

APPENDIX C.4
CASE 10-T-0139
ITE PLANS AND CONSTRUCTION DRAWINGS SITE PLAN
RETAINING WALL PACKAGE
ASTORIA HVDC CONVERTER STATION



ASTORIA HVDC CONVERTER STATION

SITE RETAINING WALL PACKAGE

SCOPE OF WORK

THE SITE RETAINING SCOPE OF WORK INCLUDES THE FOLLOWING:

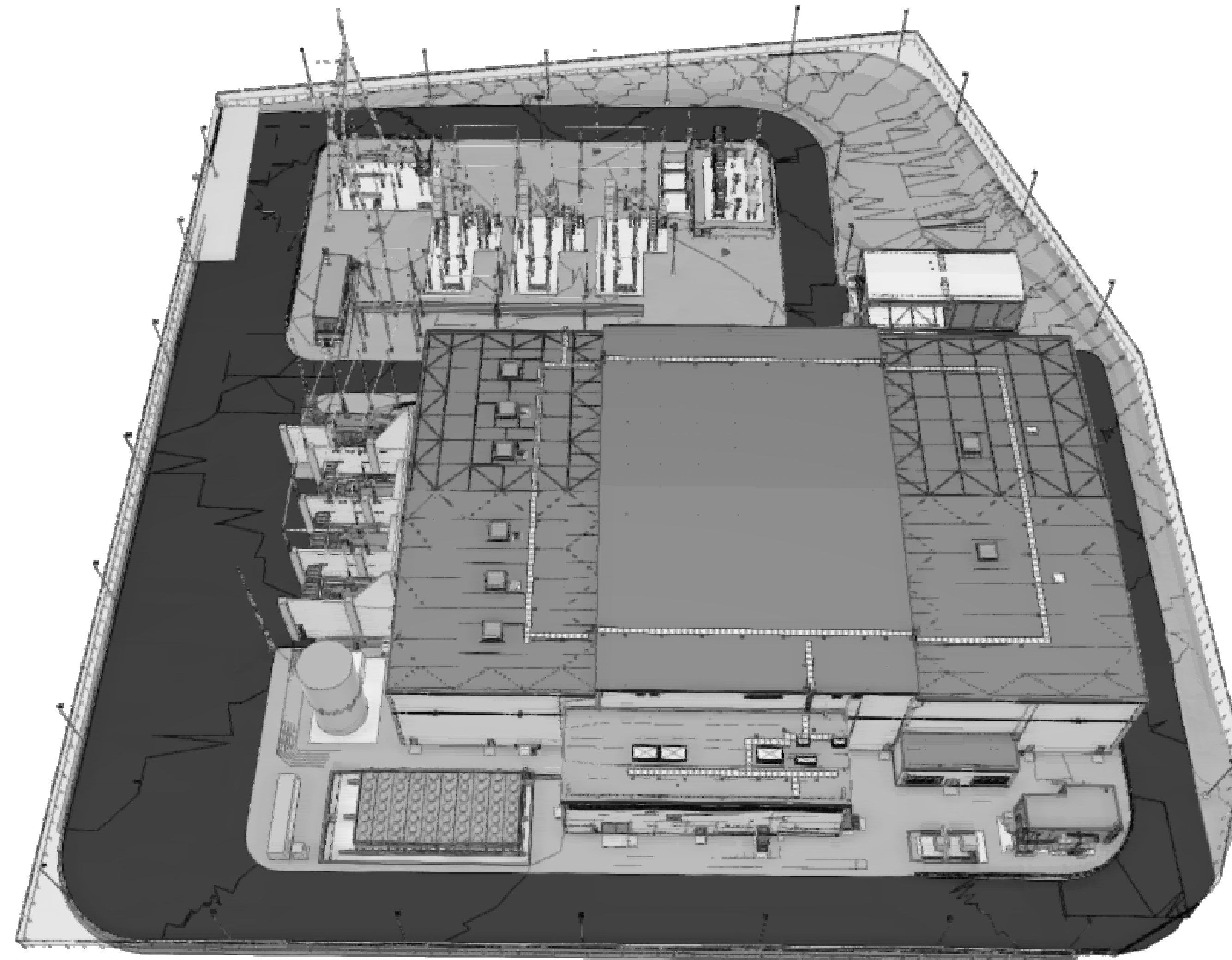
1. RETAINING WALLS

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.

