

GENERAL NOTES

DEPARTMENT OF PUBLIC WORKS - BUREAU OF ENGINEERING - UTILITY DESIGN DIVISION
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 3/20/04 Axis GeoSpatial, LLC. Additional topography shown taken from Howard County GIS and Phase I plans prepared by Site Resources, 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 No. 311M4, No. 311M3 and No. 311E.
All vertical controls are based on NAVD '88. Vertical controls provided on the drawings are pk nails. (See Traverse Coordinate Schedule)
- 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 'M' 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	1-800-252-1183
BGE (Construction Services)	410-637-8718
BGE (Emergency)	410-685-0123
Bureau of Utilities	410-313-4400
Colonial Pipeline Co.	410-745-3940
Miss Utility	1-800-251-TTTT
State Highway Administration	410-531-5533
Verizon	1-800-743-0033

- 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. All PVC pipe shall be DR18.
- 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 minimum depth 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 appropriate plate compactor or other approved means to thoroughly compact the #51 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 lag 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-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 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.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON SDP-14-033

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Flat #: - - ; SDP #: SDP-14-033

APPROVED: *John M. Robertson* 7/29/14
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Thomas E. Smith 7/30/14
BUREAU OF ENGINEERING, CHIEF DATE
Steve Curran 7/22/14
BUREAU OF UTILITIES, CHIEF DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Chad Johnson 7-31-14
DEVELOPMENT ENGINEERING DIVISION, CHIEF M.G. DATE

SITE RESOURCES
INCORPORATED
Comprehensive Land Planning & Site Design Services
16165 Annettsville Pike • Pikesville, Maryland 21111
(410) 682-3388 • Fax (410) 682-3389

DES: AM					
DRN: AM					
CHK: AFE					
DATE: 07/15/14	BY NO.	REVISION	DATE	TAX MAP NO.	BLOCK NO.

FINAL WATER AND SEWER CONSTRUCTION PLAN

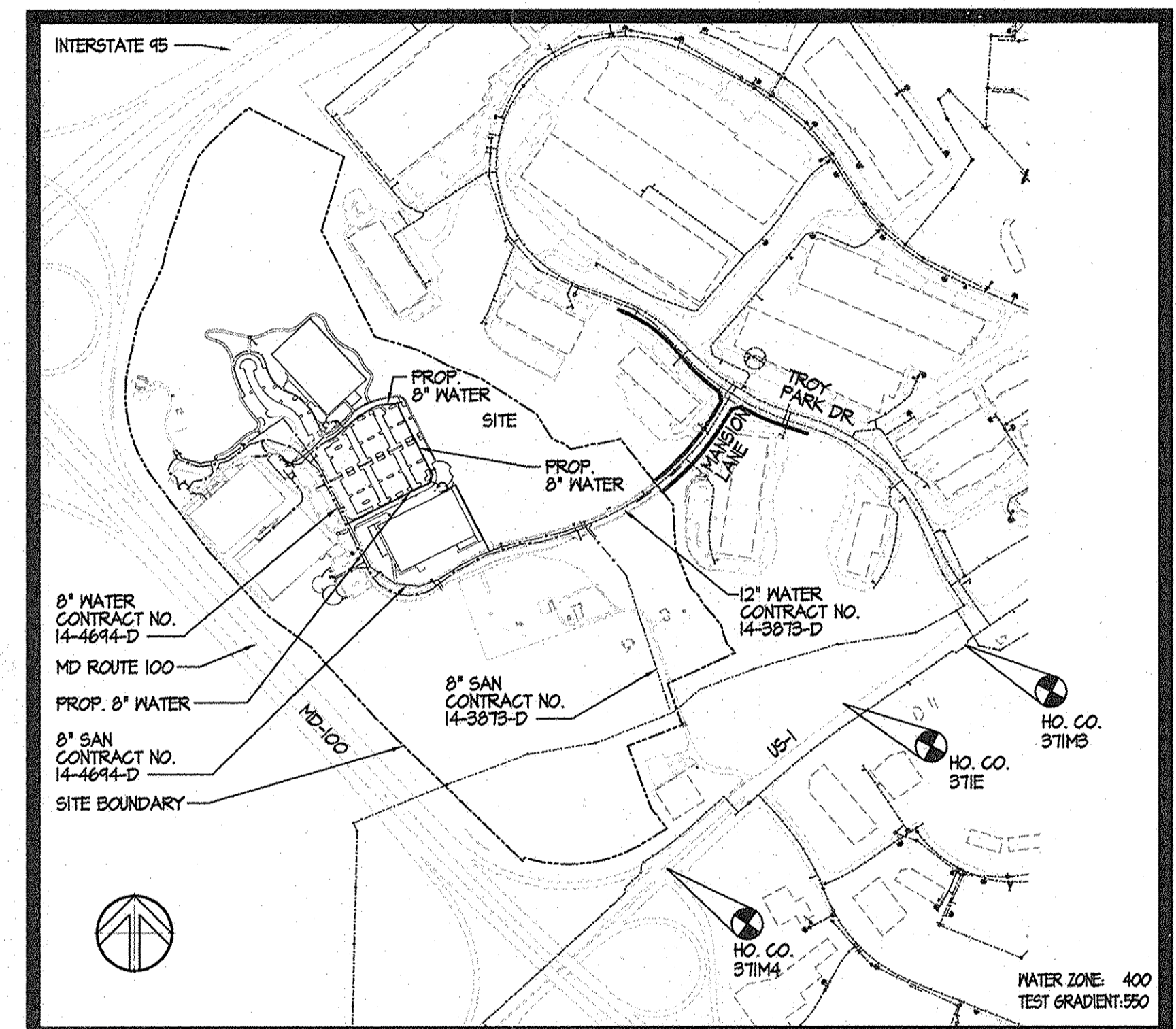
TROY PARK - PHASE 2
WATER & SEWER EXTENSION
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CONTRACT NO. 14-4854-D
CAPITAL PROJECT NUMBER N-3957
PART OF THE TROY HILL CORPORATE CENTER PHASE III B, PARCELS A-21 & A-22
6450 MANSION LANE
3rd ELECTION DISTRICT

