

APPENDIX C.5
CASE 10-T-0139
SITE PLANS AND CONSTRUCTION
DRAWINGS SITE PLAN - UTILITIES
ASTORIA HVDC CONVERTER STATION
SEGMENT 22

ASTORIA HVDC CONVERTER STATION

SITE UTILITIES PACKAGE

SCOPE OF WORK

THE SITE UTILITIES SCOPE OF WORK INCLUDES THE FOLLOWING:

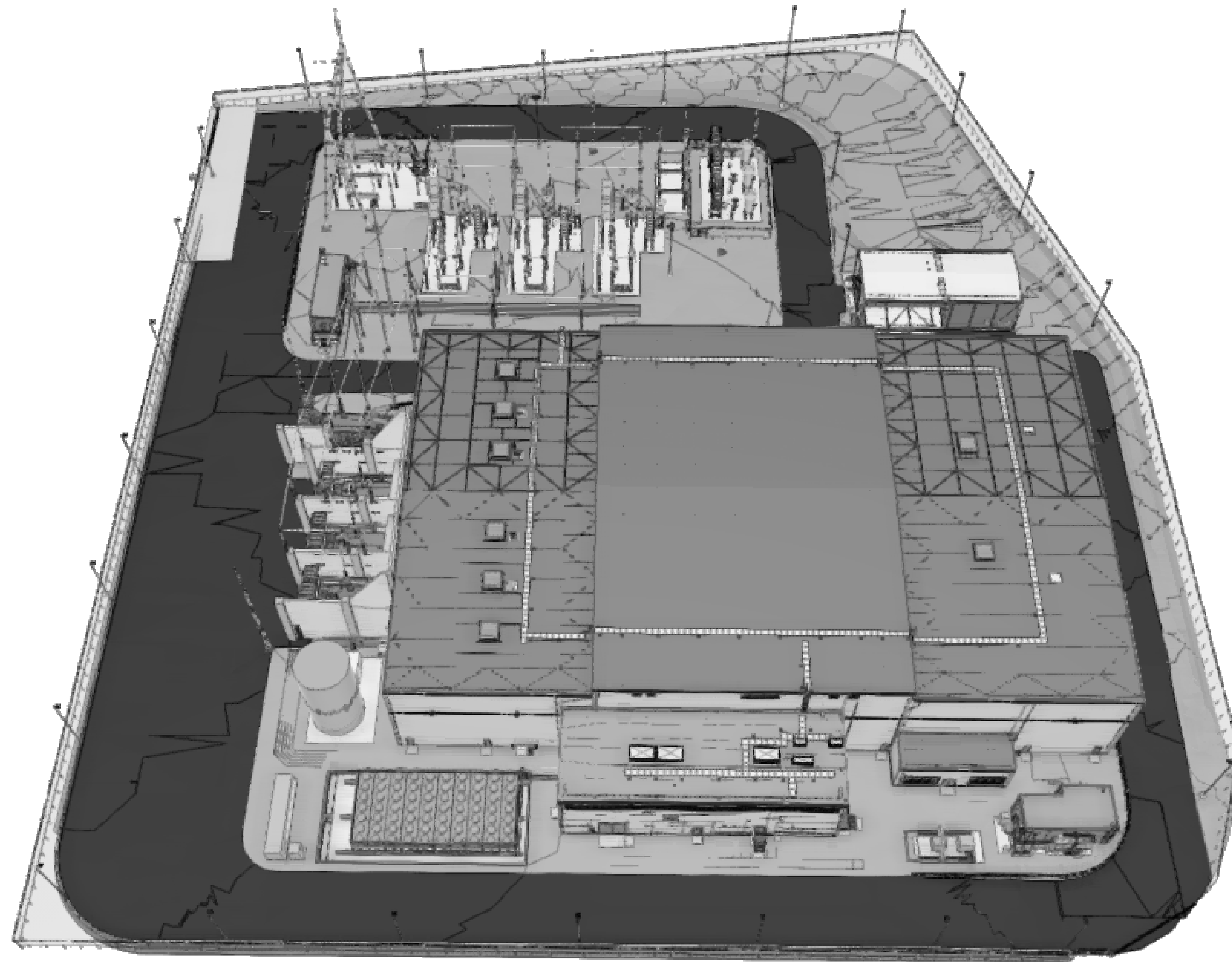
1. SITE DRAINAGE

FLOOD ZONE DESIGN CERTIFICATION:

THE EXISTING PROPERTY IS IN THE SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE PER EFFECTIVE 2015 FLOOD INSURANCE RATE MAP(FIRM). THIS IS TO CONFIRM THAT THE PROPOSED INSTALLATION IS IN COMPLIANCE WITH THE REQUIREMENTS SET FORTH IN APPENDIX Q OF THE NYC BUILDING CODE.

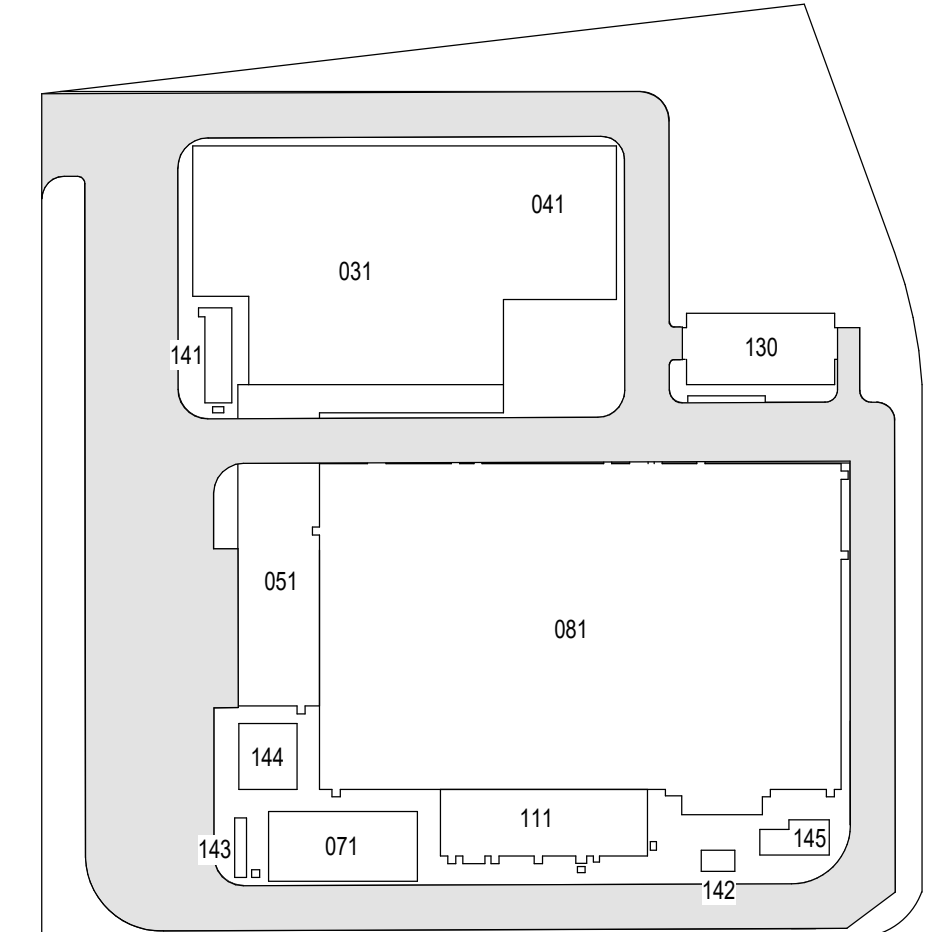
NYC ENERGY CODE COMPLIANCE:

STATEMENT: TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE. PROPOSED WORK MEETS THE GUIDELINES AND INSTRUCTIONS OUTLINED IN THE 2020 NYC ECC CHAPTER 4.



1 OVERALL SITE VIEW
T-001.00 N.T.S.

ISSUED FOR PERMIT



KEY PLAN
N.T.S.

PLAN NORTH
N

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B	FINAL SUBMISSION	VSP	EK	11/08/2022
A	INTERIM SUBMISSION	VSP	EK	09/13/2022
REV	DESCRIPTION	DRW BY	CHK BY	DATE

Kiewit
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

COVER SHEET



DATE 11/08/2022
PROJECT NO 105121
DRAWING BY V. PATEL
CHECKED BY E. KIDANE
DRAWING NO
T-001.00
CADD FILE NO
AstoriaHVDC-CoverSheet.rvt
1 of 25

GENERAL NOTES:

1. THE PLANS SHOW SUBSURFACE STRUCTURES, ABOVE GROUND STRUCTURES, AND/OR UTILITIES FROM FIELD LOCATION AND RECORD MAPPING. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES, AND/OR UTILITIES IN THE AREA MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN, AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL, OR BLAST, CALL UNDERGROUND FACILITIES PROTECTION ORGANIZATION (UFGPO) 1-(800)-962-7962 TOLL FREE.
2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
3. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL PUBLIC AND PRIVATE PROPERTY, INCLUDING ALL EXISTING VEGETATION, EXISTING LANDSCAPE FEATURES, AND MONUMENTS WITHIN, ALONG, AND ADJACENT TO THE PROPERTY. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO A PLEASING AND ACCEPTABLE CONDITION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC. AND SHALL COMPLY WITH ALL REQUIRED PERMITS.
5. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.
6. ALL PROPOSED UTILITIES AND APPURTENANCES SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE LOCAL MUNICIPALITIES' CODES AND REGULATIONS GOVERNING THE INSTALLATION OF SUCH UTILITIES.
7. THE ENGINEER RESERVES THE RIGHT TO EXAMINE ANY WORK DONE ON THIS PROJECT AT ANY TIME TO DETERMINE THE CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS OF THIS PROJECT.
8. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND COORDINATE WORK WITH ALL OTHER CONTRACTS FOR THE SITE.
10. THE CONTRACTOR SHALL:

10.A. VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

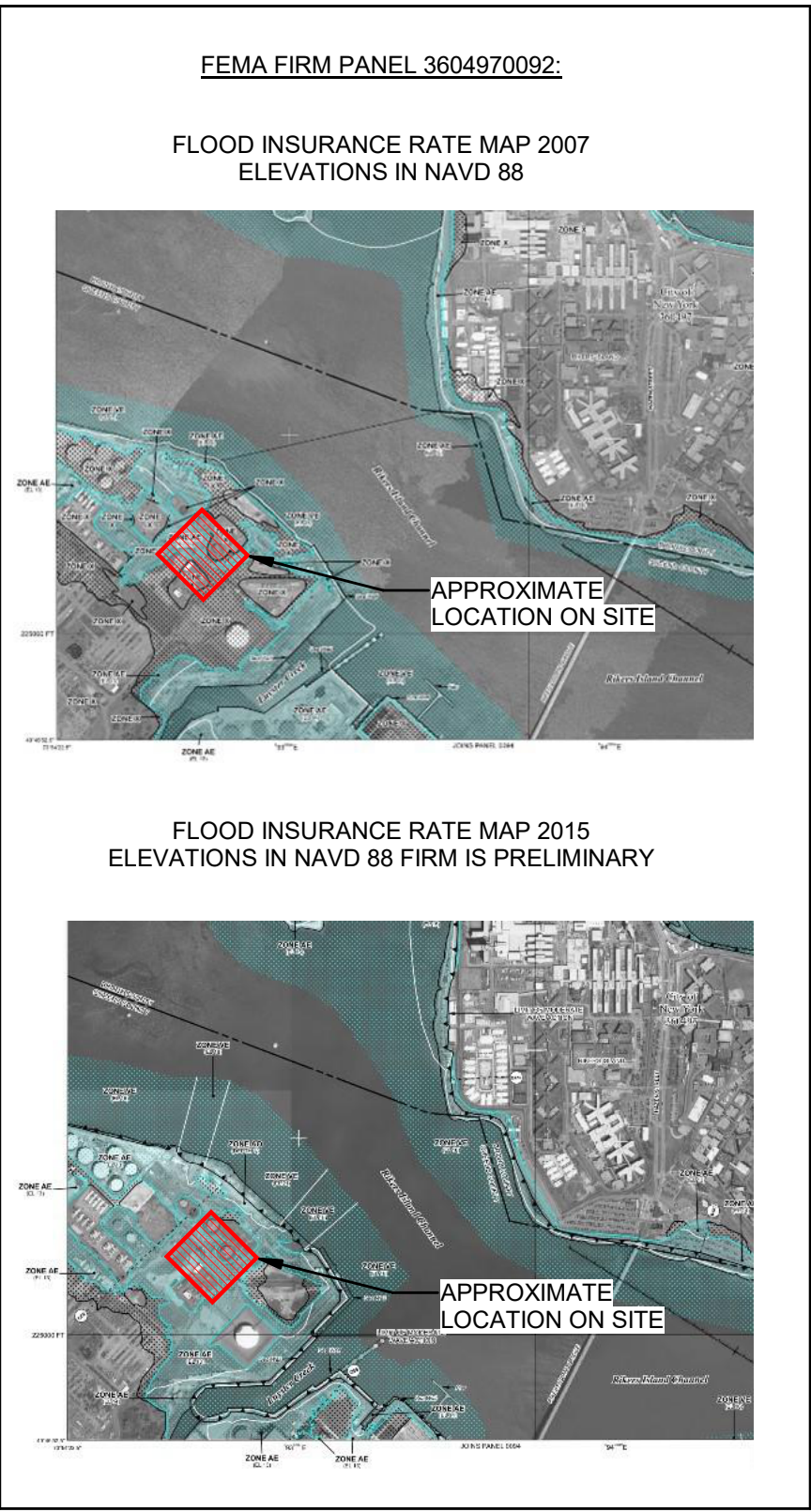
10.B. EXAMINE THE SITE AND INCLUDE IN HIS WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.

10.C. PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH GOOD STANDARD PRACTICE.
11. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF NEW YORK CITY BUILDING CODE CHAPTER 33 AND OSHA REGULATIONS FOR CONSTRUCTION. SHEET PILING SHALL BE DESIGNED AND SEALED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTINE DEWATERING RELATED TO THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK. CONTRACTOR SHALL MAINTAIN EXISTING SITE DRAINAGE PATTERNS THROUGHOUT CONSTRUCTION UNLESS OTHERWISE SHOWN ON THE PLANS. DEWATERING FOR MAJOR CONSTRUCTION ITEMS IS NOT THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED BY TDI.
13. CONTRACTOR SHALL NOT DISRUPT SERVICE TO ANY UTILITIES WITHOUT PRIOR COORDINATION WITH UTILITY OWNER.
14. ALL FRAMES/COVERS WITHIN PAVED AREAS SHALL HAVE THE TOPS SET FLUSH WITH THE FINAL PAVEMENT GRADE. IN LANDSCAPED AREAS, ALL FRAMES SHALL BE 0.1' ABOVE GRADE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIE-IN AND CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES, AND INVERTS. AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES, AND INVERTS. AS-BUILT PLANS SHOWING ALL UNDERGROUND UTILITIES INSTALLED OR ENCOUNTERED SHALL BE SUBMITTED TO THE OWNER AND HIS REPRESENTATIVES.
16. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC IN ALL AREAS (INCLUDING THE ADJACENT ROADWAYS TO THE SITE AND CONSTRUCTION VEHICLE ENTRANCE AND EXIT TO THE SITE) AS PER COORDINATION WITH ADJACENT PROPERTY OWNERS.
17. ALL EXCAVATIONS SHALL BE PROTECTED AT THE END OF EACH WORK DAY.
18. CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. IF DURING EXCAVATION PREVIOUSLY DAMAGED UTILITIES ARE UNCOVERED, CONTRACTOR SHALL DOCUMENT THE DAMAGE AND REPORT DAMAGE TO THE APPROPRIATE OWNER.
19. THE CONTRACTOR MUST COORDINATE HIS SCHEDULE OF OPERATIONS WITH THE VARIOUS UTILITY OWNERS INVOLVED WITH THE PROJECT AND SHALL VERIFY UTILITY INFORMATION FOUND IN THE CONTRACT DOCUMENTS.
20. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, TDI SHALL COORDINATE WITH ALL THE KNOWN PUBLIC AND PRIVATE UTILITY COMPANIES THAT MAY HAVE POTENTIAL IMPACT TO OVERHEAD AND UNDERGROUND UTILITIES FROM THE CONTRACTORS WORK. THE CONTRACTOR SHALL, AT THIS MEETING, INFORM THE UTILITY COMPANIES OF HIS SCHEDULE OF OPERATIONS SO THAT UTILITY COMPANIES PLAN AND SCHEDULE THEIR ACTIVITIES ACCORDINGLY.
21. THE CONTRACTOR IS GOVERNED BY AND MUST ADHERE TO THE PROVISIONS OF THE 16 NYCRR PART 753, "PROTECTION OF UNDERGROUND FACILITIES," AND ALL ITS AMENDMENTS.; I.E. CALL 811 DIG SAFE PRIOR TO BREAKING GROUND.
22. THE CONTRACTOR SHALL CONDUCT ALL OPERATIONS IN ACCORDANCE WITH ALL OSHA RULES AND REGULATIONS AND IN ACCORDANCE WITH NEW YORK STATE LABOR LAW, SECTION 202-H, "THE HIGH VOLTAGE PROXIMITY ACT."
23. REFER TO FLOOD INSURANCE RATE MAP (FIRM) NUMBER 3604970092G FOR THE PROJECT SITE. THE SPECIAL FLOOD HAZARD AREA TYPE IS ZONE AE AND X. BASE FLOOD ELEVATION IS 13' AND DESIGN FLOOD ELEVATION IS 15'.
24. EXISTING IMPERVIOUS SURFACE AREA WITHIN THE PROPERTY LIMITS TOTALS 4.36 ACRES, WHILE PROPOSED IMPERVIOUS SURFACE AREA TOTALS 7.77 ACRES.

FL FLOOD

- FL-1. THE SITE IS DEFINED AS A ZONE (NON-COASTAL).
- FL-2. BASE FLOOD ELEVATION, BFE, = 13 FEET NAVD 88.
- FL-3. RECOMMENDED FREE BOARD BY THE 2022 NYCBC-APPENDIX G IS 2.0 FEET.
- FL-4. RECOMMENDED DESIGN FLOOD ELEVATION, DFE = 15 FEET NAVD 88.
- FL-5. THE STRUCTURE IS NOT SUBJECTED TO HYDRODYNAMIC LOADS.

DESIGN ELEVATION / DEPTH	FEET IN NAVD 88
DESIGN BASE FLOOD ELEVATION	13.0
FINISH FLOOR ELEVATION	15.0
SEA LEVEL RISE	NOT CONSIDERED



SITE UTILITIES SHEET INDEX	
DRAWING TITLE	DWG. NO.
GENERAL NOTES	C-001.00
LEGEND AND ABBREVIATIONS	C-002.00
UTILITY NOTES	C-200.00
OVERALL UTILITY PLAN	C-201.00
UTILITY SECTION	C-202.00
UTILITY PROFILE - 1	C-203.00
UTILITY PROFILE - 2	C-204.00
UTILITY PROFILE - 3	C-205.00
UTILITY PROFILE - 4	C-206.00
UTILITY PROFILE - 5	C-207.00
UTILITY PROFILE - 6	C-208.00
UTILITY PROFILE - 7	C-209.00
UTILITY PROFILE - 8	C-210.00
UTILITY PROFILE - 9	C-211.00
UTILITY DETAILS - 1 WATER MAIN MANHOLE FRAME AND COVER	C-212.00
UTILITY DETAILS - 2 WATER MAIN VALVE DETAILS	C-213.00
UTILITY DETAILS - 3 FIRE HYDRANT DETAILS	C-214.00
UTILITY DETAILS - 4 FIRE HYDRANT DETAILS	C-215.00
UTILITY DETAILS - 5 PIPE INSTALLATION DETAILS	C-216.00
UTILITY DETAILS - 6 SANITARY SEWER DETAILS	C-217.00
UTILITY DETAILS - 7 GROUNDING DETAILS	C-218.00
UTILITY DETAILS - 8 GROUNDING DETAILS AND DUCT BANK DETAILS	C-219.00
UTILITY DETAILS - 9 DUCT BANK DETAILS	C-220.00
MVS BUILDING CONDUIT LAYOUT	C-221.00

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B	FINAL SUBMISSION	AB	JL	11/8/22	
A	INTERIM SUBMISSION	NS	JL	8/29/22	
REV	DESCRIPTION	DRW BY	CHK BY	DATE	



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LIST OF SPECIFICATIONS:

22 - PLUMBING	220517	SLEEVES AND SLEEVE SEALS FOR PLUMBING
31 - EARTHWORK	310001	GENERAL PROVISIONS
33 - UTILITIES	331000	WATER UTILITIES
33 - UTILITIES	333000	SANITARY SEWERAGE
33 - UTILITIES	333213	PACKAGED SEWER/PURGE LIFT STATION, WET WELL TYPE
33 - UTILITIES	330569	CONCRETE TRENCHWAYS

LIST OF SPECIAL INSPECTIONS:

INSPECTION AND TEST	CODE/SECTION
CONCRETE - CAST-IN PLACE AND PRECAST	BC 1704.4
SUBGRADE INSPECTION	BC 1704.7.1
EXCAVATIONS - SHEETING, SHORING AND BRACING	BC 1704.20.2

GENERAL NOTES



DATE	NOVEMBER 8, 2022
PROJECT NO	105121
DRAWING BY	A.BUDARAPU
CHECKED BY	J.LLORENTE
DRAWING NO	C-001.00
CADD FILE NO	2 of 25


LEGENDS & SYMBOLS

	EXISTING EASEMENT FOR DOCK INGRESS AND EGRESS
	EXISTING EASEMENT FOR INGRESS AND EGRESS
	EXISTING EASEMENT FOR STORM WATER LINE
	EXISTING EASEMENT FOR SANITARY SEWER
	EXISTING EASEMENT FOR WATER LINE
	EXISTING PROPERTY LINE
	EXISTING CATCH BASIN
	EXISTING ELECTRIC
	EXISTING OVERHEAD ELECTRIC
	EXISTING HIGH VOLTAGE ELECTRIC
	EXISTING ELECTRIC VAULT
	EXISTING POTABLE WATER LINE
	EXISTING HYDRANT
	PROPOSED ALIGNMENT CENTERLINE
	PROPOSED ALIGNMENT STATIONING
	PROPOSED FENCE
	PROPOSED GUIDE RAIL
	PROPOSED RETAINING WALL
	PROPOSED SECURITY GATE
	PROPOSED SPOT ELEVATION
	PROPOSED LIGHT POLE
	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED SANITARY SEWER
	PROPOSED SANITARY SEWER MANHOLE
	PROPOSED STORM DRAIN
	PROPOSED UNDERDRAIN
	PROPOSED FLARED END SECTION
	PROPOSED CATCH BASIN
	PROPOSED DRAINAGE MANHOLE
	PROPOSED CLEANOUT
	PROPOSED RIPRAP
	PROPOSED POTABLE WATER LINE
	PROPOSED FIRE WATER LINE
	GATE VALVE
	FIRE HYDRANT
	POST INDICATOR VALVE
	FLUSHING HYDRANT

