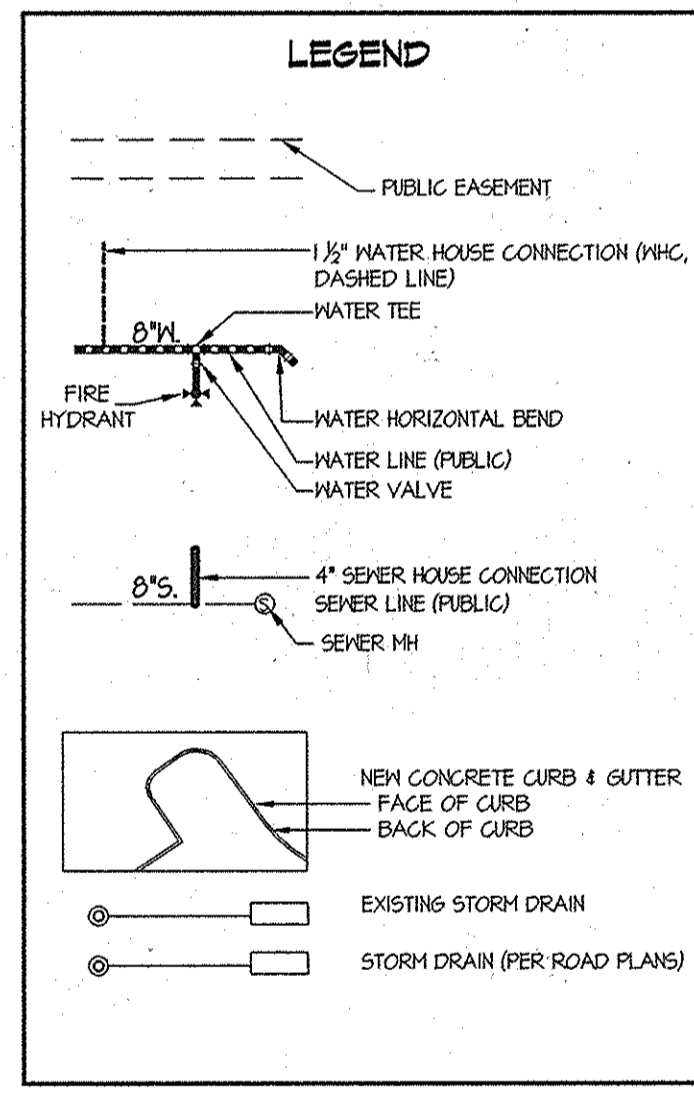


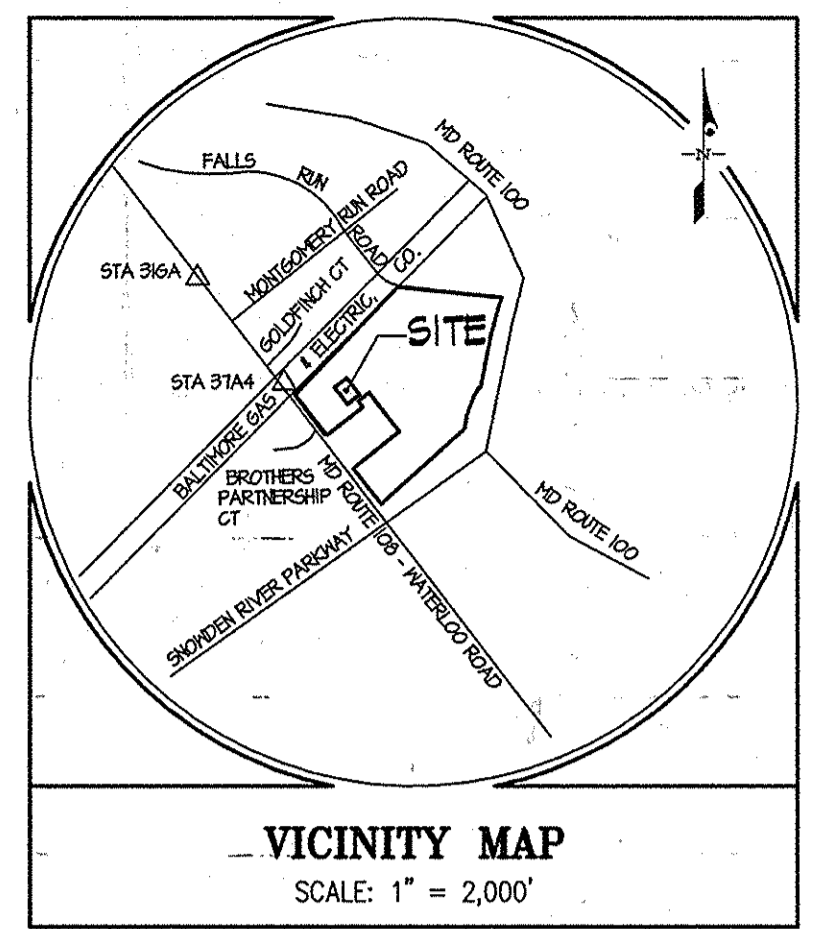
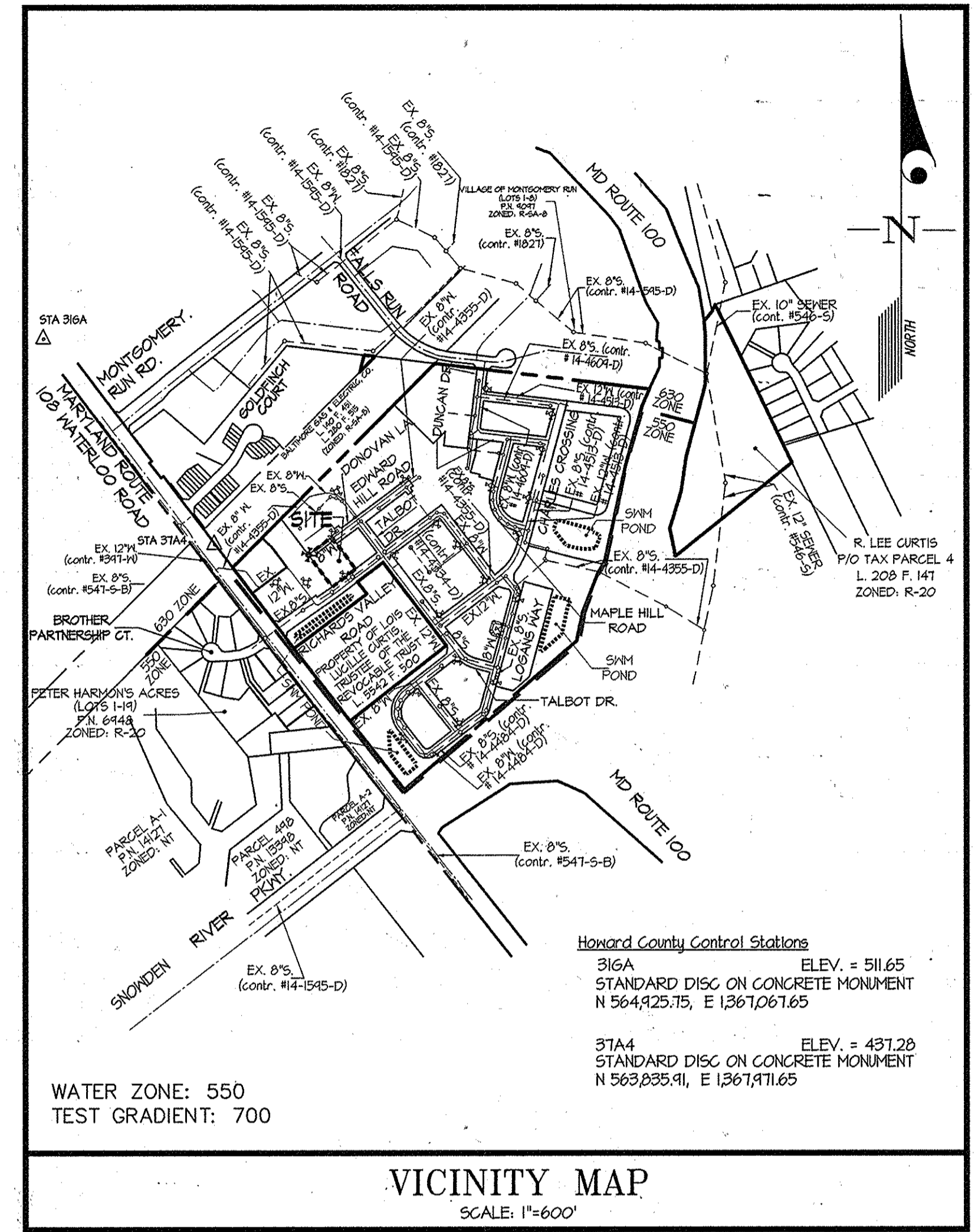
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" WATER C900 P.V.C. DR 18	140 LF.	133 LF.	DR 18	JM EAGLE
6" WATER (F.H.)	22 LF.	23 LF.	DR 18	JM EAGLE
1 1/2" W/C (Copper)	410 LF.	400 LF.	K	CAMBRIDGE-LEE INDUSTRIES
8" HB.	3 EA.	3 EA.	8" 1/2 H.B.	STAR PIPE PRODUCTS
8" x 6" F.H.T.	1 EA.	1 EA.	8" x 6" Tee	STAR PIPE PRODUCTS
6" VALVE	1 EA.	1 EA.	A-2560-20	MUELLER
8" x 6" FIRE HYDRANT	1 EA.	1 EA.	8" x 6" TEE	STAR PIPE PRODUCTS
8" sleeve (C900 to ex. DIP)	1 EA.	1 EA.	8" sleeve	STAR PIPE PRODUCTS
8" Cap & Buttrass	1 EA.	1 EA.	8" Cap	STAR PIPE PRODUCTS
4" SHC Pipe	571 LF.	350 LF.	5DR-35	NAT'L PIPE & PLASTIC
6" Fire Hydrant	1 EA.	1 EA.	A-423	MUELLER
Water Service Saddle	13 EA.	202 N5	ROMAC INDUSTRIES	
1.5" Corporation	13 EA.	B-2500	MUELLER	
Curb Valves	13 EA.	300 Ball	MUELLER	
Curb Service Boxes	13 EA.	110173-XX	ARMOR ACCESS BOXES	
Ductile Iron M.J. Fittings	N/A	MJ Fittings	STAR PIPE PRODUCTS	
Wire	N/A	8 Gauge	K-T (KRIS-TECH WIRE CO.)	
Detectable Tape	N/A	5.0 MIL	K-T (KRIS-TECH WIRE CO.)	
4" Sewer Saddle	11 EA.	CB	ROMAC INDUSTRIES	
4" 90 Degree Bends	7 EA.	4" 90 Degree Bends	HARCO	
Cleanout Blocks	11 EA.	4" x 4" CB	HORNE CONCRETE CONSTRUCTION	

