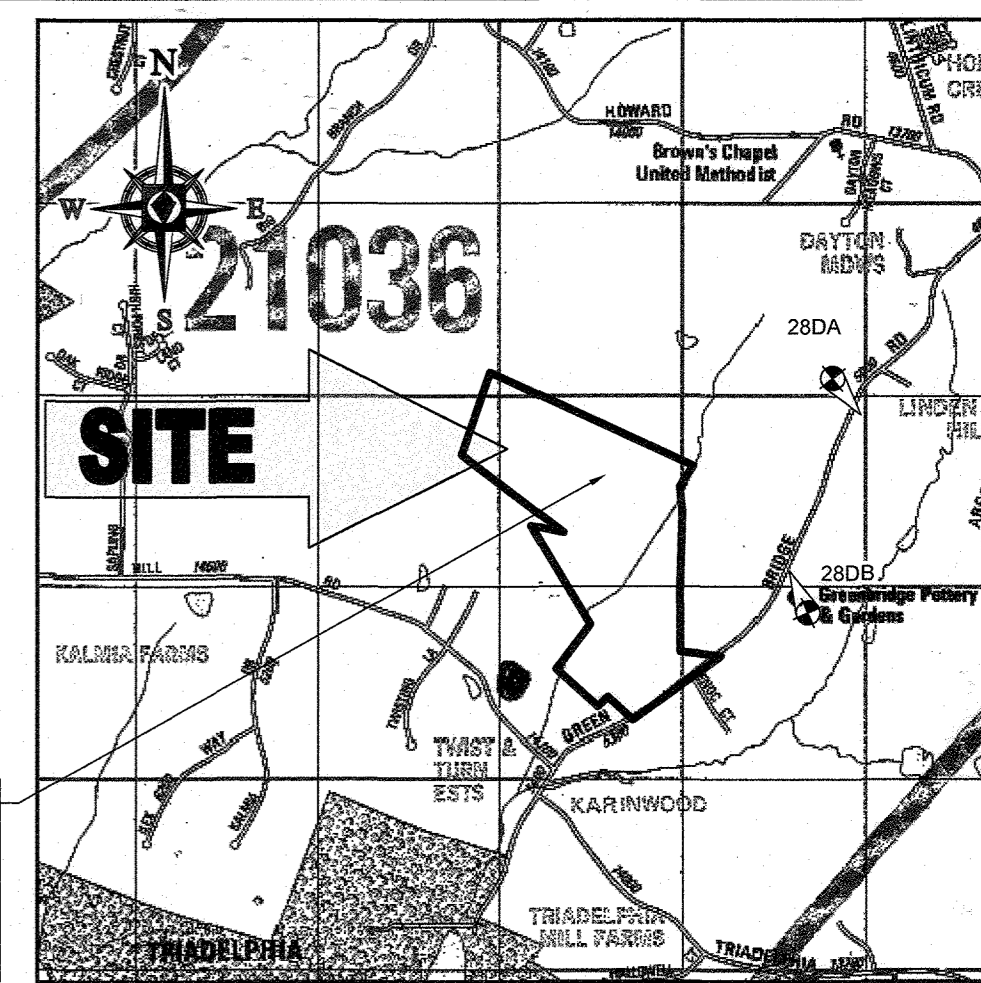


STANDARD DRAWING LEGEND		
FOR ENTIRE PLAN SET (NOT TO SCALE)		
EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
---	ONSITE PROPERTY LINE / R.O.W. LINE	---
---	NEIGHBORING PROPERTY LINE / INTERIOR PARCEL LINE	---
---	EASEMENT LINE	---
---	SETBACK LINE	---
---	UNDERGROUND FORCE MAIN	FM
S	SANITARY SEWER MAIN	---
⊙	SANITARY MANHOLE	•
○	TERMINAL SANITARY MANHOLE	•
---	STREAM BUFFER	SB
---	FLOODPLAIN	---
---	LIMIT OF DISTURBANCE	---
---	UTILITY TEST PIT LOCATION	TP
WB	WETLAND BUFFER	---
---	PERCOLATION HOLE (PASSED)	•
---	PERCOLATION HOLE (FAILED)	⊗
---	PERENNIAL STREAM	---
---	INTERMITTENT STREAM	---
---	SEWAGE DISPOSAL AREA	PRIVATE SHARED
---	PROPOSED SEWER HOUSE CONNECTION	---
---	WETLAND BUFFER	---
---	STREAM BUFFER	---
---	TREELINE	---
---	SEWER CLEANOUT	•

FINAL PUBLIC SEWER, FORCE MAIN AND SHARED ONSITE SEWER SYSTEM PLANS FOR WILLOWSHIRE LOTS 23, 38, 39, 40 & 42 CONTRACT NO.: 50-5062-D

LOCATION OF SITE
5232 GREEN BRIDGE ROAD
TAX MAP 27, GRID 18, PARCELS 34,36, 98, 111 & 112
5TH ELECTION DISTRICT, ZONED RR-DE0
HOWARD COUNTY MARYLAND



PROJECT: WILLOWSHIRE LOTS 23, 38, 39, 40 & 42 SEWER MAIN, LOW PRESSURE SEWER SYSTEM AND SHARED ONSITE SEWER SYSTEM HOWARD COUNTY, MARYLAND CONTRACT NO. 50-5062-D

VICINITY MAP
COPYRIGHT ADC THE MAP PEOPLE
PERMIT USE NO. 20602153-5
SCALE: 1"=200'
ADC MAP COORDINATES: 301CS

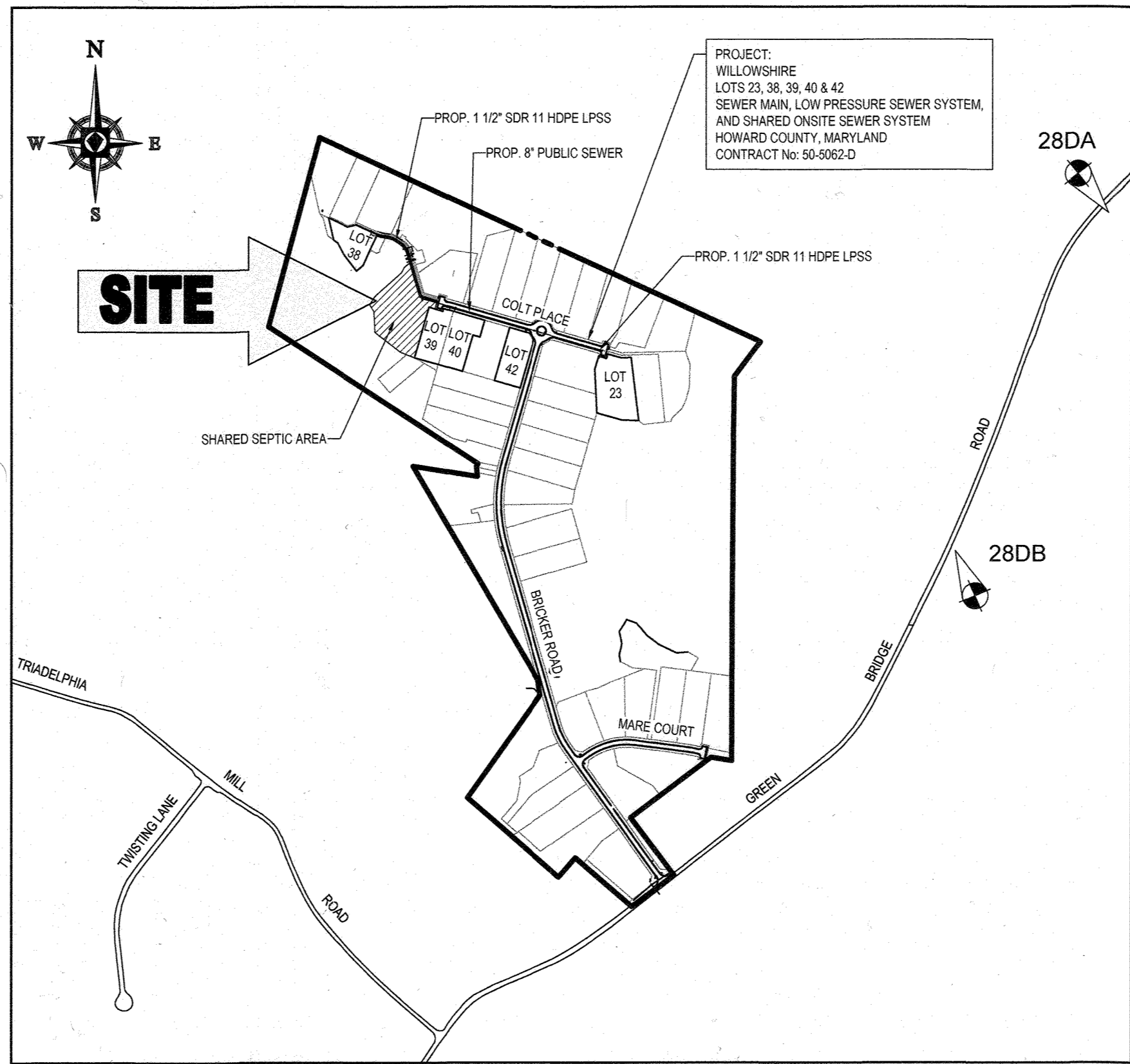
GENERAL NOTES

- 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 28, 2015 BY BOHLER ENGINEERING.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HORIZONTAL AND VERTICAL CONTROL DATUM ARE BASED ON HOWARD COUNTY MONUMENT NOS. 28DA AND 28DB WHICH WERE USED FOR THIS PROJECT.
HOWARD COUNTY MONUMENT NO. 28DA ELEV. = 564.389'
HOWARD COUNTY MONUMENT NO. 28DB ELEV. = 537.361'
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- 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 BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
AT & T 1-800-252-1133
BGE (CONSTRUCTION SERVICES) 410-637-8713
BGE (EMERGENCY) 410-685-0123
BUREAU OF UTILITIES 410-313-4800
COLONIAL PIPELINE COMPANY 410-795-1390
MISS UTILITY 1-800-267-7777
STATE HIGHWAY ADMINISTRATION 410-531-5533
VERIZON 1-800-743-0233
HOWARD COUNTY HEALTH DEPARTMENT OFFICE 410-313-6300
- 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 THE 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 WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATERSEWER 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.
- WAIVER (DMV-19-009) FROM THE HOWARD COUNTY DESIGN MANUAL VOL. II, WATER AND SEWER SECTION 4.3 B.3.B AND 4.5 E FOR LOTS 23, 38-40 AND 42 (NO BASEMENT GRAVITY SERVICE) HAS BEEN APPROVED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS ON DEC. 2, 2016. AS A RESULT OF TOPOGRAPHY CAUSING DEPTHS OF SEWER IN EXCESS OF 20 FEET, BASEMENT SEWER SERVICE CANNOT BE PROVIDED TO THESE LOT PROPOSED LOTS. FOR THESE LOTS, GRAVITY SEWER SERVICE TO BE PROVIDED TO FIRST FLOOR ONLY. BASEMENT SERVICE TO BE PROVIDED BY PRIVATE ON-SITE PUMP TO BE LOCATED INSIDE THE HOUSE. THE APPROVAL AND INSPECTION OF ON-SITE PUMPING UNITS INCLUDES THE DEPARTMENT OF INSPECTION, LICENSE AND PERMIT (DIP).
- CONSTRUCTION SHALL CONFORM TO ALL LOCAL, COUNTY, AND STATE GUIDELINES, INCLUDING HOWARD COUNTY BUILDING CODES AND RECOMMEND STANDARD FOR WASTEWATER SYSTEMS (2004). DISCREPANCIES SHALL BE REFERRED TO ENGINEER.
- REFER TO SEPTIC PERMIT APPROVAL FOR SAMPLING PROTOCOLS AND FREQUENCY FOR THE RESPECTIVE SITES. COPY OF THE SEPTIC PERMIT APPROVAL SHALL BE KEPT WITH THE OSM MANUAL.
- A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE MDE (410-537-3880), HOWARD COUNTY HEALTH DEPARTMENT AND BUREAU OF UTILITIES & CONSTRUCTION INSPECTIONS REPRESENTATIVES PRIOR TO STARTING WORK. THIS MEETING SHOULD INCLUDE DISCUSSION OF CONSTRUCTION REQUIREMENTS.
- AN OPEN TRENCH INSPECTION SHALL BE CONDUCTED PRIOR TO FILLING WITH GRAVEL.
- THIS AREA DESIGNATES A SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ FT PER LOT ON SHARED-SYSTEM AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE AREA. RECORDATION OF A REVISED SEWERAGE EASEMENT SHALL NOT BE NECESSARY.
- WAIVER (DMV-20-001) FROM THE HOWARD COUNTY DESIGN MANUAL VOL. II, WATER AND SEWER, SECTION 8.1 E.9.C WHICH REQUIRES "SEPTIC TANKS SIZED (TOTAL CAPACITY) FOR A MINIMUM VOLUME EQUAL TO 1250 GALLONS PER 4-BEDROOM HOUSE PLUS 250 GALLONS FOR EACH ADDITIONAL BEDROOM." HAS BEEN APPROVED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS ON AUGUST 16, 2014.
- THE DEVELOPER SHALL CONDUCT QUARTERLY MONITORING OF THE TREATED EFFLUENT DURING THE 12-MONTH PERIOD FOLLOWING 80% OCCUPANCY OF THE LOTS CONNECTED TO THE SHARED SYSTEM. THE SAMPLING AND ANALYSES SHALL BE IN ACCORDANCE WITH MDE GUIDANCE FOR PRE-TREATMENT SYSTEMS WITH GREATER THAN 1500 GPD CAPACITY. THIS INCLUDES GRAN SAMPLING ANALYSES OF BOD, TSS, TOTAL NITROGEN (TKN, NITRATE, NITRITE), ALKALINITY, AND FOG. DO, PH, AND TEMPERATURE SHOULD BE FIELD TESTED AS CLOSE TO THE TREATMENT PLANT EFFLUENT PIPE AS POSSIBLE. IF THE EFFLUENT CONSISTENTLY EXCEEDS THE APPROVED DESIGN CRITERIA OR APPLICABLE REGULATORY LIMITS, THE DEVELOPER WILL NOTIFY HCHD, MDE, AND HCBU AND WILL MAKE THE NECESSARY ADJUSTMENTS OR REPAIRS TO THE SYSTEM WITH AGENCY OVERSIGHT PRIOR TO DEDICATION OF THE SYSTEM TO HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. IF A TREATMENT REDUCTION IN PERCENT IS SPECIFIED, CONCURRENT INFLUENT MONITORING IS REQUIRED.