ABBREVIATIONS

AASHTO = AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	OC = ON CENTER
AC = ALTERNATING CURRENT	OD = OUTER DIAMETER
AD = TANGENT OFFSET AT PVI	OSHA = OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
APPROX = APPROXIMATE	PCC = PORTLAND CEMENT CONCRETE
ASCE = AMERICAN SOCIETY OF CIVIL ENGINEERS	PCD = PRECAST CONCRETE DUCTS
ASTM = AMERICAN SOCIETY OF TESTING AND MATERIALS	PVI = POINT OF VERTICAL INTERSECTION
BVCE = BEGINING OF VERTICAL CURVE ELEVATION	PVMT = PAVEMENT
BVCS = BEGINING OF VERTICAL CURVE STATION	STA = STATION
CB = CATCH BASIN	TYP = TYPICAL
CIP = CAST IN PLACE	RCP = REINFORCED CONCRETE PIPE
CONC = CONCRETE	RD = ROAD
DIA = DIAMETER	REQ'D = REQUIRED
DIP = DUCTILE IRON PIPE	REV = REVISION
DGA = DENSE GRADED AGGREGATE	RF = REAR FACE
E = EPOXY COATED REBAR	WM = WATER MAIN
ELEV = ELEVATION	WT = WEIGHT
EVCE = END OF VERTICAL CURVE ELEVATION	WWF = WELDED WIRE FABRIC
EVCS = END OF VERTICAL CURVE STATION	WZTC = WORK ZONE TRAFFIC CONTROL
EXIST = EXISTING	YR = YEAR
FF = FRONT FACE	
FDNY = NEW YORK CITY FIRE DEPARTMENT	
FFE = FINISHED FLOOR ELEVATION	
HDPE = HIGH DENSITY POLYETHYLENE	
HPBO = HEAVY POST BLOCK OUT	
HVAC = HEATING, VENTILATION AND AIR CONDITIONING	
HVE = HIGH VOLTAGE ELECTRIC	
ID = INNER DIAMETER	
IPS = IRON PIPE SIZE	
LBS = POUNDS	
LF = LINEAR FEET	
LVC = LENGTH OF VERTICAL CURVE	
MAX = MAXIMUM	
MH = MANHOLE	
MIN = MINIMUM	
MPT = MAINTENANCE AND PROTECTION OF TRAFFIC	
MTS = MANUAL TRANSFER SWITCH	
MVS = MEDIUM VOLTAGE SWITCHGEAR	
N/A = NOT APPLICABLE	
NTS = NOT TO SCALE	
NYC = NEW YORK CITY	
NYCDOT = NEW YORK CITY DEPARTMENT OF TRANSPORTATION	
NYCDEP = NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION	
NYCRR = NEW YORK CITY CODES, RULES AND REGULATIONS	
NYSDOT = NEW YORK STATE DEPARTMENT OF TRANSPORTATION	

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B	FINAL SUBMISSION	AB	JL	11/8/22
A	INTERIM SUBMISSION	MK	JL	8/28/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE



Kiewit
470 Chestnut Ridge Rd # 2,
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Raleigh, North Carolina 27606

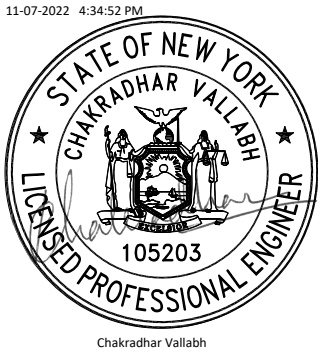
PROJECT



Champlain Hudson
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**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

LEGEND AND ABBREVIATIONS



11-01-2022 4:34:52 PM

DATE November 8, 2022
PROJECT NO 105121
DRAWING BY M. KWOK
CHECKED BY J.LLORENTE
DRAWING NO
C-002.00
CADD FILE NO 3 of 25

OUTDOOR CABLE TRENCH AND CONDUIT NOTES:

1. OUTDOOR CABLE TRENCHES SHALL BE CONSTRUCTED OF CAST IN SITU OR PREFABRICATED REINFORCED CONCRETE AND BE COVERED.
2. CABLE TRENCHES SHALL HAVE A MINIMUM WIDTH OF 500MM (20 INCHES). THE TOP OF THE TRENCH COVER SHALL BE APPROXIMATELY 100 MM (4 INCHES) ABOVE THE SURROUNDING FINISHED YARD LEVEL IN YARD AREAS, WHEREAS AT ROAD CROSSINGS THE TOP OF THE TRENCH COVER SHALL BE FLUSH WITH THE TOP OF THE ROAD.
3. ALL TRENCHES SHALL BE DRAINED BY THE DRAINAGE SYSTEM TO AVOID STANDING WATER IN THE TRENCHES. ALL INCOMING CONDUITS TO THE TRENCH SHALL BE SEALED TO MAKE THE TRENCHES WATER FREE.
4. BURIED CONDUITS SHALL BE CONSTRUCTED OF PIPES WITH PULL WIRES. PULL PITS SHALL BE INTRODUCED AS REQUIRED BY NEC.
5. WATERTIGHT AND FIRE-PROOF SEAL SHALL BE ADDED TO CABLE TRENCHES AND CONDUITS ENTERING BUILDINGS. FOR CABLE ENTRIES MULTI CABLE TRANSITS (MCT'S) SHALL BE USED.
6. ALL TRENCHES REQUIRE CONNECTION TO THE GROUNDING GRID, SEE 1 JNL 12201483

SITE UTILITIES NOTES:

1. THE FINISHED YARD LEVEL SHALL BE SLOPED AWAY FROM THE CONVERTER BUILDING COMPLEX, EITHER TO A SEPARATE YARD DRAINAGE SYSTEM (APPLICABLE FOR LARGE YARD AREAS) OR DIRECTLY TO SURROUNDING DITCHES (APPLICABLE FOR SMALLER YARD AREAS).
2. A SEPARATE BURIED STORM WATER SYSTEM SHALL BE DESIGNED TO HANDLE AND DISCHARGE ALL STORM WATER FROM THE BUILDING ROOFS.
3. THE BUILDINGS' PLUMBING AND FIRE SUPPRESSION INSTALLATIONS SHALL BE CONNECTED TO AN EXISTING WATER MAIN NEAR EXISTING VALVE VAULT NORTH WEST OF SITE FOR THE SITE WATER LINE NETWORK. (TO BE CONFIRMED WITH UTILITY OWNER).
4. THE BUILDINGS' PLUMBING INSTALLATIONS SHALL BE CONNECTED TO AN EXISTING SEWAGE MAIN AT THE FENCE LINE FOR THE SITE SEWAGE SYSTEM.
5. WALL AND POLE MOUNTED FLOOD LIGHTS, ACCESS LIGHTS, SUB-DISTRIBUTION, SOCKET OUTLETS, CONTROL SYSTEM AND CABLING SHALL BE PROVIDED, INSTALLED, AND COMMISSIONED AS REQUIRED PER LOCAL REGULATIONS AND REQUIREMENT SPECIFICATIONS (RS). PARTS AND COMPONENTS OF THE INSTALLATION THAT MAY BE SUBJECT FOR MAINTENANCE AND REPLACEMENT, SHALL BE INSTALLED IN SUCH A WAY THAT AIR CLEARANCES TOWARDS LIVE PARTS (E.G. MAIN CIRCUIT EQUIPMENT) ARE NOT BREACHED DURING POSSIBLE MAINTENANCE WORK. RISK ASSESSMENT SHALL BE MADE OF THE DESIGN PRIOR OF INSTALLATION. LIGHT POLES/MASTS SHALL FURTHERMORE BE LOWER IN HEIGHT THAN LIGHTNING PROTECTION TOWERS.
6. SMALL POWER AND LIGHTING CABLES SHALL BE SEPARATED FROM THE HITACHI ENERGY CABLES (NOT TO BE ROUTED ON SAME LADDER/TRAY). DIFFERENT LADDER OR CONDUIT BUT IN SAME DUCT BANK MAY BE USED WHERE NEEDED.

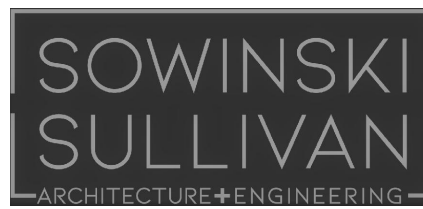
NYCDEP NOTES:

1. LOCATIONS OF EXISTING DRAINAGE STRUCTURES ARE APPROXIMATE. EXACT LOCATION AND OFFSET SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
2. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING SEWERS DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THE DESIGN BUILDER'S OPERATION SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.
3. REFER TO NOTE 5, CONSTRUCTION OPERATION NOTES, ON NYSDOT STANDARD SHEET 203-04 IF THERE IS A NEED FOR CONSTRUCTION EQUIPMENT TO CROSS NEW AND EXISTING DRAINAGE LINE INSTALLATIONS.
4. DRAINAGE STRUCTURES SHALL NOT BE LOCATED WITHIN CURB RAMPS OR PEDESTRIAN CROSSWALK LIMITS.
5. THE BRICK MASONRY OR CONCRETE FOR THE CHAMBERS SHALL BE BUILT TO WITHIN SUCH DISTANCE OF THE FINAL GRADE AS SHOWN, SPECIFIED OR ORDERED. FRAMES AND COVERS SHALL BE AS SHOWN ON THE SEWER DESIGN STANDARDS. THE FRAMES SHALL BE SET ON THE MASONRY OR CONCRETE IN A FULL BED OF STIFF FRESH CEMENT MORTAR.
6. DRAINAGE STRUCTURES IN THE PROJECT AREA SHALL BE MAINTAINED OPERABLE AT ALL TIMES.
7. THE CONTRACTOR SHALL PROVIDE TEMPORARY MEANS (PIPES, PUMPS, ETC.) TO DRAIN ANY STORM WATER WHICH MAY DEVELOP WITHIN THE PROJECT LIMITS FOR THE DURATION OF CONSTRUCTION.
8. ALL EXISTING INVERT ELEVATIONS, PIPE DIMENSIONS AND PIPE MATERIALS ARE OBTAINED FROM SURVEY AND/OR AS-BUILTS. THE CONTRACTOR SHALL FIELD VERIFY ALL OF THESE DETAILS BEFORE COMMENCING WORK.
9. THE DESIGN BUILDER ATTENTION IS DIRECTED TO OSHA STANDARDS, SECTION 1926.651(G) CONCERNING LOCATIONS OF POSSIBLE OXYGEN DEFICIENCY OR GASEOUS CONDITIONS THAT MIGHT BE ENCOUNTERED WHEN WORKING ON THE EXISTING DRAINAGE SYSTEM.
10. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). QUEENS BOROUGH SEWER DATUM IS 2.725 FEET ABOVE THE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY AS ESTABLISHED BY THE U.S.C.&G. SURVEY.
11. ALL PROPOSED DRAINAGE WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST STANDARDS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (NYCDEP).
12. PRIOR TO WORK ON NYCDEP DRAINAGE INFRASTRUCTURE THE APPLICABLE DESIGN AND PERMITTING APPROVALS SHALL BE RECEIVED FROM THE NYCDEP.
13. ALL EXISTING SEWER MANHOLES TO BE RETAINED WITHIN THE CONTRACT LIMITS SHALL BE ADJUSTED AS NECESSARY, SO THAT THEY WILL BE FLUSH WITH THE FINISHED GRADES AFTER COMPLETION OF THE WORK. ANY OF THESE MANHOLES WHICH HAVE DAMAGED, WORN OR NON-STANDARD FRAMES AND COVERS SHOULD BE PROVIDED WITH NEW 27" CASTINGS IN ACCORDANCE WITH THE LATEST STANDARDS OF NYCDEP INCLUDING ANY NECESSARY MODIFICATIONS OF THE MANHOLE MASONRY. ANY DAMAGE TO THE MANHOLES CAUSED BY THIS WORK SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER, AND AT NO COST TO THE NYCDEP.
14. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING SEWERS DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THE DESIGN BUILDER'S OPERATION SHALL BE REPAIRED BY THE DESIGN BUILDER AS DIRECTED BY THE ENGINEER, AT NO EXTRA COST TO NYCDEP.
15. WHERE THE HEIGHT OF AN EXISTING MANHOLE PERMITS MORE THAN ONE BASIN CONNECTION TO BE MADE ON THE SAME WALL, SPECIAL PRECAUTION SHALL BE TAKEN TO PROTECT THE STRUCTURAL INTEGRITY OF THE MANHOLE. THE MINIMUM CLEARANCE BETWEEN THE OUTSIDE WALLS OF ANY TWO BASIN CONNECTIONS OR BETWEEN A BASIN CONNECTION AND A SEWER, VERTICALLY OR HORIZONTALLY, SHALL BE 12 INCHES.
16. ALL EXISTING MANHOLES, INLETS, BASINS AND CONNECTIONS WITHIN THE LIMITS OF THIS CONTRACT AND CONTIGUOUS THERETO ARE TO BE CLEANED, FLUSHED AND OTHERWISE MADE OPERABLE TO THE SATISFACTION OF THE ENGINEER. WHERE THE EXISTING BASIN CONNECTIONS ARE FOUND TO BE DAMAGED OR IN DETERIORATING CONDITION, THEY SHALL BE REPLACED WITH NEW 12" DIAMETER DUCTILE IRON PIPE, CLASS 56, IN ACCORDANCE WITH THE LATEST NYCDEP STANDARDS. DAMAGED AND NON-STANDARD CASTINGS WITHIN THE LIMITS OF THIS CONTRACT SHOULD BE REPLACED WITH NEW STANDARD CASTINGS. EXISTING NON-STANDARD BASINS AT LOCATIONS WHERE BASINS ARE REQUIRED SHALL BE REPLACED WITH NEW STANDARD BASINS. ANY DAMAGED OR MISSING HOOD OF EXISTING BASINS WITHIN THE LIMITS OF THIS CONTRACT SHALL BE REPLACED WITH NEW STANDARD CAST IRON HOOD AND HOOKS. EXISTING DAMAGED AND NON-STANDARD MANHOLES FRAME AND COVER WITHIN THE LIMITS OF THIS CONTRACT SHALL BE REPLACED WITH NEW STANDARD 27" DIAMETER MANHOLE FRAME AND COVER.
17. ALL ABANDONED BASINS, INLETS AND DRAINAGE STRUCTURES AS SHOWN ON THE CONTRACT PLANS ARE TO BE BULKHEADED AND CUT DOWN TO TWO (2) FEET BELOW THE SUBGRADE AND FILLED WITH COMPACTED CLEAN SAND. BASIN CONNECTIONS NOT REQUIRED SHALL BE PLUGGED AT BOTH ENDS. ALL ABANDONED BASINS AND BASIN CONNECTIONS MUST BE DONE AS PER NYCDEP STANDARD AND SPECIFICATIONS.
18. CATCH BASINS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE CONNECTED TO A SANITARY SEWER.
19. ALL NEW CATCH BASIN CONNECTIONS SHALL BE CONNECTED TO EXISTING SEWERS AT MANHOLES, WITH 12" DUCTILE IRON PIPE, CLASS 56, WITH INTERNALLY LOCKED "PUSH-ON" JOINTS LAID ON 6" OF BROKEN STONE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR ONE-HALF THE PIPE DIAMETER. CRUSHED STONE SHALL BE BROKEN STONE, SOUND, HARD AND ROUGHLY CUBICAL IN SHAPE AND SHALL COMPLY WITH ASTM C33, SIZE NO. 67. ALL NEW CATCH BASINS SHALL HAVE A HOOD ON THE OUTLETTING PIPE.
20. CATCH BASINS SHALL NOT BE LOCATED WITHIN PEDESTRIAN CROSSWALK LIMITS.
21. SLOPE ON ALL NEW CATCH BASIN CONNECTIONS SHALL BE A MINIMUM OF 0.5% AND A MAXIMUM OF 4% PROVIDED THE TOTAL DROP BETWEEN THE BASIN AND THE BASIN/MANHOLE IS AT LEAST 6 INCHES.
22. NYCDEP SEWERS: ALL EXISTING NYCDEP SEWERS WITHIN THE FOOTPRINT OF THE PROPOSED WORK AND WITHIN THE INFLUENCE LINES OF THE WORK SHALL BE CCTV INSPECTED. CCTV INSPECTION SHALL BE PERFORMED IN BOTH THE PRE-CONSTRUCTION AND IN THE POST-CONSTRUCTION PHASES. EXTRA CARE SHALL BE TAKEN DURING CONSTRUCTION TO PROTECT THE INTEGRITY OF EXISTING SEWERS' SYSTEM INCLUSIVE OF MANHOLES, CATCH BASINS, SEWERS AND SYSTEM CONNECTIONS. EXISTING NYCDEP MANHOLE FRAMES/COVERS SHALL BE RESET TO THE FINISHED GRADE AND CATCH BASINS SHALL BE POSITIONED PER NYC AGENCY REQUIREMENTS. CONTACT NYCDEP'S COLLECTION SYSTEMS INVESTIGATION (CSI) UNIT FOR COORDINATION OF CCTV SEWER INVESTIGATION. DAMAGE TO THE EXISTING SEWER SYSTEM WITHIN THE DURATION OF THE CONTRACT SHALL BE REPAIRED/REPLACED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO NYCDEP.
23. INSTALL NYCDEP STANDARD TYPE 1 CATCH BASIN WHERE PROPOSED NYCDEP CATCH BASINS ARE REQUIRED AT LOW POINT, UNLESS SPECIFIED BY DEP.
24. NYCDEP RECOMMENDS 6 FEET MINIMUM EDGE-TO-EDGE HORIZONTAL CLEARANCES BETWEEN PROPOSED FOUNDATIONS AND SEWER/WATER UTILITIES.
25. FOR WATER MAINS CROSSING EXISTING SEWERS: THE MINIMUM CLEARANCE BETWEEN THE TOP OF A SEWER AND THE OUTSIDE BOTTOM OF THE WATER PIPE (PIPE WALL THICKNESS TO BE TAKEN INTO CONSIDERATION) SHALL BE 12 INCHES. IN ORDER TO MAINTAIN THE PROPER CLEARANCE, THE FOLLOWING ALTERNATIVES SHALL BE CONSIDERED AND APPLIED, AS DIRECTED BY THE ENGINEER:
 - 25.1. THE USE OF BEVELED CONNECTION IN LIEU OF BENDS SHALL BE INVESTIGATED IF THE DEGREE OF INTERFERENCE IS OF A MINOR NATURE; OTHERWISE, BENDS AND/OR REDUCERS SHALL BE USED.
 - 25.2. THE COVER ON THE PIPE MAY BE REDUCED TO TWO AND ONE HALF (2.5) FEET.
 - 25.3. IF A 12-INCH MINIMUM CLEARANCE CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE SUPPORTED BY A PIER OF APPROVED DESIGN ON EACH SIDE OF THE SEWER. THE PIPE SHALL THEN BE DESIGNED TO ACT AS A BEAM BETWEEN THESE SUPPORTS. THE CLEARANCE IS TO BE FILLED WITH LAYERS OF APPROVED MATERIAL TO AVOID EXCESSIVE BEARING PRESSURE ON THE PIPE. IN NO CASE, HOWEVER, SHALL THIS CLEARANCE BE LESS THAN 6 INCHES.
26. ALL HORIZONTAL CLEARANCE BETWEEN WATER MAINS INSTALLED PARALLEL TO SEWERS ARE TO CONFORM TO THE FOLLOWING:
 - 26.1. HORIZONTAL CLEARANCE BETWEEN THE OUTSIDE OF WATER MAINS AND CENTER LINE OF SEWER SHALL NOT BE LESS THAN SIX(6) FEET PLUS ONE HALF SEWER DIAMETER, WHERE THE DEPTH TO THE BOTTOM OF THE SEWER IS LESS THAN TEN (10) FEET.
 - 26.2. WHERE THE DEPTH TO THE BOTTOM OF SEWER IS TEN (10) FEET OR MORE, HORIZONTAL CLEARANCE SHALL BE INCREASED BY ONE (1) FOOT FOR EACH ADDITIONAL FIVE (5) FEET OF DEPTH OVER THE TEN (10) FEET, OR PORTION THEREOF.
27. LIST OF APPLICABLE NYC D.E.P. STANDARD SEWER SPECIFICATIONS:
 - 27.1. NYCDEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS, AUGUST 8, 2022;
 - 27.2. NYCDEP SEWER DESIGN STANDARDS, AUGUST 2018;
 - 27.3. NYCDEP WATER MAIN STANDARD DRAWINGS, DECEMBER 9,2020.
28. ALL FLOATING METALLIC PIECES SHALL BE GROUNDED.
29. GROUND ALL METALLIC COVERS IN THE SITE BY CONNECTING THEM TO THE STATION GROUNDING GRID WITH MINIMUM 4/0 AWG GROUNDING WIRE AND PROVIDING MINIMUM OF 2 FEET OF SLACK FOR LARGER COVERS SO THAT THE COVERS CAN BE MOVED ASIDE, IF REQUIRED, WITHOUT NEED FOR UNBOLTING THE GROUNDING COVER.

