FINAL WATER PLAN
VERIZON WIRELESS ANNAPOLIS JUNCTION MSC
LOT 'A-1', PARCEL 177
CONTRACT 44-5016-D

GENERAL NOTES

PART I

1. APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAINS UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE

2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON APRIL & JUNE, 2017 BY MORRIS & RITCHIE ASSOC., INC.

3. 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. 2028 NO. 2031. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE MORRIS & RITCHIE ASSOC., INC. FIRM SHALL PROVIDE DESCRIPTION OF VERTICAL CONTROL POINTS, I.E., IRON BARS, CROSS CUTS ON CONCRETE STRUCTURES)

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 THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES

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

7. 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

8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
AT&T.....800-252-1133
BGE (CONTRACTOR SERVICES).....410-637-8713
BGE (EMERGENCY).....410-685-0123
BUREAU OF UTILITIES.....410-313-4900
COLONIAL PIPELINE CO.....410-795-1390
MISS UTILITY.....800-257-7777
STATE HIGHWAY ADMINISTRATION.....410-531-5533
VERIZON.....800-743-0033

9. 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

10. 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

11. 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 DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE

PART II - WATER

1. ALL WATER MAINS SHALL BE PVC C900 DR-18 OR UNLESS OTHERWISE NOTED

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

3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TREES

4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH 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 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

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

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

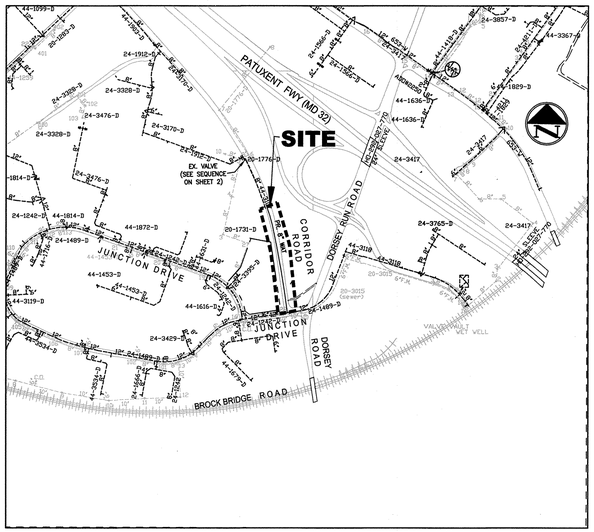
8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPES SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE.
THE TEST RECORDS SHALL 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

9. 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. 17 POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. 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

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 THE PVC PIPE.

11. 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, DR 18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR18 OR EQUAL.

12. WHEN PVC HIGH DEFLECTION 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 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.



LOCATION PLAN
SCALE: 1" = 600'

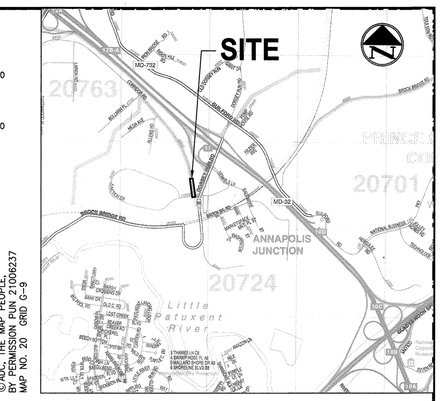
600 0 600 1200 1800

Scale 1" = 600'

BENCH MARKS

TR IBC 777
N 531,557.7800 E 1,369,658.1800
NAD 83 (Adj 07)
NAVD 88

TR IBC 778
N 531,937.5700 E 1,369,556.4300
NAD 83 (Adj 07)
NAVD 88



VICINITY MAP
SCALE: 1" = 2,000'

