


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 FIELD SURVEYS WERE PERFORMED ON MARCH 2006 BY ROBERT H. VOGEL ENGINEERING, INC.
- 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 37A AND 37B.
ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:
GEODETIC SURVEY CONTROL 24BA (N 586,783.242 E 1,359,211.656)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
GEODETIC SURVEY CONTROL 24CA (N 586,506.177 E 1,361,634.289)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- 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 DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR 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 LOCATION OF THE TEST PIT. A NOTES 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 OPERATION AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN THESE PLANS:
AT&T _____ 1-800-252-1133
BGE (CONTRACTOR SERVICE) _____ 410-637-8713
BGE (EMERGENCY) _____ 410-685-0123
BUREAU OF UTILITIES _____ 410-313-4900
COLONIAL PIPELINE CO _____ 410-795-1390
MISS UTILITY _____ 1-800-257-7777
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 THE CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY 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 DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART II - WATER

- ALL WATER MAINS TO BE PVC C-900 (DR-18) UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" 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 THE 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 RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAIL. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA 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, SEVENTEEN (17) POUND 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. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. 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.
FOR FIRE SPRINKLER SYSTEM, ALL SINGLE FAMILY DWELLINGS WILL HAVE A MINIMUM OF A 1-1/2" WHC WITH A 1" OUTSIDE METER SETTING.

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 COVERS. STANDARD DETAIL CS-52 WHERE WATERTIGHT FRAME AND COVER IS 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 CELLAR CANNOT BE SERVED. SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-12-037.