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B	FINAL SUBMISSION	SC	CV	11/8/22
A	INTERIM SUBMISSION	SC	CV	8/29/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE



Kiewit

470 Chestnut Ridge Rd # 2,
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 Hitachi Energy

901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT



Astoria HVDC
Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

UTILITY NOTES

11-08-2022 5:35:42 PM



DATE	NOVEMBER 8, 2022
PROJECT NO	105121
DRAWING BY	S. CASH
CHECKED BY	C. VALLABH
DRAWING NO	C-200.00
CADD FILE NO	4 of 25

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B	FINAL SUBMISSION	AB	JL	11/8/22
A	INTERIM SUBMISSION	MK	JL	08/29/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE

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Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

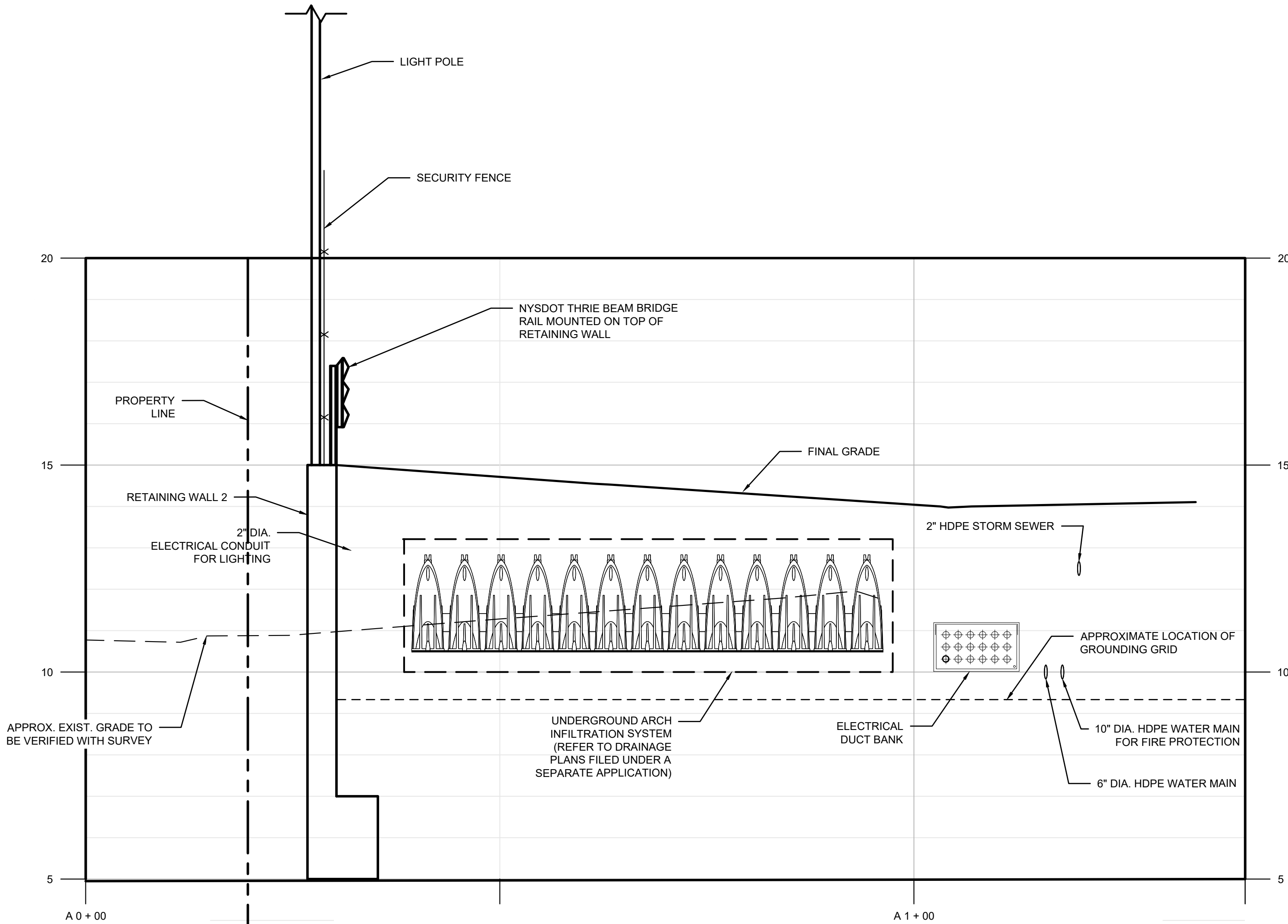
Astoria HVDC
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Block #850 - Lot #310 - BIN #4624437

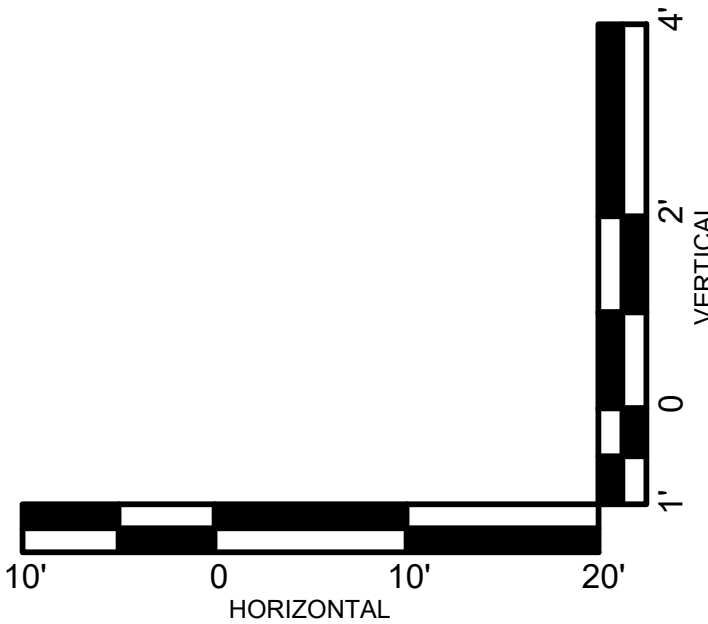
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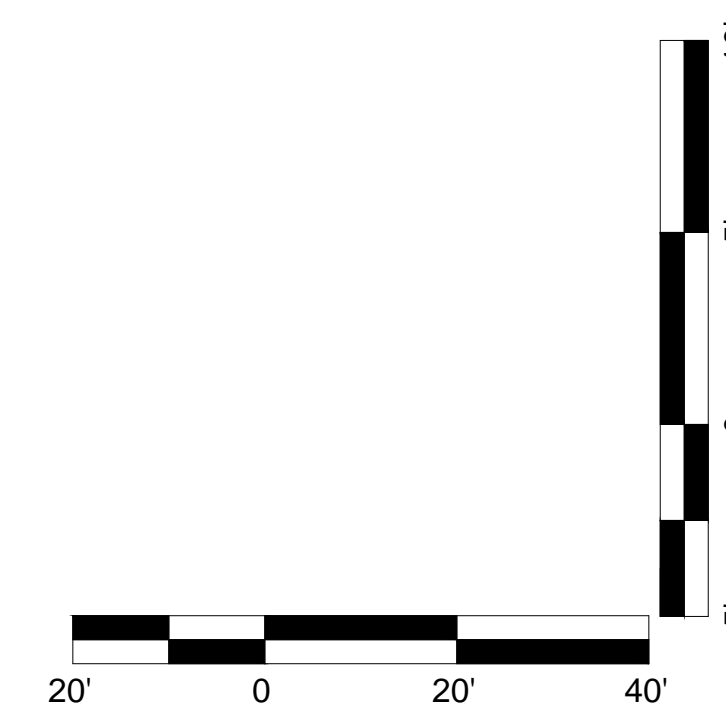
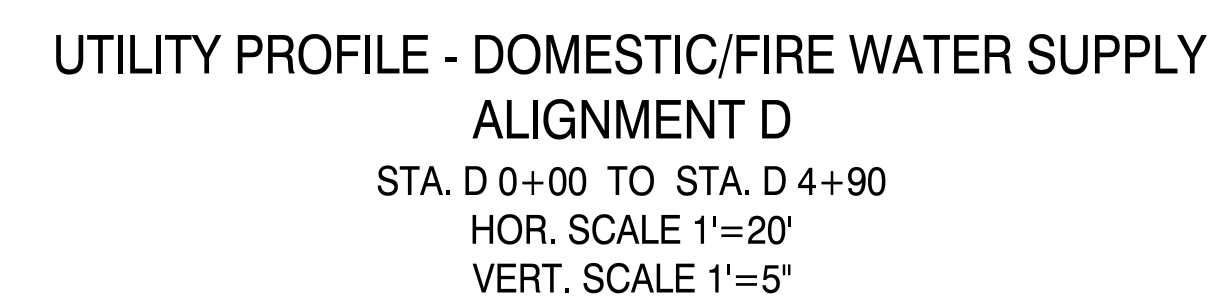
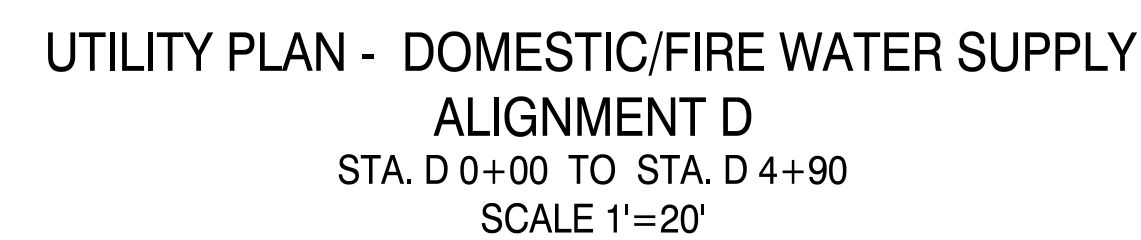


DATE: NOVEMBER 8, 2022
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CHECKED BY: J.LORENTE
DRAWING NO: C-202.00
CADD FILE NO: 6 of 25

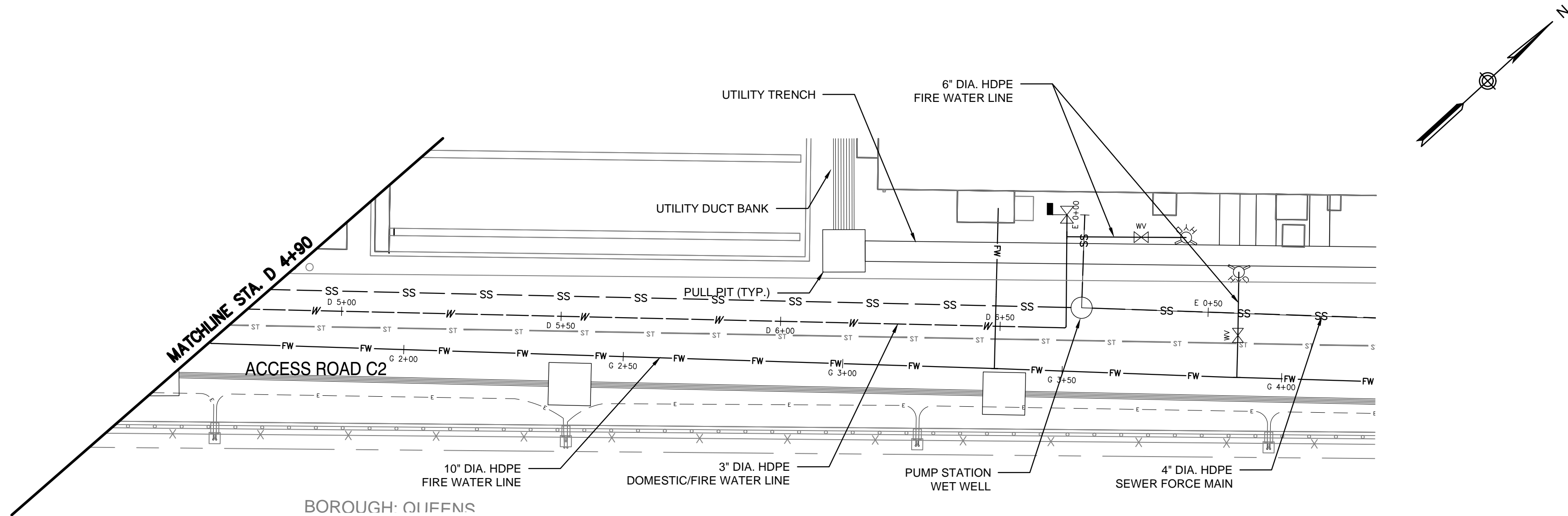


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VERTICAL SCALE 1" = 2'

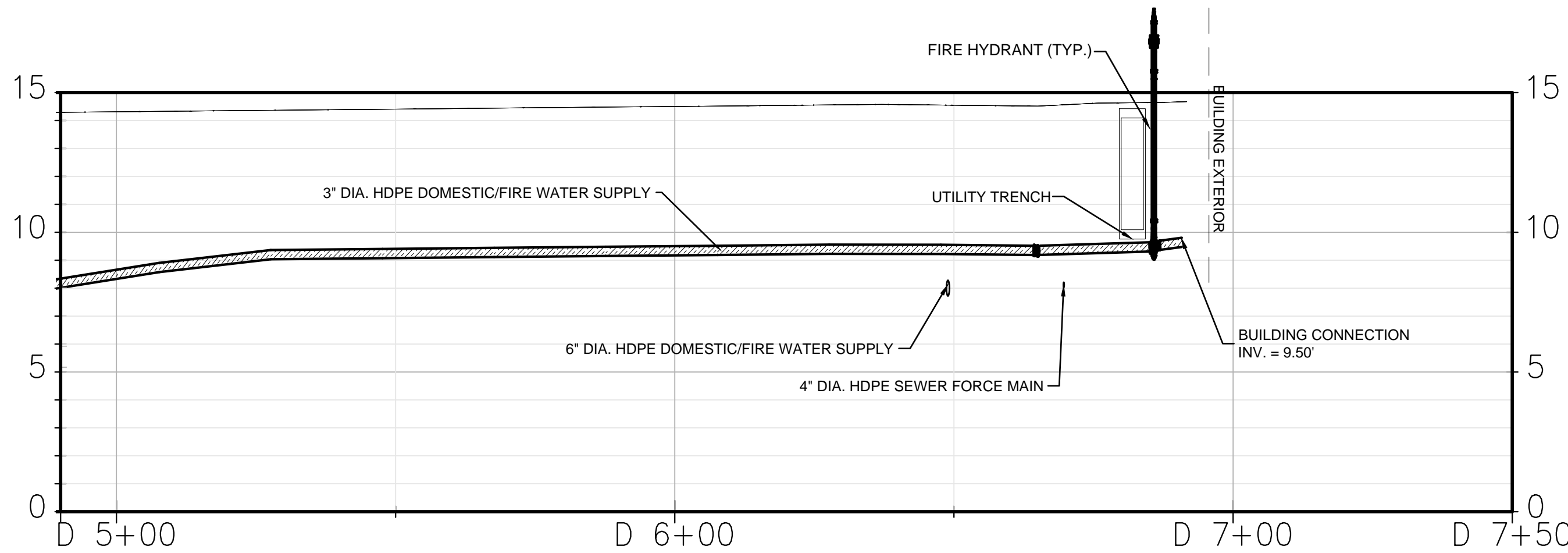




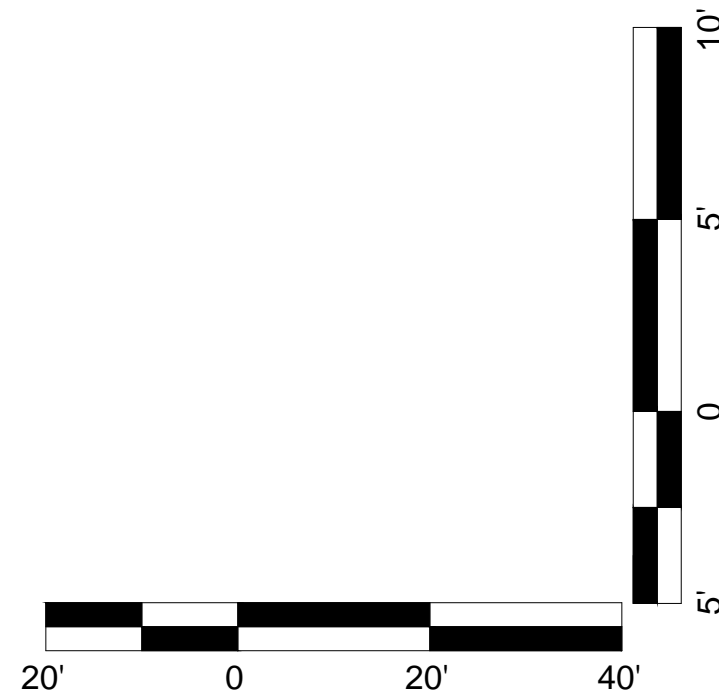
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DRAWING BY	A. TRACEY
CHECKED BY	C. VALLABH
DRAWING NO	
C-203.00	
CADD FILE NO	7 of 25



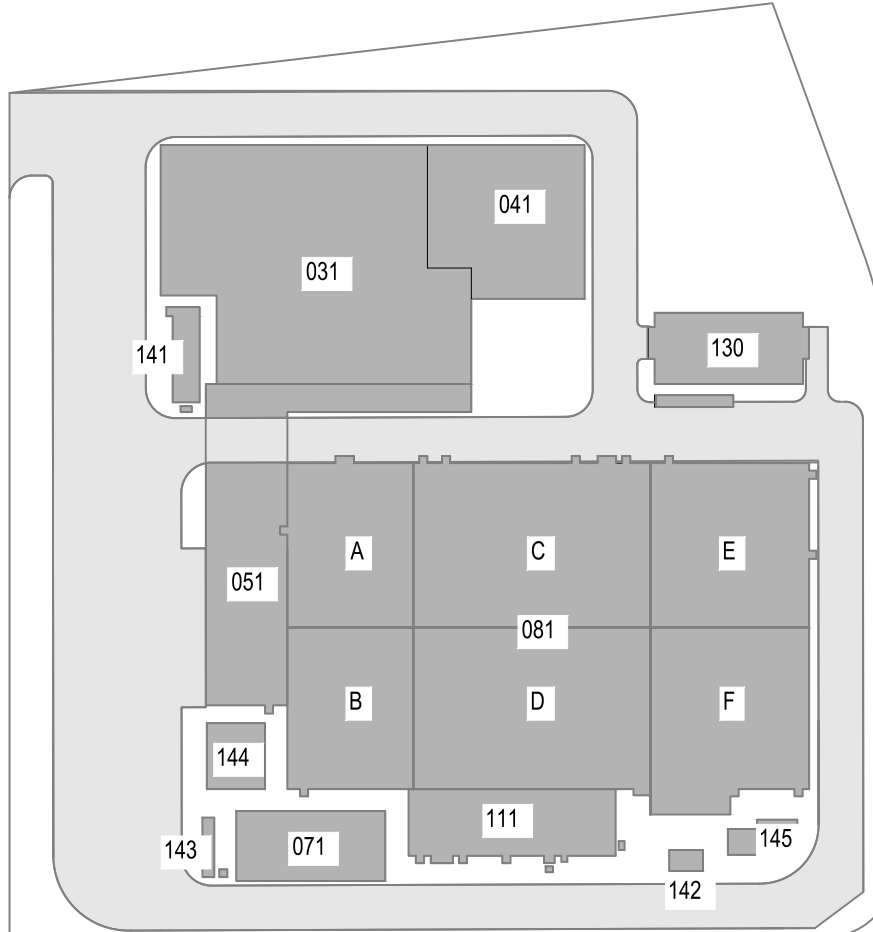
UTILITY PLAN - DOMESTIC/FIRE WATER SUPPLY
ALIGNMENT D
STA. D 4+90 TO STA. D 6+91
SCALE 1"=20'



UTILITY PROFILE - DOMESTIC/FIRE WATER SUPPLY
ALIGNMENT D
STA. D 4+90 TO STA. D 6+91
HOR. SCALE 1"=20'
VERT. SCALE 1"=5'



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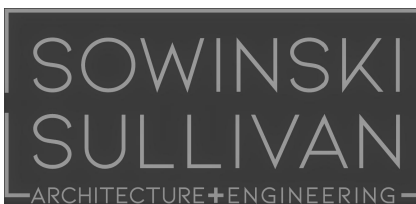
KEY PLAN
N.T.S.

PLAN NORTH



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A	FINAL SUBMISSION	AT	JL	11/8/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE



PROJECT

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Champlain Hudson
Power Express

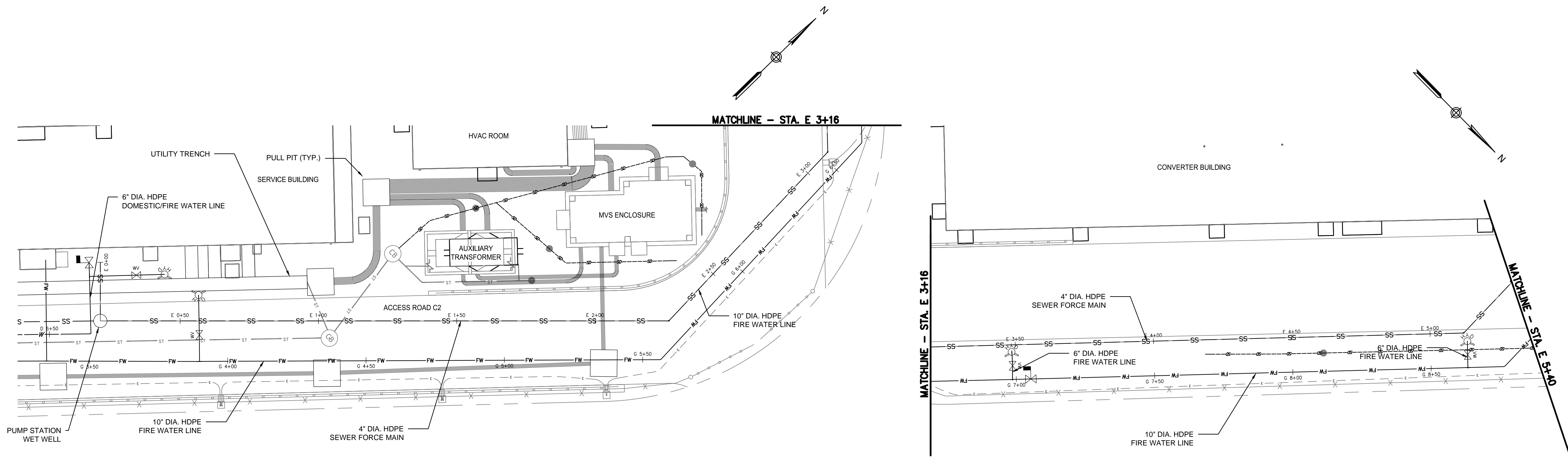
**Astoria HVDC
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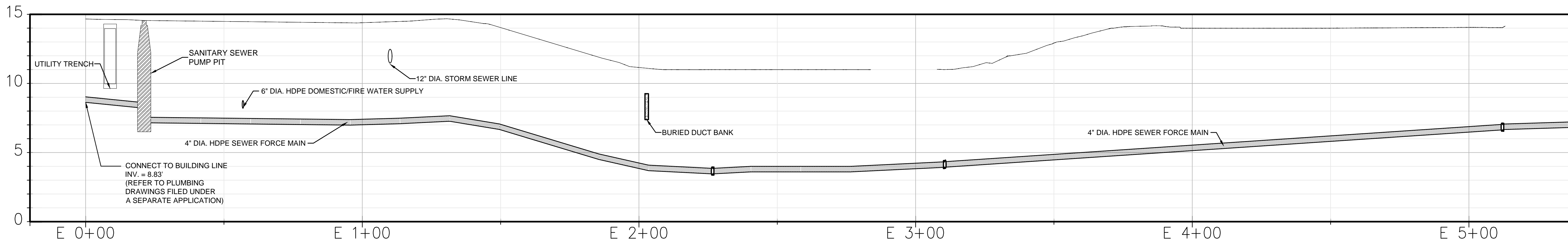
UTILITY PROFILE - 2



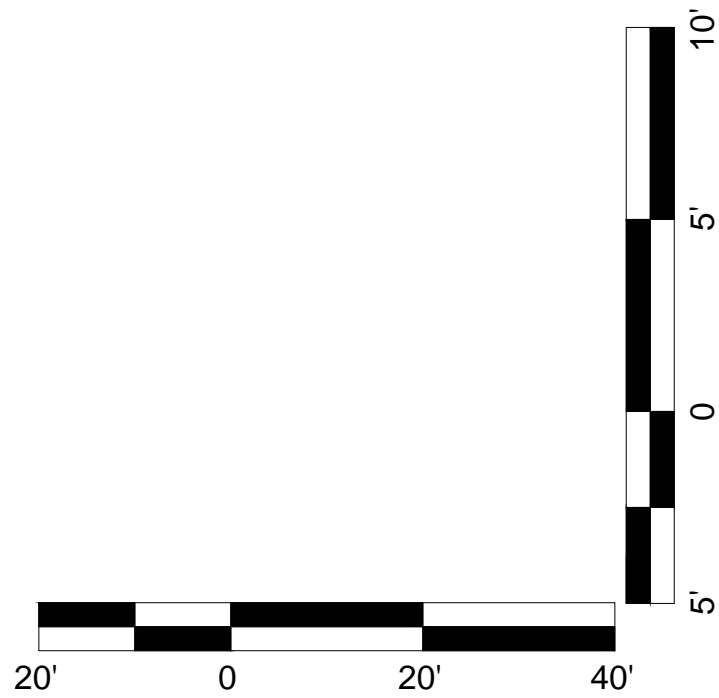
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PROJECT NO: 105121
DRAWING BY: A. TRACEY
CHECKED BY: C. VALLABH
DRAWING NO: **C-204.00**
CADD FILE NO: 8 of 25



