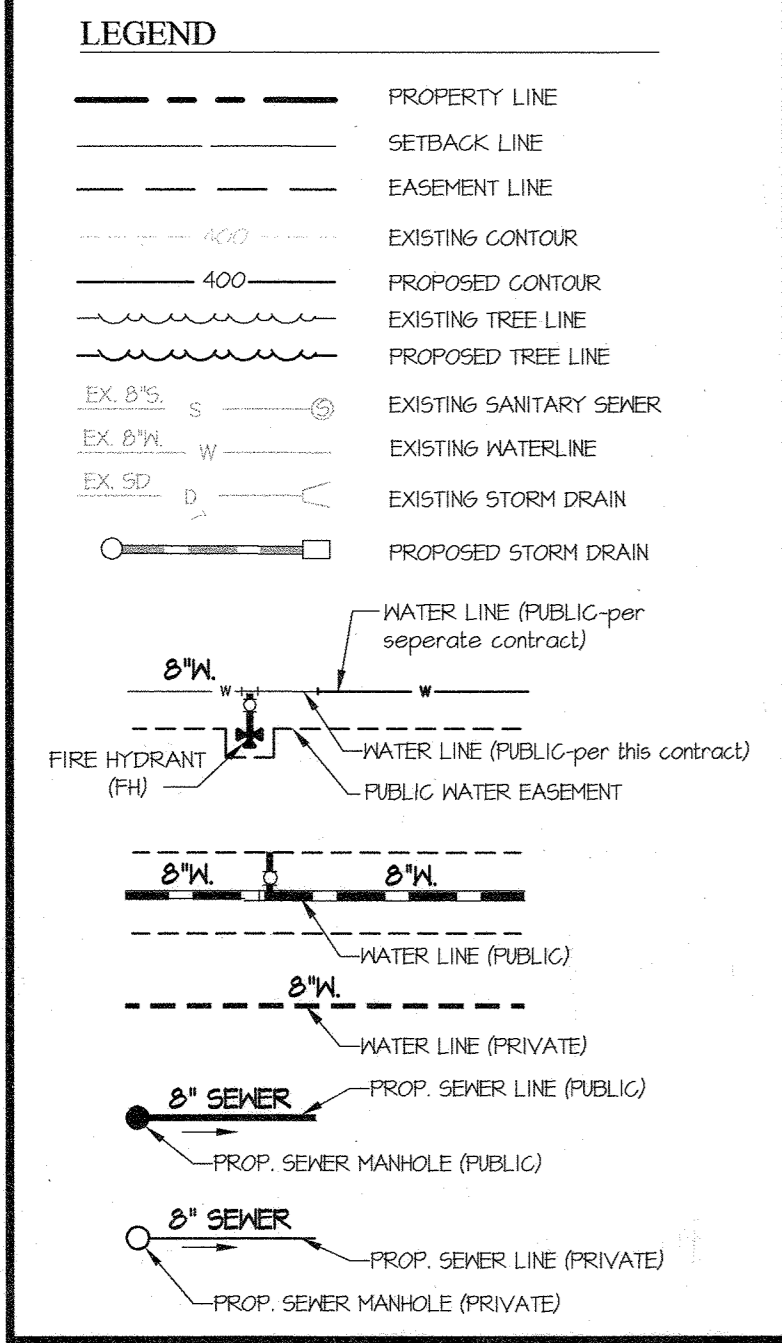


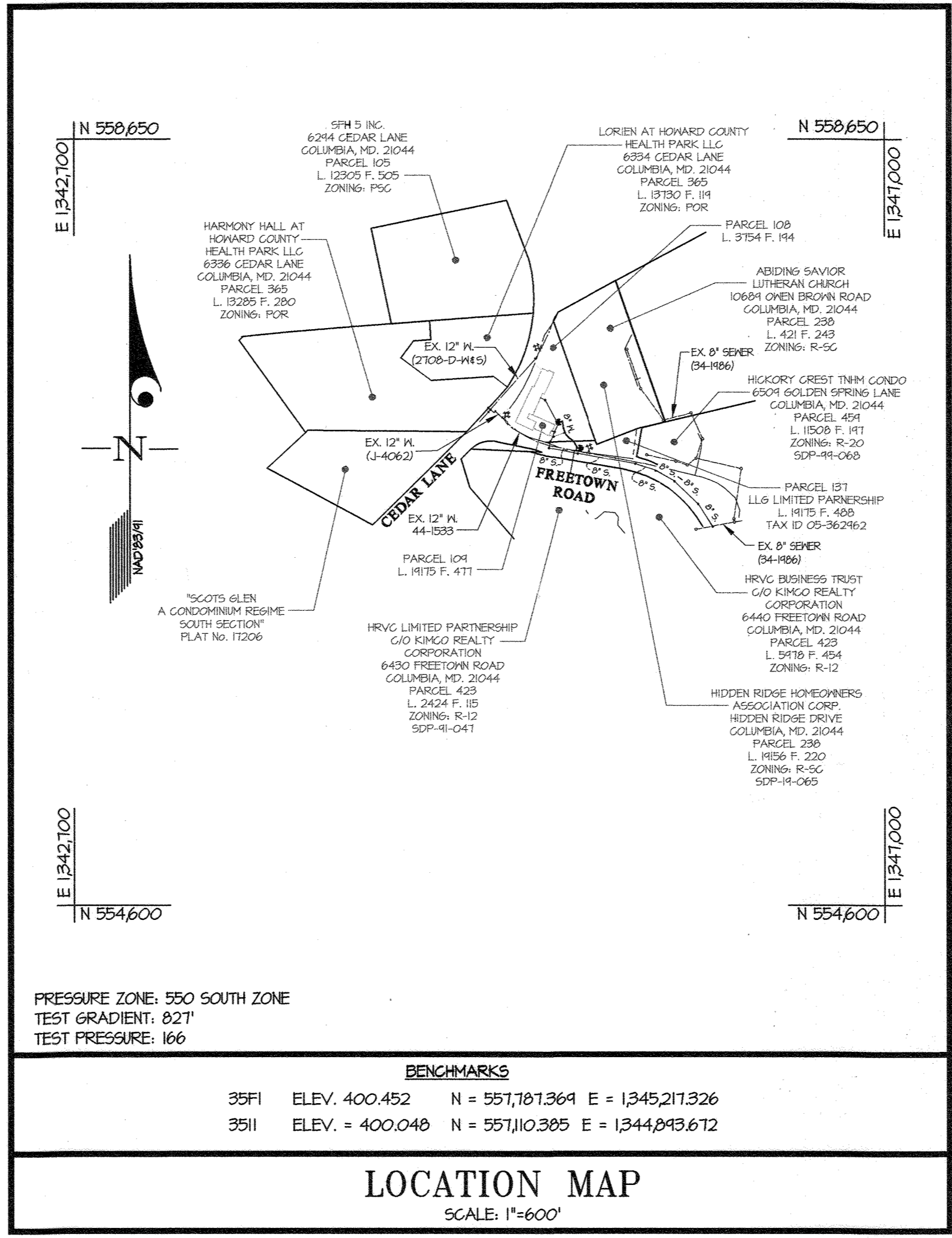
QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" SEWER MAIN (C400 PVC)	1043 LF			
6" SEWER MAIN (C400 PVC)	13 LF			
6" D.I.P. (F.H. LEAD)	13 LF			
4" MANHOLE	8 EA.			
12"x 8" T.S.#V.	1 EA.			
6" PLUG	1 EA.			
8"x 6" F.H.T.#V.	2 EA.			
FIRE HYDRANT	2 EA.			
CONTINUITY TEST STATION	2 EA.			
8" WATER MAIN (C400 PVC DR-18)	188 LF			
1/8" 8" HB	1 EA.			
1/16" 8" HB	2 EA.			
1/32" 8" HB	2 EA.			
1/8" 8" VB	2 EA.			
2" HDC	2 EA.			