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

John P. Blanton SOIL CONSERVATION DISTRICT
m/oln DATE

FINAL WATER AND SEWER PLAN

BETHEL KOREAN PRESBYTERIAN CHURCH

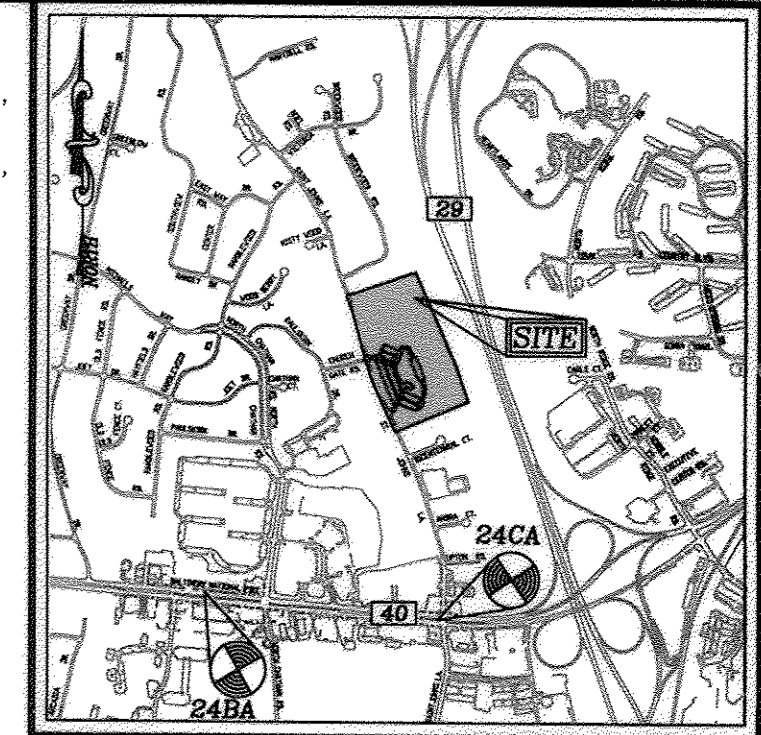
RELIGIOUS CENTER

L.01127/F.0227

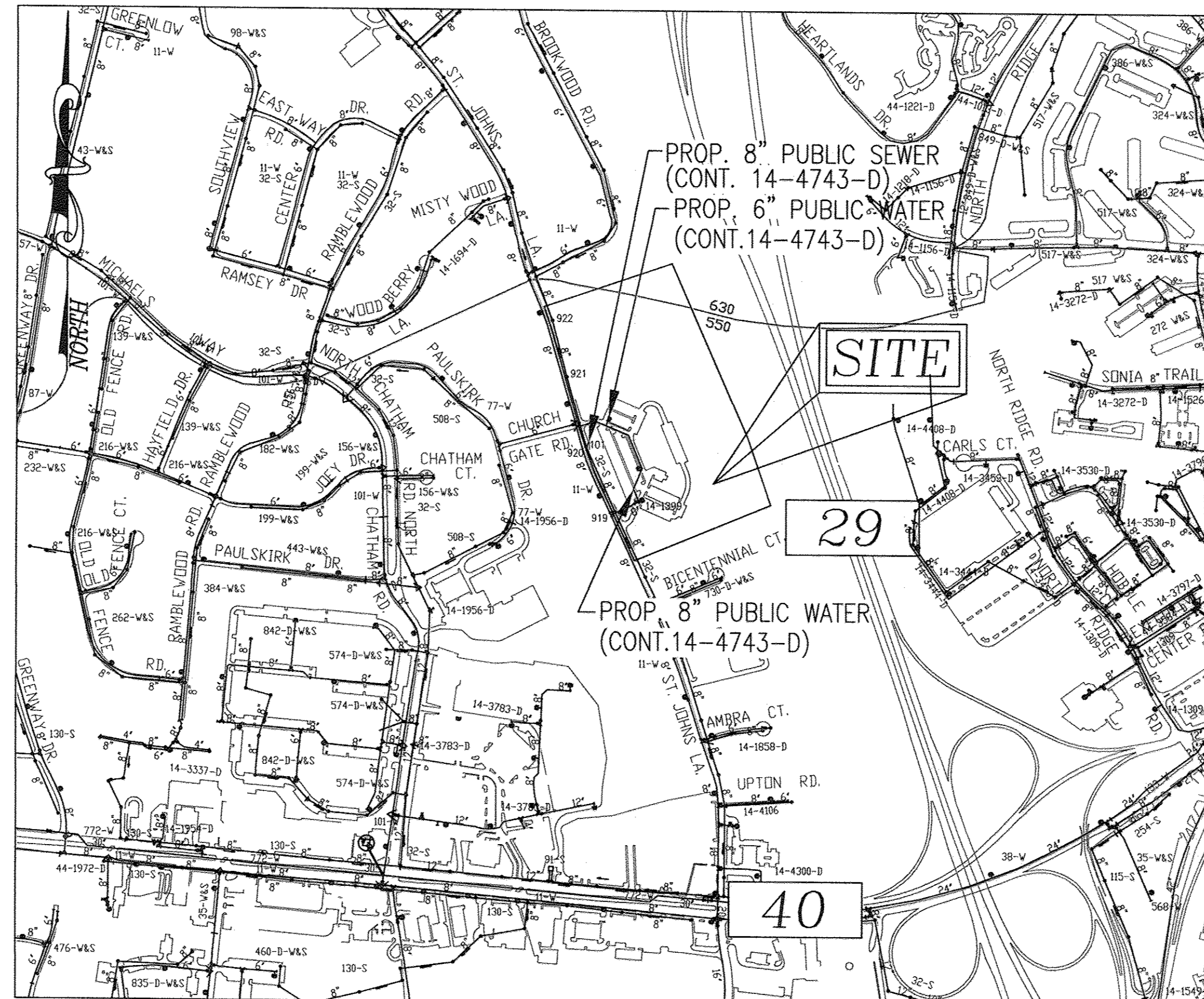
CONTRACT 14-4743-D

BENCHMARKS

HOWARD COUNTY BENCHMARK 24BA
N 586,783.242 E 1,359,211.656 ELEV.: 385.660'
HOWARD COUNTY BENCHMARK 24CA
N 586,506.177 E 1,361,634.289 ELEV.: 398.314'



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATES: 4815/H5



VICINITY MAP
SCALE: 1"=600'

WATER ZONE: _____
TEST GRADIENT: 700

TYPE OF BUILDING :	RELIGIOUS CENTER
NO. OF LOTS/PARCELS :	1
NO. OF SINGLE WATER HOUSE CONNECTIONS :	1
NO. OF TWIN WATER HOUSE CONNECTIONS :	0
NO. OF SEWER HOUSE CONNECTIONS :	2
SEWER SHED :	PATAPSCO RIVER LOWER NORTH BRANCH
TREATMENT PLANT :	DEEP RUN

