PROPOSED SEWER MAIN PROPOSED SEWER MANHOLE

---W--- EXISTING WATER MAIN

---S--- EXISTING SEWER MAIN **EXISTING SEWER MANHOLE** PROPOSED WATER VALVE

**EXISTING WATER VALVE** 

PROPOSED WATER BEND PROPOSED SHC'S ----- PROPOSED WHC'S

DOMESTIC WATER METER SEWER CLEANOUT UTILITY TEST PIT LOCATION

SHEET INDEX							
- ·	SHEET TITLE			SHEET	NUMBE	R	
SHEET					1	7.	
IC 8" WATER MAIN & 8	SEWER MAIN PLAN				2		
IC 8" WATER MAIN & 8	SEWER MAIN PROFIL	ES	-		3		
IC WATER & SEWER S	TRUCTURE CHARTS				4	gggggg den skinner en en else Mallerel	
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QUANTITIES TABLE							
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	AS-BUILT TYPE	MANUFACTURE SUPPLIER			
1/8 BEND	4						
1/16 BEND	6						
1/32 BEND	7	-					
1 1/2" WHC	1,039 L.F.						
2" WHC	0						
8" DR 14 C900 PVC WATER (235 PSI)	1,688 L.F.						
6" DR 14 C900 PVC WATER (235 PSI)	89			·.			
8" VALVE	. 6						
6" VALVE	4	***************************************					
4" VALVE	1						
FIRE HYDRANTS	4						
8"x8" TEE	2	*p					
12"X8" TAPPING SLEEVE	2						
8"x6" TEE	4						
8"X4" TEE	1 ^						
8" 3° HIGH DEFLECTION COUPLING	7						
CLEANOUT	38						
6" SDR 35 PVC SHC	0						
4" SDR 35 PVC SHC	951						
8" DIP CL 52 (SEWER MAIN)	· O. ,						
8" SDR 35 PVC (SEWER MAIN)	1,202 L.F.						
SEWER MANHOLE (PUBLIC SEWER SYSTEM EXTENSION)	11						
AIR RELEASE VALVE	1						
CAP & BUTTRESS	2						
BLOW-OFF BOX	2	***************************************					
8" COUPLING	0						
24" STEEL CASING	0						
36" STEEL CASING	0						
NAME OF UTILITY CONTRACTOR							
<u>un anticonomica de la companya del companya de la companya del companya de la co</u>			CHECK BOX				
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			SURVEY AND				

#### DMV2-23-011

CONTRACT 1 - WATER MAIN C-1 STA 9+92 TO STA 11+60 - THE MAXIMUM COVER OVER THE MAIN WILL BE ABOUT 12.0 CONTRACT 1 - WATER MAIN C-1 STA 27+95- STA 28+80 - THE MAXIMUM COVER OVER THE MAIN WILL BE ABOUT 10.0 THE UPDATED SUBMITTAL ALSO HAS AN ADDED REQUEST, WHICH SEEKS WAIVER FROM DMV2 SECTION 3.3.B.5, WHICH ALSO REQUIRES A MINIMUM COVER OVER DISTRIBUTION COVER OF 3.5°. THE REQUEST IS MADE FOR THE FOLLOWING

CONTRACT 1 - WATER MAIN C-1 STA 18+68 - STA 19+39 THE COVER OVER THE MAIN WILL BE ABOUT 2.3'. BASED ON OUR UNDERSTANDING AND THE DISCUSSIONS HELD AT PREVIOUS MEETINGS, FOLLOWING DECISIONS ARE MADE:

WATER MAIN C-1 STA 9+92 TO STA 11+60 AND STA 27+95 TO STA 28+80 – THIS IS A CONNECTION POINT TO THE EXISTING MAIN. – BASED ON THE INFORMATION PROVIDED, THIS WAIVER REQUEST IS APPROVED. WATER MAIN C-1 STA 18+68 TO STA 19+39 - THIS IS WAIVER REQUEST IS APPROVED SUBJECT TO FOLLOWING

PROVIDE A LAYER OF TRIAXIAL GEOGRID SIMILAR TO TX130 AS MANUFACTURED BY TENSAR CORPORATION, AS RECOMMENDED BY HILLIS-CARNES ENGINEERING ASSOCIATES IN THEIR LETTER TO BOHLER AND DATED SEPTEMBER 15, 2023. INCLUDE ALL DETAILS FROM THE LETTER REQUIRED FOR CONSTRUCTION ON WATER AND SEWER DRAWINGS. IN ADDITION TO ABOVE DECISIONS, BELOW POINTS WERE DISCUSSED AND AGREED TO IN PREVIOUS MEETINGS AND

PROVIDED AS APPLICABLE: 1. FROM STA 10+00, THE STANDARD 20' EASEMENT WILL BE WIDENED UP TO THE ROAD RIGHT OF WAY.
2. BETWEEN STA 27+95 AND STA 28+80, FIRE HYDRANTS AND ISOLATION VALVES SHALL BE PROVIDED FOR ISOLATING SECTION OF THE WATER MAIN CROSSING THE CULVERT AND TO PROVIDE TEMPORARY BYPASS WATER SUPPLY.

3. WATER MAIN C-1 BETWEEN STA 27+95 AND STA 28+80 SHALL BE DESIGNED TO PASS OVER THE CULVERT WITH A CLEARANCE OF MINIMUM SIX (6) INCHES. THIS CLEARANCE SHALL BE FILLED WITH CONSTRUCTION SAND EXTENDING THREE FEET ALL-AROUND OF THE CROSSING BORDERS. NOTE – BOHLER HAS RESPONDED THAT IT IS NOT FEASIBLE TO CARRY THE WATER MAIN ABOVE THE BOX CULVERT DUE TO INSUFFICIENT COVER.