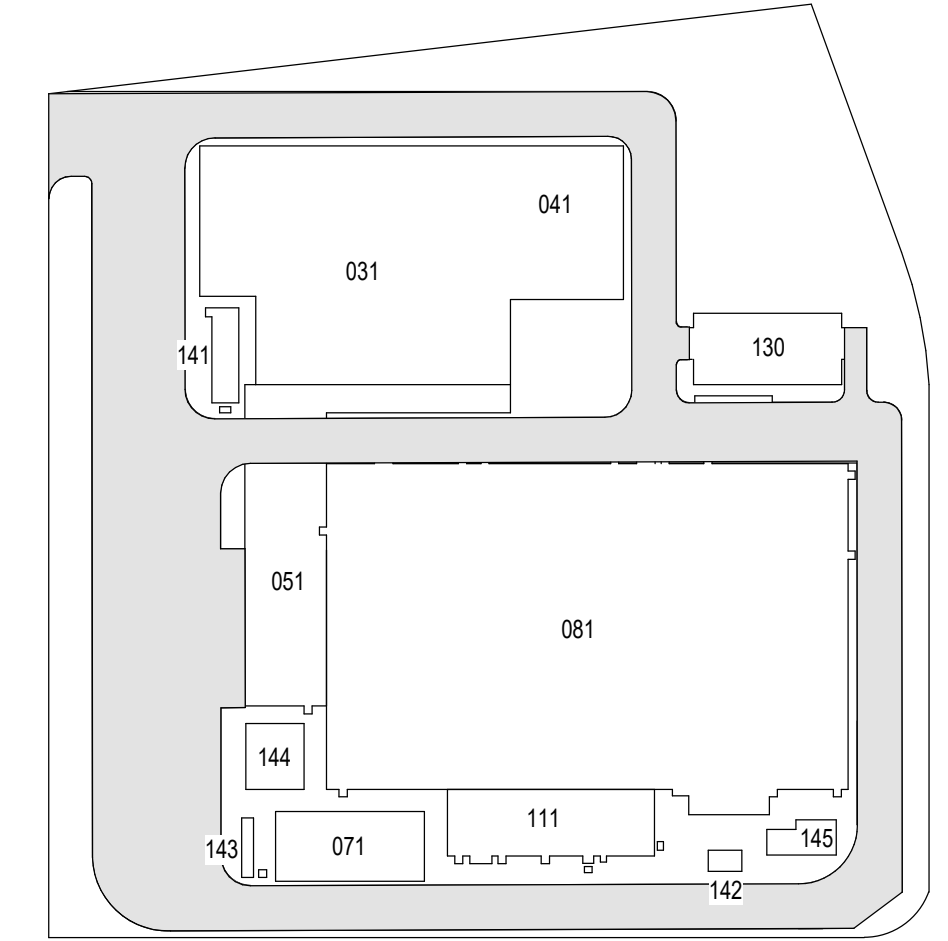
NYC ENERGY CODE COMPLIANCE:

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

K Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001

**SOWINSKI
SULLIVAN**
ARCHITECTURE+ENGINEERING

25 Mohawk Avenue
Sparta, NJ 07871

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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



**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
Astoria-HVDC-CoverSheet.rvt
1 of 12

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 (UFPD) 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.

