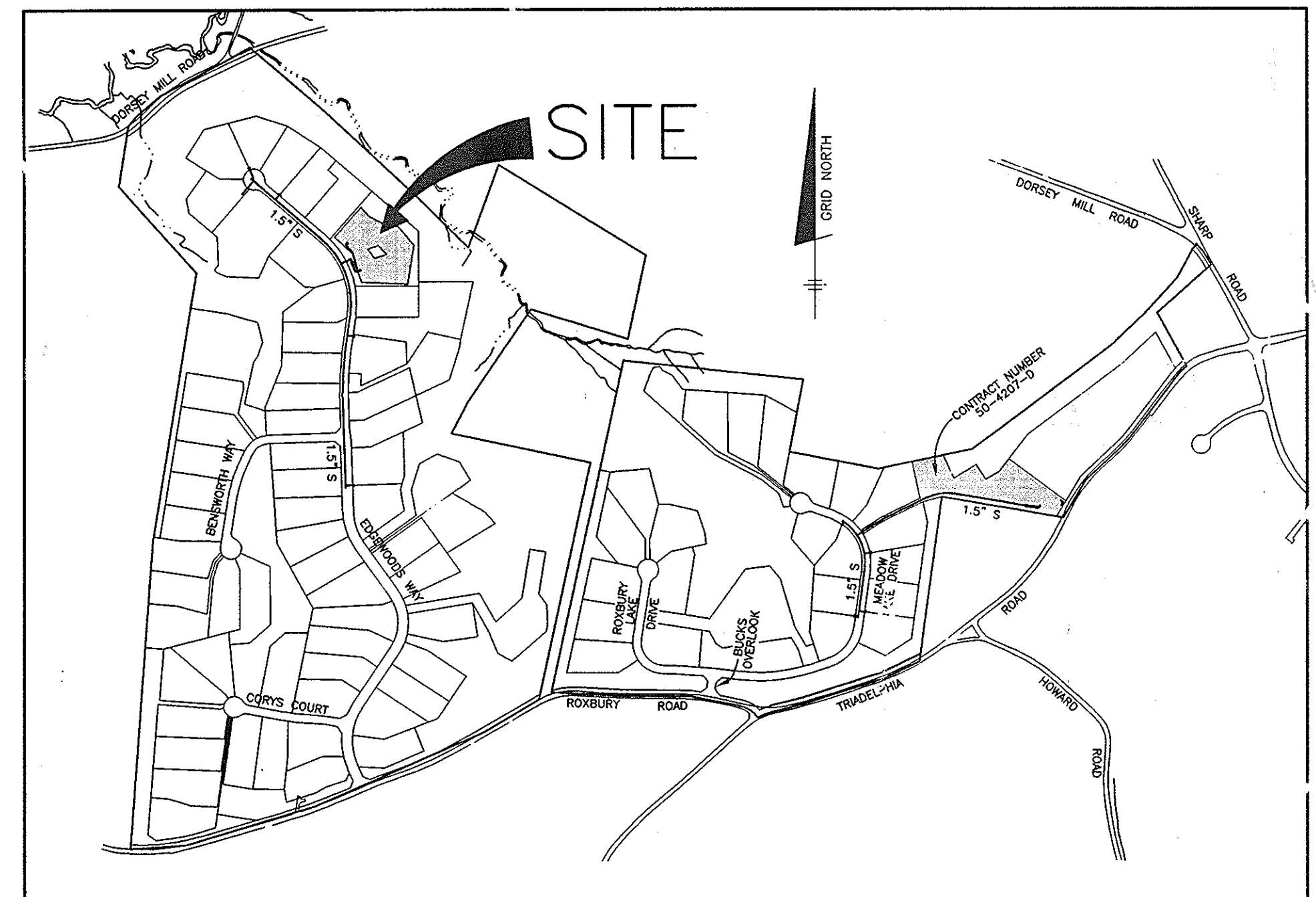


ITEMS	QUANTITIES ESTIMATED	QUANTITIES			
		AS-BUILT	QUANTITIES	TYPE	MANUF./SUPPLIER
DUPLEX GRINDER PUMP	5 EA.				
TERMINAL FLUSHING CONNECTION	3 EA.				
5000g SEPTIC TANKS	2 EA.				FREEMAN/FREEMAN
CONC. DISTRIBUTION BOX	2 EA.				CHARLOTTE/BRS
LEACHING FIELD	1240 L.F.				
VALVE BOX WITH CONDUCTING ROD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

NAME OF UTILITY CONTRACTOR: **COMAN CONSTRUCTION**
 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:	60
SEWER CODE:	N/A	NUMBER OF SHC'S:	8
TEST GRADIENT:	N/A	NUMBER OF WHC'S:	1
		PATIENT 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 GAUGE 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 GLOFFELY MARYLAND DEPARTMENT OF THE ENVIRONMENT 410-337-4156
 - 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 RECEIVE 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 DONE 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.....1-800-252-1133
 BGE (CONSTRUCTION SERVICES).....410-850-4620
 BGE (EMERGENCY).....410-685-1400
 BUREAU OF UTILITIES.....410-313-4900
 COLONIAL PIPELINE CO.....410-789-1350
 MISS UTILITY.....1-800-257-7777
 STATE HIGHWAY ADMINISTRATION.....410-531-5555
 PERIZON.....1-800-743-0033/410-224-9210
 9. 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.
 10. 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.
 11. 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(c) 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 WATERTIGHT FRAME AND COVER, STANDARD DETAIL 05.52. WHERE WATERTIGHT 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 Webb 9/29/06
 COUNTY HEALTH OFFICER DATE

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

Jim Myers 8/20/06
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Mark Sh... 8/20/06
 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-06-108

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

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

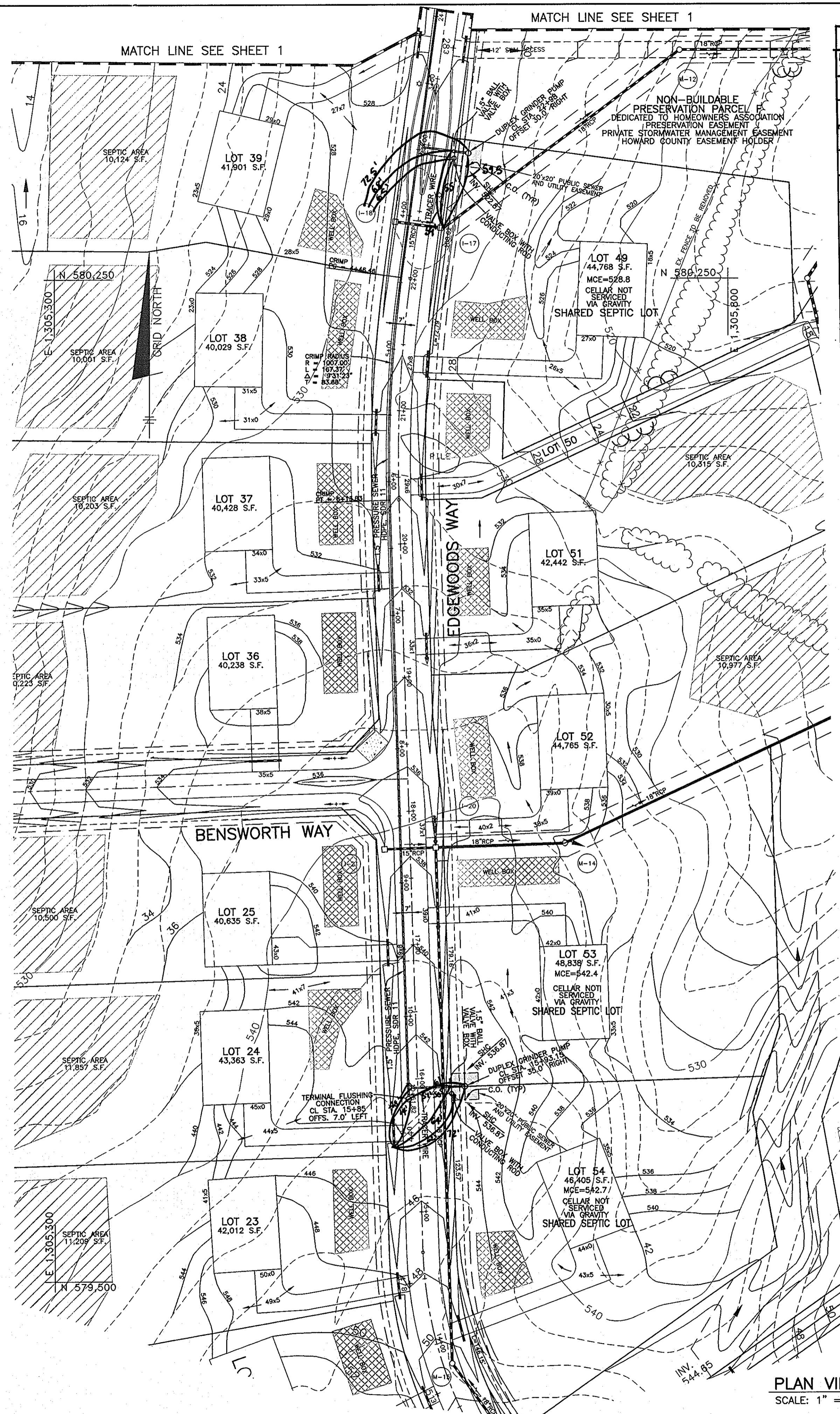
PLAN VIEW
 SCALE: 1" = 50'

****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 OF BELOW CONTROL PANEL ON HOUSE IN LINE WITH CONDUIT; SEAL WITH CHOC 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	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	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	DESIGN: DBT DRAFT: DBT CHK: DAM DATE: 6/07/06	BY: <i>AS BUILT</i> NO. _____ REVISIONS _____ DATE: 7-29-13	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
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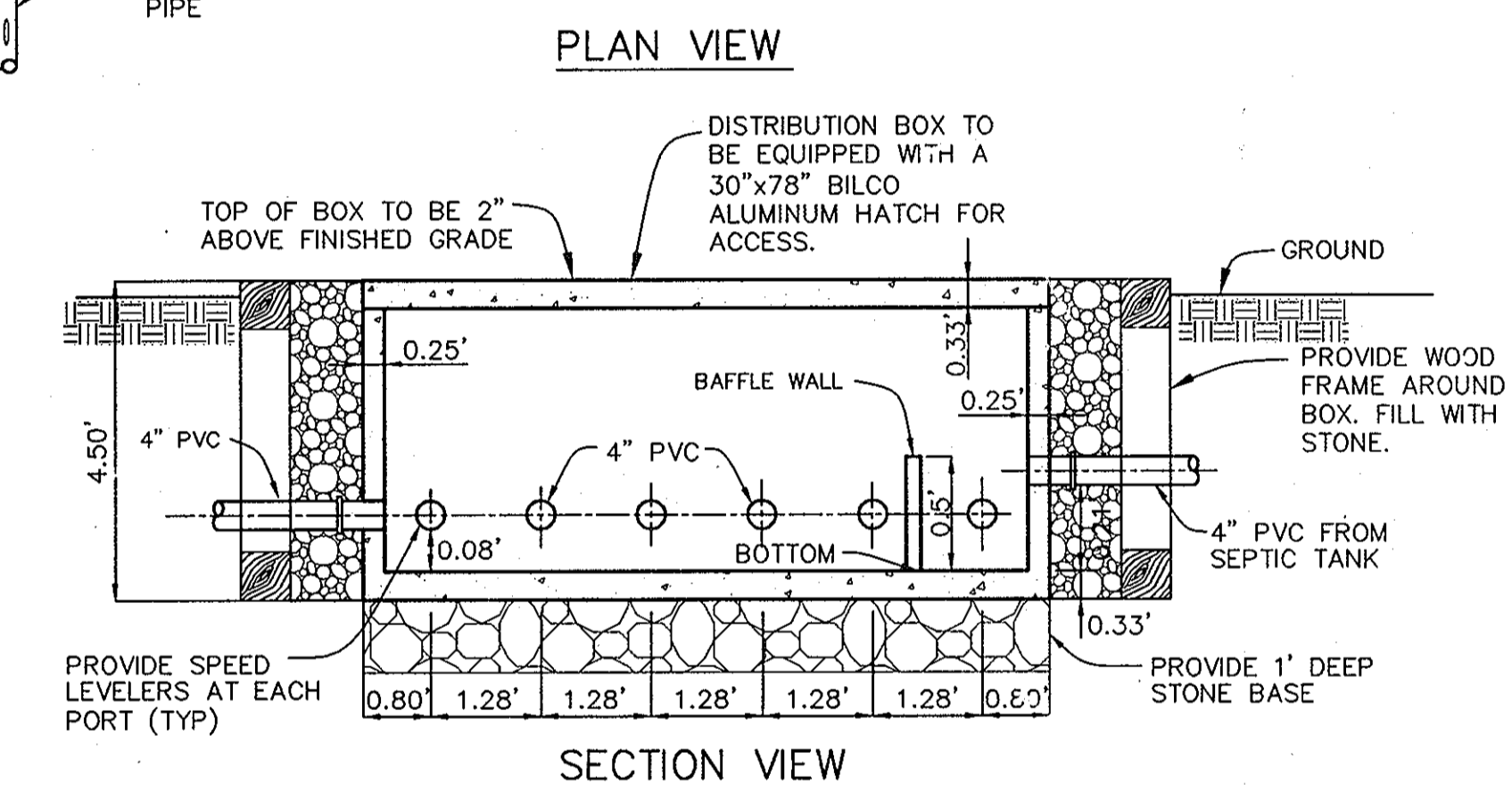
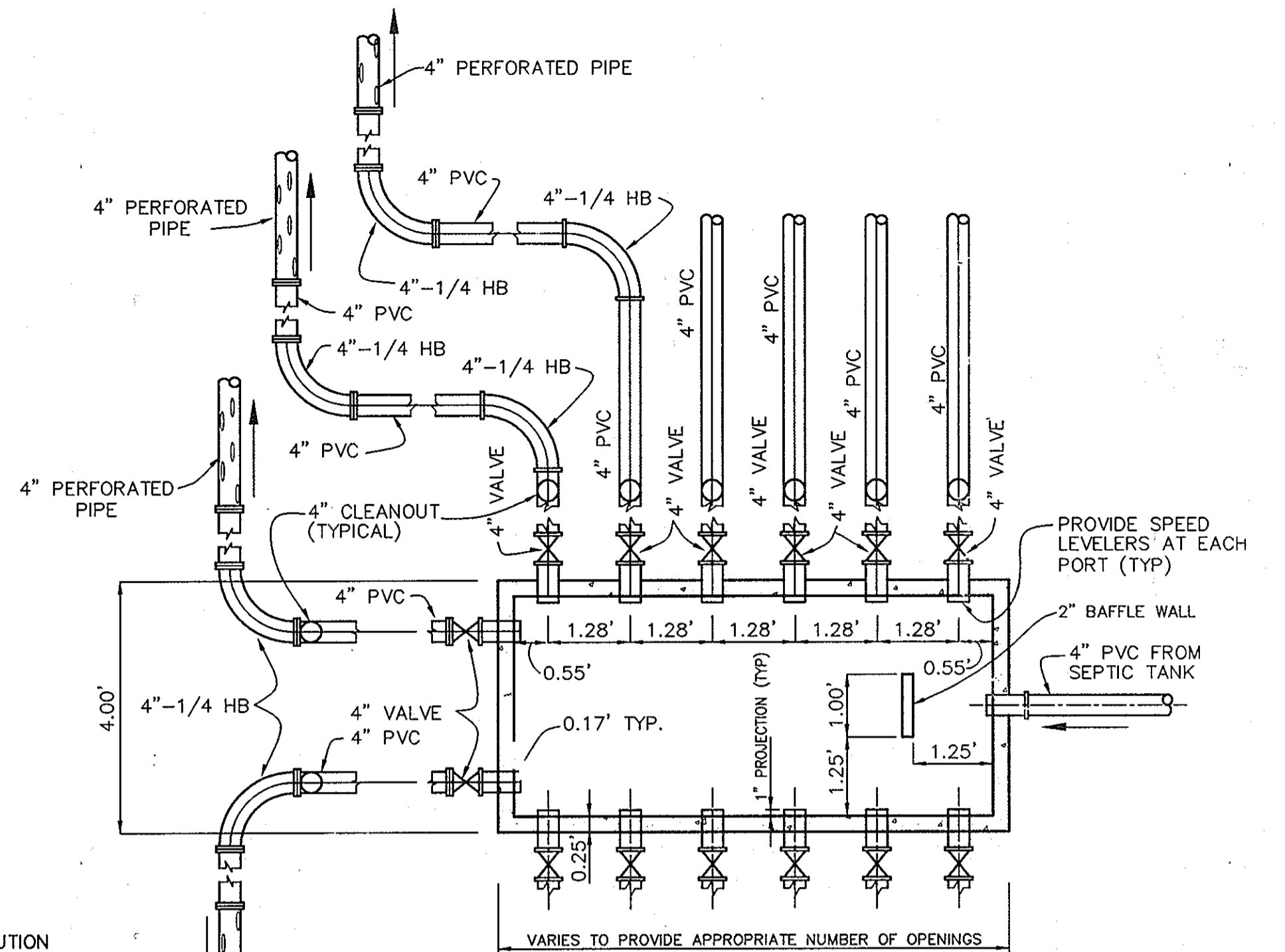