SCALE: AS SHOWN
SHEET 1 OF 4

TROY PARK - PHASE 2 WATER & SEWER EXTENSION

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CONTRACT NO. 14-4854-D

CAPITAL PROJECT NUMBER N-3957
PART OF THE TROY HILL CORPORATE CENTER PHASE III B, PARCELS A-21 & A-22

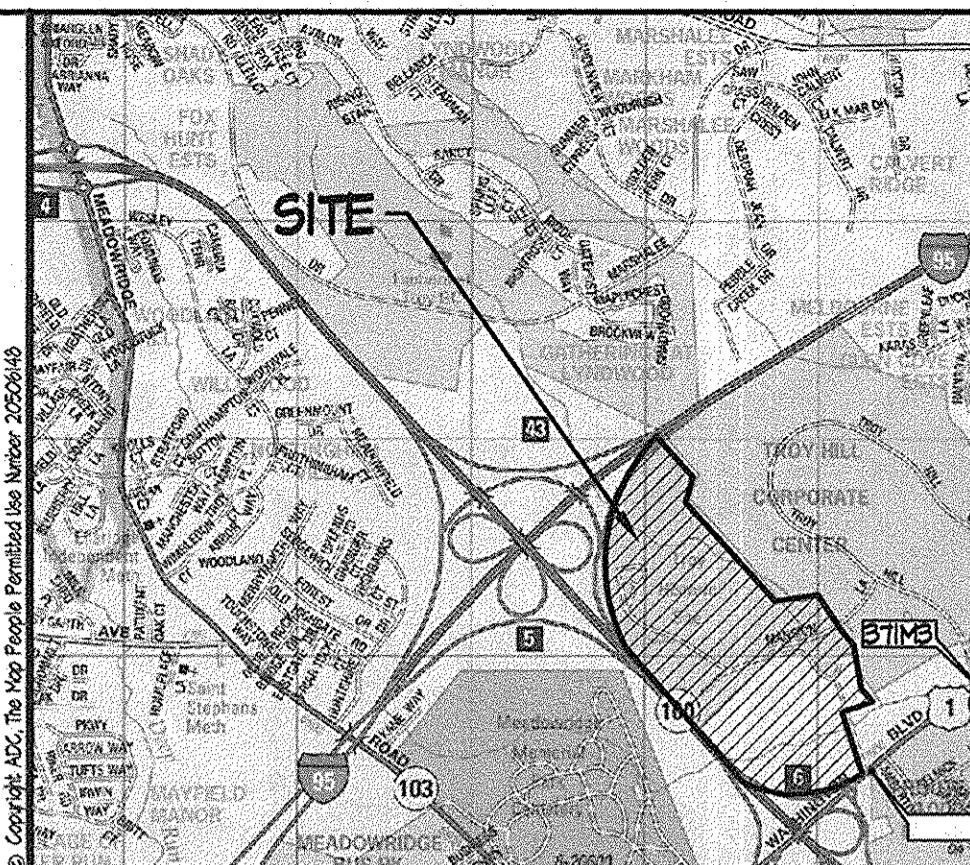


LOCATION MAP
SCALE: 1" = 600'

TYPE OF BUILDING:	PAVILLION
NUMBER OF LOTS:	1
NUMBER OF S.H.C.S.:	5
NUMBER OF M.H.C.S.:	5
AREA OF PARCEL:	108.04 AC.
SEWER SHED:	PATAPSCO
TREATMENT PLANT:	DEEP RUN
DISTURBED AREA:	34.48 AC.

HOWARD COUNTY GEODETIC SURVEY CONTROL NUMBERS

- DESCRIPTION BENCH MARK: 311M3
ALSO KNOWN AS: R-125
NS5 PID: JVO628
CLASSIFICATION: 2nd ORDER
GENERAL LOCATION: US-1 0.5 mi NE of RT-100
DESCRIPTION: DISC ON BRIDGE ABUTMENT
N: 525,420.8332 E: 138,176.3040
NAVD88 ELEVATION: 31.783 mts. = 123.961 uft.
- DESCRIPTION BENCH MARK: 311M4
ALSO KNOWN AS: N/A
NS5 PID: N/A
CLASSIFICATION: 2nd ORDER
GENERAL LOCATION: END OF RAMP FROM I-100 TO US-1 sb
DESCRIPTION: LIGHT POLE BOLT
N: 524,841.6680 E: 138,100.3573
NAVD88 ELEVATION: 51.864 mts. = 170.156 uft.
- DESCRIPTION BENCH MARK: 311E
ALSO KNOWN AS: N/A
NS5 PID: N/A
CLASSIFICATION: N/A
GENERAL LOCATION: NORTH SIDE US-1 400' NE of AMBERTON RD
DESCRIPTION: CONCRETE MONUMENT
N: 525,617.199 E: 138,206.144
NAVD88 ELEVATION: 43.716 mts. = 143.622 uft.



LEGEND

---	PROPERTY LINE
---	EXISTING WALK
---	EXISTING STORM DRAIN
---	EXISTING WATER
---	EXISTING SANITARY SEWER
---	EXISTING STREAM
---	EXISTING FLOODPLAIN
---	PROPOSED STORM DRAIN
---	PROPOSED WATER
---	PROPOSED SANITARY SEWER
---	PROPOSED WATER HOUSE SERVICE & METER BOX
---	SANITARY SEWER HOUSE CONNECTION

DRAWING INDEX

SHEET #	DRAWING TITLE
1 OF 4	COVER SHEET
2 OF 4	WATER PLAN
3 OF 4	WATER PROFILES
4 OF 4	WATER PROFILES

WELL & SEPTIC TABLE

PARCEL #	ADDRESS	STATUS
135 A-21	6450 MANSION LANE	TO REMAIN
135 A-22	6450 MANSION LANE	TO REMAIN
137	1072 WASHINGTON BLVD	TO REMAIN
185	PRIVATE RD, ELK RIDGE, MD 21075	TO REMAIN
184	1078 WASHINGTON BLVD	TO REMAIN
191	WASHINGTON BLVD, ELK RIDGE, MD 21075	TO REMAIN
332	1072 WASHINGTON BLVD	TO REMAIN
345	RT. 100, ELK RIDGE, MD 21074	TO REMAIN
561	6500 NH MANSION LANE	TO REMAIN

OWNER/DEVELOPER

HOWARD COUNTY MARYLAND
DEPARTMENT OF RECREATION AND PARKS
5800 CORNWATER DRIVE
ELLCOTT CITY, MARYLAND 21043
(410) 313-2100

SITE DATA

ADDRESS: 6500 MANSION LANE
SUBDIVISION NAME: TROY HILL ELK RIDGE
SECTION / AREA: N/A
PARCEL NO.: PARCEL 561
LIBER/FOLIO: 577/414
BLOCK NO.: 16
TAX MAP NO.: 37
ZONE: ST-1
ELECTION DISTRICT: 3
CENSUS TRACT: 601202
600 SCALE MAP #: 31

