION MANHOLE	1 EA.			
ZOELLER SPLITTER BOX	1 EA.			
MONITORING WELLS	3 EA.			

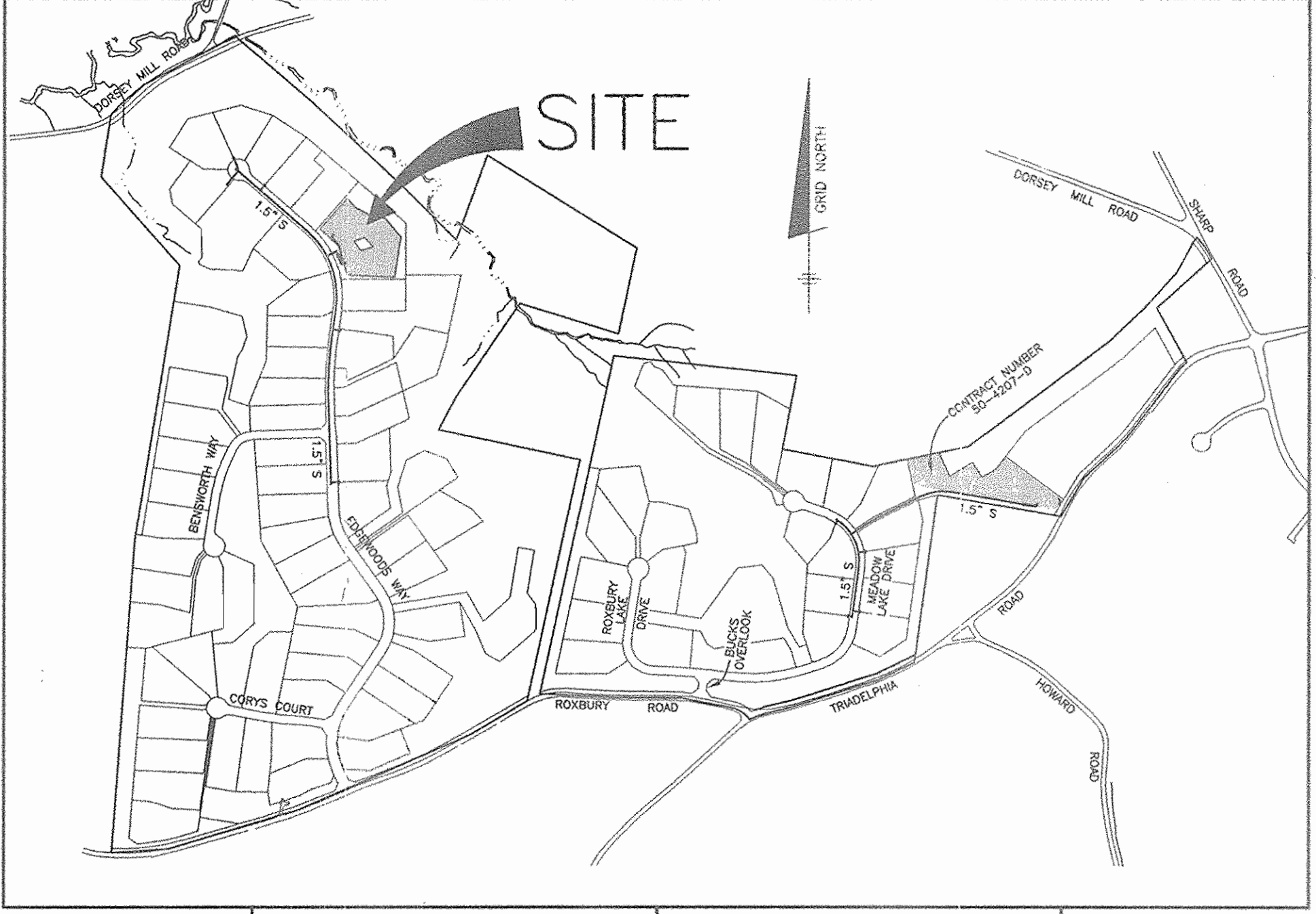
NAME OF UTILITY CONTRACTOR:
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:

SEPTIC TANK CAPACITY

*USE 4 BEDROOM HOUSE
1250 GALLONS PER 4 BEDROOM HOUSE
8 HOUSES X 1250 GALLONS = 10,000 GALLONS
USE TWO 5,000 GALLON TANKS

TRENCH REQUIREMENTS

USE 4 BEDROOM HOUSE (with 150 GPD per BEDROOM)
600 gpd PER HOUSE
600 gpd/HOUSE X 8 HOUSES = 4,800 gpd
4,800 gpd/0.8 ga./s.f./day = 6,000 s.f. EFFECTIVE AREA
6,000 s.f. / 3 (3 ft. WIDE TRENCH) = 2,000 L.F.
2,000 L.F. x 0.62 (% DECREASE FOR 2.0' SIDEWALL) = 1,240 L.F.



WATER AND SEWER COUNTY CODE	TYPE OF BUILDING - SINGLE FAMILY DETACHED
WATER CODE: N/A	NUMBER OF BUILDABLE LOTS: 80
SEWER CODE: N/A	NUMBER OF SHC'S: 0
TEST GRADIENT: N/A	DRAINAGE AREA: PATUENT
	TREATMENT PLANT: N/A

VICINITY MAP
SCALE: 1" = 600'

SHARED SEPTIC NOTES:

- WELLS ON THE LOTS SURROUNDING THE COMMON SEPTIC AREAS SHALL BE TESTED FOR BACKGROUND LEVELS OF CONTAMINANTS TO BE SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO PUTTING THE SHARED SEPTIC SYSTEM IN SERVICE.
- THE BUILDER SHALL INSTALL BACKFLOW PREVENTER AND RELIEF VENT ON THE SEWER SERVICE AT THE HOUSE, AT THE TIME OF THE HOUSE CONSTRUCTION OR AS REQUIRED BY THE PLUMBING INSPECTOR.
- INSTALLATION AND START-UP OF THE PUBLICLY OWNED GRINDER PUMPS AND APPURTENANCES, AND THE 4" PVC SEWER HOUSE CONNECTIONS (SHC) SHALL BE THE RESPONSIBILITY OF THE DEVELOPER.
- ALL PRESSURE SEWER SHALL BE HDPE SDR 11 A 6 GRADE TRACER WIRE SHALL BE WRAPPED AROUND OR ATTACHED TO THE PIPE. TRACER WIRE CONNECTIONS OFF OF THE MAIN MUST BE OVERLAPPING, INSULATED #6, FIRMLY CONNECTED AND ENCAPSULATED.
- 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 ISSUANCE OF SHARED SEPTIC SYSTEM PERMIT.
- ALL PRESSURE SEWER IS TO BE PRESSURE TESTED ACCORDING TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL NOTIFY HOWARD CO. HEALTH DEPARTMENT AT (410) 313-1771 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY PRESSURE TEST OF PRESSURE SEWERS, AND ANY SEPTIC TANKS VACUUM OR WATER TESTING IS PERFORMED.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE REQUIREMENTS AND METHOD OF INSTALLATION OF GRINDER PUMP AND ITS APPURTENANCES.
- OBSERVATION WELLS TO BE INSTALLED AFTER TRENCH INSTALLATION IS COMPLETED.
- LOTS WITH "CELLAR NOT SERVICED VIA GRAVITY" IS INDICATED, EJECTOR PUMPS LOCATED INSIDE THE BASEMENT ARE REQUIRED IN ORDER TO SERVICE THE CELLAR.
- PRIOR TO INSTALLATION, A PRECONSTRUCTION MEETING MUST BE SCHEDULED TO REVIEW THE INSTALLATION. THE ON-SITE SEWAGE DISPOSAL SYSTEM MUST BE PROFESSIONALLY STAKED FOR THE MEETING. THE MEETING SHALL INCLUDE:
 - MICHAEL DAVIS - HOWARD COUNTY DEPARTMENT OF HEALTH 410-313-1771
 - BARRY CLOFFELY - MARYLAND DEPARTMENT OF THE ENVIRONMENT 410-685-4156
 - REBECCA KUGEL - DEPARTMENT OF PUBLIC WORKS, BUREAU OF UTILITIES 410-313-4274
 - ON-SITE DISPOSAL SYSTEM INSTALLATION CONTRACTOR
 - GENERAL CONTRACTOR FOR THE PROJECT
 - ENGINEER
- A MINIMUM OF FIVE (5) DAYS NOTICE MAY BE REQUIRED TO SCHEDULE THE MEETING.
- ANY CHANGES TO THE APPROVED PLAN MUST BE PRESENTED TO THE DEPARTMENT OF HEALTH, MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE DEPARTMENT OF PUBLIC WORKS BY THE ENGINEER.
- PRIOR TO WASTEWATER DISCHARGE TO THE ON-SITE SEWAGE DISPOSAL SYSTEM, THE ENGINEER MUST CERTIFY THAT THE SYSTEM HAS BEEN INSTALLED AS DESIGNED AND RECEIVING APPROVAL FOR DISCHARGE FROM THE DEPARTMENT OF HEALTH, DEPARTMENT OF PUBLIC WORKS AND MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- PRIOR TO INSTALLATION OF ANY COMPONENT OF THE SYSTEM, PROPER PERMITS MUST BE OBTAINED FROM THE DEPARTMENT OF HEALTH, SEPTIC SYSTEM INSTALLATION PERMIT.

GENERAL NOTES

- PART 1 - GENERAL**
- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON APRIL 6, 2004 BY WINGS AERIAL MAPPING CO., INC.
 - HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 21A AND NO. 27CA.
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE:
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. 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 THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES 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 DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [] AT THE LOCATIONS OF THE TEST PITS. 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. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T (CONSTRUCTION SERVICES)	1-800-252-1133
BGE (EMERGENCY)	410-685-4620
BUREAU OF UTILITIES	410-685-1400
COLONIAL PIPELINE CO.	410-785-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	1-800-743-0033/410-224-5210
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - THE 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.
 - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE (5) WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD 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.
- PART 3 - SEWER**
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - FORCE MAINS SHALL BE D.I.P. ONLY.
 - MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER/TIGHT FRAME AND COVER, STANDARD DETAIL 05.52. WHERE WATER/TIGHT MANHOLE FRAMES AND COVERS ARE 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 SERVICED.

APPROVED:
FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert Wells 9/29/06
COUNTY HEALTH OFFICER DATE

HOWARD SOIL CONSERVATION DISTRICT:
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT
AND MEETS TECHNICAL REQUIREMENTS

Jim Myers 8/28/06
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Mark Ali 8/28/06
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE
IMPLEMENTED IN ACCORDANCE WITH SECTION 210 OF THE
HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER
ROAD CONSTRUCTION PLANS F-06-108

DEVELOPER:
TOLL BROTHERS, INC.
7164 COLUMBIA GATEWAY DRIVE
SUITE 230
COLUMBIA, MARYLAND 21046

MATCH LINE SEE SHEET 2

****ALL SEWAGE GRINDER PUMPS ARE TO BE PUBLICLY OWNED AND MAINTAINED**

PLAN VIEW
SCALE: 1" = 50'

MATCH LINE SEE SHEET 2

****MAXIMUM NUMBER OF BEDROOMS FOR EACH HOUSE ON LOTS 42-46, 49 AND 53-54 SHALL BE FOUR (4).**

CONTROL PANEL SPECS.

- CONTROL PANEL SHALL BE SITUATED ON HOUSE SO THAT A CLEAR LINE OF VISION IS MAINTAINED BETWEEN ITSELF AND THE PUMP CHAMBER.
- SEALING BOX 6" BELOW CONTROL PANEL ON HOUSE IN LINE WITH CONDUIT; SEAL WITH CHICO WATER/TIGHT SEALANT TO CREATE VAPOR LOCK.
- CONTROL PANEL MUST BE DIRECT WIRED FROM BGE ELECTRICAL SERVICE BOX.
- CONTROL PANEL SHOULD HAVE FUNCTIONAL HOA/PUSH TO RUN SWITCH.
- CONTROLS MUST HAVE OVER CURRENT DEVICE AND DISCONNECT.
- ALL WIRING SHALL BE RUN THROUGH CONDUIT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ruth Buzin 8-14-06
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Mark Ali 8/28/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844