FROM	TO	DISTANCE
DUPLEX GRINDER PUMP LOT 44 - STA. 22+98	I-17	59.5'
DUPLEX GRINDER PUMP LOT 44 - STA. 22+98	I-18	72.6'
VALVE BOX @ G.P. LOT 44	I-17	55'
VALVE BOX @ G.P. LOT 44	I-18	65'
BALL VALVE @ G.P. LOT 44	I-17	54'
BALL VALVE @ G.P. LOT 44	I-18	63'
DUPLEX GRINDER PUMP - LOTS 53/54 STA. 15+93	DRIVWAY CULVERT LOT 24 (NORTH)	61'
DUPLEX GRINDER PUMP - LOTS 53/54 STA. 15+93	DRIVWAY CULVERT LOT 24 (SOUTH)	72'
VALVE BOX @ G.P. LOT 53/54	DRIVWAY CULVERT LOT 24 (NORTH)	51'
VALVE BOX @ G.P. LOT 53/54	DRIVWAY CULVERT LOT 24 (SOUTH)	62'
BALL VALVE @ G.P. LOT 53/54	DRIVWAY CULVERT LOT 24 (SOUTH)	42'
BALL VALVE @ G.P. LOT 53/54	DRIVWAY CULVERT LOT 24 (NORTH)	64'
TERMINAL FLUSHING CONN. - STA. 15+85	DRIVWAY CULVERT LOT 24 (NORTH)	14'
TERMINAL FLUSHING CONN. - STA. 15+85	DRIVWAY CULVERT LOT 24 (SOUTH)	42'
VALVE BOX @ DISTRIBUTION BOX #1	2" 3/4" VALVE BOX @ STA. 24+45	83'
2" 3/4" VALVE INSTALLED, ALL IMPEDIMENT TO STA. 0+00	TRANSITION MH @ STA. 0+00	ALL 44'
VALVE BOX @ DISTRIBUTION BOX #1	DISTR. BOX #1	13.5'
GRINDER PUMP BOX LOT #45	I-15	49.5'
GRINDER PUMP BOX LOT #45	I-16	19'
VALVE BOX @ G.P. BOX LOT #45	I-15	43'
VALVE BOX @ G.P. BOX LOT #45	I-16	19'
1.5" BALL VALVE @ LOT 45/46	I-15	40'
1.5" BALL VALVE @ LOT 46/47	I-16	16'
S.H.C. LOT #45	G.P. BOX LOT #45	5'
S.H.C. LOT #46	G.P. BOX LOT #45	4.5'
TERMINAL FLUSHING CONNECTION @ STA. 26+50	DISTR. BOX #1	88'
TERMINAL FLUSHING CONNECTION @ STA. 26+50	CULVERT @ PAVED ALLEYS (SOUTH)	20.5'
DISTRIBUTION BOX #1	TANK #2	21'
VALVE @ SPLITTER BOX	TANK #2	18'
DISTRIBUTION BOX #1	TANK #1	42'
VALVE @ 4" PVC LINE	TANK #1	38'
TRANSITION MH @ STA. 0+00	CULVERT @ ACCESS AREA (SE)	75'
DISTRIBUTION BOX #1	TRANSITION MH @ STA. 0+00	66.5'
CULVERT @ ACCESS AREA (SE)	DISTR. BOX #2	53'
DUPLEX GRINDER PUMP BOX LOT #43/44	1.5" BALL VALVE @ LOTS 43/44	10'
DUPLEX GRINDER PUMP BOX LOT #43/44	I-24	27'
1.5" BALL VALVE @ LOTS 43/44	I-24	21'
TERMINAL FLUSHING CONNECTION @ STA. 5+74	I-24	42.6'
TERMINAL FLUSHING CONNECTION @ STA. 5+74	GRINDER PUMP BOX LOT #42	75.5'
GRINDER PUMP BOX LOT #42	CULVERT @ LOT 42 (SOUTH)	38'
1.5" BALL VALVE @ LOT 42	CULVERT @ LOT 42 (SOUTH)	16'
VALVE BOX @ LOT 42	GRINDER PUMP BOX LOT #42	33'
1.5" BALL VALVE @ LOT 42	VALVE BOX @ LOT 42	4.5'
VALVE @ TERM. FLUSH. CONN. STA. 5+74	GRINDER PUMP BOX LOT #42	77'
TERMINAL FLUSHING CONNECTION @ STA. 15+85	CULVERT FOR LOT 24 (NORTH)	14'
TERMINAL FLUSHING CONNECTION @ STA. 15+85	CULVERT FOR LOT 24 (SOUTH)	38.5'
VALVE @ TERMINAL FLUSHING CONN., STA. 15+85	CULVERT FOR LOT 24 (NORTH)	23'
VALVE @ TERMINAL FLUSHING CONN., STA. 15+85	CULVERT FOR LOT 24 (SOUTH)	44'

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

DISTRIBUTION BOX DATA		
BOX NO.	INLET SIDE	TOP ELEV.
BOX #1	N 580655.47 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

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

Robert W. Weber 9/29/06
 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

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

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 A SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-8105 FAX: 410-465-8644

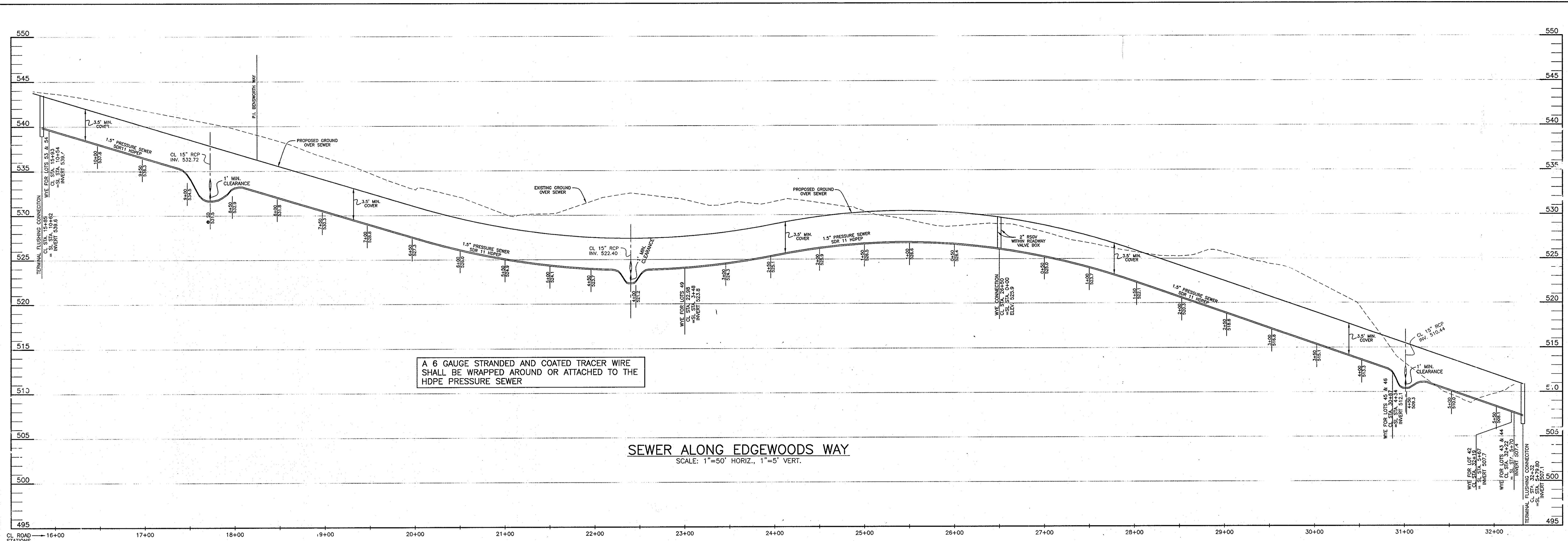
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DRAFT: DBT	
CHK: DAM	
DATE: 7/07/06	BY: KCI
	NO. 1
	AS BUILT
	DATE: 7-29-13
	REVISIONS