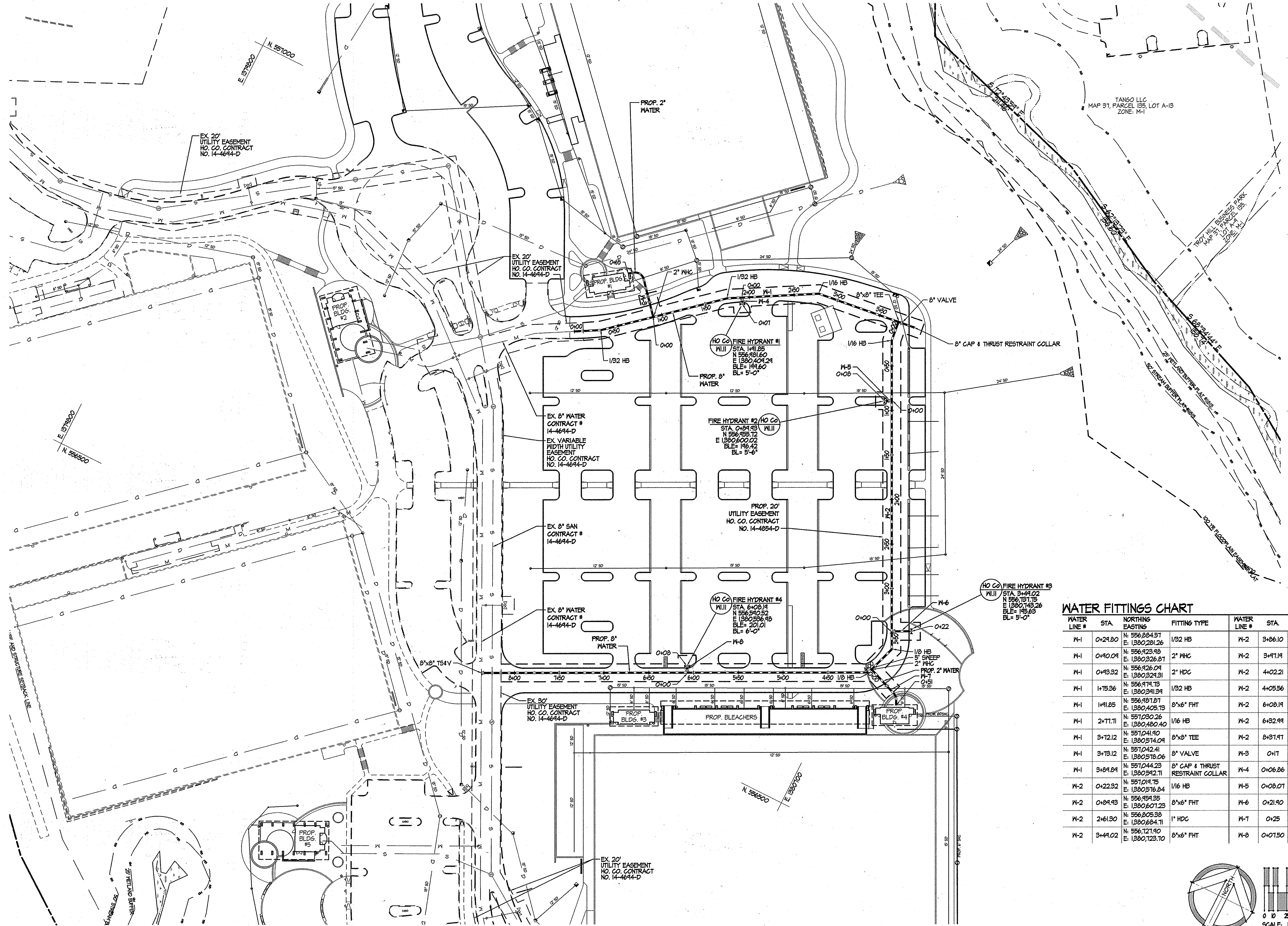
QUANTITIES

ITEM	ESTIMATED QUANTITY	AS-BUILT		
		QUANTITY	TYPE	MANUFACTURER/SUPPLIER
8" WATER PIPE (PVC C900)	1228 L.F.			
6" WATER PIPE (PVC C900)	44 L.F.			
2" MHC (TYPE K COPPER)	116 L.F.			
FIRE HYDRANT (BURY 5'-0")	2 EA.			
FIRE HYDRANT (BURY 5'-6")	1 EA.			
FIRE HYDRANT (BURY 6'-0")	1 EA.			
8" x 8" TAPPING SLEEVE & VALVE	1 EA.			
8" x 6" TEE	5 EA.			
8" x 8" TEE	1 EA.			
8" VALVE	1 EA.			
6" VALVE	4 EA.			
THRUST RESTRAINT COLLAR	1 EA.			

WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE

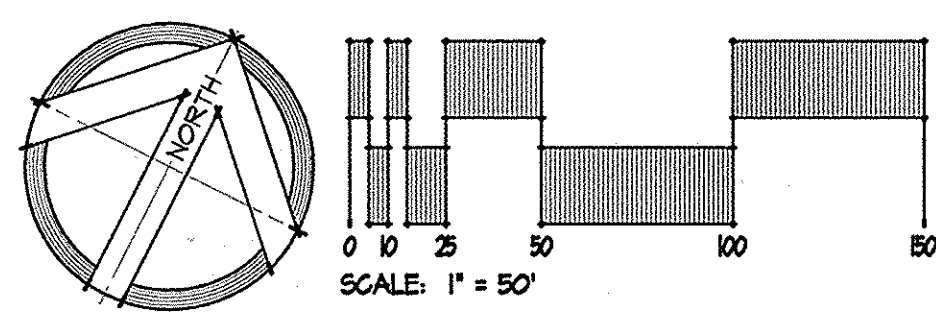
LOT NUMBER	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
LOT 1	6450 MANSION LANE BLDG. #1		
LOT 1	6450 MANSION LANE BLDG. #4		

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WATER FITTINGS CHART

WATER LINE #	STA.	NORTHING	EASTING	FITTING TYPE	WATER LINE #	STA.	NORTHING	EASTING	FITTING TYPE
W-1	0+24.20	N: 556,884.57 E: 1380,281.26		1/32 HB	W-2	3+86.10	N: 556,710.44 E: 1380,732.48		1/8 HB
W-1	0+40.04	N: 556,423.48 E: 1380,326.81		2" MHC	W-2	3+91.19	N: 556,682.36 E: 1380,723.54		5" SWEEP
W-1	0+49.32	N: 556,426.04 E: 1380,324.31		2" HDC	W-2	4+02.21	N: 556,674.66 E: 1380,722.31		2" MHC
W-1	1+75.36	N: 556,414.73 E: 1380,341.39		1/32 HB	W-2	4+05.56	N: 556,674.53 E: 1380,720.62		1/8 HB
W-1	1+41.85	N: 556,487.87 E: 1380,405.73		8"x6" FHT	W-2	6+08.19	N: 556,583.82 E: 1380,540.35		8"x6" FHT
W-1	2+71.71	N: 557,030.26 E: 1380,480.40		1/8 HB	W-2	6+32.94	N: 556,572.23 E: 1380,511.32		2" HDC
W-1	3+72.12	N: 557,041.90 E: 1380,514.04		8"x8" TEE	W-2	8+31.97	N: 556,480.54 E: 1380,539.10		8"x8" T.S.4V.
W-1	3+73.12	N: 557,042.41 E: 1380,518.06		8" VALVE	W-3	0+17	N: 556,436.94 E: 1380,515.64		2" VALVE
W-1	3+84.24	N: 557,044.23 E: 1380,522.11		8" CAP & THRUST RESTRAINT COLLAR	W-4	0+06.86	N: 556,481.60 E: 1380,404.24		FIRE HYDRANT
W-2	0+22.32	N: 557,014.75 E: 1380,516.84		1/16 HB	W-5	0+08.07	N: 556,485.72 E: 1380,600.02		FIRE HYDRANT
W-2	0+84.43	N: 556,454.35 E: 1380,607.23		8"x6" FHT	W-6	0+21.90	N: 556,731.75 E: 1380,743.26		FIRE HYDRANT
W-2	2+61.30	N: 556,805.38 E: 1380,684.71		1" HDC	W-7	0+25	N: 556,670.75 E: 1380,746.26		2" VALVE
W-2	3+44.02	N: 556,721.90 E: 1380,723.70		8"x6" FHT	W-8	0+07.50	N: 556,540.52 E: 1380,536.98		FIRE HYDRANT