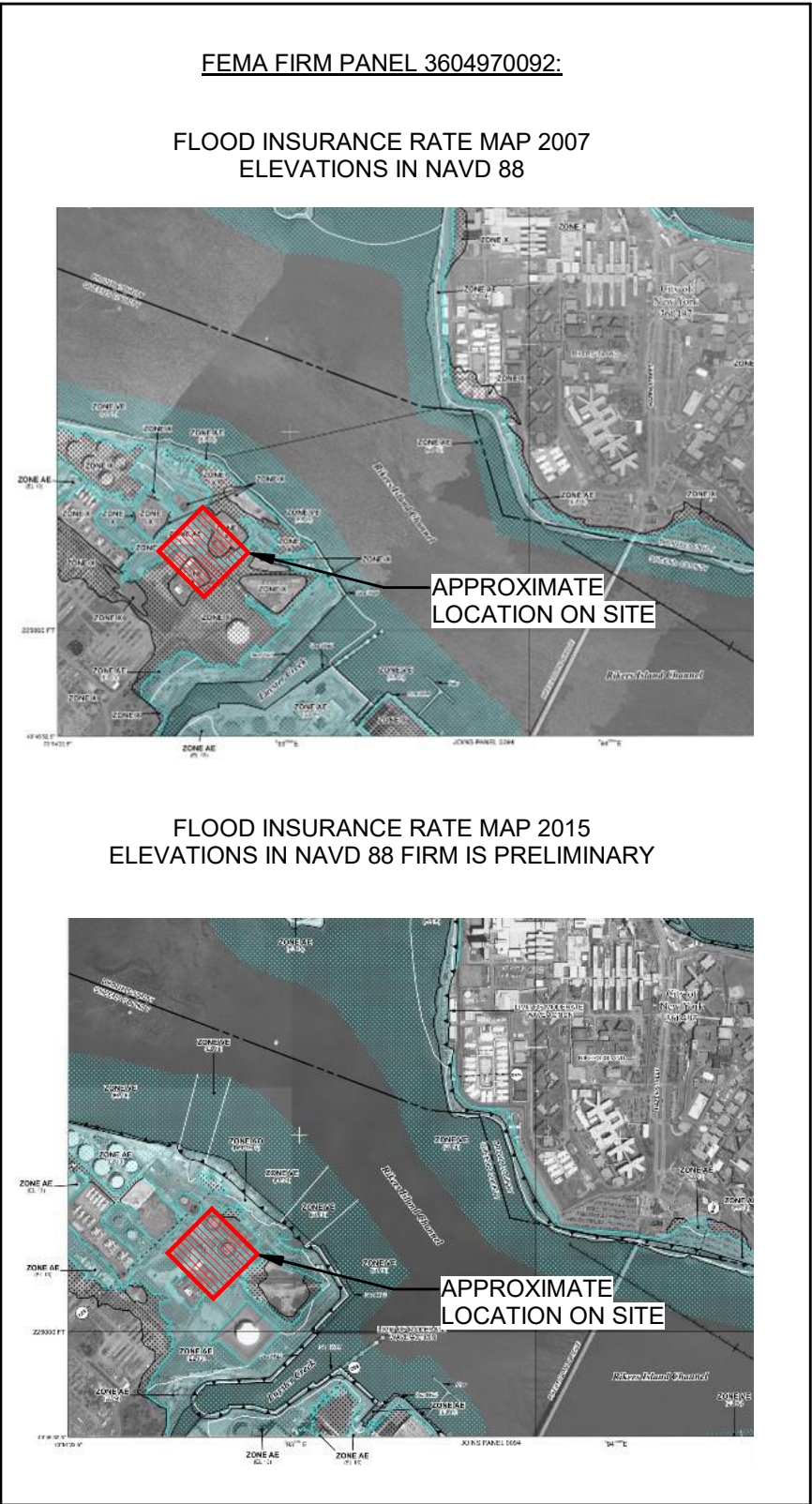
BASE FLOOD ELEVATION, BFE, = 13 FEET NAVD 88.
- FL-3.