LEGEND

- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- FIRE HYDRANT
- PROPOSED VALVE
- PROPOSED TEE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING SEWER
- SEWER MANHOLE
- PRIVATE WATER HOUSE CONNECTION
- PUBLIC SEWER
- PRIVATE SEWER HOUSE CONNECTION
- PROPOSED SIGN
- PROPOSED LIGHT

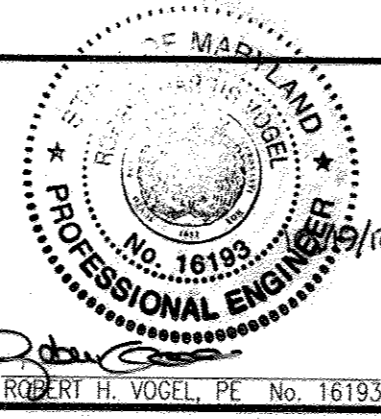
QUANTITIES

NAME OF UTILITY CONTRACTOR :		SURVEY AND DRAFTING DIVISION AS-BUILT DATE :	
ITEMS	QUANTITIES ESTIMATED	AS-BUILT	
		QUANTITIES	MANUFACTURER/SUPPLIER
WATER			
8"x8" TAPPING SLEEVE	2 EA	2	DR-18 JIM EAGLE
8" WATER	730 LF	730'	DR-18 JIM EAGLE
6" WATER	110 LF	112'	DR-18 JIM EAGLE
8" VALVE	4 EA	4	DIP MUEBLER
6" FIRE HYDRANT	2 EA	2	DIP MUEBLER
8"x8" TEE	1 EA	2	DIP STAR PIPE
8"x6" TEE	2 EA	2	DIP STAR PIPE
8" - 1/8 HORIZ. BEND	3 EA	3	DIP STAR PIPE
8" - 1/16 HORIZ. BEND	2 EA	2	DIP STAR PIPE
8" - 1/32 VERT. BEND	7 EA	7	DIP STAR PIPE
8" - VERT. COUPLING	2 EA	2	DIP STAR PIPE
8" CAP AND BUTTRISS	1 EA	1	DIP STAR PIPE
SEWER			
8" PVC SEWER	12 LF	12	SDP-35 CONCRETE JIM EAGLE
MANHOLE	1 EA	1	CONCRETE CONTRACTOR'S PRECAST

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
John P. Blanton 11/20/12
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
m/oln 11/20/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961



PROFESSIONAL CERTIFICATE
I 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. 16193 EXPIRATION DATE: 09-27-2015
DRN: DZ/KG DES: DZ
CHK: RHV
DATE: OCTOBER 2012