Omali Moan 11/06
DESIGN: DBT
DRAFT: DBT
CHK: DAM
DATE: 6/07/06

DESIGN: DBT					
DRAFT: DBT					
CHK: DAM					
DATE: 6/07/06	BY	NO.	REVISIONS	DATE	

PLAN VIEW OF SHARED SEPTIC SYSTEM

600 SCALE MAP NO. 50

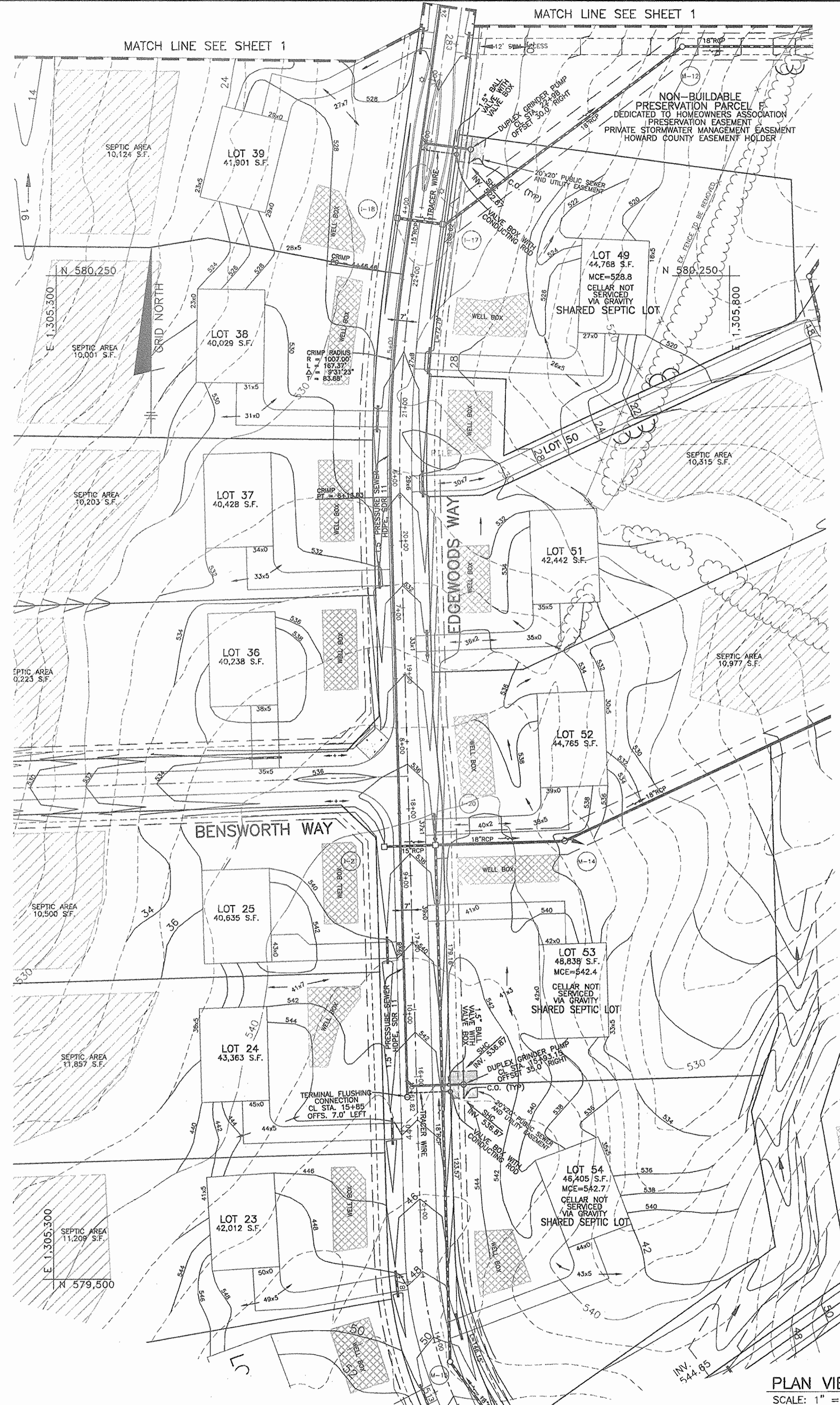
BLOCK 3

EDGEWOOD FARM
SHARED SEPTIC PLAN FOR LOTS
LOTS 42-46, 49, 53 AND 54

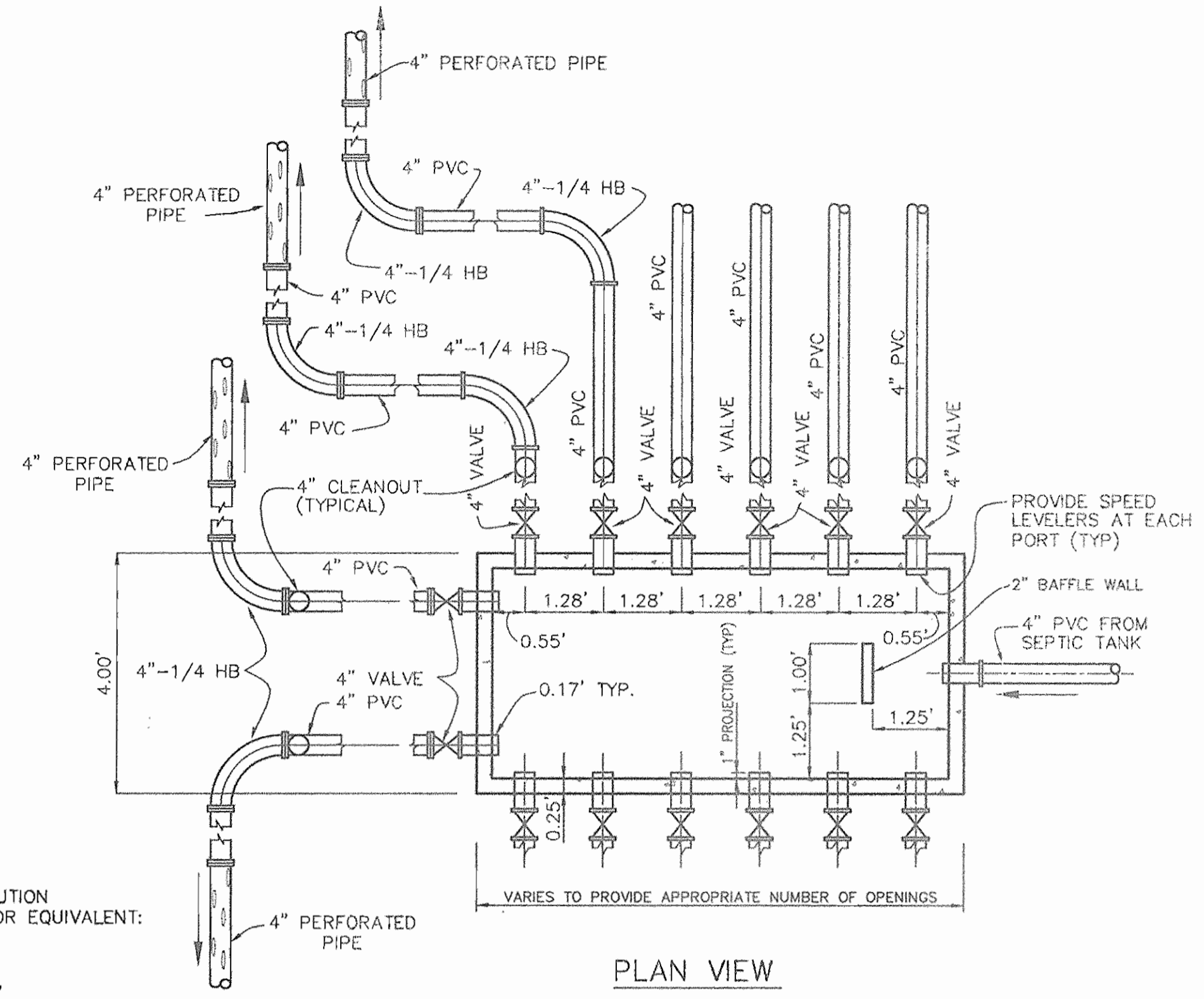
FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

SCALE:
AS SHOWN

SHEET NO.
1 OF 6



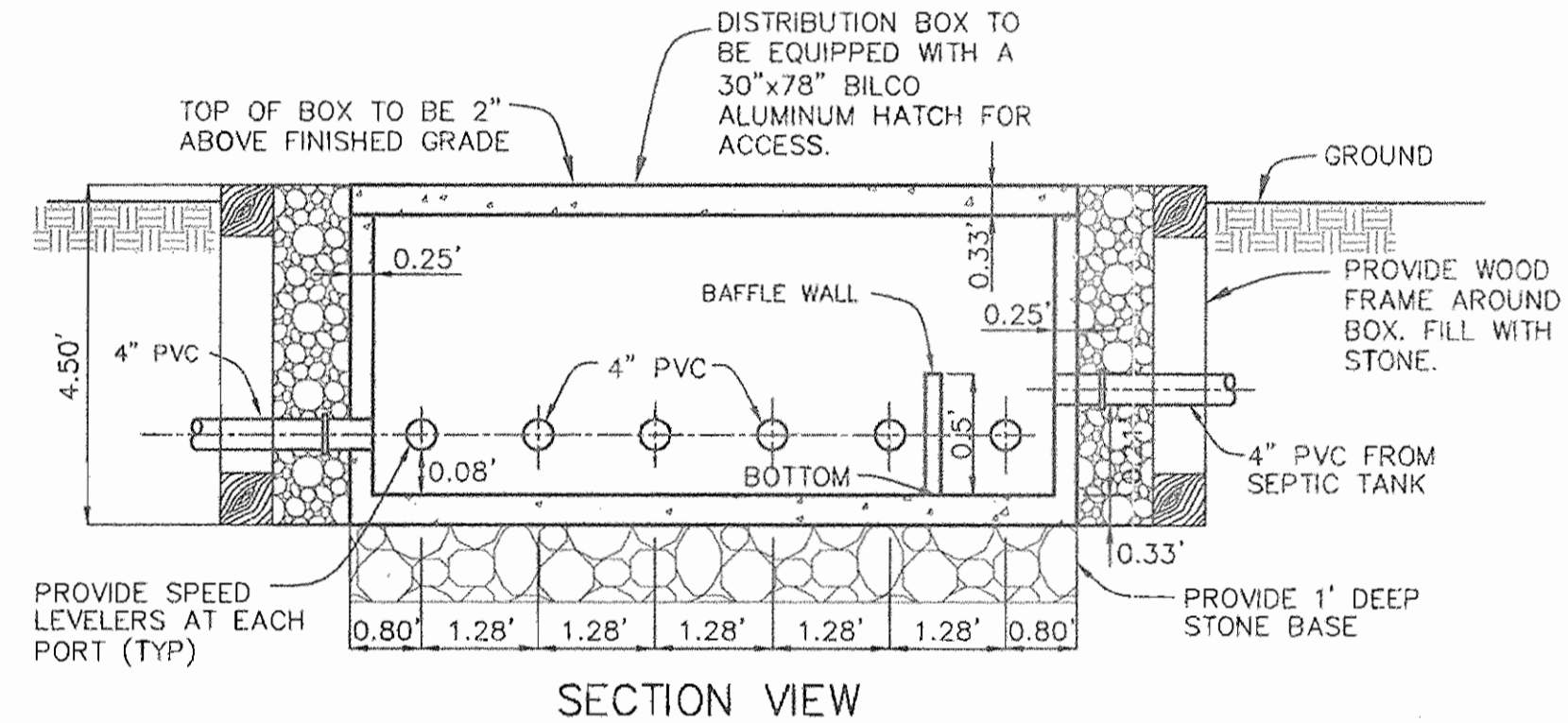
PLAN VIEW
SCALE: 1" = 50'



MANUFACTURER OF DISTRIBUTION BOX SHALL BE AS BELOW OR EQUIVALENT:
MAYER BROTHERS, INC.
6264 RACE ROAD
ELKRIDGE, MARYLAND 21227
410-796-1434

DISTRIBUTION BOX DATA		
BOX NO.	INLET SIDE	TOP ELEV.
BOX #1	N 590655.47 E 1305629.91	528.00
BOX #2	N 580779.16 E 1305574.37	526.30

COORDINATE LOCATION IS AT THE TOP CENTER OF BOX.



TYPICAL CONCRETE DISTRIBUTION BOX DETAIL
NOT TO SCALE

OWNER/DEVELOPER:
TOLL BROTHERS, INC.
7164 COLUMBIA GATEWAY DRIVE
SUITE 230
COLUMBIA, MARYLAND 21046

**MAXIMUM NUMBER OF BEDROOMS FOR EACH HOUSE ON LOTS 39-43, 46 AND 50-51 SHALL BE FOUR (4).
**ALL SEWAGE GRINDER PUMPS ARE TO BE PUBLICLY OWNED AND MAINTAINED

APPROVED:
FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert W. Walker 9/19/06
COUNTY HEALTH OFFICER DATE

HOWARD SOIL CONSERVATION DISTRICT:
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT
AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 8/22/06
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John A. ... 8/22/06
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE
IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE
HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER
ROAD CONSTRUCTION PLANS F-04-118