PLAN VIEW OF
 SHARED SEPTIC SYSTEM

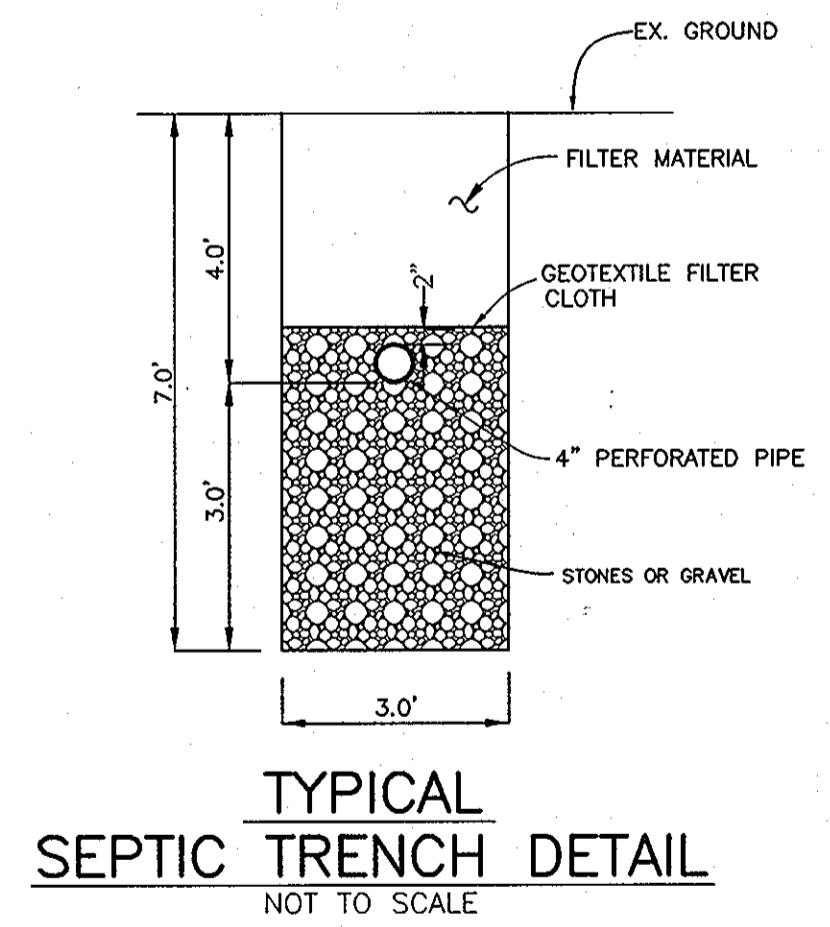
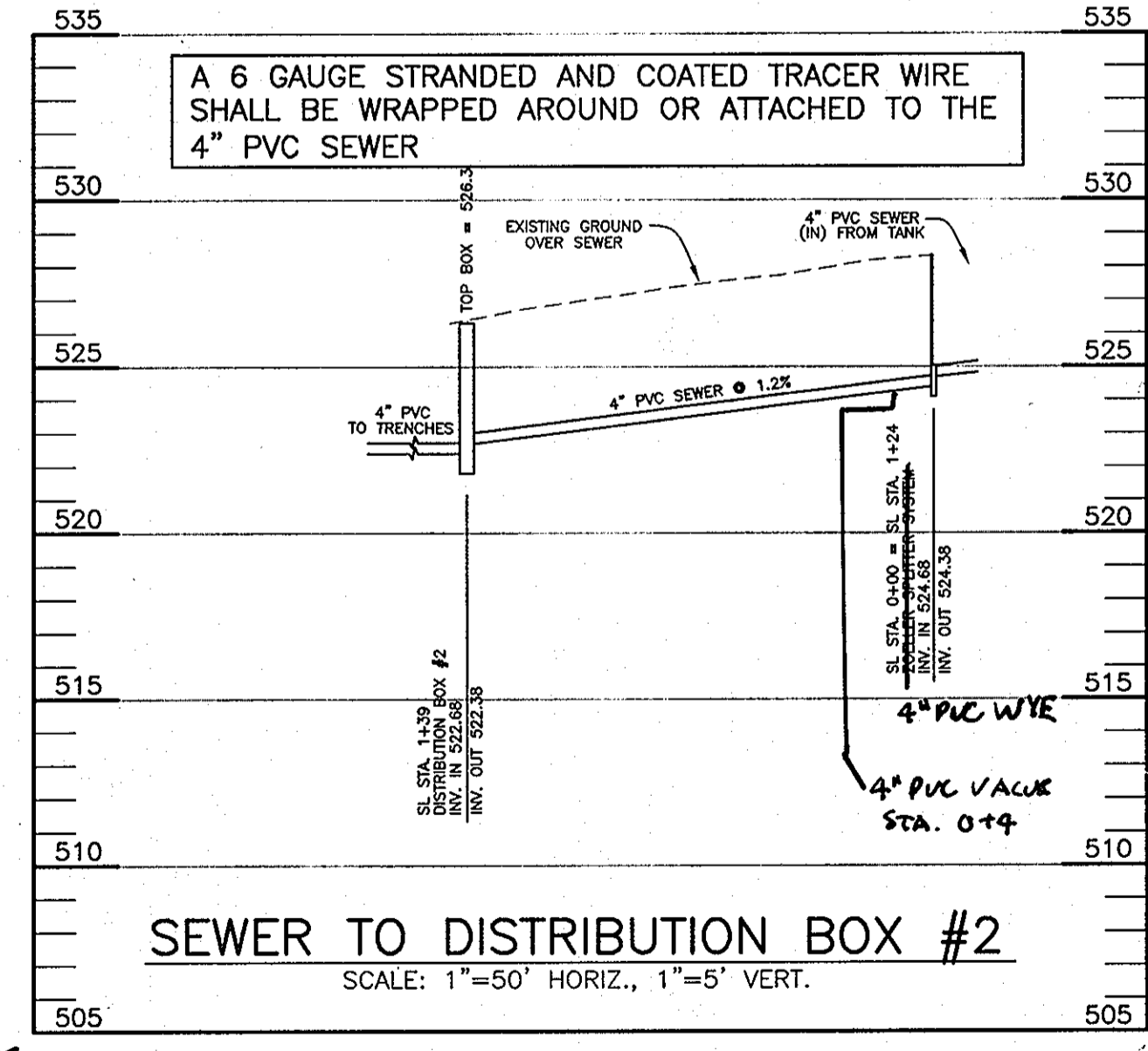
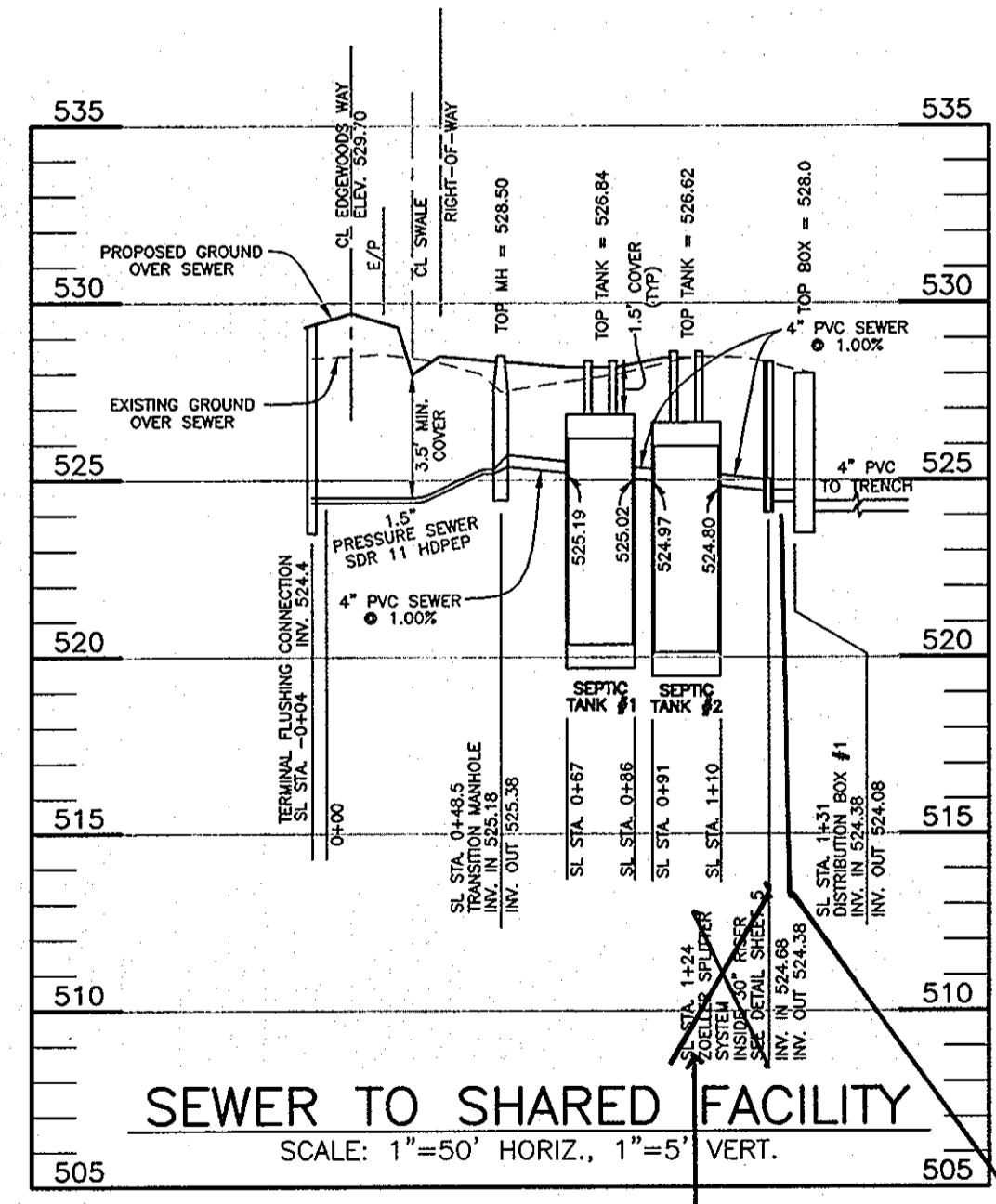
EDGWOOD FARM
 SHARED SEPTIC PLAN FOR LOTS
 LOTS 42-46, 49, 53 AND 54
 FOURTH ELECTION DISTRICT
 CONTRACT NO. 50-4309-D

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



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

Robert J. Walker
COUNTY HEALTH OFFICER

9/28/06
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Michael J. ... 2/10/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION 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