QUANTITIES					
NAME OF UTILITY CONTRACTOR: JACOBONI					
SURVEY AND DRAFTING DIVISION AS-BUILT DATE: 8-20-2018					
QUANTITIES ESTIMATED	SIZE	DESCRIPTION	AS-BUILT		
			QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
PUBLIC WATER					
41 LF	6"	WATER MAIN - PVC C900 DR 18	41'	C-900	NORTH AMERICAN
897 LF	8"	WATER MAIN - PVC C900 DR 18	897'	C-900	NORTH AMERICAN
2	6"	VALVE & ROADWAY BOX	2	GATE	KENNEDY VALVE
2	8"	VALVE & ROADWAY BOX	2	GATE	KENNEDY VALVE
2		FIRE HYDRANT	2	—	KENNEDY VALVE
2	8"x6"	TEE	2	—	SIGMA
1	12"x8"	TAPPING SLEEVE AND VALVE	1	—	KENNEDY

SHEET INDEX

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
LOT A-1/P-177	9000 JUNCTION DRIVE, ANNAPOLIS JUNCTION, MD

LEGEND

- EX. PROPERTY LINE
- EX. ADJACENT PROPERTY LINE
- EX. RIGHT OF WAY
- EX. EASEMENT
- EX. ZONING LINE
- EX. BUILDING
- EX. CONCRETE
- EX. PAVEMENT
- EX. ROAD CENTERLINE
- EX. FENCE
- EX. OVERHEAD LINE
- EX. WATER LINE
- EX. SEWER LINE
- EX. STREAM
- EX. STREAM BUFFER
- EX. TREE LINE
- EX. GUARD RAIL
- EX. UNDERGROUND ELECTRIC
- EX. LIGHT POLES
- EX. GAS LINE
- EX. STORM DRAIN
- EX. CONDUIT
- EX. FIBER OPTIC
- EX. CABLE TV LINE
- EX. UNDERGROUND TEL LINE
- EX. ELECTRIC MANHOLE
- EX. TELEPHONE MANHOLE
- EX. BORING LOCATION
- EX. NON TIDAL WETLANDS
- EX. NON TIDAL WETLANDS
- EX. 25' WETLAND BUFFER
- EX. FLOODPLAIN
- EX. WATERS OF THE US
- EX. STREAM BUFFER
- EX. SPECIMEN TREE
- PR. LOT LINE
- PR. BUILDING FOOTPRINT
- PR. BUILDING SETBACK
- PR. CURB AND GUTTER
- PR. SIDEWALK
- PR. RETAINING WALL
- PR. 8" WATER PIPE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON SDP-08-045 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/26/17

W & S COUNTY USE WATER TEST GRADIENT: 550 WATER ZONE: 400	TYPE OF BUILDINGS: N/A DRAINAGE AREA: LITTLE PATUXENT TREATMENT PLANT: LITTLE PATUXENT WASTEWATER TREATMENT PLANT, SAVAGE ,MD NUMBER OF UNITS: 0 NUMBER OF NON-BUILDABLE LOTS: 0 NUMBER OF W.H.C.: 0 NUMBER OF S.H.C.: 0

LIMIT OF DISTURBANCE : 0.12 AC

AS-BUILT
By [illegible] Date 10/5/18

OWNER/DEVELOPER:
VERIZON WIRELESS
7600 MONTPELIER ROAD
LAUREL, MD 20723
TAX MAP 48, PARCEL 177
CONTACT: MARK JOSEFSON
301-512-2453

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE 7/19/17

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/19/17

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
14280 PARK CENTER DRIVE, SUITE A
LAUREL, MARYLAND 20707
(410) 792-9792 or (301) 776-1690
FAX (410) 792-7395

STATE OF MARYLAND — MARC C. NEUGEBAUER — 29203 — REGISTERED PROFESSIONAL ENGINEER — 7-12-17

MD. PROFESSIONAL CERTIFICATION:
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. 29203, EXPIRATION DATE: 6/16/19.