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 RETAINING WALLS SHEET INDEX	
DRAWING TITLE	Dwg. No.
GENERAL NOTES	C-001.00
LEGEND AND ABBREVIATIONS	C-002.00
OVERALL RETAINING WALL PLAN	C-500.00
RETAINING WALL 1 PLAN AND PROFILE	C-501.00
RETAINING WALL 2 WEST PLAN AND PROFILE	C-502.00
RETAINING WALL 2 SOUTH PLAN AND PROFILE	C-503.00
RETAINING WALL 3 PLAN AND PROFILE	C-504.00
RETAINING WALL TYPICAL SECTION	C-505.00
RETAINING WALL TYPICAL SECTION	C-506.00
RETAINING WALL TYPICAL SECTION	C-507.00
BASE PLATE, SHEAR KEY AND UTILITY OPENING REINFORCEMENT DETAILS	C-508.00

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A	INTERIM SUBMISSION	EK	RA	8/29/22	
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

LIST OF SPECIFICATIONS:

03 - CONCRETE	030001	GENERAL PROVISIONS
31 - EARTHWORK	310001	GENERAL PROVISIONS
34 - TRANSPORTATION	340001	GENERAL PROVISIONS

LIST OF SPECIAL INSPECTIONS:


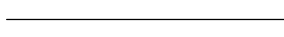
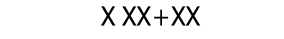
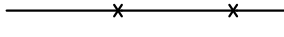
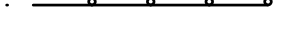




INSPECTION AND TEST	CODE/SECTION
CONCRETE CAST-IN-PLACE AND PRECAST	BC 1704.4
SUBGRADE INSPECTION	BC 1704.7.1
EXCAVATIONS - SHEETING, SHORING AND BRACING	BC 1704.20.2 & 3304.4.1
CONCRETE DESIGN MIX	BC 1905.3 & 1913.5
CONCRETE SAMPLING AND TESTING	BC 1905.6 & 1913.10

GENERAL NOTES



DATE	NOVEMBER 8, 2022
PROJECT NO	105121
DRAWING BY	E.KOLLI
CHECKED BY	R.ABBATIello
DRAWING NO	C-001.00
CADD FILE NO	2 of 12


LEGENDS & SYMBOLS

	EXISTING PROPERTY LINE
	PROPOSED ALIGNMENT CENTERLINE
	PROPOSED ALIGNMENT STATIONING
	PROPOSED FENCE
	PROPOSED GUIDE RAIL
	PROPOSED RETAINING WALL
	PROPOSED RETAINING WALL FOOTING
	PROPOSED SECURITY GATE
	PROPOSED LIGHT POLE

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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REV	DESCRIPTION	DRW BY	CHK BY	DATE