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

R. H. ... 8-14-06
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

... 8/22/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

Donnell Moore 11/6/06
PROFESSIONAL ENGINEER

DESIGN: DBT			
DRAFT: DBT			
CHK: DAM			
DATE: 7/07/06	BY NO.	REVISIONS	DATE

PLAN VIEW OF
SHARED SEPTIC SYSTEM

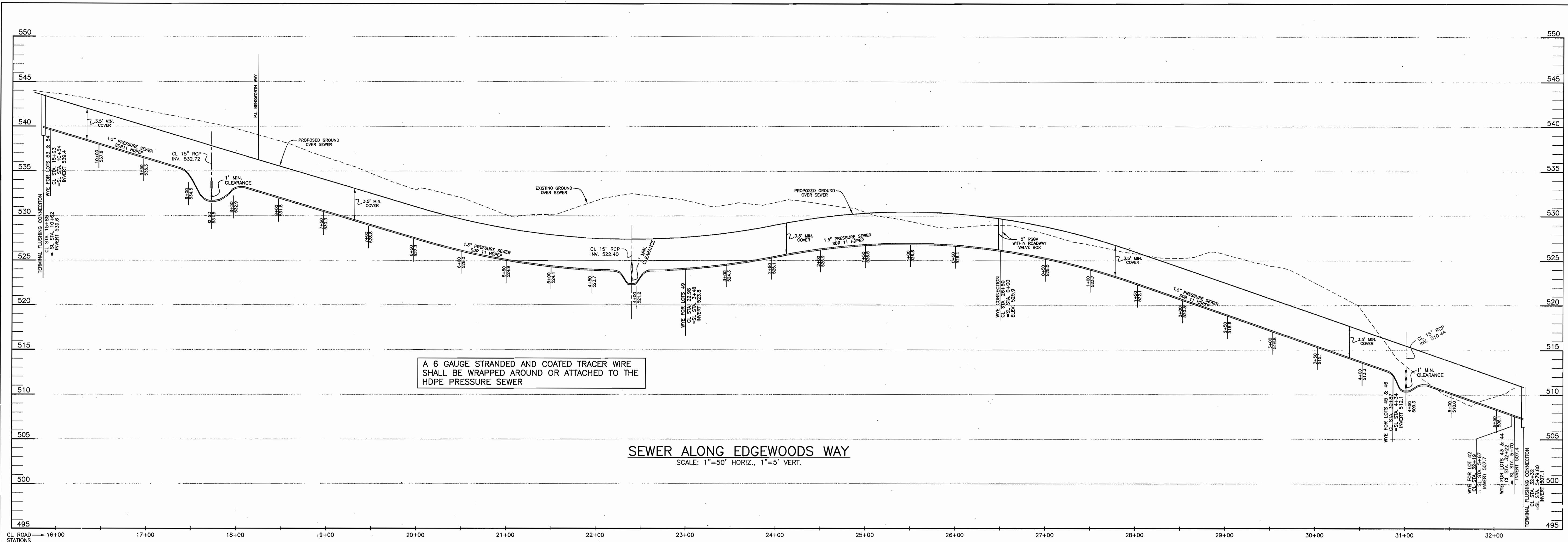
600 SCALE MAP NO. 50 BLOCK 3

EDGEWOOD FARM
SHARED SEPTIC PLAN FOR LOTS
LOTS 42-46, 49, 53 AND 54

FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

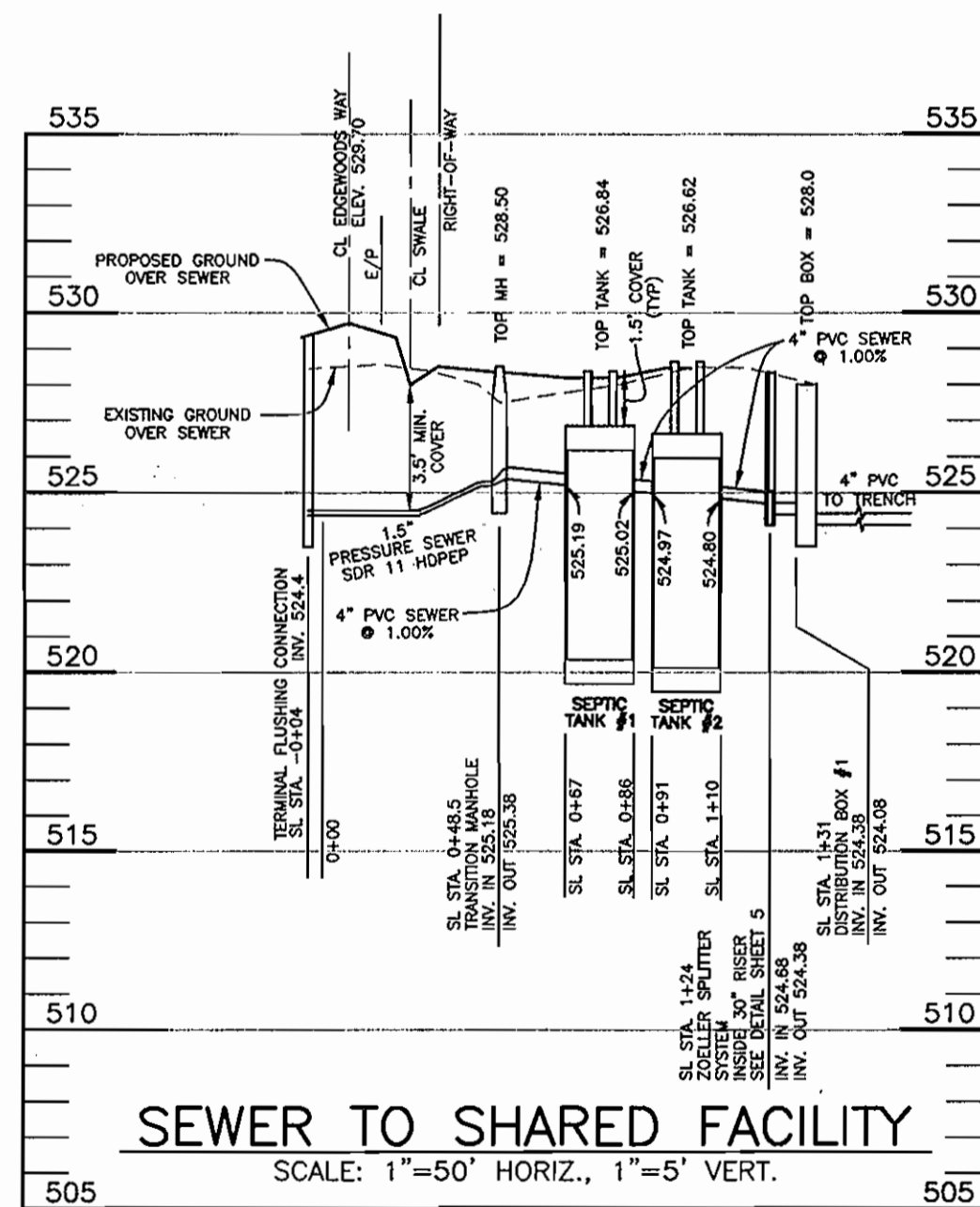
SCALE:
AS SHOWN

SHEET NO.
2 OF 6

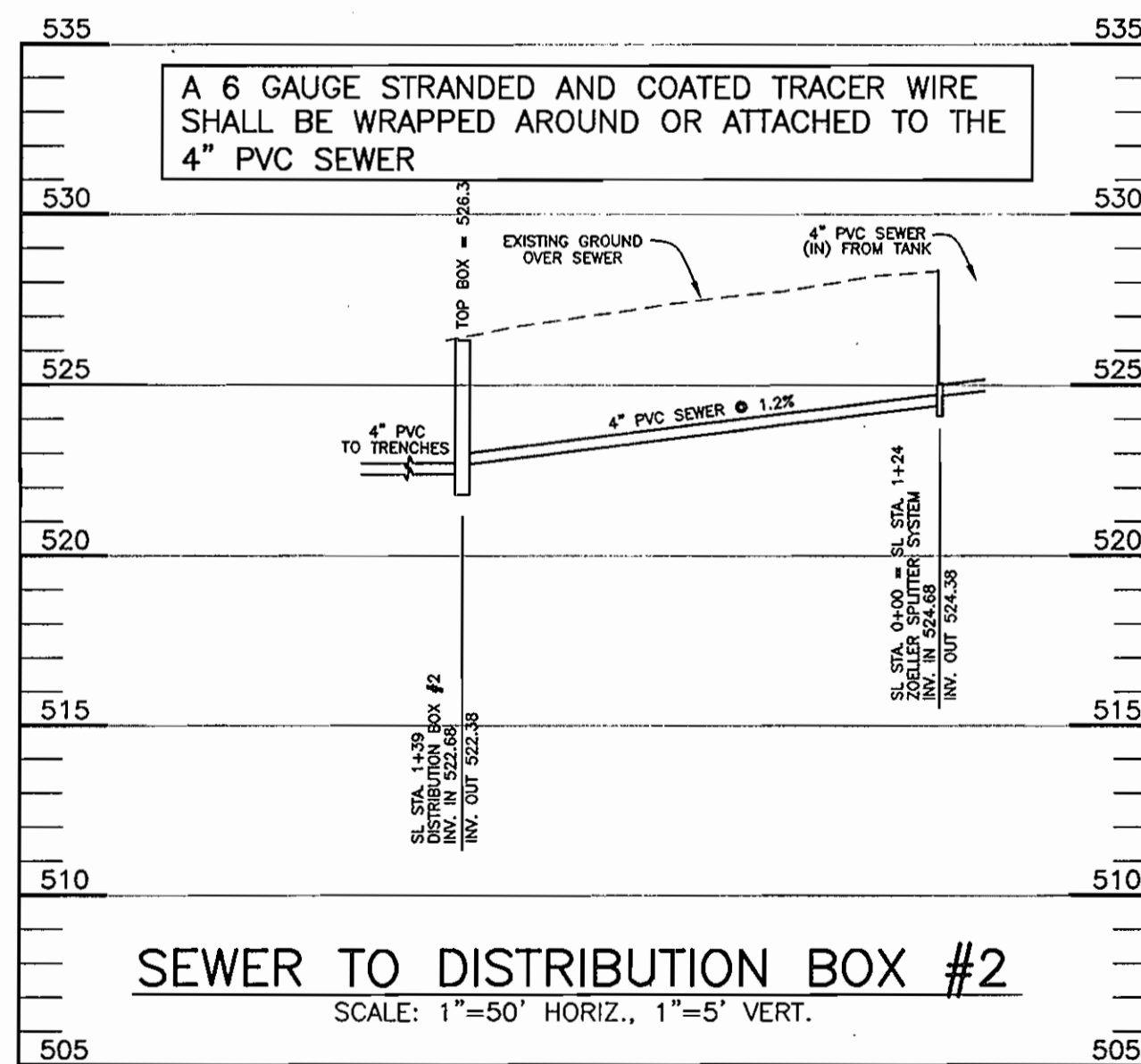


A 6 GAUGE STRANDED AND COATED TRACER WIRE SHALL BE WRAPPED AROUND OR ATTACHED TO THE HDPE PRESSURE SEWER

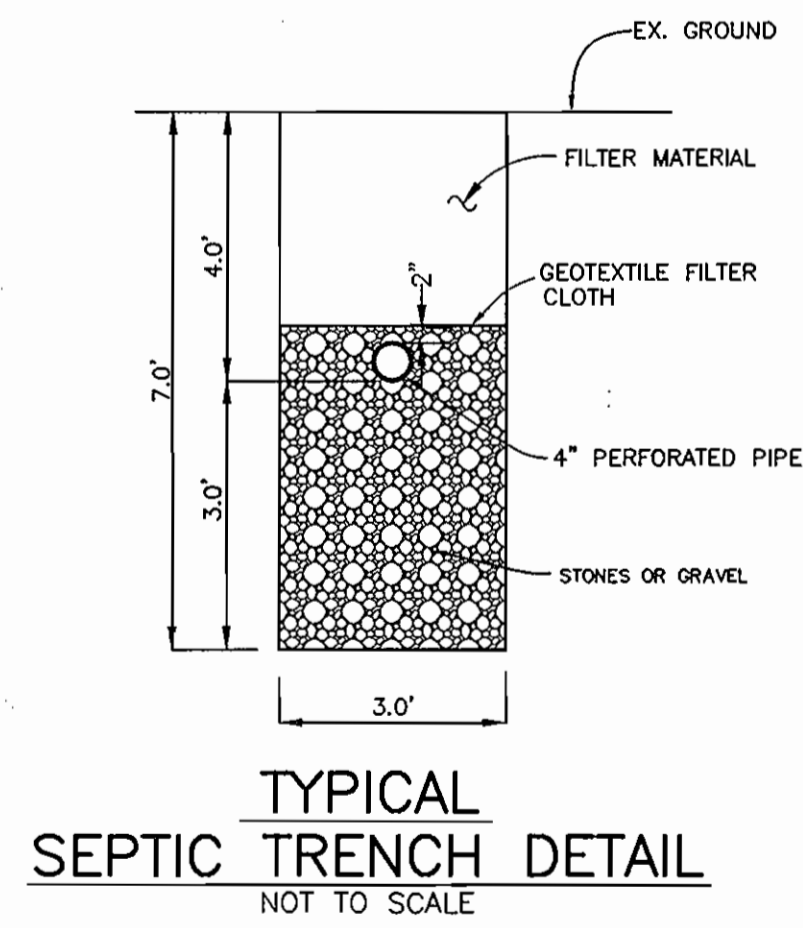
SEWER ALONG EDGEWOODS WAY
SCALE: 1"=50' HORIZ., 1"=5' VERT.



SEWER TO SHARED FACILITY
SCALE: 1"=50' HORIZ., 1"=5' VERT.



SEWER TO DISTRIBUTION BOX #2
SCALE: 1"=50' HORIZ., 1"=5' VERT.



TYPICAL SEPTIC TRENCH DETAIL
NOT TO SCALE

APPROVED:
FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert Walker
COUNTY HEALTH OFFICER

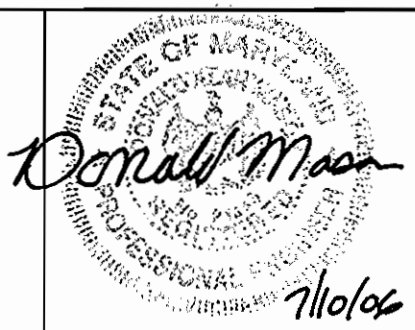
9/28/06
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
ELICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844



DESIGN: DBT
DRAFT: DBT
CHK: DAM
DATE: 7/07/06

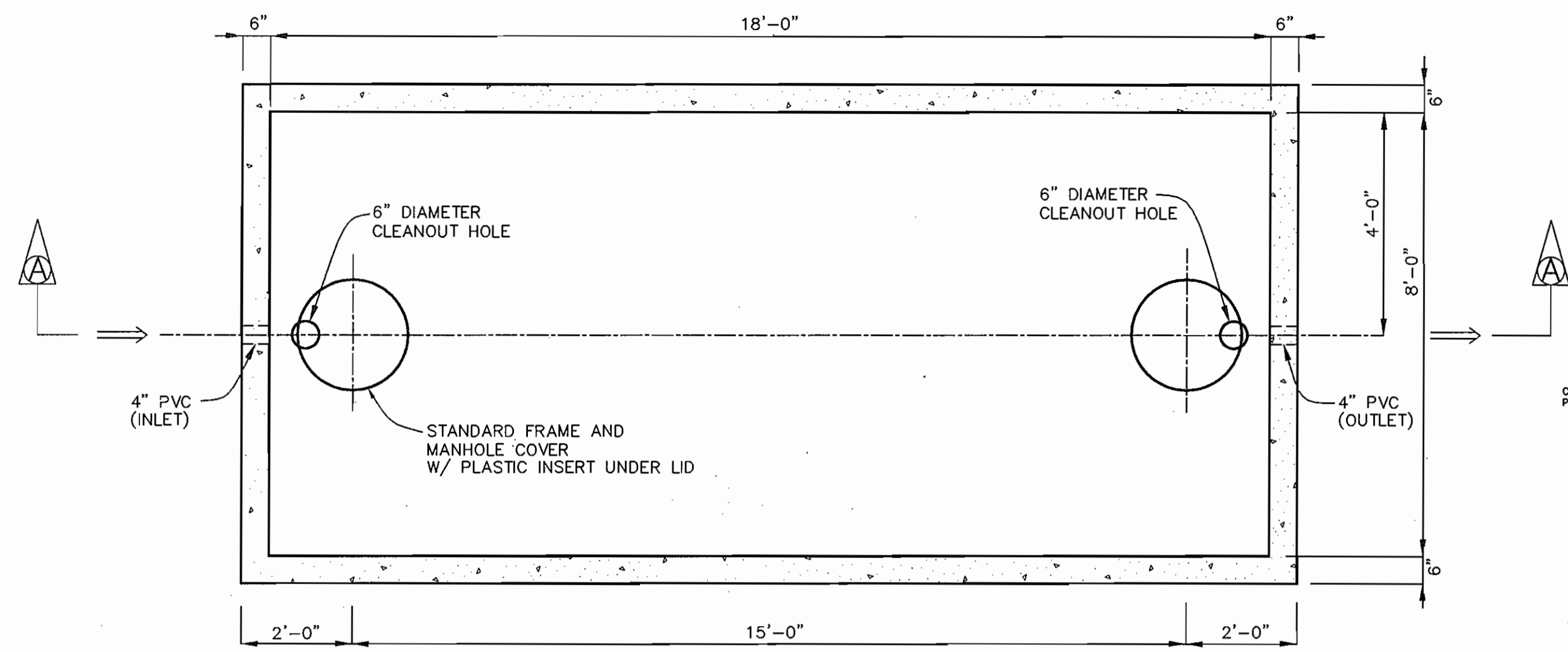
PROFILE OF SEWER MAINS AND DETAILS

600 SCALE MAP NO. 50

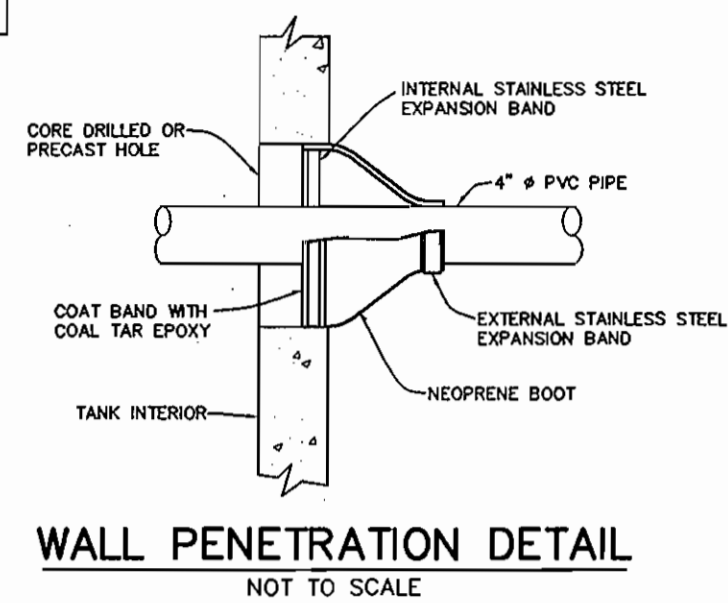
BLOCK 3

EDGEWOOD FARM
SHARED SEPTIC PLAN FOR LOTS
LOTS 42-46, 49, 53 AND 54
FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