NAME OF UTILITY CONTRACTOR: BOSLEY

SURVEY AND DRAFTING DIV. CHECKBOX: _____ AS-BUILT DATE: _____



SHEET INDEX	
1	COVER SHEET
2	WATER & SEWER PLAN & PROFILE



GENERAL NOTES

- Part I**
- 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 AIR surveys were performed on DECEMBER, 2008 by MCKENZIE SNYDER.
 - 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. 41DC, and No. 41EE.
All vertical controls are based on NAVD '88. Vertical controls provided on the drawings are STANDARD DISCS ON CONCRETE MONUMENTS.
 - 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 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 pits 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 of 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	410-313-4400
Colonial Pipeline Co.	410-745-1340
Miss Utility	1-800-251-7777
State Highway Administration	410-531-5533
Verizon	1-800-743-0033
 - 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 water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPM requirements per Section 18.114(a) of the Howard County Code.
- Part II WATER**
- All water mains shall be P.V.C. C900 unless otherwise noted.
 - All W/C's are to be 1 1/2" with 1" inside meter setting.
 - Tops of all water mains shall have a minimum of 3'-0" of cover unless otherwise noted.
 - Valves adjacent to trees shall be strapped to trees.
 - All fittings shall be buttressed or anchored with concrete in accordance with Standard Details unless otherwise provided for on the drawings.
 - Fire hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be installed in accordance with Standard Details.
 - The soil around the fire hydrant shall be compacted in accordance with Section 1000 and Section 1005 of the Standard Specifications.
 - Tracer wires and continuity test stations shall be installed on all DIP and PVC water mains in accordance with the Howard County Design Manual.
 - For PVC water mains, all records for the Quality Control and Qualification Test Requirements noted in Section 5.1 of the ANWA Standard C900 for PVC pressure pipe shall be submitted with the pipe material certifications or shop drawings 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.
 - Unless otherwise noted on the plans or in the specifications sacrificial anodes shall be installed 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 restraints 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 ductile iron.
 - 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.
 - 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 deflection 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 deflection 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 deflection 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 ANWA 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 ANWA C900 and shall be Multi Fittings (pex) Blue Brute DR18 or equal.
 - When PVC high deflection couplings or PVC 5-degree sweeps are used to facilitate changes in horizontal or vertical alignments of ANWA 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 deflection 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. or approved equal.
- Part III 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 6552. 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 the cellar cannot be served.