NAME OF UTILITY CONTRACTOR:

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



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



CONTRACT No. 24-5212-D
PATUXENT COMMONS
 6441 FREETOWN ROAD
 PROPOSED LOT 1,
 EXISTING PARCELS 108, 109 & 137
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

TYPE OF BUILDING	APARTMENT BUILDING WITH 16 UNITS
NUMBER OF S.H.C.'s	1
NUMBER OF W.H.C.'s	1
SEWERSHED	LOWER PATUXENT
TREATMENT PLANT	LPKRP
WATER ZONE	550
TEST GRADIENT	82'

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.
- The topography was performed on July, 2022 by GLW.
- Horizontal and Vertical Survey Controls:
The coordinates shown on the drawings are based on Maryland State Reference System NAD 83(ADJ. 2011) as projected by Howard County Geodetic Control Stations No. 35F1 and No. 35I1. All vertical controls are based on NAVD 88.
- 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 (2017). 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)..... 410-637-9715
 BGE (Emergency)..... 410-665-0123
 Bureau of Utilities..... 410-313-4400
 Colonial Pipeline Co..... 410-745-1340
 Miss Utility..... 1-800-251-7777
 State Highway Administration..... 410-531-3533
 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)-313-1450 at least five working days before open cutting or boring/jacking of any County roads for laying water/sewer mains or house connectors. The approval of these drawings will constitute compliance with DFM requirements per Section 18.114(a) of the Howard County Code.

Part II WATER

- All water mains shall be PVC, unless otherwise noted.
- Tops of all water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with Standard Details unless otherwise provided for on the drawings.
- Tracer wire 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 5J of the ANWA Standard C400 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 hammers. 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 HD couplings 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 5-degrees (1/2-degree on either end of the coupling), shall be rated for a minimum 200 psi meeting the requirements of ANWA C400 shall have a minimum bay length of 8-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, DR 18 meeting the requirements of ANWA C400 and shall be Multi Fittings (mpx) Blue Brute DR 18 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-400 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 incorporates 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 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 M.T. in plan and profile shall have watertight frame and cover, Standard Detail 65.52. 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 indicates that the cellar cannot be served.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SDP-23-026, SECTION 308 OF THE SPECIFICATIONS AT SITE PLAN STAGE.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *Alexander Brattini* 01/03/24
 HOWARD S.C.D. Date

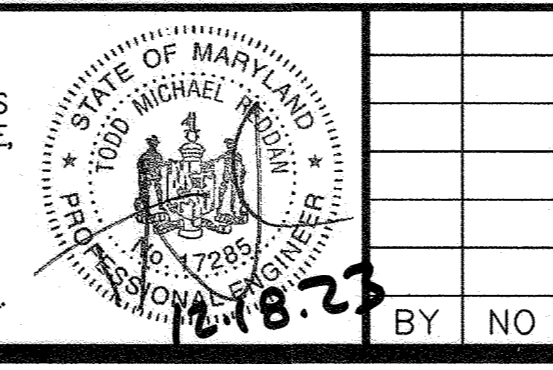
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Ann C. Pugh 12/27/23
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
Chad Clark 1-10-24
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

GLW
 PLANNING | ENGINEERING | SURVEYING
 3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20898 | GLWPA.COM
 PHONE: 301-421-4024 | BALTO: 410-880-1820 | DCBVA: 301-699-2524 | FAX: 301-421-4186

DESIGNED BY: LDD
 DRAWN BY: LDD
 CHECKED BY: TMR
 DATE: DEC. 2023
 G.L.W. No. 20089

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. 17285
 EXP. DATE: MARCH 17, 2025