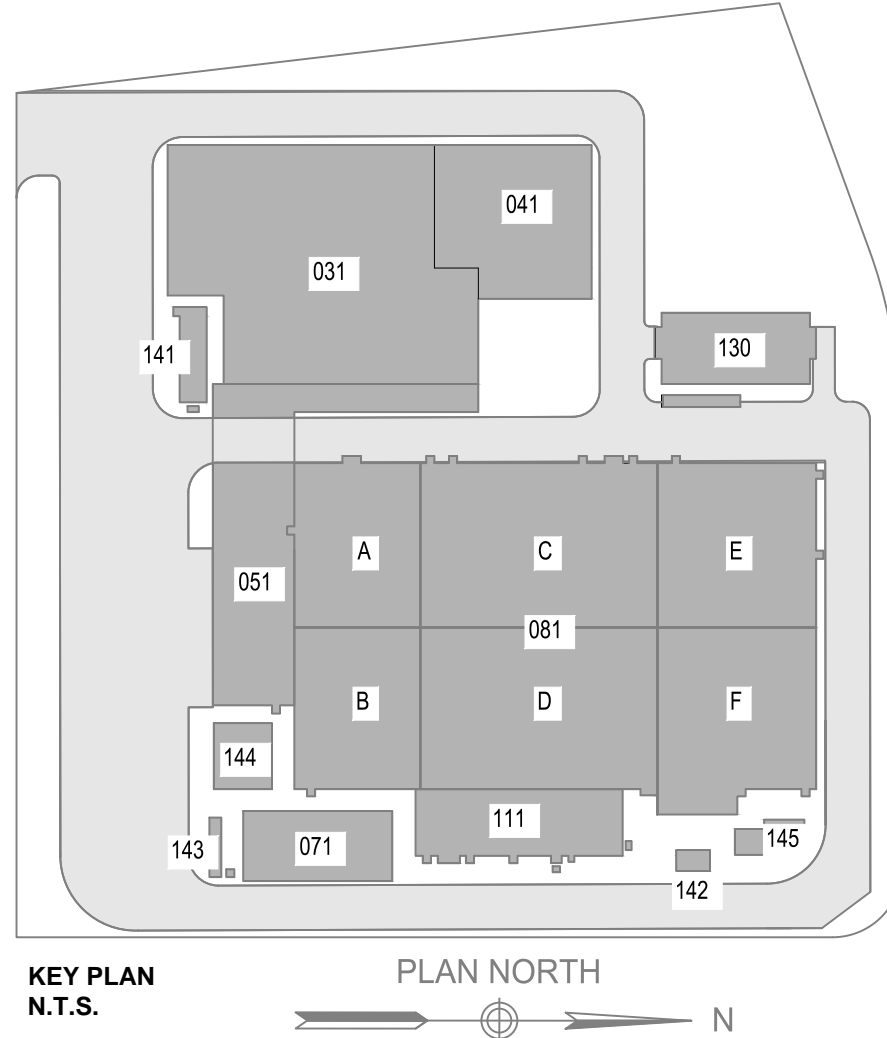
UTILITY PLAN - SANITARY SEWER
ALIGNMENT E
STA. E 0+00 TO STA. E 5+40
SCALE 1"=20'



UTILITY PROFILE - SANITARY SEWER
ALIGNMENT E
STA. E 0+00 TO STA. E 5+40
HOR. SCALE 1"=20'
VERT. SCALE 1"=5'



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Hitachi Energy 901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

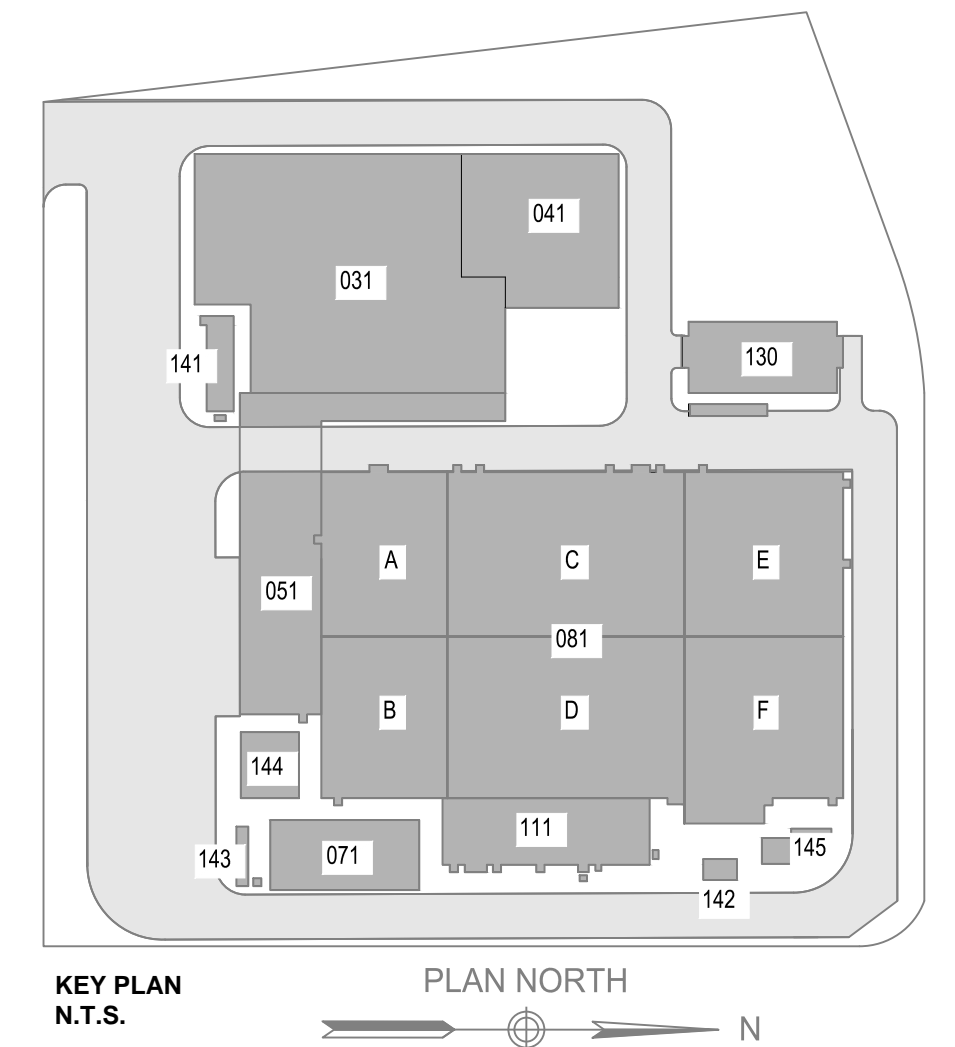
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

UTILITY PROFILE - 3



DATE NOVEMBER 8, 2022
PROJECT NO 105121
DRAWING BY A. TRACEY
CHECKED BY C. VALLABH
DRAWING NO
C-205.00
CADD FILE NO 9 of 25

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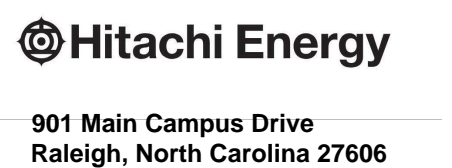
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A	FINAL SUBMISSION	AT	JL	11/6/22
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PROJECT



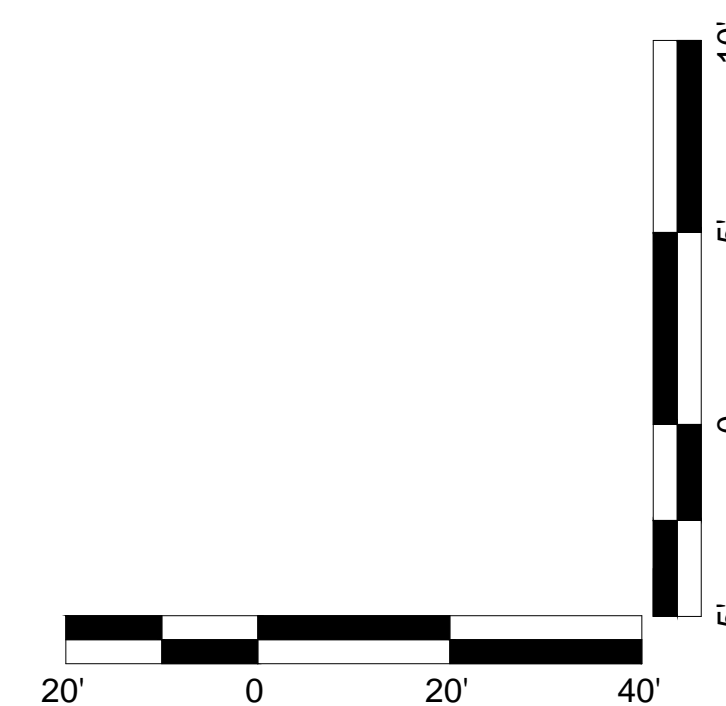
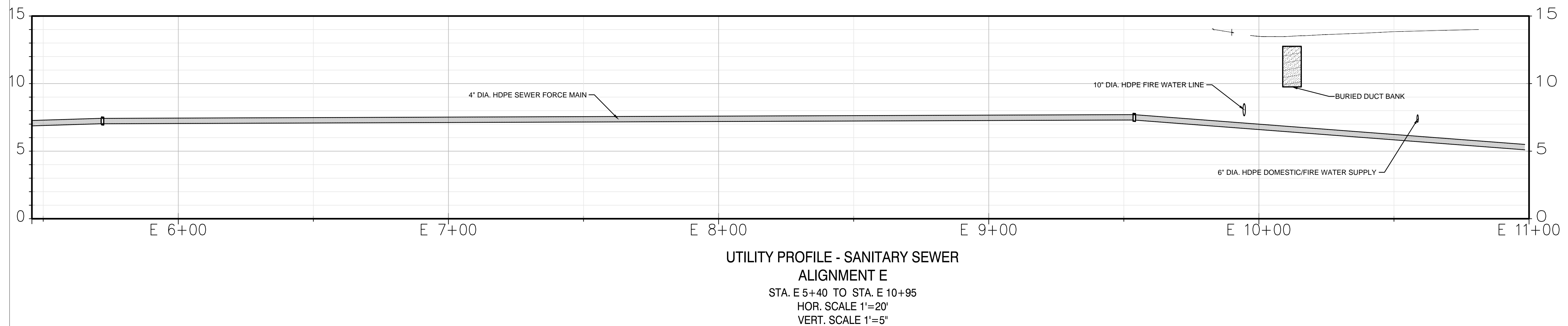
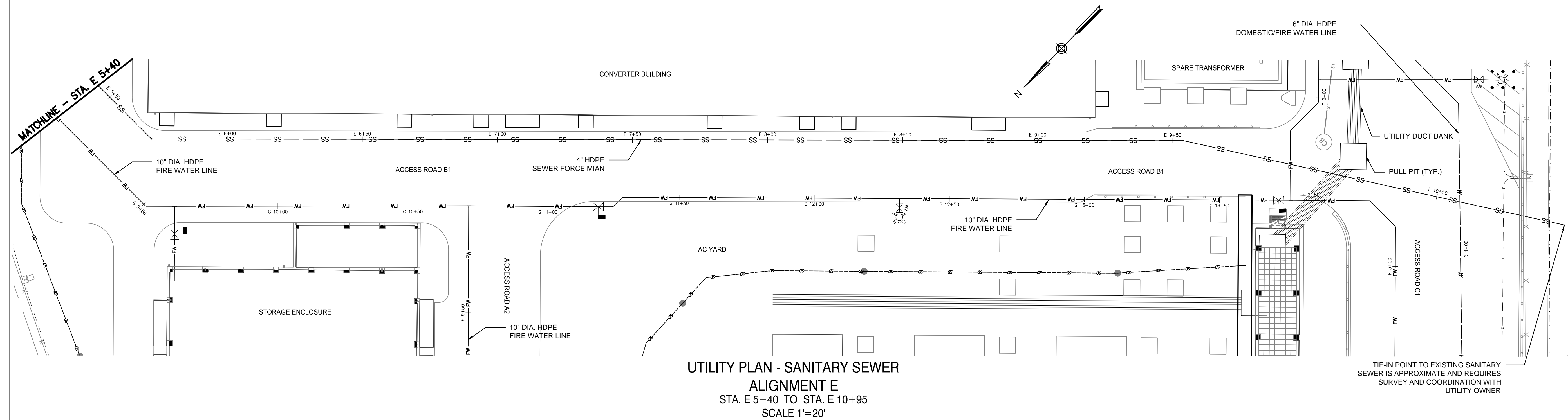
Astoria HVDC Converter Station

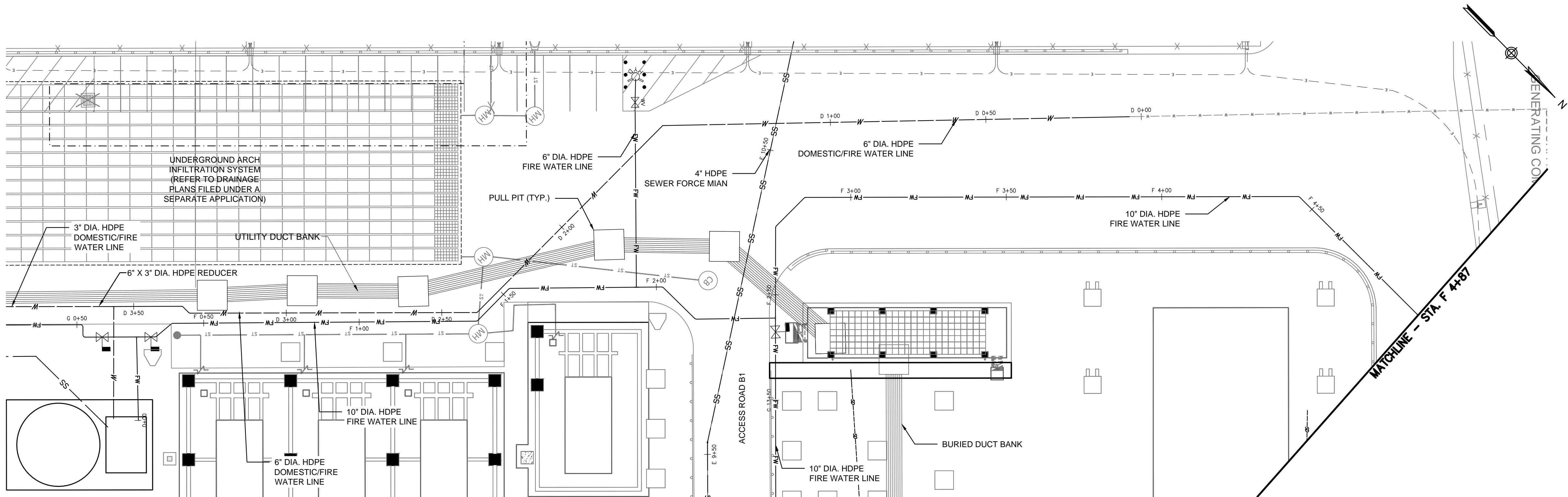
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UTILITY PROFILE - 4

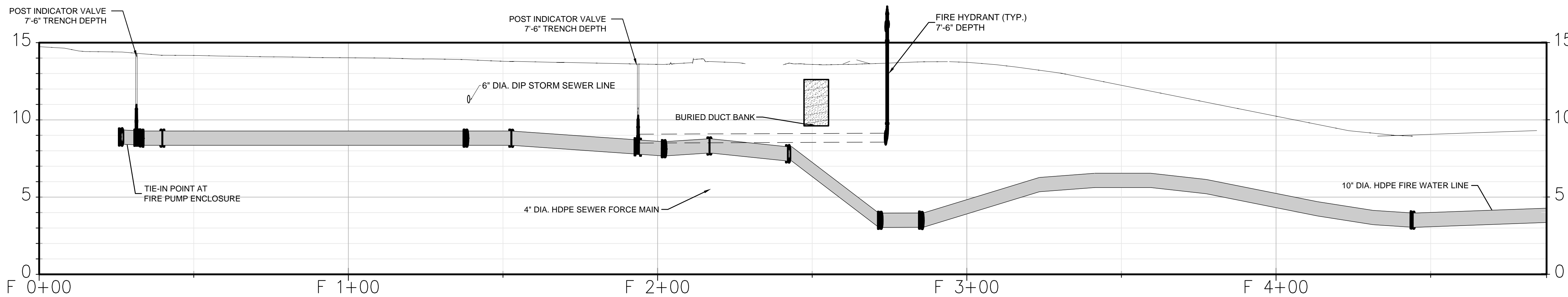


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PROJECT NO	105121
DRAWING BY	A. TRACEY
CHECKED BY	C. VALLABH
DRAWING NO	
C-206.00	
CADD FILE NO	10 of 25

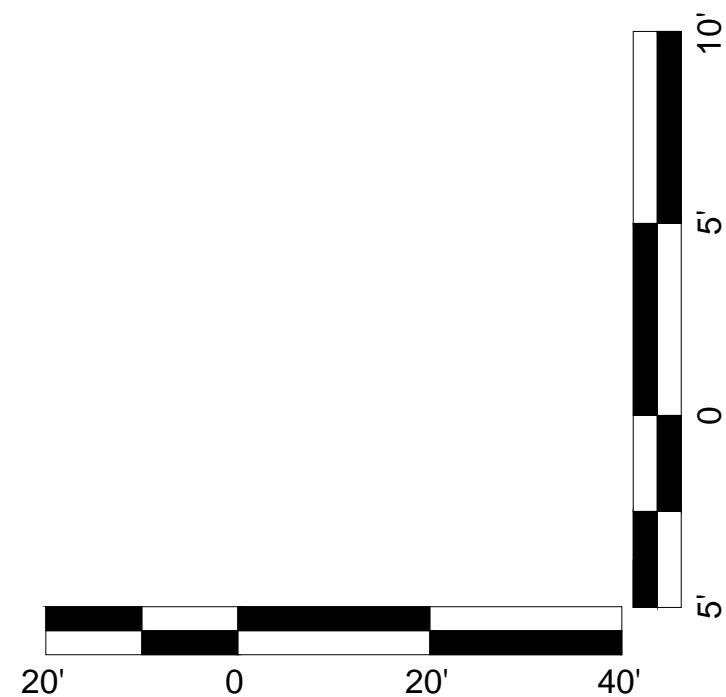




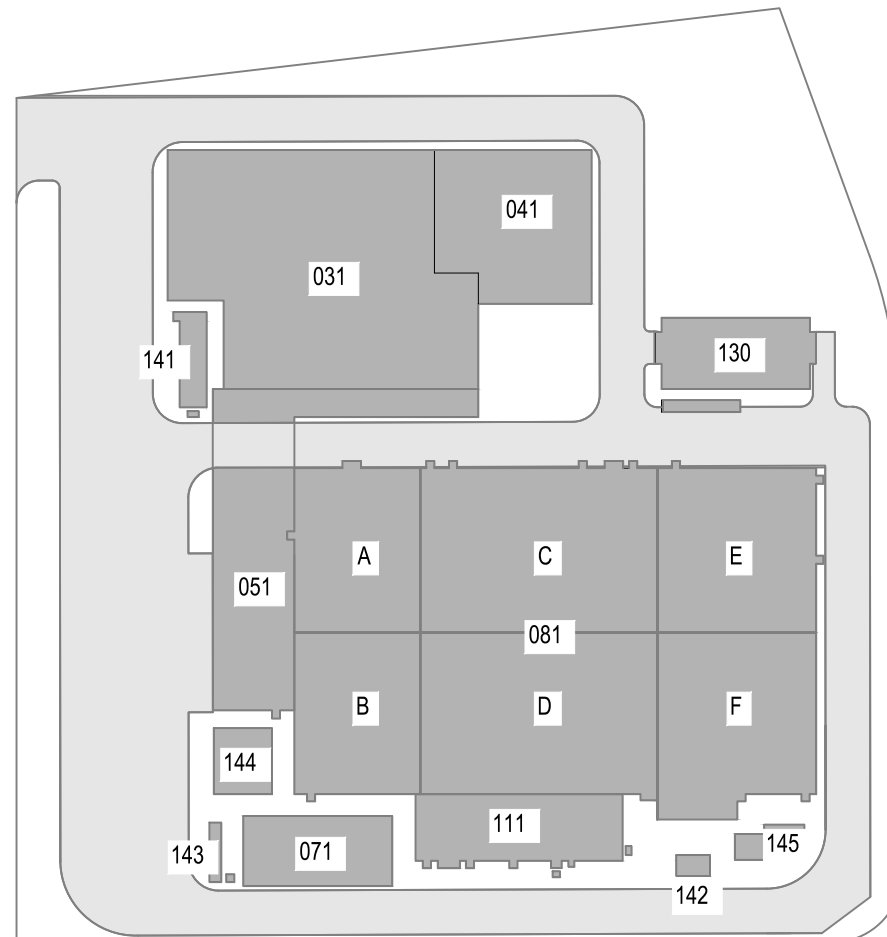
UTILITY PLAN - FIRE WATER LINE
ALIGNMENT F
STA. F 0+00 TO STA. F 4+87
SCALE 1"=20'



UTILITY PROFILE - FIRE WATER LINE
ALIGNMENT F
STA. F 0+00 TO STA. F 4+87
HOR. SCALE 1"=20'
VERT. SCALE 1"=5'



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A	FINAL SUBMISSION	AT	JL	11/8/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE

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Woodcliff Lake, NJ 07677

Hitachi Energy
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Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