TYPE OF BUILDING	RESIDENTIAL
NUMBER OF UNITS	13
NUMBER OF S.H.C.'s	13
NUMBER OF W.H.C.'s	13
AREA OF COMMERCIAL LOT/PARCEL	0.75± ACRES
SEWER SHED	DORSEY - PATAPSCO
PUMPING STATION	PATAPSCO WASTEWATER TREATMENT PLANT

CONTRACT No. 14-4875-D
SHIPLEY'S GRANT
PHASE VII
LOTS B-1 THRU B-13
AND COMMON OPEN SPACE LOT B-14.
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SDP-14-063, SECTION 219 OF THE SPECIFICATIONS AT THE SITE PLAN STAGE.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 APPROVED: *John R. Roberts* 2/13/15
 HOWARD S.C.D. Date

PREPARED FOR:
 BA WATERLOO TOWNHOMES, LLC.
 c/o BOZUTTO HOMES, INC.
 6406 IVY LANE, SUITE 700
 GREENBELT, MD 20770
 ATTN: DUNCAN SLIDELL
 301-623-1525

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>John C. Conroy</i> 1/23/15 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND <i>Chad Clark</i> 2-11-15 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	GLW GUTSCHICK LITTLE & WEBER, P.A. CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK BURTONSVILLE, MARYLAND 20866 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186	DATE JAN., 2015 G.L.W. No. 05030 PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 14931 EXP. DATE: MAY 21, 2016	STATE OF MARYLAND PROFESSIONAL ENGINEER JAMES P. HARRIS LICENSE NO. 14931 EXP. DATE: MAY 21, 2016	COVER SHEET 600' SCALE MAP NO. 37 BLOCK NO. 1&2 ZONING: R-A-15 TAX MAP 37, B-1	SHIPLEY'S GRANT PHASE VII LOTS B-1, THRU B-13 AND COMMON OPEN SPACE LOT B-14 HOWARD COUNTY, MARYLAND ELECTION DISTRICT NO. 1433 CONTRACT No. 14-4875-D	SCALE AS SHOWN SHEET 1 OF 2
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FITTING CHART			
STATION	FITTING	NAD '83/'91 COORDINATES	
0+05	0" 1/2 H.B.	N 563,866.71	E 1368,543.27
0+23	0" 1/2 H.B.	N 563,844.04	E 1368,540.82
1+23	0" 1/2 H.B.	N 563,788.61	E 1368,510.91
1+36	0" x 6" F.H.T.	N 563,715.87	E 1368,504.145

FIRE HYDRANT CHART			
FH	NAD '83/'91 COORDINATES		
'A'	N 563,718.45	E 1368,485.24	

SEWER HOUSE CONNECTIONS
MINIMUM CELLAR ELEVATIONS
AND INVERT ELEVATION @ P.L.