SHEET INDEX	
SHEET TITLE	SHEET NUMBER
WATER AND SEWER PLAN - TITLE SHEET	1
WATER AND SEWER PLAN - PUBLIC SEWER & FORCE MAIN PLAN & PROFILES	2
WATER AND SEWER PLAN - DRAINFIELD PLAN	3
WATER AND SEWER PLAN - TREATMENT SYSTEM DETAIL	4
WATER AND SEWER PLAN - DISTRIBUTION DETAILS	5

QUANTITIES TABLE				
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	AS-BUILT TYPE	MANUFACTURER / SUPPLIER
GRINDER PUMP (DUPLX)	2	2	DUPLX	ZOELLER
CLEANOUTS	7	7	CONCRETE	HORNE CONCRETE
GATE VALVES	1	1	MJ R5 O/R	MUELLER CO.
4" SMC	65 L.F.	75 L.F.	PVC-SDR 35	JM-MFG.
1 1/2" SDR 11 HDPE (LPSS)	830 L.F.	830 L.F.	HDPE	FLYING W PLASTICS
8" SDR 35 PVC	591 L.F.	590 L.F.	PVC	JM-MFG.
TERMINAL FLUSHING CONNECTION MANHOLE	2	2	PRECAST CONC.	ATLANTIC CONCRETE
SANITARY MANHOLE	2	2	PRECAST CONC.	ATLANTIC CONCRETE
3" WIDE DRAINFIELD TRENCH	750 L.F.	750 L.F.	TYPE 2-A WASHED STONE	HYDRO-TERRA
2" PVC LATERALS	744 L.F.	744 L.F.	2" PVC HDPE	FLYING W PLASTICS
3" PVC PVC FORCE MAINS	180 L.F.	180 L.F.	3" PVC HDPE	FLYING W PLASTICS
2,000 GALLON SETTLING TANKS	1	1	PRECAST CONC.	GILLESPIE
4.5 BAT UNIT (MICROFAST)	1	1	PRECAST CONC.	GILLESPIE
6,000 GALLON DOSING TANK	1	1	PRECAST CONC.	GILLESPIE
DOSING PUMPS	3	3	CAST IRON	GOULD S W 07 BHF
6 X 12 CONTROL SHED	1	1	COTTAGE A-FRAME	RIJOC CABINET CO.
TRANSITION MANHOLE	2	2	PRECAST CONC.	ATLANTIC CONCRETE
NAME OF UTILITY CONTRACTOR				HIGHLAND TURF, INC.
CHECK BOX				
AS-BUILT DATE		11-4-2021		
SURVEY AND DRAFTING DIVISION				

SANITARY STRUCTURE SCHEDULE					
NAME	TYPE	RIM ELEV. (FT.)	INVERTS	NORTHING	EASTING
CO1	CLEANOUT	489.88	INV OUT = 487.05 (4') INV IN = 487.05 (4')	9.02	1.311.235.092
CO2	CLEANOUT	489.22	INV OUT = 487.05 (4') INV IN = 487.05 (4')	3.83	1.312.235.092
CO5	CLEANOUT	490.48	INV OUT = 487.00 (10') INV IN = 487.00 (10')	7.4	1.311.123.676
CO6	CLEANOUT	499.96	INV OUT = 487.00 (10') INV IN = 487.00 (10')	5.37	1.312.235.092
GP#1	GRINDER PUMP	500.00	INV IN = 487.50 (11') INV IN = 487.00 (4')	7.4	1.312.235.092
GP#2	GRINDER PUMP	490.00	INV IN = 487.50 (11') INV IN = 487.00 (4')	2.6	1.311.123.676
SM#4	TERMINAL FLUSHING CONNECTION	490.38	INV OUT = 494.84 (10') INV IN = 490.38 (10')	.80	1.312.235.092
SM#3	TERMINAL FLUSHING CONNECTION	493.82	INV OUT = 485.00 (10') INV IN = 485.00 (10')	3.59	1.311.123.676
SM#1	STANDARD MANHOLE	498.77	INV IN = 492.10 (8') INV IN = 492.00 (8') INV IN = 491.50 (8')	.79	1.311.374.462
SM#2	STANDARD MANHOLE	500.00	INV IN = 494.04 (6') INV IN = 493.94 (6')	.75	1.311.537.854
TSM#1	TRANSITION MANHOLE	497.17	INV IN = 493.00 (11') INV OUT = 492.50 (8')	8.83	1.311.374.462
TSM#2	TRANSITION MANHOLE	511.97	INV IN = 506.65 (11') INV IN = 506.15 (8')	8.25	1.311.922.346
VALVE BOX	ISOLATION VALVE BOX	497.19	INV IN = 491.06 (8') INV OUT = 491.06 (8')	8.92	1.311.375.786



USE PROJECTION	
HOUSES SERVED BY ON-SITE SYSTEM	5
BEDROOMS PER HOUSE	5
LOW PER BEDROOM (GPD)	150
TOTAL DESIGN FLOW AT 150 GPD/BEDROOM (GAL)	3,750
ADF (GPD)	1,875

BENCHMARK	
GEODETIC SURVEY CONTROL - 28DA	ELEV. 564.389' N 570.624.997 E 1,314,434.228
GEODETIC SURVEY CONTROL - 28DB	ELEV. 537.361' N 589,055.561 E 1,313,795.348

WATER NOTES:

- WATER SERVICE TO ALL BUILDABLE LOTS SHALL BE PRIVATE AND PROVIDED BY INDIVIDUAL PRIVATE WELLS.
- ALL SEWER MAINS SHALL BE DIP OR PVC 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 COVERS. STANDARD DET. GS.52 WHERE WATERTIGHT FRAME AND COVER IS USED. SET TOP OF FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.S." INDICATES THAT CELLAR CANNOT BE SERVED.
- LOW PRESSURE SEWER PORTION OF THE COLLECTION SYSTEM MUST BE HDPE SDR-11 OR BETTER WITH THERMALLY WELDED JOINTS.
- ALL FORCE MAIN MUST BE LEAK TESTED.
- TRACER WIRE SHALL BE INSTALLED ALONG ENTIRE LENGTH OF LOW PRESSURE SEWER.
- A SPARE PUMP WILL BE PROVIDED TO THE COUNTY AT DEDICATION OF THE PUBLIC SANITARY SEWER IMPROVEMENTS.
- THE FORCE MAIN ELEMENT OF THE SHARED-SEPTIC SYSTEM MUST BE CONSTRUCTED OF FUSIBLE HDPE WHEN PASSING WITHIN 50 FEET OF THE WELL ZONES ON LOTS 2, 29 AND 30.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	BOHLER ENGINEERING	B.R. ROWE	DES: AVG	DRN: AVG	CK: TG	DATE: 01/03/20	REV.	DATE	DESCRIPTION	BY	WATER AND SEWER PLAN	WILLOWSHIRE	SCALE AS SHOWN
APPROVED: DATE: 1/28/22	APPROVED: DATE: 2/12/2020	OWNERS: PARCEL 38 TOLL MID ATLANTIC LP COMPANY INC. 250 GIBRAL TARR ROAD HORSHAM PA, 19044 TEL: 410-720-3021	OWNERS: PARCEL 112 TOLL MID ATLANTIC LP COMPANY INC. 250 GIBRAL TARR ROAD HORSHAM PA, 19044 TEL: 410-720-3021	DESIGNER: JERRY MAUCK JANET BURKE JET 5234 GREEN BRIDGE ROAD DAYTON, MD 21036 TEL: 410-213-7900	DATE: 01/03/20	DATE: 1/24/2021 AS-BUILT	DATE: 11/29/21 AS-BUILT	REV.	DATE	DESCRIPTION	BY	TITLE SHEET	LOTS 1-45, BUILDABLE PRESERVATION PARCEL C, NON-BUILDABLE PRESERVATION PARCEL A, B, D, E, G, L, & NON-BUILDABLE BULK PARCEL H-K	SHEET 1 OF 5

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (F-18-086)

DATE: 1-15-2020

CHIEF, BUREAU OF UTILITIES

APPROVED: FOR PRIVATE WATER, AND SHARED SEWER SYSTEM FOR LOTS 23, 38, 39, 40 & 42

DATE: 2/12/2020

COUNTY HEALTH OFFICER

HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER: ELM STREET DEVELOPMENT 5074 DORSEY HALL ROAD, SUITE 205 COLUMBIA, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021

PARCEL 34 TOLL MID ATLANTIC LP COMPANY INC. 250 GIBRAL TARR ROAD HORSHAM PA, 19044 TEL: 410-720-3021

PARCEL 111 DENNIS A LEAF LENORE D. SINES 5234 GREEN BRIDGE ROAD DAYTON, MD 21036 TEL: 410-213-7900

PARCEL 98 JERRY MAUCK JANET BURKE JET 5234 GREEN BRIDGE ROAD DAYTON, MD 21036 TEL: 410-213-7900

TYPE OF BUILDING: RESIDENTIAL - SINGLE FAMILY DETACH DWELLING DRAINAGE AREA: PATARSCO NUMBER OF LOTS/PARCELS/SUNITS WITHIN SUBDIVISION: 45 NUMBER OF LOTS/PARCELS SERVED BY PROPOSED SHARED SEPTIC SYSTEM: 5 AREA OF RESIDENTIAL LOT/PARCEL: 99.95AC NUMBER OF S.H.C.: 5 WATER ZONE: N/A TEST GRADIENT: N/A TREATMENT PLANT: SHARED TREATMENT FACILITY SHARED SEPTIC DISPOSAL FACILITY ON NON-BUILDABLE PRES. PARCEL "D"

901 DULANEY VALLEY ROAD, SUITE 801 TOWSON, MARYLAND 21204 Phone: (410) 821-7900 Fax: (410) 821-7987 www.BohlerEngineering.com

PROFESSIONAL ENGINEER JERRY MAUCK JANET BURKE JET 5234 GREEN BRIDGE ROAD DAYTON, MD 21036 LICENSE NO. 40888 EXPIRATION DATE 12/31/22

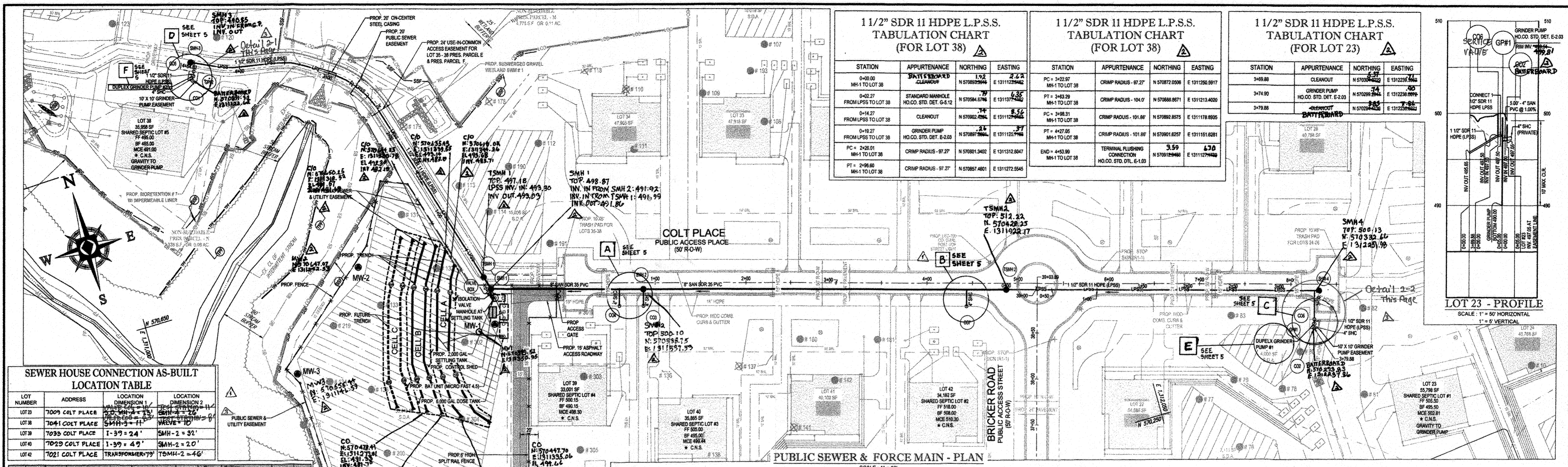
SEE SHEET 4 FOR SHARED SEPTIC TREATMENT SYSTEM NOTES.

WATER AND SEWER PLAN

TITLE SHEET

PARCEL NO. 34, 36, 98, 111 & 112

600' SCALE MAP NO. 27 & 28 BLOCK NO.



11/2" SDR 11 HDPE L.P.S.S. TABULATION CHART (FOR LOT 38)

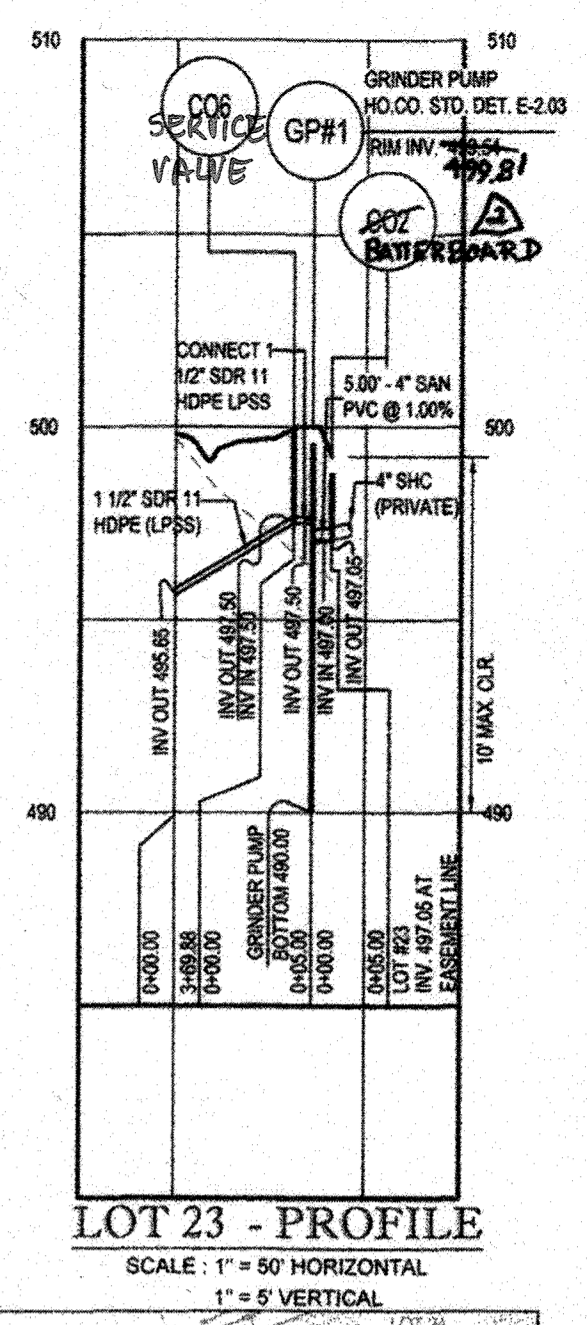
STATION	APPURTENANCE	NORTHING	EASTING
0+00.00	MH-1 TO LOT 38	1.92	2.24
0+20.27	STANDARD MANHOLE HO.CO. STD. DET. G-5.12	7.79	6.35
0+14.27	CLEANOUT	7.74	6.52
0+19.27	GRINDER PUMP HO.CO. STD. DET. E-2.03	2.4	3.7
PC = 2+28.01	CRIMP RADIUS - 97.27	N 5708013402	E 1311312.8047
PT = 2+98.68	CRIMP RADIUS - 97.27	N 5708574601	E 1311272.5545