APPROVED SEPT. 22, 2023.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON SDP-22-021

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

DEPARTMENT OF PUBLIC WORKS HOWARD

COUNTY, MARYLAND

BETHANY GLEN DEVELOPMENT, INC 5074 DORSEY HALL ROAD, SUITE 205 ELLICOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021

OWNER/DEVELOPER:

BASED ON THE INFORMATION PROVIDED, USE OF 24" CASING AT FIVE STATIONS NOTED EARLIER IS **DEPARTMENT OF PLANNING & ZONING** 

WAIVER REQUEST FOR LOCATION 2 WAS APPROVED SEPT. 22, 2023,

# BETHANY GLEN ARAH - PHASE III PUBLIC WATER & PUBLIC SEWER PLANS BENCHMARK

LOTS 117-155, LOT 156, COMMUNITY CENTER AND OPEN SPACE LOT 156 LOCATION OF SITE

> 9891 OLD FREDERICK ROAD - ROUTE 99 TAX MAP 17, GRID 15, PARCEL 34 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT No. 24-5237-D

#### DMV2-24-013

REQUESTING APPROVAL TO WAIVE THE HOWARD COUNTY DESIGN MANUAL VOLUME II - WATER AND SEWER (DMV2) FOR THE PROPOSED PROJECT, ALLOWING AN APPROXIMATELY 760-FOOT LONG, 6-FOOT TALL PRIVACY SCREEN FENCE TO BE PLACED 5 FEET WITHIN THE EXISTING PUBLIC SEWER AND UTILITY EASEMENT FROM CONTRACT NO. 738-S-A. THEREBY WAIVING DMV2 SECTION 5.4.B.5 WHICH REQUIRES A MINIMUM 10 FEET OF HORIZONTAL CLEARANCE BETWEEN ANY PERMANENT STRUCTURE AND THE EDGE OF THE

JUSTIFICATION FOR THE PROPOSED WAIVER INCLUDES THAT THE PROPOSED FENCE IS REQUIRED FOR THE DEVELOPMENT. TO PROVIDE A PRIVACY BUFFER BETWEEN THE PROPOSED POSTWICK ROAD AND MICHAELS WAY, DPW NOTES THAT IT IS HIGHLY UNCOMMON TO PERMIT PERMANENT STRUCTURES WITHIN EASEMENTS SUCH AS IS PROPOSED. WITHOUT MITIGATION MEASURES THE PROPOSED FENCE WOULD BE APPROXIMATELY 5 FEET HORIZONTAL FROM THE EXISTING 12-INCH SEWER CONSTRUCTED UNDER CONTRACT NO. 738-S-A AND SIGNIFICANTLY IMPACT DPW'S ABILITY TO ACCESS AND MAINTAIN THIS SEWER AND ASSOCIATED EASEMENT. IN CONSIDERATION OF THIS AND PREVIOUS CORRESPONDENCE WITH BOHLER, DPW CONDITIONALLY APPROVES

AN ADDITIONAL 10 FEET WIDTH BE ADDED TO THE EXISTING EASEMENT ON THE SIDE OPPOSITE THE FENCE (TO THE NORTH BETWEEN EXISTING SEWER MH #738A-123A AND #738A-122, AND TO THE EAST BETWEEN MH #738A-122 AND #738A-120). THEREBY CREATING A 30-FOOT WIDE EASEMENT AS SHOWN ON THE EXHIBIT ATTACHED TO THIS WAIVER REQUEST. THIS DEVELOPMENT'S HOMEOWNER'S ASSOCIATION (HOA) IS

SOLELY RESPONSIBLE FOR THE FENCE IN PERPETUITY. INCLUDING ITS REMOVAL AND REPLACEMENT IF NEEDED IN THE FUTURE BY DPW FOR WORK ON THE SEWER, EASEMENT, OR

### DMV2-24-003

IT IS UNDERSTOOD THAT THE HIGHWAY I-70 PASSES THROUGH THE PROPERTY TO BE DEVELOPED AND REQUIRES A NOISE WALL TO BE CONSTRUCTED ALONG THE SOUTH PROPERTY LINE OF THE DEVELOPMENT. THE NOISE WALL GENERALLY RUNS IN THE EAST-WEST DIRECTION, THERE IS A 12" SEWER THAT WAS CONSTRUCTED UNDER CONTRACT NO. 738-S-A AND CROSSES THE NOISE WALL IN THE NORTH-SOUTH DIRECTION WITHIN A 20" EASEMENT. TO PROVIDE ACCESS TO THE SEWER MAINTENANCE UPON CONSTRUCTING THE NOISE WALL, THE NOISE WALL HAS BEEN DESIGNED TO SPAN OVER THE EASEMENT WIDTH WITHOUT ANY SUPPORT IN THE EASEMENT AND AS PRACTICAL AS AT 90 DEGREES TO THE EASEMENT. THE WALL CONSISTS OF A SINGLE PANEL AND IS REMOVABLE AS SUCH WHEN REQUIRED TO ACCESS THE SEWER IN THIS AREA. BOHLER ALSO PROVIDED A DETAILED DESCRIPTION OF THIS 25" PANEL, ITS REMOVAL AND TEMPORARY STORAGE PROCEDURES THROUGH SUBSEQUENT CORRESPONDENCE.

THE WAIVER REQUEST FOR LOCATION 1 - WAS APPROVED SEPT. 22, 2023 PROVIDED FOLLOWING CONDITION IS 1. INCLUDE COMPLETE INSTRUCTION PACKAGE ON THE REMOVAL AND STORAGE OF THE 25.0' PANEL ON THE WATER AND SEWER DRAWINGS. THE INSTRUCTIONS SHOULD BE CLEAR AND LEGIBLE.