Donnell Moore
7/10/06

DESIGN:	DBT			
DRAFT:	DBT			
CHK:	DAM			
DATE:	7/07/06	BY:	KCI	NO. 1
			AS BUILT	
				7-21-13
				REVISIONS

PROFILE OF SEWER MAINS AND DETAILS

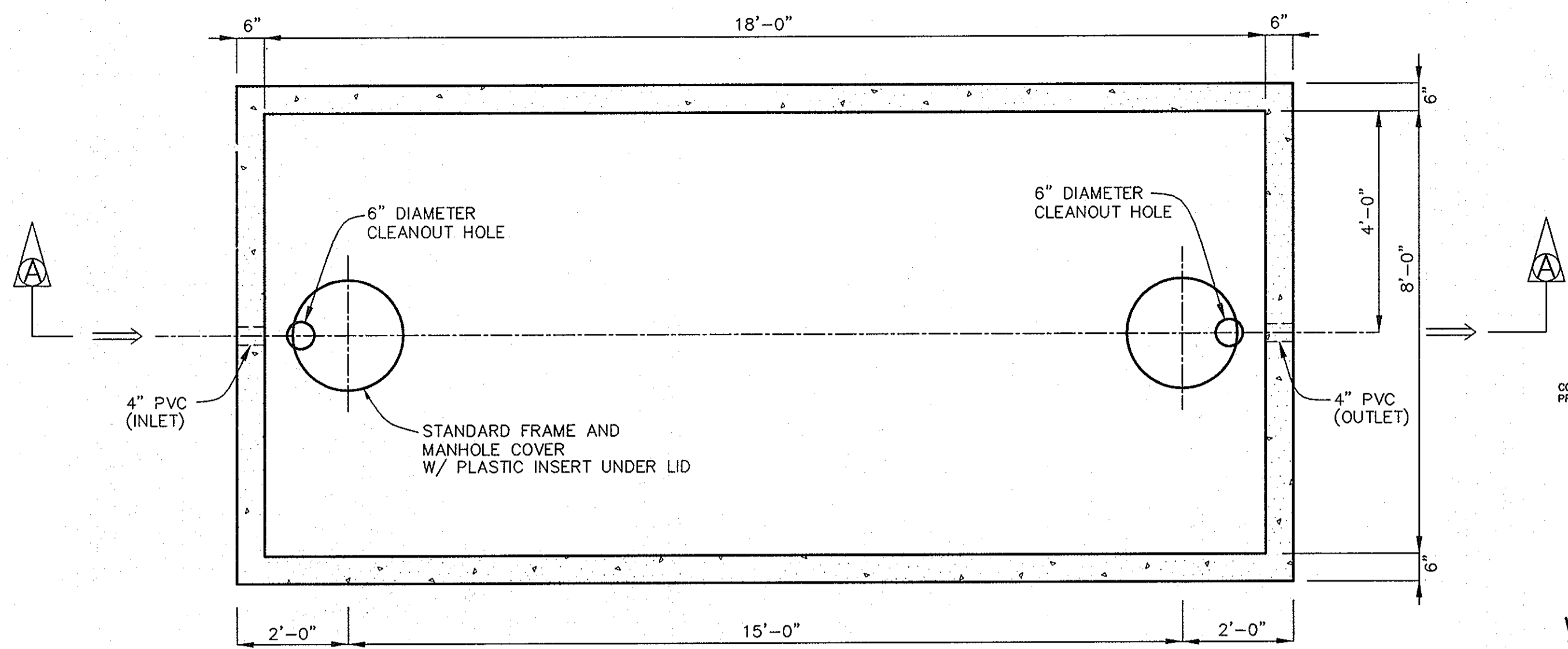
600 SCALE MAP NO. 50 BLOCK 3

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

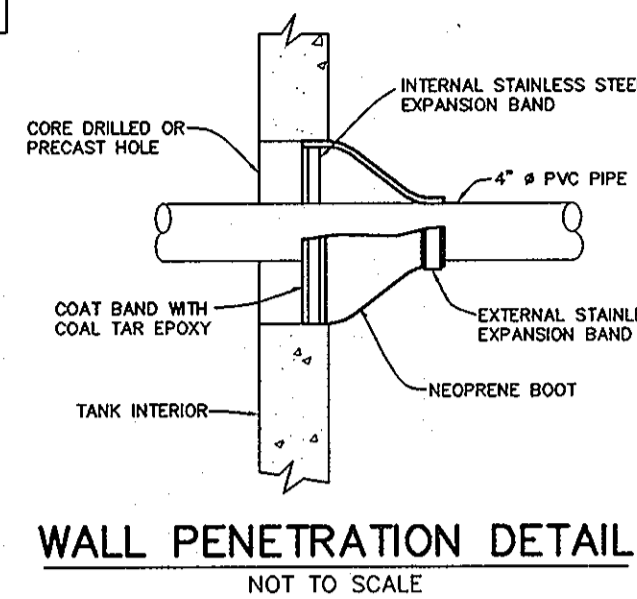
FOURTH ELECTION DISTRICT
CONTRACT NO. 50-4309-D

SCALE:
AS SHOWN

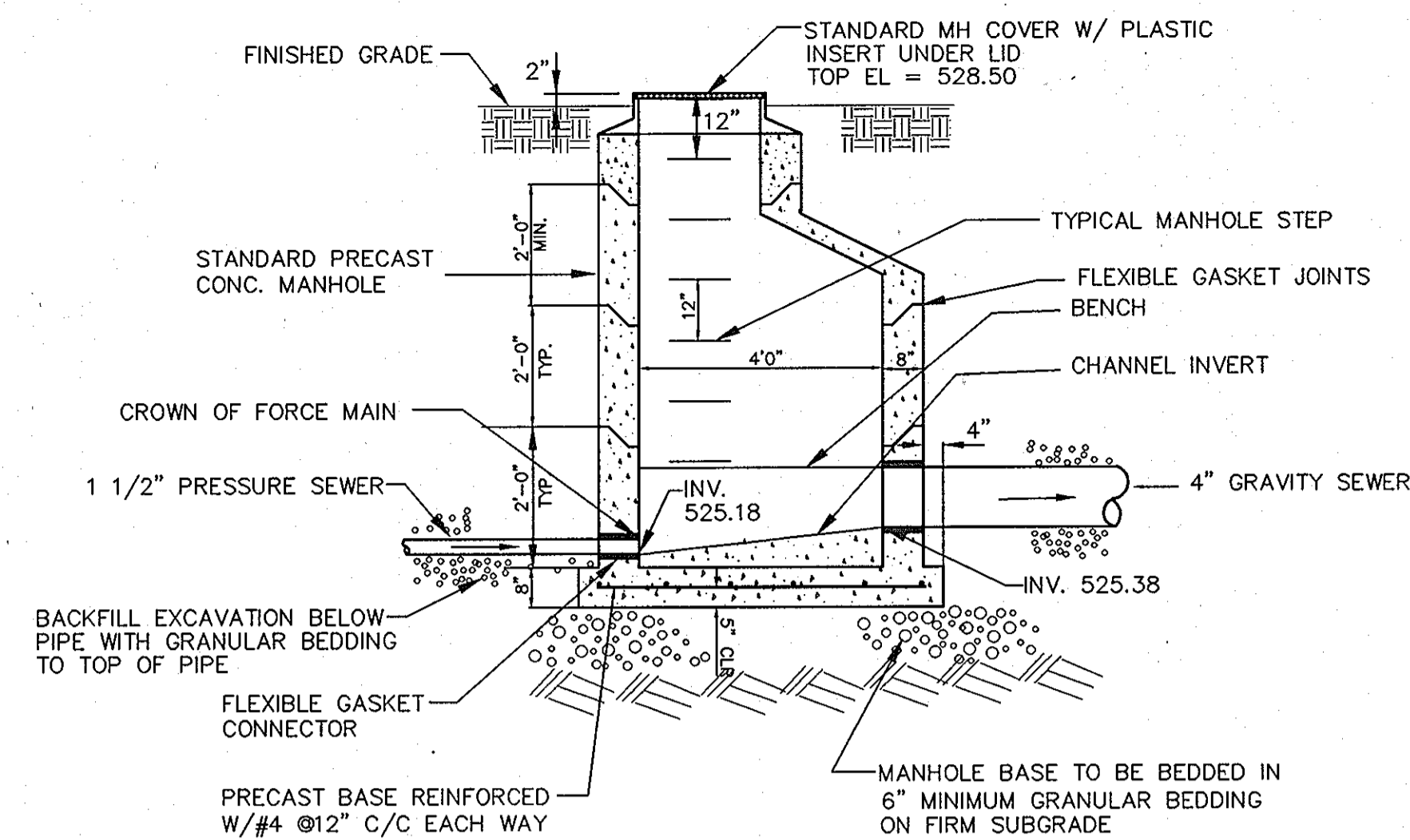
SHEET NO.
3 OF 6



PLAN VIEW

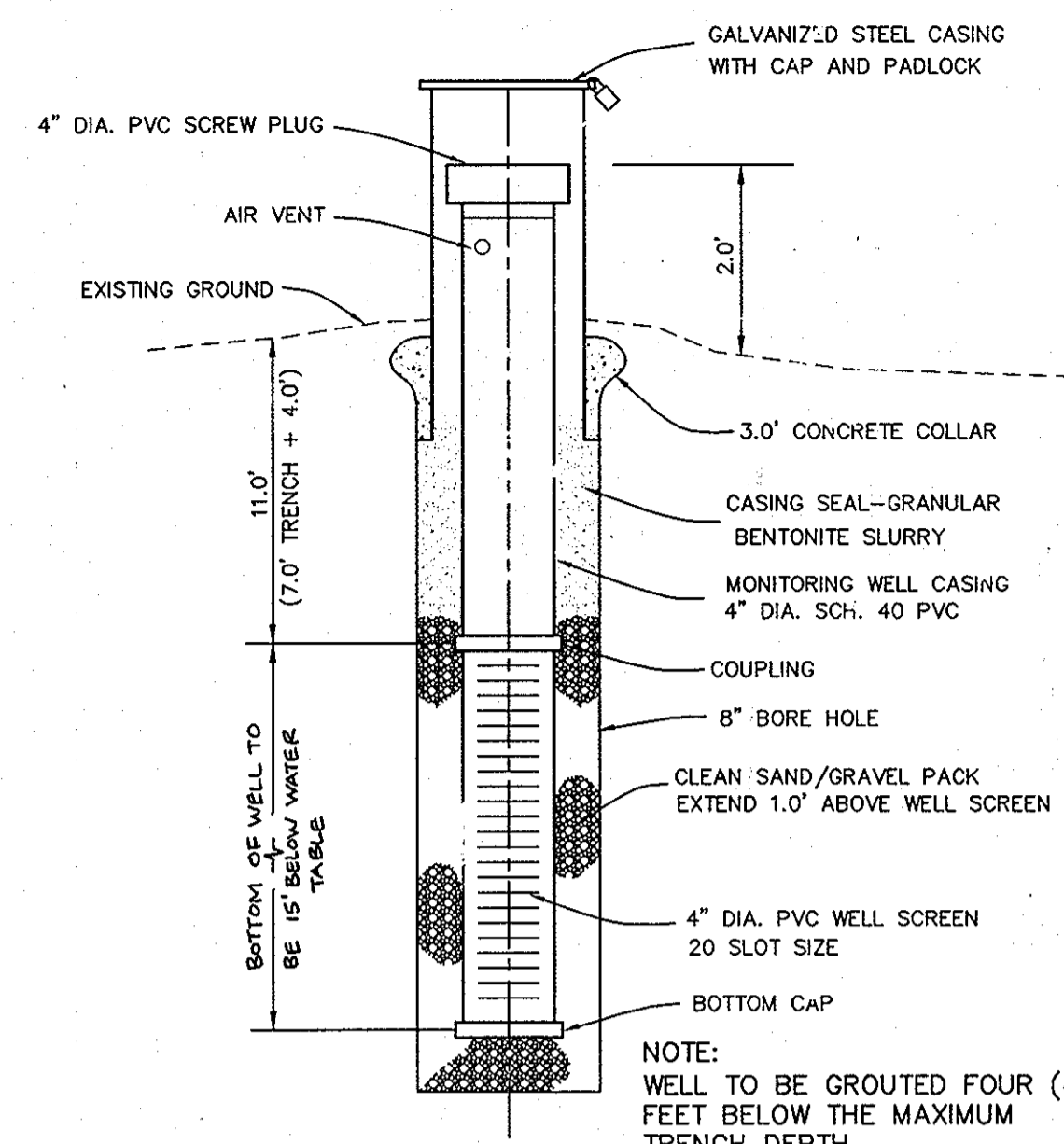


WALL PENETRATION DETAIL
NOT TO SCALE

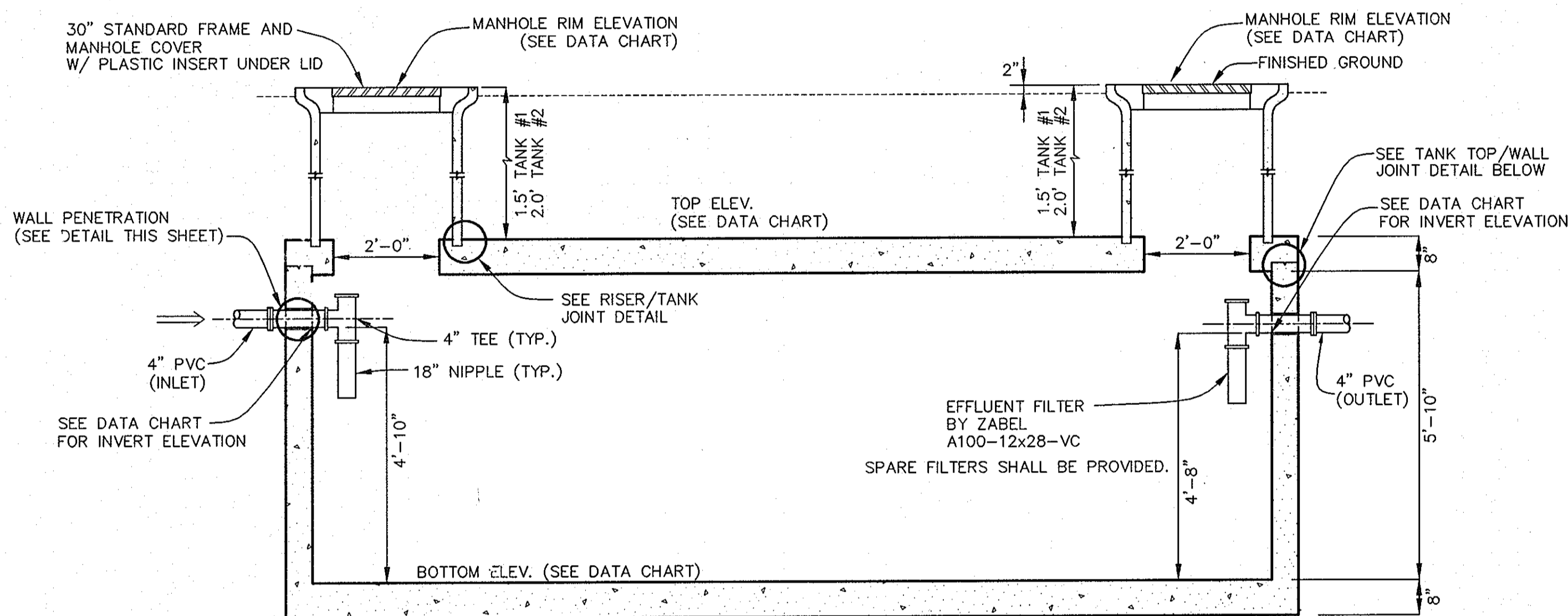


- NOTES:
- ELEVATION OF GRAVITY SEWER INVERT SHALL BE MINIMUM 0.1' ABOVE ELEVATION OF PRESSURE SEWER CROWN.
 - PROVIDE SMOOTH UPWARD SLOPING CHANNEL FROM FORCE MAIN TO GRAVITY SEWER.

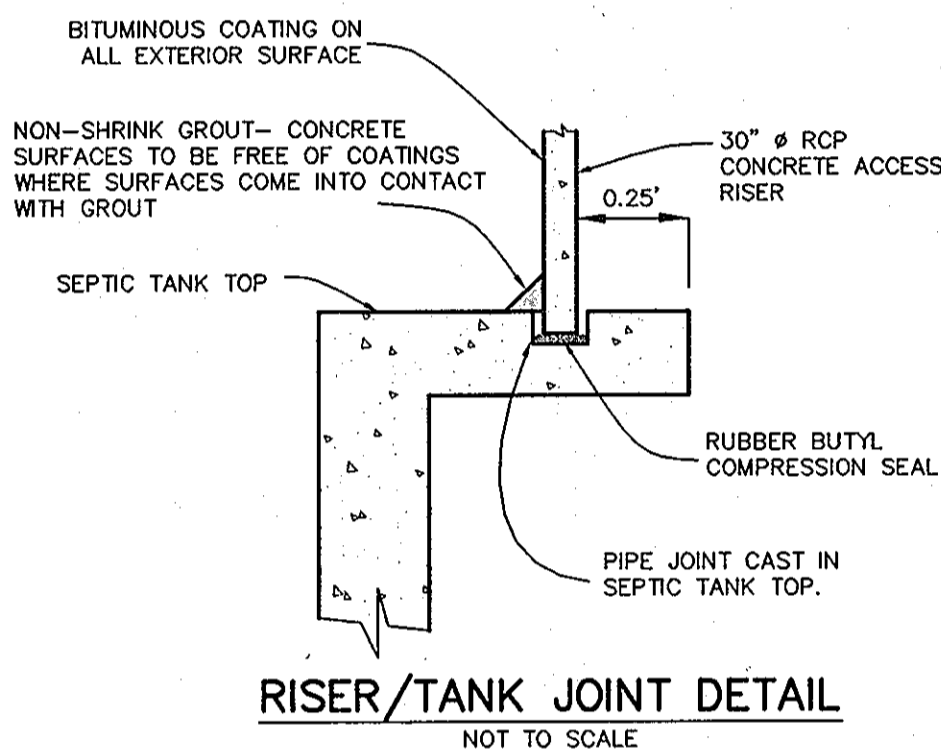
TRANSITION MANHOLE:
PRESSURE SEWER TO GRAVITY SEWER
NOT TO SCALE



MONITORING WELL DETAIL
NOT TO SCALE



SECTION VIEW A-A



RISER/TANK JOINT DETAIL
NOT TO SCALE

ENVIRONMENT ONE GRINDER PUMP DATA TABLE							
LOTS	TOP ELEV.	BOTTOM ELEV.	DEPTH	INLET ELEV.	DISCHARGE ELEV.	CONC. ANCHOR VOLUME	REMARKS
42	505.0	495.0	10.00' (120")	497.67	498.25	35.7 C.F.	MODEL NO. 2014 (DUPLX)
43 & 44	510.0	500.0	10.00' (120")	502.67	503.25	35.7 C.F.	MODEL NO. 2014 (DUPLX)
45 & 46	515.0	505.0	10.00' (120")	507.67	508.25	35.7 C.F.	MODEL NO. 2014 (DUPLX)
49	530.0	520.0	10.00' (120")	522.67	523.25	35.7 C.F.	MODEL NO. 2014 (DUPLX)
53 & 54	544.0	534.0	10.00' (120")	536.67	537.25	35.7 C.F.	MODEL NO. 2014 (DUPLX)

NOTE: SEE MANUFACTURER'S MANUAL FOR GRINDER PUMP INSTALLATION REQUIREMENT, PROCEDURE, AND ELECTRICAL CONNECTION.

ACCEPTABLE ALTERNATE TO ENVIRONMENT ONE GRINDER PUMP:
VORTEK GRINDER PUMPS
C/O FLUID SOLUTIONS, INC.
TANEYTOWN, MARYLAND
410-756-9292

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.

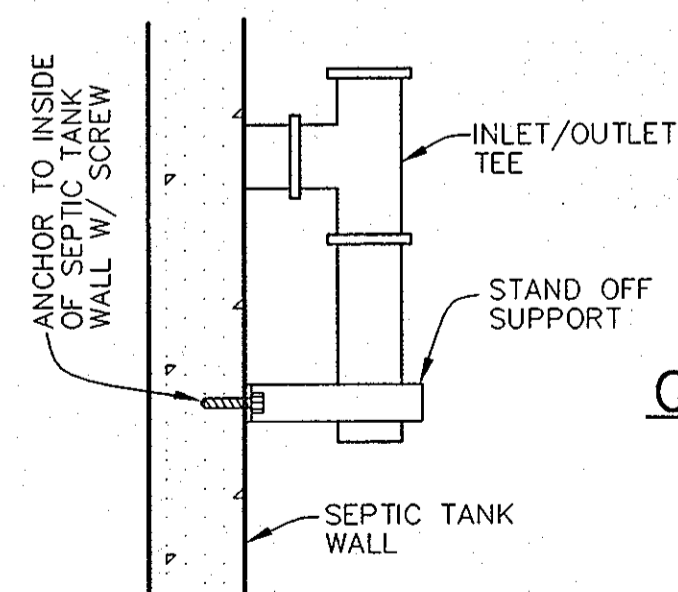
5,000 GALLON SEPTIC TANK DATA				
	TANK ELEVATION	INVERT ELEVATION	TANK COORDINATES	MANHOLE RIM ELEVATION
SEPTIC TANK #1	TOP = 526.84	525.19 IN	N 580692.11 E 1305593.51	528.34
	BOT = 520.35	525.02 OUT	N 580674.64 E 1305600.98	528.34
SEPTIC TANK #2	TOP = 526.62	524.97 IN	N 580670.04 E 1305602.95	528.62
	BOT = 520.13	524.80 OUT	N 580652.58 E 1305610.42	528.62

NOTES:

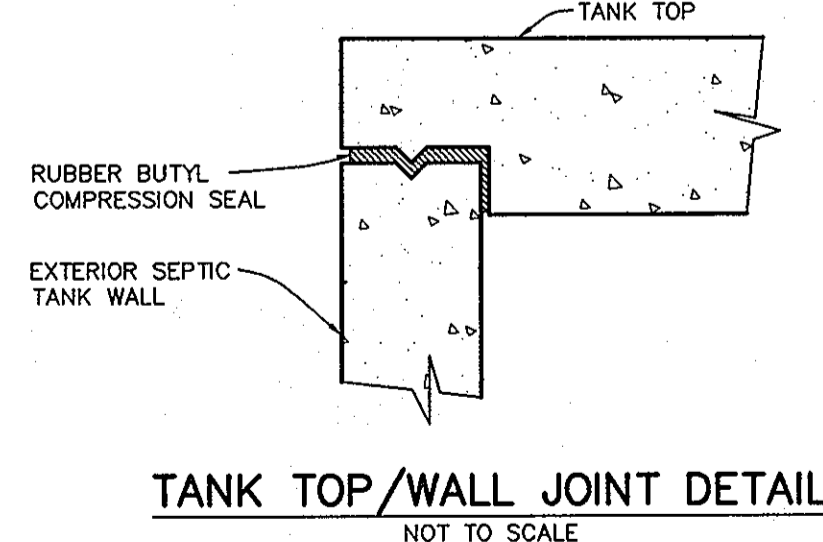
- MANHOLE RIM ELEVATION SHOWN HEREON IS AT THE CENTER OF THE RIM.
- TANK COORDINATES ARE AT THE MIDPOINT OF EACH END.