11/2" SDR 11 HDPE L.P.S.S. TABULATION CHART (FOR LOT 38)

STATION	APPURTENANCE	NORTHING	EASTING
PC = 2+22.97	MH-1 TO LOT 38	N 5708722008	E 1312250.917
PT = 2+93.29	MH-1 TO LOT 38	N 5708682671	E 1312133.4020
PC = 2+98.21	MH-1 TO LOT 38	N 5708922875	E 1311178.8935
PT = 4+27.58	MH-1 TO LOT 38	N 5709016257	E 1311511.6281
END = 4+53.99	TERMINAL FLUSHING CONNECTION HO.CO. STD. DET. E-1.03	3.59	4.70
		N 5709129940	E 1311279.948

11/2" SDR 11 HDPE L.P.S.S. TABULATION CHART (FOR LOT 23)

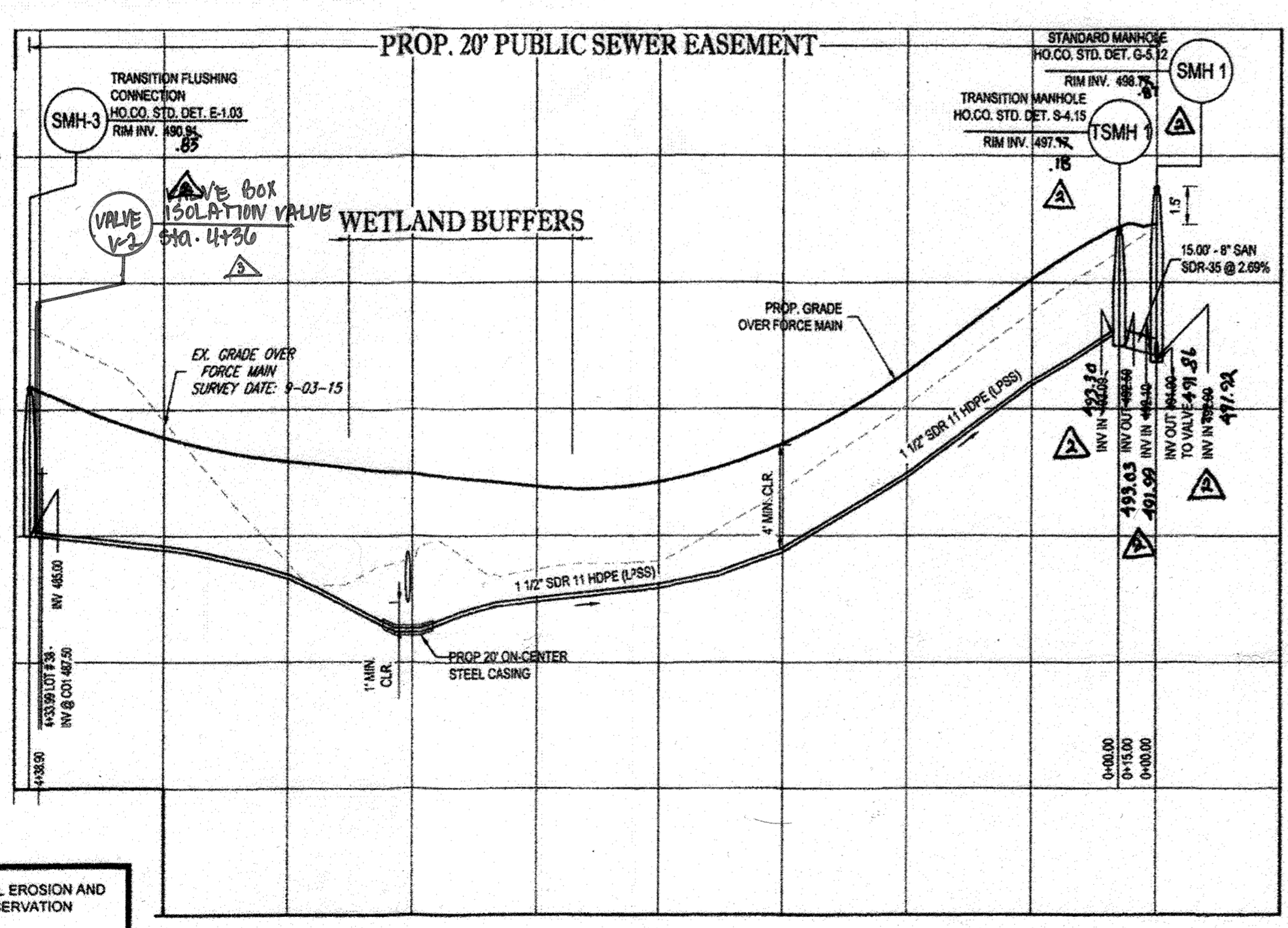
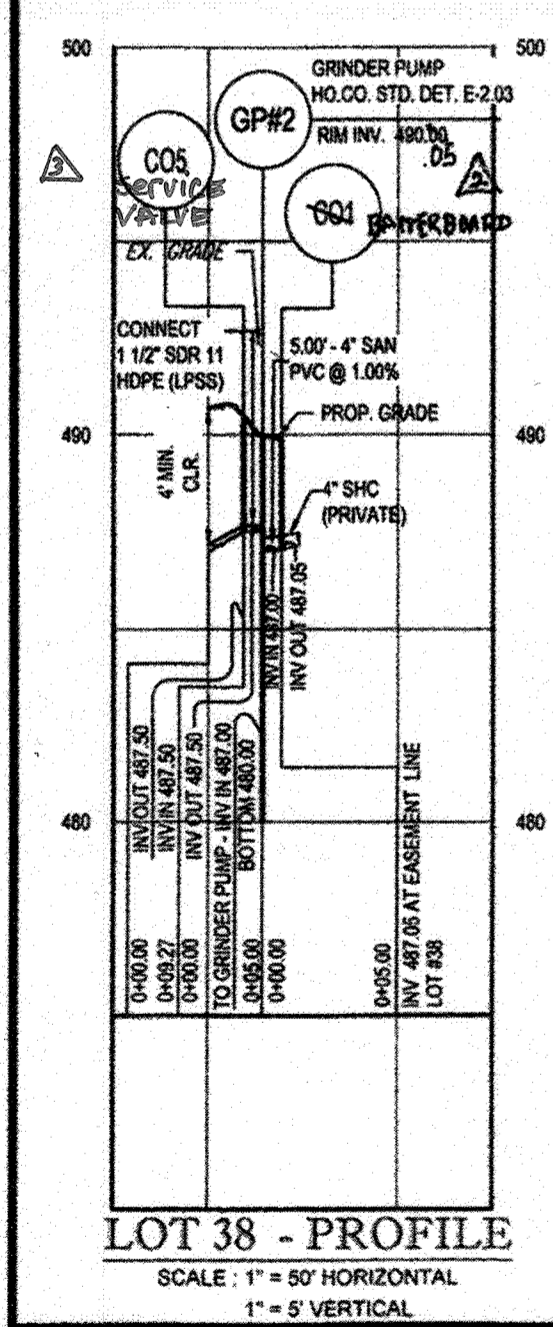
STATION	APPURTENANCE	NORTHING	EASTING
3+48.88	CLEANOUT	N 5703324242	E 1312236.544
3+74.90	GRINDER PUMP HO.CO. STD. DET. E-2.03	N 5702912844	E 1312236.0999
3+78.88	CLEANOUT	N 5702912844	E 1312236.0999



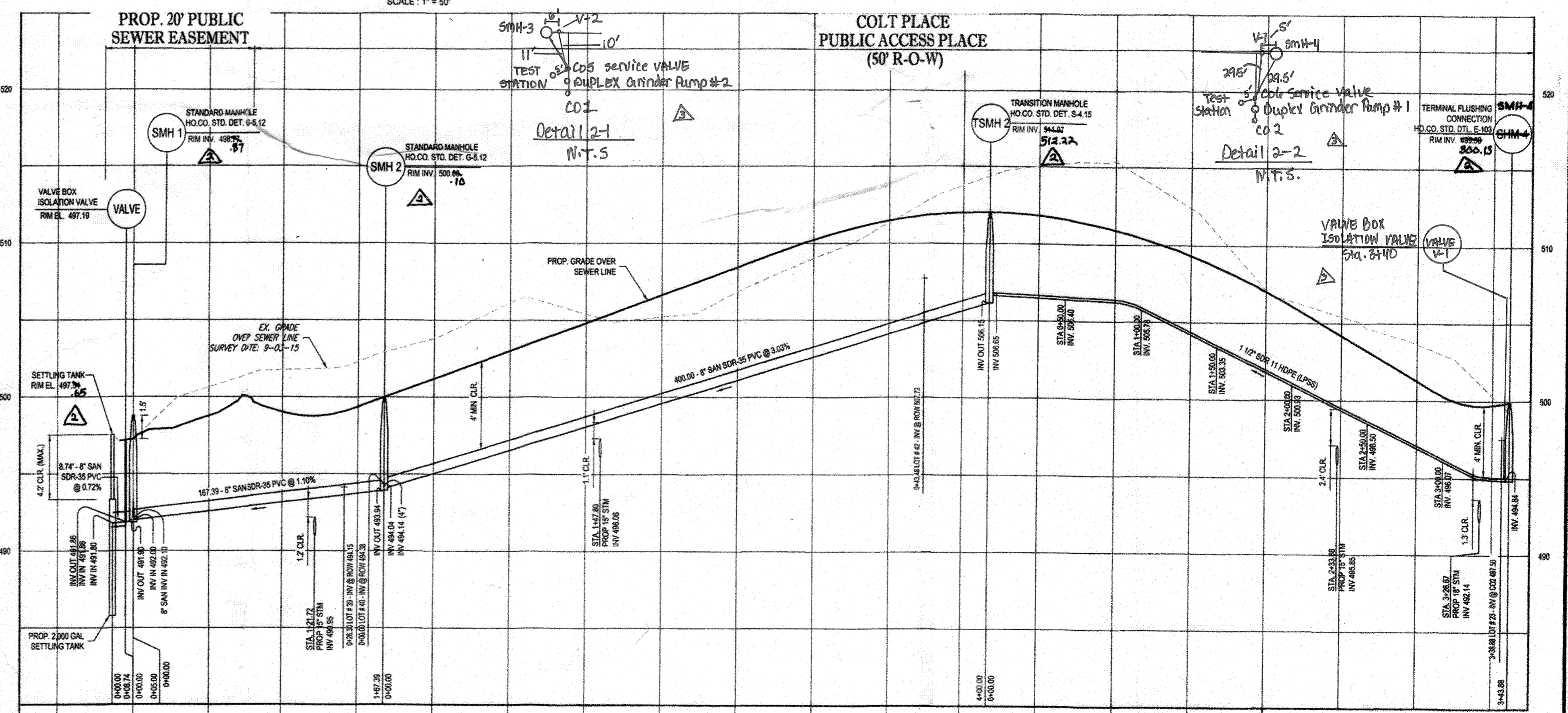
SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE

LOT NUMBER	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
LOT 23	7009 COLT PLACE	SMH-1 = 2' 0"	SMH-2 = 2' 0"
LOT 38	7041 COLT PLACE	SMH-3 = 11'	SMH-4 = 10'
LOT 39	7033 COLT PLACE	1-39 = 2' 4"	SMH-2 = 3'
LOT 40	7023 COLT PLACE	1-39 = 4' 9"	SMH-2 = 2' 0"
LOT 42	7021 COLT PLACE	TRANSFORMER-79	TSMH-2 = 4' 6"

LOT	MCE	BF	FF	Inv. Out. of House	SHC Length (ft)	SHC Slope	Inv. of Grinder Pump	Prop. Grade of Grinder Pump	Bottom of Grinder Pump	Drop Length (ft)	Drop	CHG
23	502.81	495.50	505.50	500.31	331.00	1.00%	497.05	497.00	500.00	400.00	N/A	N/A
38	491.00	485.00	495.00	488.50	160.00	1.00%	487.05	487.00	490.00	N/A	N/A	N/A
39	498.30	491.00	501.00	495.80	183.00	1.00%	494.15	N/A	N/A	N/A	N/A	N/A
40	498.44	495.00	505.00	498.94	278.00	1.00%	494.34	N/A	N/A	N/A	N/A	N/A
42	510.30	508.00	518.00	507.80	264.00	1.00%	505.34	N/A	N/A	N/A	YES	2.56



11/2" LPSS FORCE MAIN - PROFILE
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



11/2" LPSS FORCE MAIN AND 8" SEWER MAIN - PROFILE
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (1-18-2022)

John R. White
DATE: 1/18/22

APPROVED: FOR PRIVATE WATER AND SHARED SEWER SYSTEM FOR LOTS 23, 38, 39, 40 AND 42

Brian M. Moore
DATE: 2/12/2022

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Chris
DATE: 1-15-2020

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

David
DATE: 2-19-22

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL: 811

1-800-242-4849 (PA) 1-800-242-1770 (DC) 1-800-257-7771 (VA) 1-800-522-7001 (MD) 1-800-257-7771 (DE) 1-800-282-5656

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

B. ROWE
PROFESSIONAL ENGINEER
1000 WOODBURN ROAD, SUITE 200
BETHESDA, MARYLAND 20814
Phone: (301) 440-1100
Fax: (301) 440-1101
www.BRoweEngineering.com

DES. AVG	DRN. AVG	CK. TG	REV.	DATE	DESCRIPTION	BY
			1	2/15/2021	AS-BUILT	DPI
			2	1/24/2022	AS-BUILT	SAL
			3	N/23/21	AS BUILT	WRA