2. INCLUDE STANDARD SIZE DOOR IN THE 25.00' PANEL IN THE EASEMENT.

THE SECOND LOCATION INCLUDED IN THIS WAIVER REQUEST IS AT THE END OF A PRIVATE ALLEY IN NEIGHBORHOOD D, NEAR LOT 100. SIMILAR TO LOCATION 1, NOISE WALL IS REQUIRED ALONG I-70. HOWEVER, TO MEET THE GRADING REQUIREMENTS OF THE PRIVATE ALLEY AND THE NOISE WALL, A RETAINING WALL IS REQUIRED BETWEEN THE TWO. THE RETAINING WALL WILL BE LOCATED APPROXIMATELY 5.0' BEHIND THE FACE OF THE CURB AT THE END OF THE PRIVATE ADEQUATE SPACE HAS BEEN PROVIDED FOR ROAD MAINTENANCE. THE AREA BETWEEN THE PRIVATE ALLEY AND THE RETAINING WALL DOES NOT HAVE ANY UTILITIES. FURTHERMORE, THE NOISE WALL HAS BEEN DESIGNED TOTALLY INDEPENDENT OF THE RETAINING WALL.

#### DMV2-23-005

C900 FOR DEPTHS GREATER THAN 20', DIP IS REQUIRED. IN DISCUSSIONS WITH BOHLER AND UTILITIES UNLIMITED, THE COUNTY HAS BEEN INFORMED THAT AVAILABILITY OF DIP IS NO LONGER AN ISSUE. SUCH, THE WAIVER REQUEST IS RESCINDED AND PIPE MATERIAL AS SPECIFIED UNDER STANDARD DETAIL

IN ADDITION TO DMV2 SECTION 4.3.E.2.B.1, DMV 4 STANDARD DETAIL G-2.14 SHOWS THE PERMISSIBLE DEPTHS OF COVER FOR VARIOUS PIPE MATERIALS. THIS DETAIL ALLOWS A MAXIMUM COVER OF 20' OVER

A CLEARANCE LESS THAN 1.0' BETWEEN TOP OF THE CASING AND THE BOX CULVERT BOTTOM BETWEEN MANHOLES S-27 AND S-23 IS ACCEPTABLE, WITH THE CONDITION THAT THE GAP BETWEEN TOP OF THE CASING AND THE BOTTOM OF THE BOX CULVERT IS FILLED WITH CONSTRUCTION SAND. THE EXTENT OF THE FILL SHALL BE MINIMUM THREE (3) FEET BEYOND THE OUTER EDGES OF THE PIPE AND CULVERT, IN BOTH

WAIVER REQUEST 2 IS APPROVED, PROVIDED ABOVE CONDITION IS MET AND DENOTED ON THE PLANS AND

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

ELEV. 441.515' N 592,656.774

E 1,353,019.981

ELEV. 453.949 N 593,815.262 E 1,355,774.821

GEODETIC SURVEY CONTROL - 17GB

GEODETIC SURVEY CONTROL - 17EE

3. 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. 17EE AND 17GB WHICH WERE USED FOR THIS PROJECT. HOWARD COUNTY MONUMENT NO: 17GB ELEV. = 441.515

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 BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH

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.

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 IN 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

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

BGE (CONSTRUCTION SERVICES) 410-637-8713 BGE (EMERGENCY) 410-685-0123 BUREAU OF UTILITIES 410-313-4900 COLONIAL PIPELINE COMPANY 410-795-1390 MISS UTILITY 1-800-257-777 STATE HIGHWAY ADMINISTRATION 410-531-5533

SUBMITTED TO HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS FOR APPROVAL AS A RESULT OF TOPOGRAPHY CAUSING DEPTHS OF SEWER IN EXCESS OF 20 FEET. BASEMENT SEWER SERVICE CANNOT BE PROVIDED TO THESE PROPOSED LOTS. FOR THESE LOTS: GRAVITY SEWER SERVICE TO BE PROVIDED TO FIRST FLOOR ONLY; BASEMENT SERVICE TO BE PROVIDED BY PRIVATE ON-SITE

**GENERAL NOTES** 

15. A WAIVER REQUEST HAS BEEN SUBMITTED PENDING APPROVAL FOR THE FOLLOWING

a. ALTERNATIVE PIPE MATERIAL SUBSTITUTION OF C900 TO BE USED IN LIEU OF DIP FOR SEWER DEPTHS MORE THAN 16 FEET, b. MINIMUM VERTICAL CLEARANCES OF LESS THAN 1-FOOT FROM OTHER UTILITIES OR LESS THAN 2' FROM STREAM TO CASING PIPE

16. A WAIVER REQUEST HAS BEEN SUBMITTED PENDING APPROVAL FOR FOLLOWING: a. MAXIMUM COVER PERMITTED OVER DISTRIBUTION MAINS GREATER THAN 8'-0"

#### WATER NOTES

1. ALL WATER MAINS TO BE P.V.C. CLASS (DR-14) C900 UNLESS OTHERWISE NOTED.

2. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.

3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.

4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS

5. FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.

6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

7. TRACER WIRES AND CONTINUITY TEST STATION SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL

8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATIONS TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH PIPE MATERIALS CERTIFICATIONS OR SHOP DRAWING PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT, ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.

9. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINS AND HARNESSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE

10. PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF PVC PIPE.

1. ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.

PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFECTION OF 3-DEGREES (1 1/2-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL

FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA

C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR18 OR EQUAL.

12. WHEN PVC HIGH DEFECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFECTION COUPLINGS AND 5 DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC.

13. EACH DWELLING WILL BE SERVED BY A 1-1/2" DIAMETER WHC, WITH A 1" METER WHICH WILL BE LOCATED AT THE PROPERTY LINE. THE PREFERRED LOCATION OF THE OUTSIDE WATER METER SETTING IS IN A GRASS AREA WITH THE ROAD RIGHT-OF-WAY AND OUTSIDE OF TRAFFIC BEARING AREAS.

