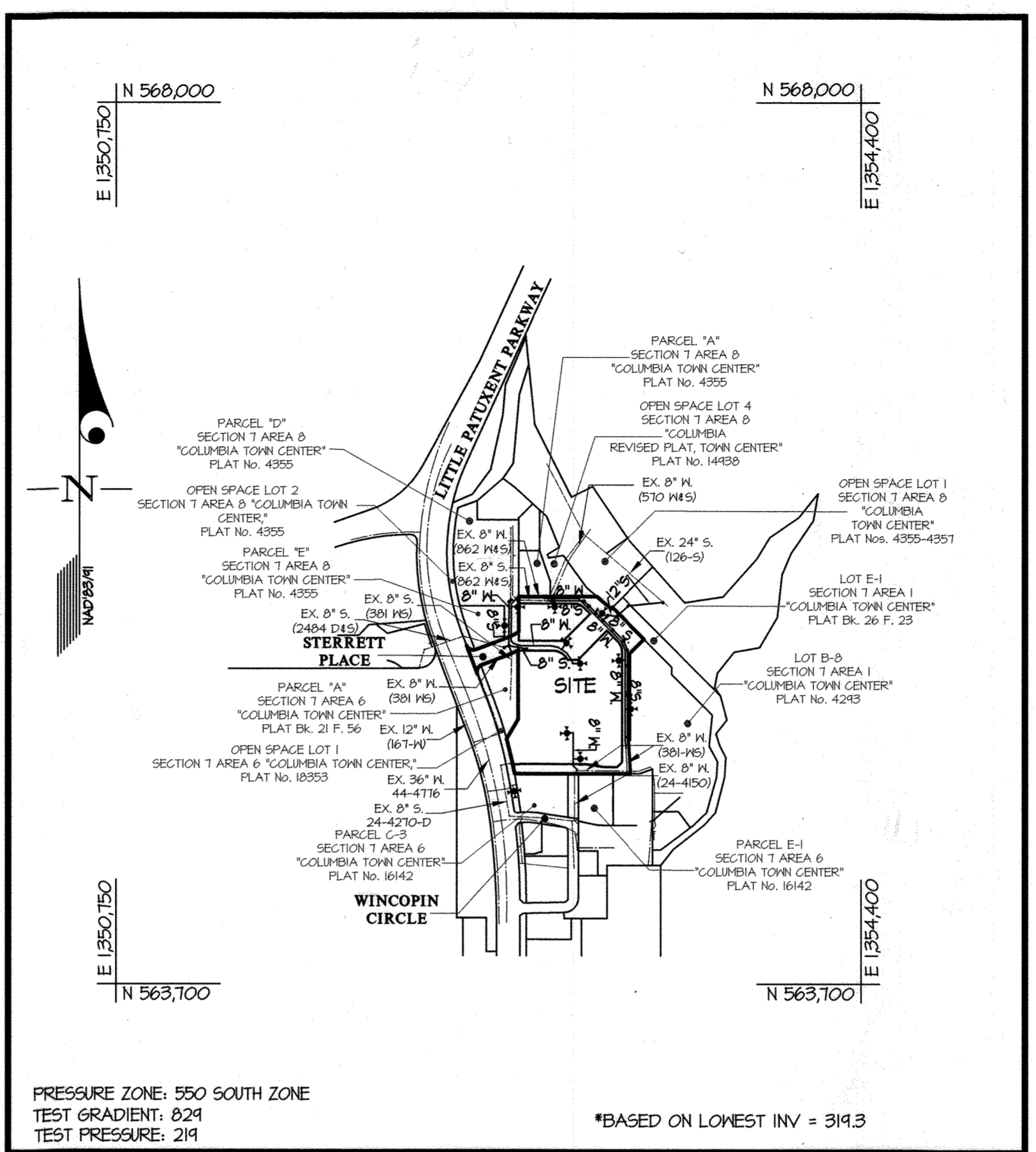


ITEMS	QUANTITIES ESTIMATED	AS-BUILT	
		QUANTITIES	MANUFACTURER/SUPPLIER
4" SEWER MAIN (SDR35 PVC)	34 LF		
8" SEWER MAIN (SDR35 PVC)	1,247 LF		
12" SEWER MAIN (SDR35 PVC)	194 LF		
12" SEWER MAIN (DIP) (CL 54)	76 LF		
6" D.I.P. (F.H. LEAD) (CL 54)	204 LF		
4" WATER MAIN (C400 PVC-D-10)	16 LF		
8" WATER MAIN (C400 PVC-D-10)	2,017 LF		
8" x 8" T.S.&V.	1 EA.		
8" x 6" T.S.&V.	1 EA.		
8" x 4" T.	1 EA.		
8" x 8" T.	7 EA.		
8" x 5" SWEEP	2 EA.		
8" x 0.5" HDC	3 EA.		
8" x 1" HDC	1 EA.		
8" x 1.5" HDC	4 EA.		
8" x 2.5" HDC	1 EA.		
8" x 3" HDC	2 EA.		
8" x 1/2" BEND	4 EA.		
8" x 1/2" BEND	14 EA.		
8" x 1/2" BEND	9 EA.		
8" CAP	2 EA.		
8" x 6" F.H.T.&V.	11 EA.		
4" V.	1 EA.		
8" V.	8 EA.		
FIRE HYDRANT	11 EA.		
CONTINUITY TEST STATION	11 EA.		
4" MANHOLE	10 EA.		
T MANHOLE	1 EA.		
4" MANHOLE (TYPE 'B')	8 EA.		
NAME OF UTILITY CONTRACTOR:			
SURVEY AND DRAFTING DIV.	CHECKBOX:.....		
	AS-BUILT DATE:.....		



PRESSURE ZONE: 550 SOUTH ZONE
TEST GRADIENT: 0.24
TEST PRESSURE: 214

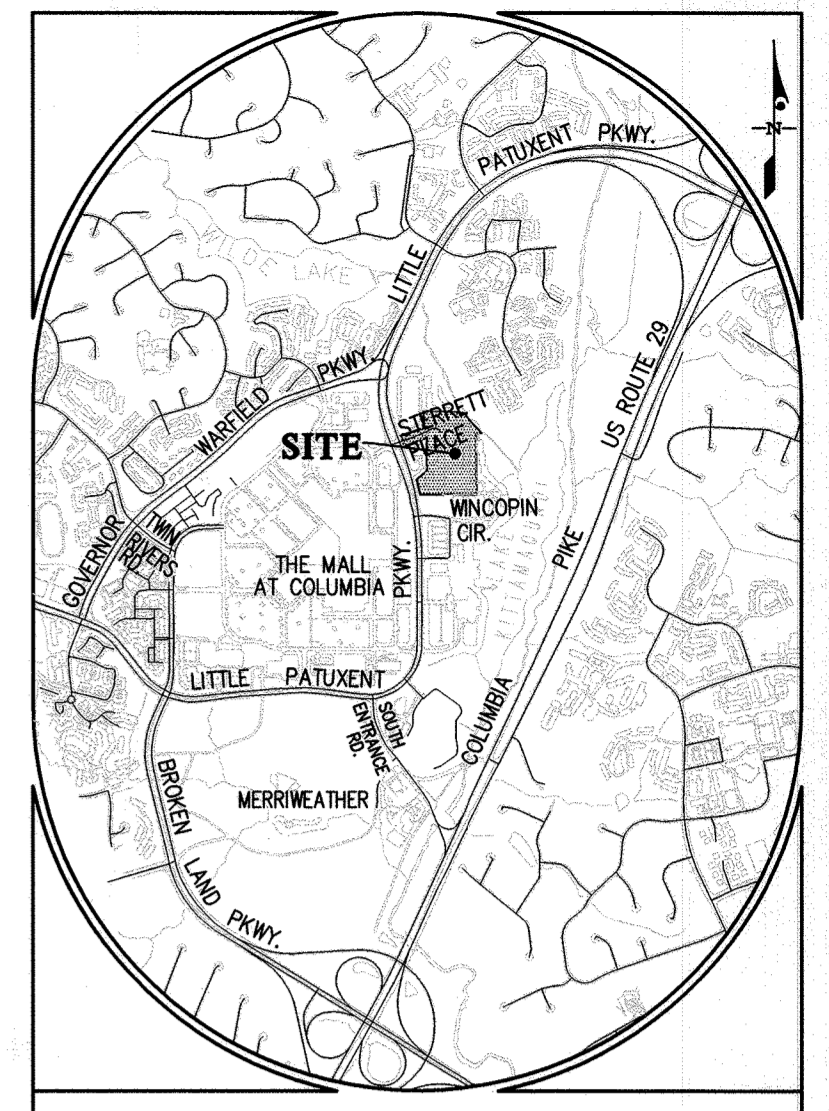
*BASED ON LOWEST INV = 319.3

BENCHMARKS
BM #1 306A ELEV. = 339.844 N = 566,053.514 E = 1,352,171.604
BM #2 36AA ELEV. = 359.163 N = 562,804.842 E = 1,344,906.240

SCALE: 1"=600'

TYPE OF BUILDING	RESIDENTIAL/COMMERCIAL
NUMBER OF UNITS	701 UNITS/25,000 S.F. COMMERCIAL
NUMBER OF S.H.C.'s	4
NUMBER OF W.H.C.'s	4
AREA OF COMMERCIAL LOT/PARCEL	11.34 ACRES
SEWER SHED	LITTLE PATUXENT
PUMPING STATION	N/A

- 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 existing aerial topography performed on May, 2011 by McKenzie-Snyder.
 - Horizontal and Vertical Survey Controls:
The coordinates shown on the drawings are based on Maryland State Reference System NAD '83/11 as projected by Howard County Geodetic Control Stations No. 306A and No. 36AA. 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).....410-657-9710
 BGE (Emergency).....410-685-0123
 Bureau of Utilities.....410-313-4400
 Colonial Pipeline Co.....410-745-1340
 Miss Utility.....1-800-251-TITTY
 State Highway Administration.....410-531-5935
 Verizon.....1-800-143-0038
 - 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 connections. The approval of these drawings will constitute compliance with DPW requirements per Section 19.114(a) of the Howard County Code.

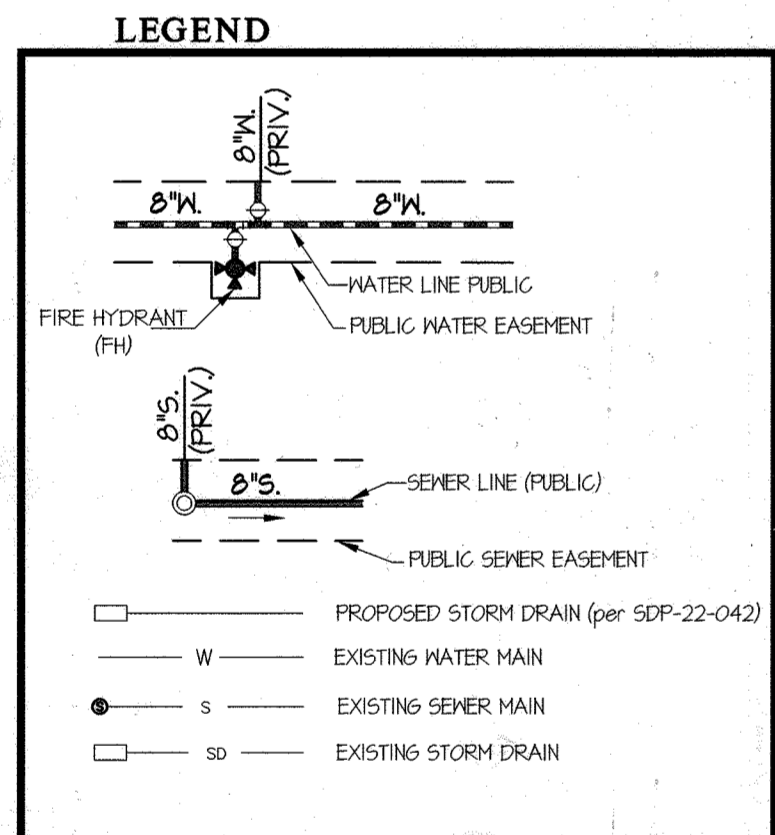


ADG MAP 33 GRID B-1

HC CONTROL STATIONS

306A
NORTHING: 566,053.514
EASTING: 1,352,171.604
ELEVATION: 339.844
(LATEST ADJ. FEB. 2014)

36AA
NORTHING: 562,804.842
EASTING: 1,344,906.240
ELEVATION: 359.163
(LATEST ADJ. FEB. 2014)



SHEET INDEX

- COVER SHEET
- WATER & SEWER PLAN
- WATER & SEWER PROFILES
- WATER & SEWER PROFILES & DETAILS
- WATER & SEWER PROFILES
- DEMOLITION PLAN

CONTRACT No. 24-5196-D
LAKEFRONT NORTH - PARCELS A, B & C
DOWNTOWN COLUMBIA
LAKEFRONT NEIGHBORHOOD,
A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-1, & LOT D-1,
SECTION 7, AREA 6 PARCELS B, D-1, G & H
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

WAIVERS

ON FEBRUARY 5, 2022 DMV2-22-015, A WAIVER TO HOWARD COUNTY DESIGN MANUAL VOLUME II - WATER AND SEWER WAS APPROVED. THE WAIVER APPROVAL WAS SPLIT INTO TWO SECTIONS.

- A WAIVER TO SECTION SECTION 5.3.A.3 AND SECTION 5.4.B.4 TO ALLOW PRIVATE STORM DRAIN WITHIN THE A PUBLIC EASEMENT WAS CONDITIONALLY APPROVED PROVIDED THAT THE 5-FOOT MINIMUM HORIZONTAL CLEARANCE BETWEEN COUNTY WATER/SEWER PIPELINES AND STRUCTURES IS PROVIDED AND MAINTAINED FROM THE PRIVATE STORM DRAIN SYSTEM.
- A WAIVER TO SECTION 5.4.B.5, WHICH REQUIRES 10-FOOT HORIZONTAL CLEARANCE BETWEEN THE WATER EASEMENT AND PERMANENT STRUCTURES WAS APPROVED TO ALLOW SEWER WITHIN A CASING THROUGH THE RETAINING WALLS (NOTE THIS SECTION IS NO LONGER APPLICABLE. SEE NOTE #2 BELOW).

ON JUNE 9, 2022 DMV2-22-025, A WAIVER TO HOWARD COUNTY DESIGN MANUAL VOLUME II - WATER AND SEWER WAS APPROVED. THE WAIVER APPROVAL WAS SPLIT INTO TWO SECTIONS.

- A WAIVER TO SECTION SECTION 5.4.B.4 TO ALLOW A STRUCTURE WITHIN 10 FEET OF A PUBLIC HYDRANT EASEMENT WAS CONDITIONALLY APPROVED PROVIDED THAT CLEAR OBSTRUCTION MARKINGS NOTED IN DMV4 DETAILS W-12 AND W-13 ARE PROVIDED AND MAINTAINED WITHIN THE EASEMENT ITSELF AND THE FIRE HYDRANT CAN INDEED BE INSTALLED IN CONFORMANCE WITH DMV4 DETAIL W-11 WHEN SET EITHER BEHIND THE CURB (5' TO CENTER) OR BEHIND THE SIDEWALK (2' FROM EDGE TO CENTER).
- A WAIVER TO SECTION 5.3.A.2, TO ALLOW A PRIVATE SEWER EASEMENT WAS APPROVED ALONG WITH THE ASSOCIATED CLEARANCE WAIVERS INHERENT WITH EASEMENTS. THE PRIVATE EASEMENT SHALL BE RECORDED AND 20 FEET IN WIDTH. THE OWNERSHIP AND MAINTENANCE RESPONSIBILITY OF THE SUBJECT BUILDING SEWER HOUSE CONNECTION WITHIN THE PRIVATE EASEMENT SHALL BE THE PROPERTY OWNERS. THE DEVIATION POINT OF PRIVATE VS. PUBLIC MAINTENANCE SHALL BE CLEARLY INDICATED ON THE APPLICABLE WATER AND SEWER CONTRACT DRAWINGS.