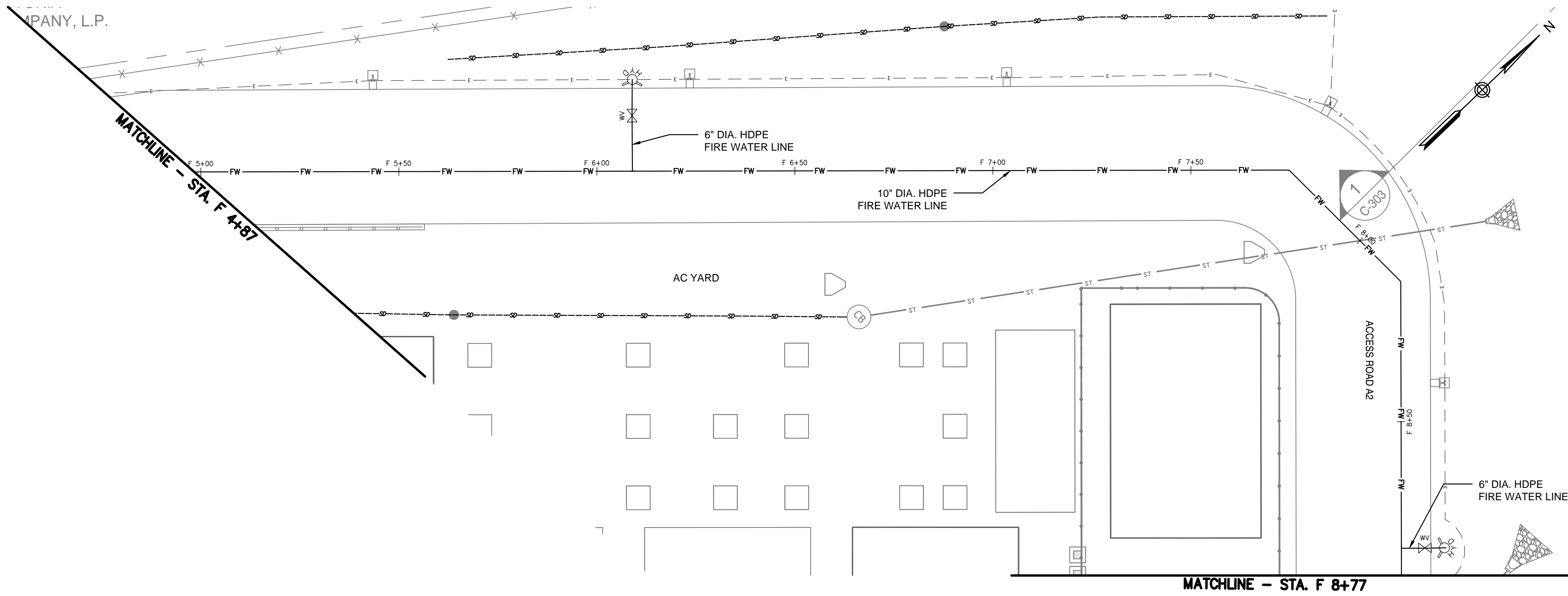
**Astoria HVDC
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UTILITY PROFILE - 5



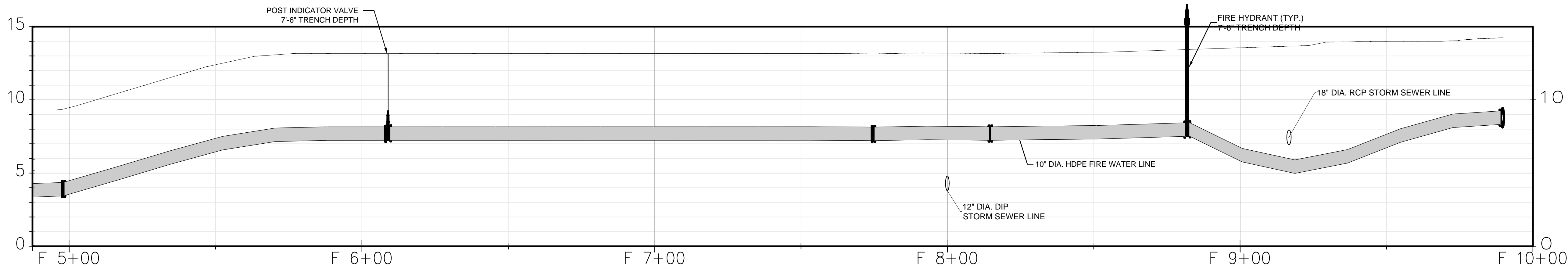
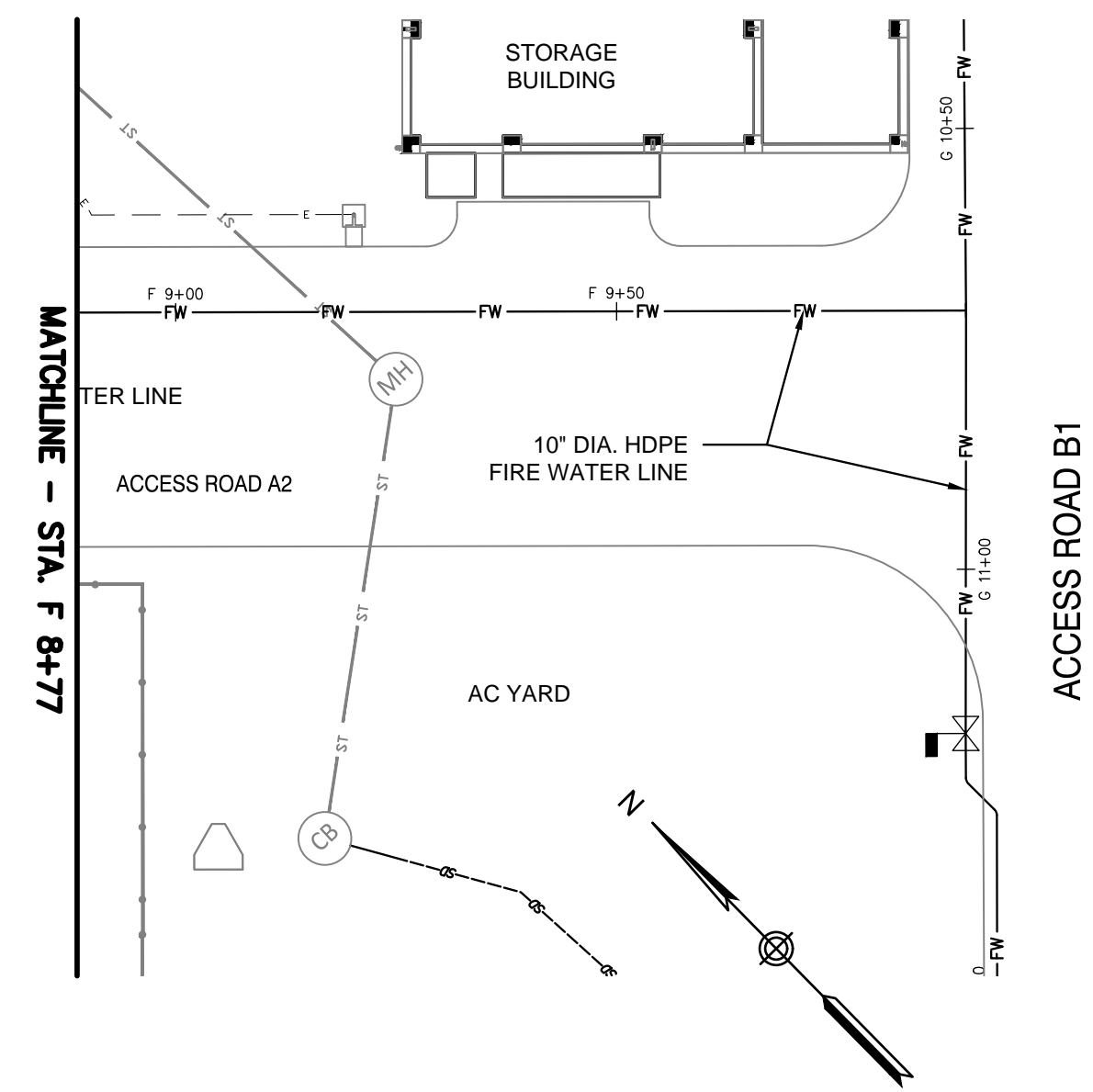
DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A. TRACEY
CHECKED BY: C. VALLABH
DRAWING NO: C-207.00
CADD FILE NO: 11 of 25



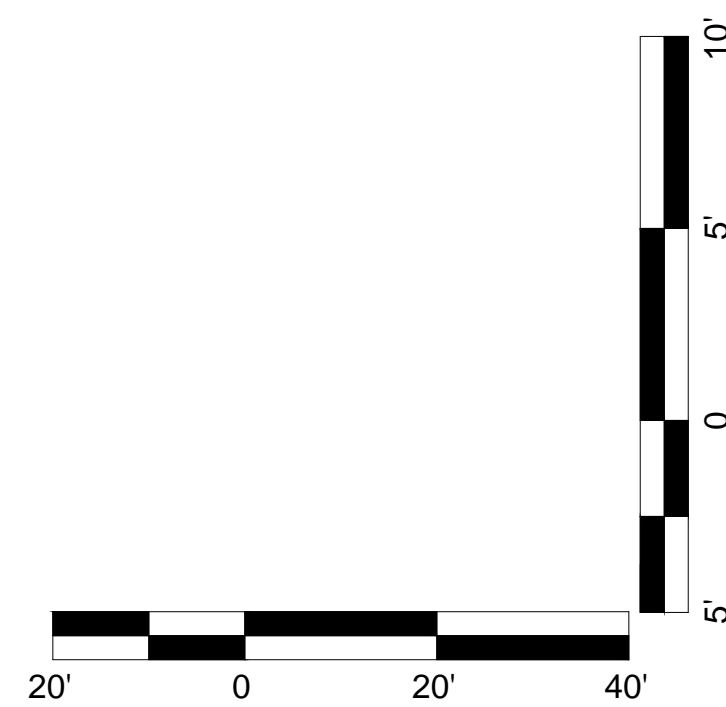
MATCHLINE - STA. F 4+87

MATCHLINE - STA. F 8+77

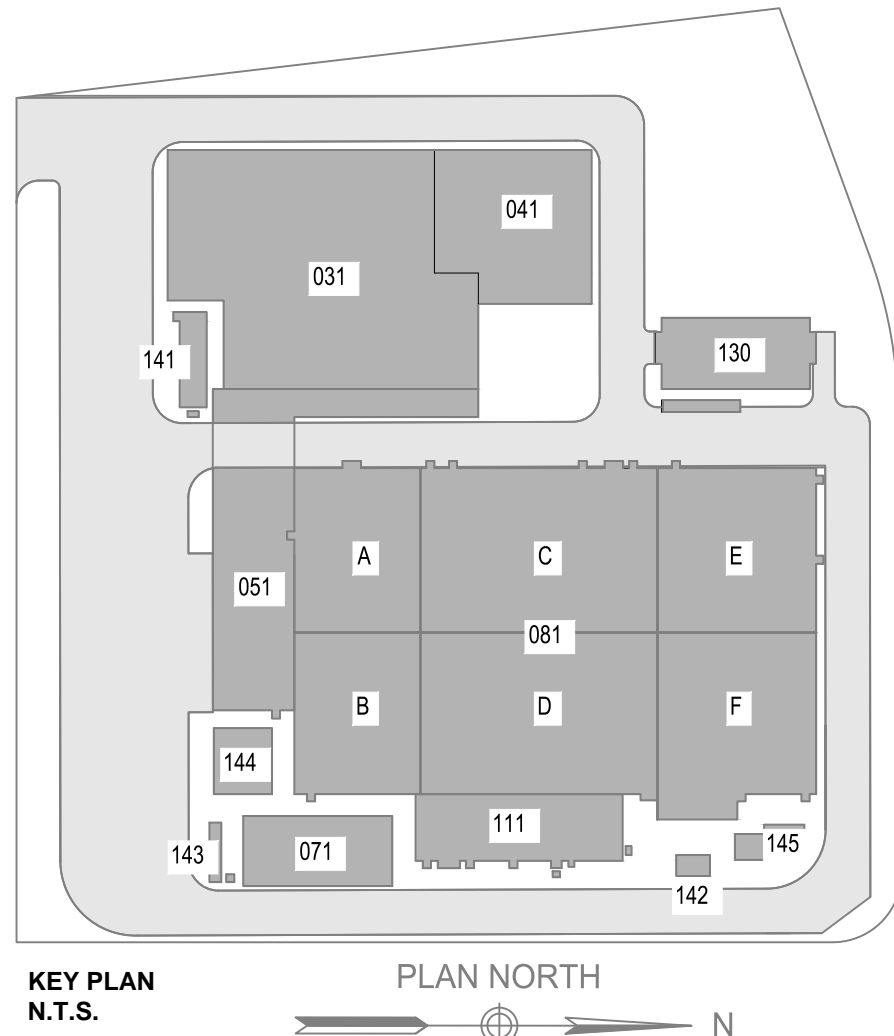
UTILITY PLAN - FIRE WATER LINE
ALIGNMENT F
STA. F 4+87 TO STA. F 9+78
SCALE 1"=20'



UTILITY PROFILE - FIRE WATER LINE
ALIGNMENT F
STA. F 4+87 TO STA. F 9+78
HOR. SCALE 1"=20'
VERT. SCALE 1"=5'



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Raleigh, North Carolina 27606

PROJECT

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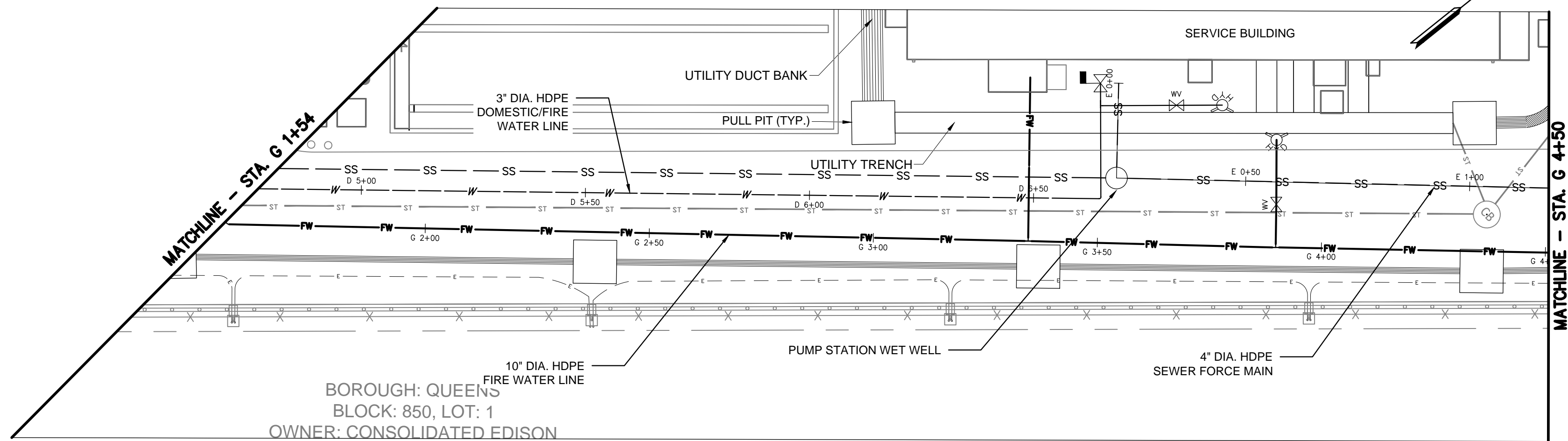
**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

UTILITY PROFILE - 6

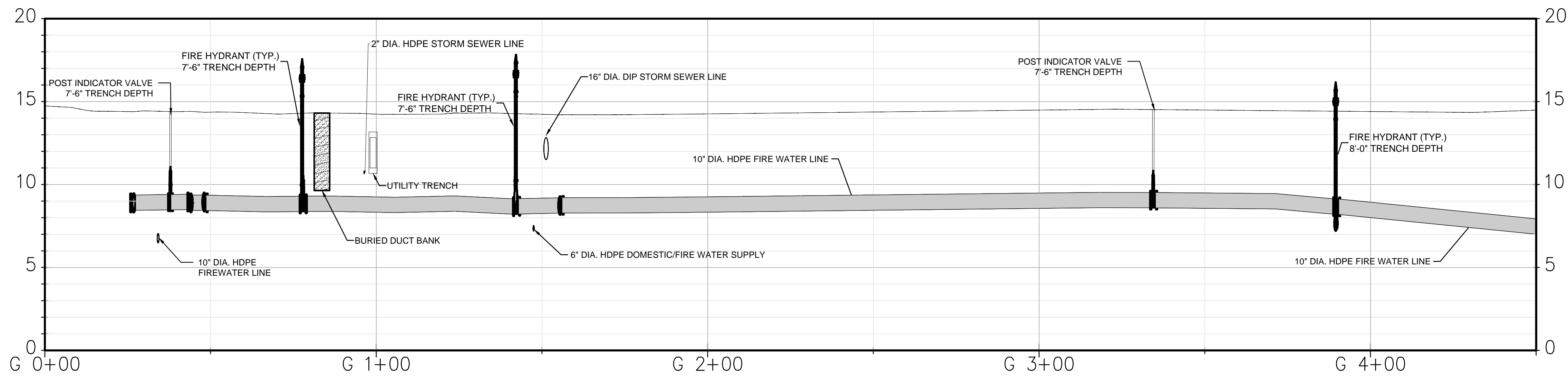


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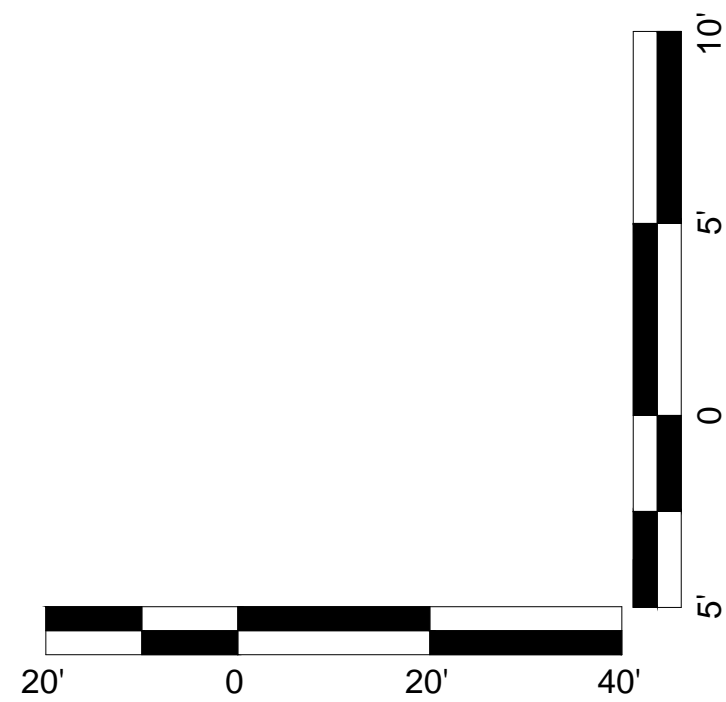
NOVEMBER 8, 2022
105121
A. TRACEY
C. VALLABH
C-208.00
12 of 25



UTILITY PLAN - FIRE WATER LINE
ALIGNMENT G
STA. G 0+00 TO STA. G 4+50
SCALE 1"=20'



UTILITY PROFILE - FIRE WATER LINE
ALIGNMENT G
STA. G 0+00 TO STA. G 4+50
HOR. SCALE 1'=20'
VERT. SCALE 1'=5"



KEY PLAN
N.T.S.

PLAN NORTH



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A	FINAL SUBMISSION	AT	JL	11/8/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE



Kiewit

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PROJECT



Astoria HVDC Converter Station

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UTILITY PROFILE - 7



DATE NOVEMBER 8, 2023

PROJECT NO 10512

DRAWING BY A. TRACEY

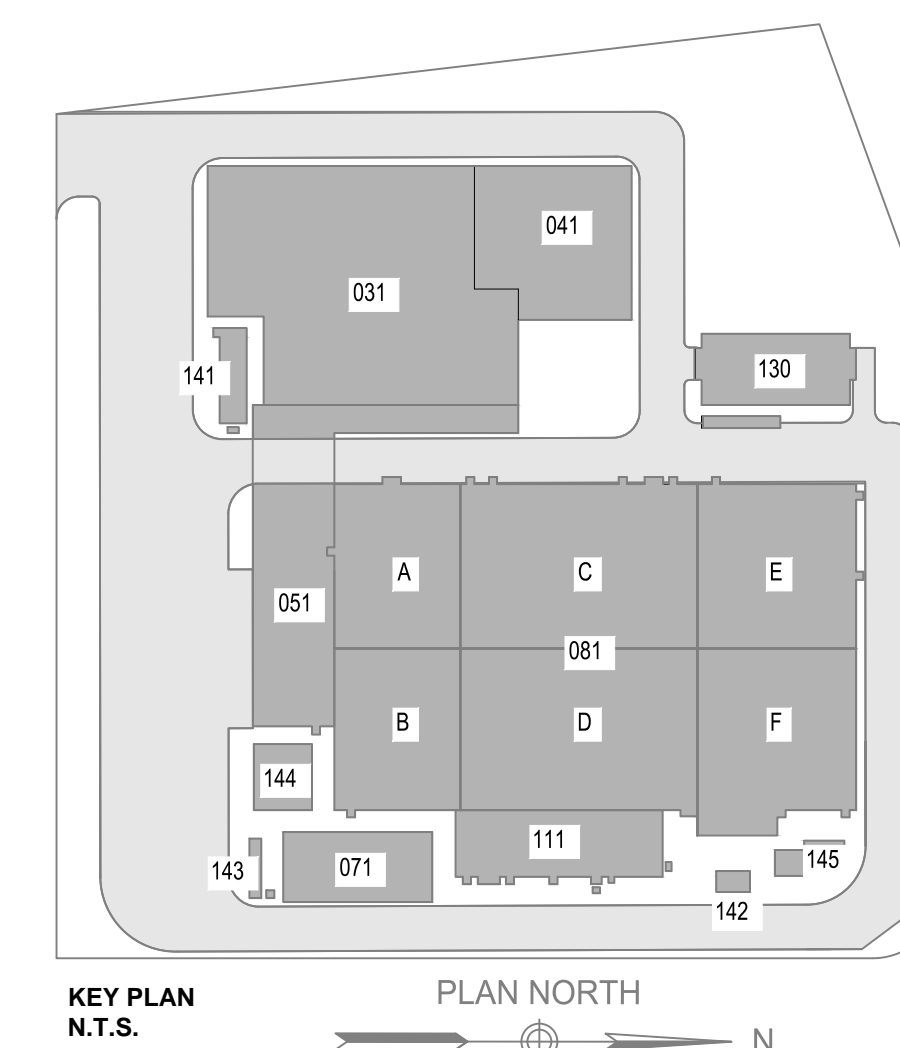
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C-209.00

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13 of 25

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REV	DESCRIPTION	DRW BY	CHK BY	DATE




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PROJECT



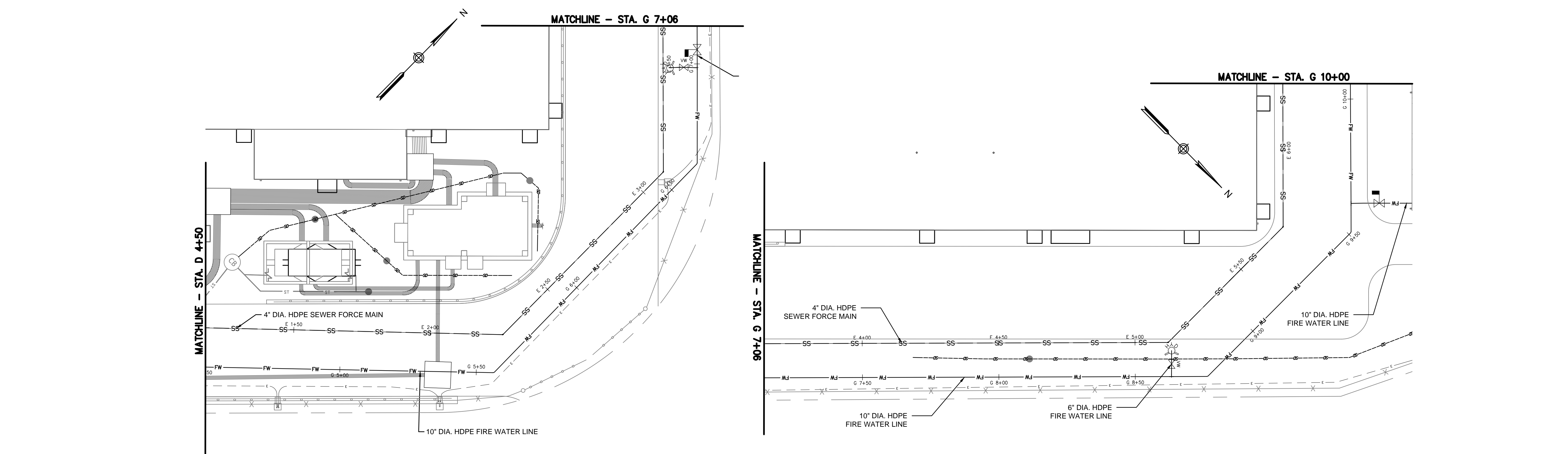
Astoria HVDC Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