#### SEWER NOTES:

1. ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED

2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED

3. FORCE MAINS SHALL BE D.I.P. ONLY

4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY

TITLE SHEET

5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER. STANDARD DETAIL G5.52 WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS

6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THE CELLAR CANNOT BE SERVED



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BETHANY GLEN - PHASE III

LOTS 117-154, LOT 155, COMMUNITY CENTER AND OPEN SPACE LOT 156

9891 OLD FREDERICK ROAD - RTE. 99, ELLICOTT CITY, MD TAX MAP 17, GRID 15, PARCEL 34 2ND ELECTION DISTRICT

HOWARD COUNTY

SHOWN

HOWARD COUNTY, MARYLAND



901 DULANEY VALLEY ROAD, SUITE 801 **TOWSON, MARYLAND 21204** Phone: (410) 821-7900 Fax: (410) 821-7987 MD@BohlerEng.com

CUMENTS WERE PREPARED OR APPROVED BY ME. A UNDER THE LAWS OF THE STATE OF MARYI AND

DATE: 03/01/24 DATE REV.

**LOCATION MAP** 

SCALE: 1"=600"

DRAINAGE AREA : PATUXENT

NUMBER OF LOTS/PARCELS/UNITS: 38

NUMBER OF W.H.C.: 39 (PROPOSED)

NUMBER OF S.H.C.: 39 (PROPOSED)