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

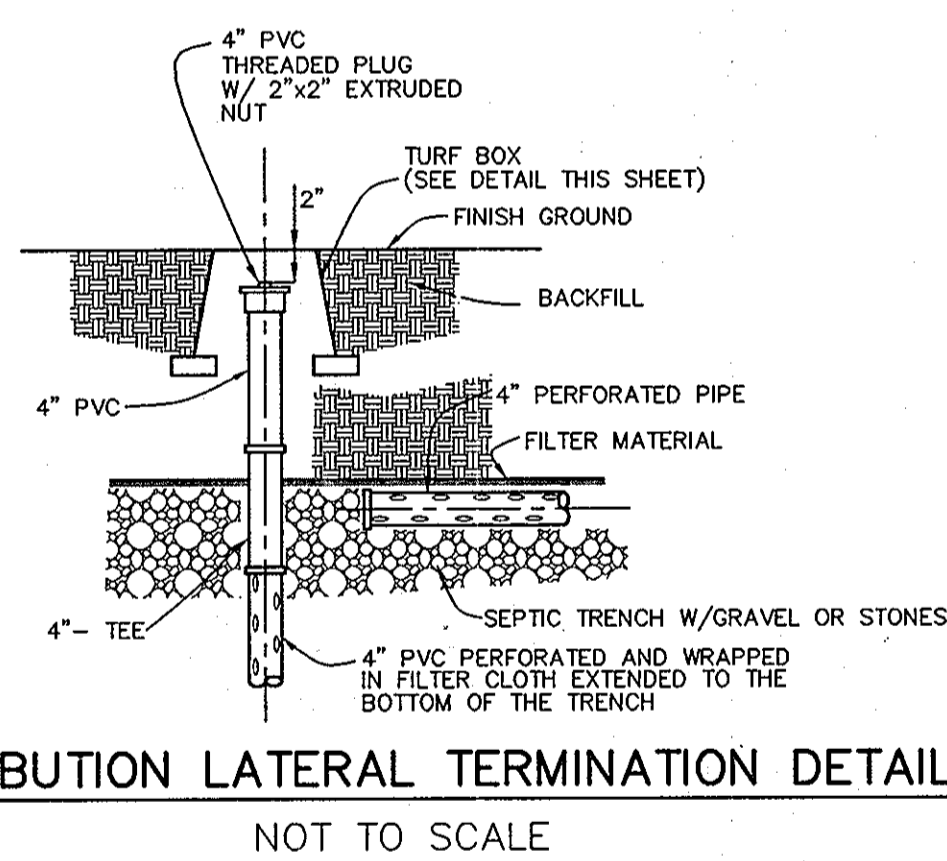
PRECAST CONCRETE 5000 GALLON
CAPACITY SINGLE COMPARTMENT SEPTIC TANK
SCALE: 1" = 2'



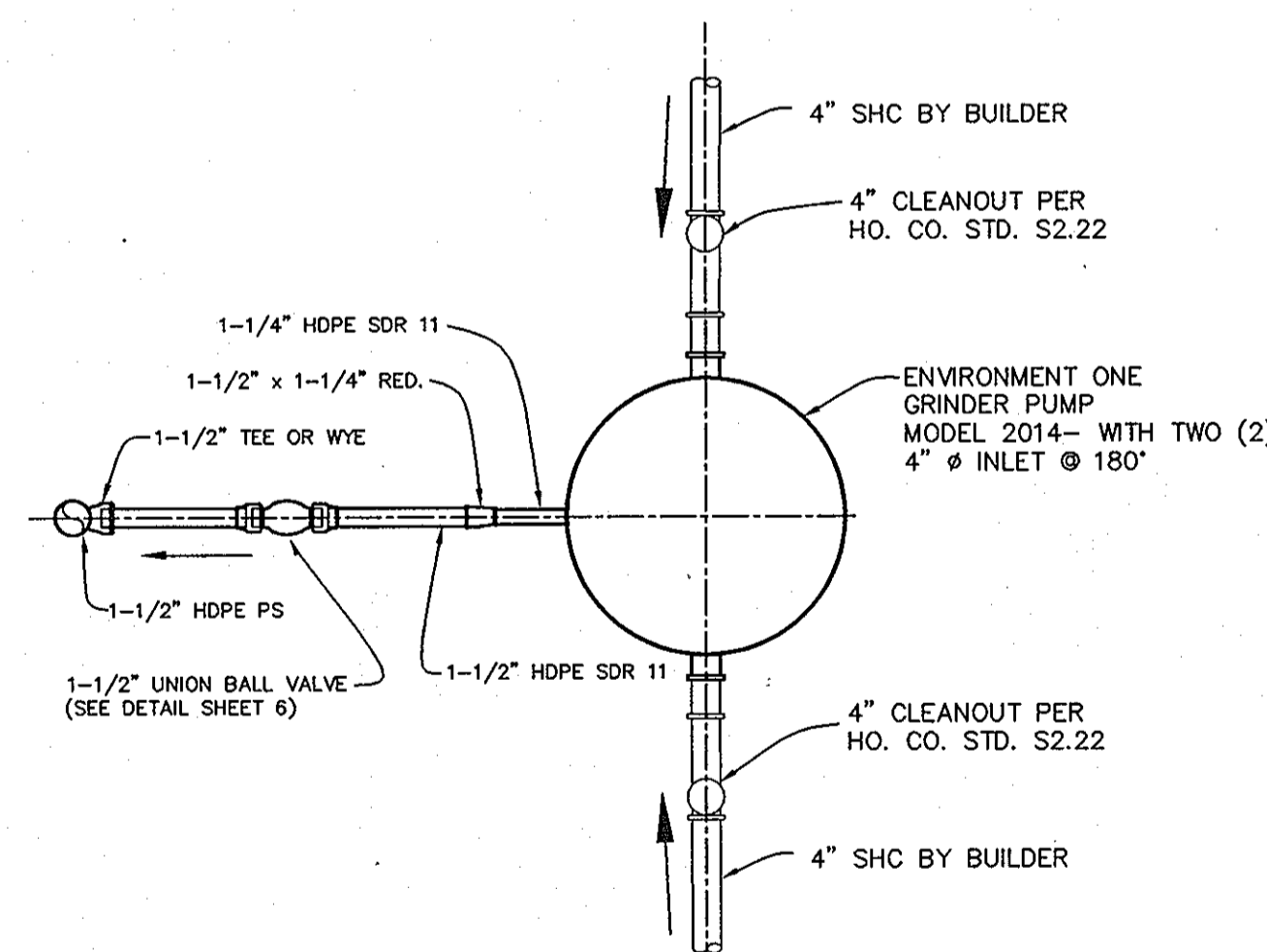
ANCHOR SUPPORT
FOR INLET AND OUTLET TEES
NOT TO SCALE



TANK TOP/WALL JOINT DETAIL
NOT TO SCALE



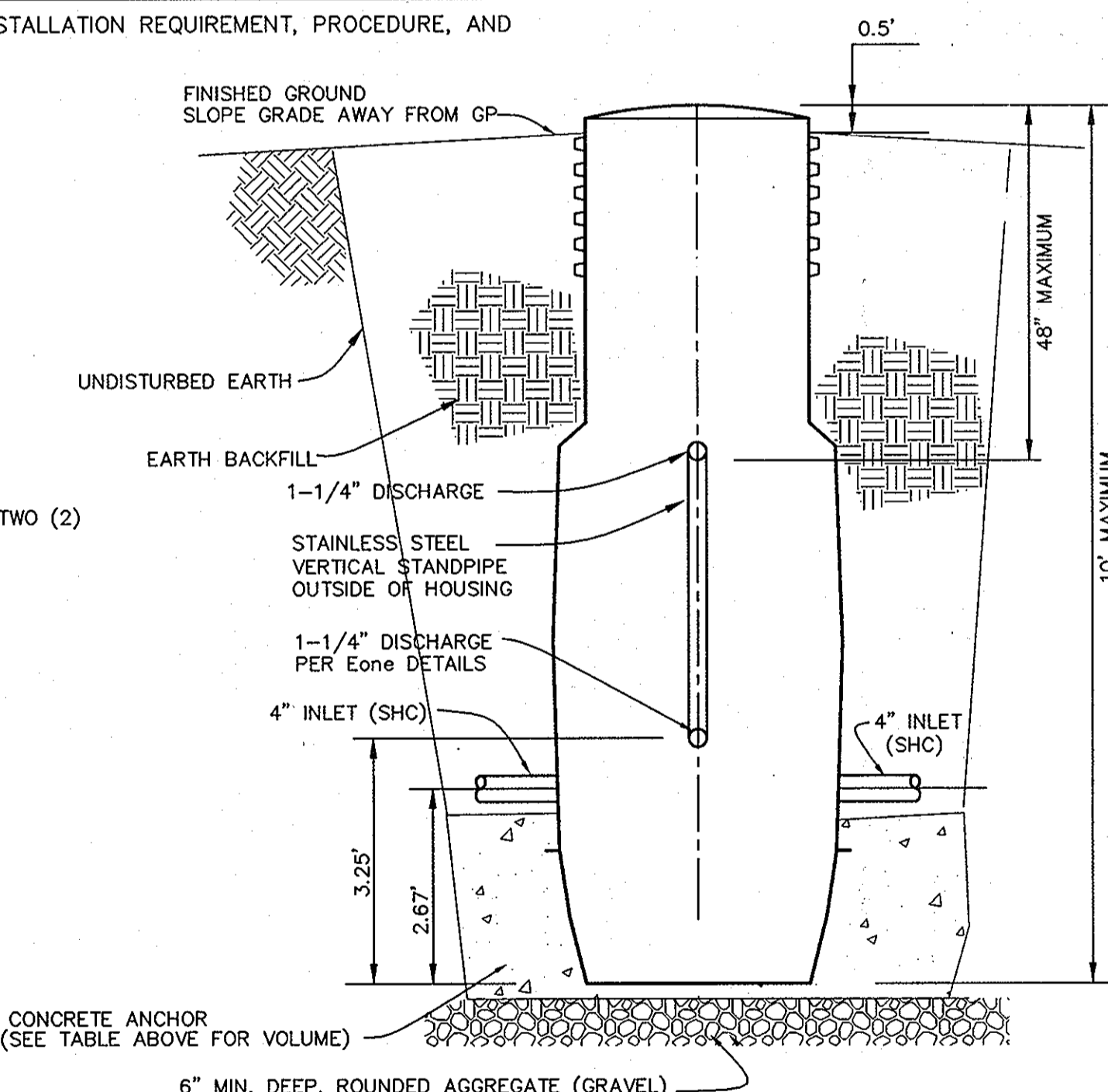
DISTRIBUTION LATERAL TERMINATION DETAIL
NOT TO SCALE



PLAN VIEW

TYPICAL DUPLEX GRINDER PUMP (MODEL #2014)

NOT TO SCALE



SECTION VIEW

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

Robert J. Walker
COUNTY HEALTH OFFICER

9/29/06
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
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844

DESIGN: DBT

DRAFT: DBT

CHK: DAM

DATE: 7/07/06

BY NO.