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



901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT




Champlain Hudson
Power Express

Astoria HVDC
Converter Station

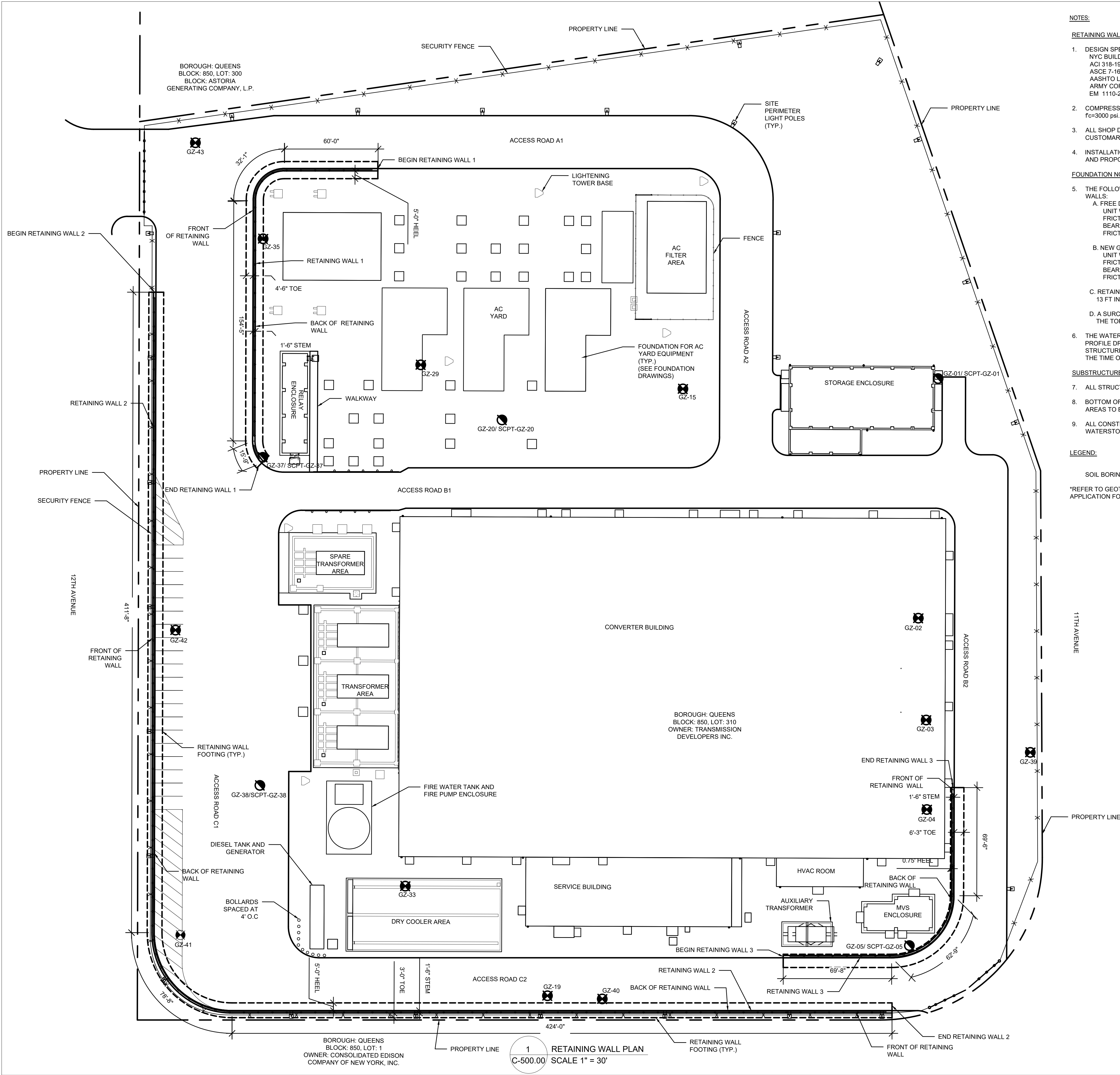
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

LEGEND AND ABBREVIATIONS



STATE OF NEW YORK
10556A
PROFESSIONAL ENGINEER

DATE November 8, 2022
PROJECT NO 105121
DRAWING BY E.KOLLI
CHECKED BY R.ABBIATICI
DRAWING NO
C-002.00
CADD FILE NO 3 of 12



NOTES:

RETAINING WALL GENERAL NOTES:

- DESIGN SPECIFICATIONS:
NYC BUILDING CODE, 2022
ACI 318-19
ASCE 7-16
AASHTO LRFD DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES, 2021
ARMY CORP OF ENGINEERS - RETAINING AND FLOOD WALLS MANUAL
EM 1110-2-2502
- COMPRESSIVE STRENGTH OF CONCRETE FOR RETAINING WALL AT 28 DAYS
 $f_c=3000$ psi.
- ALL SHOP DRAWINGS SUBMITTED FOR THE PROJECT SHALL BE IN U.S. CUSTOMARY UNITS.
- INSTALLATION OF RETAINING WALLS TO BE COORDINATED WITH EXISTING AND PROPOSED UTILITIES, DRAINAGE, ITS UTILITIES, AND WZTC.

FOUNDATION NOTES:

- THE FOLLOWING INFORMATION WAS USED IN THE DESIGN OF THE RETAINING WALLS:
 - FREE DRAINING BACKFILL:
UNIT WEIGHT = 120 LB/FT³
FRICTION ANGLE = 32
BEARING RESISTANCE = NA
FRICTION FACTOR = NA
 - NEW GRANULAR FILL
UNIT WEIGHT = 120 LB/FT³
FRICTION ANGLE = 32
BEARING RESISTANCE = 1200 LB/FT²
FRICTION FACTOR = 0.4
- RETAINING WALLS ARE DESIGNED FOR A GROUNDWATER ELEVATION OF 13 FT IN ACCORDANCE WITH SITE FLOOD ZONE CLASSIFICATION FEMA AE.
- A SURCHARGE LOAD OF 600 POUNDS PER SQUARE FOOT IS ASSUMED AT THE TOP OF THE WALL.
- THE WATER LEVELS NOTED ON THE BORING LOGS AND ON THE SUBSURFACE PROFILE DRAWING INCLUDED IN THE CONTRACT PLANS FOR THIS STRUCTURE MAY NOT BE INDICATIVE OF ACTUAL WATER CONDITIONS AT THE TIME OF CONSTRUCTION.