WATER ZONE: 907 W

**TEST GRADIENT: 907** 

TEST PRESSURE: 254 PS

AREA OF RESIDENTIAL LOT/PARCEL: 1.94 AC

TREATMENT PLANT: LITTLE PATUXENT WRP

TYPE OF BUILDING : AGE-RESTRICTED ADULT HOUSING

REFERENCE DRAWINGS

ECP-21-017

BA-CASE No. 17-018C

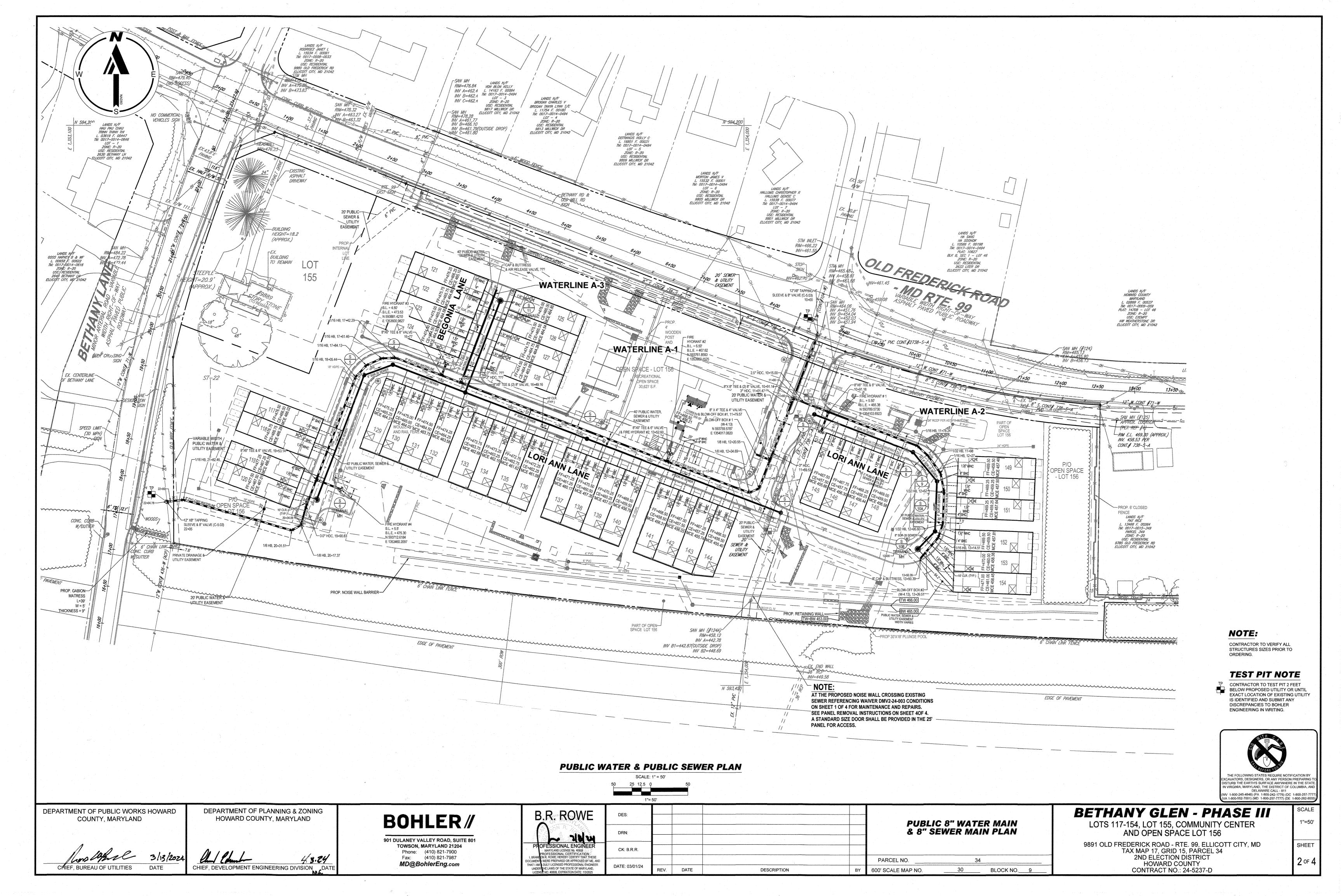
F-22-033

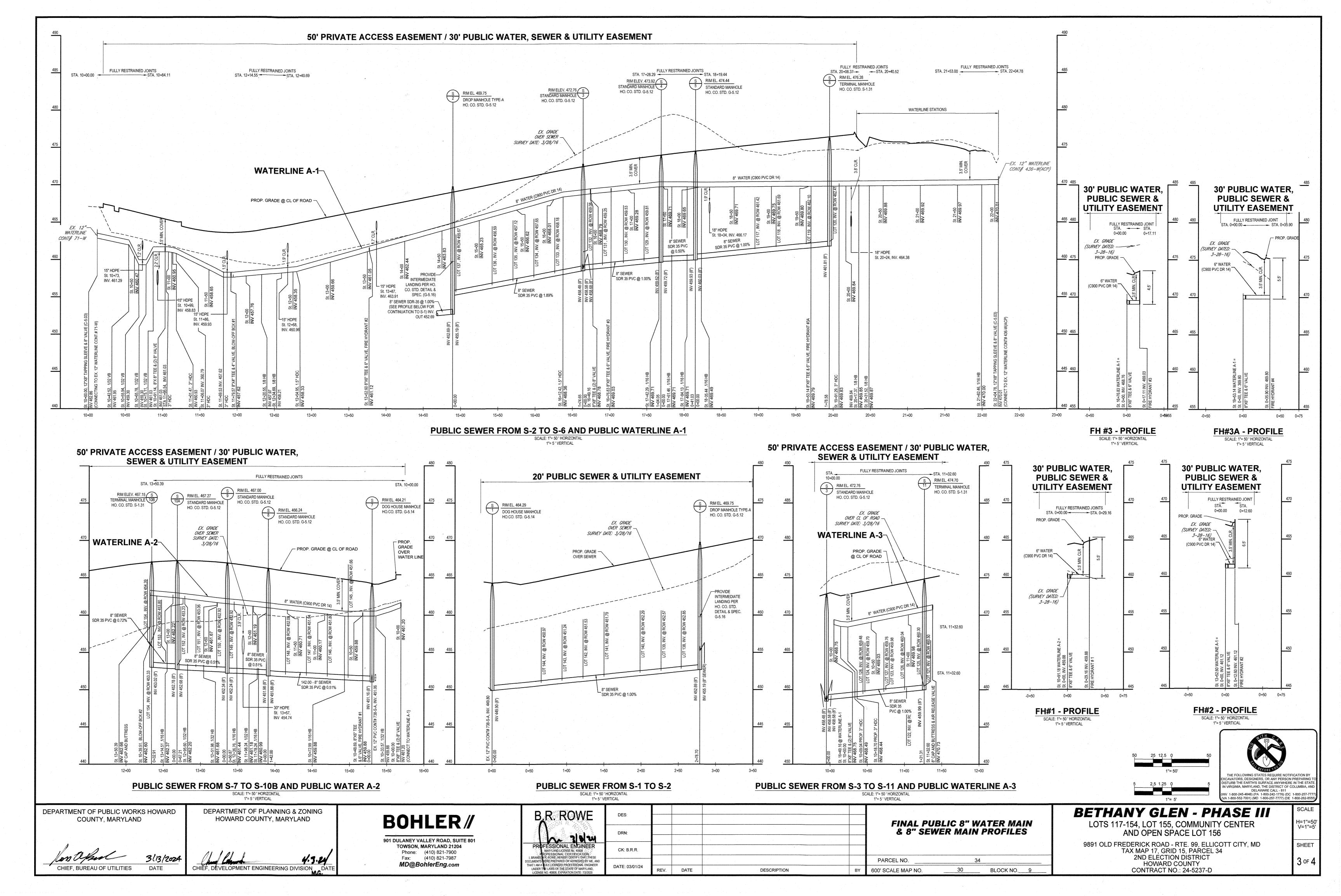
PARCEL NO. 600' SCALE MAP NO.

BLOCK NO.\_

**CONTRACT NO.: 24-5237-D** 

SHEET





#### CRANFORD STRUCTURAL, LLC 119 Davis Road, Suite 7A Augusta, Georgia 30907 (706) 799-5717

#### PROCEDURE FOR REMOVAL AND TEMPORARY STORAGE OF 10' X 24' PANEL P-55

#### Bethany Glen Sound Wall Ellicott, Maryland

#### September 7, 2023

#### PURPOSE:

The purpose of this procedure is to provide the recommended requirements for the temporary removal and storage of a 10 foot high x 24 foot long sound wall panel which will span across an existing sanitary sewer easement. This section of wall may need to be removed on occasion to facilitate future maintenance of the sanitary sewer utility.

#### PANEL DESCRIPTION:

The panel is constructed of six (6) 3-1/2" x 5-1/2" continuous treated glulam beams placed horizontally and spaced at approximately 24 inch centers. The 5-1/2 inch dimension is flat after the wall is erected in the permanent vertical position. The panels are sheeted with 5/8" thick T1-11 plywood in a staggered pattern on both sides of the wall. The exterior edges of each individual T1-11 4'x8' sheet are blocked between the glulam beams with double P.T. 2x6 members to allow for full blocking around the perimeter of the sheet. The fully assembled 10x24 panel weighs 1,800 pounds. The panel is secured to the posts using 3-1/2" x 3-1/2" (4x4 nominal) cleats that are Grade 1, Southern Yellow Pine. The cleats are placed snug against the wall panel on each side of the panel to the posts on each end. The cleats securing this particular panel are fastened to the posts using 3/8" diameter x 8" long lag screws spaced at 8 inch centers. The panel is provided as an attachment to this procedure and labeled as Figure 1. The cleat to post anchorage is noted on Figure 4. The panel is detailed as Design Panel 3 on Sheet S303 of the project construction plans prepared by ShearLock Engineering. The specific panel number is noted as P-55 on the profile sheets.