REVISIONS

DATE

600 SCALE MAP NO. 50

BLOCK 3

DETAILS

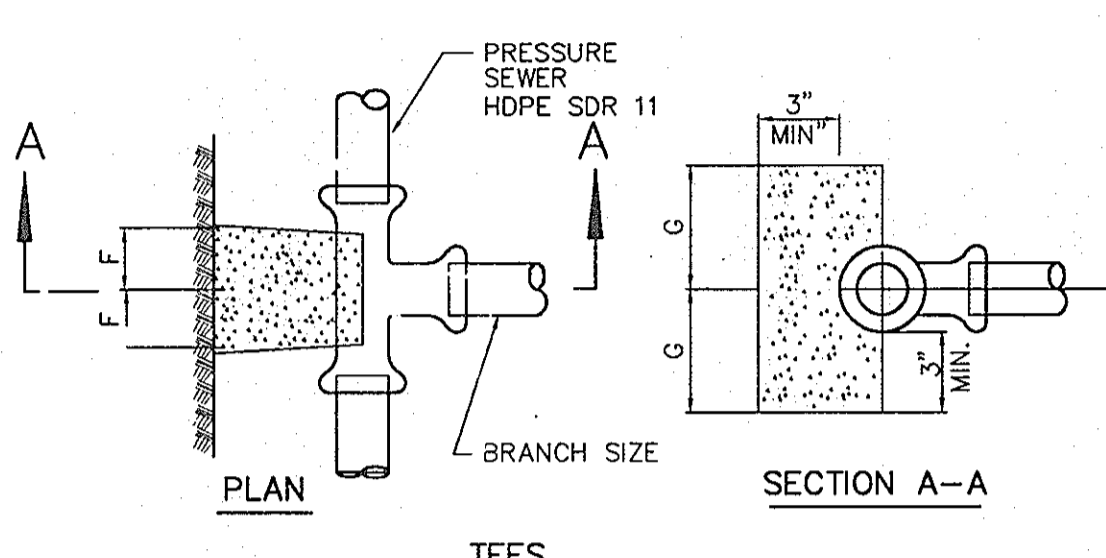
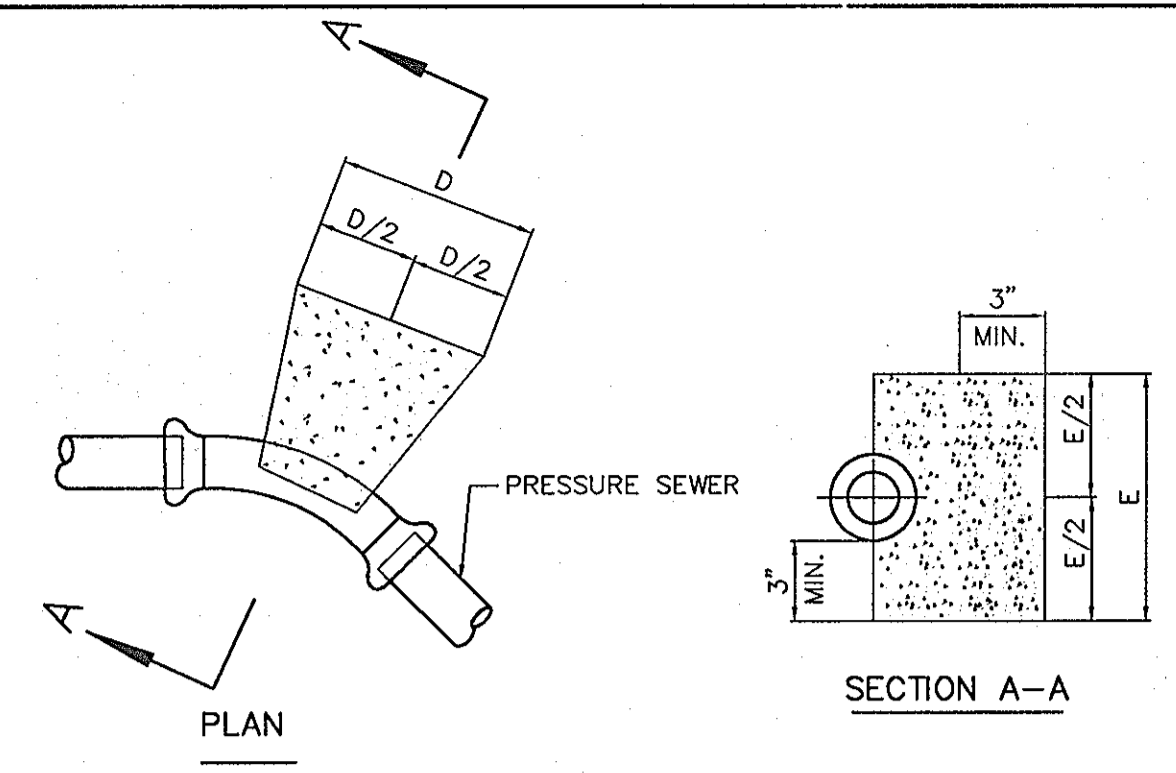
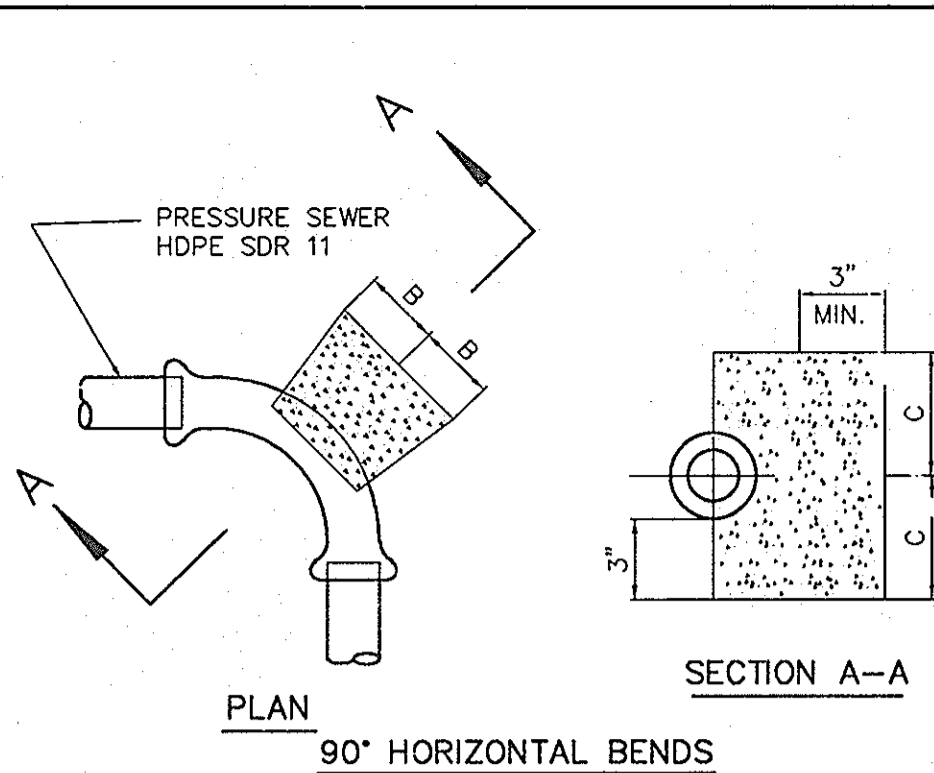
EDGEWOOD FARM
SHARED SEPTIC PLAN FOR LOTS
LOTS 42-46, 49, 53 AND 54

FOURTH ELECTION DISTRICT

CONTRACT NO. 50-4309-D

SCALE:
AS SHOWN

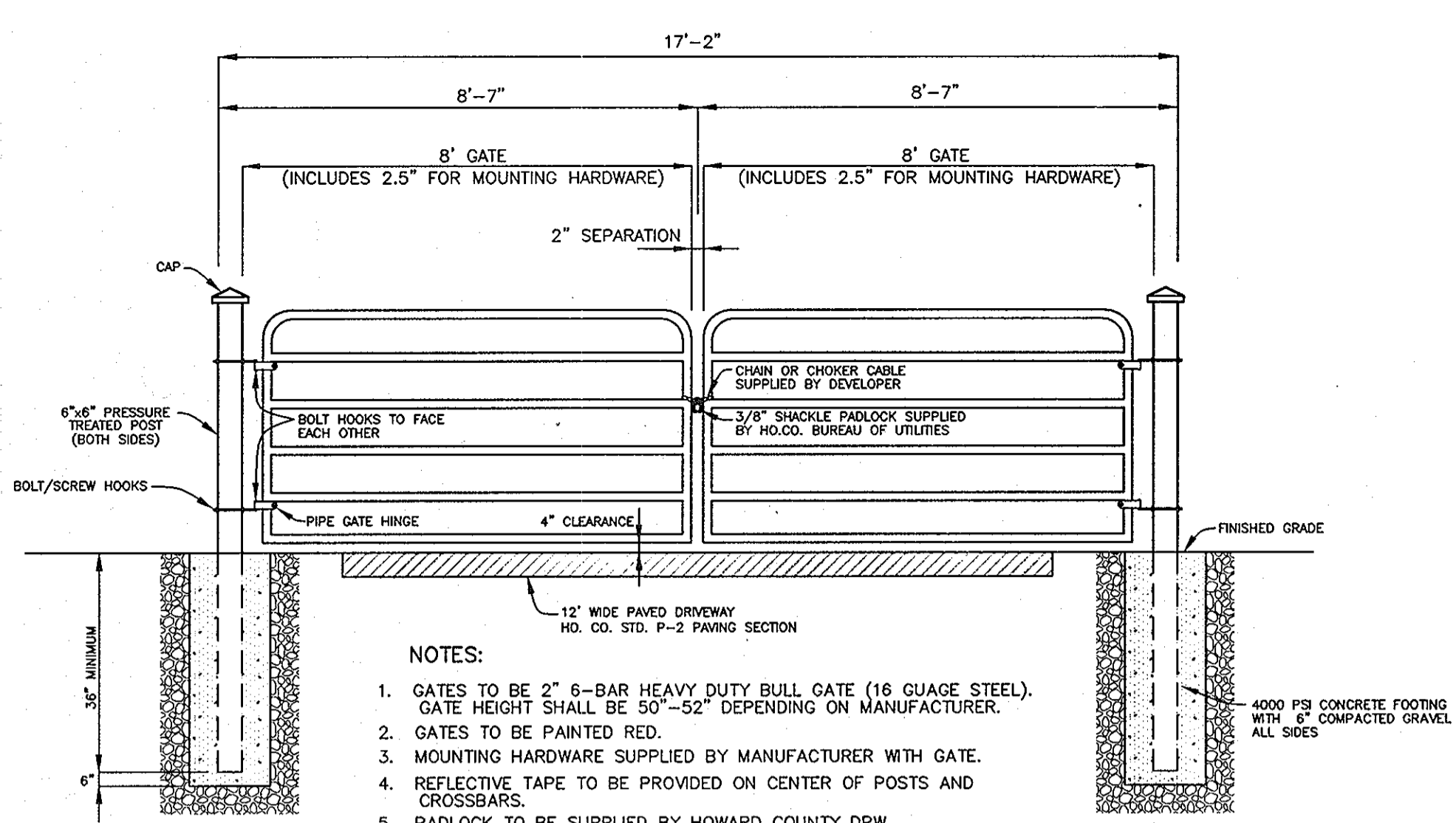
SHEET NO.
4 OF 6



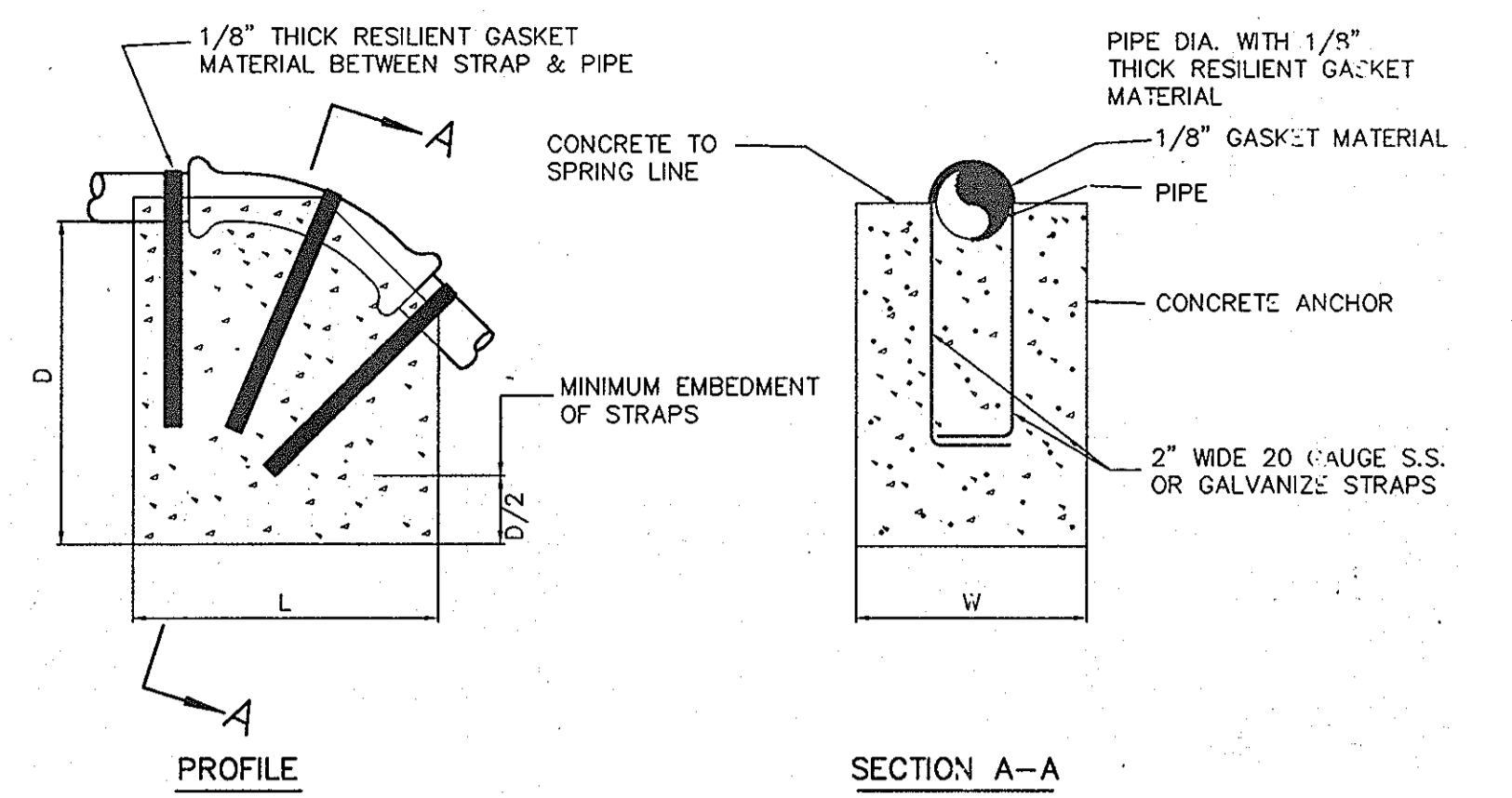
11-1/4, 22-1/2, 45° HORIZONTAL & LOWER VERTICAL BENDS

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.