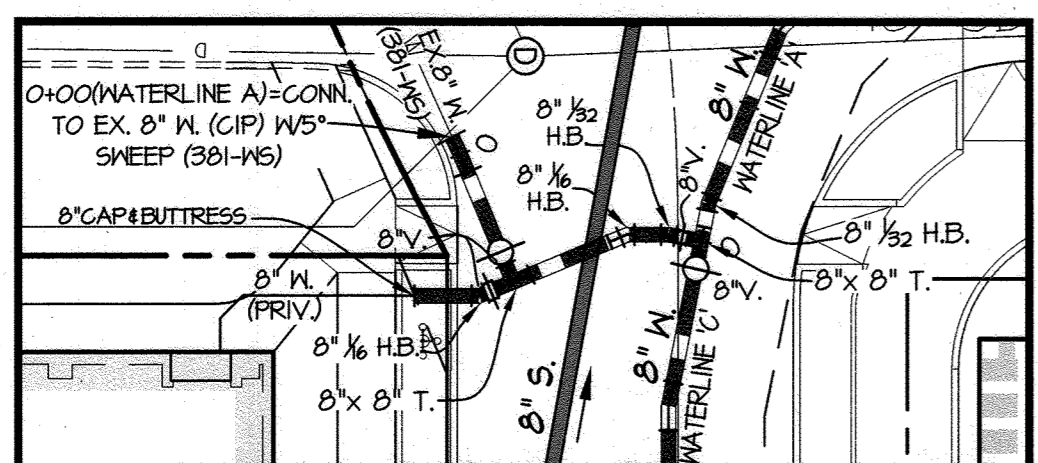
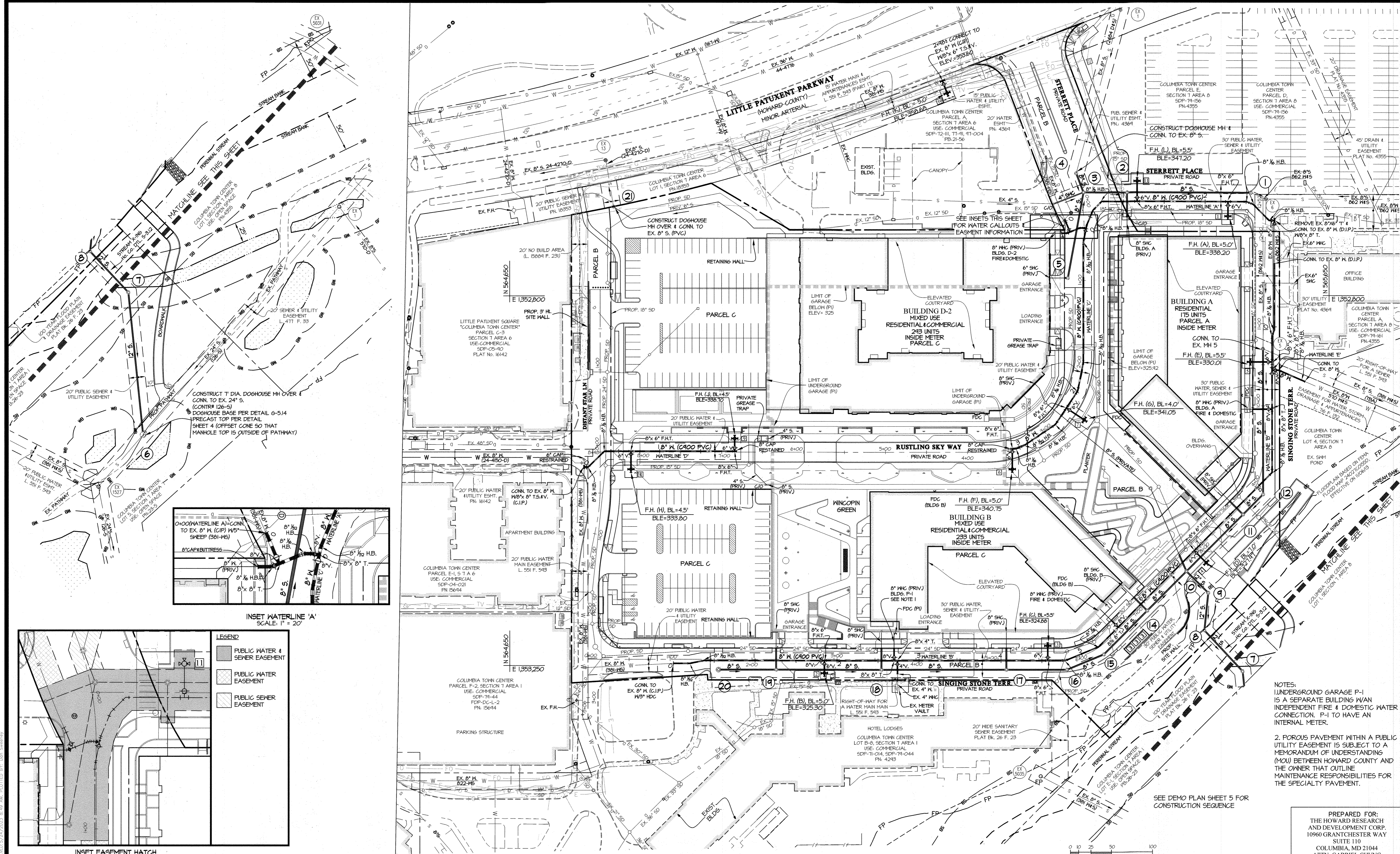
SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SDP-22-042, SECTION 308 OF THE SPECIFICATIONS AT SITE PLAN STAGE.

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

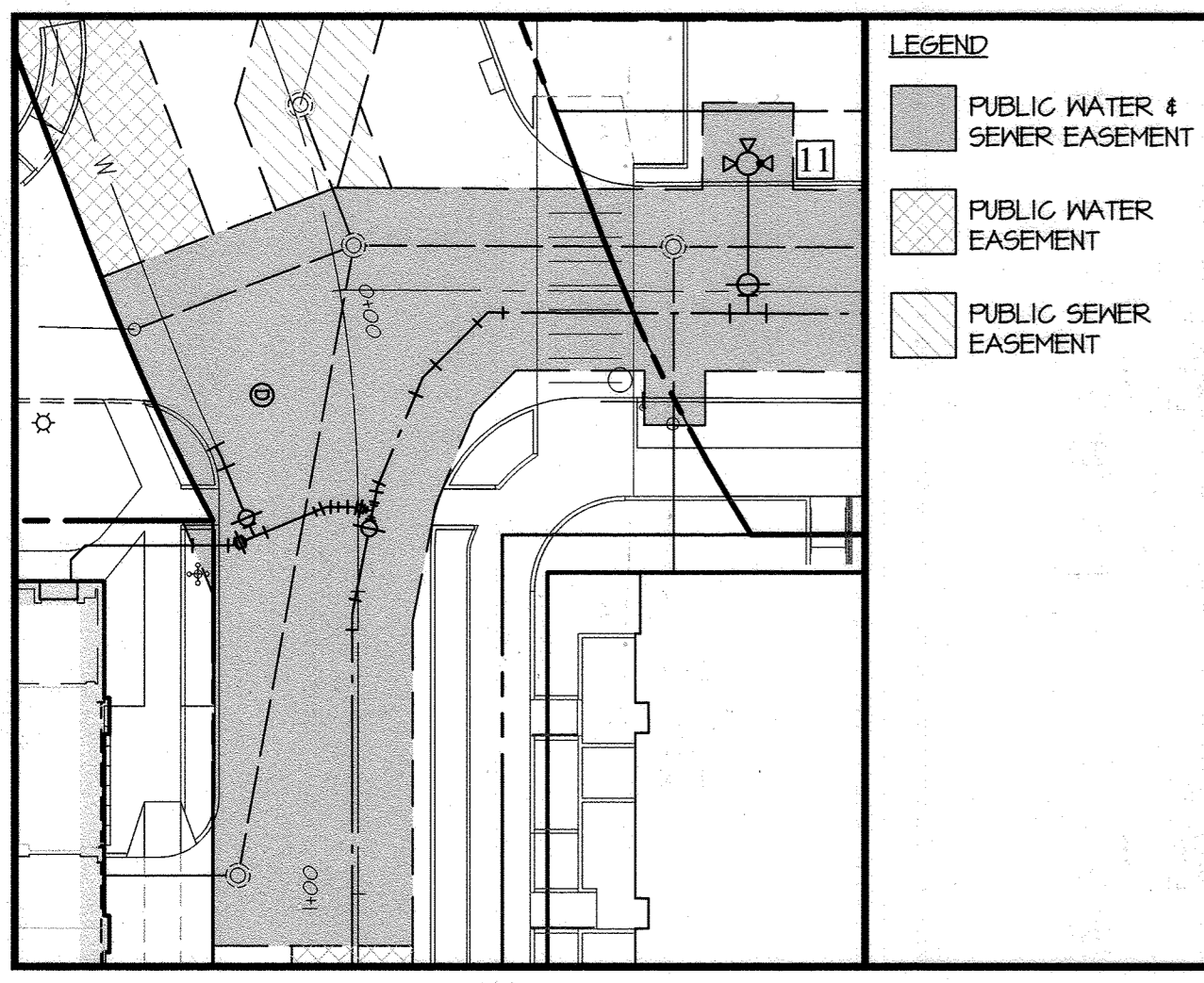
APPROVED:
Alexander Butcher 06/07/23
HOWARD S.C.D. Date

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE: 5-3-23	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 6-20-23	GLW PLANNING ENGINEERING SURVEYING 3808 NATIONAL DRIVE SUITE 250 BURTONSVILLE, MD 20886 GLWPA.COM PHONE: 301-421-4024 FAX: 301-421-4188	DESIGNED BY: WJ DATE: MAY, 2023 DRAWN BY: WJ CHECKED BY: G.L.W. No. DATE: 21014 DDD	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. 12975 EXP. DATE: MAY 26, 2024 <i>5/23/23</i>	BY NO REVISION DATE 600' SCALE MAP NO. 30 BLOCK NO. 20	LAKEFRONT NORTH - PARCELS A, B & C DOWNTOWN COLUMBIA CONTRACT NO. 24-5196-D LAKEFRONT NEIGHBORHOOD A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-1, & LOT D-1, SECTION 7, AREA 6 PARCELS B, D-1, G & H HOWARD COUNTY, MARYLAND ELECTION DISTRICT NO. 5	SCALE AS SHOWN SHEET 1 OF 6
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L:\CAD\DRAWINGS\2014\PLANS BY GUY WAT - SEW/UTL - WS\2014-WS-1-C5.dwg
 PLOTTED: 5/24/2023 10:30 AM, LAST SAVED: 5/24/2023 10:29 AM, PLOTTED BY: Dan Severney



INSET WATERLINE 'A'
SCALE: 1" = 20'



INSET EASEMENT HATCH
SCALE: 1" = 30'

- LEGEND**
- PUBLIC WATER & SEWER EASEMENT
 - PUBLIC WATER EASEMENT
 - PUBLIC SEWER EASEMENT

NOTES:
 1. UNDERGROUND GARAGE P-1 IS A SEPARATE BUILDING WITH AN INDEPENDENT FIRE & DOMESTIC WATER CONNECTION. P-1 TO HAVE AN INTERNAL METER.
 2. POROUS PAVEMENT WITHIN A PUBLIC UTILITY EASEMENT IS SUBJECT TO A MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN HOWARD COUNTY AND THE OWNER THAT OUTLINE MAINTENANCE RESPONSIBILITIES FOR THE SPECIALTY PAVEMENT.

SEE DEMO PLAN SHEET 5 FOR CONSTRUCTION SEQUENCE

PREPARED FOR:
 THE HOWARD RESEARCH
 AND DEVELOPMENT CORP.
 10960 GRANTCHESTER WAY
 SUITE 110
 COLUMBIA, MD 21044
 ATTN: GABRIEL CHUNG
 410-964-4800

DEPARTMENT OF
 PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Gabe Chung
 5-31-23
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF
 PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

David Smith
 6-20-23
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

GLW
 PLANNING | ENGINEERING | SURVEYING

3808 NATIONAL DRIVE | SUITE 280 | BURTONSVILLE, MD 20886 | GLWPA.COM
 PHONE: 301-421-4024 | BALT: 410-880-1820 | DCVA: 301-989-2524 | FAX: 301-421-4186