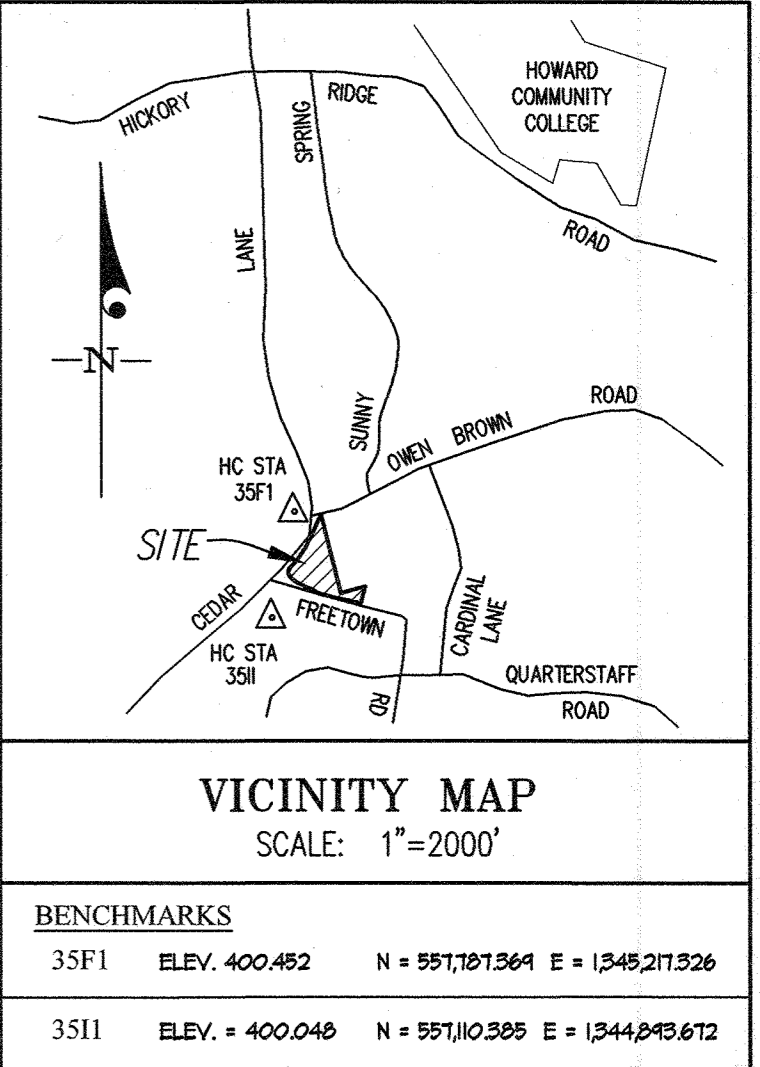


BY	NO	REVISION	DATE

COVER SHEET
 FINAL
 WATER AND SEWER
 600' SCALE MAP NO. 35 BLOCK NO. 18

PATUXENT COMMONS
 DOWNTOWN COLUMBIA
 CONTRACT No. 24-5212-D
 PROPOSED LOT 1
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 5