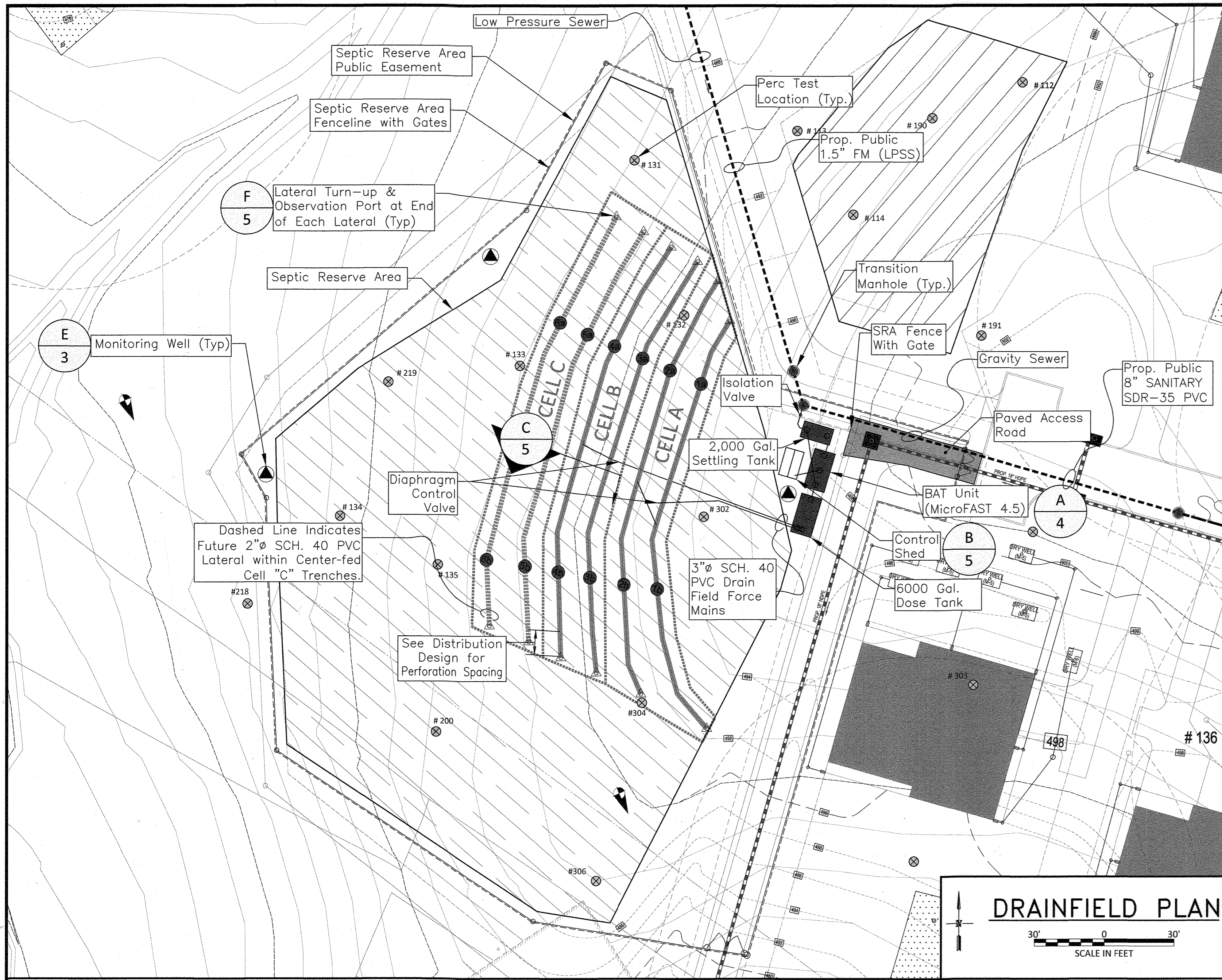
WATER AND SEWER PLAN
PUBLIC SEWER & FORCE MAIN
PLAN & PROFILES

PARCEL NO. 34, 36, 98, 111 & 112
BLOCK NO. 27 & 28

WILLOWSHIRE
LOTS 1-45, BUILDABLE PRESERVATION PARCEL C, NON-BUILDABLE PRESERVATION PARCEL A, B, D, E, G, L, & NON-BUILDABLE BULK PARCEL H-K

5232 GREEN BRIDGE ROAD
TAX MAP 27, GRID 18, PARCELS 34, 36, 98, 111 & 112
5TH ELECTION DISTRICT, ZONED RR-DEO
HOWARD COUNTY MARYLAND
CONTRACT NO. 50-5062-D

SCALE AS SHOWN
SHEET 2 OF 5



USE PROJECTIONS

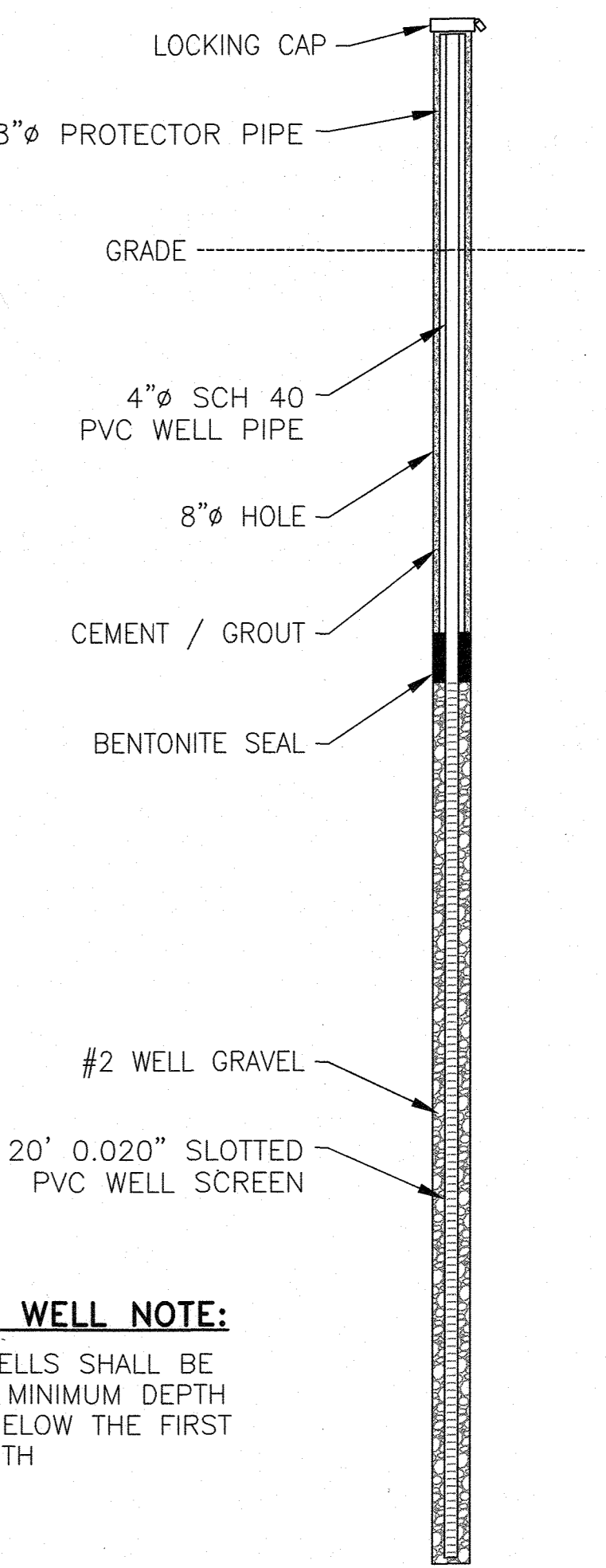
properties served	5
bedrooms per property	5
flow per bedroom (gpd)	150
MDF (gpd)	3,750
ADF (gpd)	1,875

	Influent	Effluent
BOD (mg/L)	220	30
TSS (mg/L)	220	30
Total Nitrogen (mg/L as N)	60	30

Notes
calculated values in italics
 ADF = average daily flow
 MDF = maximum daily flow
 Unit rates from Howard County Well and Septic memo Nov 2014

***All results recorded here are for passed perc testing locations within the septic reserve area**

Test #	Test Depth (feet)	Test Pt. Depth (feet)	Limiting Zone Depth (ft)	Perc Rates (min/inch)	Max sidewall height (feet)	Max gravel depth (feet)	Approx. Ground Surface Elevation (feet msl)	Perc Test Depth Elevation (feet msl)	Sidewall Bottom Elevation (feet msl)	Application Rate (gpd/ft ²)
131	3.5	10.0	2.5	<5	3.5	6.0	486.10	482.6	480.1	1.2
132	4.3	13.5	3	5.0	6.5	9.5	490.82	486.5	481.3	1.2
133	4.3	14.7	2.5	3.3	8.2	10.7	485.96	481.7	475.3	1.2
134	4.1	11.5	3.8	6.0	3.7	7.5	478.74	474.6	471.2	0.8
135	4.2	12.5	2.5	3.1	6.0	8.5	484.75	480.6	476.3	1.2
200	4.0	12.5	2	4.0	6.5	8.5	484.43	480.4	475.9	1.2
218	3.5	8.0	2.8	5.0	1.2	4.0	474.69	471.2	470.7	1.2
219	4.0	9.5	2.2	4.0	3.3	5.5	480.83	476.8	475.3	1.2
302	3.5	13.0	1.8	3.0	7.2	9.0	494.34	490.8	485.3	1.2
304	4.5	13.0	2.2	4.0	6.8	9.0	491.42	486.9	482.4	1.2
306	4.5	12.0	3.3	5.0	4.7	8.0	487.98	483.5	480.0	1.2
112	3.0	11.0	1.7	<5	5.3	7.0	497.19	494.2	490.2	1.2
113	4.3	12.0	2.8	7.0	5.2	8.0	491.09	486.8	483.1	0.8
114	3.7	14.0	2.2	3.0	7.8	10.0	495.87	492.2	485.9	1.2
190	4.0	9.0	1.5	4.0	3.5	5.0	495.40	491.4	490.4	1.2



200% capacity build-out with low pressure distribution system

Cell	Trench	Existing Ground Elevation (feet msl)	perc ID's	Sidewall Top Elevation (feet msl)	Perc Rate (min/inch)	Sidewall Height (feet)	Sidewall Bottom Elevation (feet msl)	Trench Bottom Depth (feet)	Trench Length (feet)	Trench Width (feet)	Application Rate (gpd/ft ²)	Capacity (gpd, L*W*Appr/ft ²)
A	1	492.5	304, 132, 302	489.50	≤5	5	484.5	8.0	186	3	1.2	1,875
	2	491.5	304, 132	488.50	≤5	5	483.5	8.0	186	3	1.2	1,875
B	3	490.5	304, 132	487.50	≤5	5	482.5	8.0	186	3	1.2	1,875
	4	489.5	132, 131	486.50	≤5	5	481.5	8.0	186	3	1.2	1,875
C	5	488.0	133, 135	485.00	≤5	5	480.0	8.0	186	3	1.2	1,875
	6	487.0	133, 135	484.00	≤5	5	479.0	8.0	186	3	1.2	1,875

300% total capacity (gpd) 11,250
 100% capacity (gpd) 3,750
 primary capacity, 200% (gpd) 7,500
 reserve capacity, 100% (gpd) 3,750

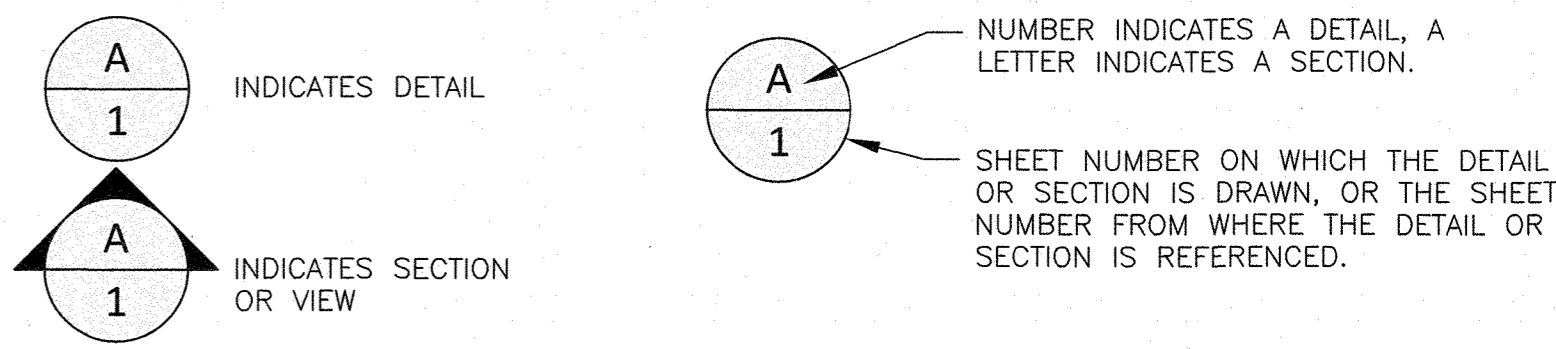
calculated values in italics
 gpd = gallons per day
 NA = not available

msl = mean sea level in feet
 laterals in each trench are at same elevation

MONITORING WELL NOTE:
 MONITORING WELLS SHALL BE DRILLED TO A MINIMUM DEPTH OF 15 FEET BELOW THE FIRST ENCOUNTER WITH GROUNDWATER.