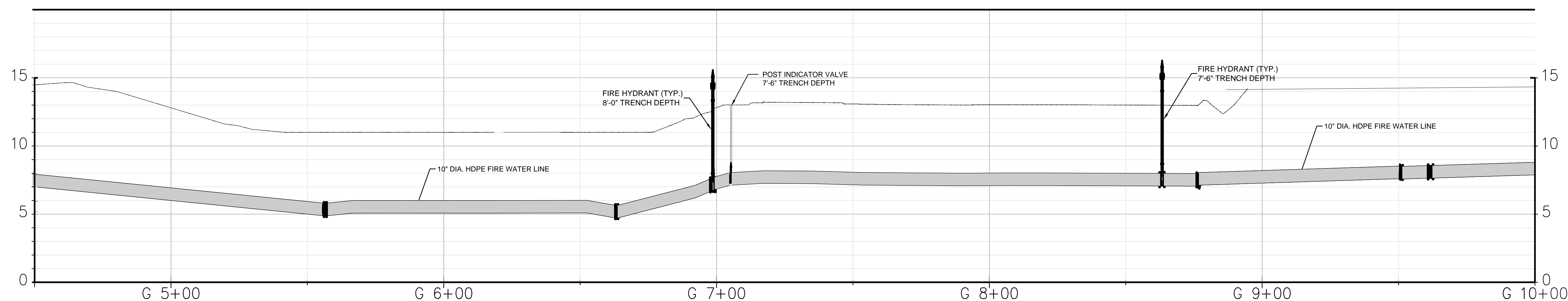
UTILITY PROFILE - 8



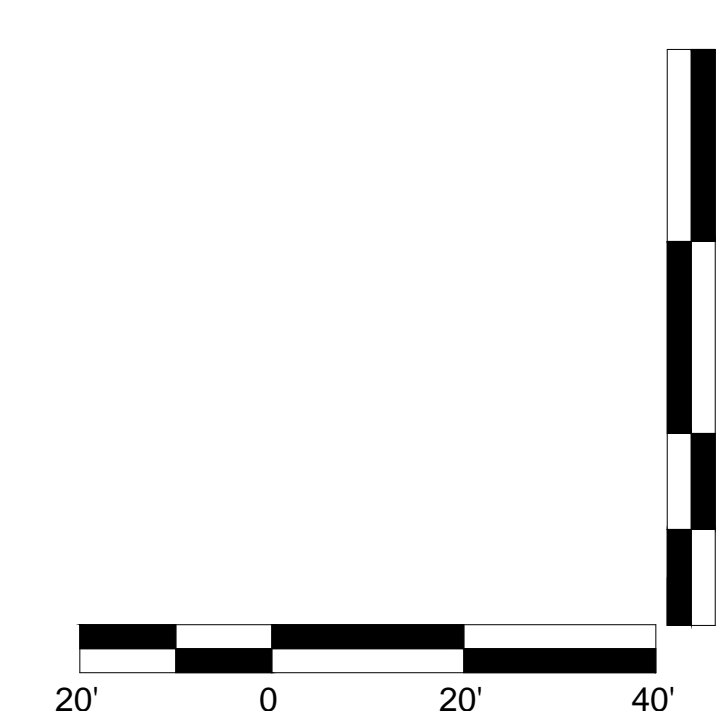
DATE	NOVEMBER 8, 2021
PROJECT NO	105121
DRAWING BY	A. TRACEY
CHECKED BY	C. VALLABH
DRAWING NO	
C-210.00	
CADD FILE NO	14 of 25

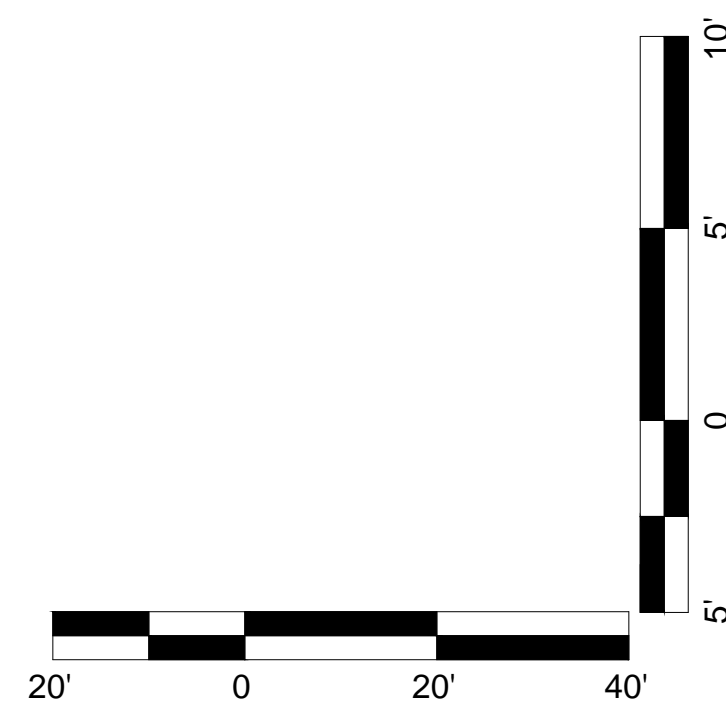
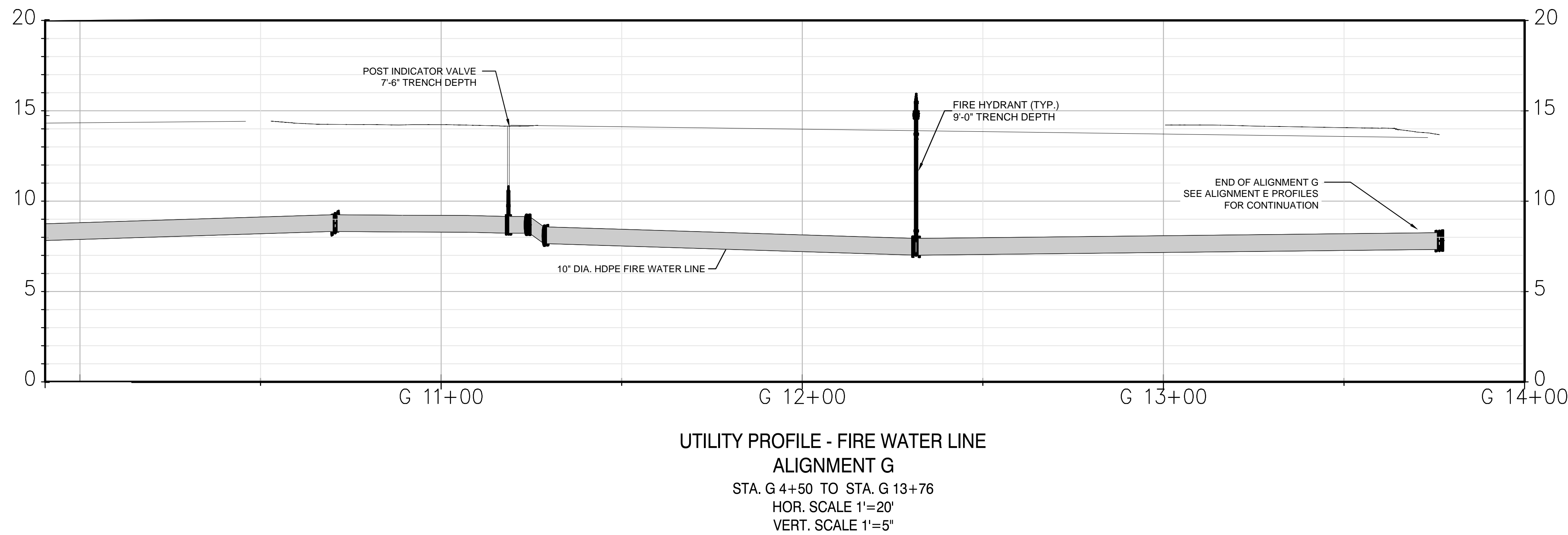
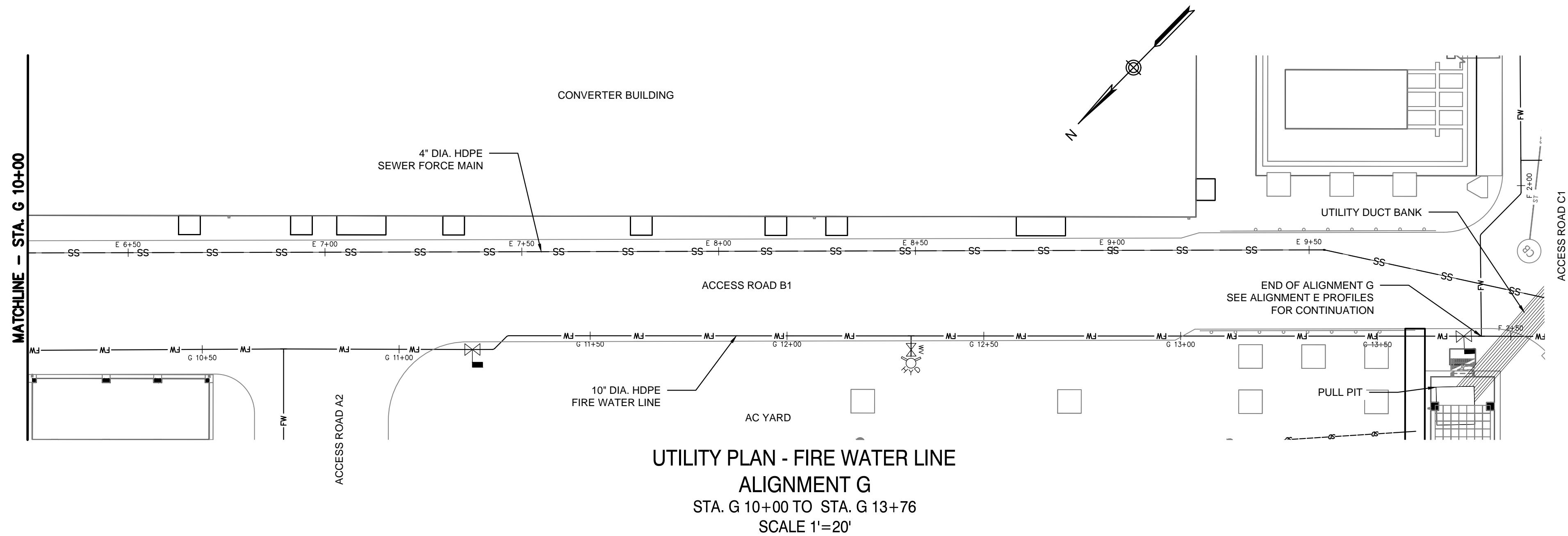


UTILITY PLAN - FIRE WATER LINE
ALIGNMENT G
STA. G 4+50 TO STA. G 10+00
SCALE 1'=20'



UTILITY PROFILE - FIRE WATER LINE
ALIGNMENT G
STA. G 4+50 TO STA. G 10+00
HOR. SCALE 1"=20'
VERT. SCALE 1"=5'





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REV	DESCRIPTION	DRW BY	CHK BY	DATE

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PROJECT
CHPE
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**Astoria HVDC
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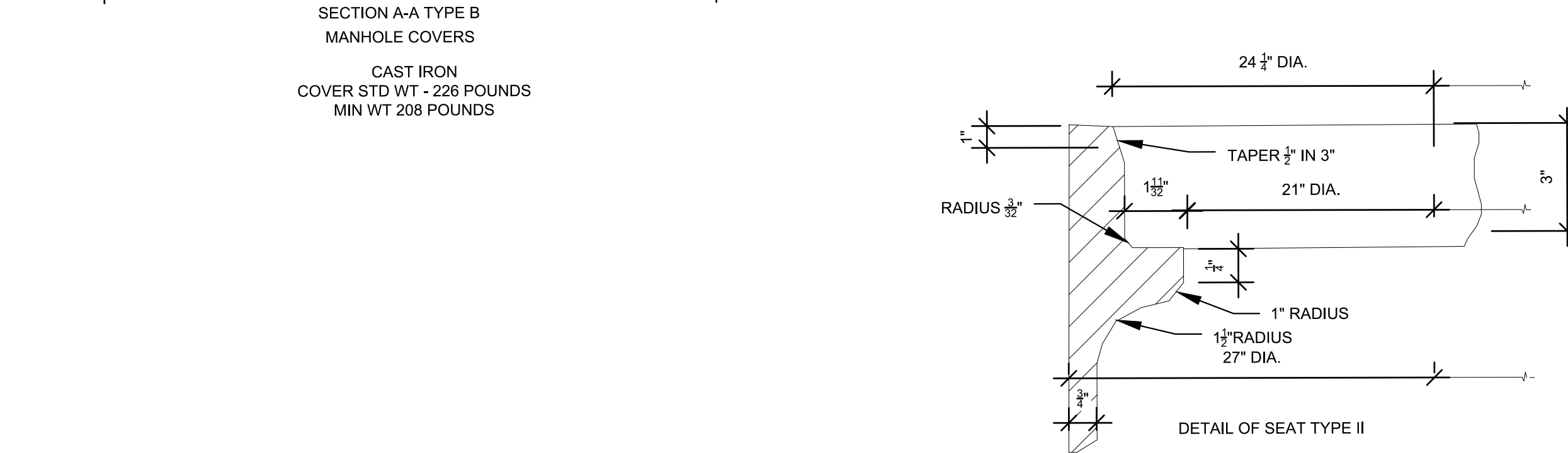
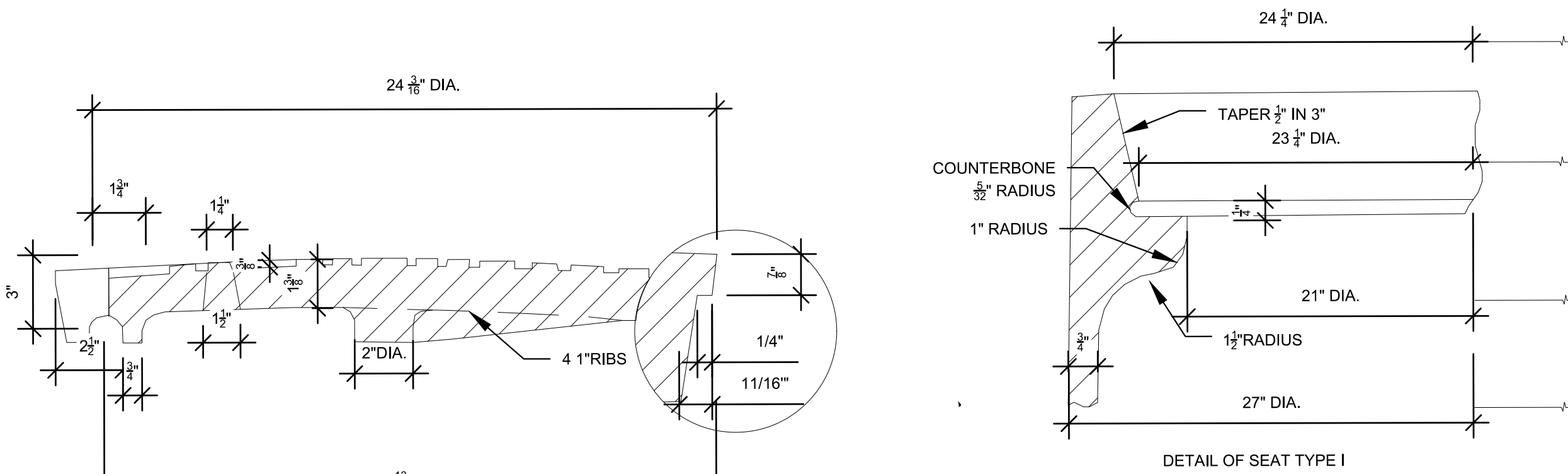
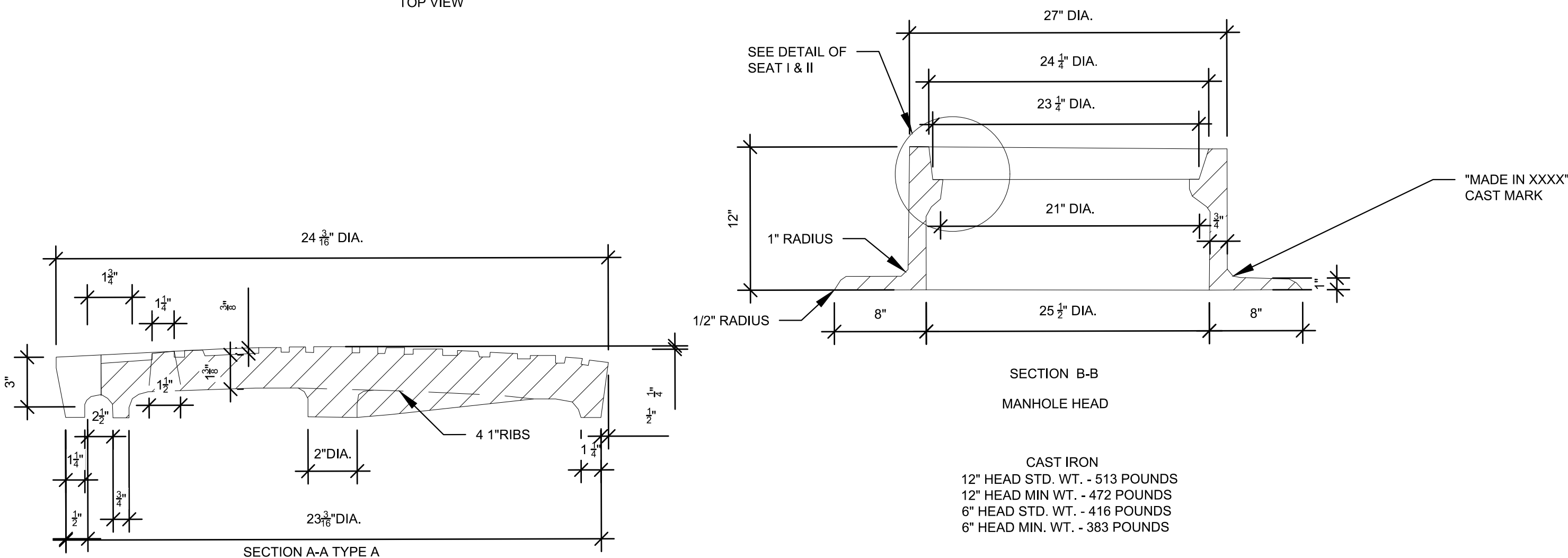
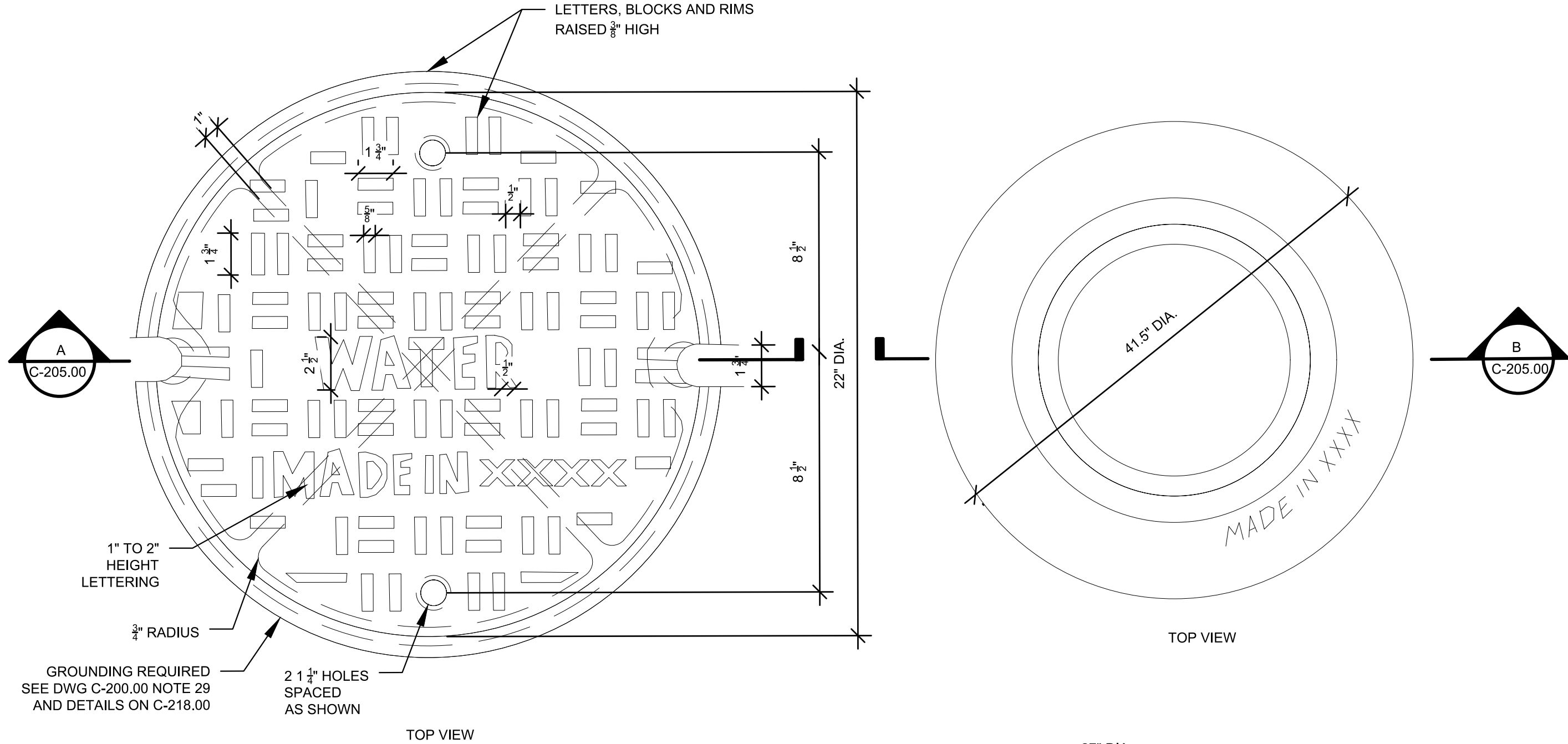
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

UTILITY PROFILE - 9



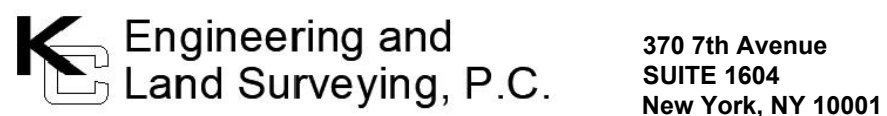
DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A. TRACEY
CHECKED BY: C. VALLABH
DRAWING NO: **C-211.00**
CADD FILE NO: 15 of 25