#### PANEL REMOVAL:

The panel shall be removed using the following task sequence on one side of the panel only:

#### Page 2 of 7

- 1. Remove all soil and drainage stone from one side of the bottom of panel. 2. Remove the 2x8 panel cap from the top of the wall. The panel cap will be screwed into the top glulam of the panel with 1/4" diameter x 3" long Simpson SDWH Timber Hex screws spaced at 12 inch centers. All screws shall be unscrewed using a hex socket drill to remove cap.
- 3. Two (2) lift points are illustrated on Figure 2.
- 4. Secure lifting cable around panel as shown on Figure 2. Note that 4x6 wood blocks are recommended to be placed on the bottom of the panel to prevent damage to the bottom of the panel by the loaded cable at each lift point. The soil/gravel below the lift points will need to be dug out to allow for the lift block placement and the passage of the lift cable under the wall. Each lift point shall support a minimum of 900 pounds.
- 5. The crane or boom truck shall be rated for a minimum of 1.25 x the panel weight or 2,250 pounds for the boom length of the equipment to be used to make the lift.
- 6. After securing the panel horizontally to prevent tipping, remove the 3/8 inch diameter lag screws on one cleat per post and on one side of the wall only. The lag screws will need to be removed using a 9/16 inch socket wrench.
- 7. Following the removal of the two (2) cleats, the panel may be removed. 8. The panel shall be placed back to its permanent position using the reverse order of the removal procedure. However, the setting bed consisting of gravel or crushed stone, will need to be graded for proper drainage below the bottom of the permanent panel position. Refer to Figure 5 for stone placement around bottom of the panel during bedding.

#### TEMPORARY PANEL STORAGE:

- 1. While removed, panel should be placed in the flat position on four (4) 6x6 x 12'-0" timber supports as illustrated in Figure 3 attached to this report.
- 2. While the panel is in temporary storage position, the contractor shall take all
- precautionary measures to protect the panel from damage while performing maintenance on the sanitary sewer system.

T1-11 2x8 CUT SHEET THIS JOINT IS CENTER OF 4x4	1-1/4" 1-0/2"	PROVIDE (2) TOENAILED  MAZE ZL 8-A-8 ALL 4X4  TO 4x4 CONNECTIONS
T1-11 4'x4' CUT SHEET  T1-11 4'x2'-8" CUT SHEET ON DOOR  THIS JOINT IS CENTER OF DOUBLE 2x4  T1-11 2'-1176" x 2'-8" CUT SHEET ON DOOR  T1-11 4'x8' SHEET  WITH CUT AS SHOWN  4'-0"  START WITH GROOVE DOWN  T1-11  T1-11  T1-11  T1-12  4'x1'-3'/  T1-11 2'-1176" x 2'-8'-4"  2'-8'-4"  2'-8'-4"  2'-8'-4"	34" - %11 - 8%11 - 8%11 - 8%11	4 x 4  4x4 DOOR HEADER AT PANEL SPLICE  6-10"x2'-8" DOOR TO BE FRAMED WITH 2x4 STUDS HORIZONTALLY AT 12" O.C. AND SINGLE 2x4 AROUND PERIMETER  PROVIDE (2) TOENAILED 10d NAILS ALL 2x4 TO 4x4 CONNECTIONS  1½"  1'-03/4" 4 x 4
PLYWOOD SCHEME	PANEL 6 24 NOT TO SCALE	8'x10' STUD 2x4 FRAME WITH DOOR  -10 DETAILS W/ DOOR

SEWER STRUCTURE SCHEDULE									
NAME	TYPE	RIM ELEV. (FT.)	INVERTS	COORDINATE					
1	DOG HOUSE MANHOLE HO.CO. STD. G-5.14	464.29'	INV IN = 449.90' (8")	N 593681.283 E 1354050.185					
2	DROP MANHOLE TYPE-A HO. CO. STD. G-5.12	469.75'	INV IN = 455.19' (8") INV OUT = 452.69' (8")	N 593780.503 E 1353789.745					
3	STANDARD MANHOLE HO. CO. STD. G-5.12	472.76'	INV IN = 458.58' (8") INV IN = 458.68' (8") INV OUT = 458.48' (8")	N 593842.680 E 1353626.537					
4	STANDARD MANHOLE HO. CO. STD. G-5.12	473.92'	INV IN = 459.72' (8") INV OUT = 459.62' (8")	N 593879.723 E 1353529.305					
5	STANDARD MANHOLE HO. CO. STD. G-5.12	474.44'	INV IN = 460.02' (8") INV OUT = 459.92' (8")	N 593865.611 E 1353490.777					
6	TERMINAL MANHOLE HO. CO. STD. S-1.31	476.28'	INV OUT = 461.81' (8")	N 593698.734 E 1353427.202					
7	DOG HOUSE MANHOLE HO.CO. STD. G-5.14	464.21'	INV IN = 451.16' (8")	N 593813.441 E 1354094.860					
8	STANDARD MANHOLE HO. CO. STD. G-5.12	466.24'	INV IN = 451.98' (8") INV OUT = 451.88' (8")	N 593762.892 E 1354227.558					
9	STANDARD MANHOLE HO. CO. STD. G-5.12	467.00'	INV IN = 452.34' (8") INV OUT = 452.24' (8")	N 593723.603 E 1354259.878					
10B	TERMINAL MANHOLE HO. CO. STD. S-1.31	467.15'	INV OUT = 453.02' (8")	N 593632.960 E 1354234.360					
10A	STANDARD MANHOLE HO. CO. STD. G-5.12	467.27'	INV IN = 452.78' (8") INV OUT = 452.68' (8")	N 593656.438 E 1354257.428					
11 .	TERMINAL MANHOLE HO. CO. STD. S-1.31	474.70'	INV OUT = 459.99' (8")	N 593965.391 E 1353673.286					