MONITORING WELL
NOT TO SCALE

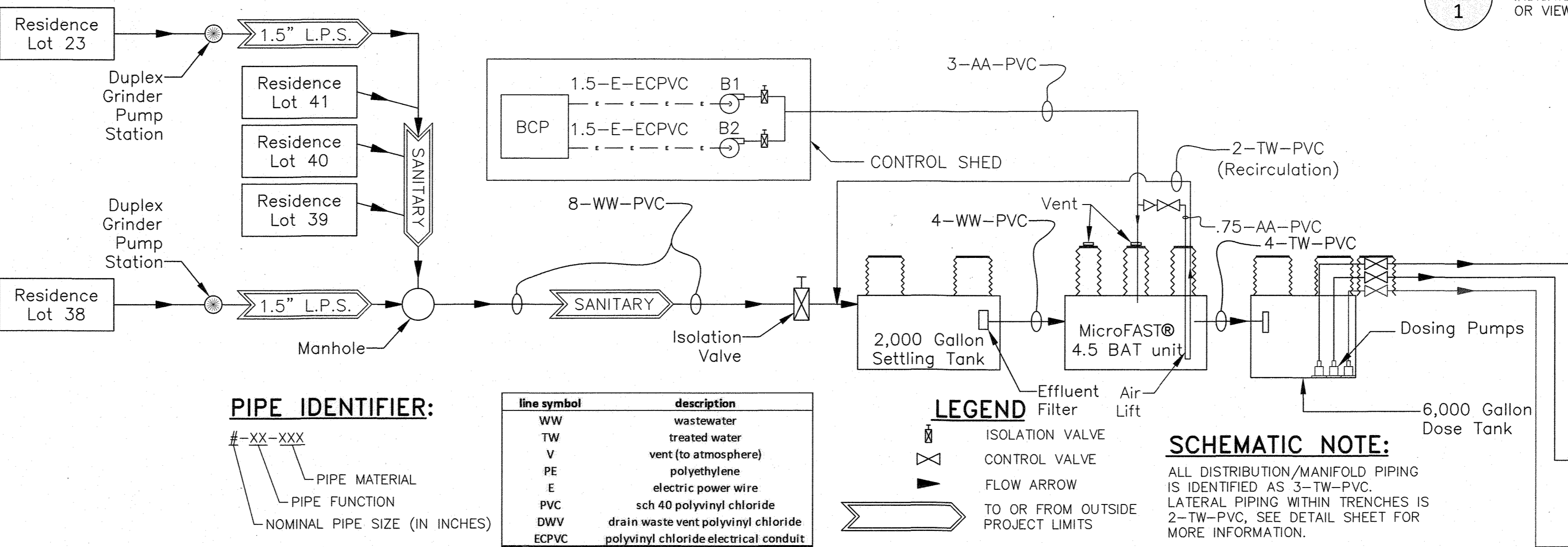
SYMBOLS



Center feed with 50/50 design

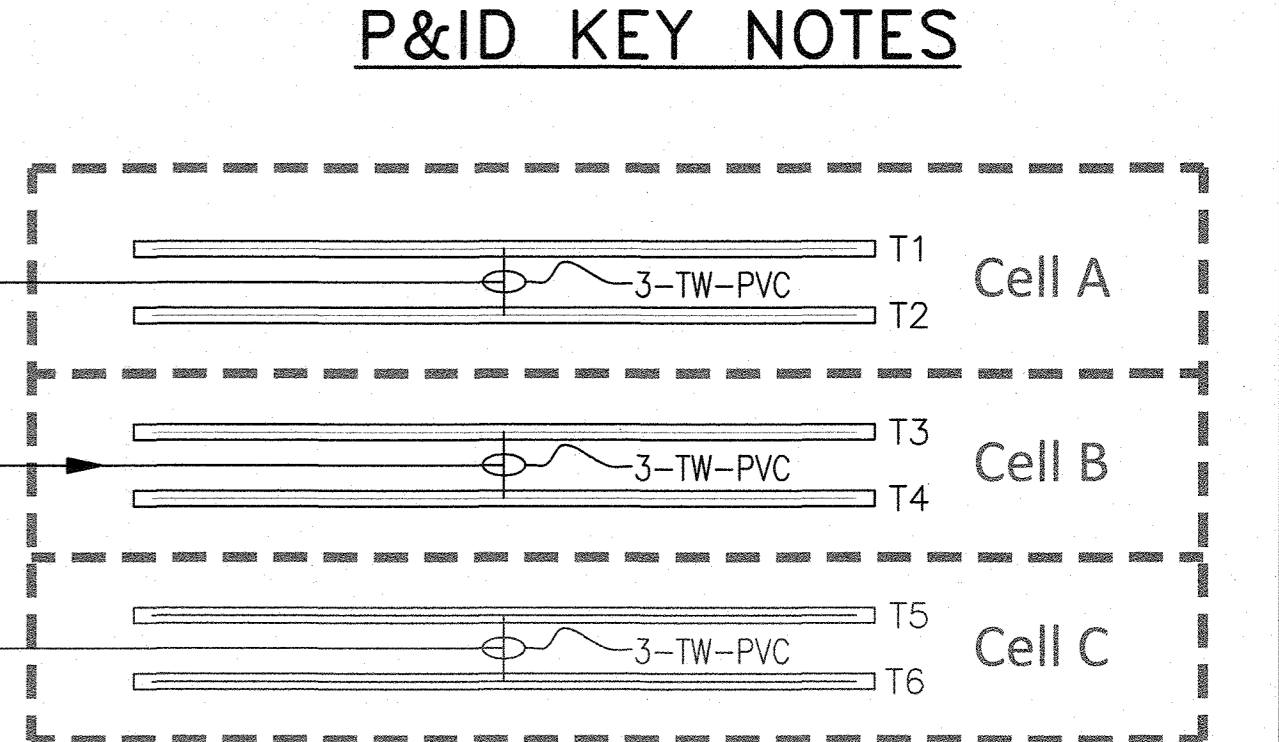
Cell	Trench	Lateral	Sidewall Top Elevation (feet msl)	Lateral Elevation (feet msl)	Trench Length (feet)	# Holes - Each Lateral	Lateral Length (feet)	Lateral Spacing (feet)	Lateral Length (feet)	Perf Dia (inches)	Perf Flow (gpm)	Lateral Flow (gpm)	Dose Rate (gpm/foot of trench)	Max. Lateral Friction Loss (feet)	Lateral Velocity (feet/second)	Cell Flow (gpm)
A	1	a	489.5	489.5	186	15	6.20	89.9	5/16	2.00	30.0	0.33	0.7	2.9		120
	1	b	488.5	489.5	186	15	6.20	89.9	5/16	2.00	30.0	0.33	0.7	2.9		120
B	3	a	487.5	487.5	186	15	6.20	89.9	5/16	2.00	30.0	0.33	0.7	2.9		120
	3	b	486.5	487.5	186	15	6.20	89.9	5/16	2.00	30.0	0.33	0.7	2.9		120

Notes
calculated values in italics
 gpm = gallons per minute
 msl = mean sea level in feet
 Minimum cover over laterals shall be 24".
 All laterals within a cell shall be at the same elevation.
 design distal head (feet) = 3.0
 friction C factor for plastic pipe = 130
 lateral inside diameter (2" dia sch40PVC, in) = 2.067



P&ID Key Notes

part symbol	component	size	notes	material	#
ST	settling tank	2000 gal	(2) 30" dia PE manholes	concrete	1
TT	treatment tank	4240 gal	Biomicrobics MicroFAST 4.5	concrete	1
PT	dose tank	6000 gal	(2) 30" dia PE manholes	concrete	1
B1-2	blower	2" disch.	Spencer Turbine (1 duty, 1 spare)	var.	2
P1-3	dose pump	2" disch.	Goulds W507BHF (2 duty, 1 spare)	cast iron	3
T1-T6	trenches per plan	3' wide	8' total depth, 5' sidewall, 186' long each		6



APPROVED FOR PRIVATE WATER AND SHARED SEWER SYSTEM FOR LOTS 23, 38, 39, 40 & 42

2/12/2020
 HOWARD COUNTY HEALTH OFFICER

DISTRIBUTION DESIGN

WASTEWATER TREATMENT SYSTEM SCHEMATIC
NO SCALE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE: 1-15-2020	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 2-19-20	Hydro-Terra Group 1106 Business Parkway South Suite E Westminister, Maryland 21157 (410) 861-5376 (phone) (410) 861-5467 (fax)	PROFESSIONAL ENGINEER (410) 861-5376 (phone) (410) 861-5467 (fax)	DES: MJM DRN: MDS CK: MDH DATE: 1/3/2020	Water and Sewer Plans DRAINFIELD PLAN PARCEL NO. 34, 36, 98, 111 & 112 600' SCALE MAP NO. 27 & 28 BLOCK NO.	WILLOWSHIRE LOTS 1 - 45, BUILDABLE PRESERVATION PARCEL C, NON-BUILDABLE PRESERVATION PARCEL A, B, E-G & L, NON-BUILDABLE BULK PARCEL D & H-K 5232 GREEN BRIDGE ROAD TAX MAP 27, GRID 18, PARCELS 34, 36, 98, 111 & 112 5TH ELECTION DISTRICT HOWARD COUNTY MARYLAND CONTRACT NO.: 50-5082-D	SCALE As Noted SHEET 3 OF 5
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SHARED SEPTIC TREATMENT SYSTEM NOTES

1. ALL INSPECTION, VIEWING AND PUMP OUT PORTS MUST BE SECURED TO PREVENT ACCIDENTAL OR UNAUTHORIZED ACCESS.
2. CONCRETE SHALL BE 5,000 P.S.I.
3. NO MORE THAN 3' OF FILL SHALL BE PLACED OVER ANY TANK LID. ALL TANKS SHALL BE SET UPON 6" TO 8" OF GRAVEL BEDDING.
4. TANK MEASUREMENTS AND ELEVATIONS ARE BASED ON SEPTIC TANKS AND PUMP CHAMBERS AS MANUFACTURED BY GILLESPIE PRECAST, LLC (1-800-638-6884). TANKS FROM ALTERNATIVE MANUFACTURERS MAY BE USED. ALL TANK SHOP DRAWINGS SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.
5. ALL NEW TANKS SHALL BE TESTED FOR WATER TIGHTNESS PRIOR TO BACKFILLING. A VACUUM AIR TEST IS AN ACCEPTABLE METHOD.
6. BLOWER PIPING TO FAST MAY NOT EXCEED 100 FT TOTAL LENGTH AND USE 45° ELBOWS MAXIMUM. BLOWER MUST BE LOCATED ABOVE FLOOD/STANDING WATER LEVELS ON A CONCRETE BASE 28" X 42" X 2" MINIMUM OR WITHIN CONTROL SHED.
7. VENT TO BE LOCATED ABOVE FINISHED GRADE TO AVOID INFILTRATION. VENTILATION AREA SHALL BE PROVIDED PER MANUFACTURER'S SPECIFICATION. SECURE WITH STAINLESS STEEL SCREWS.
8. ALL APPURTENANCES TO FAST UNIT SHALL CONFORM TO ALL PLUMBING AND ELECTRICAL CODES.
9. ALL VALVES AND QUICK CONNECTS WITHIN PORTS SHALL BE ACCESSIBLE FROM FINISHED GRADE AND SHALL NOT REQUIRE TANK ENTRY FOR SERVICE. ALL PUMPS SHALL HAVE SAFETY ROPES.
10. REMOTE MONITORING SYSTEM (RMS) SHALL AUTOMATICALLY NOTIFY THE COUNTY IN THE EVENT OF A PUMP FAILURE OR HIGH WATER ALARM. REMOTE NOTIFICATION SHALL BE ROUTINELY TESTED AS PART OF REGULAR O&M.
11. TWO BLOWERS SHALL BE PROVIDED BY THE TREATMENT SYSTEM MANUFACTURER AND SHALL EACH BE CAPABLE OF CONTINUOUS DUTY AT THE DESIGN VALUES, WITH ONE BLOWER SERVING AS AN INSTALLED SPARE. BLOWER SHALL BE BY SPENCER TURBINE, INC.
12. ONE CONTROL PANEL SHALL BE PROVIDED FOR BLOWER CONTROL. BLOWER CONTROL PANEL SHALL HAVE A GASKETED, HINGED, LOCKABLE DOOR; DOOR-MOUNTED BLOWER ON-OFF SWITCHES; AND ALARM LIGHTS/SILENCERS. CONTROL PANEL SHALL BE BY SJE RHOMBUS OR APPROVED EQUAL.

Design Input		Calculations	
Primary and Secondary Treatment and Equalization			
settling tank capacity (gallons per inch)	44.9	maximum daily flow (MDF) (gpd)	3,750
normal settling tank fluid level (inches)	45	average daily flow (ADF) (gpd)	1,875
		recommended minimum settling tank volume (gal)	1,875
		normal settling tank volume (gal)	2,020
Static Hydraulic Profile (with invert elevations)			
inflow invert elev. (feet msl)	491.80	From Bohler	
dose tank inflow invert elev. (feet msl)	490.88		
dose tank floor elev. (feet msl)	484.88		
dose pump elev. (feet msl)	485.38		
Cell A lateral elev. (feet msl)	489.50	Cell A in-service lift (feet)	4.1
Cell B lateral elev. (feet msl)	487.50	Cell B in-service lift (feet)	2.1
Drainfield Dosing			
cell A flow (gpm)	120	force main velocity (feet/second)	5.2
Cell A force main length (feet)	78	Cell A force main friction loss (feet)	4.7
Cell A minor loss equivalent lengths (feet)	44.4	Cell A max. total dynamic head (feet)	12.5
		Cell A main volume (gal)	30
		Cell A total lateral volume (gal)	63
		Cell A dose vol. @ main + 5x lateral (gal)	343
cell B flow (gpm)	120	force main velocity (feet/second)	5.2
Cell B force main length (feet)	100	Cell B force main friction loss (feet)	5.5
Cell B minor loss equivalent lengths (feet)	44.4	Cell B max. total dynamic head (feet)	11.4
		Cell B main volume (gal)	38
		Cell B total lateral volume (gal)	63
		Cell B dose vol. @ main + 5x lateral (gal)	352
dose tank length (inches)	192	dose tank capacity (gal)	5,745
dose tank width (inches)	96	dose tank capacity (gals per inch)	79.8
dose tank height to invert (inches)	72	design dose volume (gals/Cell B)	352
# cells in service	2	effective dose volume (gals)	399
lag pump on (inches)	27	min # daily doses @ ADF	5.3
high water alarm height (inches)	25	average dose time (minutes)	2.9
lead pump on (inches)	23	dose off time setting (hours)	4.5
low water cutoff (inches)	18	residual settling volume (gal)	1,436
Pump model (Goulds)	WS07BHF	volume above high water alarm (gal)	3,750
min. tank height above invert (inches)	9		
dose pump control panel model (SJE Rhombus)	1FS 41W-4H 4A 4D 8AC 10E 19F		
Notes			
gpd = gallons per day	design distal head (feet) = 3.0		
gpm = gallons per minute	friction C factor for plastic pipes = 130		
msl = mean sea level in feet	force main ID (3" dia sch 40 PVC, in) = 3.069		
calculated values in italics	lateral inside diameter (2" dia sch 40 PVC, in) = 2.067		
set floats based on weight +/- 3"			
one cell is always in service, with the other resting			

DESIGN INPUT

APPROVED FOR PRIVATE WATER AND SHARED SEWER SYSTEM FOR LOTS 23, 38, 39, 40 & 42

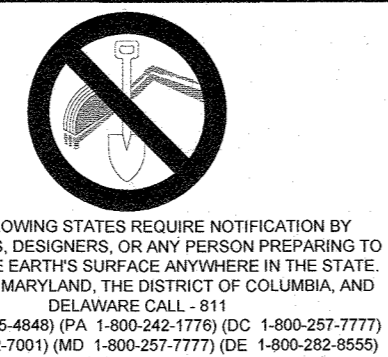
Signature: *Howard J. Rossman* 2/12/2020
HOWARD COUNTY HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

Signature: *Chief of Utilities* 1-15-2020
CHIEF, BUREAU OF UTILITIES DATE

Signature: *Chief Development Engineering* 7-19-20
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