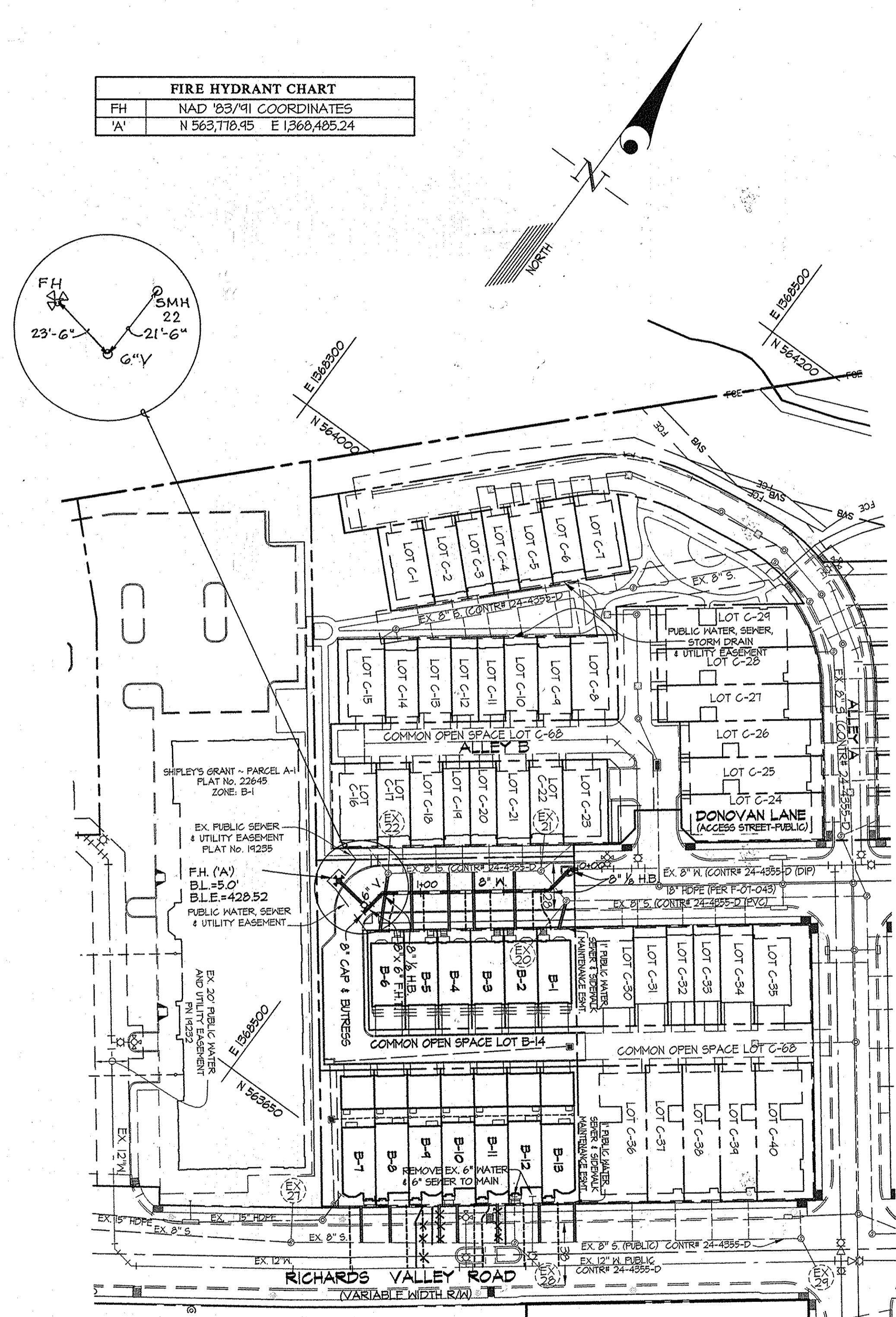
MINIMUM CELLAR ELEVATIONS			
LOT NO.	SLAB/BSMT. (PER SDP)	MCE	INV. @ R/M ELEV.
B-1	428.74	422.60	418.78
B-2	429.74	424.62	420.80
B-3	429.74	424.94	421.14
B-4	429.13	425.21	421.34
B-5	429.13	425.55	421.73
B-6	429.13	425.92	422.10
B-7*	427.64	423.86	419.96
B-8*	428.34	424.36	420.46
B-9*	429.00	425.06	421.16
B-10*	429.00	425.36	421.46
B-11*	429.66	425.56	421.66
B-12*	429.66	425.86	421.96
B-13*	429.66	425.86	421.96