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1 WIDE FLANGE MANHOLE HEAD AND COVER DETAILS
C-205.00 SCALE: NTS

NOTE: NYS DEP WATERMAIN STANDARD DRAWINGS DATED 12-9-2022 DRAWING 13547-B-Z



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A	FINAL SUBMISSION	SC	CV	11/8/22
A	INTERIM SUBMISSION	SC	CV	8/29/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE



PROJECT



Astoria HVDC Converter Station

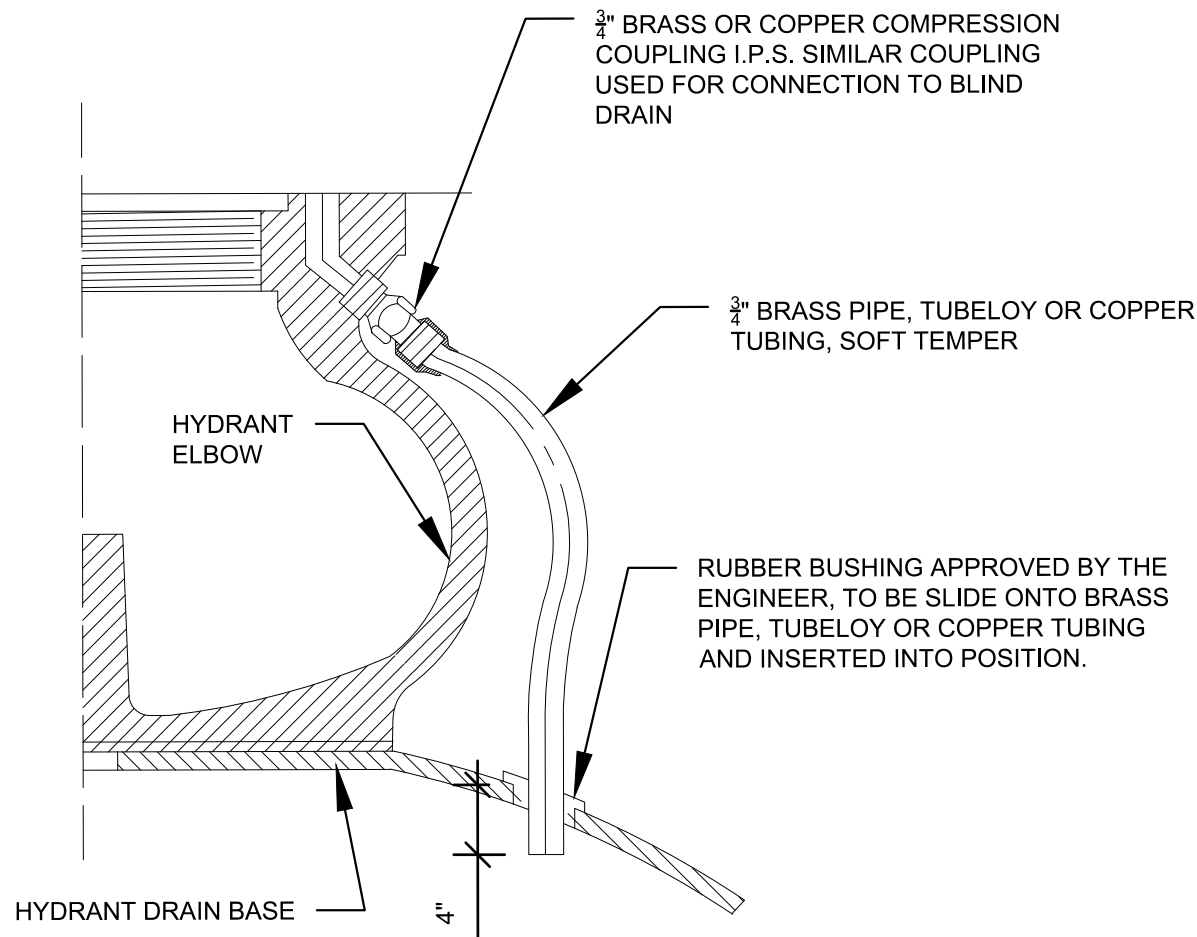
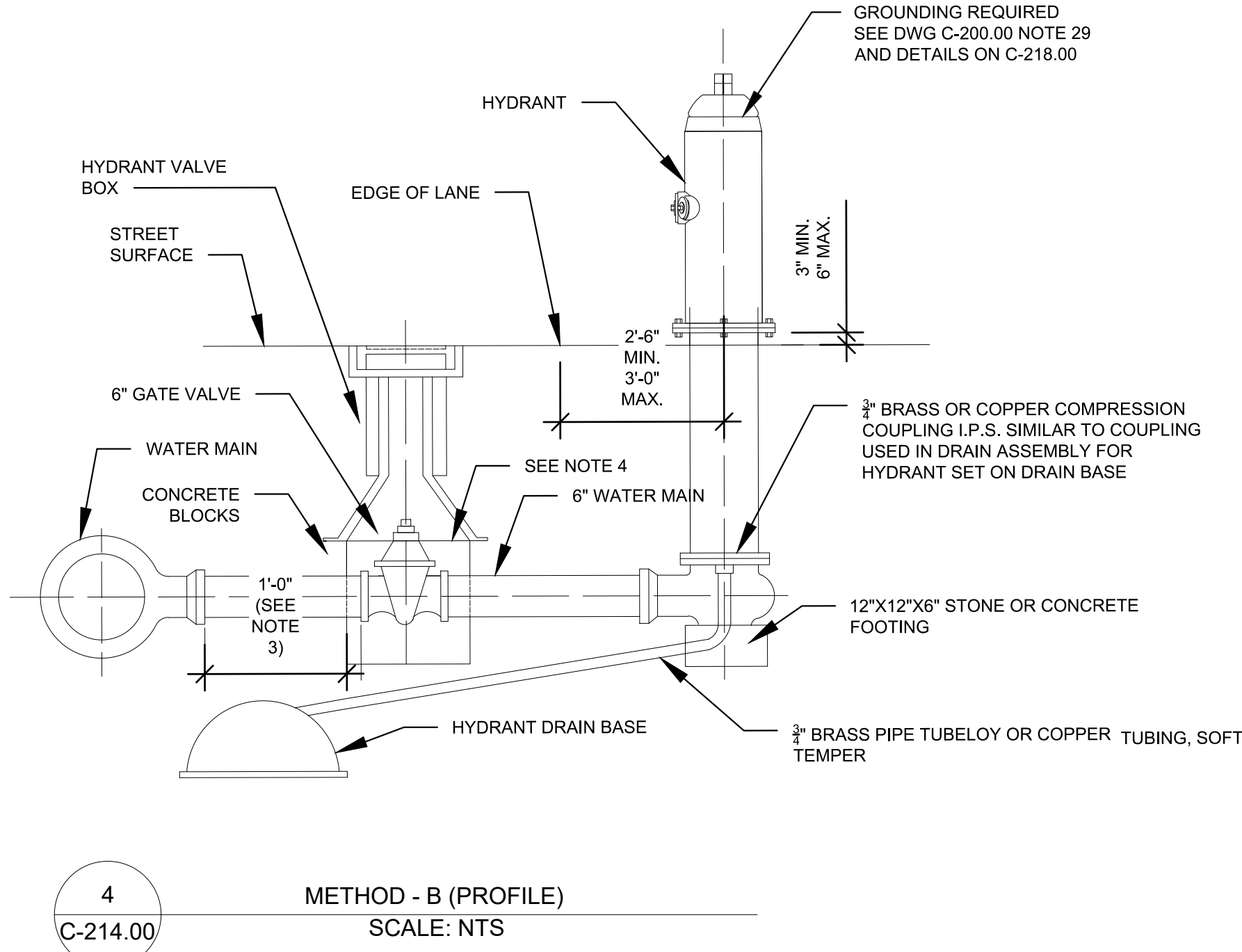
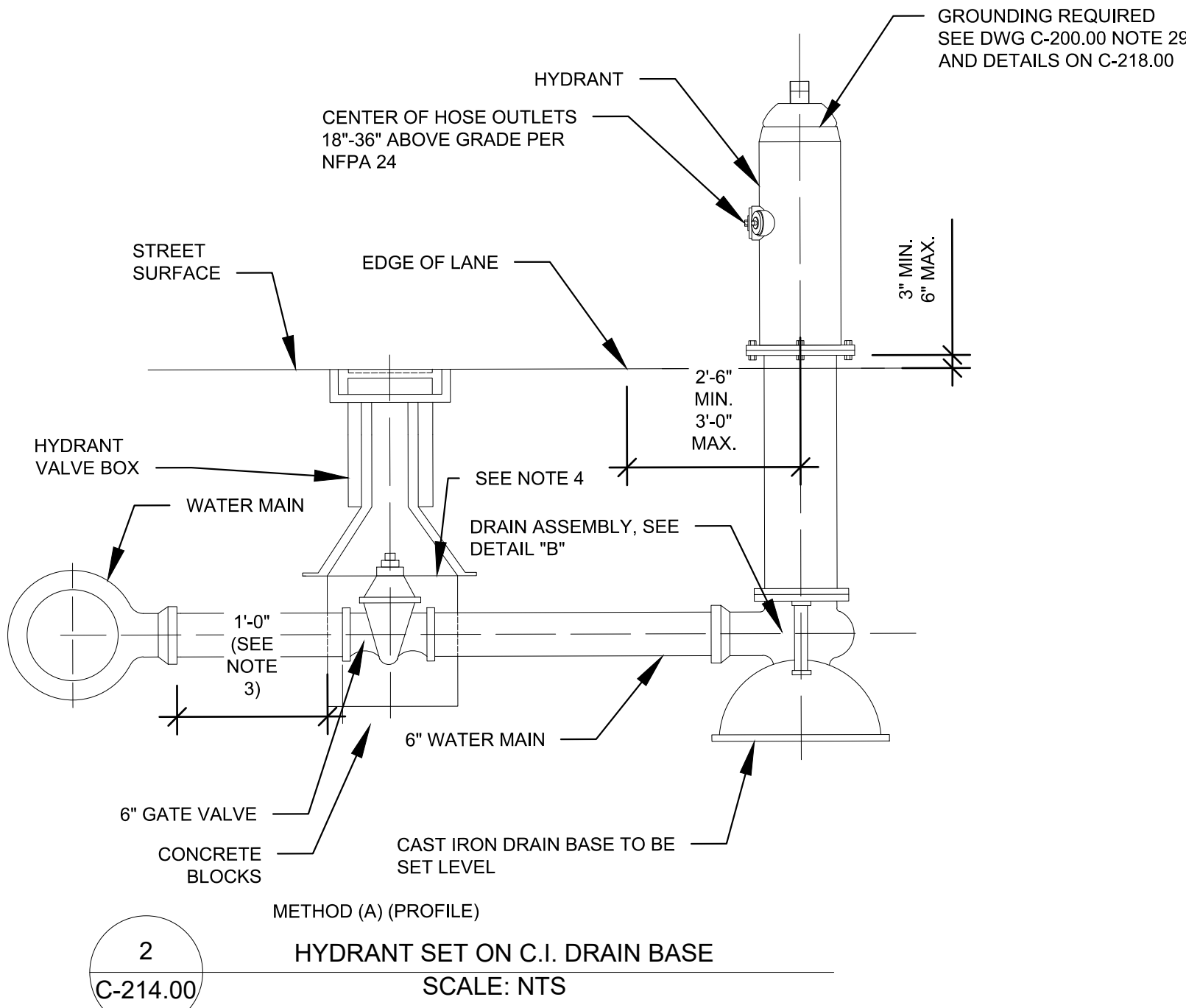
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Block #850 - Lot #310 - BIN #4624437

UTILITY DETAILS 1 WATER MAIN MANHOLE FRAME AND COVER



DATE	NOVEMBER 8, 2022
PROJECT NO	105121
DRAWING BY	S. CASH
CHECKED BY	C. VALLABH
DRAWING NO	
C-212.00	
CADD FILE NO	16 of 25

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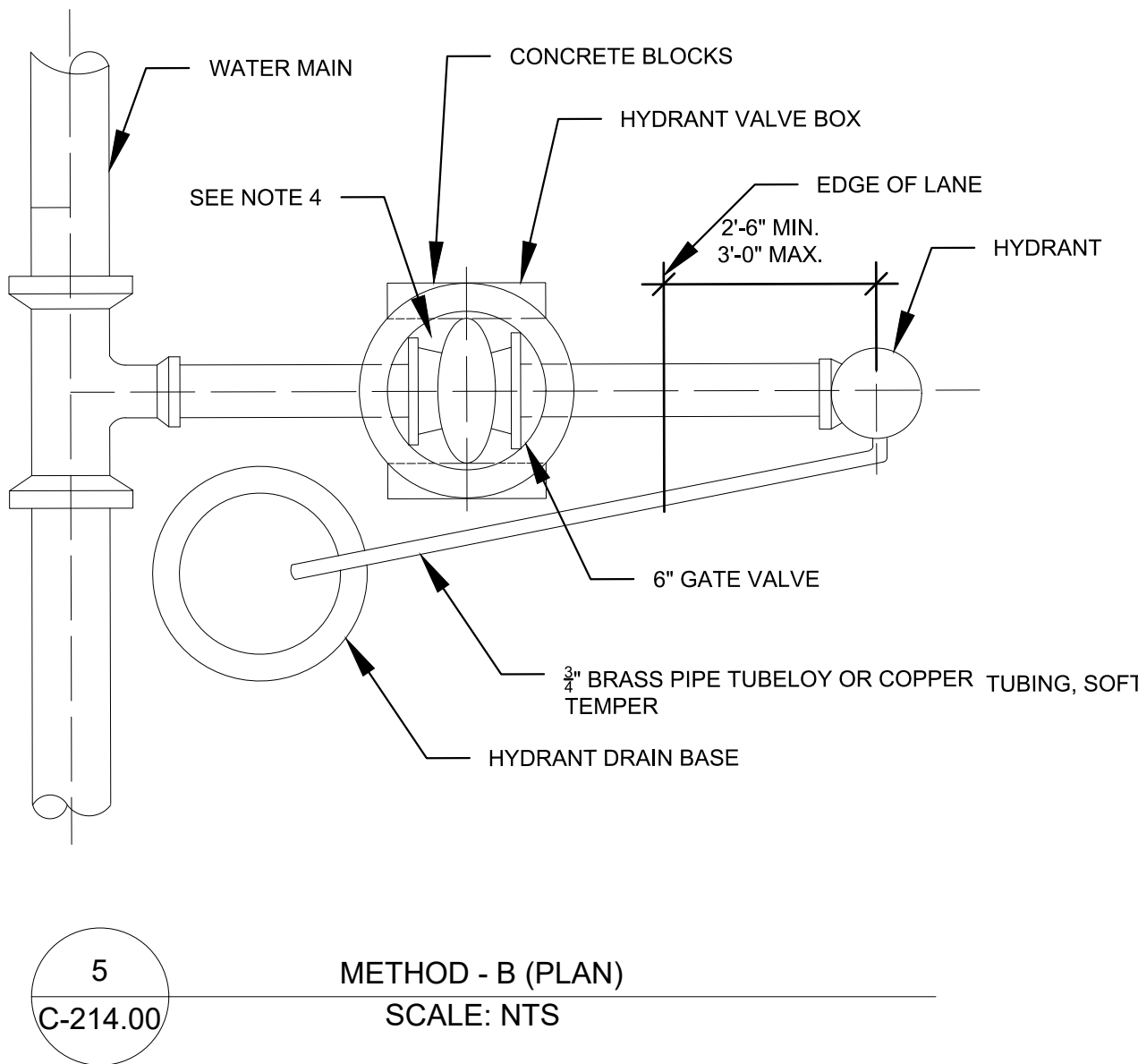
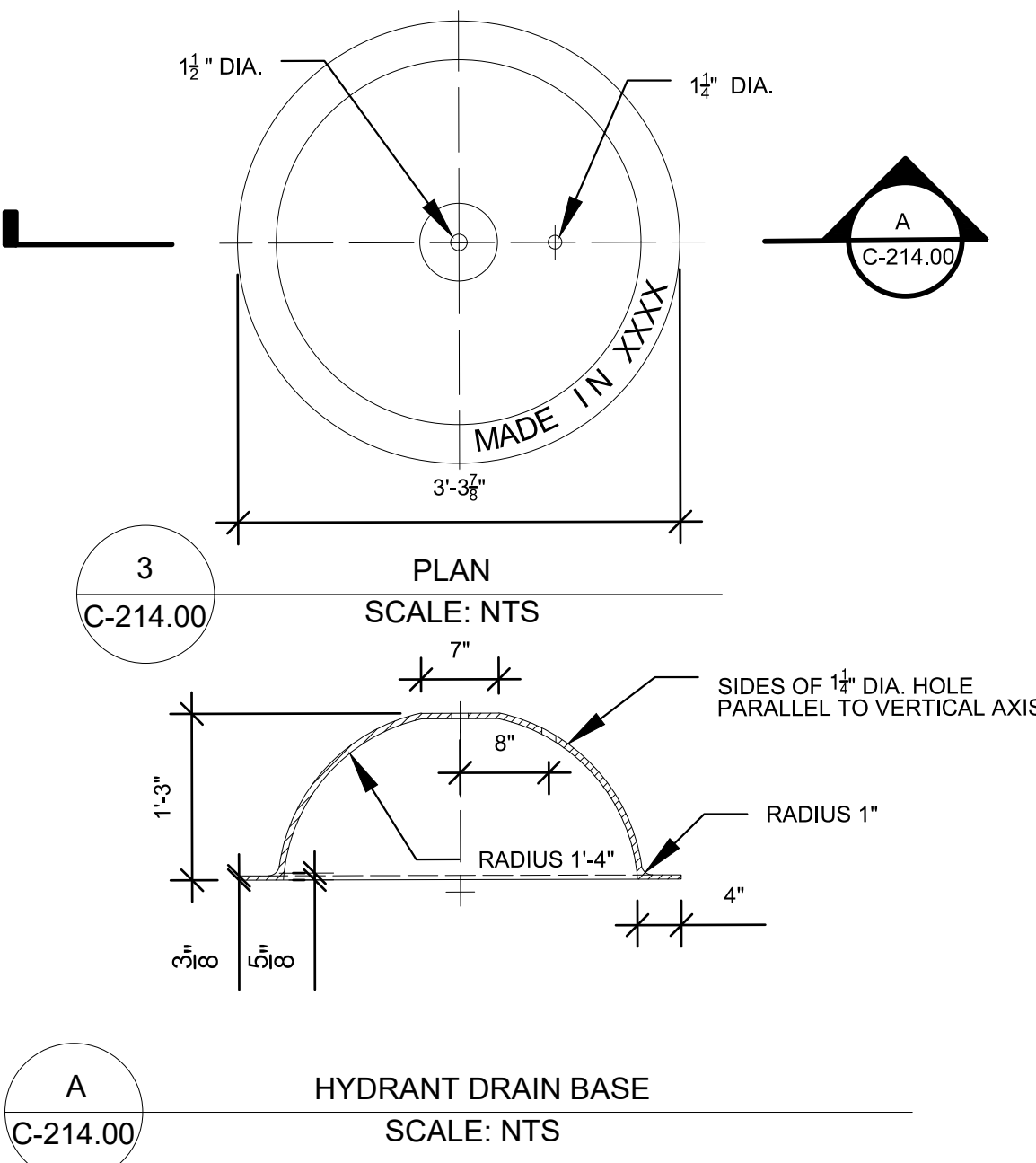


B
C-214.00

DRAIN ASSEMBLY FOR HYDRANT SET ON DRAIN BASE
SCALE: NTS

NOTES

1. HYDRANT DRAIN BASE MUST BE MADE IN ACCORDANCE WITH DEPARTMENT'S LATEST STANDARD SPECIFICATION FOR IRON CASTINGS.
2. LOCATION OF THE DOMED CAST IRON HYDRANT DRAIN IN METHOD-B TO BE AS DETERMINED BY THE ENGINEER.
3. THE DISTANCE OF THE HYDRANT VALVE SHALL BE WITHIN 20 FEET OF HYDRANT PERMITS.
4. SELECT GRANULAR FILL MUST BE PROVIDED TO BACKFILL VOID SPACE FROM THE BOTTOM OF THE CONCRETE BLOCKS UP TO THE BOTTOM OF THE VALVE BOX SKIRT, IN LINE WITH THE TOP OF THE VALVE BOX FLANGE.