Hydro-Terra Group
1106 Business Parkway South
Suite E
Westminster, Maryland 21157
(410) 861-5376 (phone)
(410) 861-5467 (fax)

PROFESSIONAL ENGINEER
MARYLAND LICENSE NO. 1106
I AM A PROFESSIONAL ENGINEER UNDER THE PROVISIONS OF THE PROFESSIONAL ENGINEERING AND SURVEYING ACT OF 1967, AS AMENDED, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 1106, EXPIRATION DATE: 12/31/2020

DES: MJM
DRN: MDS
CK: MDH
DATE: 1/3/2020

REV.	DATE	DESCRIPTION	BY
1	1/12/21	A5 BUILT	

Water and Sewer Plans
TREATMENT SYSTEM DETAIL
PARCEL NO. 34, 36, 98, 111 & 112
600' SCALE MAP NO. 27 & 28 BLOCK NO. _____

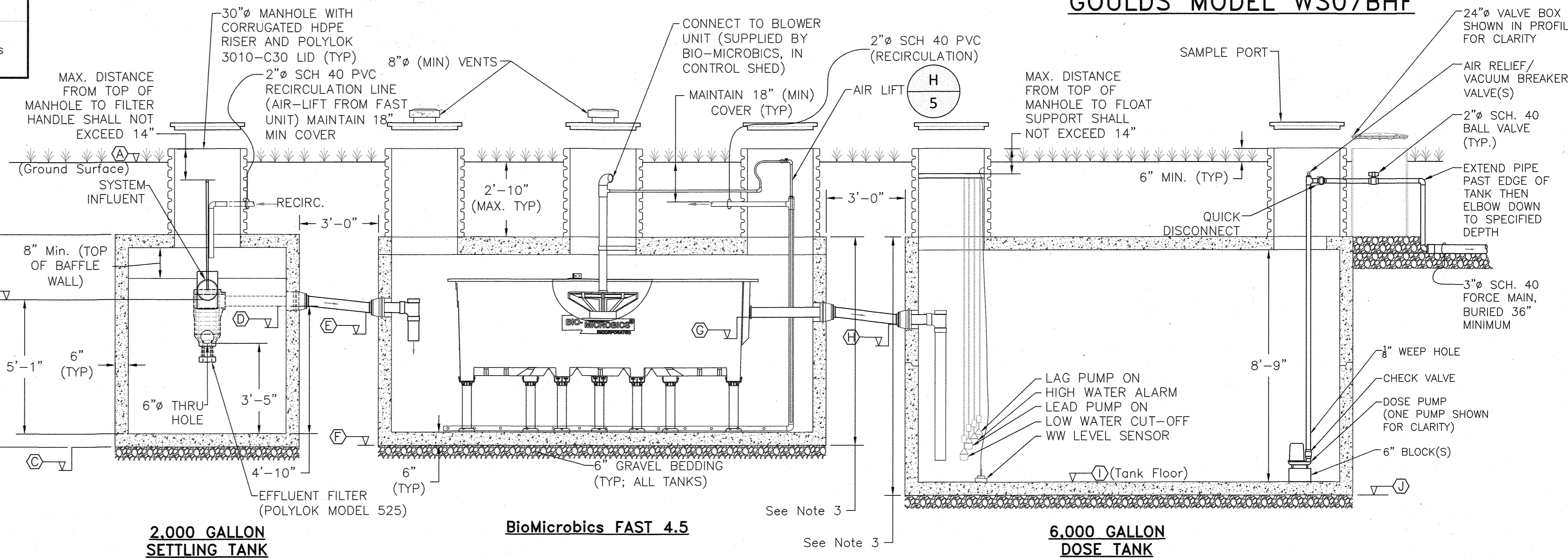
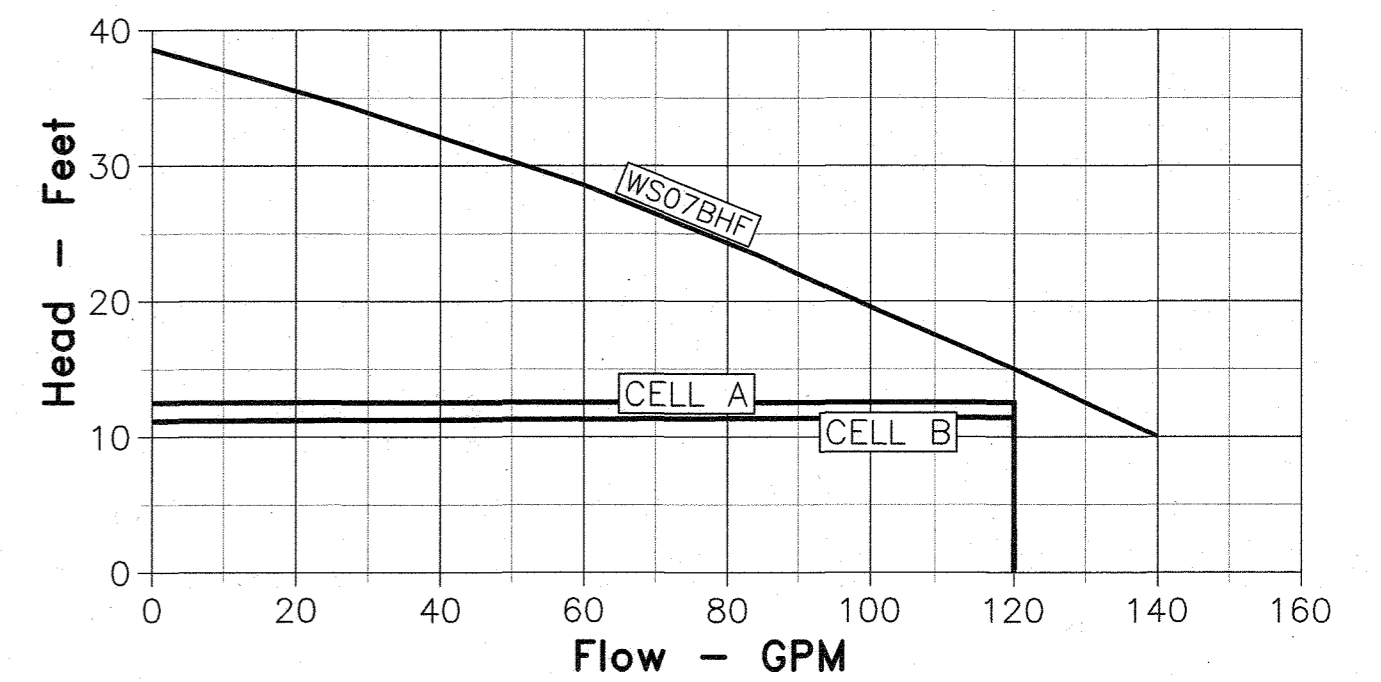
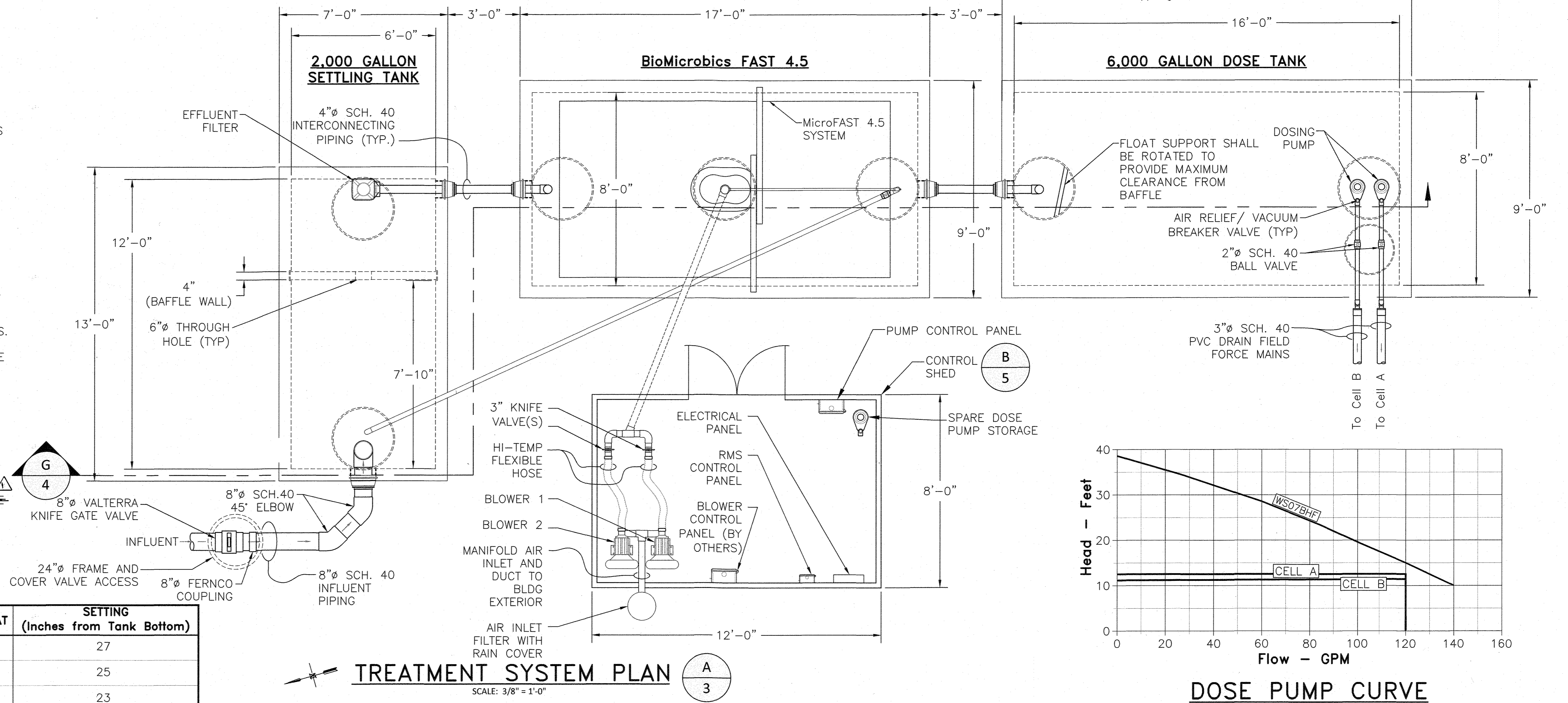
WILLOSHIRE
LOTS 1-45, BUILDABLE PRESERVATION PARCEL C, NON-BUILDABLE PRESERVATION PARCEL A, B, E-G & L, NON-BUILDABLE BULK PARCEL D & H-K
5232 GREEN BRIDGE ROAD
TAX MAP 27, GRID 18, PARCELS 34, 36, 98, 111 & 112
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND
CONTRACT NO.: 50-5062-D
SCALE: As Noted
SHEET: 4 OF 5

DOSE PUMP TANK FLOAT	SETTING (Inches from Tank Bottom)
LAG PUMP ON	27
HIGH WATER	25
LEAD PUMP ON	23
LOW WATER CUT-OFF	18

Float settings are based upon tank dimensions indicated. If different tanks are used, float settings shall be adjusted accordingly.

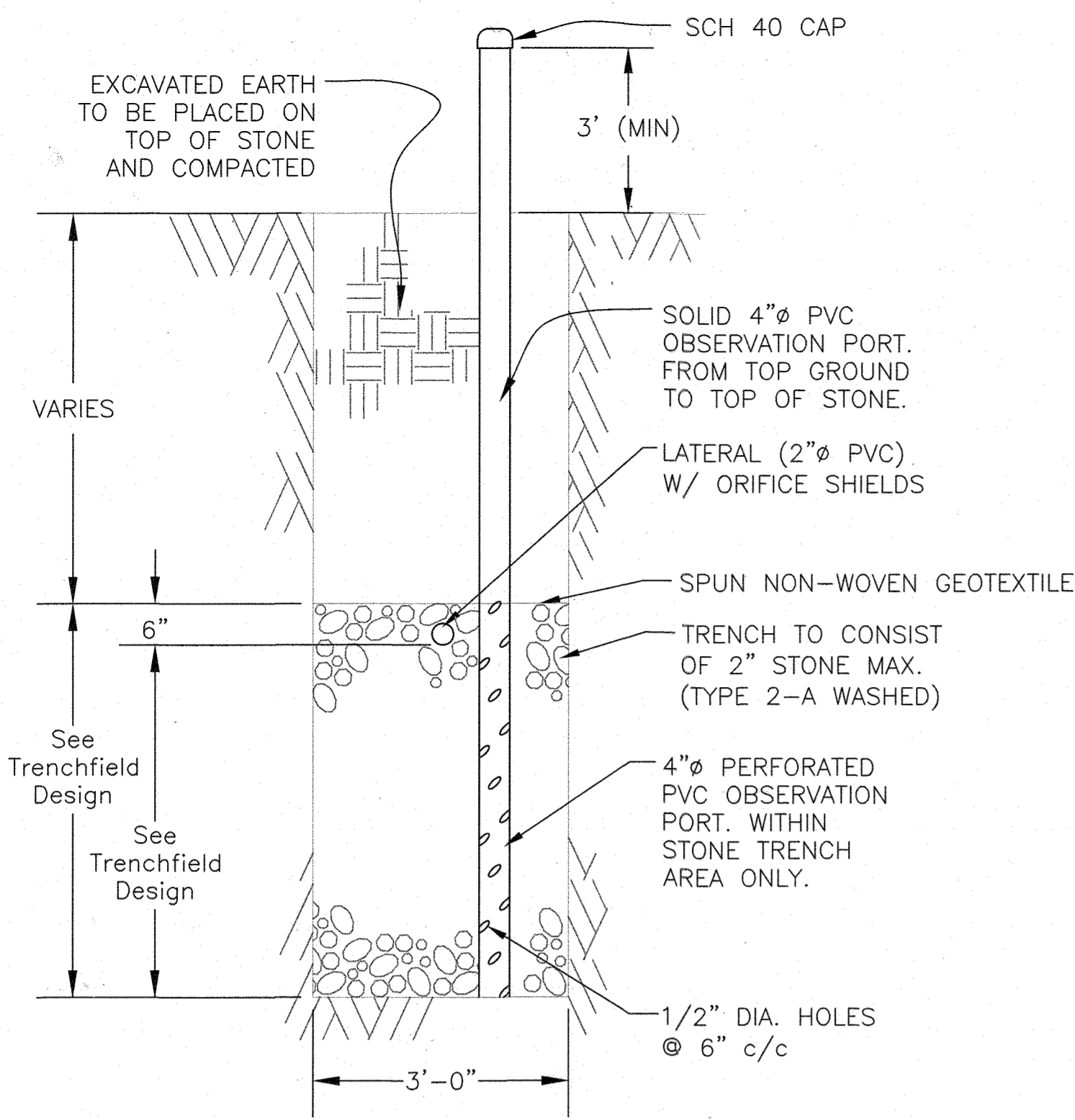
Elevation I.D.	Elevation (Feet; MSL)
(A)	Varies (497'-498')
(B)	491.80
(C)	486.22
(D)	491.55
(E)	491.30
(F)	486.22
(G)	491.13
(H)	490.88
(I)	484.88
(J)	484.38

Elevations for Pipes refer to invert.