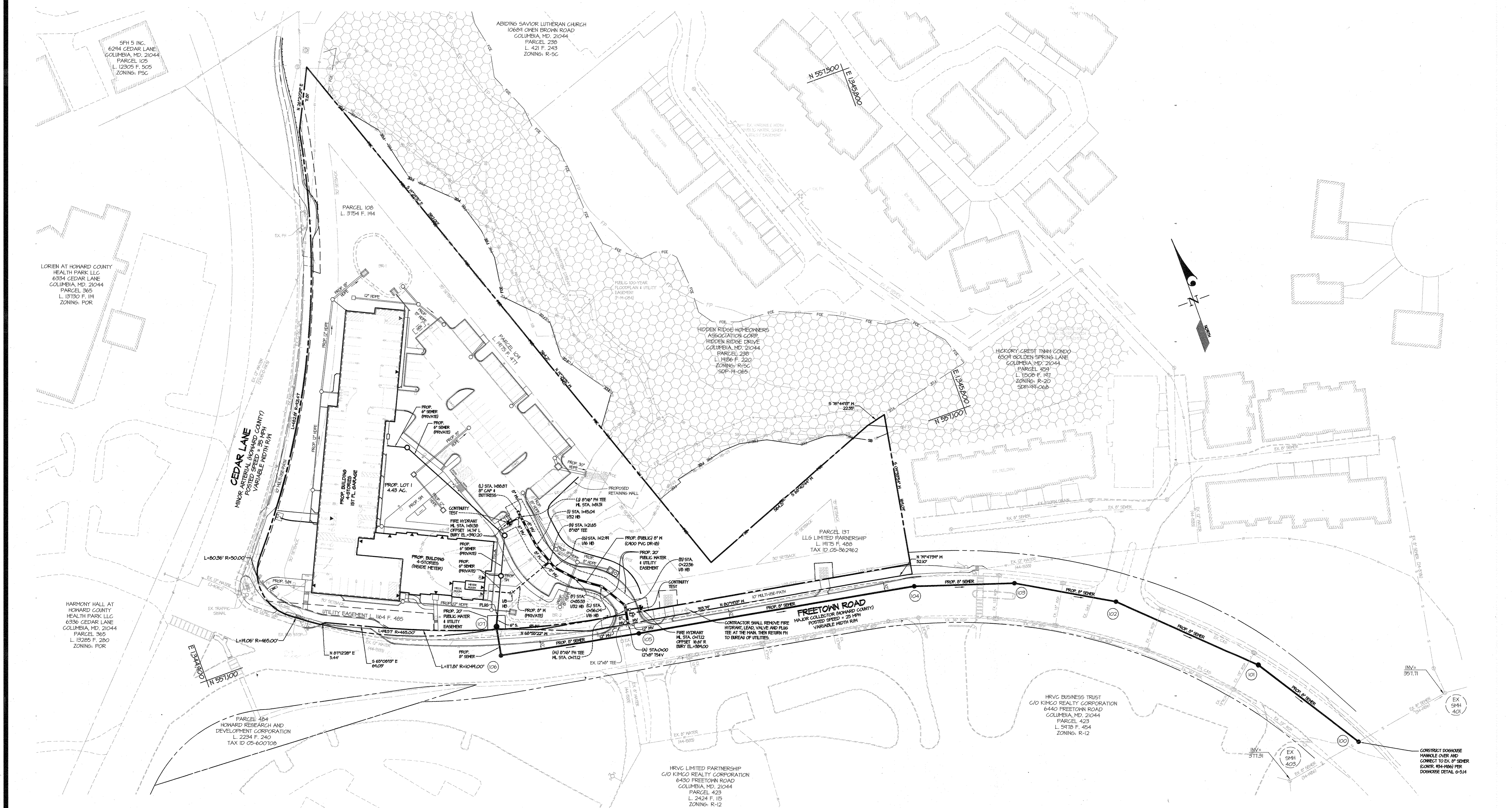
SCALE AS SHOWN
 SHEET 1 OF 3



ADC MAP 52 GRID E-9

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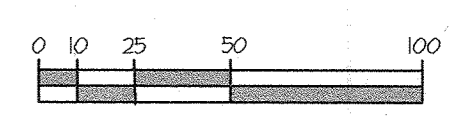
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 APPROVED: *Alexander Butcher* 01/03/24
 HOWARD S.C.D. Date

NOTE: THE PROPOSED FIRE HYDRANT 8"x6" TEE SHALL INCLUDE A CONCRETE BUTTRESS, PER DETAIL W-111. THE 12"x8" TEE SHALL ALSO INCLUDE A CONCRETE BUTTRESS, PER DETAIL W-3.24.



PREPARED FOR:
 PATUXENT LLC
 1330 NEW HAMPSHIRE AVE., NW
 SUITE 116
 WASHINGTON, DC 20036
 ATTN: ELIZABETH EVERHART
 (202)-223-3405

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
[Signature] 12/27/23
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
[Signature] 1/10/24
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

GLW
 PLANNING ENGINEERING SURVEYING
 3800 NATIONAL DRIVE | SUITE 250 | BURTONTOWN, MD 20886 | GLWPA.COM
 PHONE: 301-421-4024 | BALT: 410-890-1820 | DC&VA: 301-689-2524 | FAX: 301-421-4186