GATE DETAIL
NOT TO SCALE

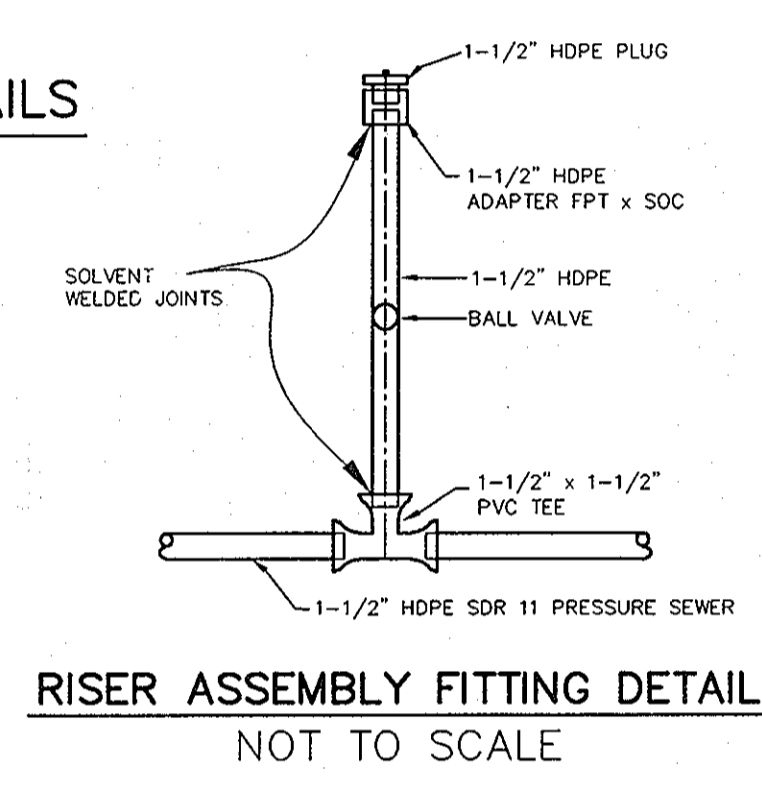
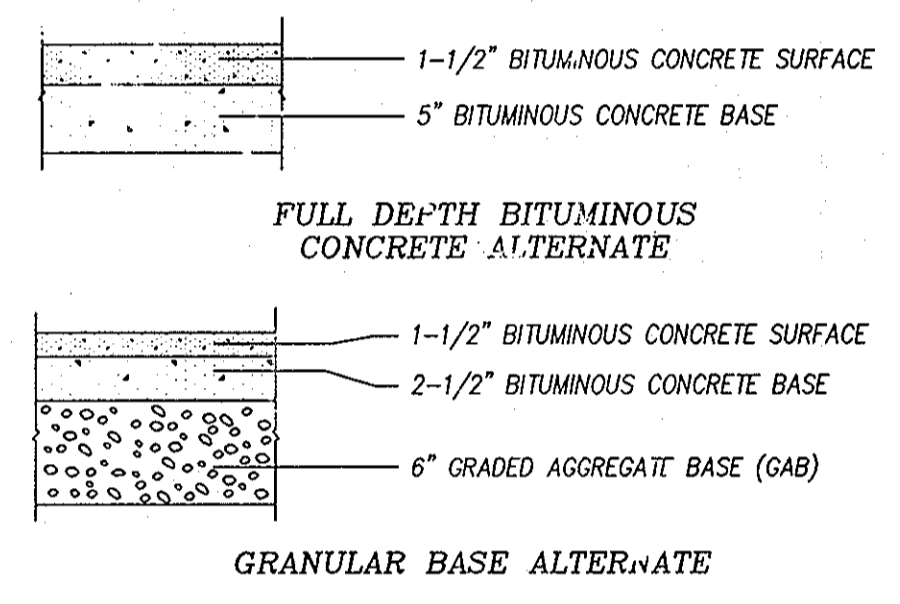


BEND	1-1/4"	22-1/2"	45°
L	12"	12"	12"
W	10"	10"	10"
D	10"	10"	10"
L	15"	15"	15"
W	15"	15"	15"
D	12"	12"	12"
L	20"	20"	20"
W	20"	20"	20"
D	12"	12"	12"

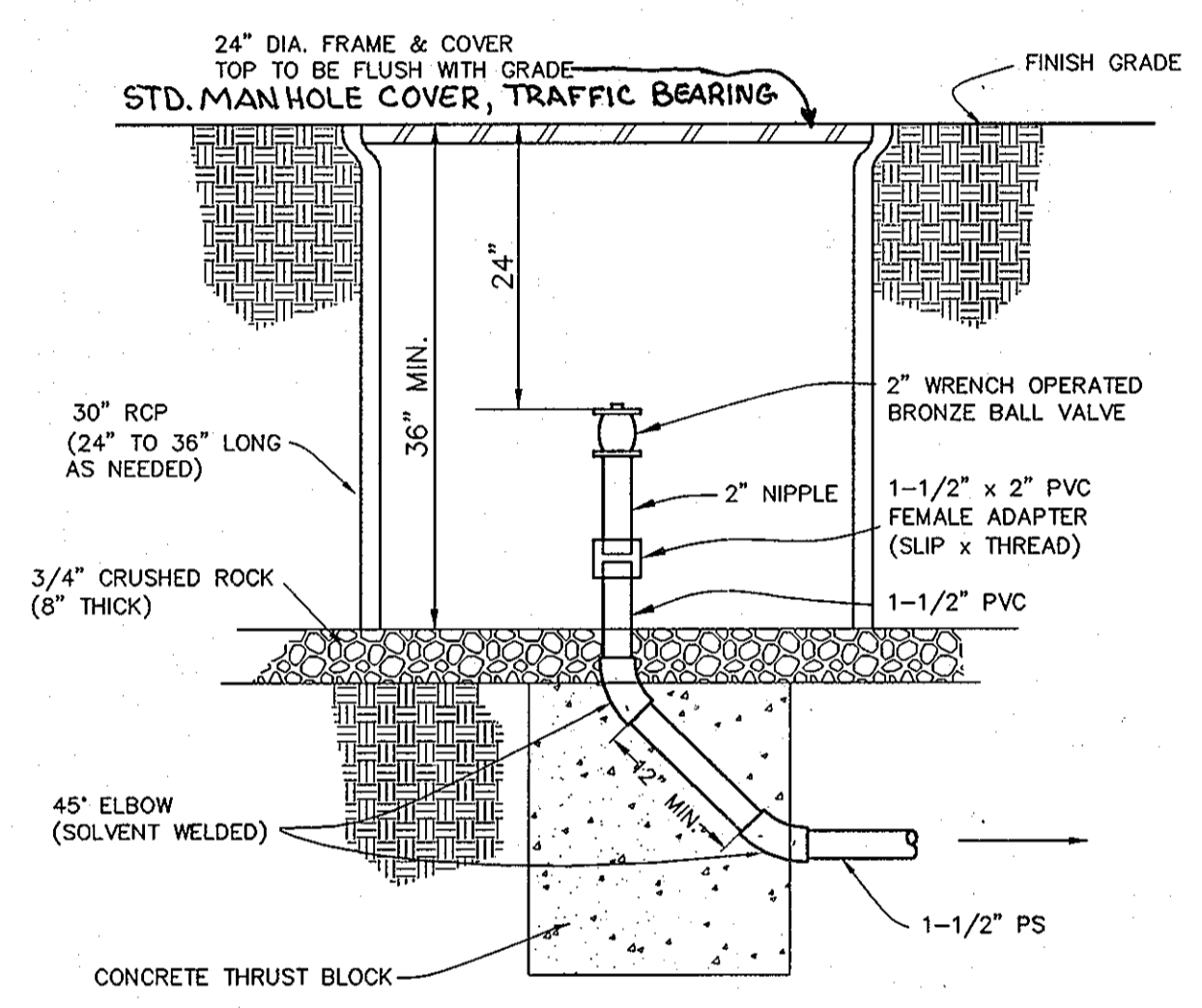
- NOTES:
- PAINT EXPOSED GALVANIZE STRAPS WITH TWO(2) COATS OF BITUMINOUS PAINT.
 - f'c = 3000 psi AT 28 DAYS.
 - CARRY ALL BEARING SURFACE TO UNDISTURBED EARTH OR FIRM SUBGRADE.
 - CONCRETE ANCHORAGE DIMENSIONS ARE BASED ON TOTAL PRESSURE OF 150 psi.

ANCHORING PRESSURE SEWERS
(UPPER VERTICAL BENDS)
NOT TO SCALE

PRESSURE SEWER BLOCKING DETAILS
NOT TO SCALE



RISER ASSEMBLY FITTING DETAIL
NOT TO SCALE



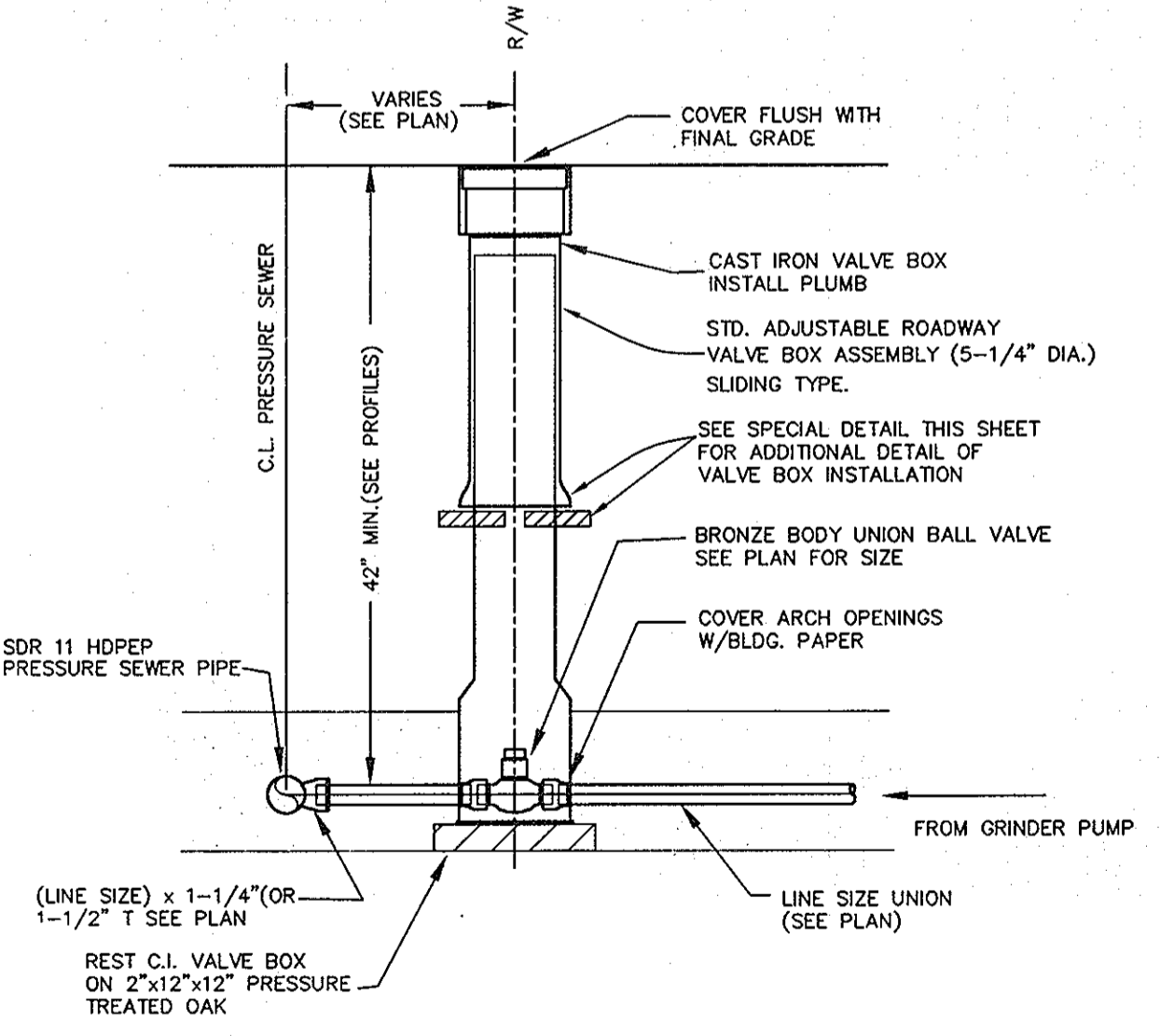
TERMINAL FLUSHING CONNECTION
NOT TO SCALE

SPECIFICATIONS FOR UTILITY STORAGE BUILDING

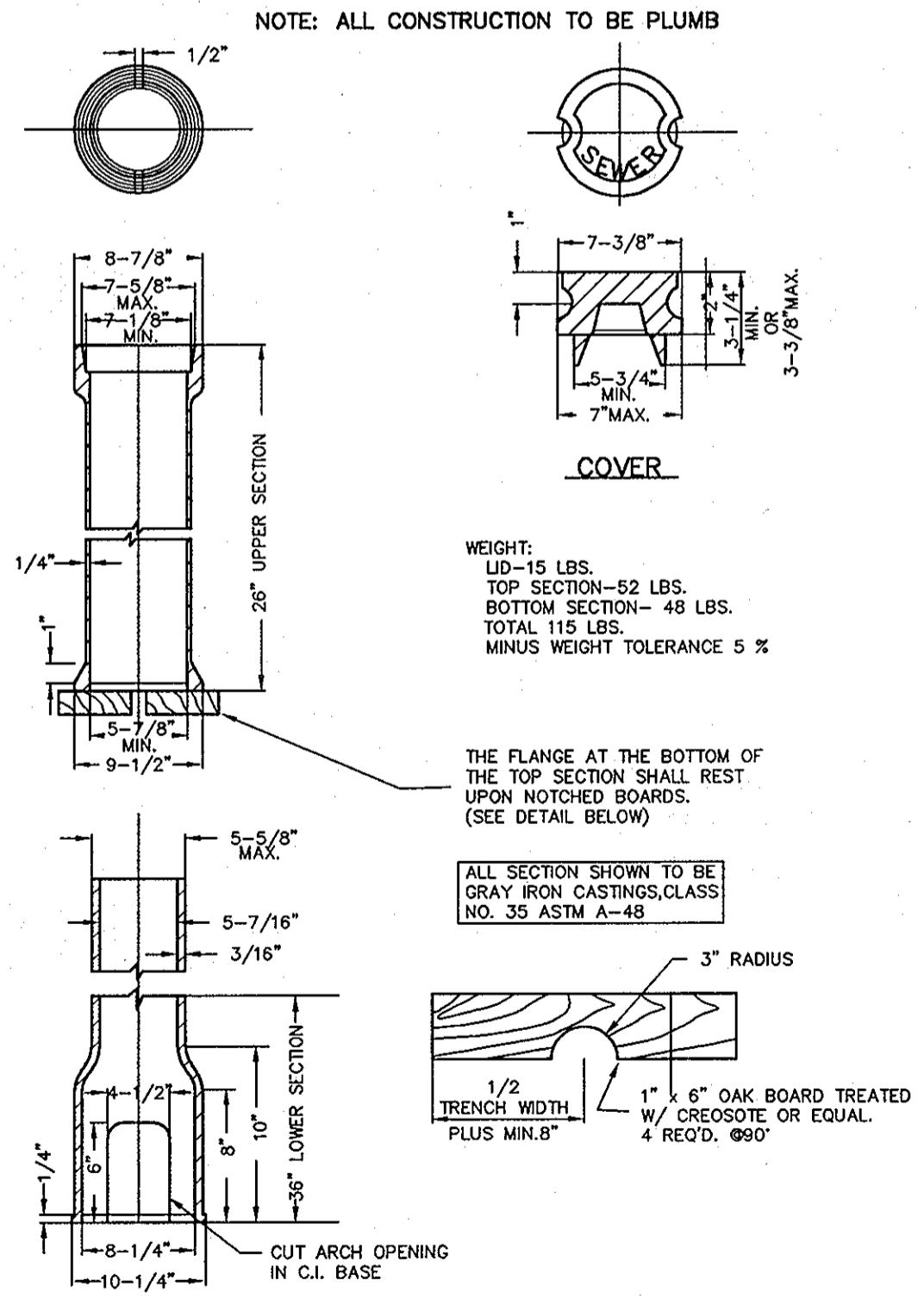
- BUILDING SHALL BE 8'x12' VINYL SIDED STORAGE BUILDING
- SHALL BE HIGH WALL BARN STYLE WITH 6" SIDE WALLS
- ONE DOUBLE DOOR ON END OF BUILDING
- DOORS AND FRAME TO BE REINFORCED
- DOOR HINGES MUST BE "T" TYPE OR STRAP TYPE; 3 HINGES PER DOOR
- PIANO HINGES ARE NOT ACCEPTABLE
- NO WINDOWS
- 10' RIDGE 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 KEYPED 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