DES: ATS
DRN: MZR
CHK: TCN
DATE: 07/11/17

BY	NO.	REVISIONS	DATE

FINAL WATER PLAN
COVER SHEET

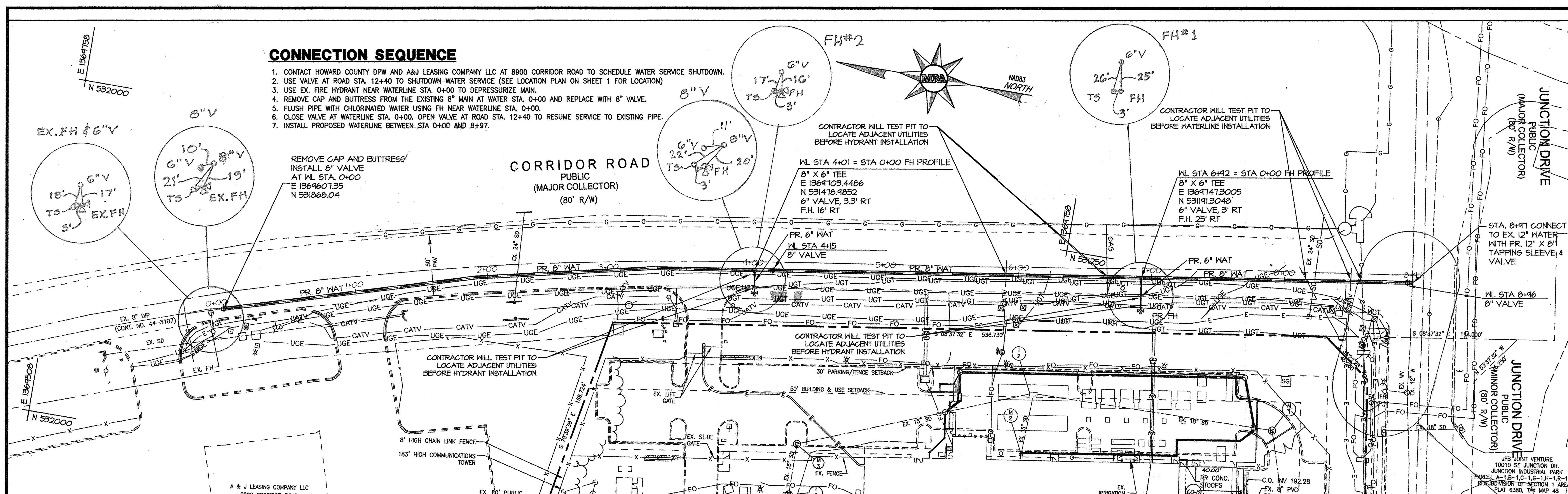
600' MAP NO. 48 BLOCK NO. 20

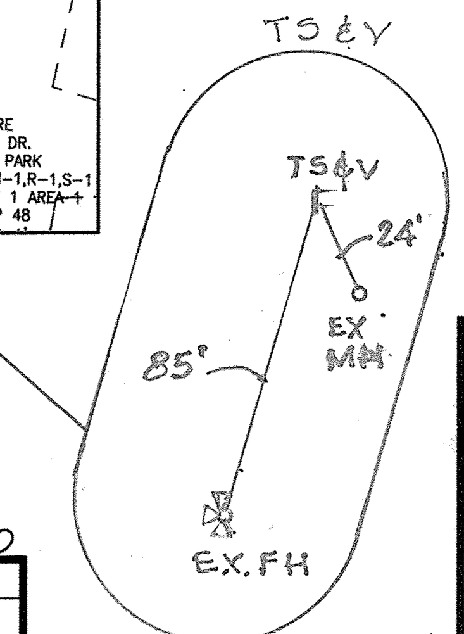
FINAL WATER PLAN
VERIZON WIRELESS
ANNAPOLIS JUNCTION MSC
LOT 'A-1', PARCEL 177
CONTRACT 44-5016-D
9000 JUNCTION DRIVE, ANNAPOLIS JUNCTION, MD 20701
LIBER: 3677 ~ FOLIO: 368
ZONED: TOD ~ TAX MAP: 48 ~ GRID: 2 ~ PARCEL: 177
5TH ELECTION DISTRICT ~ HOWARD COUNTY, MARYLAND