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Thomas E. Switzer 7/30/14
BUREAU OF ENGINEERS, CHIEF DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Chad Edwards 7-31-14
DEVELOPMENT ENGINEERING DIVISION, CHIEF DATE

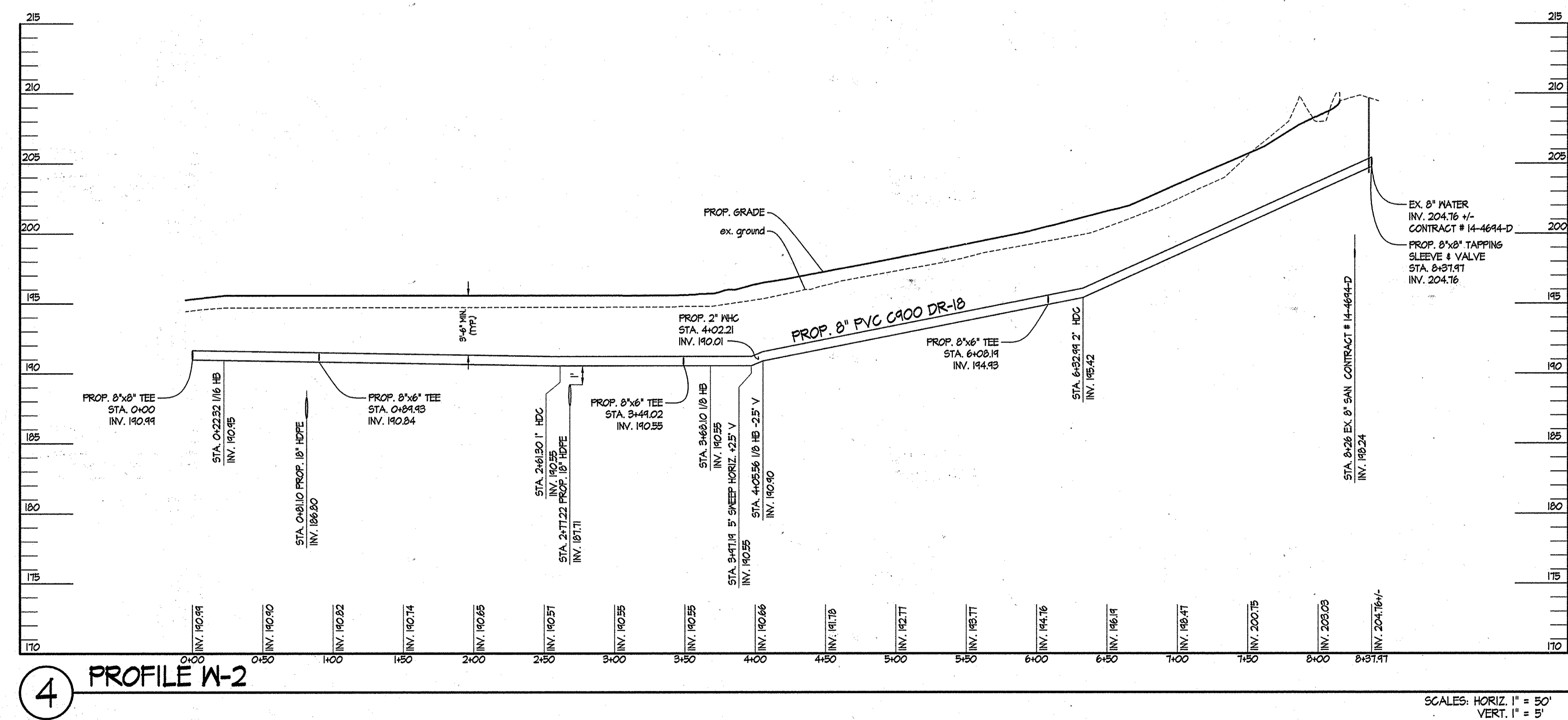