BY	NO.	REVISION	DATE

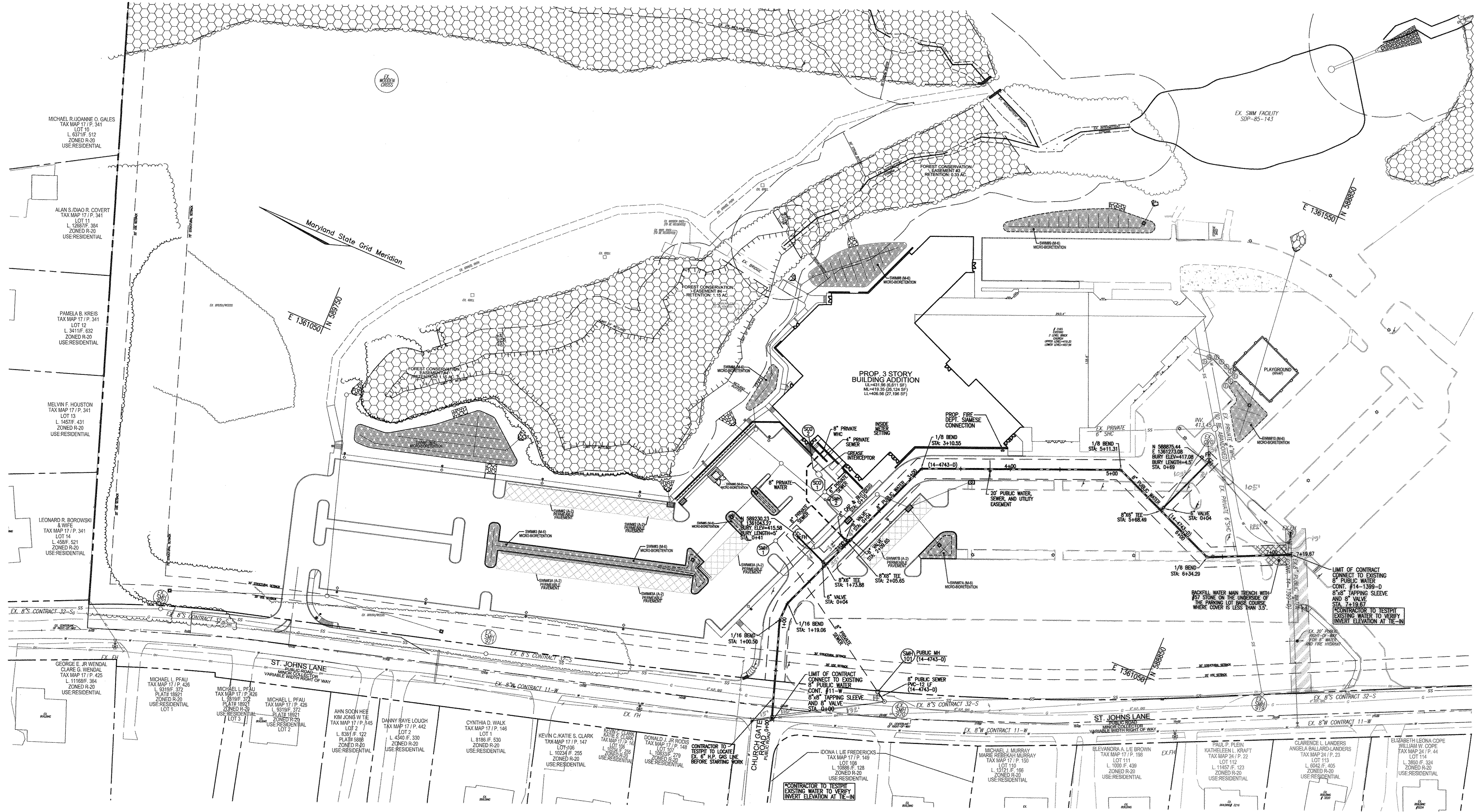
FINAL WATER AND SEWER CONSTRUCTION PLAN
CONTRACT 14-4743-D

TAX MAP 17 GRID 23
TAX MAP 24 GRID 5
2ND ELECTION DISTRICT

BETHEL KOREAN PRESBYTERIAN CHURCH
RELIGIOUS CENTER
L.01127/F.0227

OWNER
BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3165 SAINT JOHNS LANE
ELLCOTT CITY, MARYLAND 21042
C/O TED JEE
410-461-1235

SCALE AS SHOWN
SHEET 1 OF 3



OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHNS LANE
 ELLICOTT CITY, MARYLAND 21042
 C/O TED JEE
 410-461-1235

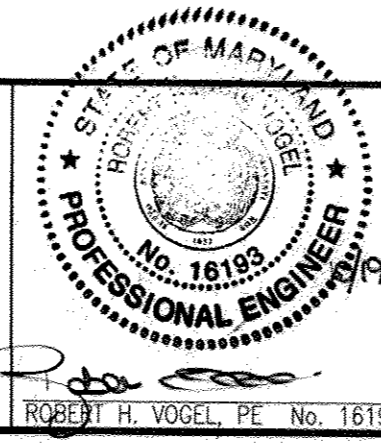
BETHEL KOREAN PRESBYTERIAN CHURCH RELIGIOUS CENTER
 L01127/F.0227

SCALE AS SHOWN
 SHEET 2 OF 3

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 S. J. CLEGG
 CHIEF, BUREAU OF UTILITIES
 DATE 12/10/12

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 M. J. JONES
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE 12/10/12

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, SUITE 100
 ELLICOTT CITY, MD 21043
 TEL: 410-461-7666
 FAX: 410-461-8961