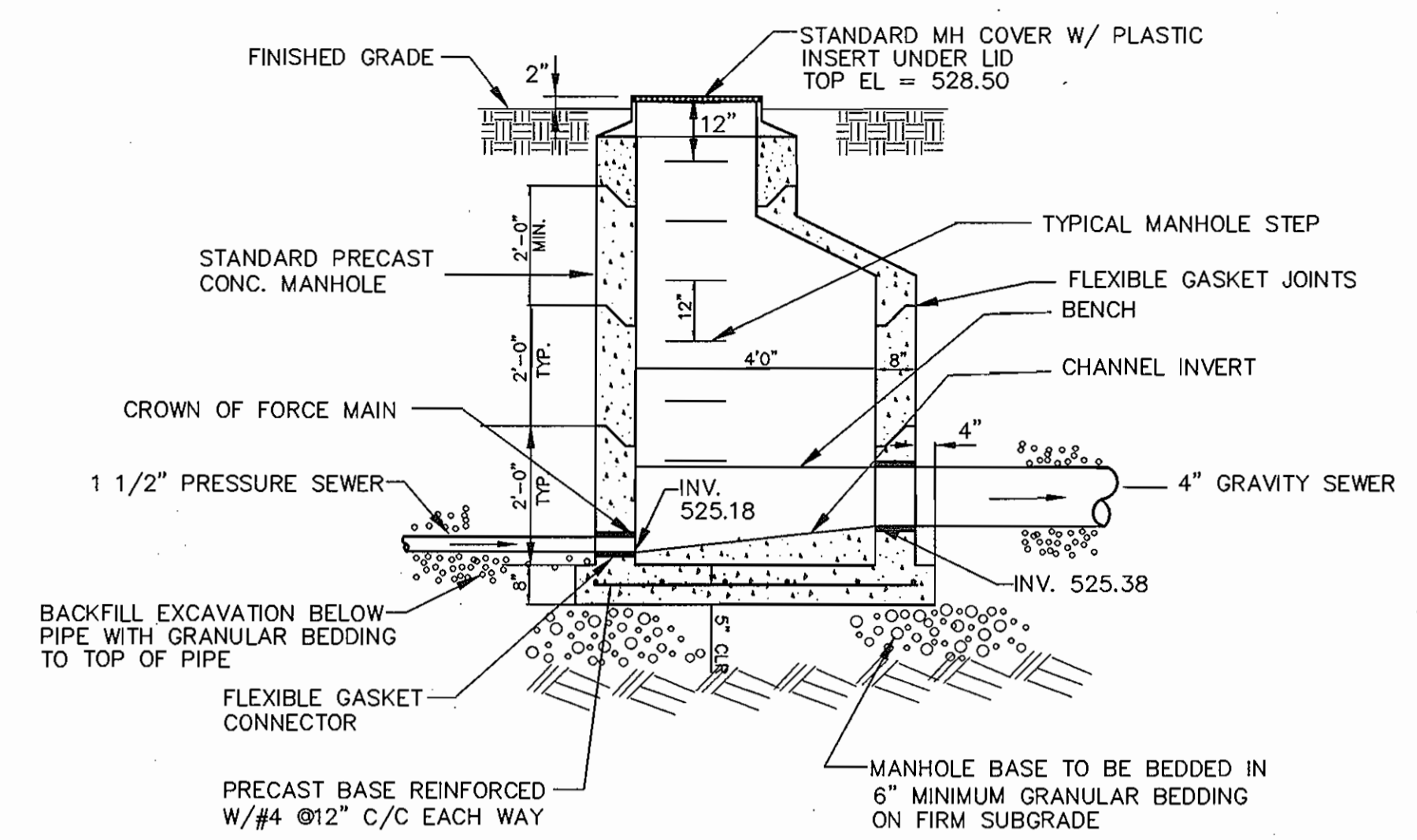
SCALE:
AS SHOWN
SHEET NO.
3 OF 6



PLAN VIEW

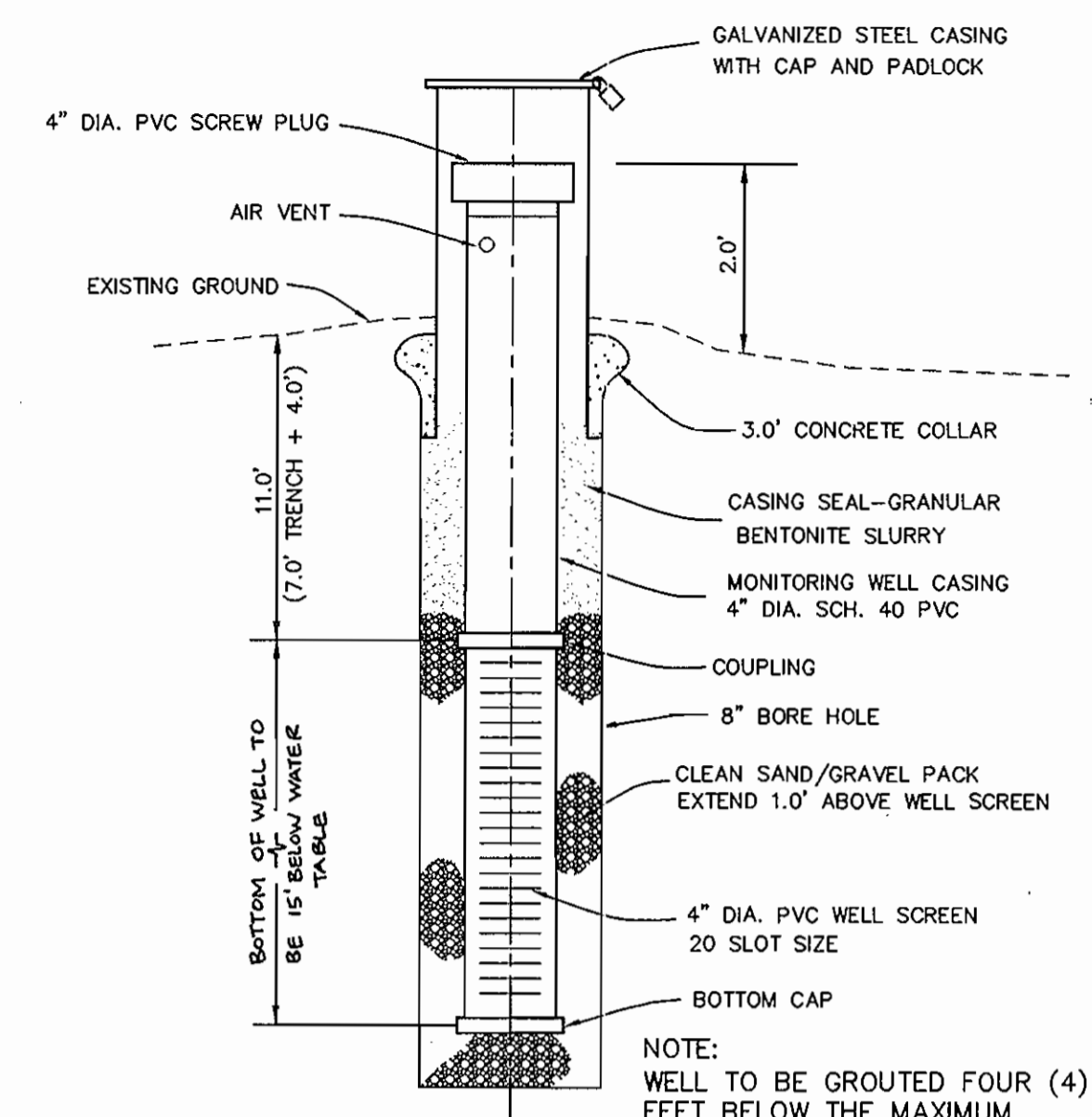


WALL PENETRATION DETAIL
NOT TO SCALE



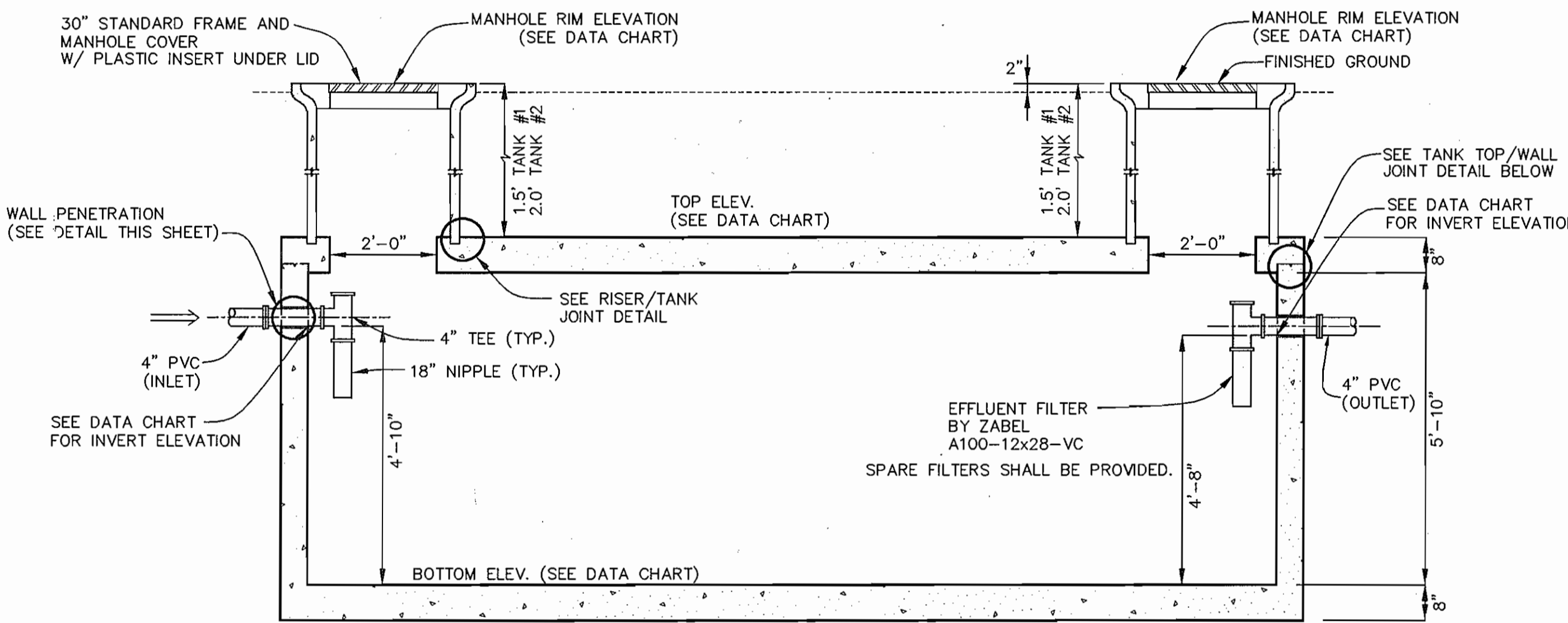
NOTES:
 1. ELEVATION OF GRAVITY SEWER INVERT SHALL BE MINIMUM 0.1' ABOVE ELEVATION OF PRESSURE SEWER CROWN.
 2. PROVIDE SMOOTH UPWARD SLOPING CHANNEL FROM FORCE MAIN TO GRAVITY SEWER.

TRANSITION MANHOLE:
PRESSURE SEWER TO GRAVITY SEWER
NOT TO SCALE

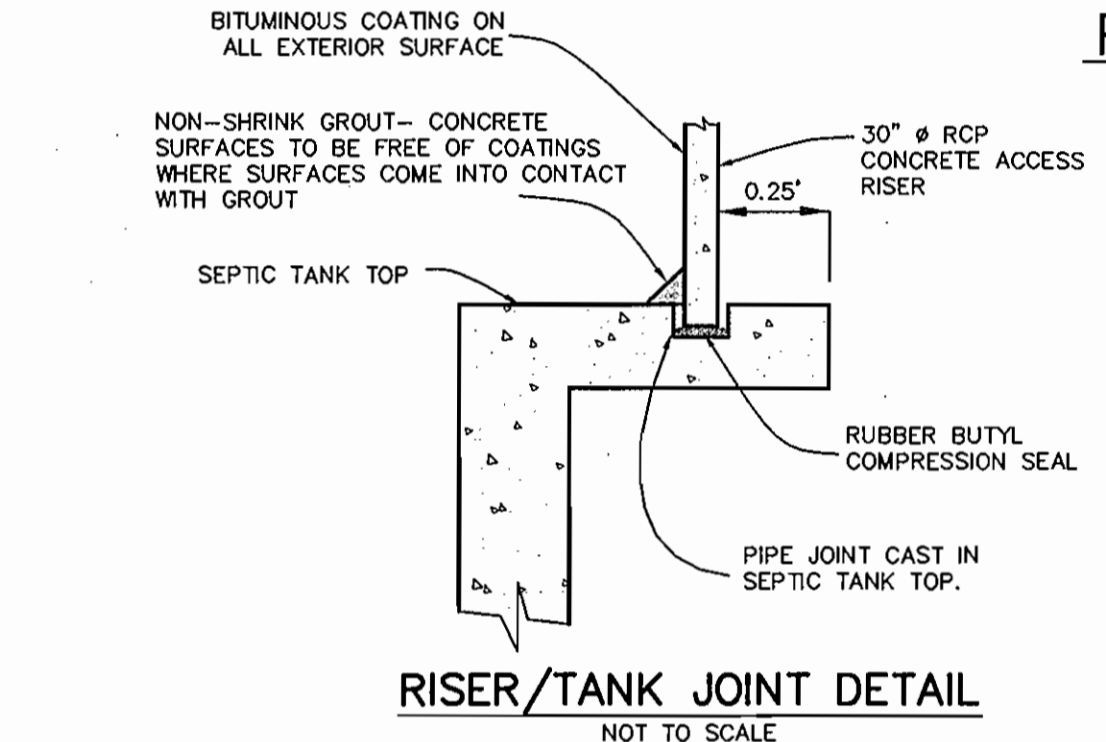


MONITORING WELL DETAIL
NOT TO SCALE

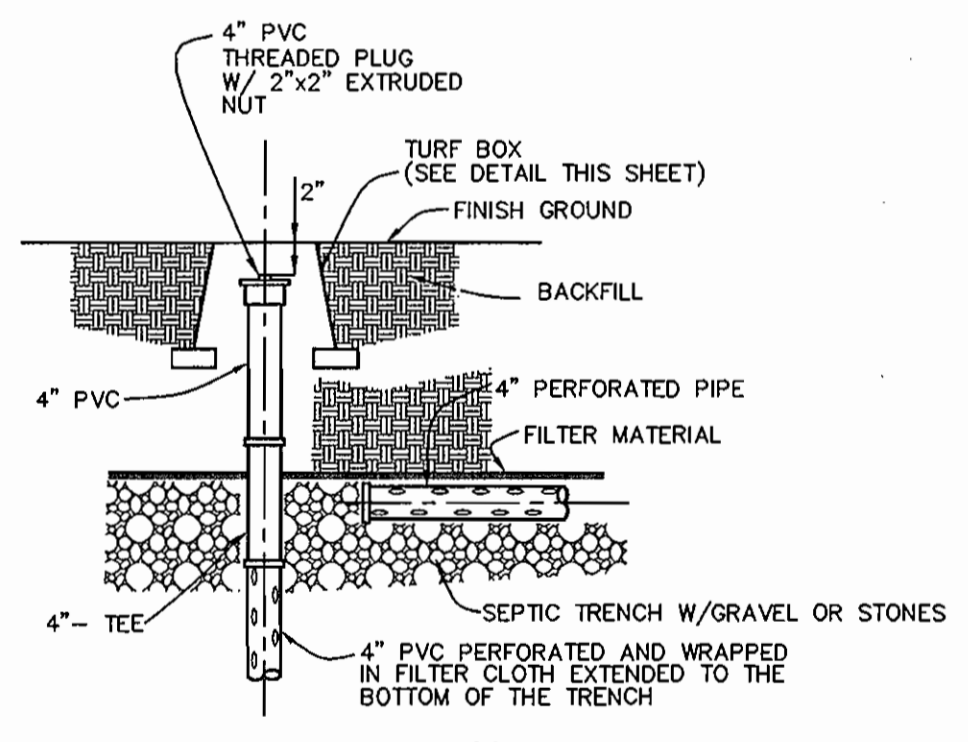
ACCEPTABLE ALTERNATE TO ENVIRONMENT ONE GRINDER PUMP:
 VORTEK GRINDER PUMPS
 C/O FLUID SOLUTIONS, INC.
 TANEYTOWN, MARYLAND
 410-755-9292