(*) DROP SEWER HOUSE CONNECTION

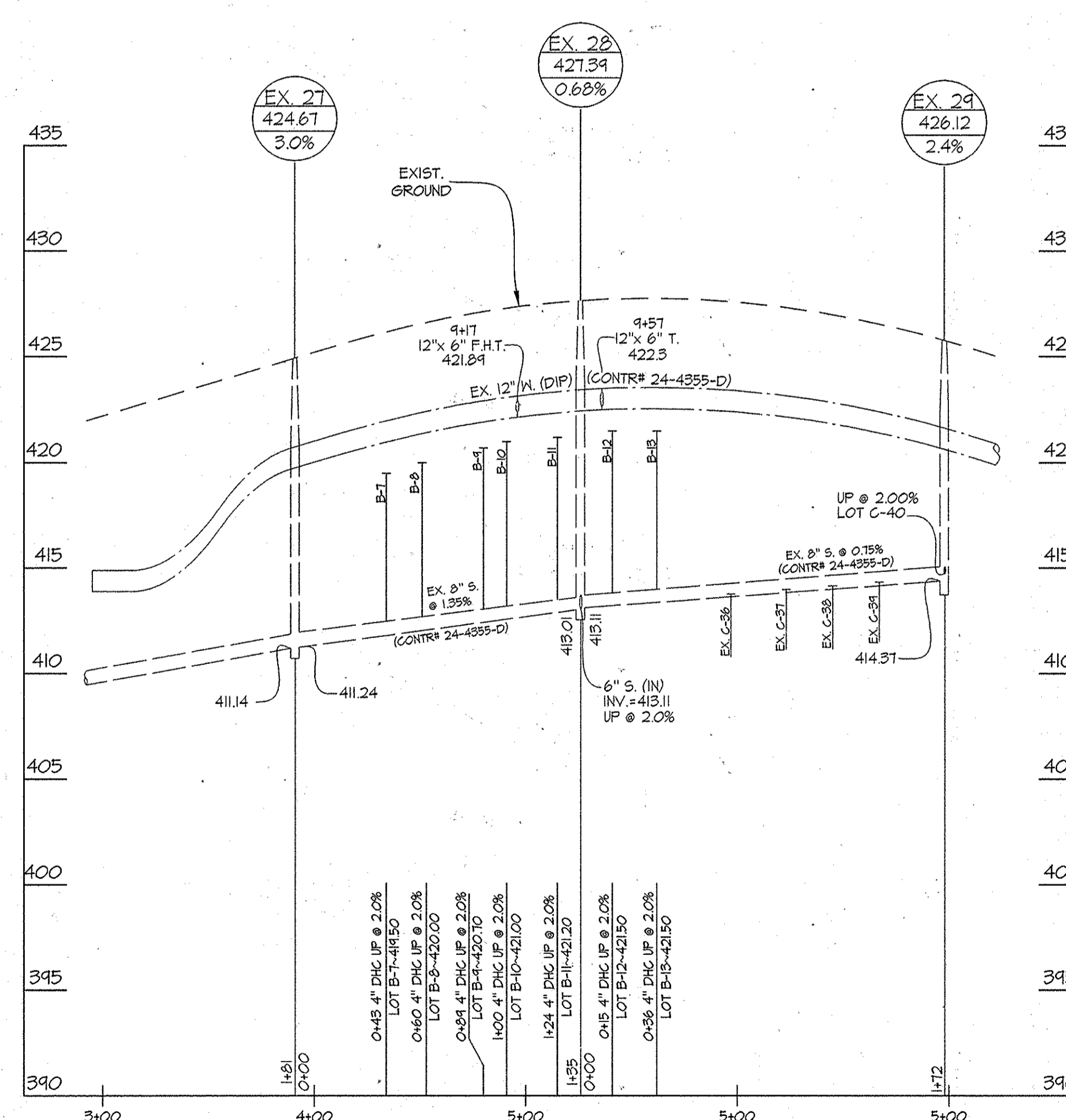
LOT FRONTAGE TABLE

LOT No.	DISTANCE (feet)
B-1	23.00'
B-2	20.00'
B-3	20.00'
B-4	20.00'
B-5	20.00'
B-6	22.00'
B-7	32.54'
B-8	20.00'
B-9	20.00'
B-10	20.00'
B-11	20.00'
B-12	20.00'
B-13	22.41'