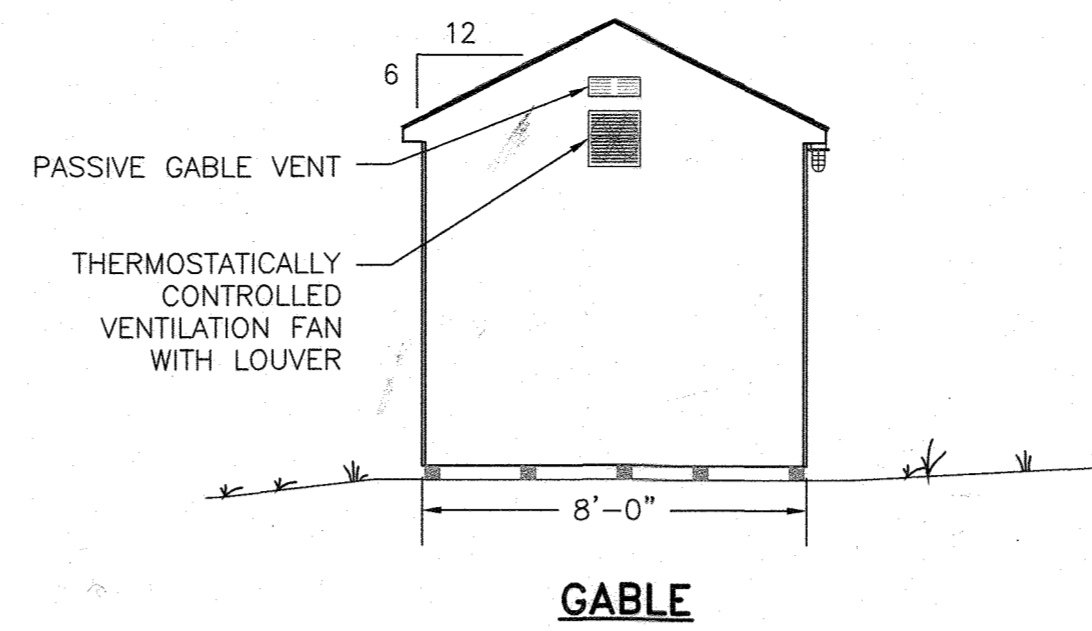
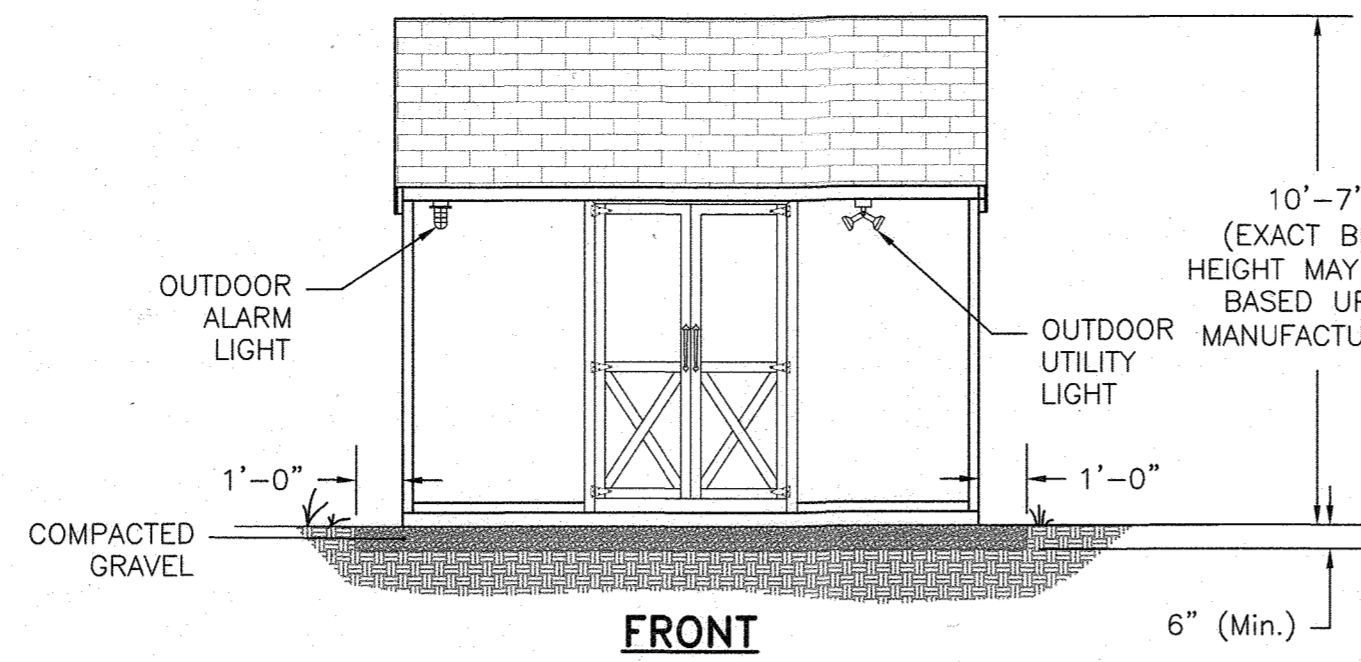
TREATMENT SYSTEM SECTION

SCALE: 3/8" = 1'-0"

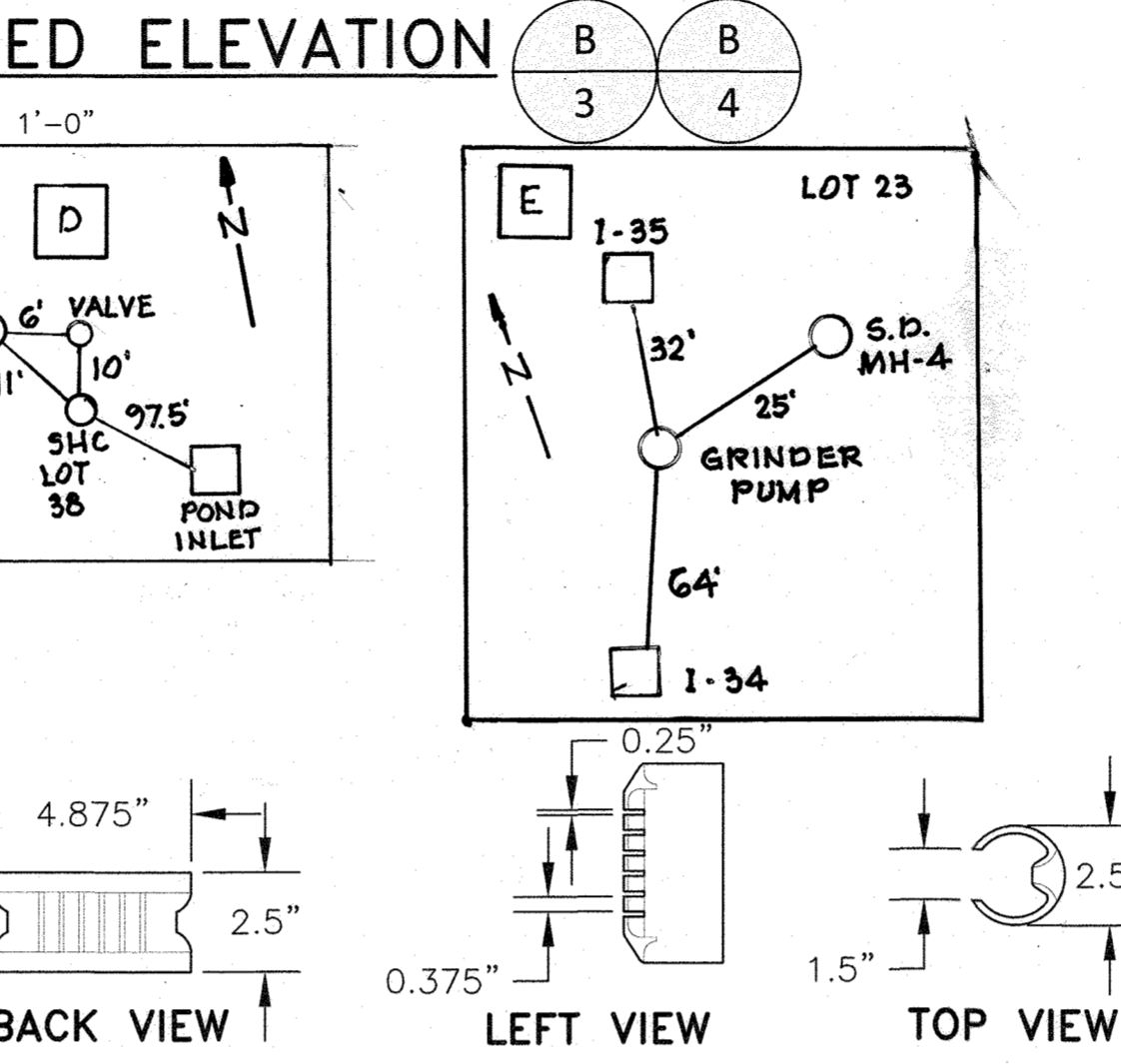
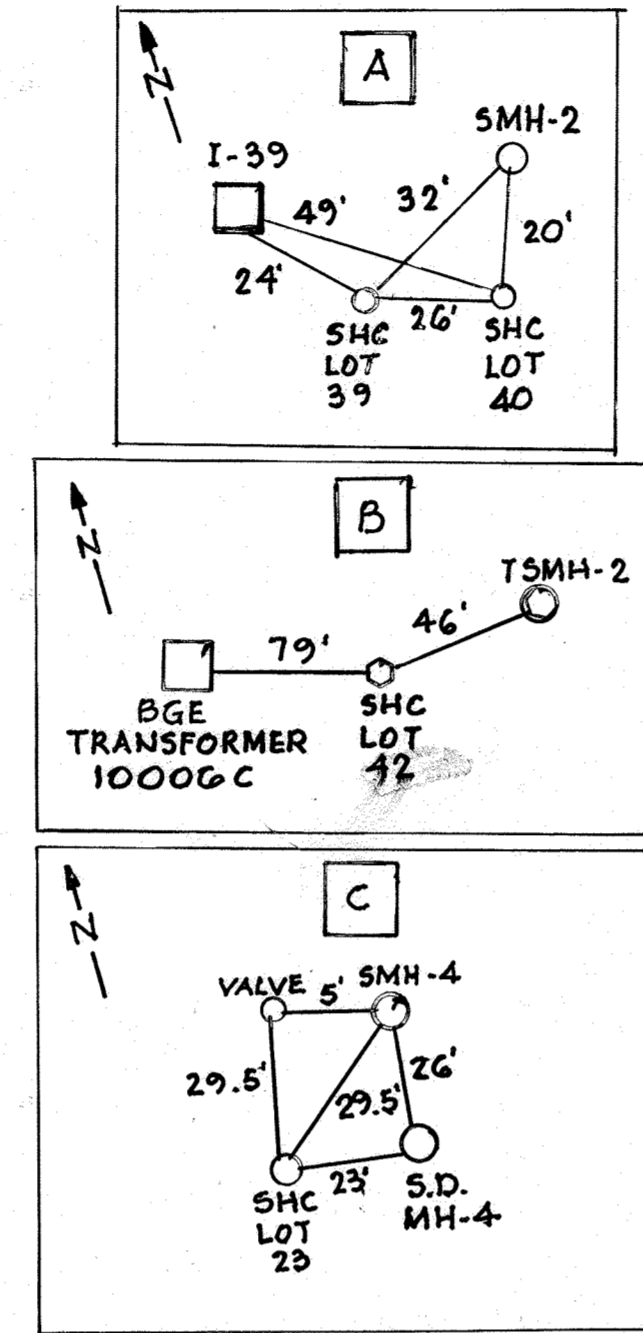


TYPICAL OBSERVATION PORT (F 3)

NOT TO SCALE



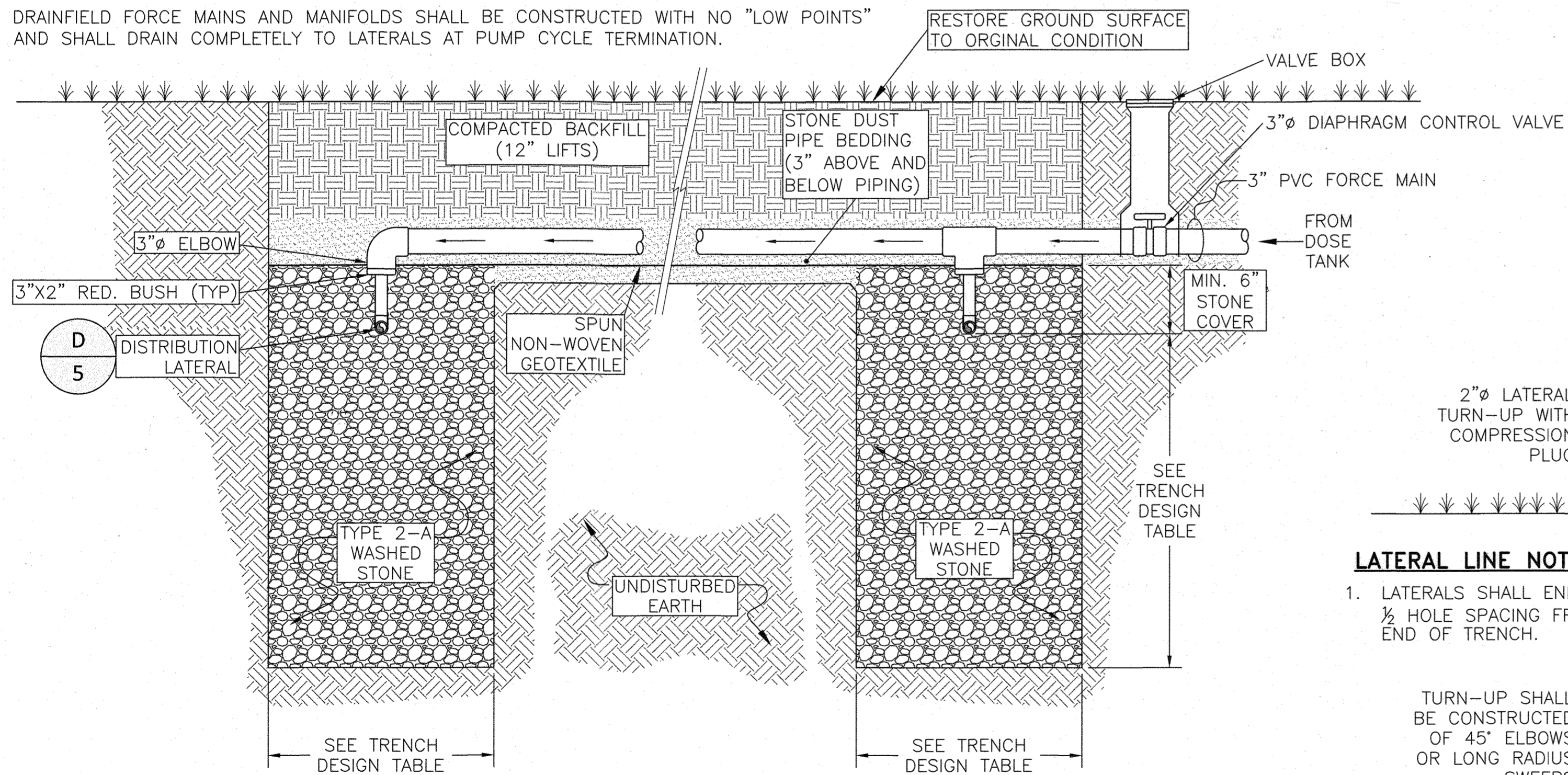
CONTROL SHED ELEVATION



SIM TECH ORIFICE SHIELD 2"
(STF-106-2.0)

NOT TO SCALE

- FEED LINE NOTES:**
- ALL HOLES (EXCEPT LAST) ARE FACE DOWN AND PROTECTED WITH ORIFICE DIFFUSER (SEE DETAIL THIS SHEET)
 - SEE DRAINFIELD CONSTRUCTION TABLE FOR TRENCH DIMENSIONS AND LATERAL PERFORATIONS NOT SHOWN.
 - DRAINFIELD FORCE MAINS AND MANIFOLDS SHALL BE CONSTRUCTED WITH NO "LOW POINTS" AND SHALL DRAIN COMPLETELY TO LATERALS AT PUMP CYCLE TERMINATION.