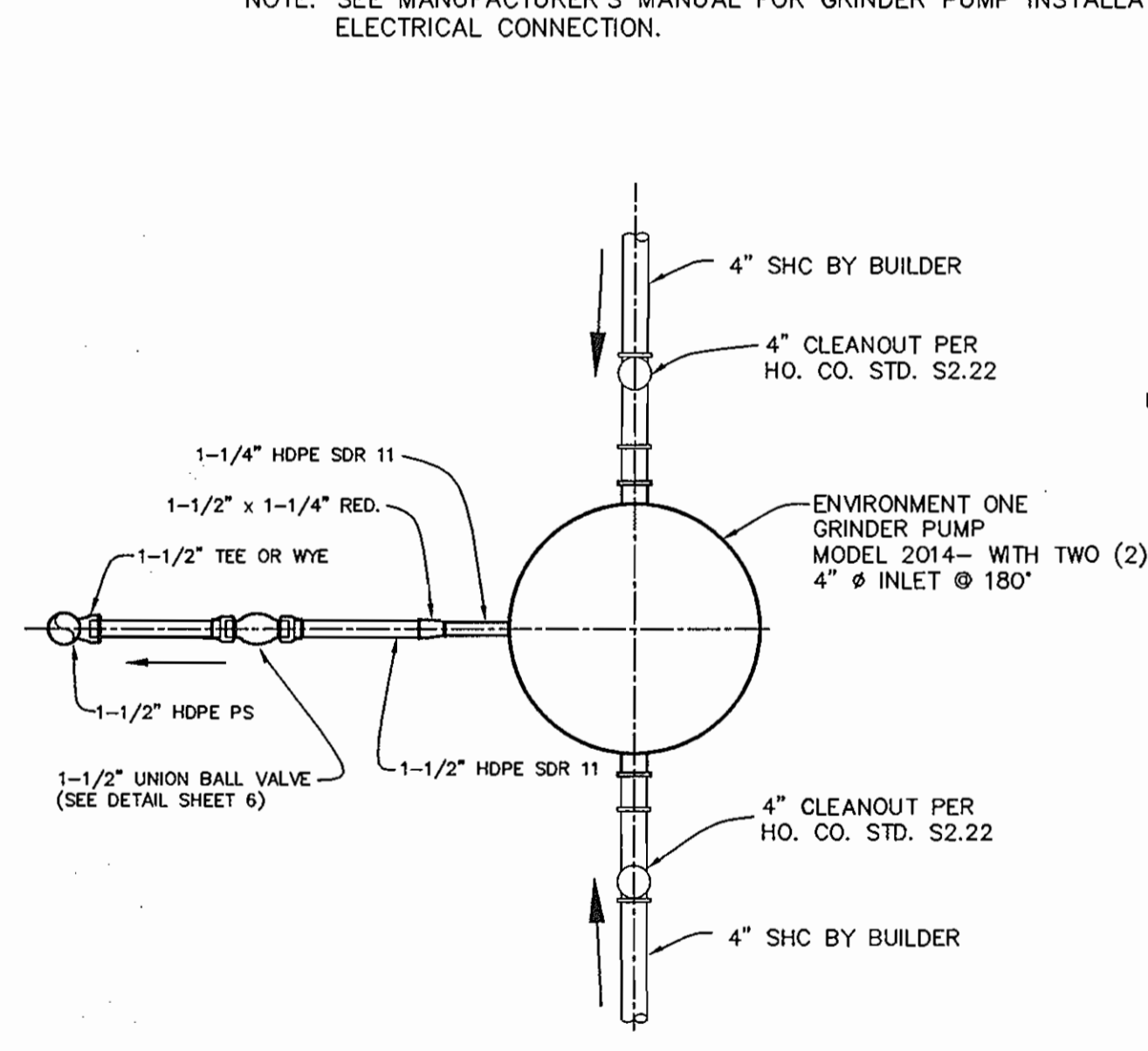
SECTION VIEW A-A



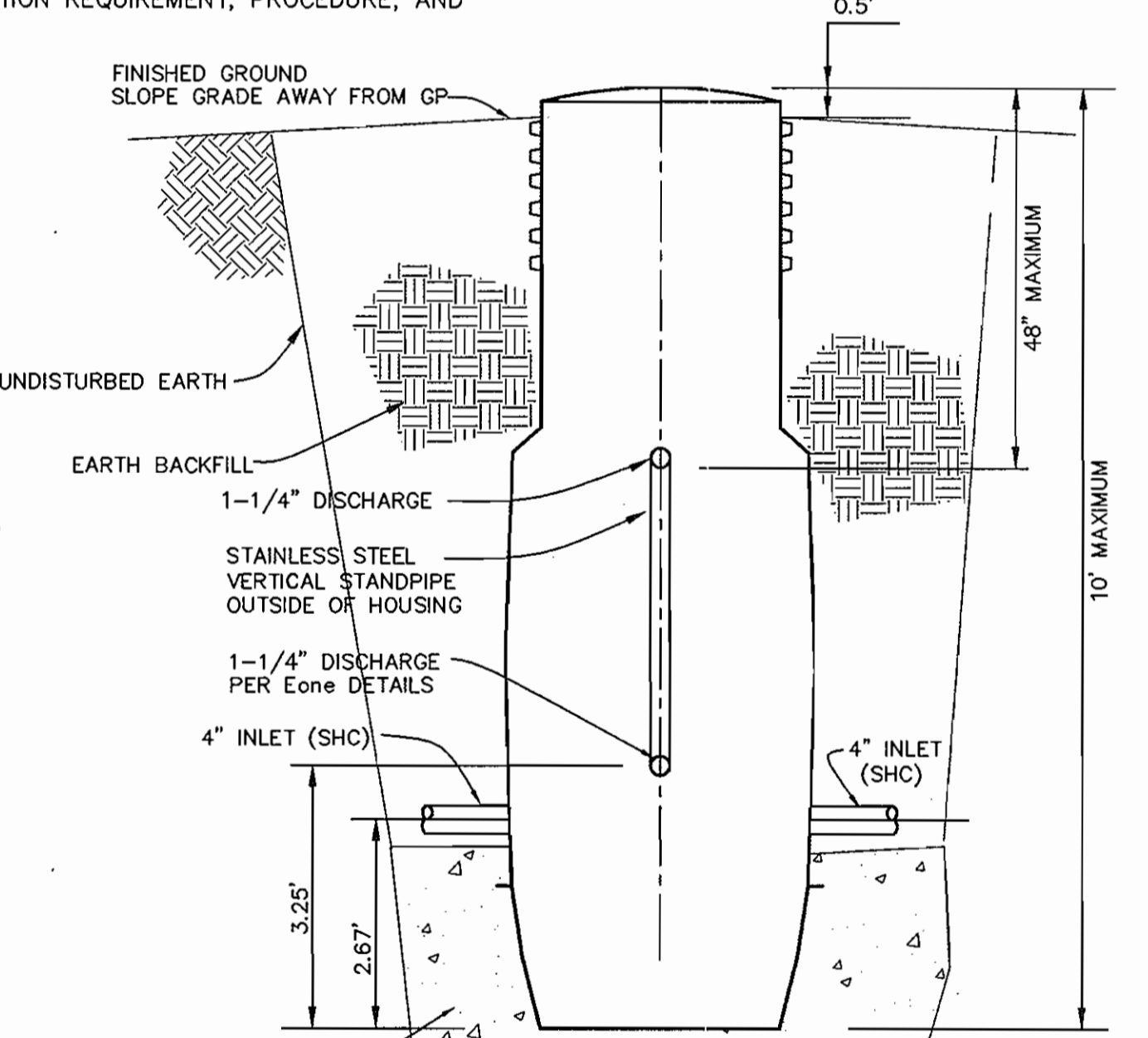
RISER/TANK JOINT DETAIL
NOT TO SCALE



DISTRIBUTION LATERAL TERMINATION DETAIL
NOT TO SCALE



PLAN VIEW



SECTION VIEW

TYPICAL DUPLEX GRINDER PUMP (MODEL #2014)
NOT TO SCALE

REINFORCING:
 WALLS - #4 REBAR, 8" C/C E/W
 SLAB TOP - #4 REBAR, 8" C/C E/W
 BASE - #4 REBAR, 8" C/C E/W
 REBAR GRADE 60

JOINTS SEALED WITH BUTYL ROPE FORM AND MORTAR.

CONCRETE 4,000 PSI IN 28 DAYS

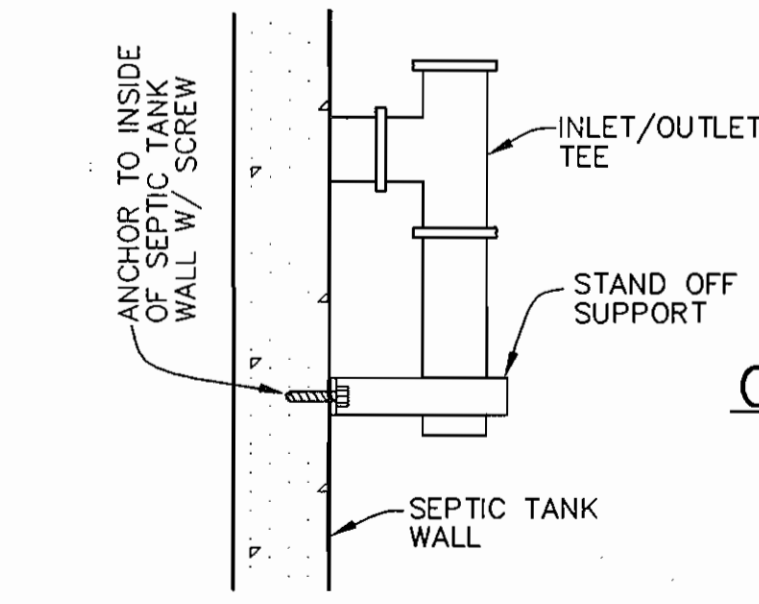
INTERIOR COATED WITH TWO COATS INERT COATING.

5,000 GALLON SEPTIC TANK DATA				
	TANK ELEVATION	INVERT ELEVATION	TANK COORDINATES	MANHOLE RIM ELEVATION
SEPTIC TANK #1	TOP = 526.84	525.19 IN	N 580692.11 E 1305993.51	528.34
	BOT = 520.35	525.02 OUT	N 580674.64 E 1305600.98	528.34
SEPTIC TANK #2	TOP = 526.62	524.97 IN	N 580670.04 E 1305602.95	528.62
	BOT = 520.13	524.80 OUT	N 580652.58 E 1305610.42	528.62

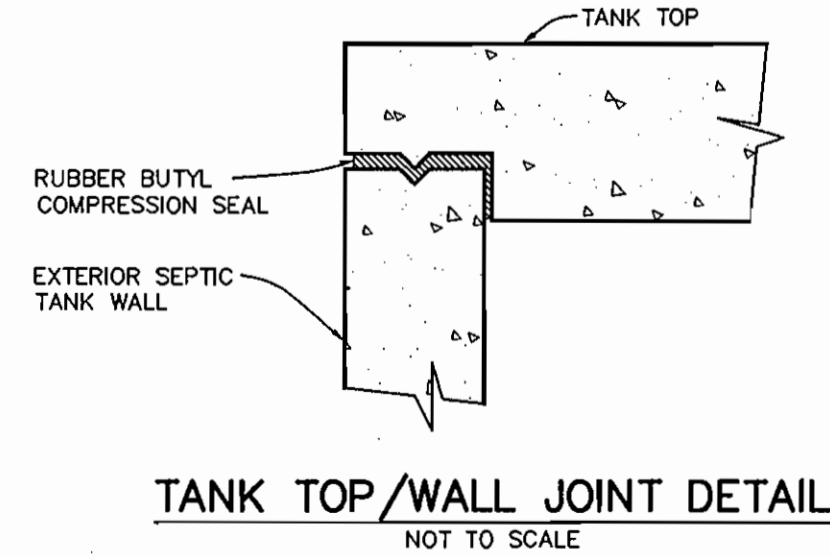
NOTES:
 1. MANHOLE RIM ELEVATION SHOWN HEREON IS AT THE CENTER OF THE RIM.
 2. TANK COORDINATES ARE AT THE MIDPOINT OF EACH END.

SEPTIC TANK TO BE PRECAST BY J.F. GILLESPIE, INC. OR EQUAL.

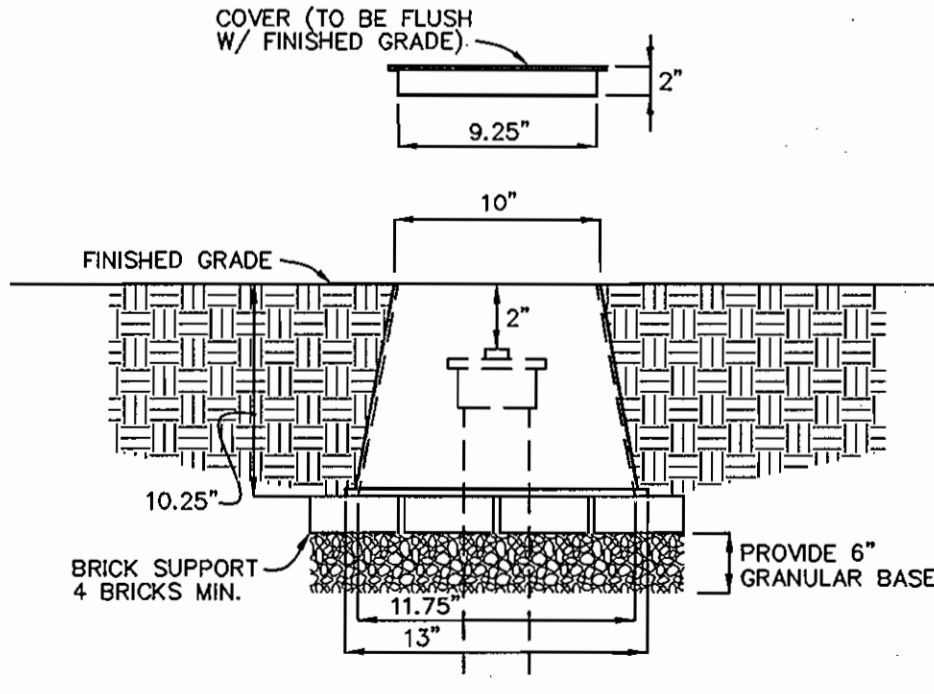
PRECAST CONCRETE 5000 GALLON CAPACITY SINGLE COMPARTMENT SEPTIC TANK
SCALE: 1" = 2'