DRAIN BASE WEIGHT - LBS		
MIN.	STD.	MAX.
229	270	284

NOTE: NYS DEP WATERMAIN STANDARD DRAWINGS DATED
12-9-2020 DRAWING WM0020

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REV	DESCRIPTION	DRW BY	CHK BY	DATE



PROJECT



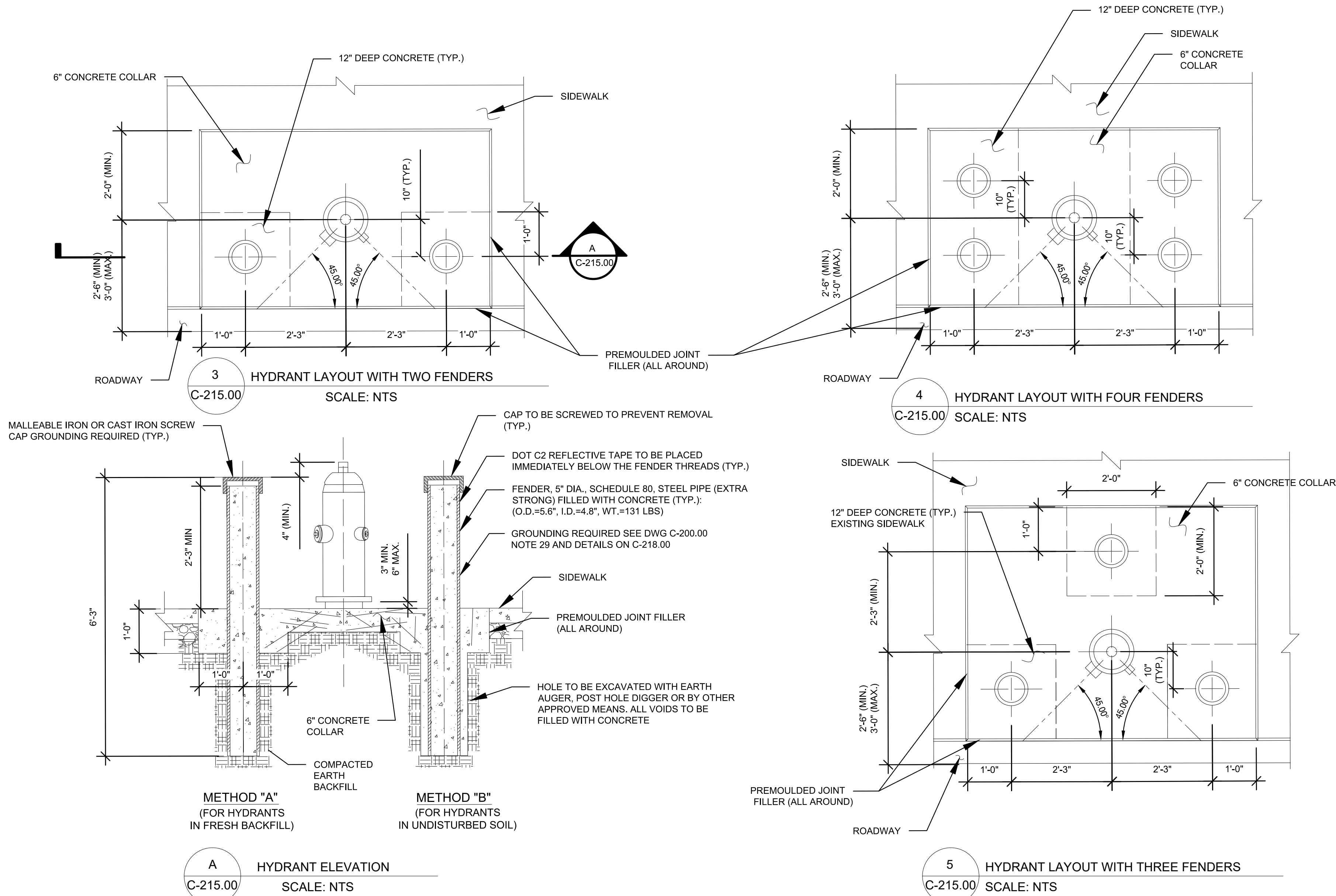
Astoria HVDC Converter Station

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UTILITY DETAILS 3 FIRE HYDRANT DETAILS



DATE	November 8, 2022
PROJECT NO	105121
DRAWING BY	S. CASH
CHECKED BY	C. VALLABH
DRAWING NO	C-214.00
CADD FILE NO	18 of 25



- NOTES:
1. CONCRETE COLLARS MUST BE SQUARED AND MADE FLUSH WITH SIDEWALK, AND PAVEMENT.
 2. ALL PARTS OF HYDRANT FENDERS MUST BE CLEANED OF SCALE, RUST, AND DIRT AND BE COATED ON THE OUTSIDE WITH A COAT OF RED PRIMER AND ONE COAT OF BLACK ASPHALT PAINT BELOW THE GROUND AND ONE COAT OF INDUSTRIAL GRADE ALUMINUM PAINT ABOVE THE GROUND.
 3. THE NUMBER OF HYDRANT FENDERS INSTALLED, AT ANY LOCATION, WILL BE AT THE DISCRETION OF THE ENGINEER. TYPICALLY, HYDRANT LAYOUT WITH TWO FENDERS IS USED AT MID BLOCK LOCATIONS AND HYDRANT LAYOUTS WITH THREE OR FOUR FENDERS ARE USED IN ISLANDS/MEDIANS OR COMMERCIAL DRIVEWAY AREAS.
 4. ALL FIELD PAINT MUST BE APPLIED WITH A MINIMUM OF TWO (2) COATS BY BRUSH AS PER THE MANUFACTURER'S INSTRUCTIONS.
 5. ALL HYDRANTS MUST HAVE ONE FINISH COAT OF HEAVY DUTY / INDUSTRIAL EXTERIOR GRADE ENAMEL PAINT TOP = BRIGHT ALUMINUM UPPER SECTION = BLACK < 24" PIPE DIA.
 6. SIZE OF WATER MAIN TO BE STENCILED ON STREET SIDE OF HYDRANT IN HEAVY DUTY / EXTERIOR ENAMEL PAINT. COLOR = HIGH GLOSS WHITE MIN. HEIGHT = 4" MAX. HEIGHT = 6"
 7. UNITED STATES DEPARTMENT OF TRANSPORTATION CERTIFIED 2" WIDE (DOT C2) REFLECTIVE TAPE MUST BE PLACED IMMEDIATELY BELOW THE THREADS OF THE HYDRANT FENDERS AND MUST ENCIRCLE THE HYDRANT FENDER'S CIRCUMFERENCE. THE TYPE OF DOT C2 TAPE MUST BE 6" RED/6" WHITE.

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A	INTERIM SUBMISSION	SC	CV	8/29/22

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PROJECT

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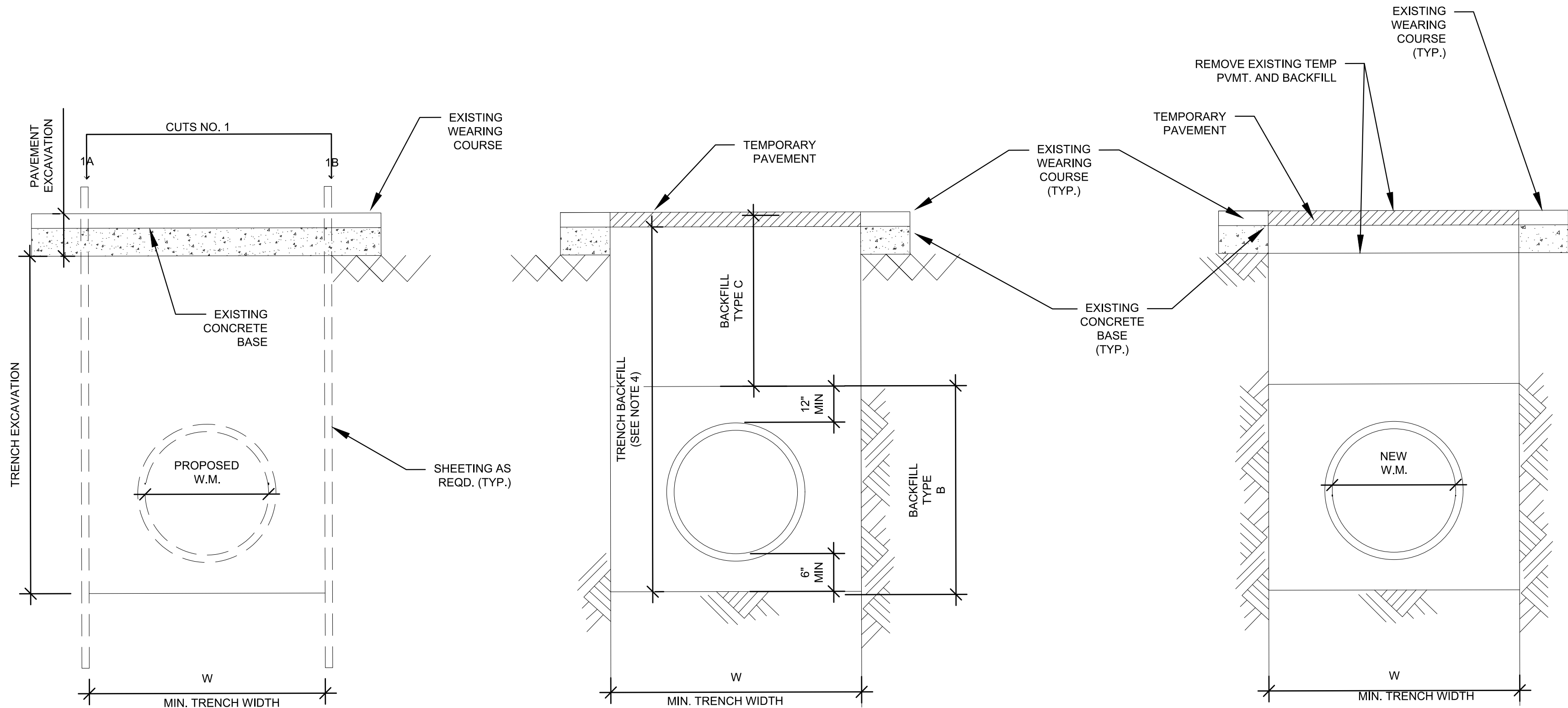
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Block #850 - Lot #310 - BIN #4624437

UTILITY DETAILS 4
FIRE HYDRANT
DETAILS



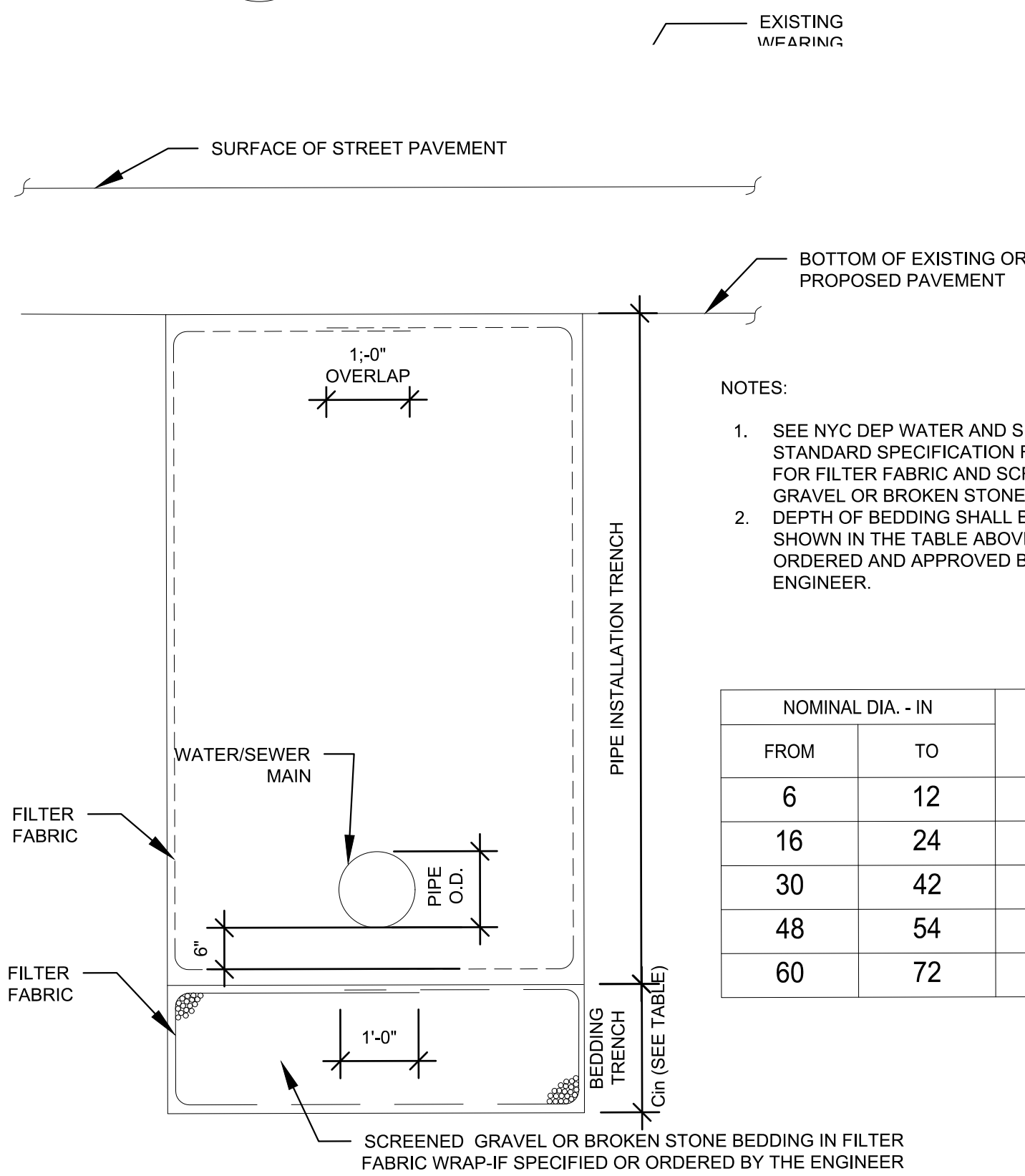
DATE November 8, 2022
PROJECT NO 105121
DRAWING BY S. CASH
CHECKED BY C. VALLABH
DRAWING NO C-215.00
CADD FILE NO 19 of 25



1 TRENCH AND PAVEMENT EXCAVATION
C-216.00 SCALE: NTS

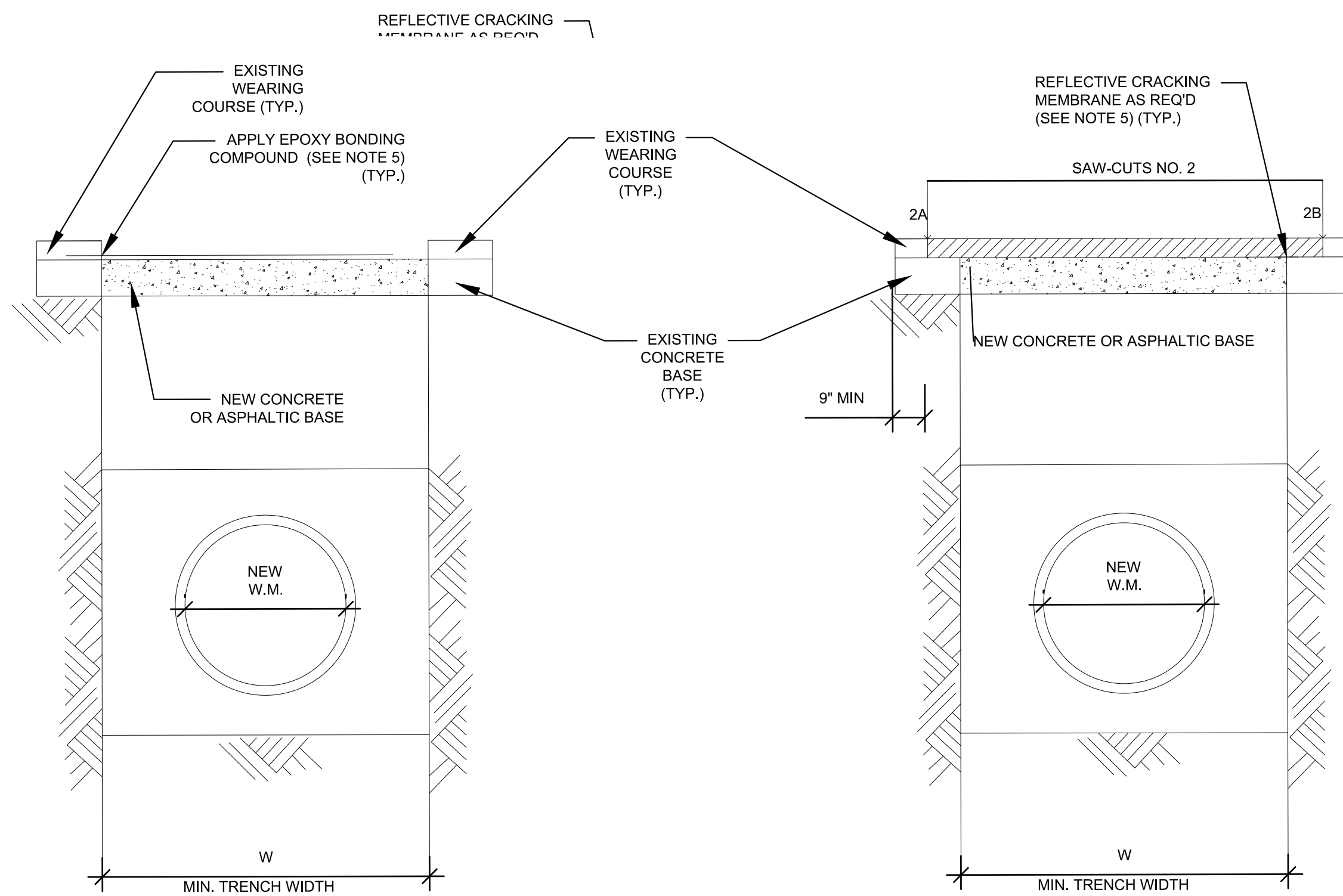
2 TRENCH BACKFILLING AND TEMPORARY PAVEMENT
C-216.00 SCALE: NTS

3 PAVEMENT EXCAVATION AND BACKFILLING
C-216.00 SCALE: NTS



2 GRAVEL OR BROKEN STONE BEDDING AND FILTER FABRIC INSTALLATION FOR D.I.P/H.D.P.E PIPES
C-216.00 SCALE: NTS

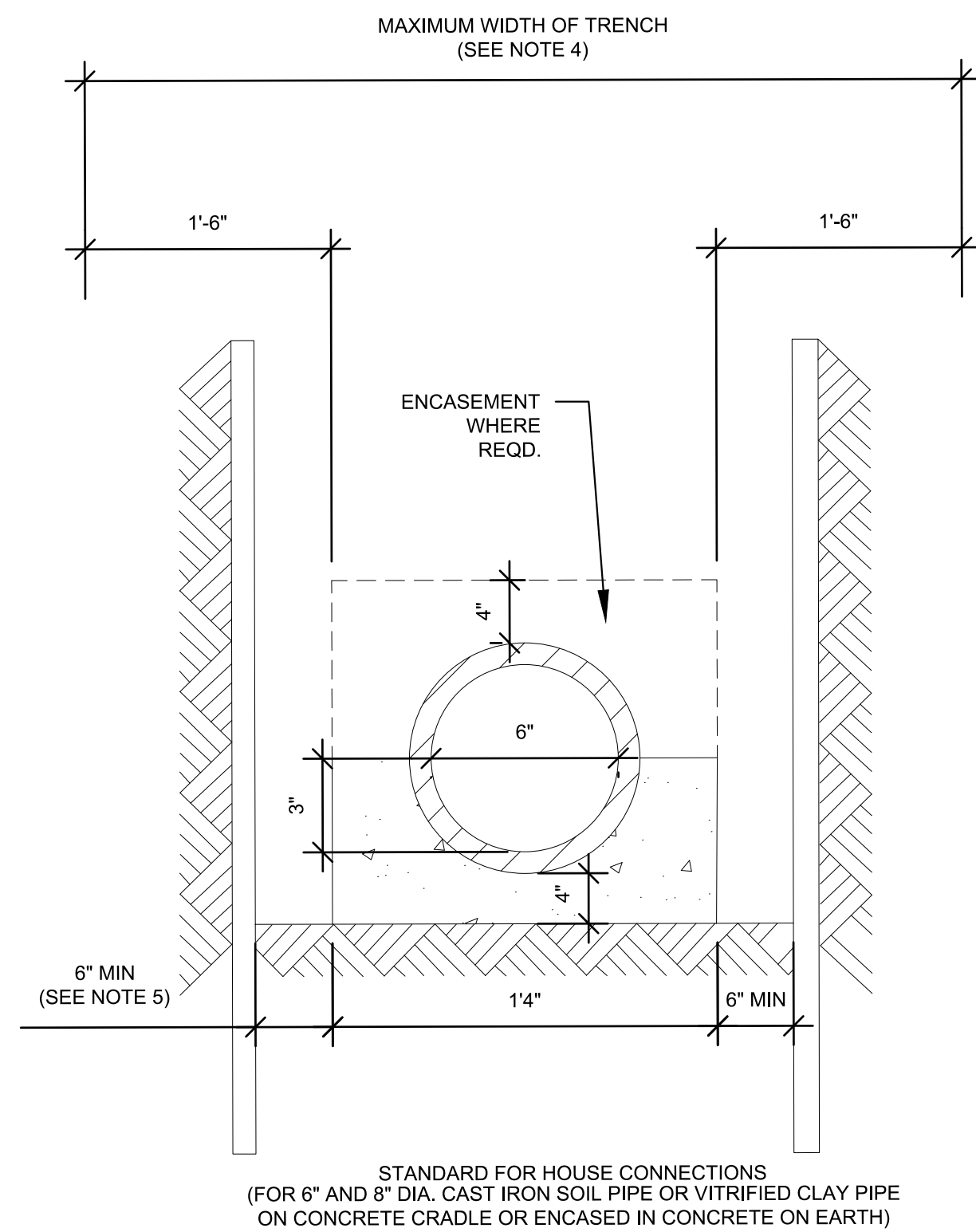
NOTE: NYS DEP WATERMAIN STANDARD DRAWINGS DATED 12-9-2020
DRAWING 44292-B-Z



4 FINAL CONCRETE BASE RESTORATION
C-216.00 SCALE: NTS

5 FINAL PAVEMENT RESTORATION
C-216.00 SCALE: NTS

- NOTES:
- ALL BACKFILL MATERIALS AND METHODS OF COMPACTION SHALL COMPLY WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS OF THE DIVISION OF INFRASTRUCTURE, DEPARTMENT OF DESIGN AND CONSTRUCTION.
 - BROKEN STONE BASE OR OTHER SUPPORT UNDER PIPE, AND FILTER FABRIC, INSTALLATION OF WHICH MAY BE REQUIRED, ARE NOT SHOWN.
 - THE MINIMUM WIDTH OF TRENCH (W), GOVERNING THE WIDTH OF PAVEMENT EXCAVATION AND REPLACEMENT, IS SPECIFIED IN SECTION 60.12 OF THE STANDARD WATER MAIN SPECIFICATIONS.
 - FOR ADDITIONAL INFORMATION ON BACKFILLING TRENCHES AND DESCRIPTION OF BACKFILL TYPES "B" AND "C", SEE SECTION 26.01 OF THE STANDARD WATER MAIN SPECIFICATIONS.
 - EXPOSED CONCRETE EDGES SHALL BE CLEANED AND COATED WITH AN APPROVED EPOXY BONDING COMPOUND.
 - REFLECTIVE CRACKING MEMBRANE SHALL BE PLACED OVER JOINT BETWEEN NEWLY PLACED AND EXISTING CONCRETE BASES AND OVER ALL TRANSVERSE JOINTS OR CRACKS THAT CARRY THROUGH.
 - ALL SAW-CUT EDGES OF EXISTING ASPHALT PAVEMENT SHALL BE COATED WITH AN APPROVED ASPHALTIC TACK COAT NOT MORE THAN THREE (3) HOURS PRIOR TO THE RESTORATION OF THE WEARING COURSE.
 - FOR DETAILS OF REPLACING PAVEMENTS AND FOUNDATIONS, SEE SECTION 71.41 OF THE STANDARD WATER MAIN SPECIFICATIONS.



- NOTES:
- CRADLE AND ENCASEMENT ARE CLASS 40 CONCRETE FOR ALL HOUSE CONNECTIONS.
 - ENTIRE CRADLE OR ENCASEMENT IS TO BE PLACED MONOLITHICALLY.
 - ENCASEMENT REQUIRED ON H.C. PIPE WHICH HAS A COVER, FROM FINAL GRADE TO THE OUTER TOP OF THE PIPE, OF LESS THAN THREE (3) FEET OR WHEN THE UPPER LIMIT OF COVER IS EXCEEDED.
 - UNLESS OTHERWISE APPROVED BY THE ENGINEER, THE MAXIMUM WIDTH OF TRENCH BETWEEN INNER FACES OF THE LOWEST STAGE OF SHEETING OR ROCK SHALL NOT EXCEED THE WIDTH OF THE CRADLE BY MORE THAN THREE (3) FEET (1'-6" MAXIMUM EACH SIDE OF CRADLE).
 - SIX (6) INCH MINIMUM SHALL BE MAINTAINED AT ALL TIMES, EXCEPT WHERE SHEETING IS TO BE USED AS FORMWORK.

6 HOUSE SEWER CONNECTION DETAIL
C-216.00 SCALE: NTS

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UTILITY DETAILS 5
PIPE INSTALLATION
DETAILS



DATE November 8, 2022
PROJECT NO 105121
DRAWING BY S. CASH
CHECKED BY C. VALLABH
DRAWING NO C-216.00
CADD FILE NO 20 of 25