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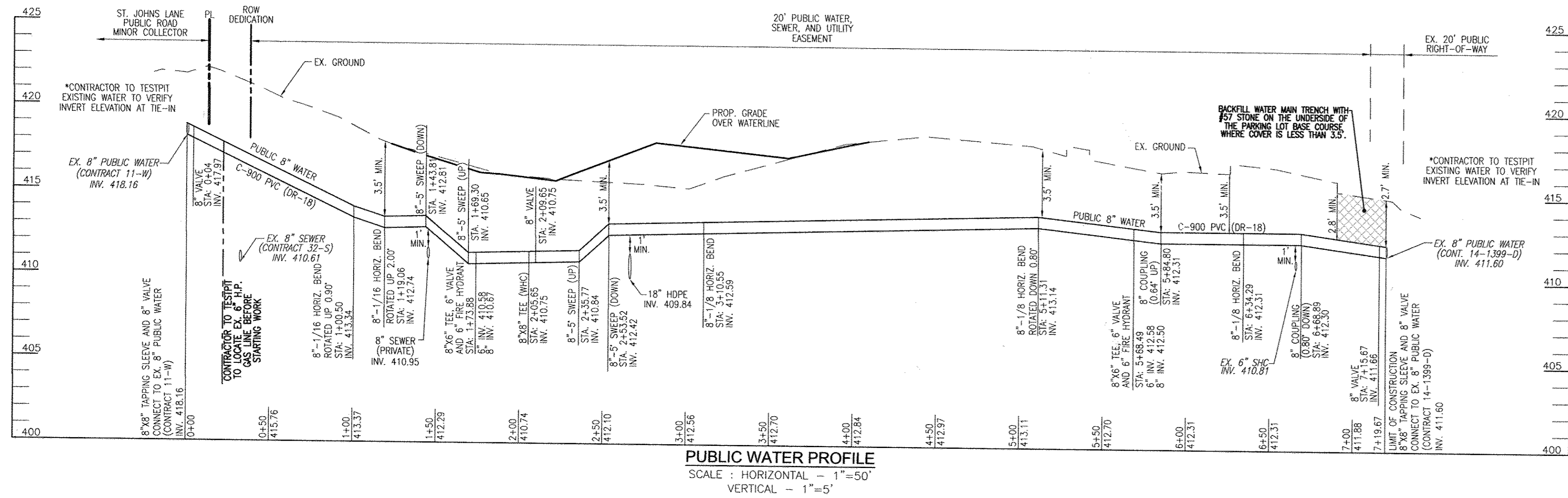
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BY NO.	REVISION
DATE	