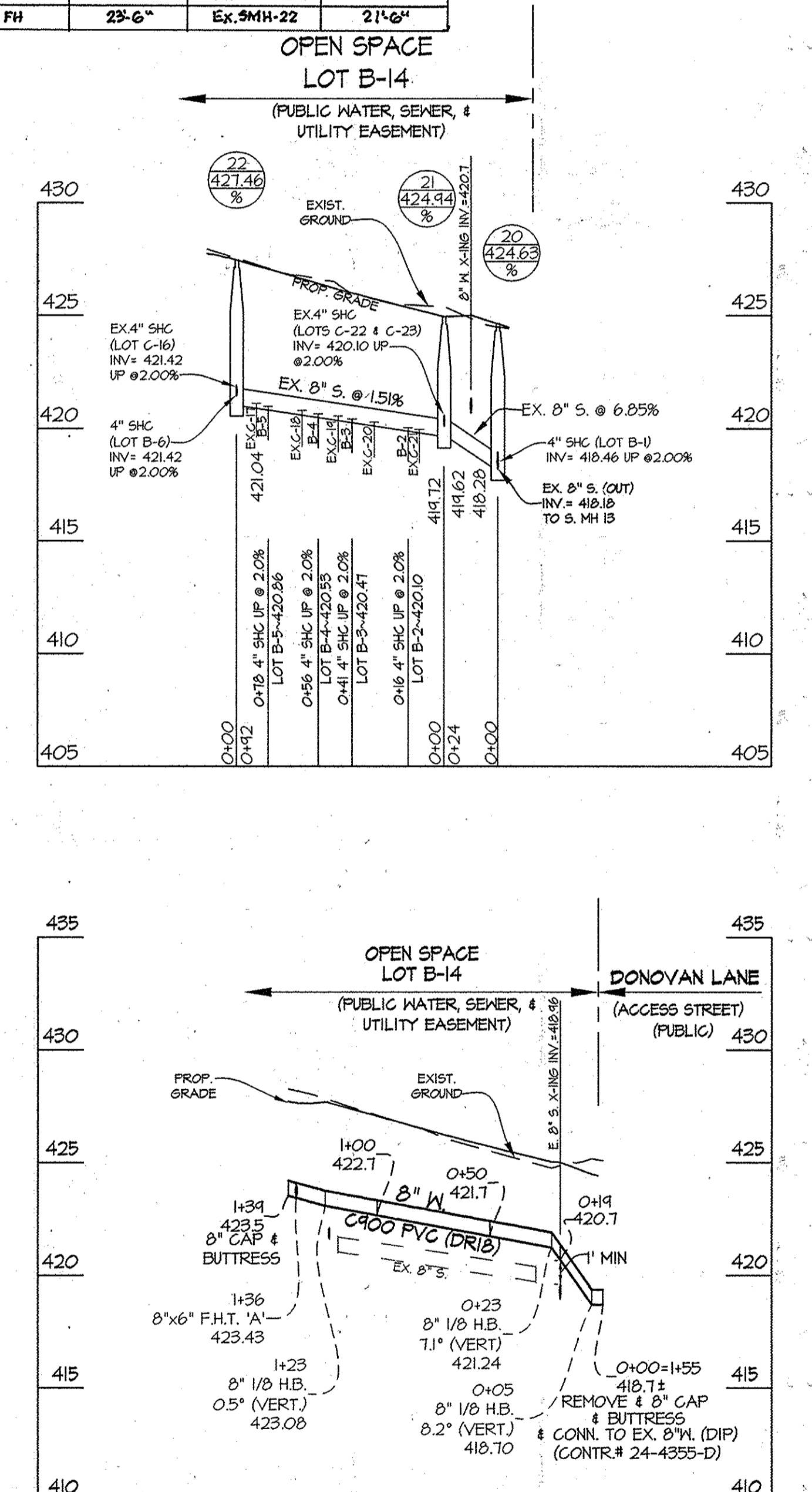
Shipley's Grant Phase 7				14-4875-D	
Item Address	Location 1	Measurement	Location 2	Measurement	
Lot B-1 / 4" SHC	Ex. SMH-22	108"	Ex. SMH-20	17'-6"	
Lot B-1 / 1.5" WHC	FH	129'-6"	Ex. SMH-20	35'-0"	
Lot B-2 / 4" SHC	Ex. SMH-22	85'-0"	Ex. SMH-20	33'-6"	
Lot B-2 / 1.5" WHC	FH	121'-0"	Ex. SMH-20	35'-0"	
Lot B-3 / 4" SHC	Ex. SMH-22	61'-6"	Ex. SMH-20	37'-6"	
Lot B-3 / 1.5" WHC	FH	97'-6"	Ex. SMH-20	46'-6"	
Lot B-4 / 4" SHC	Ex. SMH-22	50'-6"	Ex. SMH-20	72'-6"	
Lot B-4 / 1.5" WHC	FH	82'-6"	Ex. SMH-20	57'-6"	
Lot B-5 / 4" SHC	Ex. SMH-22	38'-6"	Ex. SMH-20	93'-6"	
Lot B-5 / 1.5" WHC	FH	60'-6"	Ex. SMH-20	78'-6"	
Lot B-6 / 4" SHC	Ex. SMH-22	36'-0"	Ex. SMH-20	114'-0"	
Lot B-6 / 1.5" WHC	FH	43'-6"	Ex. SMH-20	98'-6"	
Lot B-7 / 4" SHC	Ex. SDMH	23'-6"	FH	63'-0"	
Lot B-7 / 1.5" WHC	Ex. SMH-27	17'-6"	FH	69'-6"	
Lot B-8 / 4" SHC	Ex. SDMH	49'-0"	FH	46'-0"	
Lot B-8 / 1.5" WHC	Ex. SMH-27	50'-0"	Ex. WV	49'-0"	
Lot B-9 / 4" SHC	Ex. WV	39'-0"	FH	21'-6"	
Lot B-9 / 1.5" WHC	Ex. SMH-27	59'-0"	FH	27'-6"	
Lot B-10 / 4" SHC	FH	7'-6"	FH	43'-0"	
Lot B-10 / 1.5" WHC	FH	9'-0"	Ex. SMH-28	35'-0"	
Lot B-11 / 4" SHC	FH	21'-6"	Ex. SMH-28	23'-0"	
Lot B-11 / 1.5" WHC	FH	16'-0"	Ex. SMH-28	27'-6"	
Lot B-12 / 4" SHC	FH	42'-0"	Ex. SMH-28	26'-0"	
Lot B-12 / 1.5" WHC	FH	36'-0"	Ex. SMH-28	24'-6"	
Lot B-13 / 4" SHC	FH	65'-0"	Ex. SMH-28	41'-6"	
Lot B-13 / 1.5" WHC	FH	56'-0"	Ex. SMH-28	35'-0"	
6" Water Valve	FH	23'-6"	Ex. SMH-22	21'-6"	