DESIGNED BY:
DDS

DRAWN BY:
WJ

CHECKED BY:
CKG

DATE
MAY, 2023

G.L.W. No.
21014

EXP. DATE:
MAY 26, 2024

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. 12975

STATE OF MARYLAND
 PROFESSIONAL ENGINEER

BY	NO	REVISION	DATE

FINAL WATER & SEWER PLAN

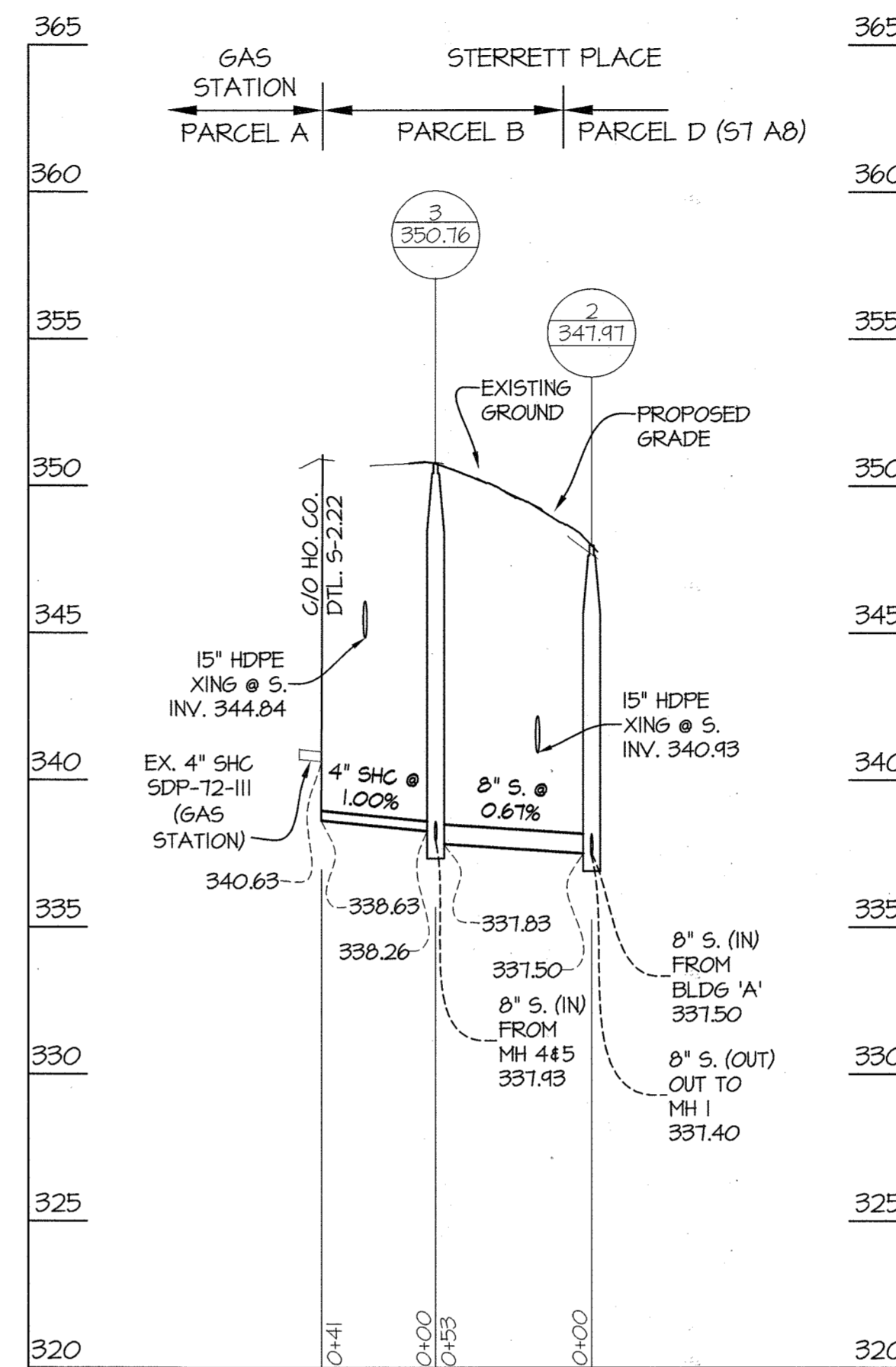
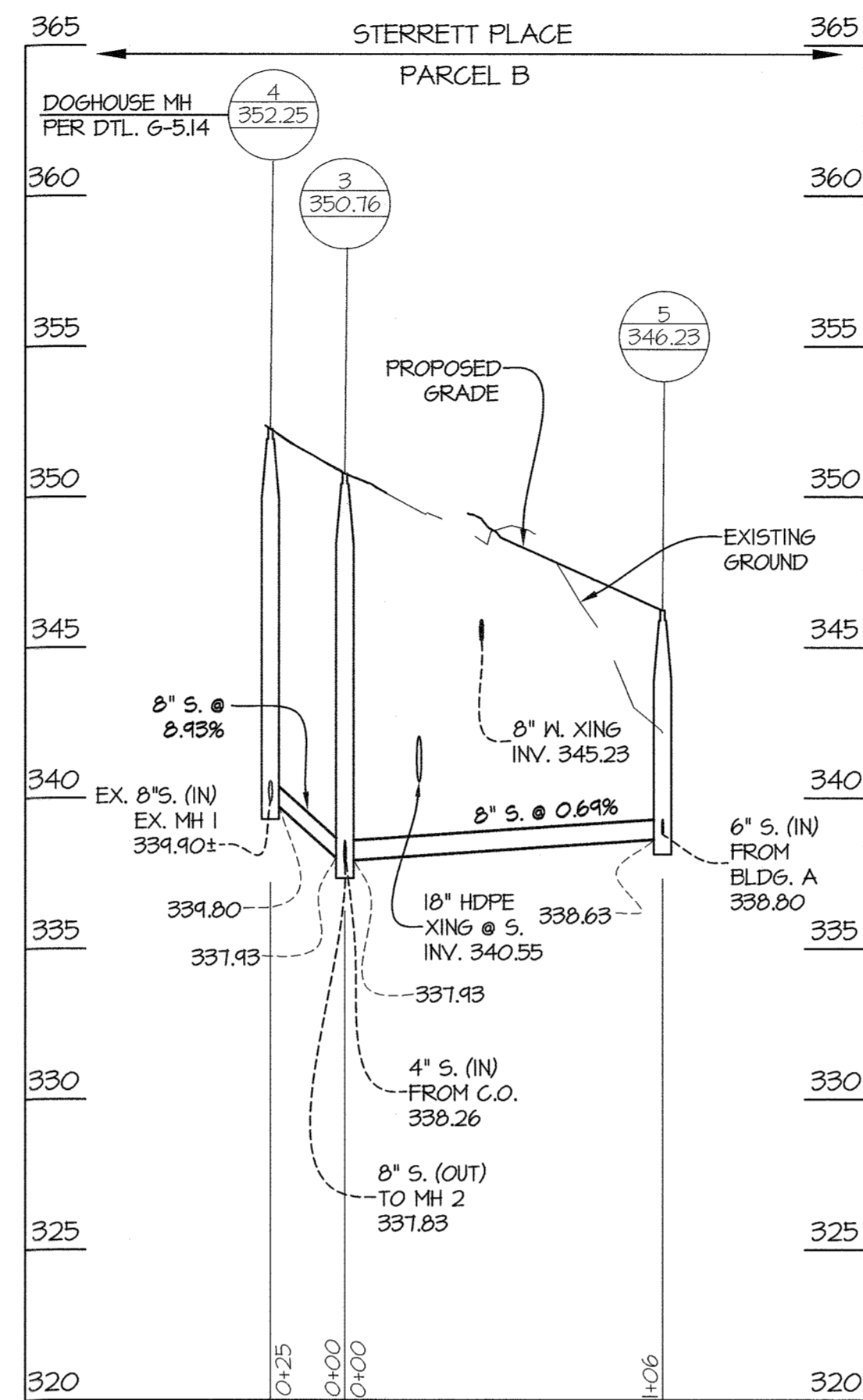
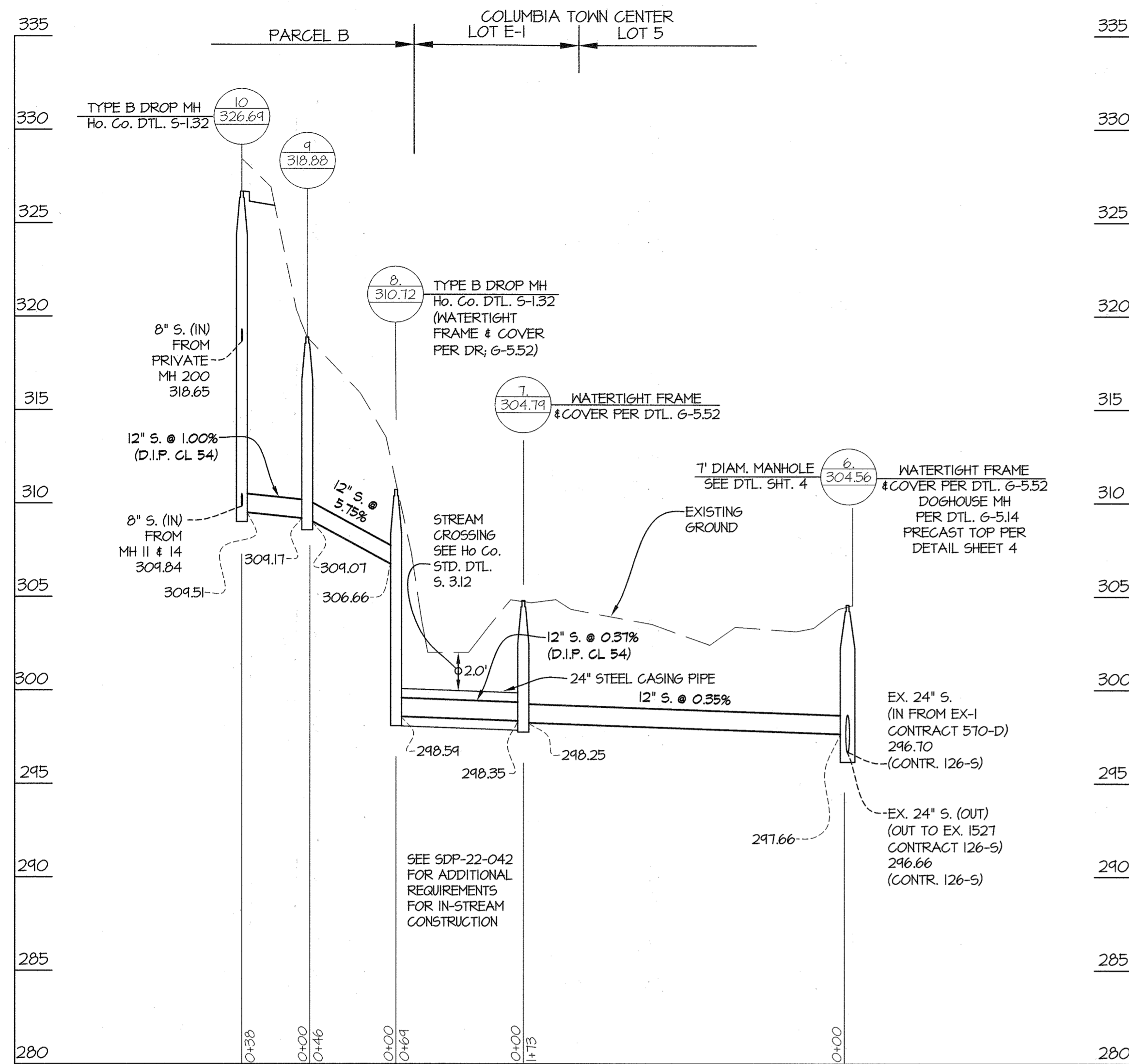
600' SCALE MAP NO. 30 BLOCK NO. 20

LAKEFRONT NORTH - PARCELS A, B & C
 DOWNTOWN COLUMBIA
 CONTRACT NO. 24-5196-D
 LAKEFRONT NEIGHBORHOOD
 A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-1, & LOT D-1,
 SECTION 7 AREA 6 PARCELS B, D, G & H
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT NO. 5

SCALE
 AS SHOWN

SHEET
 2 OF 6

LAKEFRONT NEIGHBORHOOD PARCELS A, B, & C WATER & SEWER PLAN - REV 5/31/23 - WJ, DDS
 PLOTTED: 05/22/2023 10:52 AM, PLOT: 05/22/2023 10:52 AM, PLOTTED BY: Don Stummey