JOB NO.: 104271880
SCALE: AS SHOWN
SHEET 1 OF 2

CONNECTION SEQUENCE

1. CONTACT HOWARD COUNTY DPW AND A&J LEASING COMPANY LLC AT 8900 CORRIDOR ROAD TO SCHEDULE WATER SERVICE SHUTDOWN.
2. USE VALVE AT ROAD STA. 12+40 TO SHUTDOWN WATER SERVICE (SEE LOCATION PLAN ON SHEET 1 FOR LOCATION)
3. USE EX. FIRE HYDRANT NEAR WATERLINE STA. 0+00 TO DEPRESSURIZE MAIN.
4. REMOVE CAP AND BUTTRESS FROM THE EXISTING 8" MAIN AT WATER STA. 0+00 AND REPLACE WITH 8" VALVE.
5. FLUSH PIPE WITH CHLORINATED WATER USING FH NEAR WATERLINE STA. 0+00.
6. CLOSE VALVE AT WATERLINE STA. 0+00. OPEN VALVE AT ROAD STA. 12+40 TO RESUME SERVICE TO EXISTING PIPE.
7. INSTALL PROPOSED WATERLINE BETWEEN STA 0+00 AND 8+97.





LAYOUT PLAN

SCALE: 1"=50'

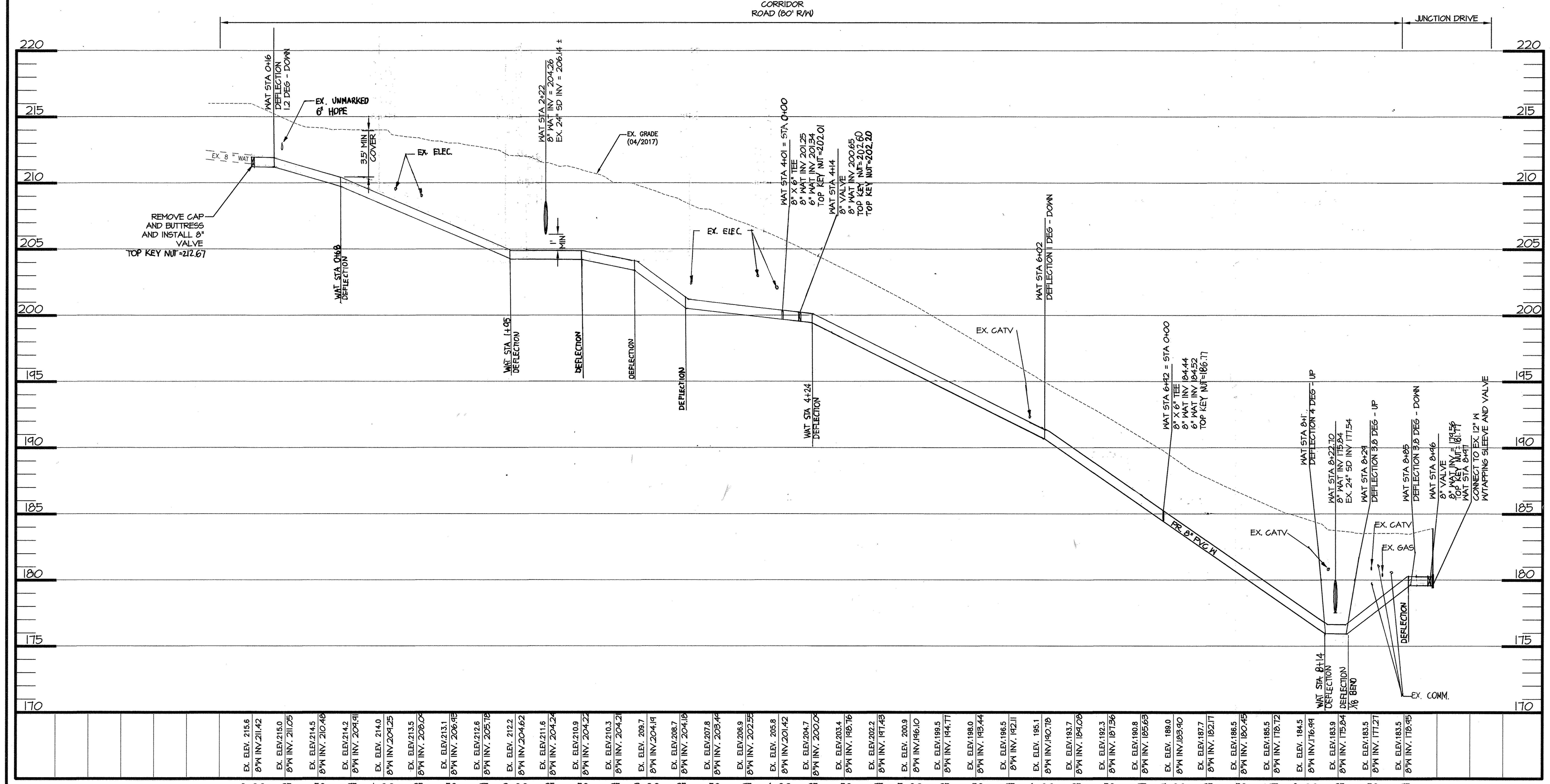
Scale 1" = 50'