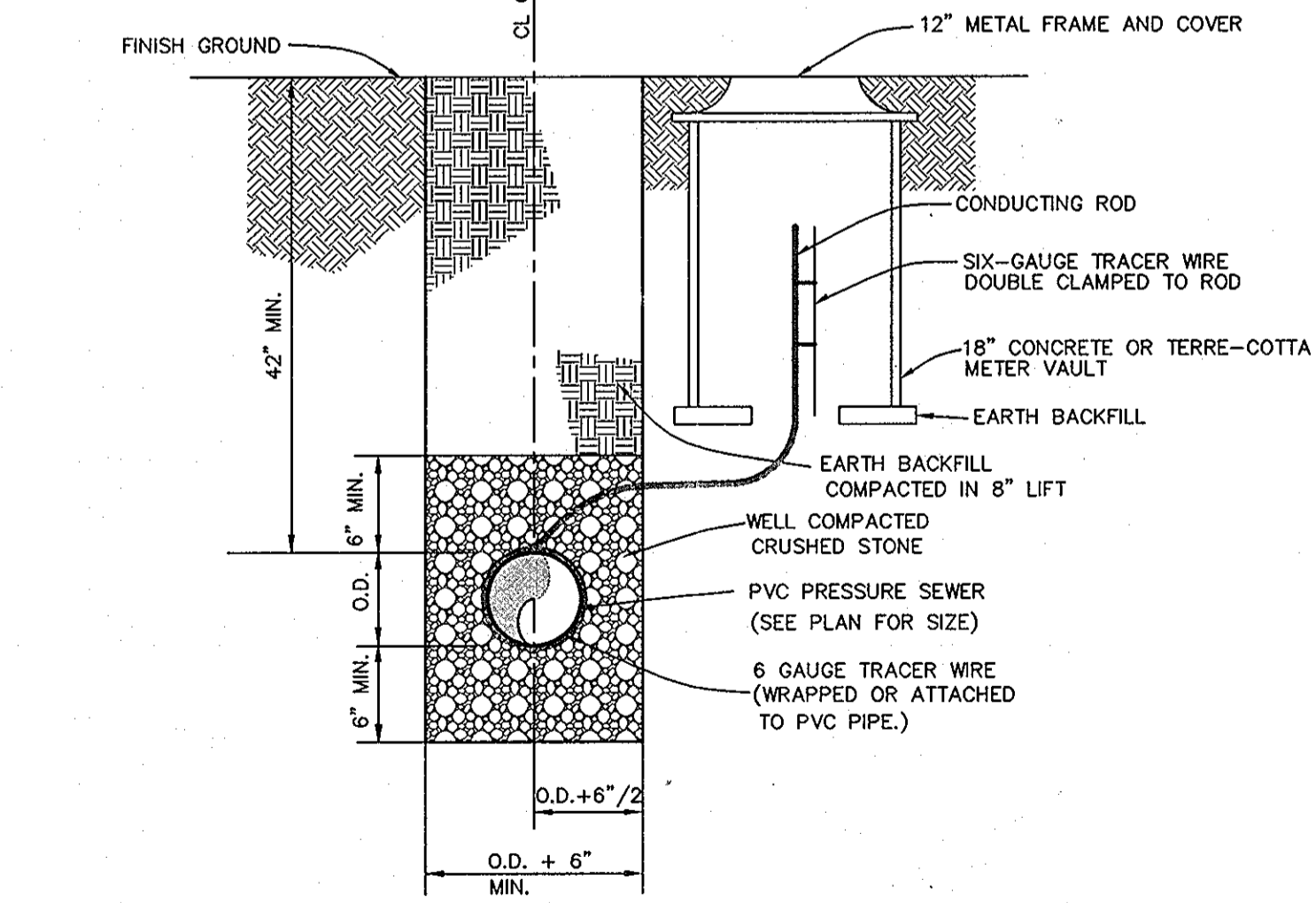
PAVING SECTION P-2
NOT TO SCALE



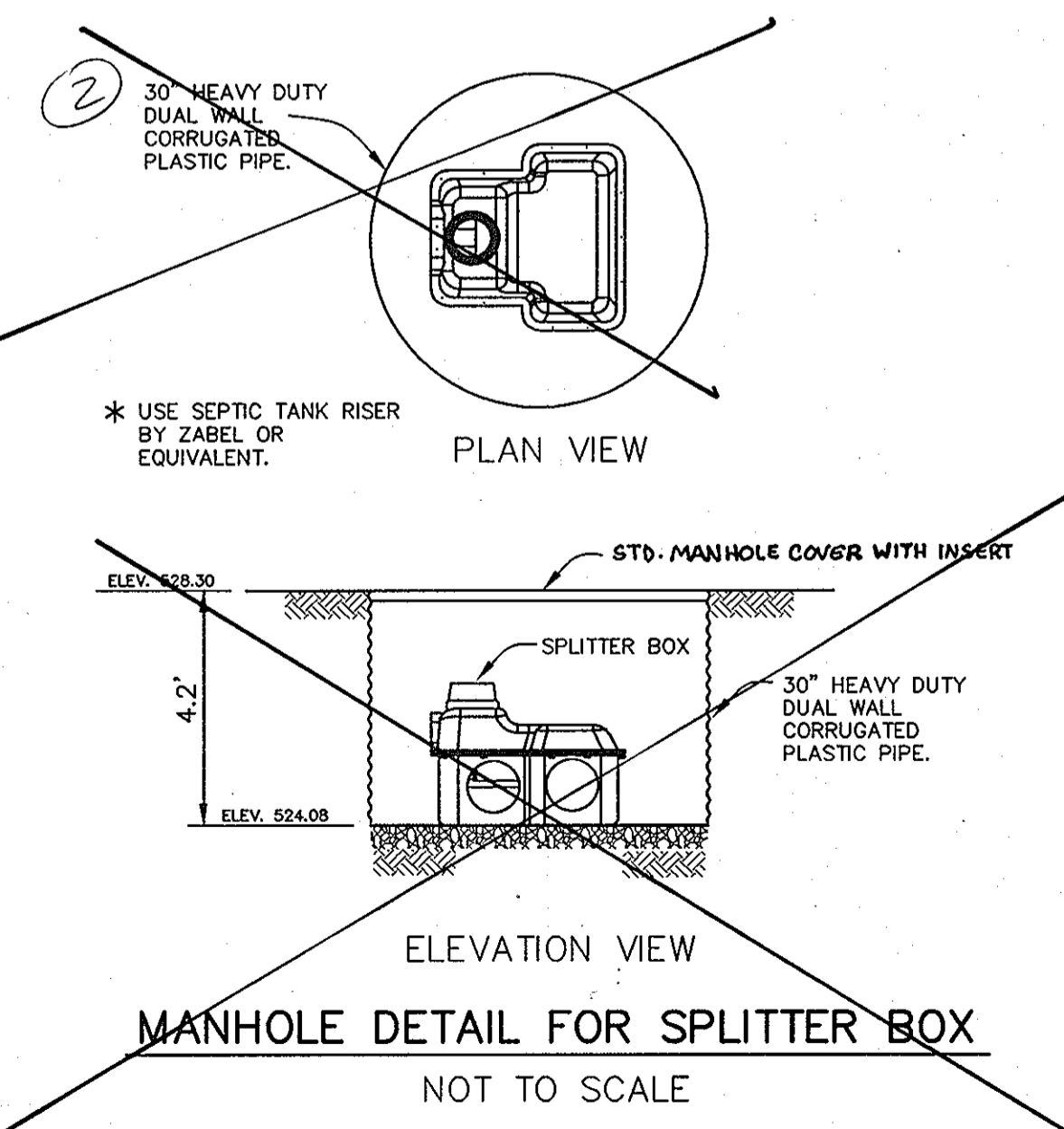
UNION BALL VALVE ASSEMBLY
NOT TO SCALE



ADJUSTABLE VALVE BOX ROUND HEAD SLIDING TYPE
NOT TO SCALE



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



MANHOLE DETAIL FOR SPLITTER BOX
NOT TO SCALE

Technical Specifications

SAMPLE ENGINEERING SPECIFICATION:
CONTRACTOR must furnish a Zoeller Tri-Flow splitter system, model 173-0001. A concrete or plastic distribution box requiring speed levels should not be considered equal. 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 of 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:
Zoeller Pump Co.
1-800-828-PUMP
www.zoeller.com

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

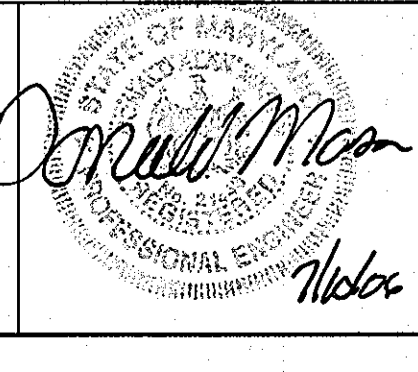
Robert J. Water
CHIEF, BUREAU OF UTILITIES
8-14-06
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Donna McLean
CHIEF, DEVELOPMENT ENGINEERING DIVISION
2/22/07
DATE

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-8644



DESIGN:	DBT				
DRAFT:	DBT				
CHK:	DAM				
DATE:	7/07/06				
BY:	KCI	1	ASBULT		
NO.					
REVISIONS					
DATE					

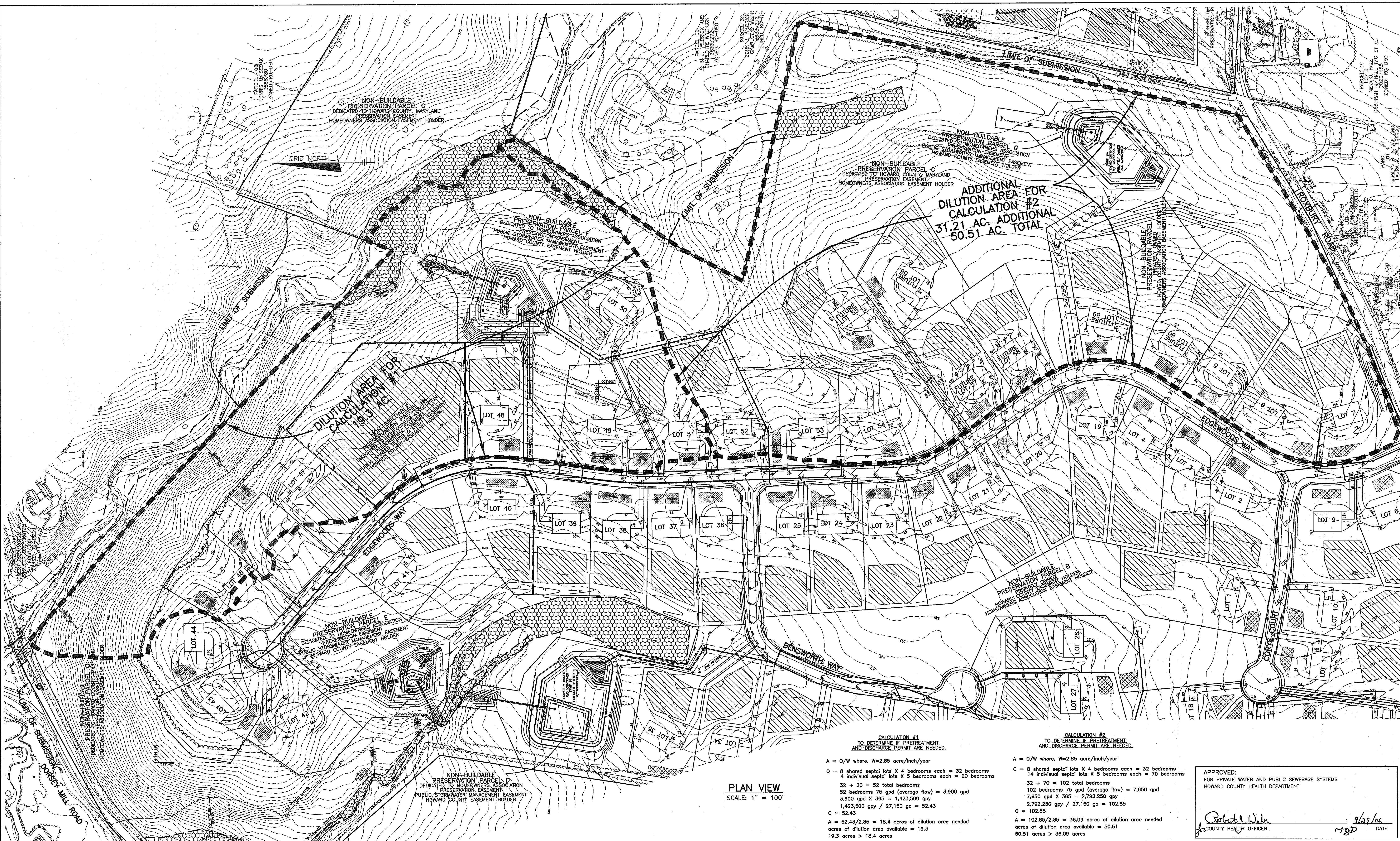
600 SCALE MAP NO. 50
BLOCK 3

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



DILUTION AREA FOR CALCULATION #1
19.3 AC.

ADDITIONAL DILUTION AREA FOR CALCULATION #2
31.21 AC. ADDITIONAL
50.51 AC. TOTAL

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
 14 individual septic lots X 5 bedrooms each = 70 bedrooms
 $32 + 70 = 102$ total bedrooms
 102 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

Ruth J. Wade
COUNTY HEALTH OFFICER

9/29/06
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ruth J. Wade 844-06
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

William J. H. ... 26067
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-485-8105 FAX: 410-485-8644

STATE OF MARYLAND
PROFESSIONAL ENGINEER
William J. H. ...
No. 6

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