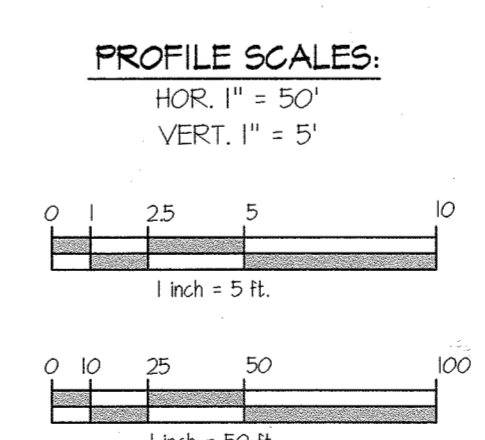
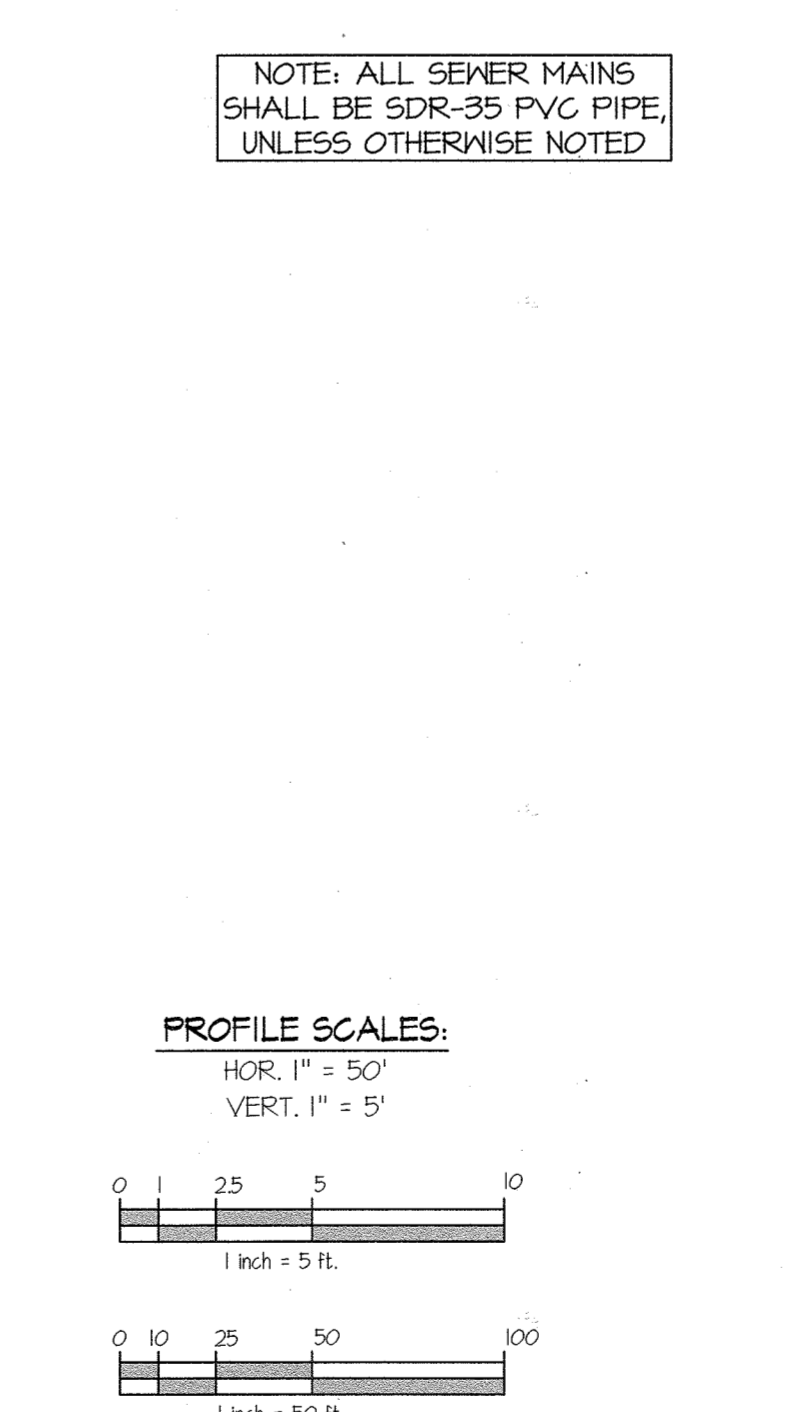
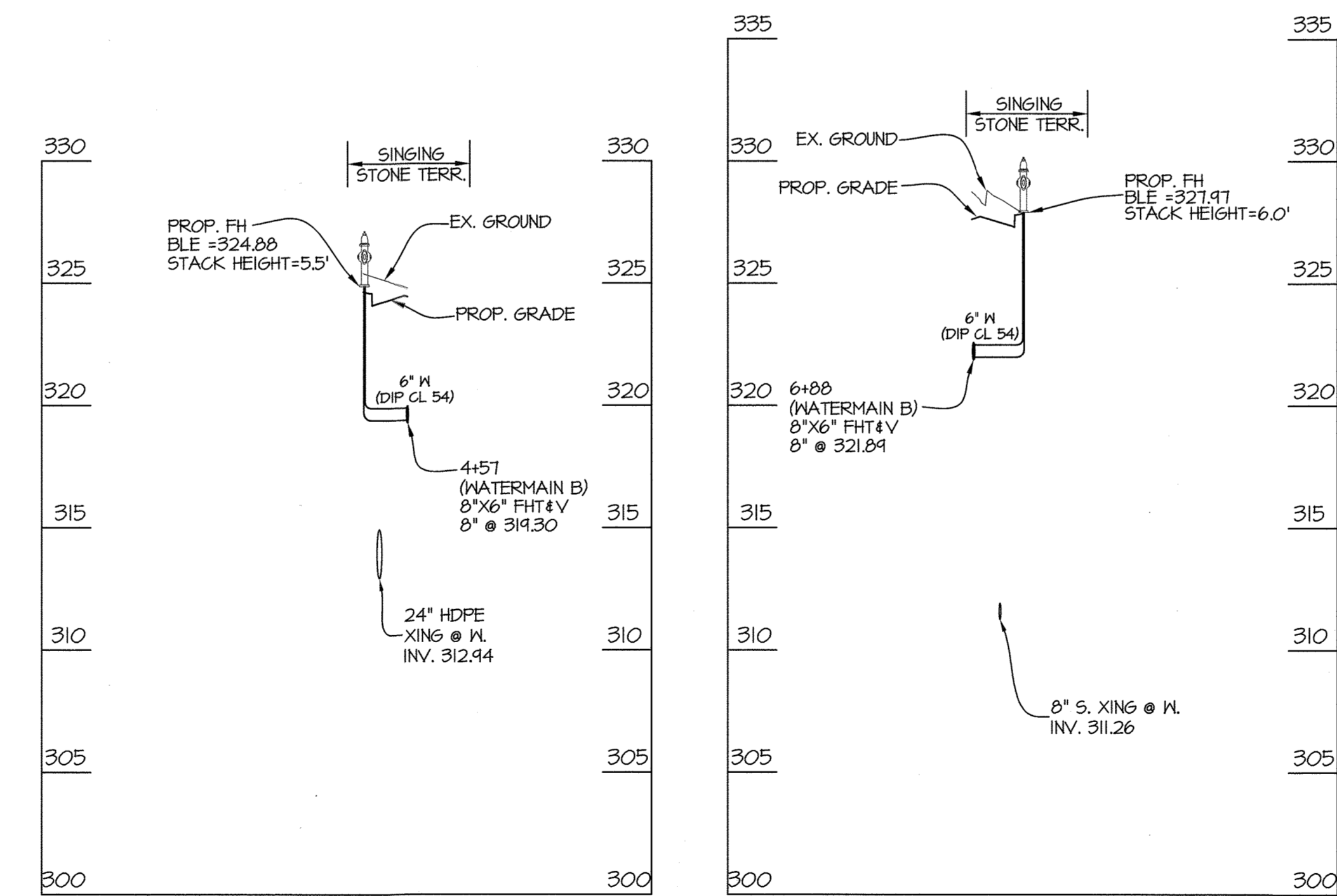
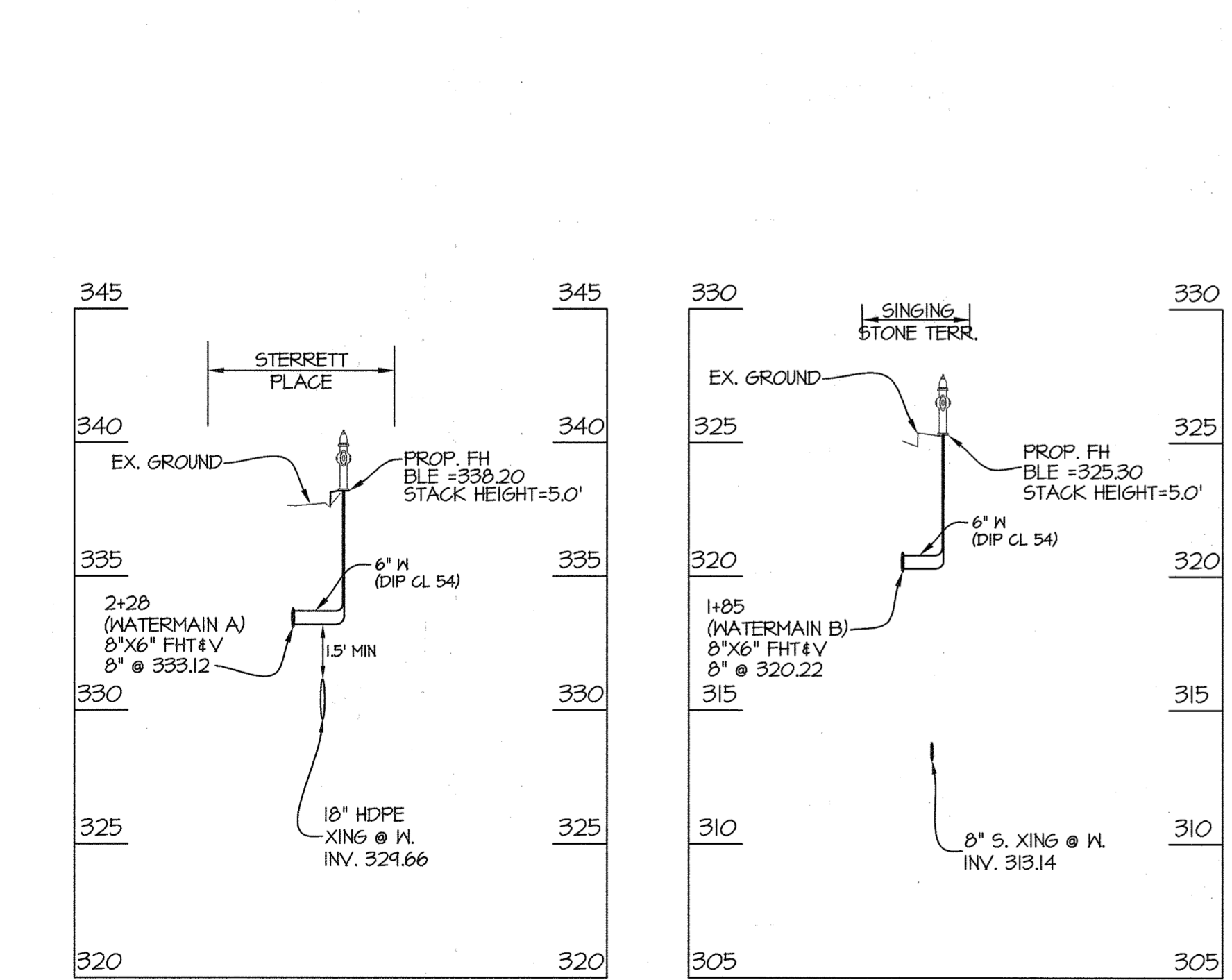


FITTING CHART			
STATION	FITTING	NAD '83/'91 COORDINATES	
WATERLINE 'A'			
0+00	5" SNEEP	N 565,328.23	E 1,352,109.16
0+14	8" X 8" T	N 565,333.71	E 1,352,122.40
0+27	8" 1/8" HB	N 565,345.61	E 1,352,117.44
0+31	8" 1/32 HB	N 565,344.84	E 1,352,117.44
0+35	8" X 8" T	N 565,353.31	E 1,352,110.17
0+34	8" 1/32 HB	N 565,354.10	E 1,352,114.23
0+54	8" 1/8" HB	N 565,361.60	E 1,352,096.11
0+74	8" 1/8" HB	N 565,372.30	E 1,352,085.33
1+04	15" HDG (VERT)	SEE PROFILE (SHEET 5)	
1+55	05" HDG (VERT)	SEE PROFILE (SHEET 5)	
1+17	8" X 6" FHT	N 565,415.54	E 1,352,085.44
2+28	8" X 6" FHT	N 565,526.44	E 1,352,085.84
2+51	8" 1/8" HB	N 565,544.26	E 1,352,066.00
2+54	8" 1/8" HB	N 565,557.36	E 1,352,084.22
2+87	8" 1/8" HB	N 565,576.73	E 1,352,108.75
2+43	8" X 8" T	N 565,583.14	E 1,352,108.75
WATERLINE 'B'			
0+00	8" 3" HDC	N 564,844.48	E 1,353,247.68
0+20	8" 1/32 HB	N 564,864.53	E 1,353,247.68
0+38	8" 1/32 HB	N 564,886.77	E 1,353,244.24
1+05	8" X 6" FHT	N 565,033.74	E 1,353,244.24
2+52	05" HDG (VERT)	SEE PROFILE (SHEET 5)	
2+10	8" X 8" T	N 565,110.76	E 1,353,244.24
2+74	8" X 4" T	N 565,122.78	E 1,353,244.24
4+57	8" X 6" FHT	N 565,306.34	E 1,353,244.25
4+78	8" 1/8" HB	N 565,321.50	E 1,353,244.24
5+23	8" 1/8" HB	N 565,368.47	E 1,353,227.27
5+56	8" X 8" T	N 565,342.24	E 1,353,203.46
6+22	10" HDG (VERT)	SEE PROFILE (SHEET 5)	
6+88	8" X 6" FHT	N 565,485.01	E 1,353,110.67
7+04	15" HDG (VERT)	SEE PROFILE (SHEET 5)	
8+22	8" 1/8" HB	N 565,580.11	E 1,353,015.44
8+56	15" HDG (VERT)	SEE PROFILE (SHEET 5)	
8+44	8" X 8" T	N 565,580.11	E 1,352,938.40
9+47	8" X 8" T	N 565,580.11	E 1,352,840.47
9+57	8" X 6" FHT	N 565,580.11	E 1,352,840.40
9+88	8" 1/8" HB	N 565,580.11	E 1,352,844.25
9+46	8" 1/8" HB	N 565,583.15	E 1,352,841.43
10+53	8" 1/32 LVB	SEE PROFILE (SHEET 5)	
10+74	8" 1/32 LVB	SEE PROFILE (SHEET 5)	
WATERLINE 'C'			
0+17	8" 1/32 HB	N 565,344.91	E 1,352,735.30
1+63	8" 1/32 HB	N 565,344.91	E 1,352,801.16
1+44	8" 1/8" HB	N 565,342.49	E 1,352,915.91
2+24	8" X 6" FHT	N 565,324.17	E 1,352,436.60
2+48	8" 1/8" HB	N 565,315.65	E 1,352,456.83
2+43	8" 1/32 HB	N 565,271.84	E 1,352,482.10
3+04	8" 1/8" HB	N 565,267.12	E 1,352,486.25
3+04	8" X 6" FHT	N 565,263.03	E 1,352,486.25
3+11	8" CAP	N 565,261.03	E 1,352,486.25
WATERLINE 'D'			
0+00	8" X 8" T S. 4 V.	N 564,740.65	E 1,353,008.76
0+05	8" 1/8" HB	N 564,745.61	E 1,353,008.81
0+33	8" 1/8" HB	N 564,765.36	E 1,352,484.50
0+52	15" HDG (VERT)	SEE PROFILE (SHEET 5)	
0+65	8" X 6" FHT	N 564,741.74	E 1,352,484.50
1+05	05" HDG (VERT)	SEE PROFILE (SHEET 5)	
1+41	8" X 6" FHT	N 564,424.25	E 1,352,484.44
1+44	8" CAP	N 564,426.77	E 1,352,484.50
WATERLINE 'E'			
0+00	25" HDG (VERT)	SEE PROFILE (SHEET 5)	
0+06	30" HDG (VERT)	SEE PROFILE (SHEET 5)	
0+24	5" SNEEP (VERT)	SEE PROFILE (SHEET 5)	
0+35	8" 1/8" HB	N 565,588.27	E 1,352,841.04
WHC BLDG D-2 (PUBLIC)			
0+04	8" 1/8" HB	N 565,330.16	E 1,352,123.86

SEWER MH CHART	
MH	NAD '83/'91 COORDINATES
1	N 565,564.38 E 1,352,675.05
2	N 565,403.40 E 1,352,674.44
3	N 565,350.17 E 1,352,674.24
4	N 565,341.34 E 1,352,651.01
5	N 565,331.03 E 1,352,178.40
6	N 565,561.94 E 1,353,430.64
7	N 565,543.94 E 1,353,251.46
8	N 565,447.33 E 1,353,207.63
9	N 565,502.05 E 1,353,162.04
10	N 565,475.45 E 1,353,135.74
11	N 565,544.60 E 1,353,066.60
12	N 565,564.11 E 1,353,042.68
14	N 565,427.54 E 1,353,183.66
15	N 565,374.70 E 1,353,236.54
16	N 565,324.64 E 1,353,255.24
17	N 565,255.68 E 1,353,255.23
18	N 565,103.32 E 1,353,255.24
19	N 564,474.86 E 1,353,255.24
20	N 564,404.52 E 1,353,255.22
21	N 564,776.50 E 1,352,641.83

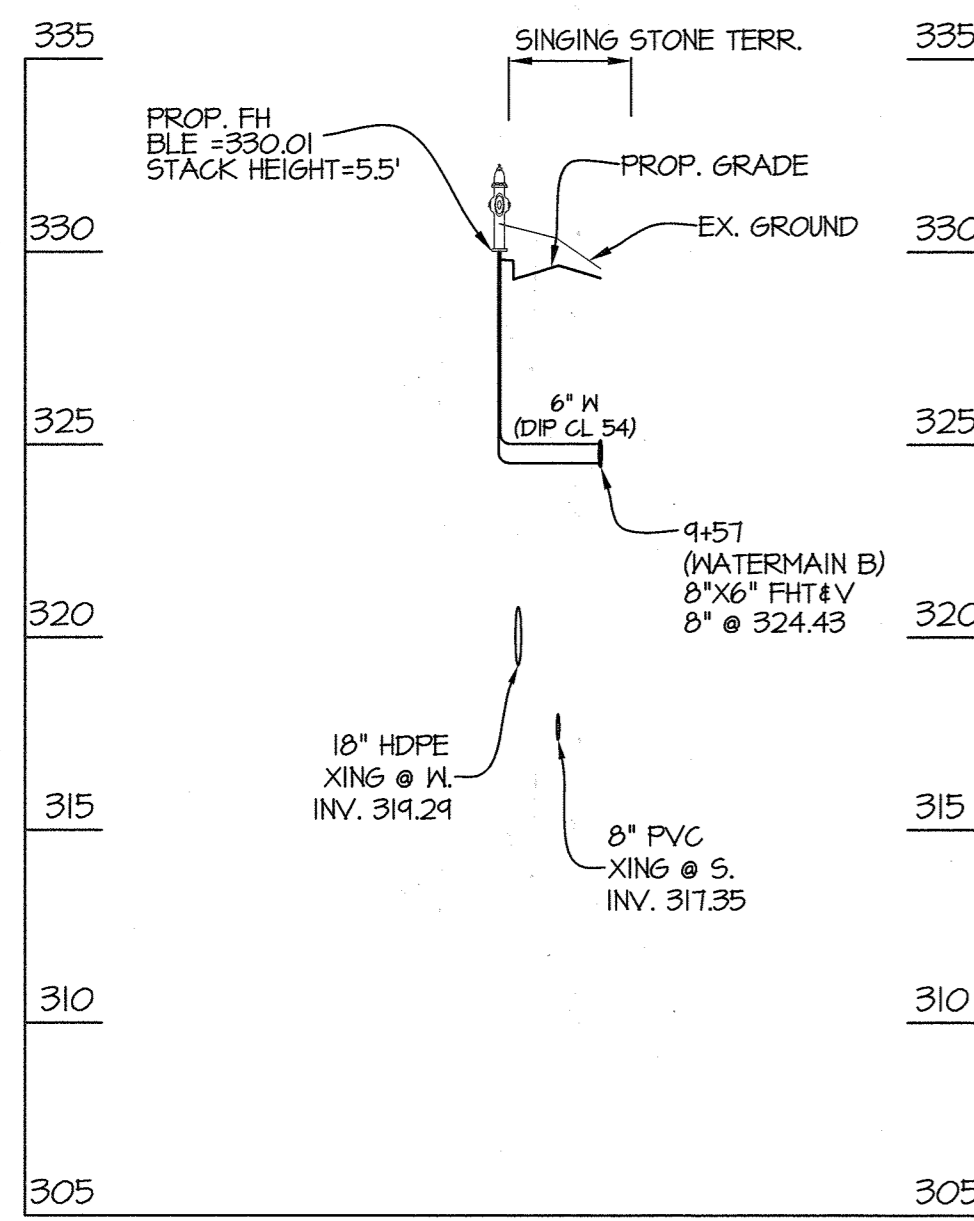
FIRE HYDRANT CHART	
FH	NAD '83/'91 COORDINATES
A	N 565,526.42 E 1,352,703.57
B	N 565,033.74 E 1,353,254.50
C	N 565,306.34 E 1,353,226.07
D	N 565,444.62 E 1,353,125.28
E	N 565,553.64 E 1,352,880.40
F	N 565,263.03 E 1,353,011.08
G	N 565,350.84 E 1,352,451.07
H	N 564,747.14 E 1,353,011.46
J	N 564,424.25 E 1,352,474.00
K	N 565,183.81 E 1,352,553.38
L	N 565,415.54 E 1,352,660.73