PLAN SCALE:
1" = 50'



PROFILE SCALES:
HORIZ. 1" = 50'
VERT. 1" = 5'

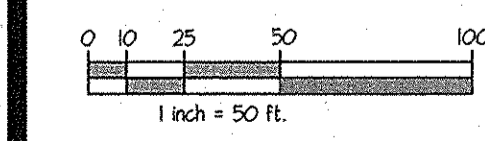


OPEN SPACE
LOT B-14

(PUBLIC WATER SEWER & UTILITY EASEMENT)

OPEN SPACE
LOT B-14

(PUBLIC WATER SEWER & UTILITY EASEMENT)



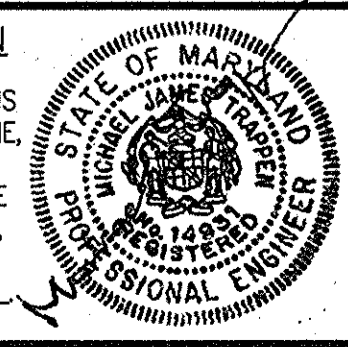
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
S. C. COMPTON
CHIEF, BUREAU OF UTILITIES
DATE: 11/27/15

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
C. E. CLARK
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 2.11.15

GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE JAN., 2015
G.L.W. No. 05030

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 14931
EXP. DATE: MAY 21, 2016



BY	NO	REVISION	DATE

WATER and SEWER EXTENSION
PLAN and PROFILE
600' SCALE MAP NO. 37
BLOCK NO. 1&2

SHIPLEY'S GRANT
PHASE VII
LOTS B-1, THRU B-13 AND COMMON OPEN SPACE LOT B-14
HOWARD COUNTY, MARYLAND
ELECTION DISTRICT NO. 1
CONTRACT No. 14-4875-D
ZONING: R-A-15
TAX MAP 37, B-1

SCALE AS SHOWN
SHEET 2 OF 2

PREPARED FOR:
BA WATERLOO TOWNHOMES, LLC.
606 BOZITTO HOMES, INC.
6406 IVY LANE, SUITE 700
GREENBELT, MD 20770
ATTN: DUNCAN SLIDELL
301-623-1525