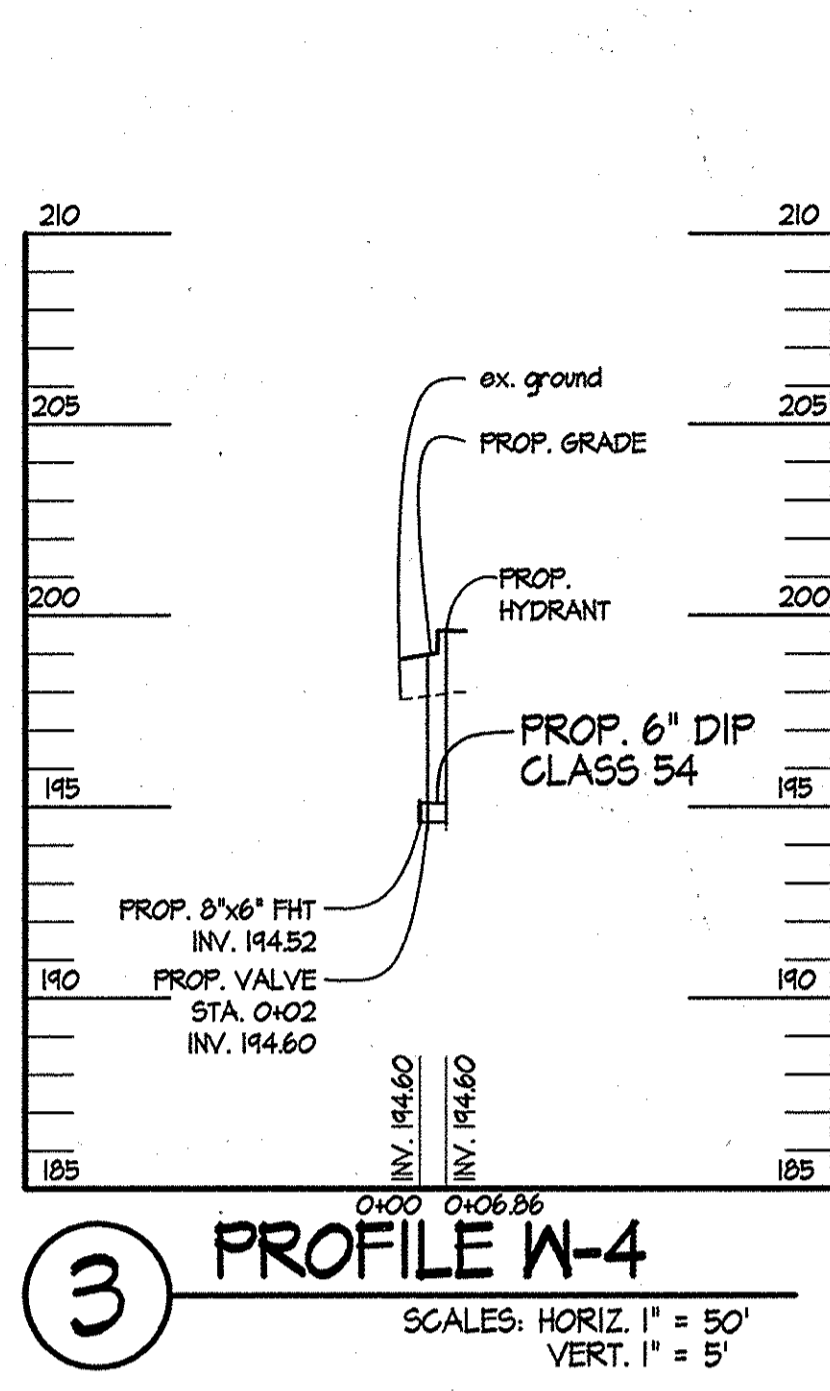
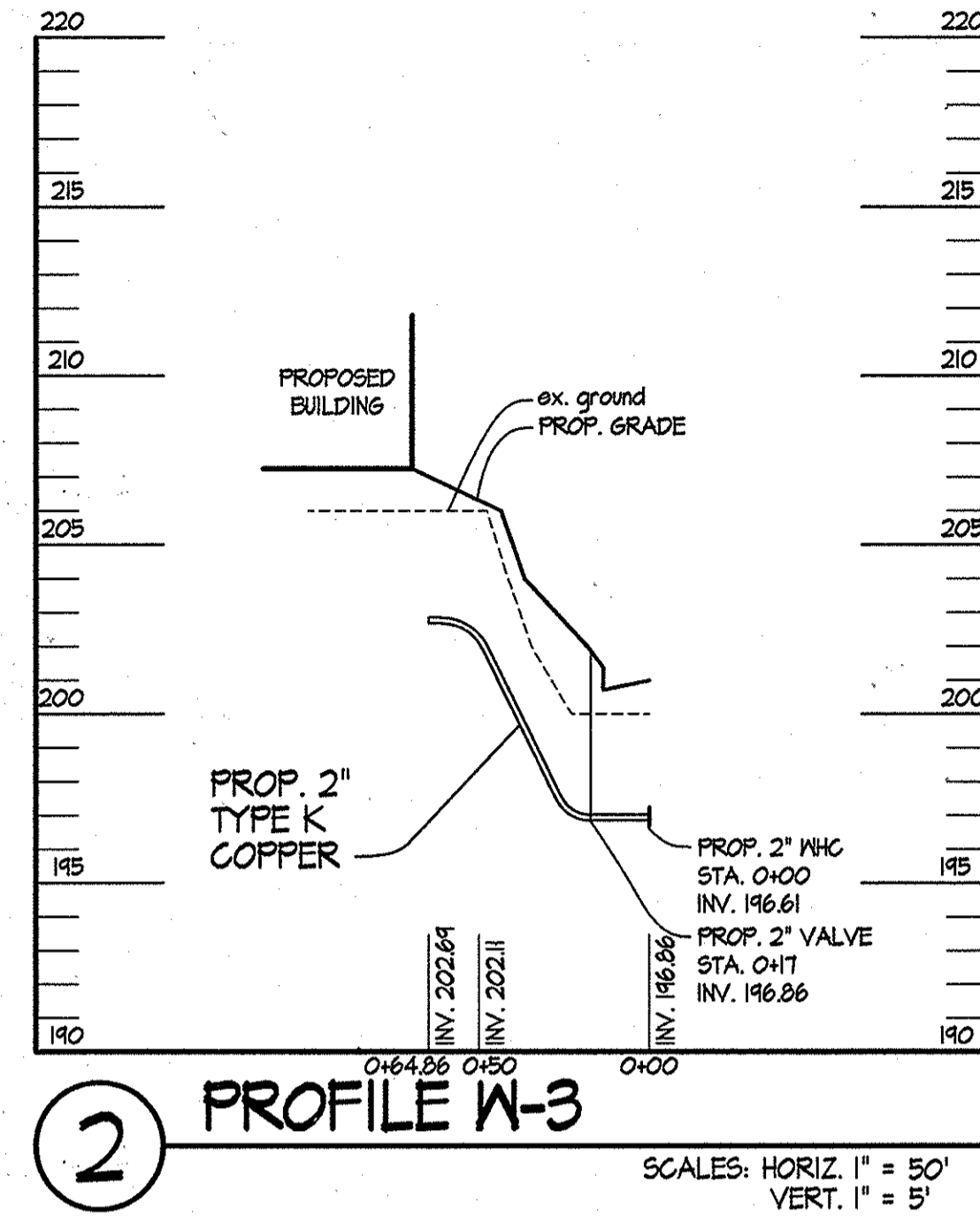
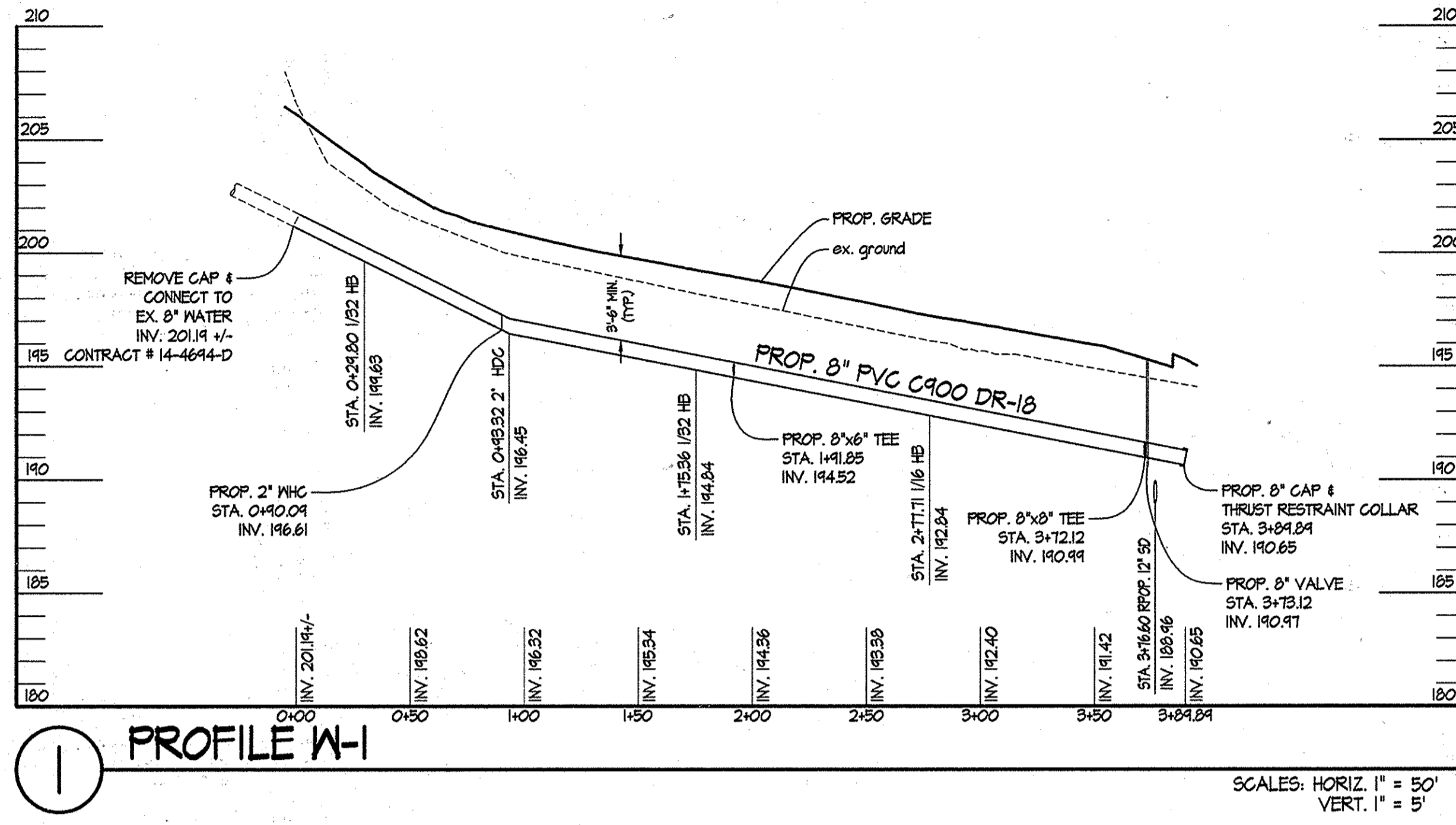
SITE RESOURCES
INCORPORATED
Comprehensive Land Planning & Site Design Services
14115 Annettsville Pike • Pikesville, Maryland 21115
(410) 883-3388 • Fax (410) 883-3389