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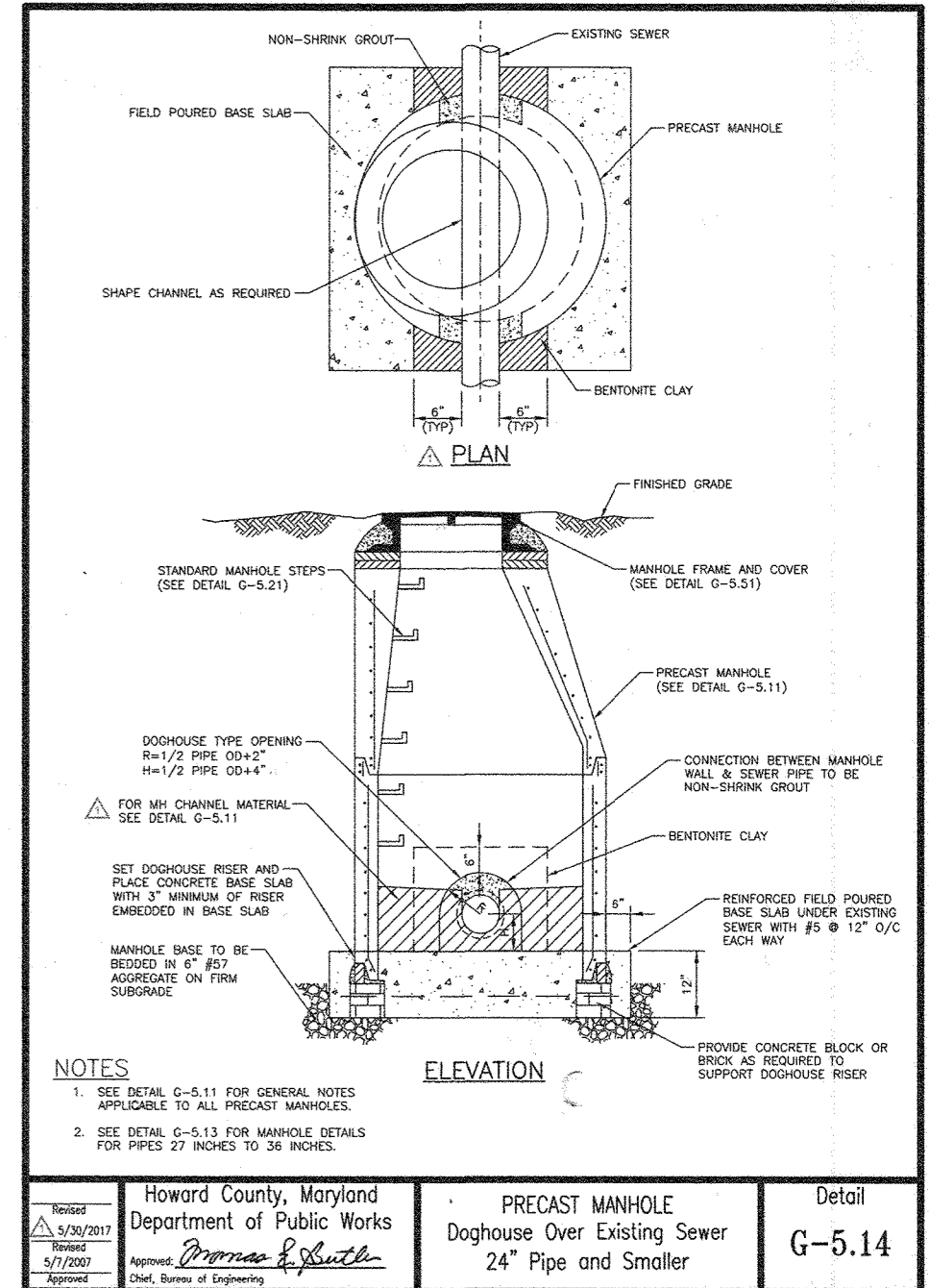
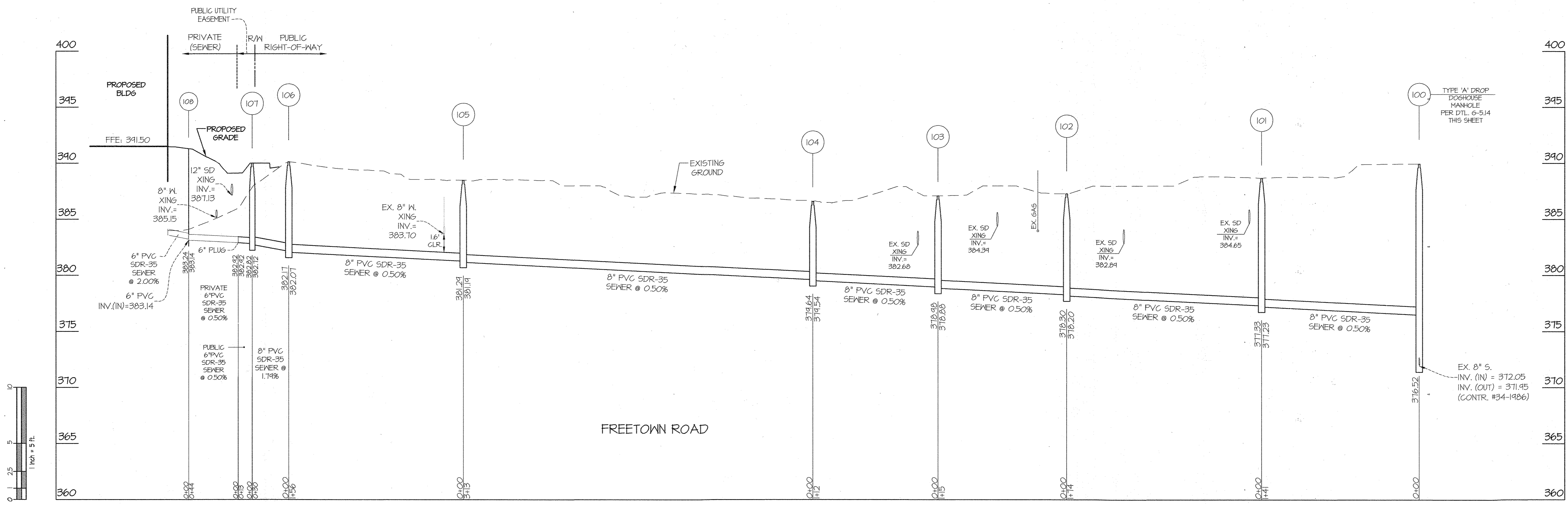