ANCHOR SUPPORT FOR INLET AND OUTLET TEES
NOT TO SCALE



TANK TOP/WALL JOINT DETAIL
NOT TO SCALE



TURF BOX DETAIL
NOT TO SCALE

TURF BOX TO BE A CARSON GRADE LEVEL ENCLOSURE SMALL BOX SERIES MODEL #910

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

BENCHMARK
 ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644



DESIGN:	DBT				
DRAFT:	DBT				
CHK:	DAM				
DATE:	7/07/06	BY	NO.	REVISIONS	DATE

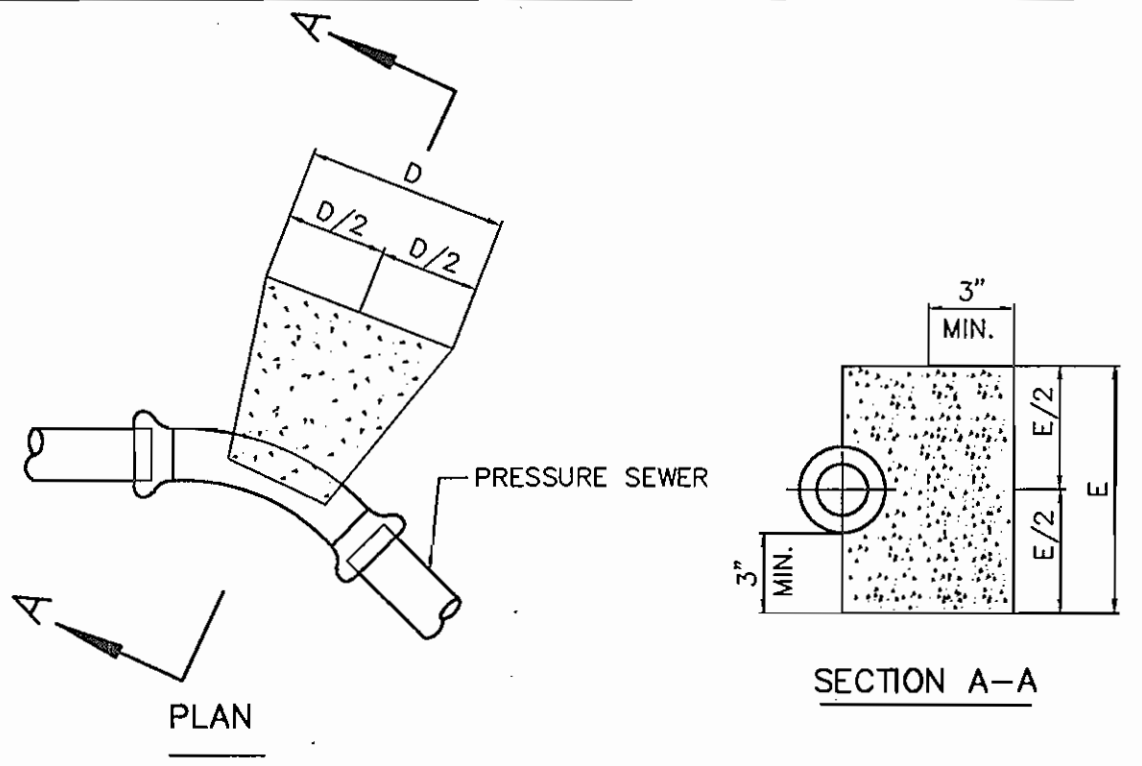
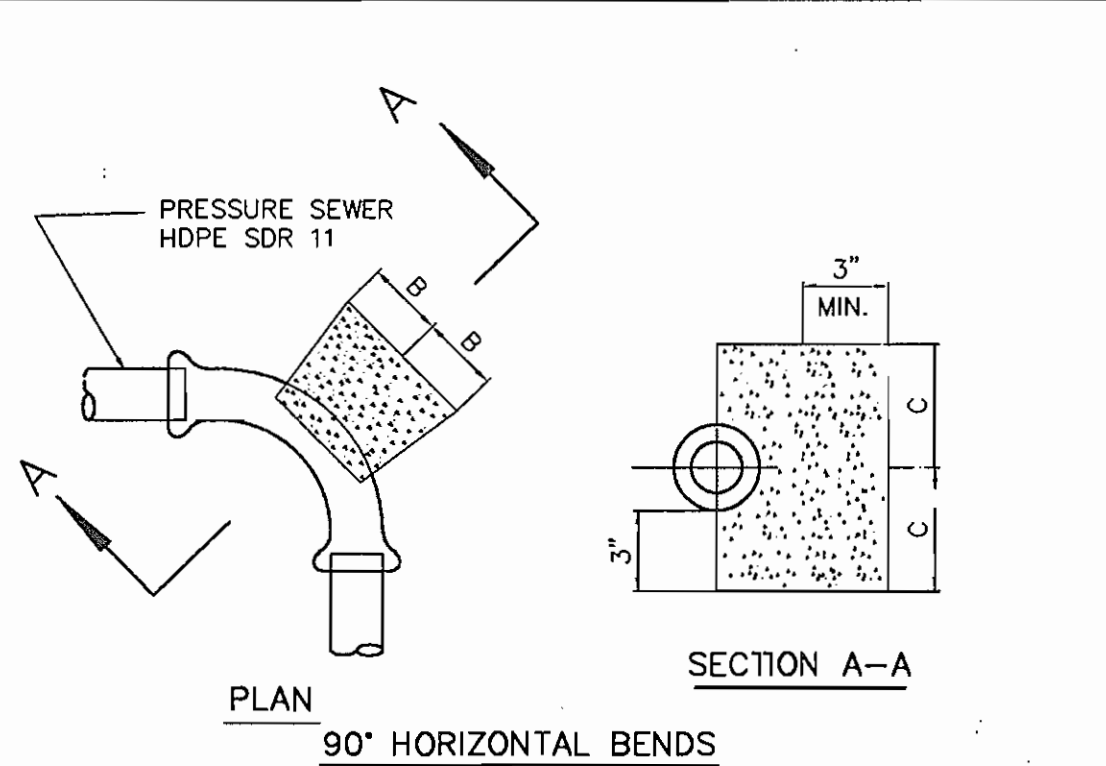
600 SCALE MAP NO. 50
BLOCK 3

EDGEWOOD FARM
 SHARED SEPTIC PLAN FOR LOTS
 LOTS 42-46, 49, 53 AND 54
 FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

SCALE:
AS SHOWN
 SHEET NO.
4 OF 6

APPROVED:
 FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert M. Walsh
 COUNTY HEALTH OFFICER
 7/29/06
 DATE

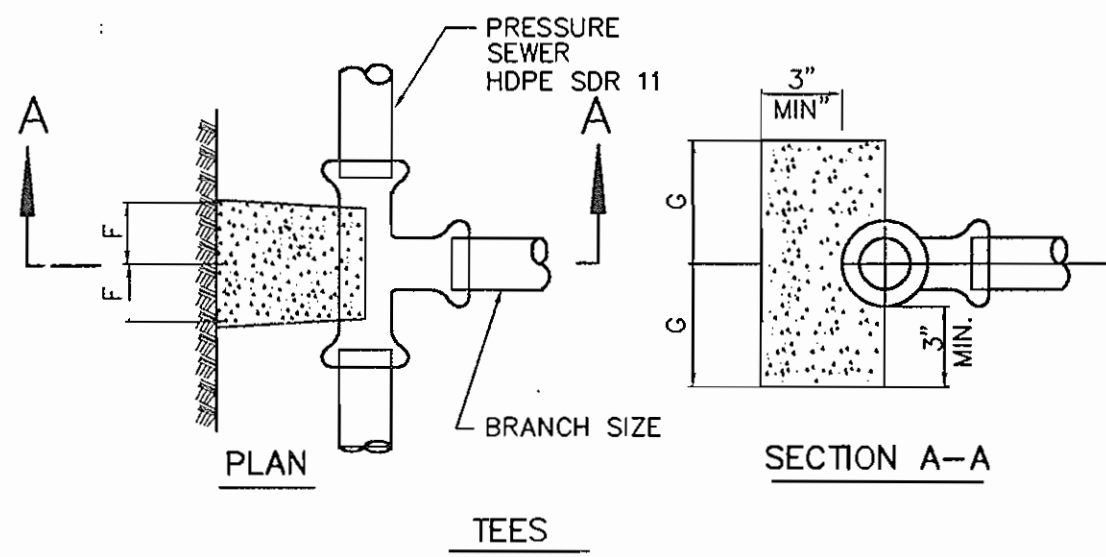
DETAILS



11-1/4, 22-1/2, 45° HORIZONTAL & LOWER VERTICAL BENDS

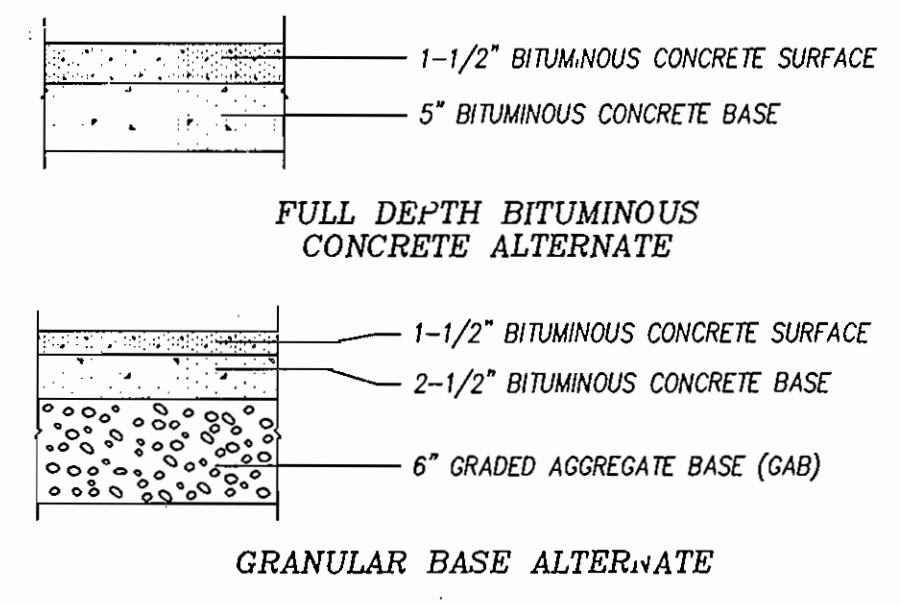
PIPE SIZE	B	C	D	E	F	G
1-1/4" & 1-1/2"	4"	4"	5"	5"	3"	3"
2"	5"	5"	7"	7"	5"	5"

- NOTES:
- f'c = 3000 psi @ 28 DAYS.
 - CARRY ALL BEARING SURFACE TO UNDISTURBED GROUND OR FIRM SUBGRADE.
 - BUTTRESS SIZED FOR 150 psi.
 - DO NOT ENCASE JOINTS.