FINAL WATER AND SEWER CONSTRUCTION PLAN
CONTRACT 14-4743-D

600' SCALE MAP NO. 17 & 24
 BLOCK NO. 5 & 23

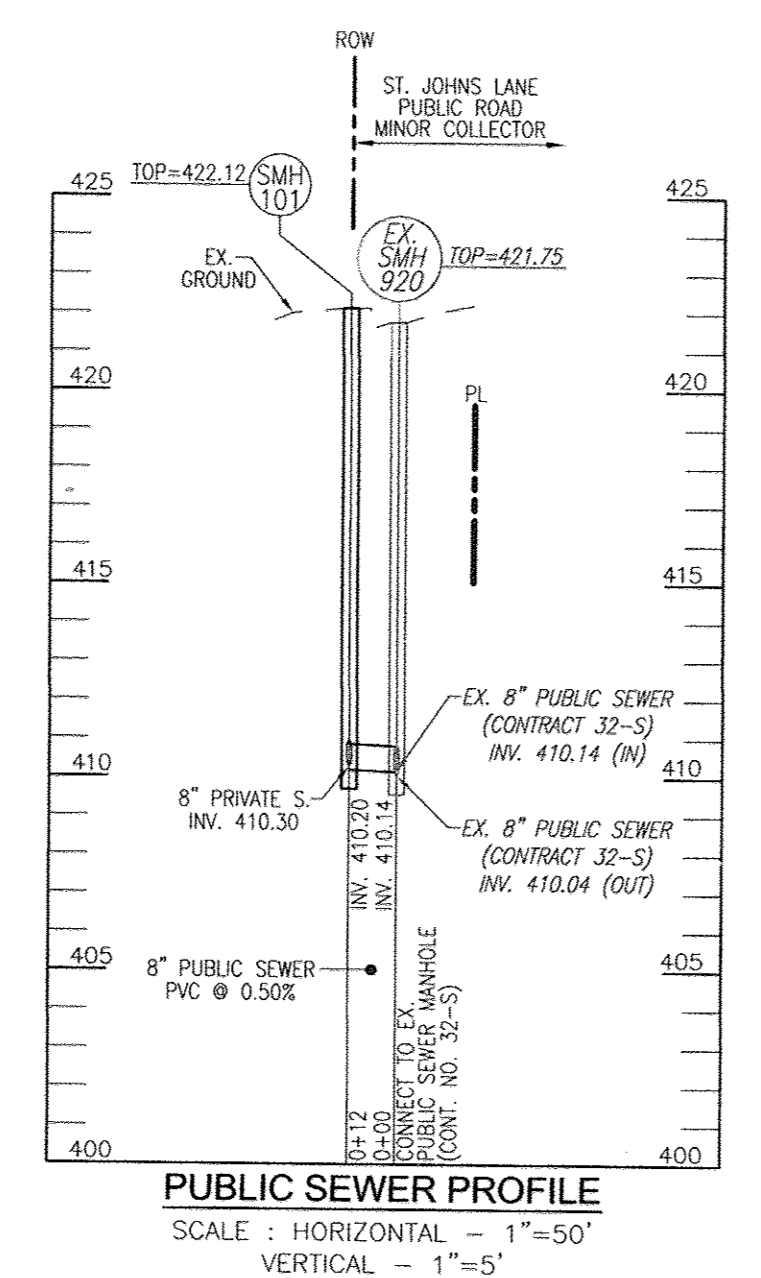
TAX MAP 17 GRID 23
 TAX MAP 24 GRID 5
 2ND ELECTION DISTRICT

ZONING R-SI
 PARCEL 1168
 HOWARD COUNTY, MARYLAND

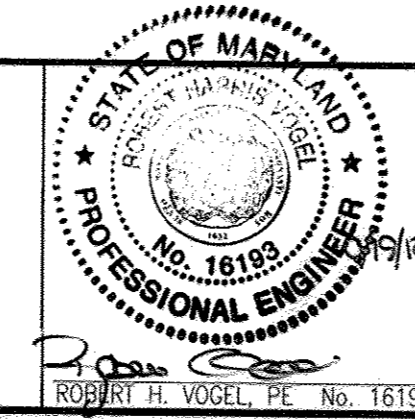


STA.	FITTING
0+00	8"x8" TAPPING SLEEVE
0+04	8" VALVE
1+00.50	8"-1/16 HORIZ. BEND (ROTATED UP 0.90')
1+19.06	8"-1/16 HORIZ. BEND (ROTATED UP 2.00')
1+43.81	8"-5" SWEEP (DOWN)
1+59.30	8"-5" SWEEP (UP)
1+73.88	8"x8" TEE, 6" VALVE, AND FIRE HYDRANT
2+05.65	8"x8" TEE (WHC)
2+09.65	8" VALVE
2+35.77	8"-5" SWEEP (UP)
2+53.52	8"-5" SWEEP (DOWN)
3+10.55	8"-1/8 HORIZ. BEND
3+11.31	8"-1/8 HORIZ. BEND (ROTATED DOWN 0.80')
5+58.49	8"x8" TEE, 6" VALVE, AND FIRE HYDRANT
5+84.80	8" COUPLING (0.64' UP)
6+34.29	8"-1/8 HORIZ. BEND
6+68.89	8" COUPLING (0.80' DOWN)
7+15.67	8" VALVE
7+19.67	8"x8" TAPPING SLEEVE

- NOTES:**
- ALL CONNECTIONS ARE TO BE VERIFIED FOR LOCATION BY THE CONTRACTOR PRIOR TO ABANDONMENT.
 - THE WATER CONNECTION FOR THE BUILDING SHALL BE 8" WITH INSIDE METER SETTINGS. REFER TO HOWARD COUNTY DETAILS W-3.24.



MH No.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT
SMH 101	STD. 4" PRECAST MANHOLE (G 5.12)	N 589094.72 E 1360930.66	422.12	410.30	410.20



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FINAL WATER AND SEWER CONSTRUCTION PLAN
CONTRACT 14-4743-D

TAX MAP 17 GRID 23
TAX MAP 24 GRID 5
2ND ELECTION DISTRICT

BETHEL KOREAN PRESBYTERIAN CHURCH RELIGIOUS CENTER
L.01127/F.0227

ZONING R-S-1
PARCEL 1168

SCALE AS SHOWN
SHEET 3 OF 3

OWNER
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION

600' SCALE MAP NO. 17 & 24
BLOCK NO. 5 & 23