WAT	ERLINE A-1 FITTINGS C	HART
WATER MAIN	FITTINGS	COORDINATE
CL STATION St. 10+00	12"X8" TAPPING	N 593919.914
WATERLINE - A-1		E 1354099.48
St. 10+43 WATERLINE - A-1	1/32 VB	N 593880.196 E 1354084.29
St. 10+56 WATERLINE - A-1	1/32 VB	N 593867.666 E 1354079.50
St. 10+66 WATERLINE - A-1	1/32 VB	N 593858.450 E 1354076.04
St. 10+75 WATERLINE - A-1	1/32 VB	N 593849.724 E 1354072.74
St. 10+91 WATERLINE - A-1	8"X 8" TEE & (2) 8" VALVE	N 593834.745 E 1354067.039
St. 10+96 WATERLINE - A-1	3° HDC	N 593830.632 E 1354065.476
St. 11+01 WATERLINE - A-1	3° HDC	N 593825.084 E 1354063.391
St. 11+06 WATERLINE - A-1	1/32 VB	N 593820.792 E 1354061.736
St. 11+70 WATERLINE - A-1	3° HDC	N 593761.449 E 1354039.248
St. 11+80 WATERLINE - A-1	8" X 4" TEE & 4" VALVE & BLOW-OFF BOX #1	N 593752.084 E 1354035.625
St. 12+21 WATERLINE - A-1	1/8 HB	N 593713.815 E 1354020.969
St. 12+35 WATERLINE - A-1	1/8 HB	N 593708.031 E 1354008.064
St. 12+55 WATERLINE - A-1	1.5° HDC	N 593715.244 E 1353989.130
St. 12+83 WATERLINE - A-1	1/32 VB	N 593725.180 E 1353963.049
St. 13+53 WATERLINE - A-1	8"X6" TEE & 6" VALVE & FIRE HYDRANT #2	N 593750.007 E 1353897.880
St. 16+49 WATERLINE - A-1	8"X8" TEE & (2) 8" VALVE	N 593855.585 E 1353620.752
St. 16+77 WATERLINE - A-1	8"X6" TEE & 6" VALVE FIRE HYDRANT # 3	N 593865.437 E 1353594.893
St. 17+42 WATERLINE - A-1	1/16 HB	N 593888.742 E 1353533.721
St. 17+61 WATERLINE - A-1	1/16 HB	N 593888.191 E 1353514.556
St. 17+84 WATERLINE - A-1	1/16 HB	N 593878.921 E 1353493.876
St. 18+05 WATERLINE - A-1	1/16 HB	N 593863.422 E 1353479.241
St. 19+53 WATERLINE - A-1	FIRE HYDRANT #4	N 593712.618 E 1353460.210
St. 19+53 WATERLINE - A-1	8"X6" TEE & 6" VALVE	N 593725.400 E 1353426.659
St. 19+91 WATERLINE - A-1	3.0° HDC	N 593690.181 E 1353413.242
St. 20+17 WATERLINE - A-1	1/8 HB	N 593664.614 E 1353406.117
St. 20+32 WATERLINE - A-1	1/8 HB	N 593657.666 E 1353393.800
St. 21+82 WATERLINE - A-1	1/16 HB	N 593698.186 E 1353248.394
St. 22+05	12" X8" TAPPING	N 593695.909

St. 22+05 WATERLINE - A-1	12" X8" TAPPING SLEEVE & 8" VALVE	N 593695.909 E 1353226.193	
WATE	ERLINE A-2 FITTINGS (	CHART	
WATER MAIN CL STATION	FITTINGS	COORDINATES	
St. 10+34 WATERLINE - A-2	1/32 VB	N 593822.792 E 1354098.414	
St. 10+50 WATERLINE - A-2	FIRE HYDRANT # 1	N 593789.573 E 1354103.692 N 593808.759 E 1354135.248	
St. 10+73 WATERLINE - A-2	1/16 VB		
St. 10+91 WATERLINE - A-2	8"X6" TEE & 6" VALVE	N 593816.825 E 1354114.075	
St. 11+98 WATERLINE - A-2	1/32 HB	N 593757.562 E 1354248.141	
St. 12+27 WATERLINE - A-2	1/16 HB	N 593734.310 E 1354264.666	
St. 12+52 WATERLINE - A-2	1/32 HB	N 593709.547 E 1354269.445	
St. 12+96 WATERLINE - A-2	1/32 HB	N 593665.958 E 1354267.780	
St. 13+15 WATERLINE - A-2	1/16 HB	N 593648.073 E 1354261.653	
St. 13+40 WATERLINE - A-2	BLOW-OFF BOX #2 (W-4.13)	N 593629.098 E 1354245.380	
St. 13+50 WATERLINE - A-2	8" CAP & BUTTRESS	N 593620.838 E 1354238.296	

WATE	RLINE A-3 FITTINGS C	HART
WATER MAIN CL STATION	FITTINGS	COORDINATES
STA 10+09 WATERLINE - A-3	3° HDC	N 593864.034 E 1353623.971
STA 10+19 WATERLINE - A-3	3° HDC	N 593873.056 E 1353627.408
STA 11+33 WATERLINE - A-3	CAP & BUTTRESS & AIR RELEASE VALVE	N 593979.496 E 1353667.959