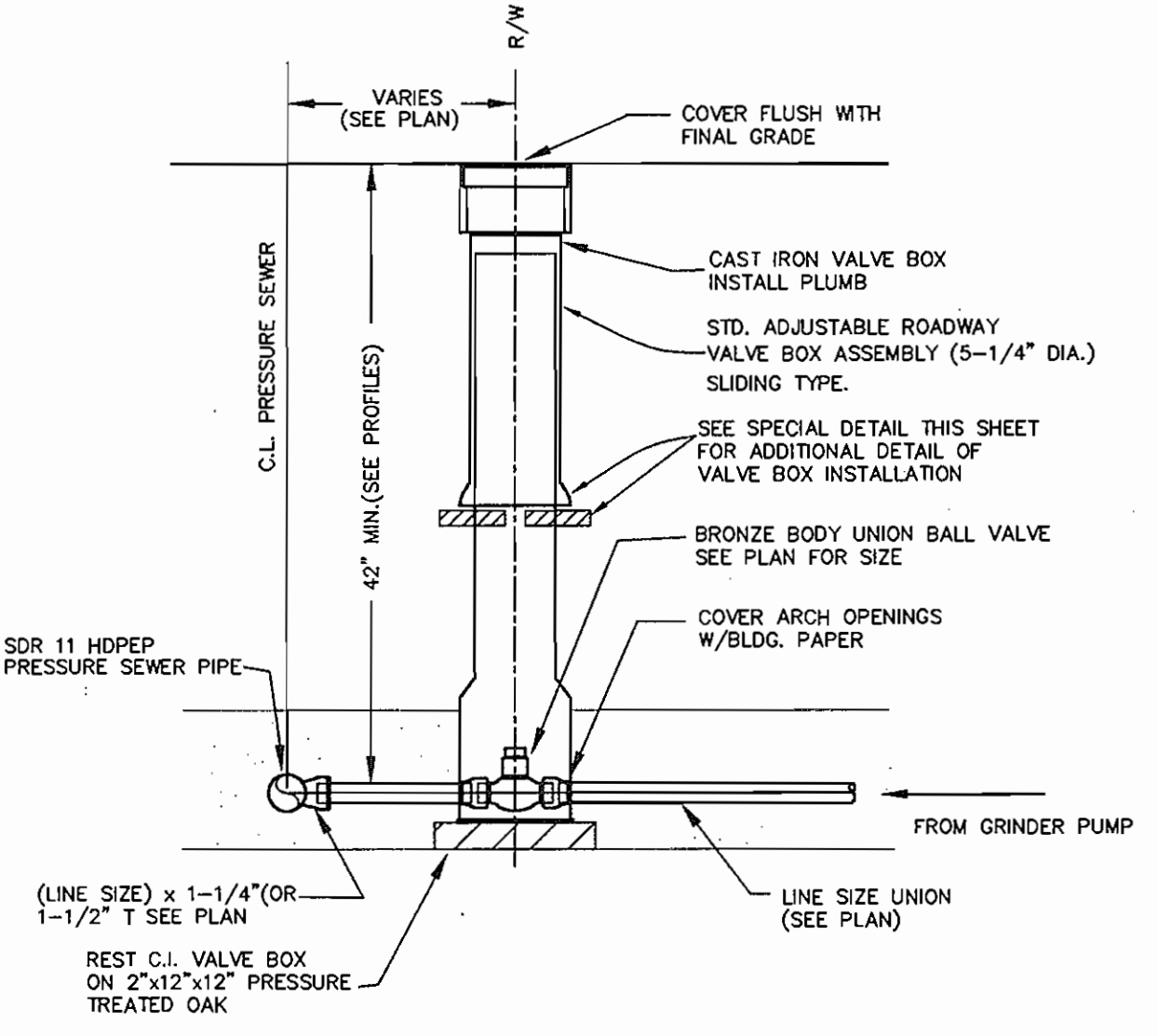
PRESSURE SEWER BLOCKING DETAILS

NOT TO SCALE



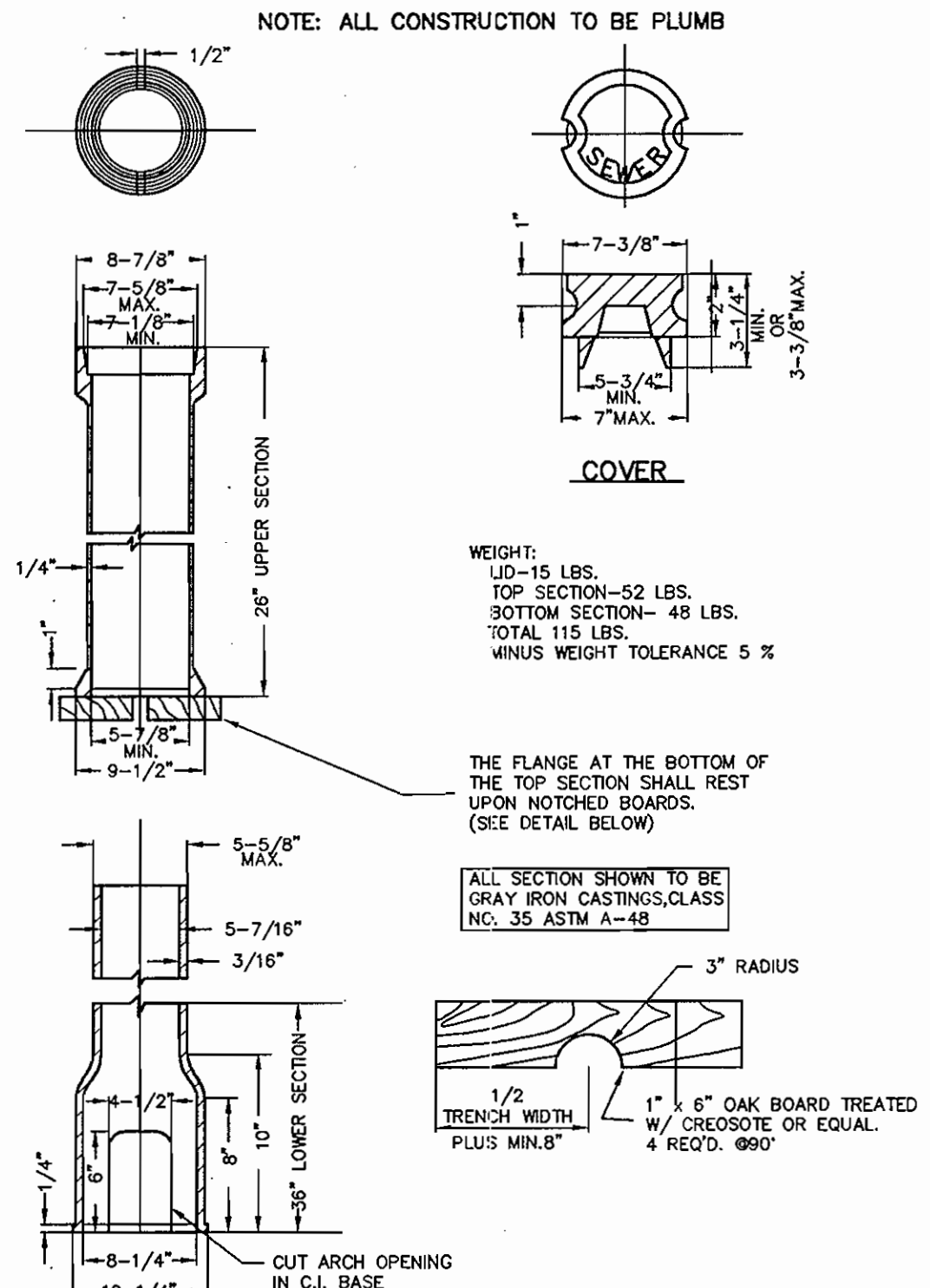
PAVING SECTION P-2

NOT TO SCALE

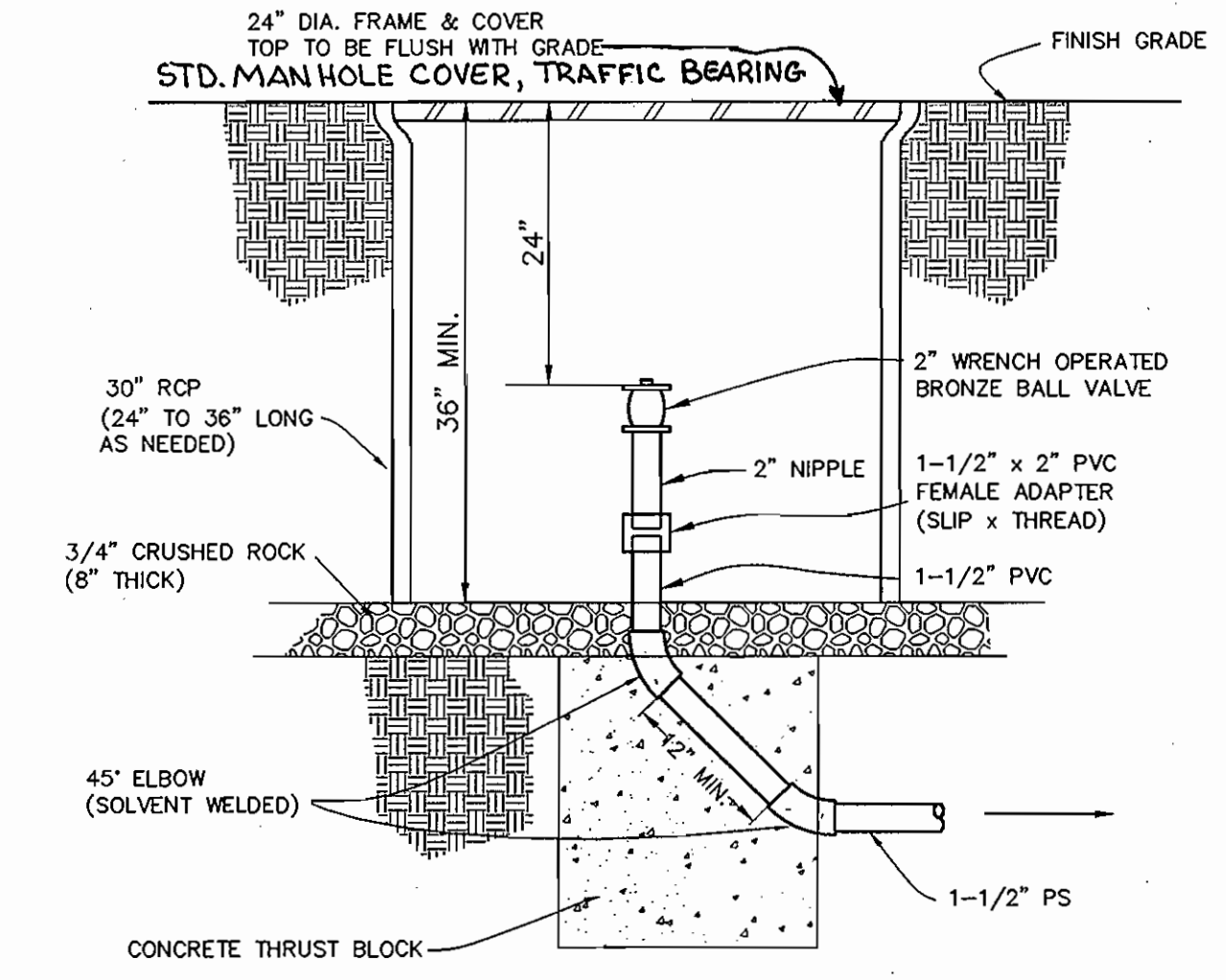


- NOTES:
- MAINTAIN 42" MINIMUM COVER OVER PRESSURE SEWER.
 - OAK BOARDS TO REST ON UNDISTURBED EARTH OR FIRM SUBGRADE.
 - ALL CONNECTIONS SHALL BE SOLVENT WELDED.
 - INSURE CHECK VALVE IS PROPERLY ORIENTED IN DIRECTION OF FLOW & RIGHT SIDE UP.

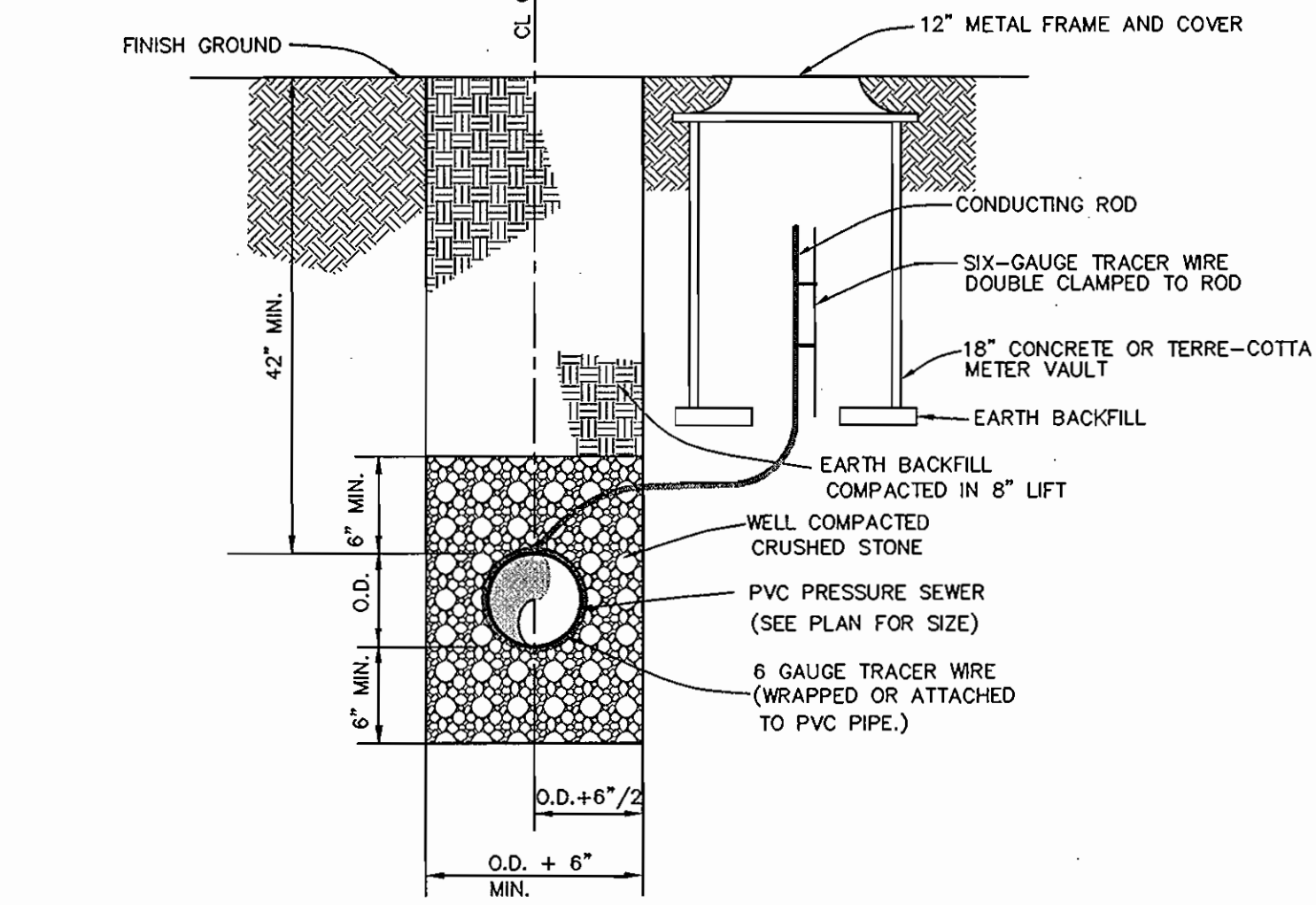
UNION BALL VALVE ASSEMBLY NOT TO SCALE



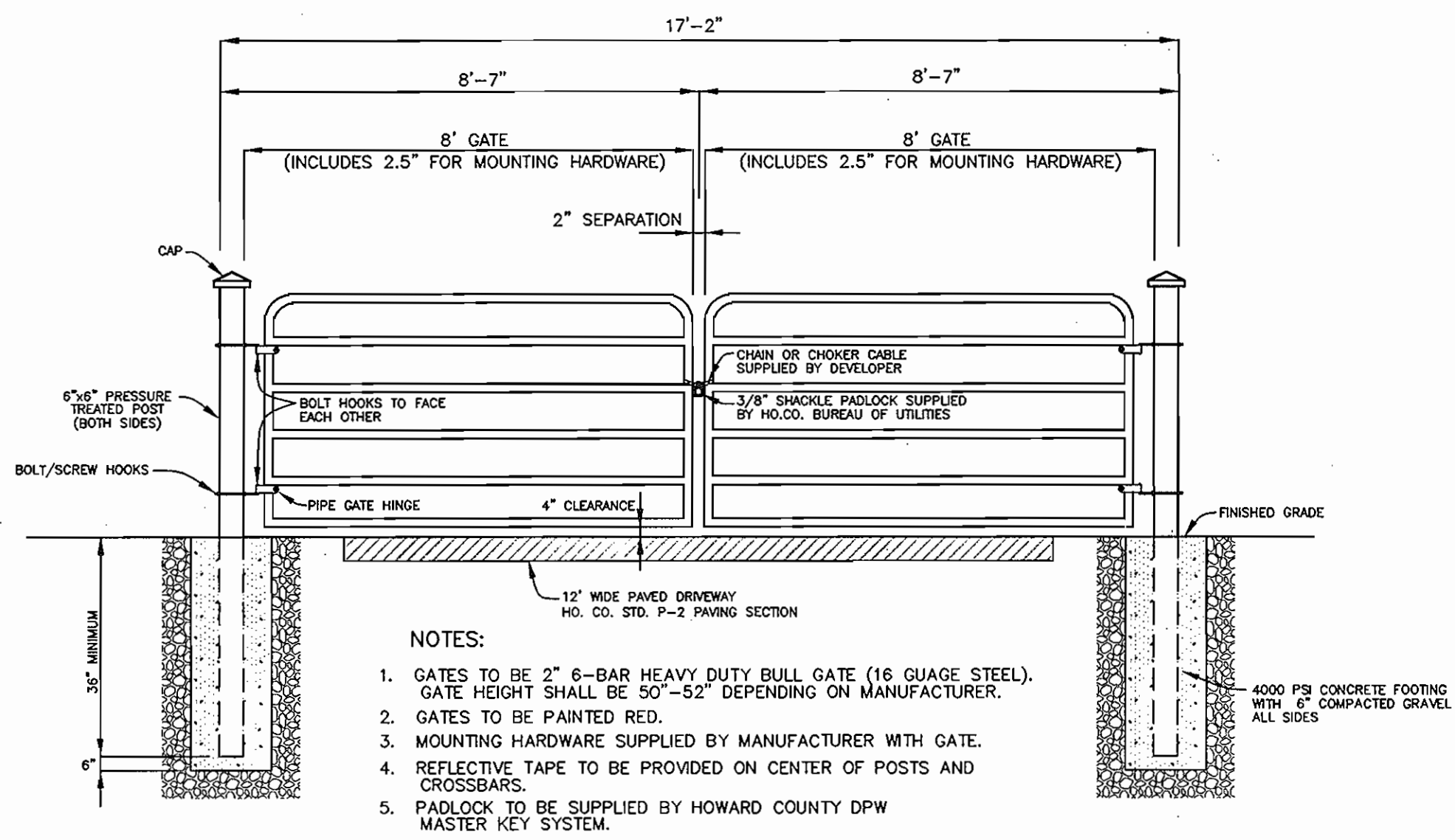
ADJUSTABLE VALVE BOX ROUND HEAD SLIDING TYPE NOT TO SCALE



TERMINAL FLUSHING CONNECTION NOT TO SCALE

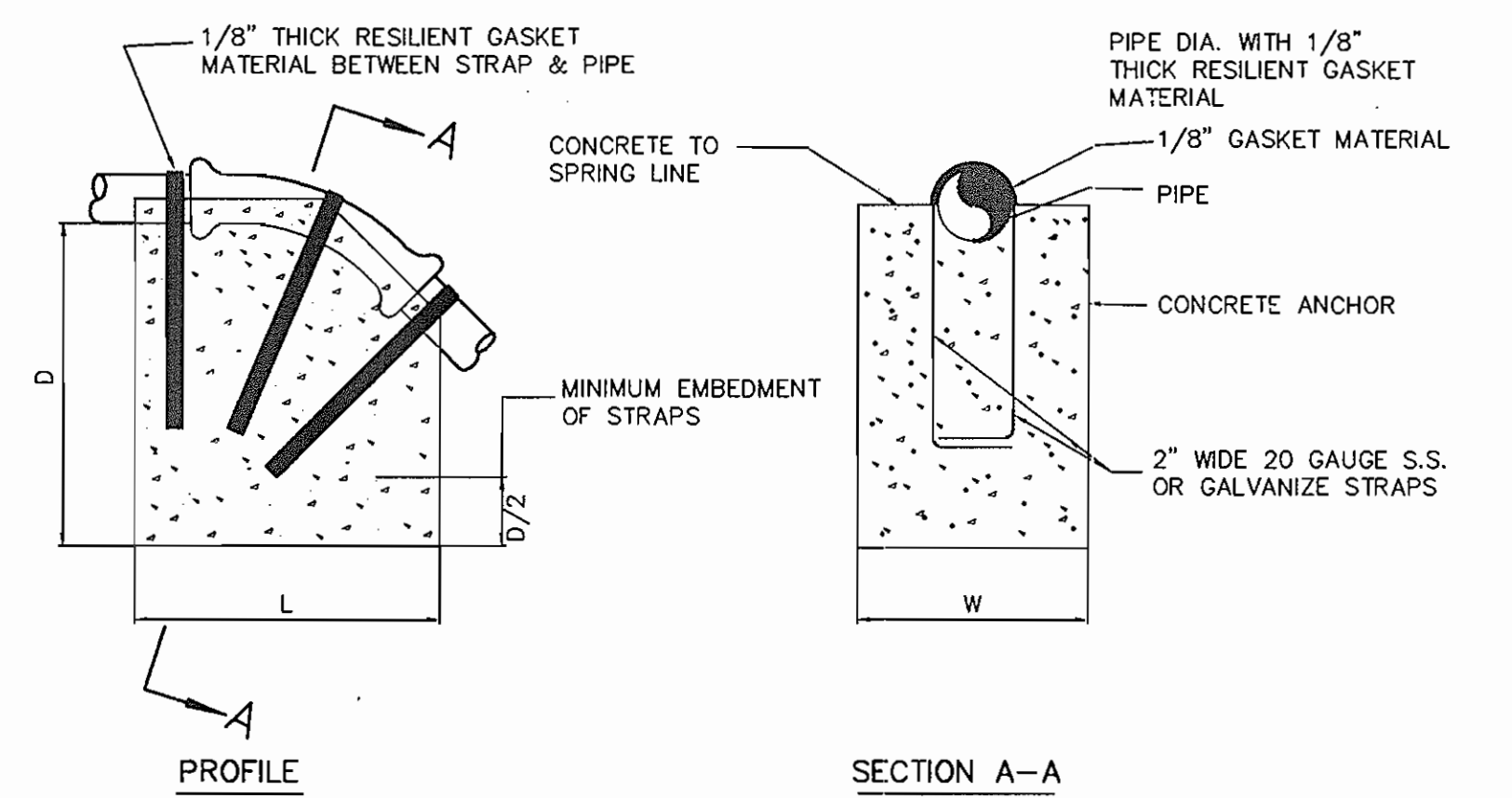


PRESSURE SEWER TRENCH, BEDDING & CONDUCTING ROD CABLE BOX LOCATION DETAIL NOT TO SCALE



GATE DETAIL NOT TO SCALE

- NOTES:
- GATES TO BE 2" 6-BAR HEAVY DUTY BULL GATE (16 GAUGE STEEL). GATE HEIGHT SHALL BE 50"-52" DEPENDING ON MANUFACTURER.
 - GATES TO BE PAINTED RED.
 - MOUNTING HARDWARE SUPPLIED BY MANUFACTURER WITH GATE.
 - REFLECTIVE TAPE TO BE PROVIDED ON CENTER OF POSTS AND CROSSBARS.
 - PADLOCK TO BE SUPPLIED BY HOWARD COUNTY DPW MASTER KEY SYSTEM.