STATION	APPURTENANCE	COORDINATES
0+00	8" VALVE	N 531868.25, E 1369607.29
4+01	8" X 6" TEE	N 531478.99, E 1369703.45
4+01 2' RT	6" VALVE	N 531478.48, E 1369700.14
4+01 16' RT	F.H.	N 531476.44, E 1369686.75
4+15	8" VALVE	N 531465.47, E 1369705.50
6+92	8" X 6" TEE	N 531191.32, E 1369747.20
6+92 2' RT	6" VALVE	N 531190.80, E 1369744.00
6+92 24' RT	F.H.	N 531187.60, E 1369722.87
8+96	8" VALVE	N 530993.31, E 1369777.48
8+97	12" X 8" TAPPING SLEEVE	N 530989.32, E 1369778.32

WATER FITTINGS LOCATION

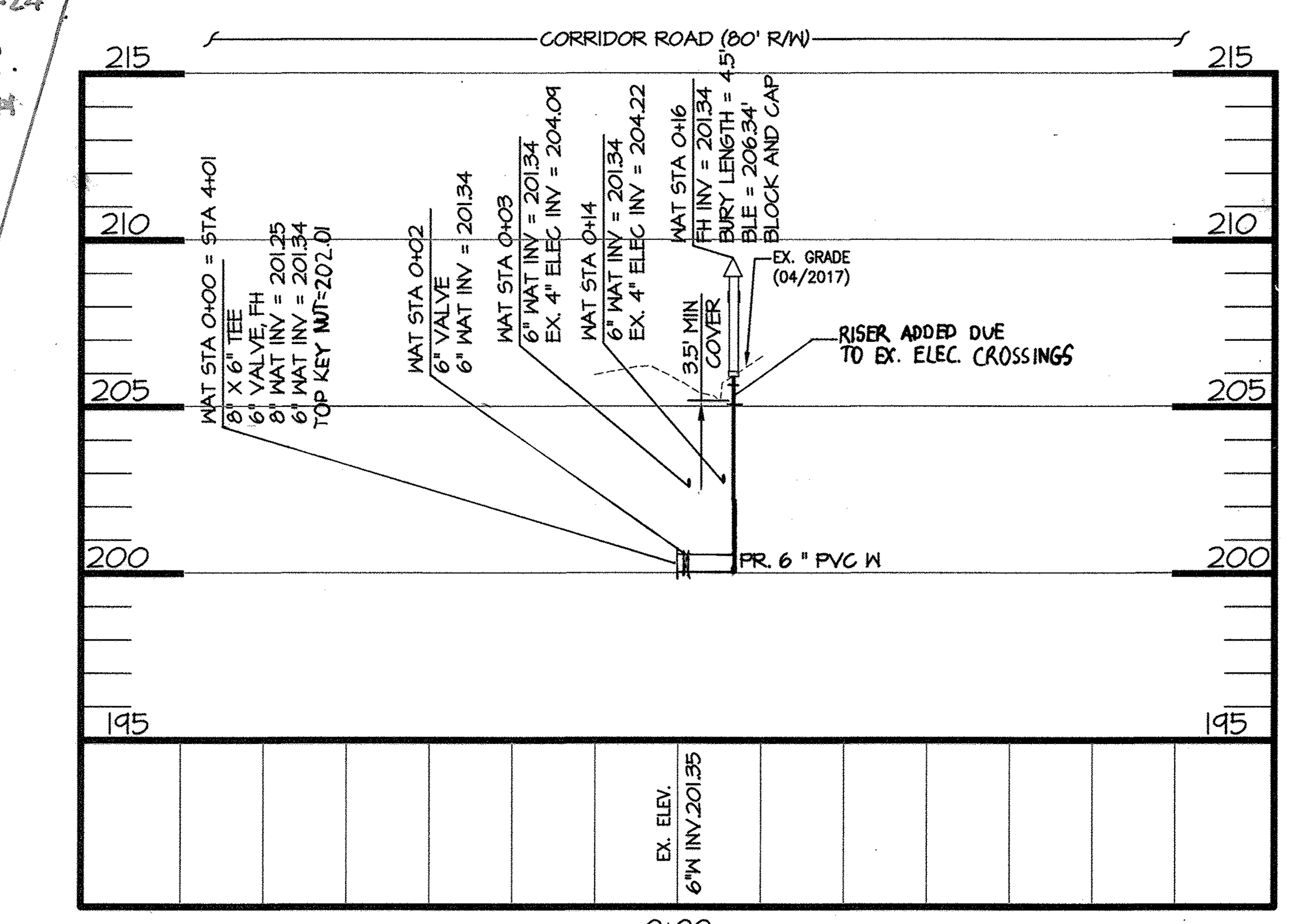
AS-BUILT

By [signature] Date 10/5/18