BY	NO	REVISION	DATE

FINAL WATER AND SEWER PLAN
 600' SCALE MAP NO. 35 BLOCK NO. 18

PATUXENT COMMONS
 DOWNTOWN COLUMBIA
 CONTRACT No. 24-5212-D
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 ELECTION DISTRICT No. 5

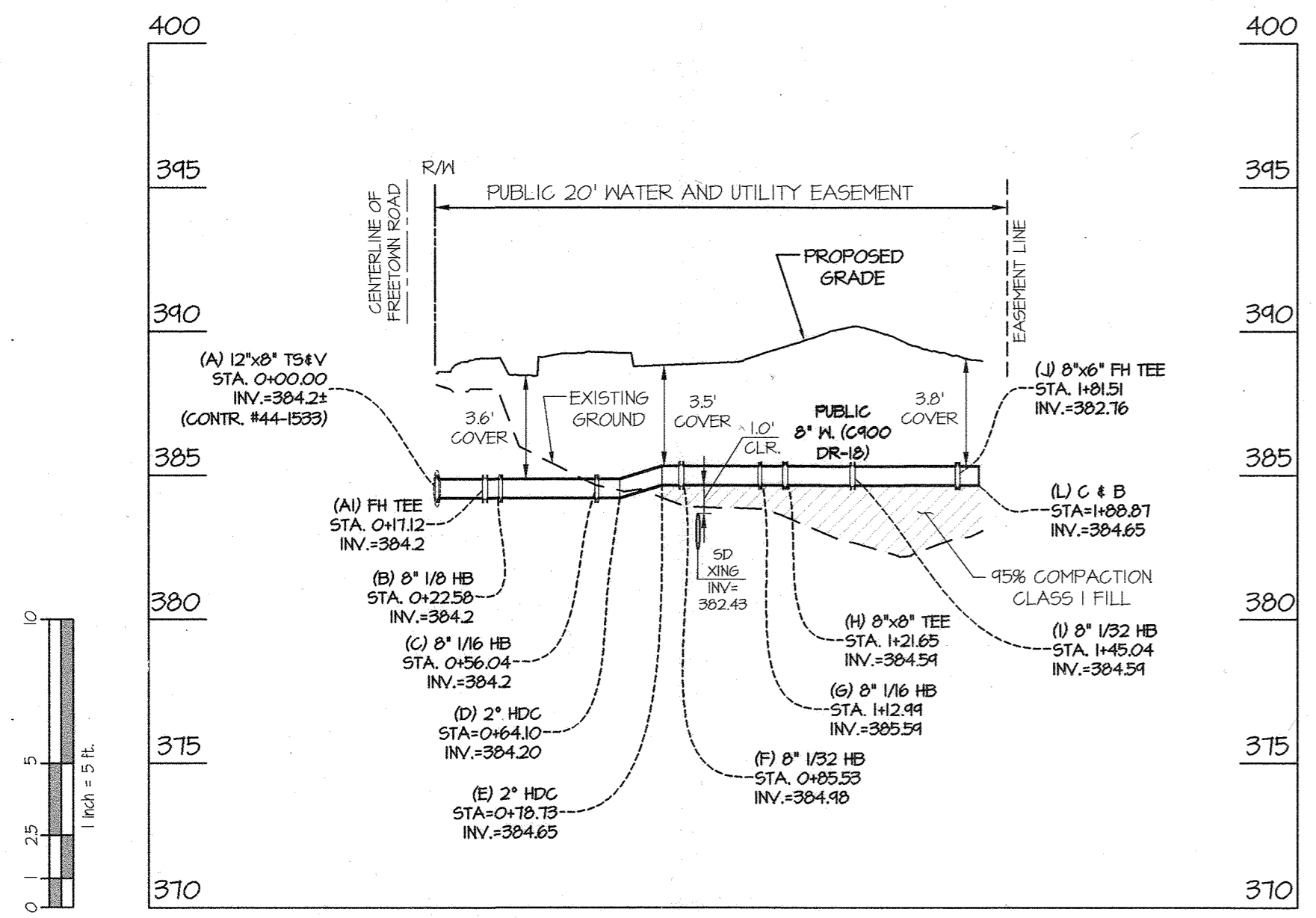
SCALE AS SHOWN
 SHEET 2 OF 3



PUBLIC SEWER PROFILE SCALES:
 HOR. 1" = 50'
 VERT. 1" = 5'

PUBLIC SEWER STRUCTURE TABLE							
NUMBER	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	STD. DETAIL	REMARKS
100	48" MH	N56600.0178, E134608.3245	316.52(0')		384.48	HO. CO. STD. G-514	TYPE 'A' DROP, DOGHOUSE MH
101	48" MH	N56710.4483, E1346012.5466	317.33(0')		388.64	HO. CO. STD. G-514	
102	48" MH	N56839.0081, E1345886.1115	318.30(0')	318.20(0')	387.31	HO. CO. STD. G-514	
103	48" MH	N56846.1442, E1345106.8101	318.48(0')	318.88(0')	387.11	HO. CO. STD. G-514	
104	48" MH	N56431.4452, E1345690.4258	319.64(0')		386.60	HO. CO. STD. G-514	
105	48" MH	N56405.4402, E1345372.4523	381.24(0')	381.14(0')	388.44	HO. CO. STD. G-514	
106	48" MH	N57015.1620, E1345215.6245	382.14(0')	382.04(0')	384.91	HO. CO. STD. G-514	
107	48" MH	N57042.4680, E1345223.4476	382.44(0')	382.34(0')	388.33	HO. CO. STD. G-514	

PUBLIC WATER APPURTENANCE SCHEDULE				
NAME	APPURTENANCE	WATER LINE STATION	NORTHING	EASTING
A	12"x8" TAPPING SLEEVE & VALVE	ML STA. 0+00	556440.5144	1345364.3128
AI	8"x6" FH TEE	ML STA. 0+11.2	557015.4153	1345361.4135