BEND	1-1/4"	22-1/2"	45"
L	12"	12"	12"
W	10"	10"	10"
D	10"	10"	10"
L	15"	15"	15"
W	15"	15"	15"
D	12"	12"	12"
L	20"	20"	20"
W	20"	20"	20"
D	12"	12"	12"

- NOTES:
- PAIN EXPOSED GALVANIZE STRAPS WITH TWO(2) COATS OF BITUMINOUS PAINT.
 - f'c = 3000 psi AT 28 DAYS.
 - CARRY ALL BEARING SURFACE TO UNDISTURBED EARTH OR FIRM SUBGRADE.
 - CONCRETE ANCHORAGE DIMENSIONS ARE BASED ON TOTAL PRESSURE OF 150 psi.

ANCHORING PRESSURE SEWERS (UPPER VERTICAL BENDS) NOT TO SCALE

SPECIFICATIONS FOR UTILITY STORAGE BUILDING

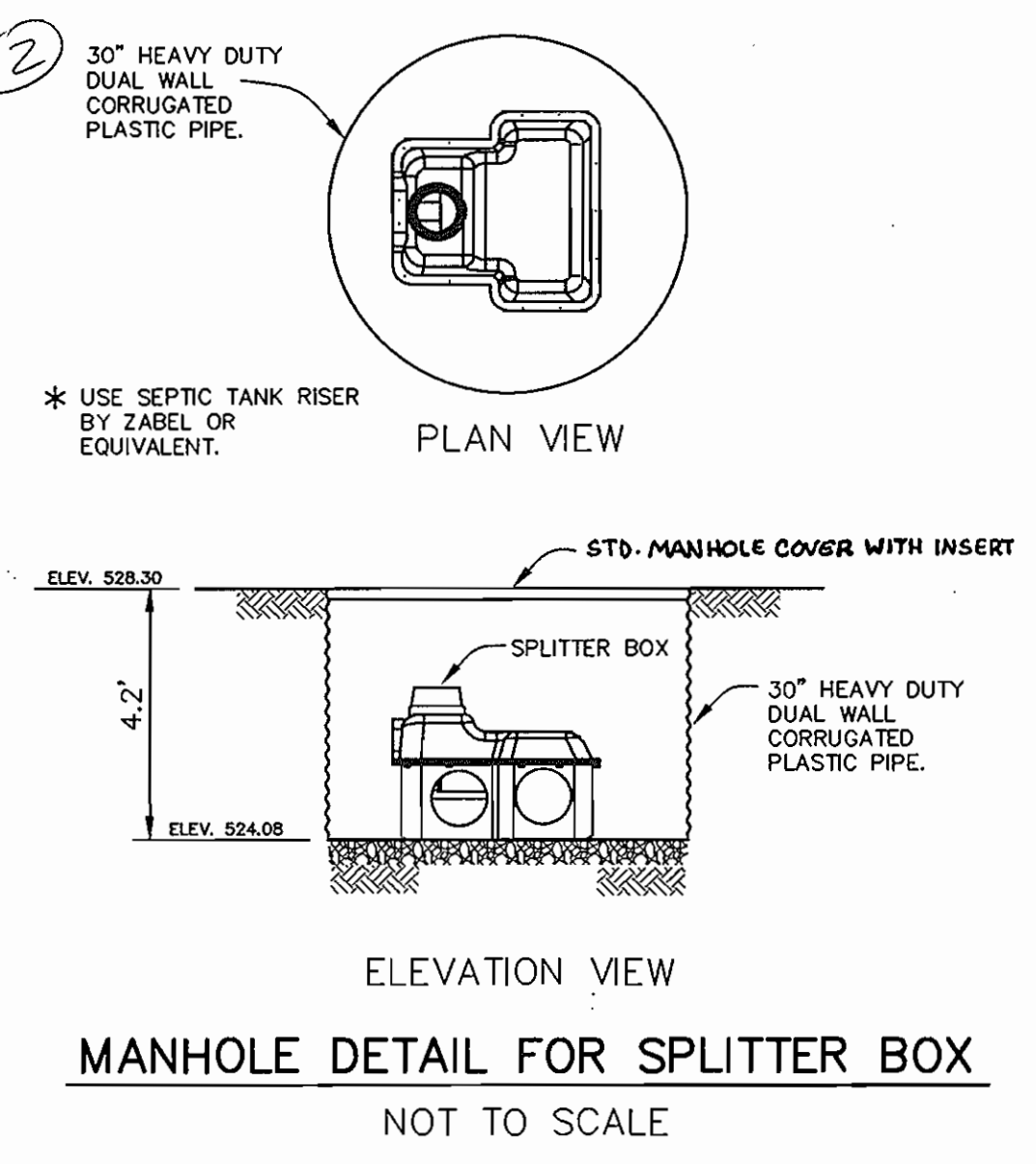
- BUILDING SHALL BE 8'x12' VINYL SIDED STORAGE BUILDING
- SHALL BE HIGH WALL BARN STYLE WITH 6' SIDE WALLS
- ONE DOUBLE DOOR ON END OF BUILDING
- DOORS AND FRAME TO BE REINFORCED
- DOOR HINGES MUST BE "T" TYPE OR STRAP TYPE; 3 HINGES PER DOOR
- PIANO HINGES ARE NOT ACCEPTABLE
- NO WINDOWS
- 10' RIDGE VENT
- 4"x4" PRESSURE TREATED SKIDS
- 2"x4" FLOOR JOIST 16" ON CENTER
- 5/8" PLYWOOD FLOOR SHEATHING
- 2"x4" STUDS 16" ON CENTER
- ALL WALLS TO BE PLATED AT BOTTOM AND DOUBLE PLATED AT THE TOP
- 1/2" ROOF SHEATHING
- 240 POUND ASPHALT 20-YEAR SHINGLES
- LOCKS ARE TO BE KEYS ALIKE WITH BAUER CH751 LOCK
- ALMOND COLORED VINYL SIDING AND TRIM
- BROWN COLORED ROOF SHINGLES

REFERENCE: RIDGE CABINET COMPANY
4636 RIDGE ROAD
MT. AIRY, MARYLAND
410-875-2211

Technical Specifications

SAMPLE ENGINEERING SPECIFICATION:
CONTRACTOR must furnish a Zoeller Tru-Flow® splitter system, model 173-0001. A concrete or plastic distribution box requiring speed levers should not be considered. The assembled splitter system must be lightweight to ease the burden of installation. Product must be capable of splitting effluent from 1/10th to 30 GPM evenly into 2 to 5 distribution lines. Product must not require external water for distribution line flow balancing purposes. System must be maintainable from the surface. Bubble level will be built in for easy adjustments and service. A 4" or 6" riser pipe shall be brought to the surface for future access, inspection, and adjustment. Splitter housing shall be rigid enough to withstand the anticipated frost and traffic loading. The splitter system must be made of all non-corrosive materials. Housing shall be made of polypropylene to increase the chemical resistance to the effluent and gases present in the waste stream. Diverter shall be made of virgin ABS with Vinylene additive to enhance product life. Six 4" SDR 35 pipe seals shall be provided with the unit.

Distributed By:
ZOEHLER PUMP CO.
1-800-828-PUMP
www.zoeller.com



MANHOLE DETAIL FOR SPLITTER BOX NOT TO SCALE

APPROVED:
FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Water
COUNTY HEALTH OFFICER

9/27/06
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert J. Water
CHIEF, BUREAU OF UTILITIES
8-14-06
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Donna Mearns
CHIEF, DEVELOPMENT ENGINEERING DIVISION
2/26/07
DATE

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

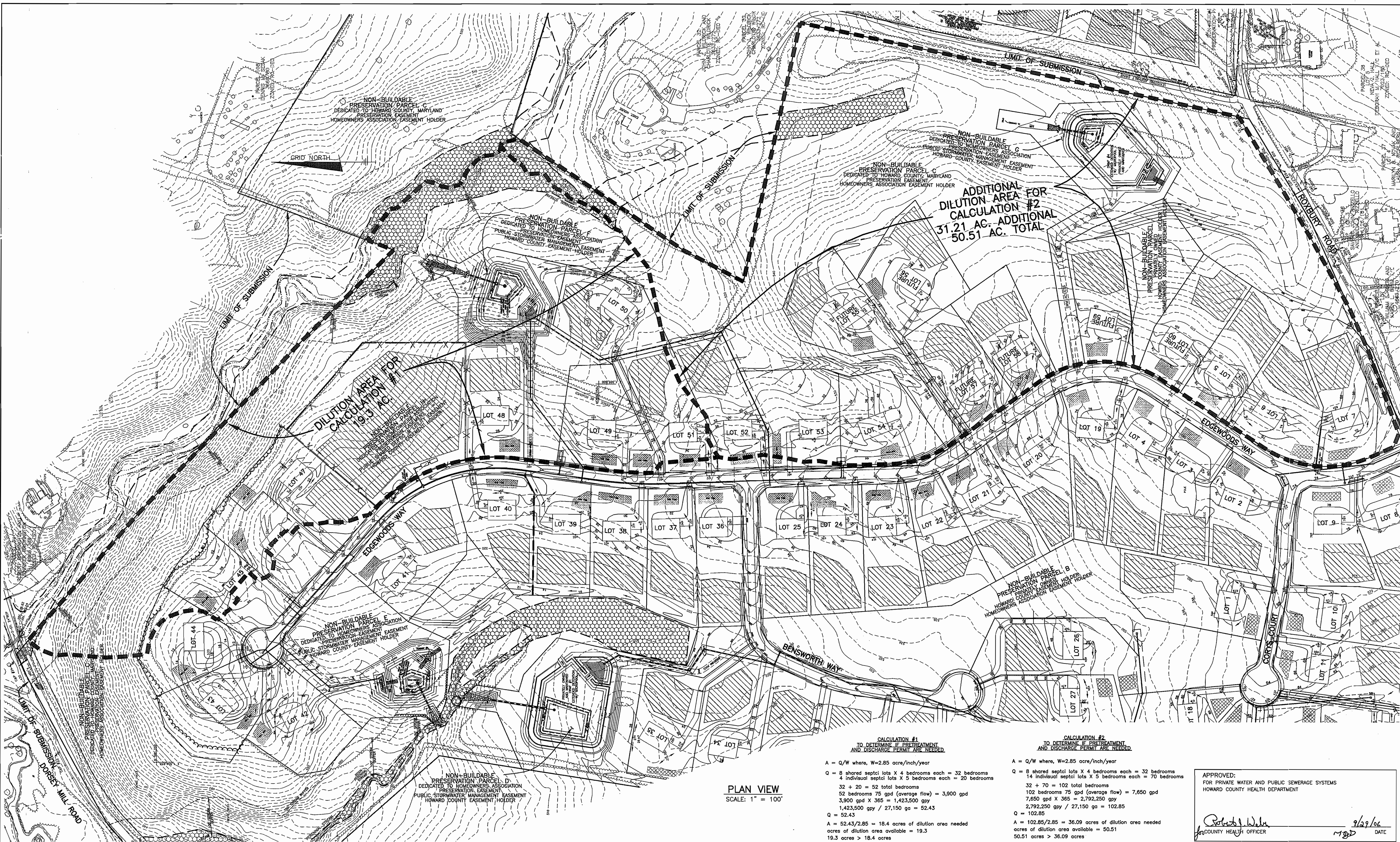
DESIGN:	DBT				
DRAFT:	DBT				
CHK:	DAM				
DATE:	7/07/06	BY	NO.	REVISIONS	DATE

600 SCALE MAP NO. 50
BLOCK 3

EDGEWOOD FARM
SHARED SEPTIC PLAN FOR LOTS
LOTS 42-46, 49, 53 AND 54
FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

SCALE:
AS SHOWN

SHEET NO.
5 OF 6



PLAN VIEW
SCALE: 1" = 100'

CALCULATION #1
TO DETERMINE IF PRETREATMENT AND DISCHARGE PERMIT ARE NEEDED

A = Q/W where, W=2.85 acre/inch/year
 Q = 8 shared septic lots X 4 bedrooms each = 32 bedrooms
 4 individual septic lots X 5 bedrooms each = 20 bedrooms
 32 + 20 = 52 total bedrooms
 52 bedrooms 75 gpd (average flow) = 3,900 gpd
 3,900 gpd X 365 = 1,423,500 gpy
 1,423,500 gpy / 27,150 ga = 52.43
 Q = 52.43
 A = 52.43/2.85 = 18.4 acres of dilution area needed
 acres of dilution area available = 19.3
 19.3 acres > 18.4 acres

CALCULATION #2
TO DETERMINE IF PRETREATMENT AND DISCHARGE PERMIT ARE NEEDED

A = Q/W where, W=2.85 acre/inch/year
 Q = 8 shared septic lots X 4 bedrooms each = 32 bedrooms
 14 individual septic lots X 5 bedrooms each = 70 bedrooms
 32 + 70 = 102 total bedrooms
 102 bedrooms 75 gpd (average flow) = 7,650 gpd
 7,650 gpd X 365 = 2,792,250 gpy
 2,792,250 gpy / 27,150 ga = 102.85
 Q = 102.85
 A = 102.85/2.85 = 36.09 acres of dilution area needed
 acres of dilution area available = 50.51
 50.51 acres > 36.09 acres

APPROVED:
FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Wala
COUNTY HEALTH OFFICER

9/29/06
DATE

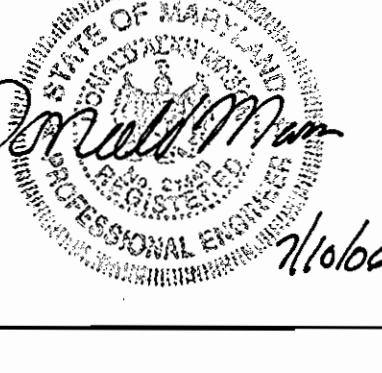
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Retna Duman 8-11-06
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Michael J. Zaleski
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE • SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644



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BY:	NO.
REVISIONS:	
DATE:	

PLAN VIEW OF
DILUTION AREA

600 SCALE MAP NO. 50
BLOCK 3

EDGEWOOD FARM
SHARED SEPTIC PLAN FOR LOTS
LOTS 42-46, 49, 53 AND 54

FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

SCALE:
AS SHOWN

SHEET NO.
6 OF 6