CABLE TEST STATION CHART			
STR.	WAT STA.	OFFSET	REMARKS
WATERMAIN 'A'			
1	2+26	18' RIGHT	HO. CO. STD. DETAIL G-8.21
1	1+19	25' LEFT	HO. CO. STD. DETAIL G-8.21
WATERMAIN 'B'			
2	1+83	15' RIGHT	HO. CO. STD. DETAIL G-8.21
3	4+54	18' LEFT	HO. CO. STD. DETAIL G-8.21
4	6+86	21' RIGHT	HO. CO. STD. DETAIL G-8.21
5	4+54	26' LEFT	HO. CO. STD. DETAIL G-8.21
WATERMAIN 'C'			
6	3+11	25' LEFT	HO. CO. STD. DETAIL G-8.21
7	2+18	26' LEFT	HO. CO. STD. DETAIL G-8.21
WATERMAIN 'D'			
8	0+67	22' RIGHT	HO. CO. STD. DETAIL G-8.21
9	1+43	16' LEFT	HO. CO. STD. DETAIL G-8.21
EXIST. 8" W. (CONTRACT 381-NS)			
10	2+46	15' RIGHT	HO. CO. STD. DETAIL G-8.21

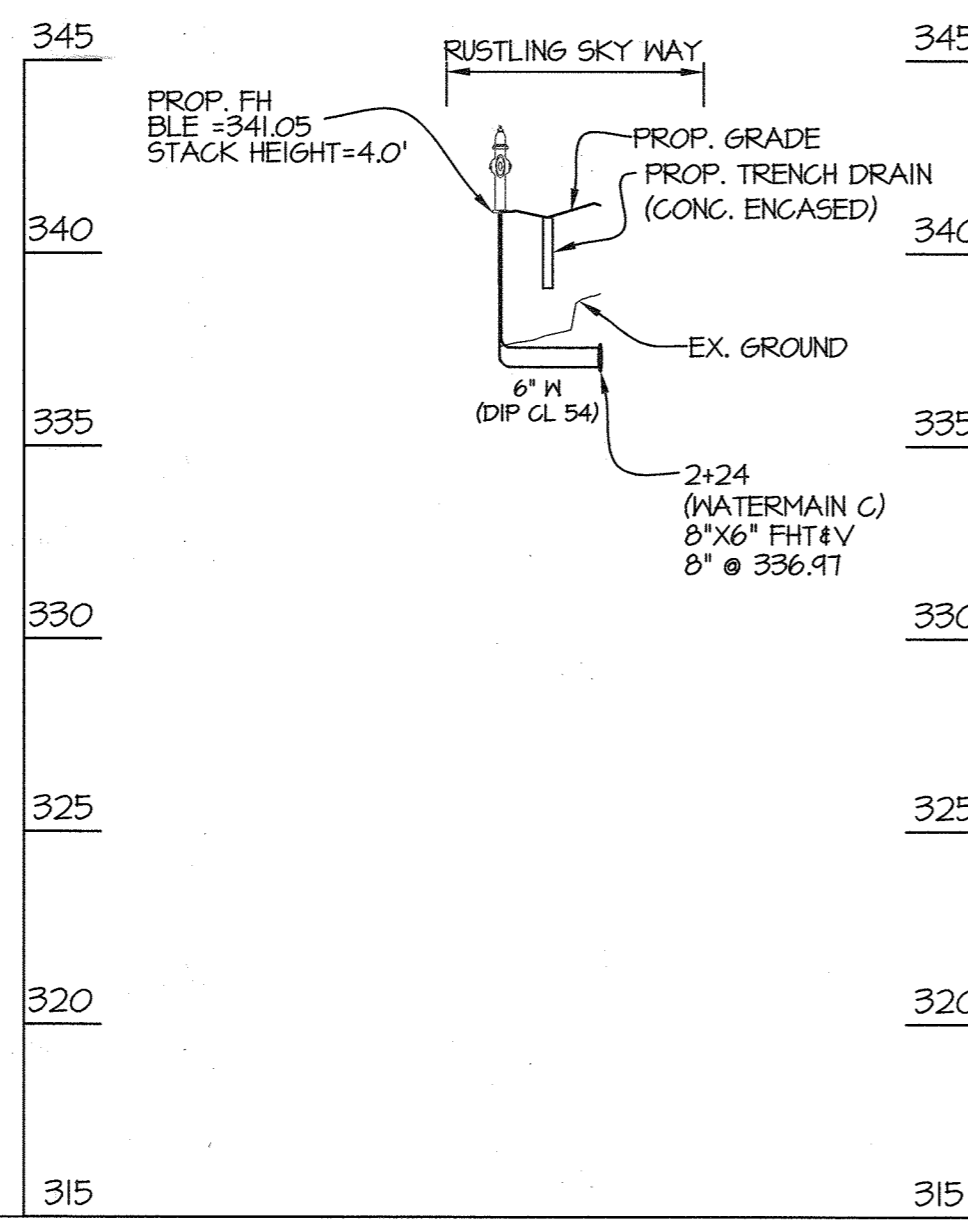


NOTE: ALL SEWER MAINS SHALL BE SDR-35 PVC PIPE, UNLESS OTHERWISE NOTED

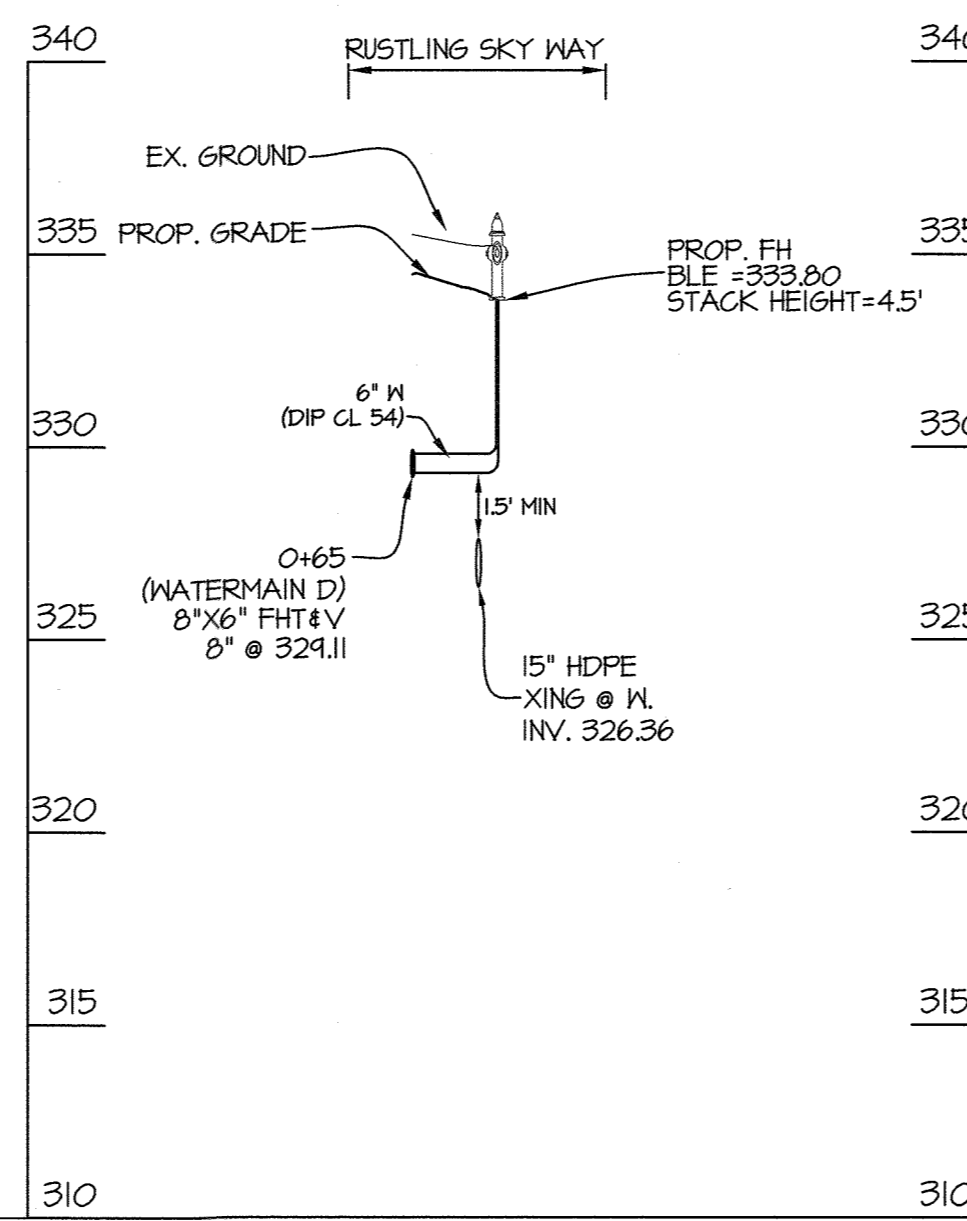
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE: 5-31-23	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 5-23-23	GLW PLANNING ENGINEERING SURVEYING 3908 NATIONAL DRIVE SUITE 250 BURTONSVILLE, MD 20886 GLWPA.COM PHONE: 301-421-4024 BALT: 410-880-1920 DC/VA: 301-889-2524 FAX: 301-421-4188	DESIGNED BY: Waj DRAWN BY: Waj CHECKED BY: DDS	DATE: MAY, 2023 G.L.W. No. 21014	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. 12975 EXP. DATE: MAY 26, 2024	STATE OF MARYLAND PROFESSIONAL ENGINEER 5/23/23	FINAL WATER AND SEWER PROFILES 600' SCALE MAP NO. 30 BLOCK NO. 20	LAKEFRONT NORTH - PARCELS A, B & C DOWNTOWN COLUMBIA CONTRACT NO. 24-5196-D A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-1, & LOT D-1, SECTION 7 AREAS PARCELS B, D-1, G & H HOWARD COUNTY, MARYLAND ELECTION DISTRICT NO. 5	SCALE AS SHOWN SHEET 3 OF 6
			PREPARED FOR: THE HOWARD RESEARCH AND DEVELOPMENT CORP. 10960 GRANTCHESTER WAY SUITE 110 COLUMBIA, MD 21044 ATTN: GABRIEL CHUNG 410-964-4800						



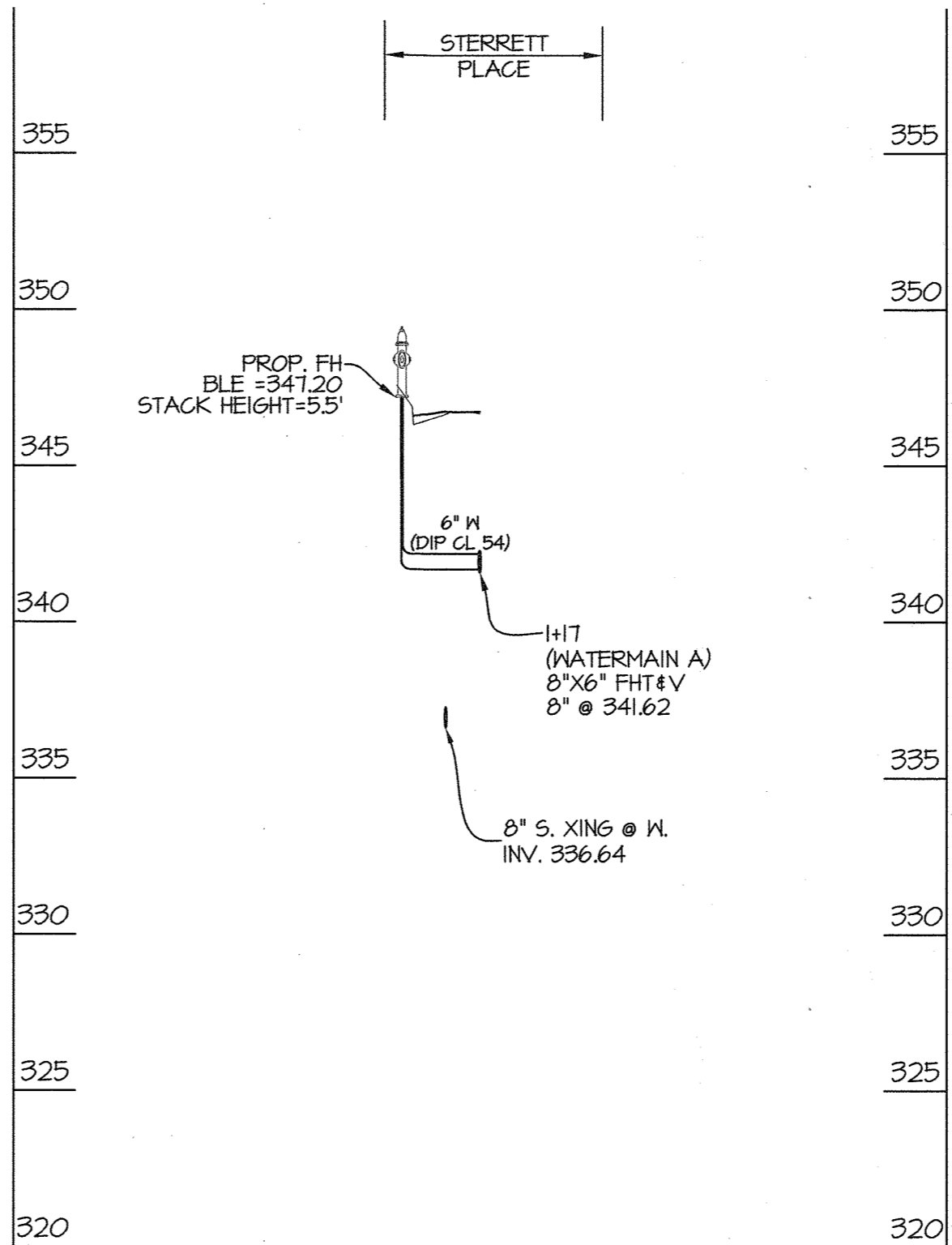
FH 'E' PROFILE
SCALE: 1"=50' HORIZ
1"=5' VERT