A2	FIRE HYDRANT	ML STA. 0+11.04	557012.3667	1345359.2137
B	1/8" HORIZONTAL BEND	ML STA. 0+22.56	557020.1675	1345368.4537
C	1/16" HORIZONTAL BEND	ML STA. 0+56.04	557044.4123	1345351.1605
D	2" HDC	ML STA. 0+64.10	557054.4112	1345344.6647
E	2" HDC	ML STA. 0+78.13	557062.8682	1345332.8841
F	1/32" HORIZONTAL BEND	ML STA. 0+85.53	557066.4010	1345327.14065
G	1/16" HORIZONTAL BEND	ML STA. 1+12.91	557087.1383	1345308.8542
H	8"x8" TEE	ML STA. 1+21.65	557045.2141	1345305.8410
I	1/32" HORIZONTAL BEND	ML STA. 1+45.04	557111.2548	1345291.2851
J	8"x6" FH TEE	ML STA. 1+81.51	557153.3145	1345242.4440
K	FIRE HYDRANT	ML STA. 1+81.58	557151.8491	1345271.2565
L	8" CAP & BUTTRESS	ML STA. 1+88.87	557160.5124	1345241.3084



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 ATTN: ELIZABETH EVERHART
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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Chris C. Beck 12/21/23
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
Chad Robinson 1.10.24
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FINAL WATER AND SEWER PROFILE
 600' SCALE MAP NO. 35 BLOCK NO. 18

PATUXENT COMMONS
 DOWNTOWN COLUMBIA
 CONTRACT No. 24-5212-D
 PROPOSED LOT 1
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 5

SCALE AS SHOWN
 SHEET 3 OF 3

L:\CADD\DRAWINGS\20089\PLANS BY GLW\WATER AND SEWER\Final Water and Sewer Plan\20089-WS-SHT 2 and 3.dwg
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