DES: AM					
DRN: AM					
CHK: AFE					
DATE: 07/15/14	BY	NO.	REVISION	DATE	TAX MAP NO. 37

WATER PLAN
TAX MAP NO. 37 BLOCK NO. 16

TROY PARK - PHASE 2
WATER & SEWER EXTENSION
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CONTRACT NO. 14-4854-D
CAPITAL PROJECT NUMBER N-3957
PART OF THE TROY HILL CORPORATE CENTER PHASE III, PARCELS A-21 & A-22
6450 MANSION LANE
3rd ELECTION DISTRICT
SCALE: 1"=50'
SHEET 2 OF 4

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Thomas E. Suttles 7/30/14
BUREAU OF ENGINEERING, CHIEF DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Chad Edwards 7.31.14
DEVELOPMENT ENGINEERING DIVISION, CHIEF M.G. DATE

SITE RESOURCES
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14115 Annettsville Pike • Pikesville, Maryland 21113
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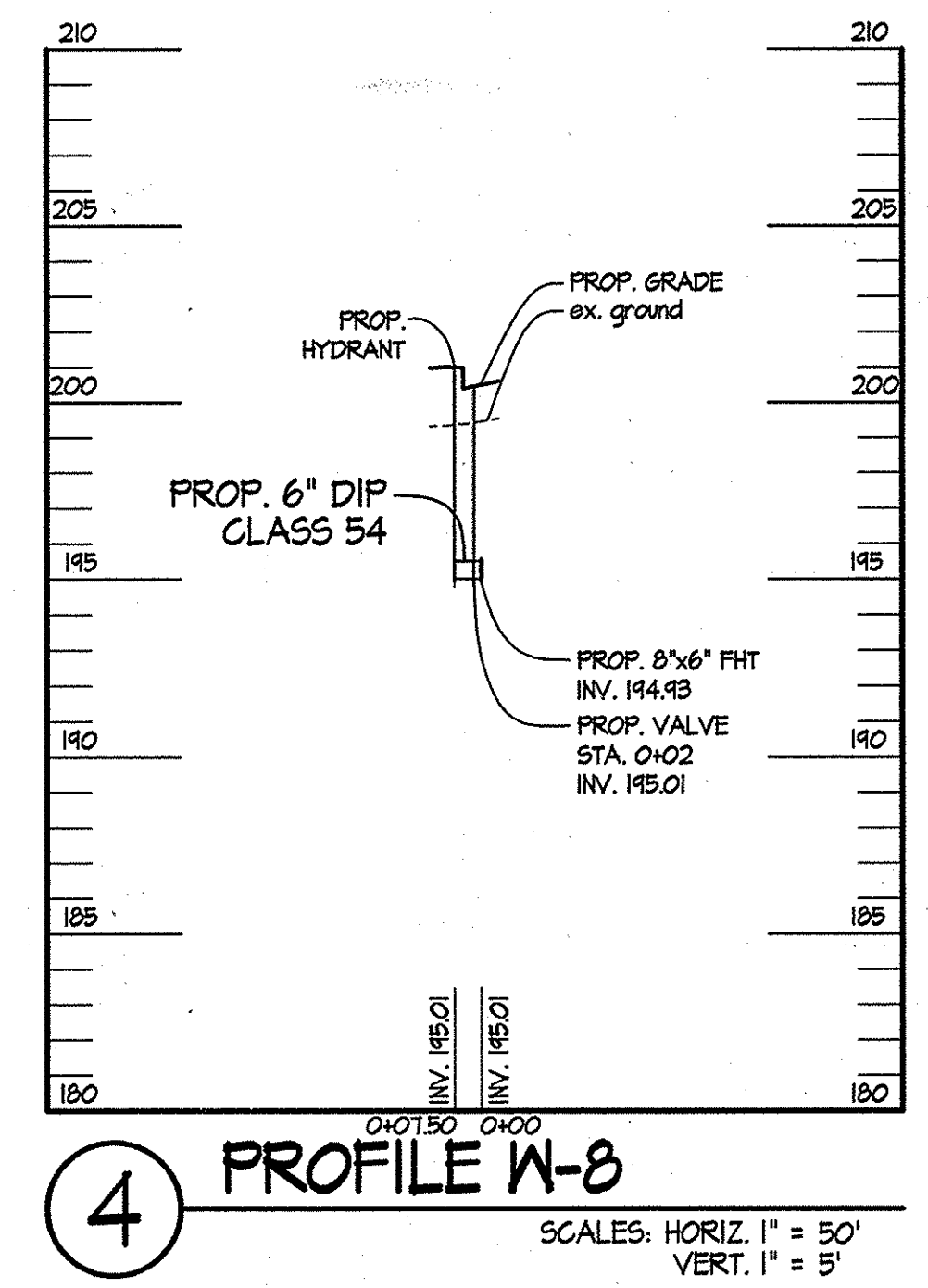
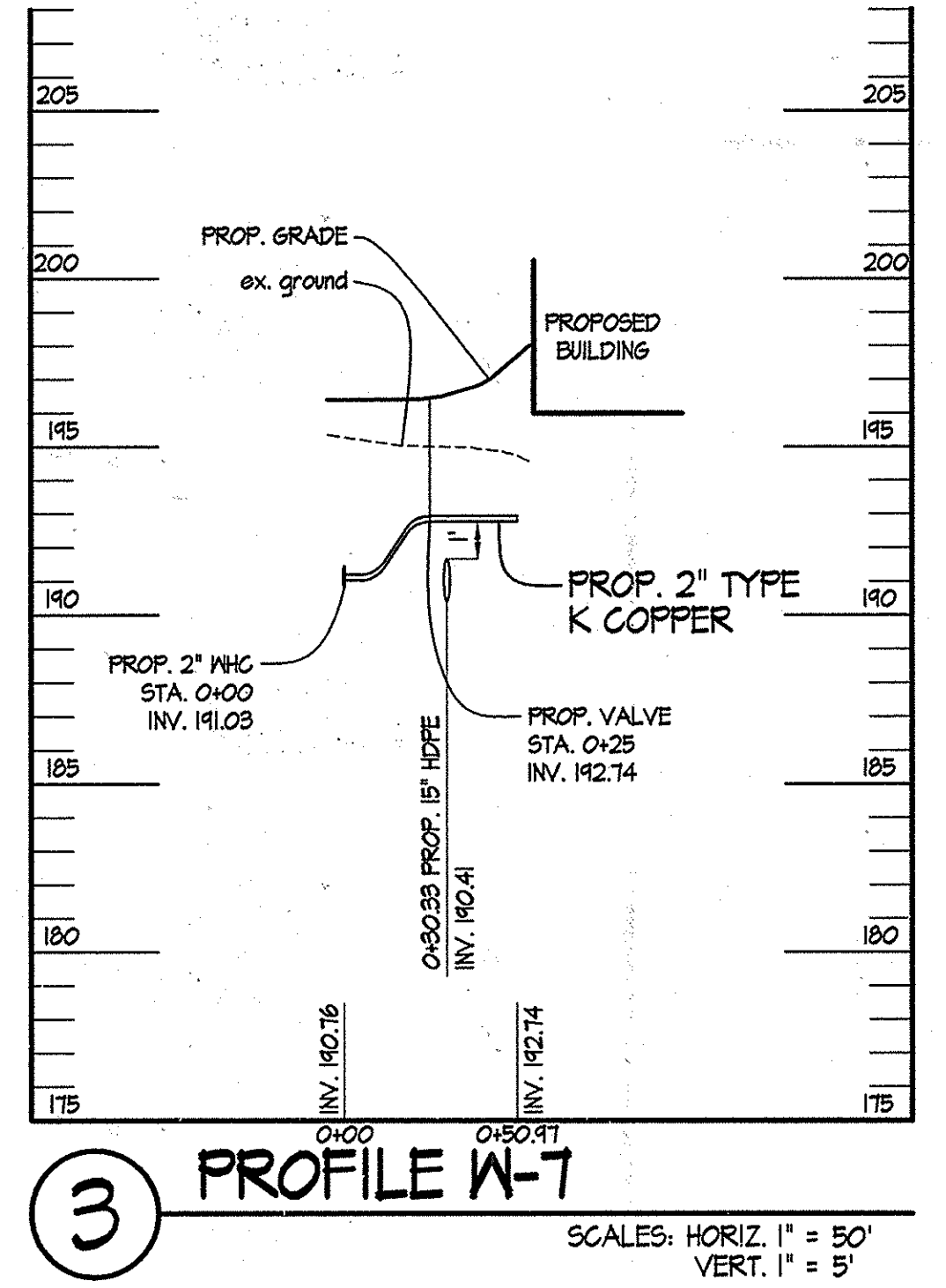
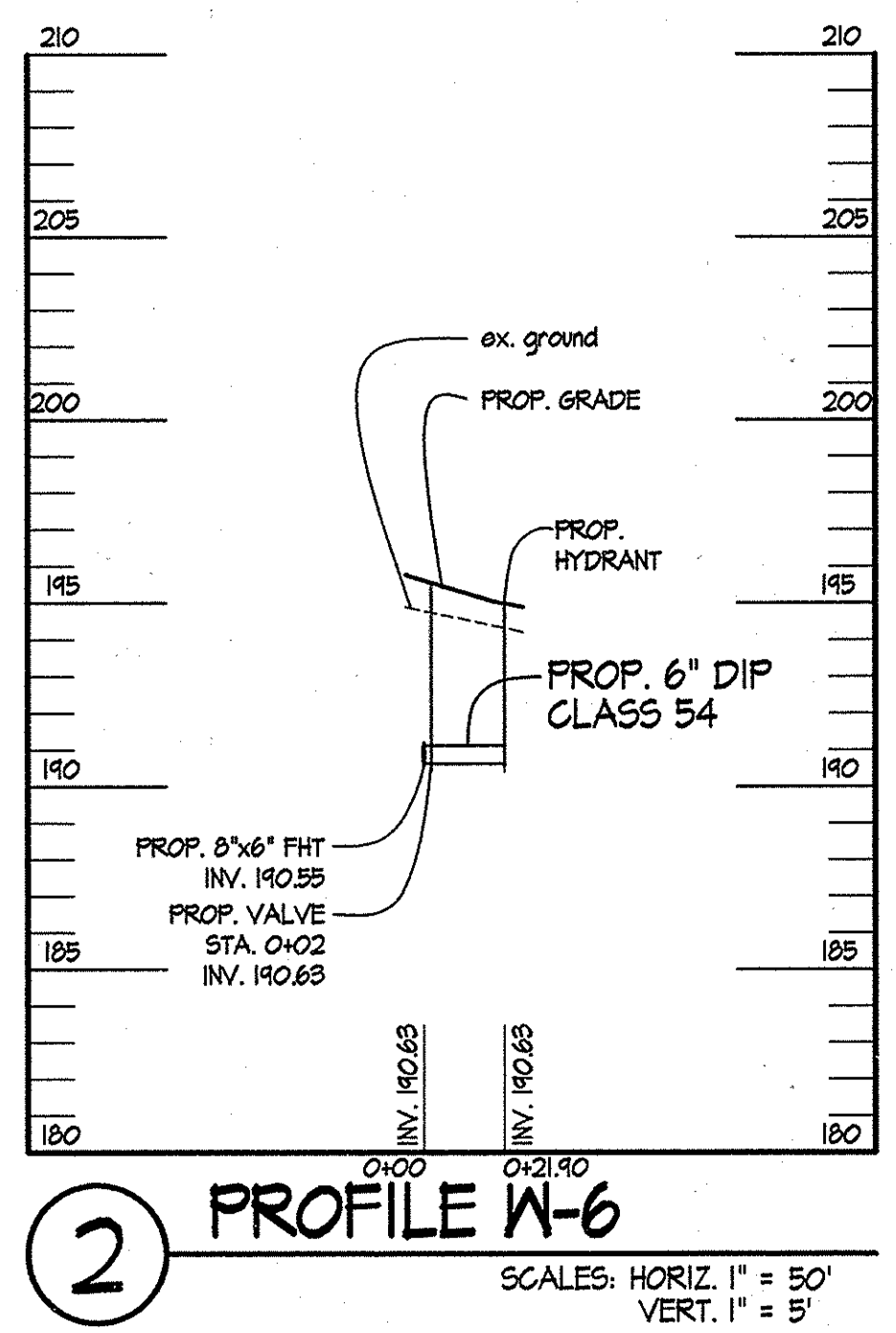
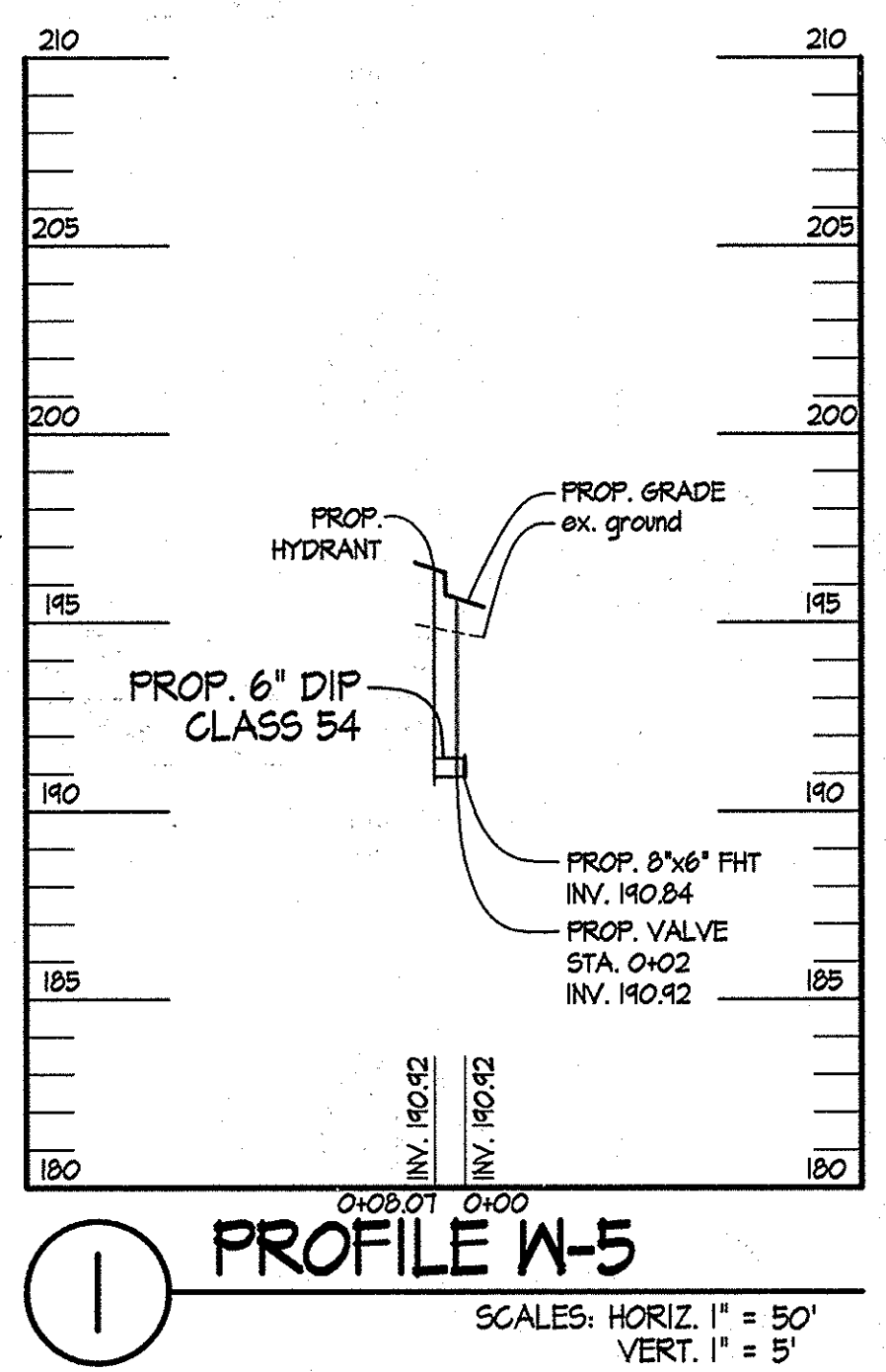