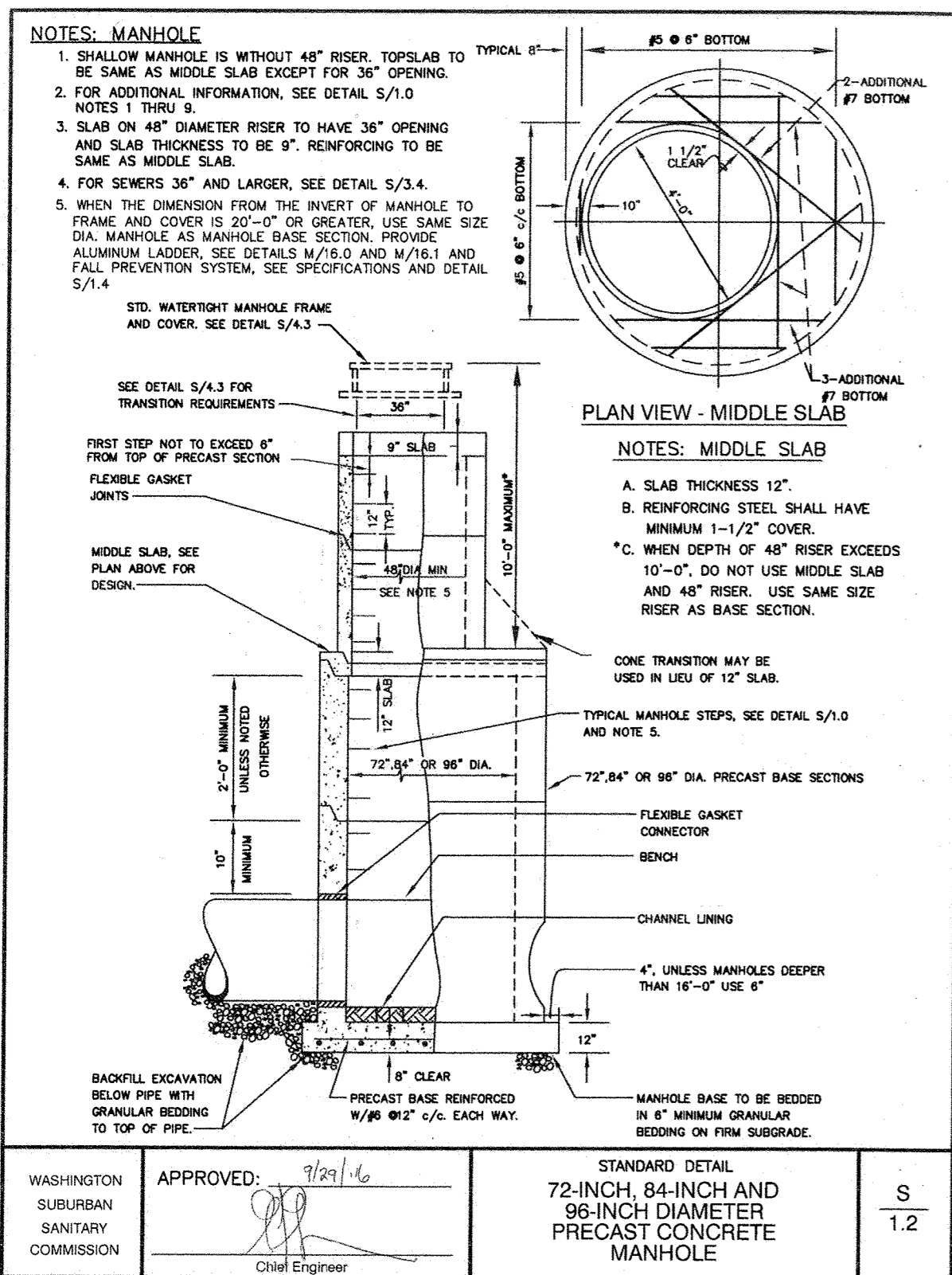
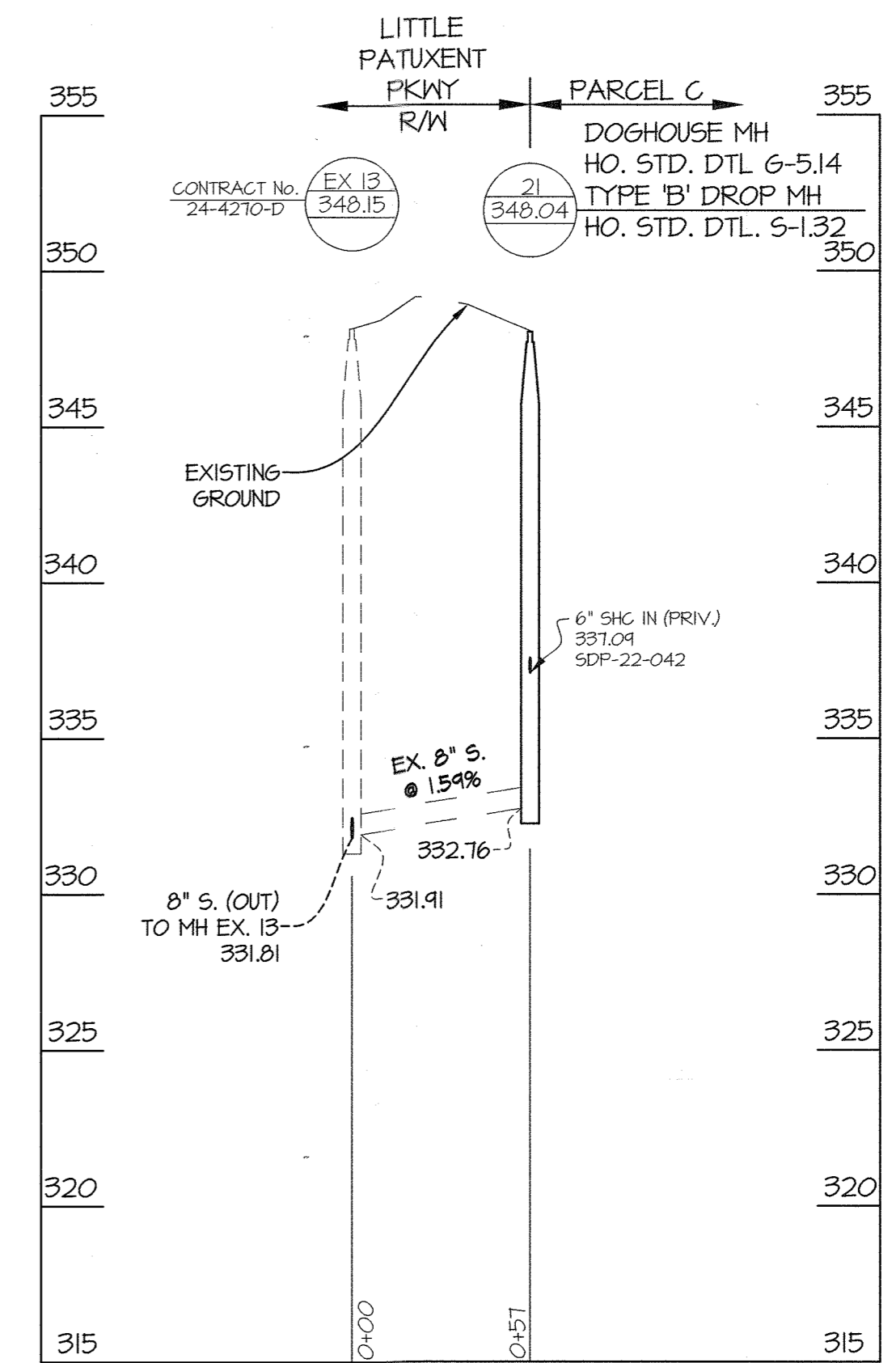
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1"=5' VERT



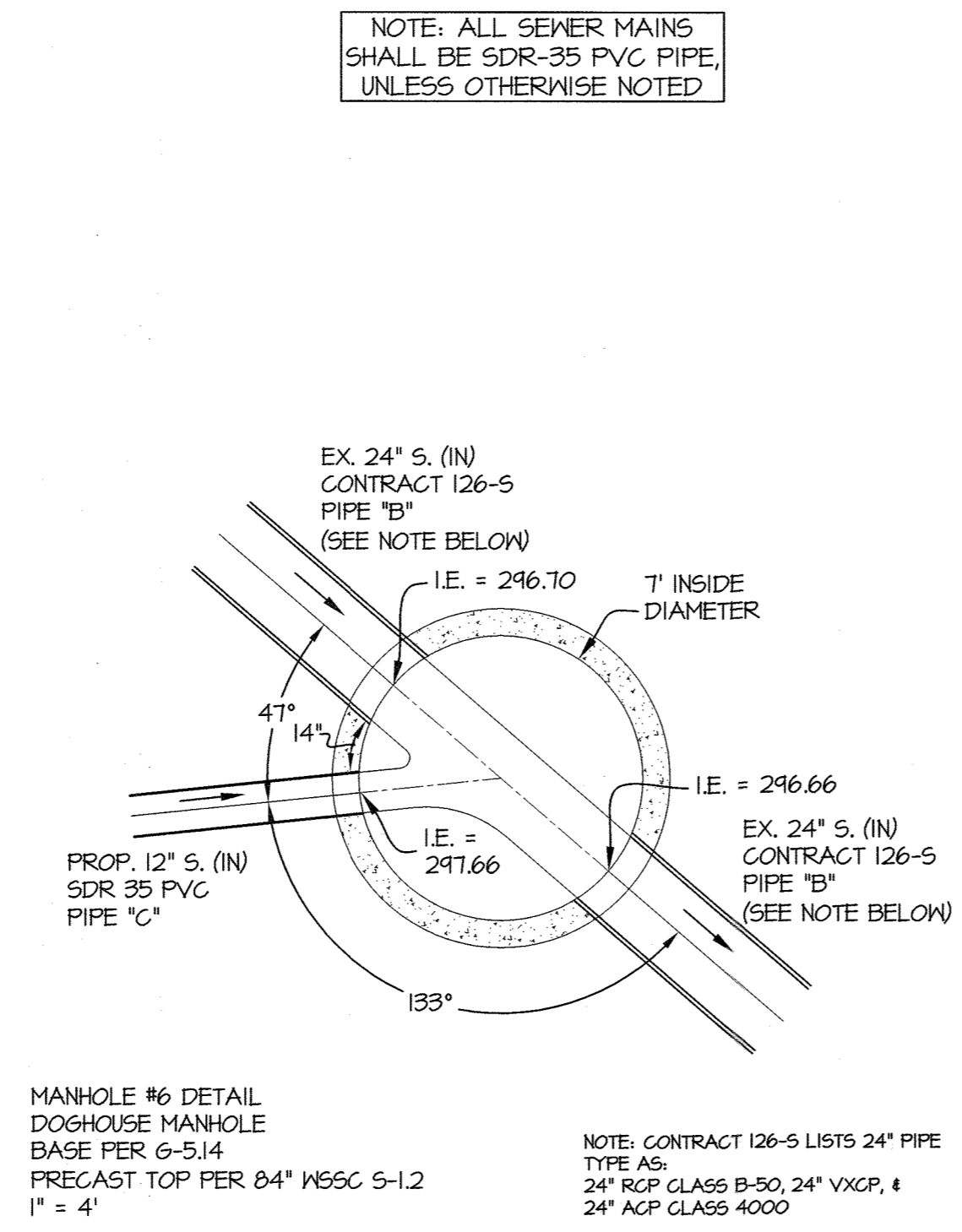
FH 'H' PROFILE
SCALE: 1"=50' HORIZ
1"=5' VERT



FH 'L' PROFILE
SCALE: 1"=50' HORIZ
1"=5' VERT



MANNHOLE #6 PRECAST TOP DETAIL (84")



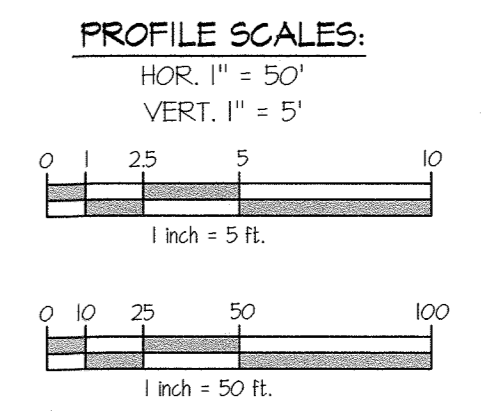
MANNHOLE #6 DETAIL DOGHOUSE MANHOLE BASE PER 6-514
PRECAST TOP PER 84" WSSC S-1.2
1" = 4"

- NOTES: MANHOLE**
1. SHALLOW MANHOLE IS WITHOUT 48" RISER. TOPSLAB TO BE SAME AS MIDDLE SLAB EXCEPT FOR 36" OPENING.
 2. FOR ADDITIONAL INFORMATION, SEE DETAIL S/1.0 NOTES 1 THRU 5.
 3. SLAB ON 48" DIAMETER RISER TO HAVE 36" OPENING AND SLAB THICKNESS TO BE 9". REINFORCING TO BE SAME AS MIDDLE SLAB.
 4. FOR SEWERS 36" AND LARGER, SEE DETAIL S/3.4.
 5. WHEN THE DIMENSION FROM THE INVERT OF MANHOLE TO FRAME AND COVER IS 10'-0" OR GREATER, USE SAME SIZE DIA. MANHOLE AS MANHOLE BASE SECTION. PROVIDE ALUMINUM LADDER, SEE DETAILS M/1.0 AND M/1.1, AND FALL PREVENTION SYSTEM, SEE SPECIFICATIONS AND DETAIL S/1.4.

PLAN VIEW - MIDDLE SLAB

- NOTES: MIDDLE SLAB**
- A. SLAB THICKNESS 12".
 - B. REINFORCING STEEL SHALL HAVE MINIMUM 1-1/2" COVER.
 - C. WHEN DEPTH OF 48" RISER EXCEEDS 10'-0", DO NOT USE MIDDLE SLAB AND 48" RISER. USE SAME SIZE RISER AS BASE SECTION.