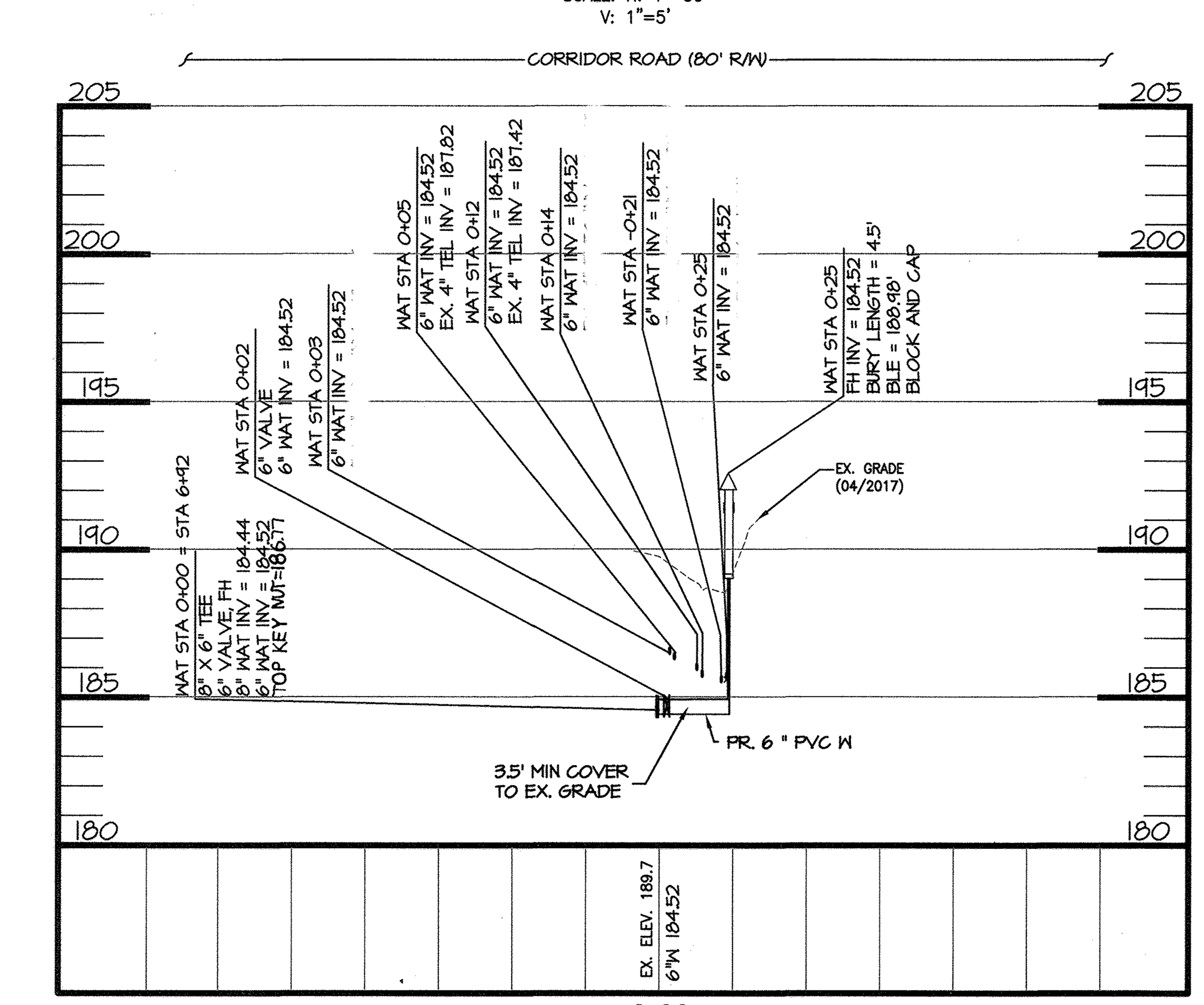
CORRIDOR ROAD PUBLIC WATER MAIN PROFILE

SCALE: H: 1"=50'
V: 1"=5'



FIRE HYDRANT WAT STA 4+01 PROFILE

SCALE: H: 1"=50'
V: 1"=5'



FIRE HYDRANT WAT STA 6+92 PROFILE

SCALE: H: 1"=50'
V: 1"=5'

OWNER/DEVELOPER:
TAX MAP 48, PARCEL 177
VERIZON WIRELESS
7600 MONTPELIER ROAD
LAUREL, MD 20723
CONTACT: MARK JOSEFSON
301-512-2453

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[signature] 7/19/17
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[signature] 7/24/17
CHIEF, DEVELOPMENT ENGINEERING DIVISION M.G. DATE

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
14280 PARK CENTER DRIVE, SUITE A
LAUREL, MARYLAND 20707
(410) 792-9792 or (301) 776-1690
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STATE OF MARYLAND THOMAS C. NEUGEBAUER 29203 PROFESSIONAL ENGINEER 7-12-17

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DES: ATS
DRN: MZR
CHK: TCN
DATE: 07/11/17

BY	NO.	REVISIONS	DATE

FINAL WATER PLAN & PROFILES

600' MAP NO. 48 BLOCK NO. 20

FINAL WATER PLAN
VERIZON WIRELESS
ANNAPOLIS JUNCTION MSC
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