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WATER PROFILES
BLOCK NO. 16

TROY PARK - PHASE 2
WATER & SEWER EXTENSION
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CONTRACT NO. 14-4854-D
CAPITAL PROJECT NUMBER N-3957
PART OF THE TROY HILL CORPORATE CENTER PHASE III, PARCELS A-21 & A-22
6450 MANSION LANE
3rd ELECTION DISTRICT

SCALE:
AS SHOWN
SHEET
3 OF 4

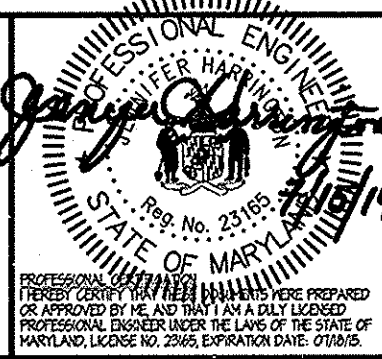


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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Momas E. Butler 7/30/14
 BUREAU OF ENGINEERING, CHIEF DATE
Steve C. Kern 7/22/14
 BUREAU OF UTILITIES, CHIEF DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
Chad Edwards 7.31.14
 DEVELOPMENT ENGINEERING DIVISION, CHIEF N.G. DATE

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 Comprehensive Land Planning & Site Design Services
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WATER PROFILES

TAX MAP NO. 37 BLOCK NO. 16

TROY PARK - PHASE 2
 WATER & SEWER EXTENSION
 HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS
 CONTRACT NO. 14-4054-D
 CAPITAL PROJECT NUMBER N-3957
 PART OF THE TROY HILL CORPORATE CENTER PHASE IIIB, PARCELS A-21 & A-22
 6450 MANSION LANE
 3rd ELECTION DISTRICT

SCALE:
 AS SHOWN
 SHEET
 4 OF 4