WASHINGTON SUBURBAN SANITARY COMMISSION
APPROVED: 9/29/16
STANDARD DETAIL 72-INCH, 84-INCH AND 96-INCH DIAMETER PRECAST CONCRETE MANHOLE
S 1.2



PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORP.
10960 GRANTCHESTER WAY
SUITE 110
COLUMBIA, MD 21044
ATTN: GABRIEL CHUNG
410-964-4800

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES
DATE: 5-31-23

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 6-20-23

GLW
PLANNING | ENGINEERING | SURVEYING
3809 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20886 | GLWPA.COM
PHONE: 301-421-4024 | BALT: 410-980-1820 | DC/VA: 301-989-2524 | FAX: 301-421-4186

DESIGNED BY: Wsj
DRAWN BY: Wsj
CHECKED BY: DDS
DATE: MAY, 2023
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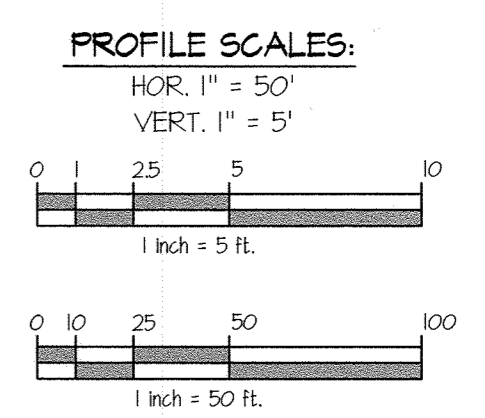
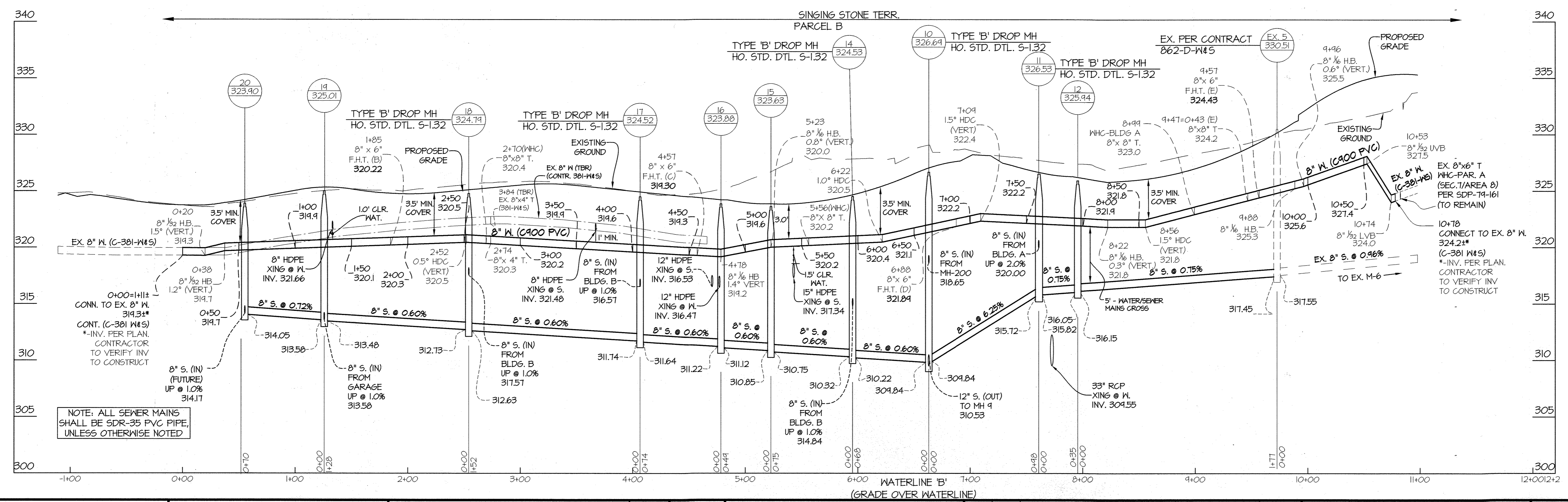
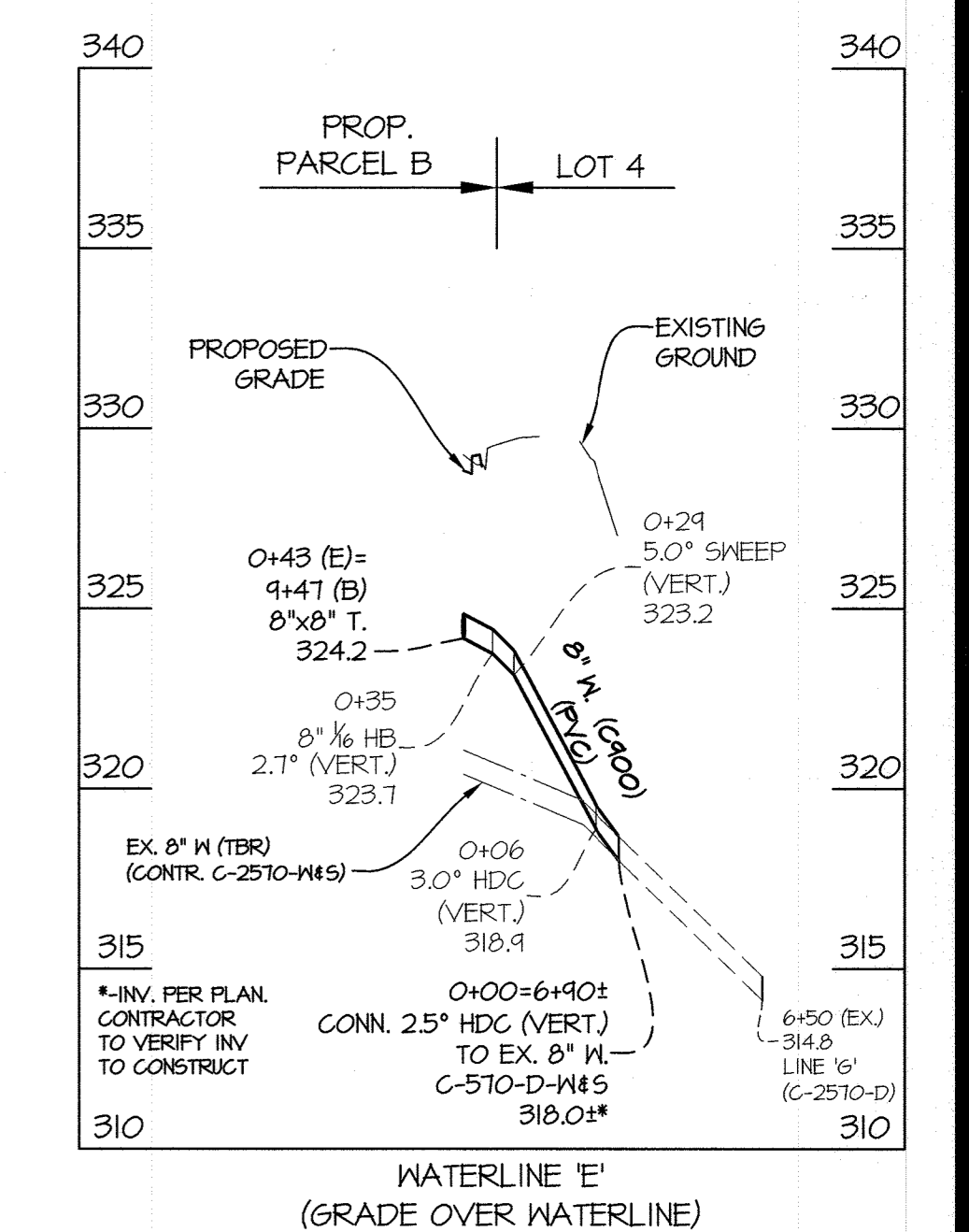
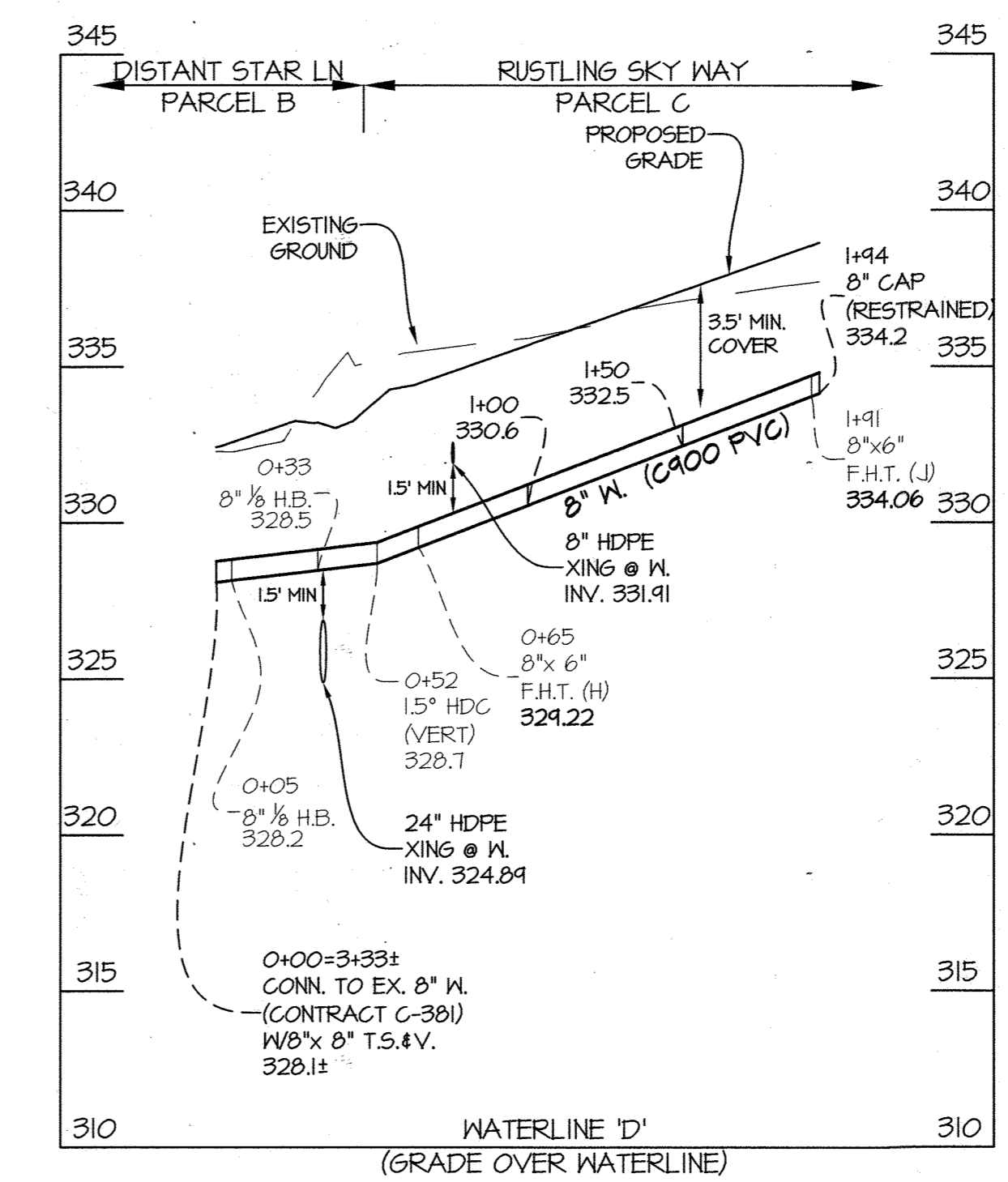
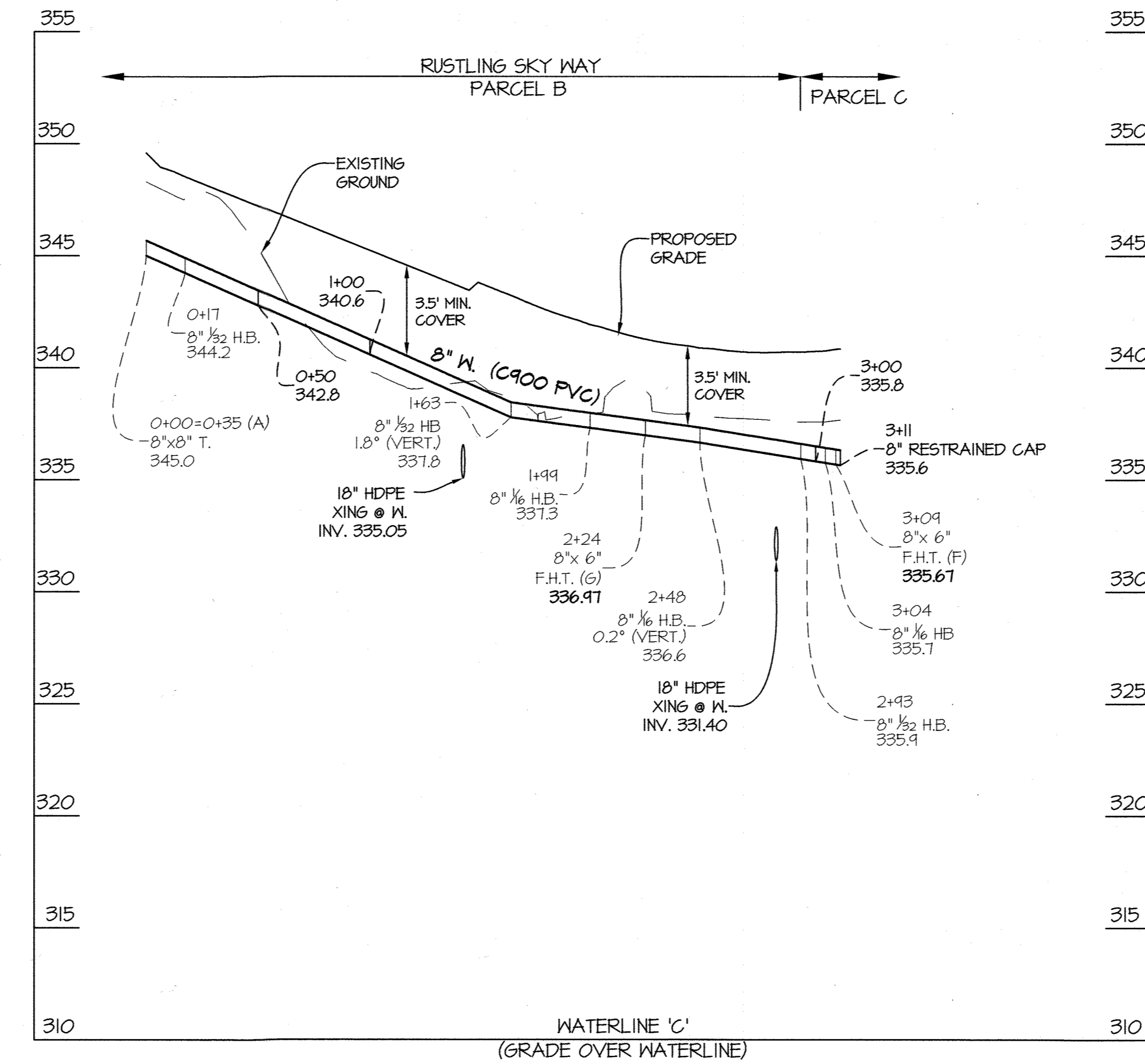
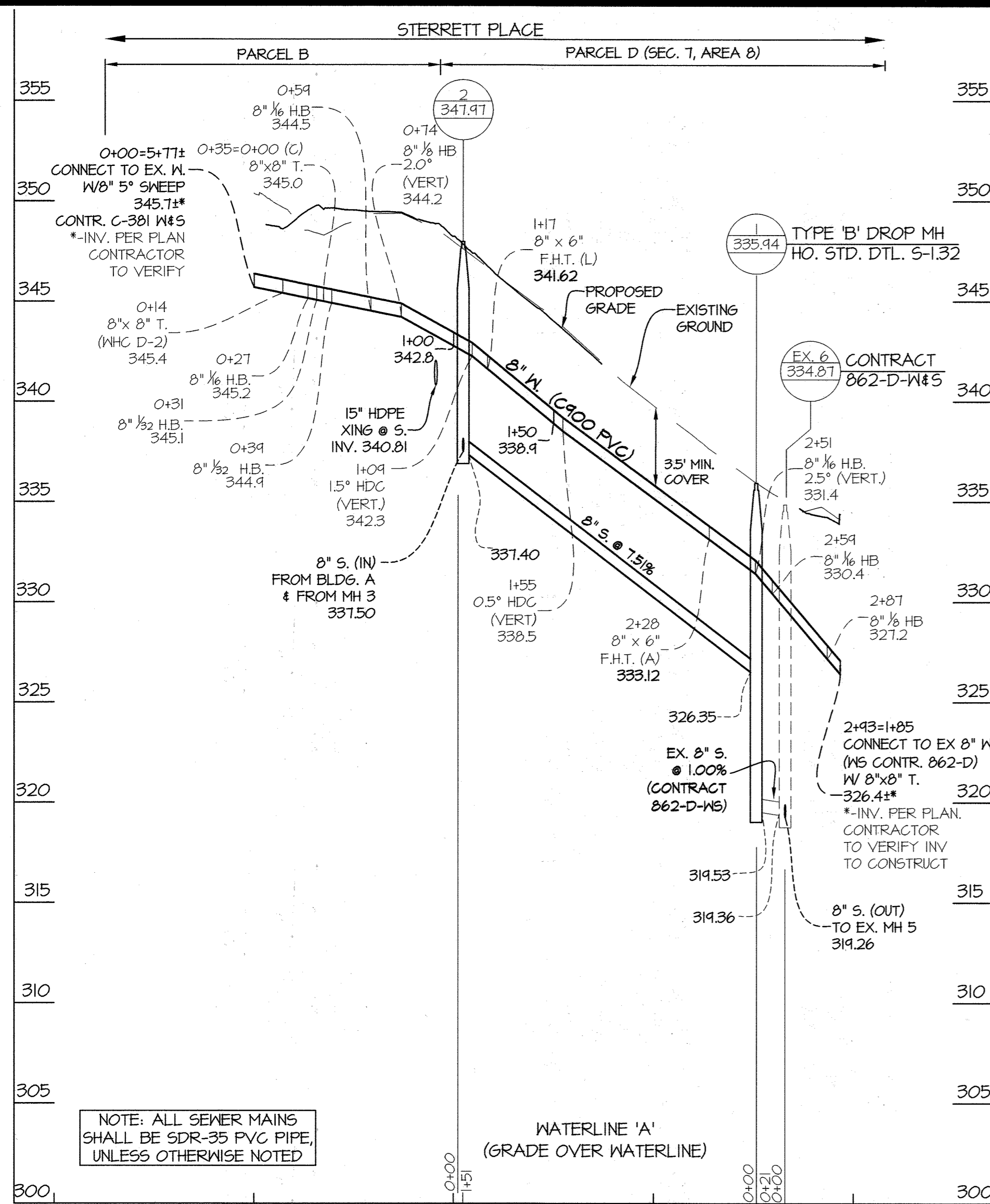
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EXP. DATE: MAY 26, 2024