						SHC TABL	E				
LOT	FF ELEV.	INV. @ MAIN	SHC LENGTH TO ROW (FT)	SHC SLOPE WITHIN ROW	INVERT @ ROW	SHC SLOPE WITHIN LOT	MAX SHC LENGTH (FT)	2.50 FT BELOW CELLAR	MIN. CELLAR ELEV.	CELLAR ELEV.	CONNECTION TYP
117	476.50	460.82	30.00	2.0%	461.42	2.0%	105.00	2.50	(MCE) 466.02	466.50	STD SHC
118	476.75	461.09	30.00	2.0%	461.69	2.0%	105.00	2.50	466.29	466.75	STD SHC
119	477.25	461.50	30.00	2.0%	462.10	2.0%	105.00	2.50	466.70	467.25	STD SHC
120	477.50	461.81	30.00	2.0%	462.41	2.0%	105.00	2.50	467.01	467.50	STD SHC
121	476.25	459.99	25.50	2.0%	460.50	2.0%	105.00	2.50	465.10	466.25	STD SHC
122	475.75	459.75	25.40	2.0%	460.26	2.0%	105.00	2.50	464.86	465,75	STD SHC
123	475.00	459.47	25.40	2.0%	459.98	2.0%	105.00	2.50	464.58	465.00	STD SHC
124	474.50	459.19	25.40	2.0%	459.70	2.0%	105.00	2.50	464.30	464.50	STD SHC
125	476.00	459.99	15.46	2.0%	460.30	2.0%	100.00	2.50	464.80	466.00	STD SHC
126	475.50	459.73	15.42	2.0%	460.04	2.0%	100.00	2.50	464.54	465.50	STD SHC
127	474.75	459.45	15.42	2.0%	459.76	2.0%	100.00	2.50	464.26	464.75	STD SHC
128	474.50	459.17	15.42	2.0%	459.48	2.0%	100.00	2.50	463.98	464.50	STD SHC
129	475.00	459.40	20.25	2.0%	459.81	2.0%	100.00	2.50	464.31	465.00	STD SHC
130	474.50	459.12	20.25	2.0%	459.53	2.0%	100.00	2.50	464.03	464.50	STD SHC
131	474.25	458.84	20.25	2.0%	459.25	2.0%	100.00	2.50	463.75	464.25	STD SHC
132	473.75	458.68	20.00	2.0%	459.08	2.0%	100.00	2.50	463.58	463.75	STD SHC
133	473.50	457.77	20.25	2.0%	458.18	2.0%	100.00	2.50	462.68	463.50	
134	473.00	457.24	20.25	2.0%	457.65	2.0%	100.00	2.50	462.15	463.00	STD SHC
135	472.50	456.71	20.25	2.0%	457.12	2.0%	100.00	2.50	461.62	462.50	STD SHC
136	472.00	456.18	20.25	2.0%	456.59	2.0%	100.00	2.50	461.09	462.00	STD SHC
137	471.25	455.26	20.25	2.0%	455.67	2.0%	100.00	2.50	460.17	461.25	STD SHC
138	470.75	452.44	20.25	2.0%	452.85	2.0%	100.00	2.50	457.35	460.75	DROP TYPE A
139	469.75	452.16	20.25	2.0%	452.57	2.0%	100.00	2.50	457.07	459.75	DROP TYPE A
140	469.25	451.88	20.25	2.0%	452.29	2.0%	100.00	2.50	456.79	459.25	STD SHC
141	468.25	451.40	20.25	2.0%	451.81	2.0%	100.00	2.50	456.31	458.25	STD SHC
142	467.50	451.12	20.25	2.0%	451.53	2.0%	100.00	2.50	456.03	457.50	STD SHC
43	466.75	450.83	20.25	2.0%	451.24	2.0%	100.00	2.50	455.74	456.75	STD SHC
44	466.00	450.56	20.25	2.0%	450.97	2.0%	96.63	2.50	455.40	456.00	STD SHC
45	466.00	451.31	17.60	2.0%	451.66	1.5%	100.00	2.50	455.66	456.00	STD SHC
46	466.50	451.45	17.60	2.0%	451.80	2.0%	100.00	2.50	456.30	456.50	STD SHC
47	467.00	451.59	17.60	2.0%	451.94	2.0%	100.00	2.50	456.44	457.00	STD SHC
48	467.50	451.73	17.60	2.0%	452.08	2.0%	100.00	2.50	456.58	457.50	STD SHC
49	469.50	452.30	29.96	2.0%	452.90	2.0%	104.00	2.50	457.48	457.50	STD SHC
50	469.50	452.37	27.74	2.0%	452.92	2.0%	104.00	2.50	457.50	459.50	STD SHC
51	469.25	452.51	27.66	2.0%	453.06	2.0%	104.00	2.50	457.64	459.55	STD SHC
52	469.50	452.64	29.34	2.0%	453.23	2.0%	104.00	2.50	457,81	459.50	STD SHC
53	469.25	452.75	52.33	2.0%	453.80	2.0%	104.00	2.50	458.38	459.35	STD SHC
54	468.75	452.98	70.64	2.0%	454.39	1.5%	104.00	2.50	458.45	458.75	STD SHC

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STAIN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AN DELAWARE CALL - 811 (WV 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-777) (VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-855

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

3(3/2024

CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BOHLER**//

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

B.R.ROWE
PROFESSIONAL ENGINEER
MARYLAND LICENSE No. 40808
PROFESSIONAL CERTIFICATION  I, BRANDON'R, ROWE, HEREBY CERTIFY THAT THESE
DOCUMENTS WERE PREPARED OR APPROVED BY ME. AND
THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 40808, EXPIRATION DATE: 7/3/2025

DES:					
DRN:		-			FINAL PUBLIC WATER & SEWER STRUCTURE CHARTS
CK: B.R.R.					
DATE: 02/04/04					PARCEL NO. 34
DATE: 03/01/24	REV.	DATE	DESCRIPTION	BY	600' SCALE MAP NO. 30 BLOCK NO. 9

## **BETHANY GLEN - PHASE III**

LOTS 117-154, LOT 155, COMMUNITY CENTER AND OPEN SPACE LOT 156

9891 OLD FREDERICK ROAD - RTE. 99, ELLICOTT CITY, MD TAX MAP 17, GRID 15, PARCEL 34 2ND ELECTION DISTRICT HOWARD COUNTY CONTRACT NO.: 24-5237-D

SHEET 4 of 4