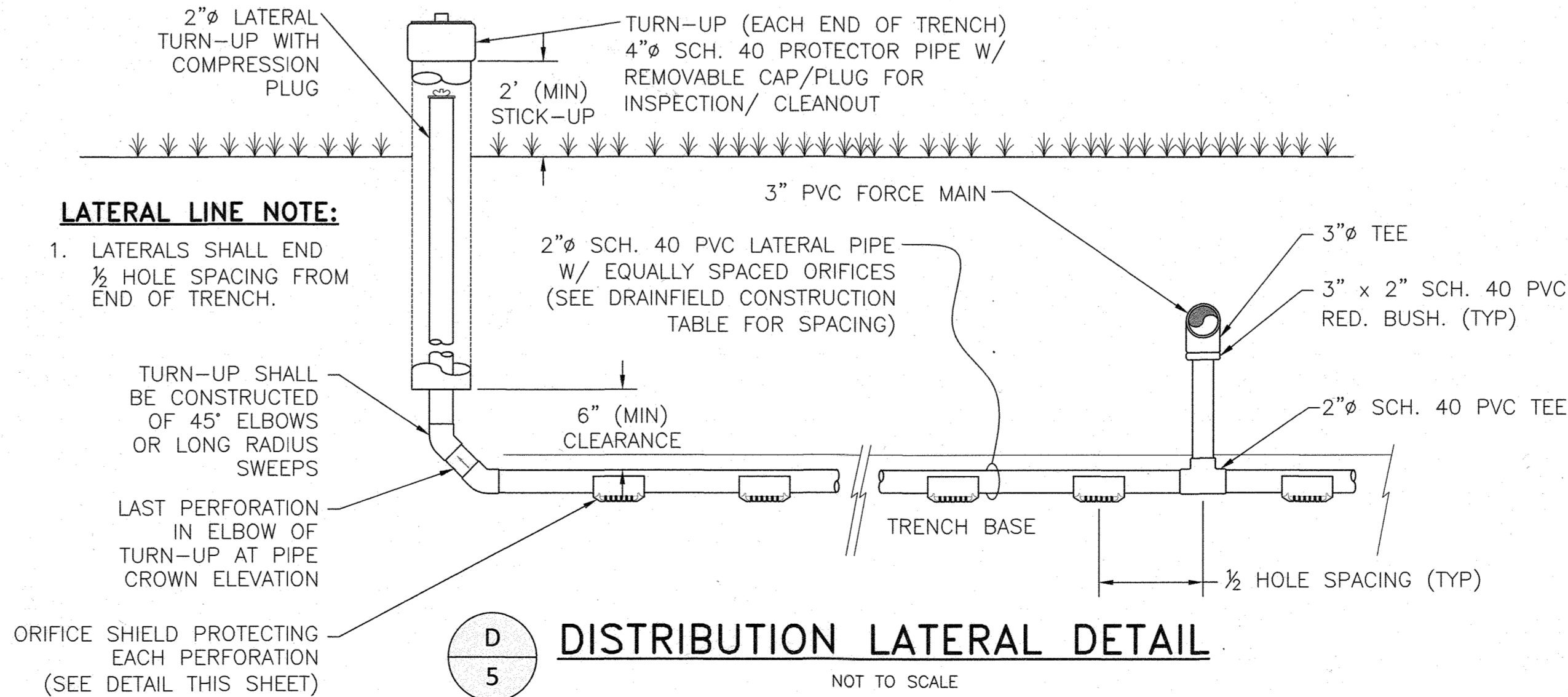


FEED LINE/DEEP TRENCH DETAIL (TYP) (C 3)

NOT TO SCALE

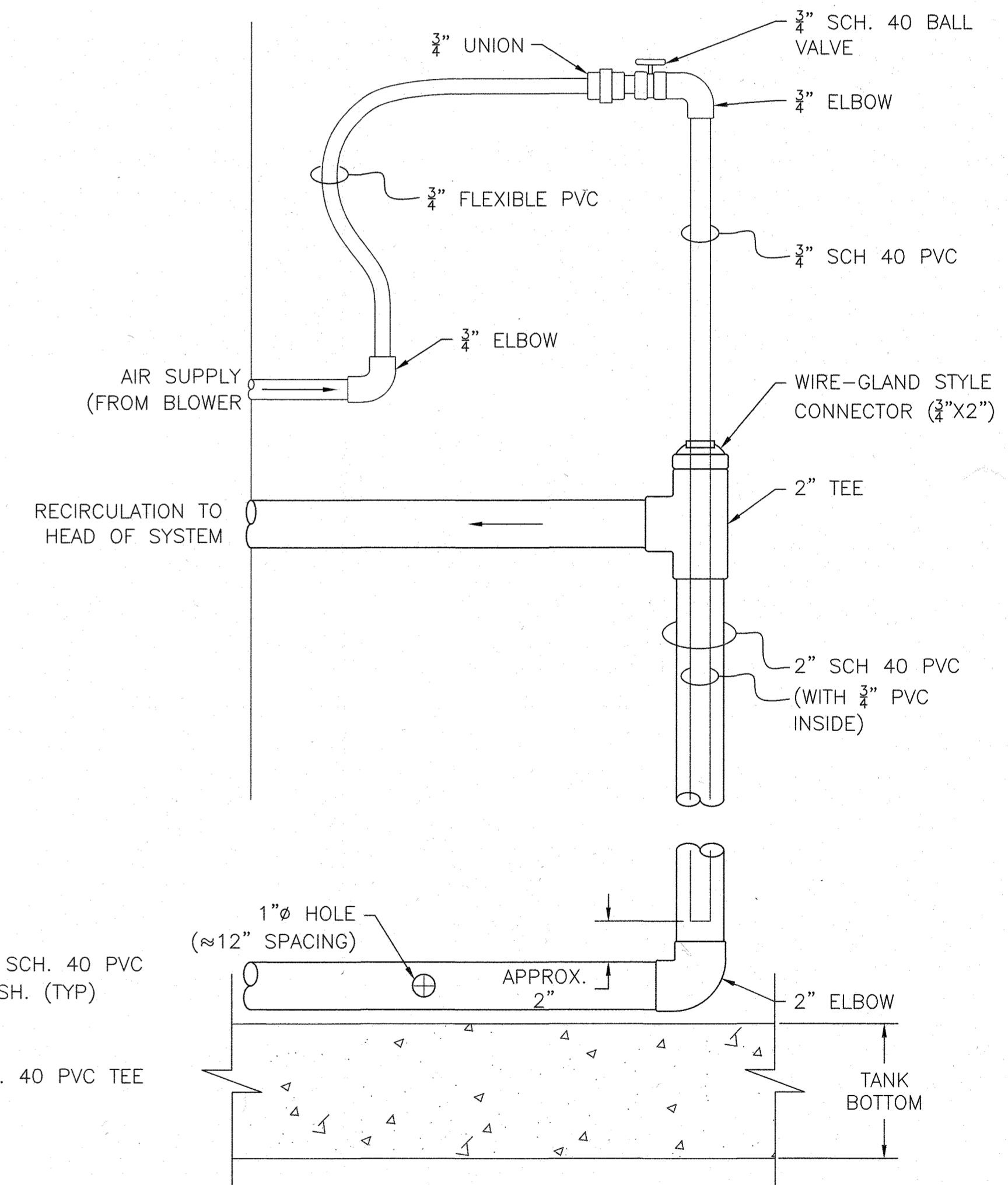
LATERAL LINE NOTE:

- LATERALS SHALL END 1/2 HOLE SPACING FROM END OF TRENCH.



DISTRIBUTION LATERAL DETAIL (D 5)

NOT TO SCALE



AIR LIFT RECIRCULATION PUMP (H 4)

NOT TO SCALE

CONTROL SHED NOTES:

- UTILITY STORAGE BUILDING SHALL BE PROVIDED NEAR WASTE WATER TREATMENT SYSTEM WITH CONTROL PANEL MOUNTED INSIDE.
- BUILDING SHALL BE RIDGE CABINET COMPANY "COTTAGE A-FRAME" STYLE STORAGE BUILDING. 8' X 12', VINYL SIDED WITH NOMINAL 7" SIDE WALLS AND NO WINDOWS, WITH ONE DOUBLE DOOR CENTERED ON 12' SIDE OF BUILDING. BUILDING SHALL HAVE 10" RIDGE VENT, 4"x4" PRESSURE TREATED SKIDS, 2"x4" FLOOR JOISTS (16" ON CENTER), 5/8" PLYWOOD FLOOR SHEATHING, 2"x4" VENT, ALL WALLS TO BE PLATED AT BOTTOM AND DOUBLE PLATED AT THE TOP, 1/2" ROOF SHEATHING, ARCHITECTURAL SHINGLES, DOORS AND FRAME TO BE REINFORCED, DOOR HINGES MUST BE "T" TYPE OR STRAP TYPE, 3 HINGES PER DOOR SIDE (PIANO HINGES ARE NOT ACCEPTABLE), LOCKS ARE TO BE KEYPED ALIKE WITH BAUER CH751 LOCK.
- VINYL SIDING SHALL BE ALMOND COLOR AND SHINGLES SHALL BE BROWN COLOR.
- A RED ALARM BEACON SHALL BE MOUNTED ON THE OUTSIDE OF THE BUILDING.
- BUILDING SHALL BE PLACED ON TOP OF 6" (MIN.) COMPACTED STONE.
- GRADING TO BE LEVEL AND COMPACTED PRIOR TO PLACEMENT OF BUILDING.
- FIELD PLACEMENT OF PANELS, PIPING, BLOWERS, AND TANKS SHALL BE APPROVED BY SITE ENGINEER.
- BUILDING SHALL HAVE A 230 VAC LOAD CENTER WITH APPROPRIATE CIRCUIT BREAKERS, POWER SHALL BE PROVIDED TO SERVE ALL EQUIPMENT SPECIFIED HEREIN.
- BUILDING SHALL HAVE AT LEAST 3 DOUBLE-DUPLEX CONVENIENCE OUTLETS, A CEILING LIGHT, OUTDOOR FLOODLIGHTS, AND AN OUTDOOR ALARM LIGHT.
- A REMOTE MONITORING SYSTEM (RMS) SHALL BE INSTALLED THAT SHALL REMOTELY NOTIFY THE COUNTY IN THE EVENT OF A PUMP FAILURE OR A HIGH WATER ALARM. THE RMS SHALL BE COMPATIBLE WITH THE COUNTY'S EXISTING REMOTE MONITORING NETWORK AND INFRASTRUCTURE. RMS ALERT SYSTEM TESTING SHALL BE PART OF REGULAR O&M.
- ADEQUATE VENTILATION SHALL BE PROVIDED FOR SHED TO AVOID EQUIPMENT WEAR DUE TO EXTREME HEAT. (MAX PERMISSIBLE INTERIOR TEMPERATURE IS 104°F).
- HOWARD COUNTY ISSUED LOCKS SHALL BE PROVIDED TO SECURE UTILITY SHED AND ANY OTHER APPROPRIATE SYSTEM APPURTENANCES (E.G. MANHOLE COVERS AND EXTERIOR MOUNTED CONTROL BOXES).

APPROVED FOR PRIVATE WATER AND SHARED SEWER SYSTEM FOR LOTS 23, 38, 39, 40 & 42

Brandon Moore, Roseman 2/12/2020
HOWARD COUNTY HEALTH OFFICER DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND
Chris Stoy 1-15-2020
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND
Chris Stoy 2-19-20
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Hydro-Terra Group
1106 Business Parkway South Suite E Westminister, Maryland 21157
(410) 861-5376 (phone) (410) 861-5467 (fax)
www.hydro-terra.com

PROFESSIONAL ENGINEER
MARIA L. MAZZUCCHETTI, REGISTERED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 80302, EXPIRATION DATE 12/31/20

DES: MJM
DRN: MDS
CK: MDH
DATE: 1/3/2020

REV. DATE DESCRIPTION BY

1	1/1/23/21	A5 BUILT	W/RA
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Water and Sewer Plans
DISTRIBUTION DETAILS
PARCEL NO. 34, 36, 98, 111 & 112
600' SCALE MAP NO. 27 & 28 BLOCK NO.

WILLOWSHIRE
LOTS 1 - 45, BUILDABLE PRESERVATION PARCEL C, NON-BUILDABLE PRESERVATION PARCEL A, B, E-G & L, NON-BUILDABLE BULK PARCEL D & H-X
5232 GREEN BRIDGE ROAD
TAX MAP 27, GRID 18, PARCELS 34, 36, 98, 111 & 112
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND
CONTRACT NO.: 50-5062-D

SCALE As Noted SHEET 5 OF 5