BY	NO	REVISION	DATE

FINAL WATER SEWER PROFILES AND DETAILS
600' SCALE MAP NO. 30 BLOCK NO. 20

LAKEFRONT NORTH - PARCELS A, B & C
DOWNTOWN COLUMBIA
CONTRACT No. 24-5196-D
LAKEFRONT NEIGHBORHOOD
A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-1, & LOT D-1,
SECTION 7 AREAS PARCELS B, D, I, G & H
HOWARD COUNTY, MARYLAND
ELECTION DISTRICT No. 5

SCALE AS SHOWN
SHEET 4 OF 6



PREPARED FOR:
 THE HOWARD RESEARCH
 AND DEVELOPMENT CORP.
 10960 GRANTCHESTER WAY
 SUITE 110
 COLUMBIA, MD 21044
 ATTN: GABRIEL CHUNG
 410-964-4800

L:\CAD\DRAWINGS\2014\PLANS BY G.W.M.T.-SEW\FINAL-MS\014-MS-3-5.dwg
 DATE: 5/25/23 10:52:23 AM

DEPARTMENT OF
 PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

5-31-23
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF
 PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

6/20/22
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

GLW
 PLANNING | ENGINEERING | SURVEYING

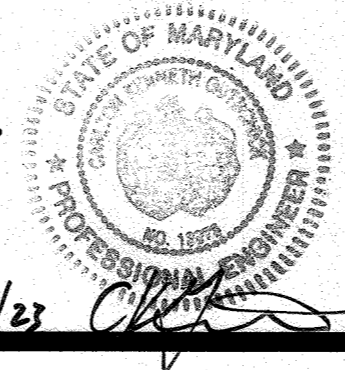
3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20886 | GLWPA.COM
 PHONE: 301-421-4024 | BALT: 410-480-1820 | DCVA: 301-489-2524 | FAX: 301-421-4150

DESIGNED BY: **Wsj**
 DRAWN BY: **Wsj**
 CHECKED BY: **DDS**

DATE
 MAY, 2023

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 AND THAT I AM A DULY LICENSED
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 EXP. DATE: MAY 26, 2024

5/25/23



BY	NO	REVISION	DATE

FINAL
 WATER AND SEWER PROFILES

600' SCALE MAP NO. 30 BLOCK NO. 20




LAKEFRONT NORTH - PARCELS A, B & C
 DOWNTOWN COLUMBIA
 CONTRACT No. 24-5196-D

LAKEFRONT NEIGHBORHOOD
 A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-I, & LOT D-I,
 SECTION 7 AREAS PARCELS B, D-I, G & H
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 5

SCALE
 AS SHOWN

SHEET
 5 OF 6

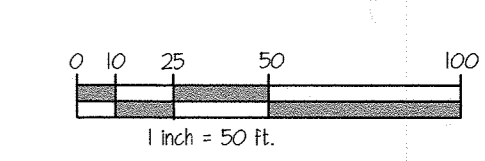
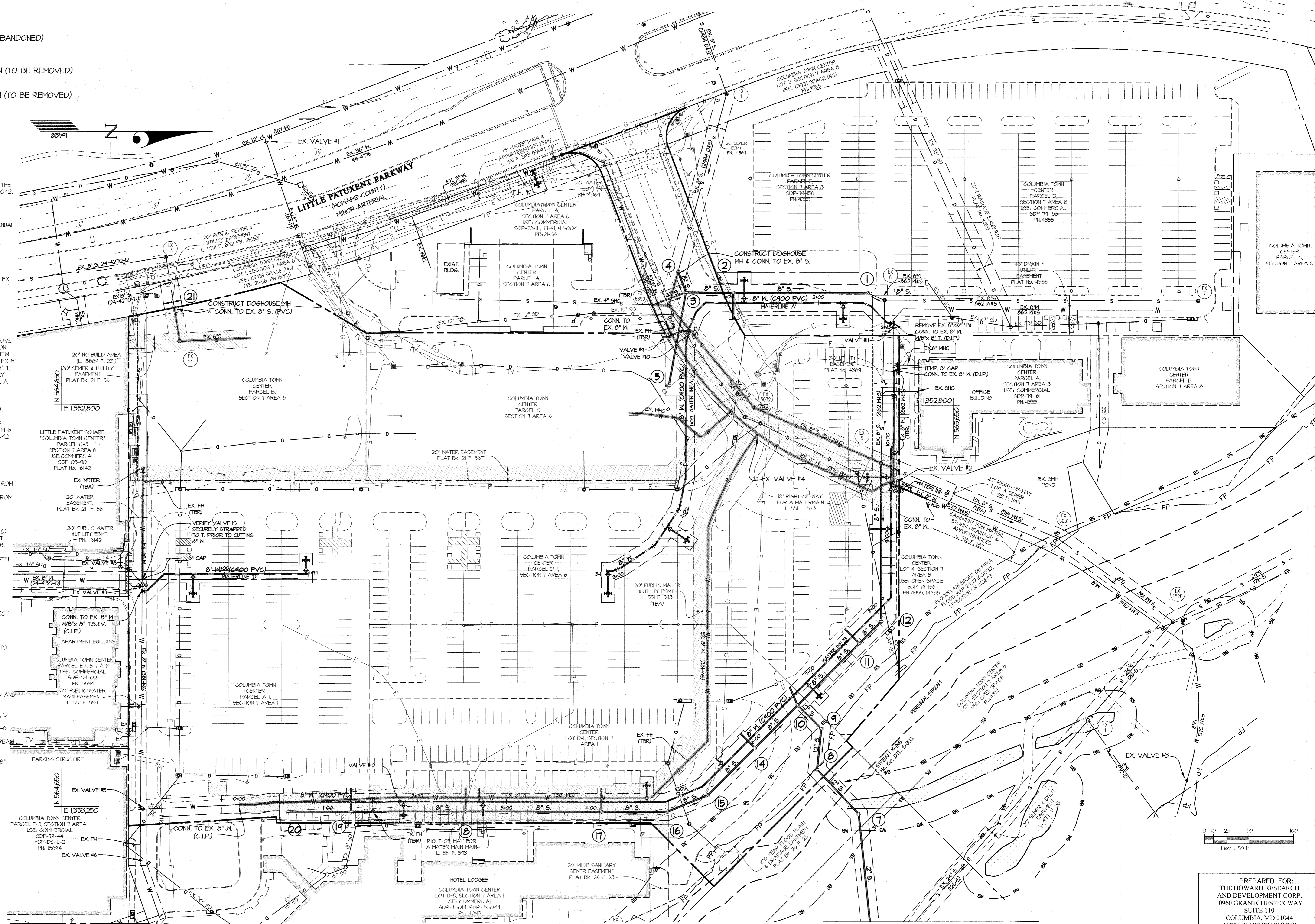
LEGEND

-  EASEMENTS (TO BE ABANDONED)
-  EXISTING WATER MAIN (TO BE REMOVED)
-  EXISTING SEWER MAIN (TO BE REMOVED)

SEQUENCE OF CONSTRUCTION:

- SEE SDP-22-042 FOR ADDITIONAL INFORMATION
- TEMPORARILY PLUG AND CAP ALL PROPOSED MHs AND SHCs AT THE END OF THE PUBLIC PIPE UNTIL THE PIPE IS EXTENDED PER SDP-22-042.
- DPH TO OPERATE ALL EXISTING WATER VALVES.
- ALL PUBLIC WATER AND SEWER TO BE REMOVED OR ABANDONED SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME 2, SECTION 5.6
- STEPS MAY BE DONE CONCURRENTLY WITH THE APPROVAL OF THE HOWARD COUNTY INSPECTOR.

1. INSTALL FIRE HYDRANT 'K'
 2. INSTALL MH-1 OVERTOP EXISTING 8" SEWER STUB ADJACENT TO EX. M-6. INSTALL SEWER FROM MH-1 TO M-4, M-3 TO CLEANOUT AT PARCEL A (GAS STATION) PROPERTY LINE, M-3 TO M-5. COORDINATE SEWER TIE-IN AT CLEANOUT WITH PARCEL A OPERATOR.
 3. INSTALL WATERLINE 'A' FROM STATION 0+20 TO 2+88.
 4. OVERNIGHT, CLOSE VALVES 1, 3, & 4. THIS WILL TAKE PARCEL A (ST/A6) AND PARCELS A, B, & C (ST/A6) OUT OF SERVICE. REMOVE EXISTING 8" WATERLINE AND HYDRANT AT WATERLINE 'A' STATION 0+00 AND CONNECT WATERLINE 'A' TO EXISTING 8" M. CLOSE NEH VALVES #1 AND #10 AND CAP 8" M BEYOND VALVES. REMOVE EX 8" WATERLINE AT WATERLINE 'A' STATION 2+44. INSTALL NEW 8"x8" T. VALVE #11 AND CONNECT TO EXISTING 8" M. INSTALL TEMPORARY END CAP ON EX. 8" WATER JUST BEYOND THE WHG FOR PARCEL A (ST/A6).
 5. WITH APPROVAL FROM DPH, REOPEN VALVE #1 AND RESTORE SERVICE TO PARCEL A (ST/A6) AND PARCELS A, B, & C (ST/A6).
 6. BEGIN INSTALLATION OF SEWER FROM EX. M-5 TO M-10 TO M-20. BLOCK OPENING FROM EX. M-5 TO M-12. SEWER FROM M-10 TO M-6 MAY BE DONE NOW OR ANY TIME IN THE FUTURE. SEE SDP-22-042 FOR ADDITIONAL INFORMATION ON CONSTRUCTION SEQUENCING, SEDIMENT CONTROLS FOR STREAM CROSSINGS, AND STREAM CLOSURE PERIODS. SEWER FROM EX. M-5 TO M-10 TO M-20 TO REMAIN DRY UNTIL SEWER FROM M-10 TO M-6 IS INSTALLED.
 7. REMOVE OR ABANDON EXISTING 8" WATER IN THE VICINITY OF WATERMAN B, STATION 9+40 TO 10+78. INSTALL WATERLINE B FROM STATION 1+85 TO 10+78. CLOSE VALVE #12 AND INSTALL TEMPORARY 8" CAP AT STATION 1+85. INSTALL WATERLINE E FROM STATION 0+00 TO STATION 0+24 AND CONNECT TO EXISTING 8" WATER. SEE SDP-22-042 FOR ADDITIONAL INFORMATION ON CONSTRUCTION SEQUENCING.
 8. OVERNIGHT CLOSE VALVE #11. THIS WILL TAKE PARCEL A (ST/A6) OUT OF SERVICE. REMOVE TEMPORARY END CAP AND CONNECT WATERLINE B TO EXISTING 8" WATER AT WATERLINE B STA 10+78.
 9. OVERNIGHT CLOSE VALVE #5. THIS WILL TAKE PARCEL B-9 (HOTEL LODGES) OUT OF SERVICE. REMOVE EXISTING 4" WHG NEAR WATERLINE B STATION 2+73 WITHIN THE LIMITS SHOWN AND RECONNECT WHG TO WATERLINE B.
 10. WITH APPROVAL FROM DPH, REOPEN VALVES #3, AND #11 TO RESTORE SERVICE TO PARCEL B-8.
 11. WITH APPROVAL FROM DPH, REOPEN VALVES #5, AND #12
 12. CLOSE EX VALVE #8. VERIFY VALVE IS SECURELY STRAPPED TO EXISTING 'T'. REMOVE OR ABANDON EXISTING 6" WATER, FIRE HYDRANT AND METER VAULT SERVICE THE FORMER FIREFIGHTER BUILDING. INSTALL 6" CAP JUST BEYOND VALVE #8.
 13. INSTALL MANHOLE M-21.
- STEPS 14 -16 ARE TO BE DONE AFTER P-1 GARAGE IS CONSTRUCTED AND SURROUNDING AREA IS BACKFILLED. SEE SDP-22-042.
14. INSTALL REMAINING WATER AND SEWER INCLUDING WATERLINE C, D
 15. IF NOT PREVIOUSLY INSTALLED, INSTALL SEWER FROM M-10 TO M-6. SEE SDP-22-042 FOR ADDITIONAL INFORMATION ON CONSTRUCTION SEQUENCING, SEDIMENT CONTROLS FOR STREAM CROSSINGS, AND STREAM CLOSURE PERIODS.
 16. REMOVE BLOCKING FROM EX. M-5 TO M-14. ABANDON EXISTING 8" SEWER BETWEEN EXISTING MANHOLE 5 AND EXISTING MANHOLE 5091.



SEE SHEET 2 FOR CONTINUATION NO DEMOLITION BEYOND THIS MATCHLINE

PREPARED FOR:
THE HOWARD RESEARCH
AND DEVELOPMENT CORP.
10960 GRANTCHESTER WAY
SUITE 110
COLUMBIA, MD 21044
ATTN: GABRIEL CHUNG
410-964-4800

DEPARTMENT OF
PUBLIC WORKS
HOWARD COUNTY, MARYLAND

G. L. W.
5-31-23
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF
PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

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CHIEF, DEVELOPMENT ENGINEERING DIVISION

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DESIGNED BY:
DDS

DRAWN BY:
Wsj

CHECKED BY:
CKG

DATE
MAY, 2023

G.L.W. No.
21014

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FINAL
WATER & SEWER
DEMOLITION PLAN

600' SCALE MAP NO. 30
BLOCK NO. 20

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DOWNTOWN COLUMBIA
CONTRACT NO. 24-5196-D
LAKEFRONT NEIGHBORHOOD
A RESUBDIVISION OF SECTION 7, AREA 1 PARCELS A-1, & LOT D-1,
SECTION 7 AREA 6 PARCELS B, D-1, G & H
HOWARD COUNTY, MARYLAND
ELECTION DISTRICT No. 5

SCALE
AS SHOWN

SHEET
6 OF 6