SUBSTRUCTURE NOTES:

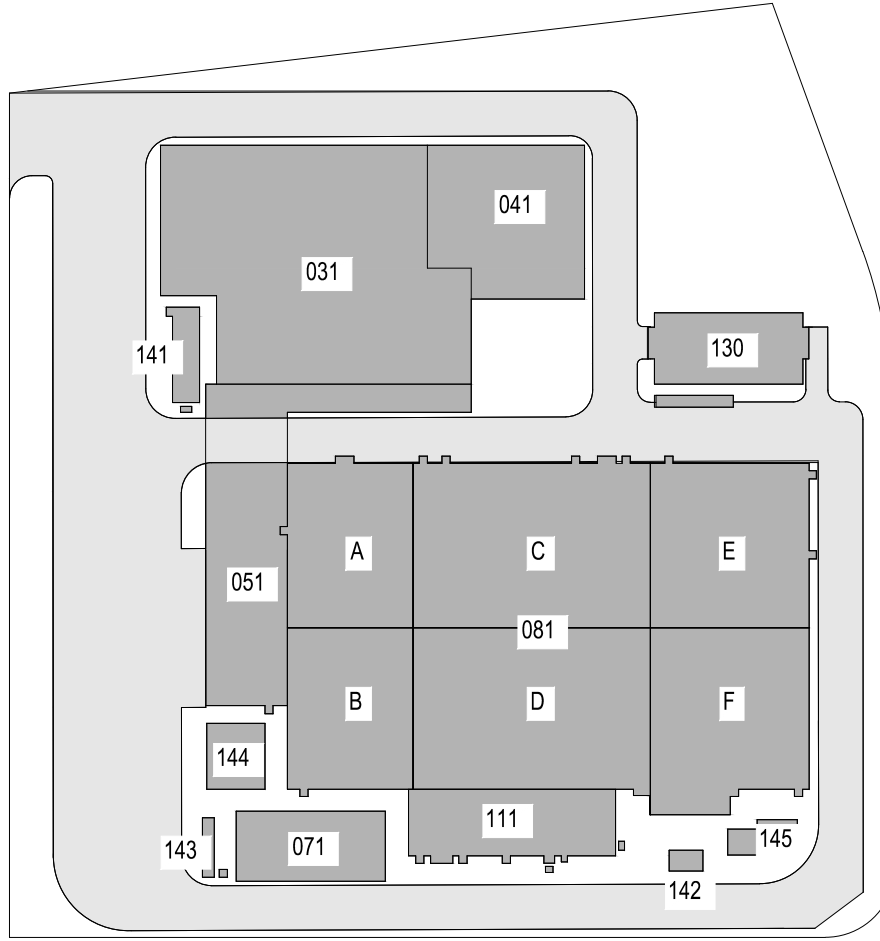
- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709 GRADE 60.
- BOTTOM OF EXCAVATION TO BE COMPACTED. ANY LOCALIZED UNSTABLE AREAS TO BE STABILIZED AS DIRECTED BY SITE ENGINEER.
- ALL CONSTRUCTION JOINTS SHALL BE PROVIDED WITH SHEAR KEYS AND WATERSTOPS.

LEGEND:

SOIL BORING LOCATION GZ-XX GZ-XX/SCPT-GZ-XX

*REFER TO GEOTECHNICAL ENGINEERING REPORT FILED UNDER A SEPARATE APPLICATION FOR ADDITIONAL INFORMATION.

ISSUED FOR PERMIT



KEY PLAN
N.T.S.

PLAN NORTH



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PROJECT

CHPE
Champlain Hudson
Power Express

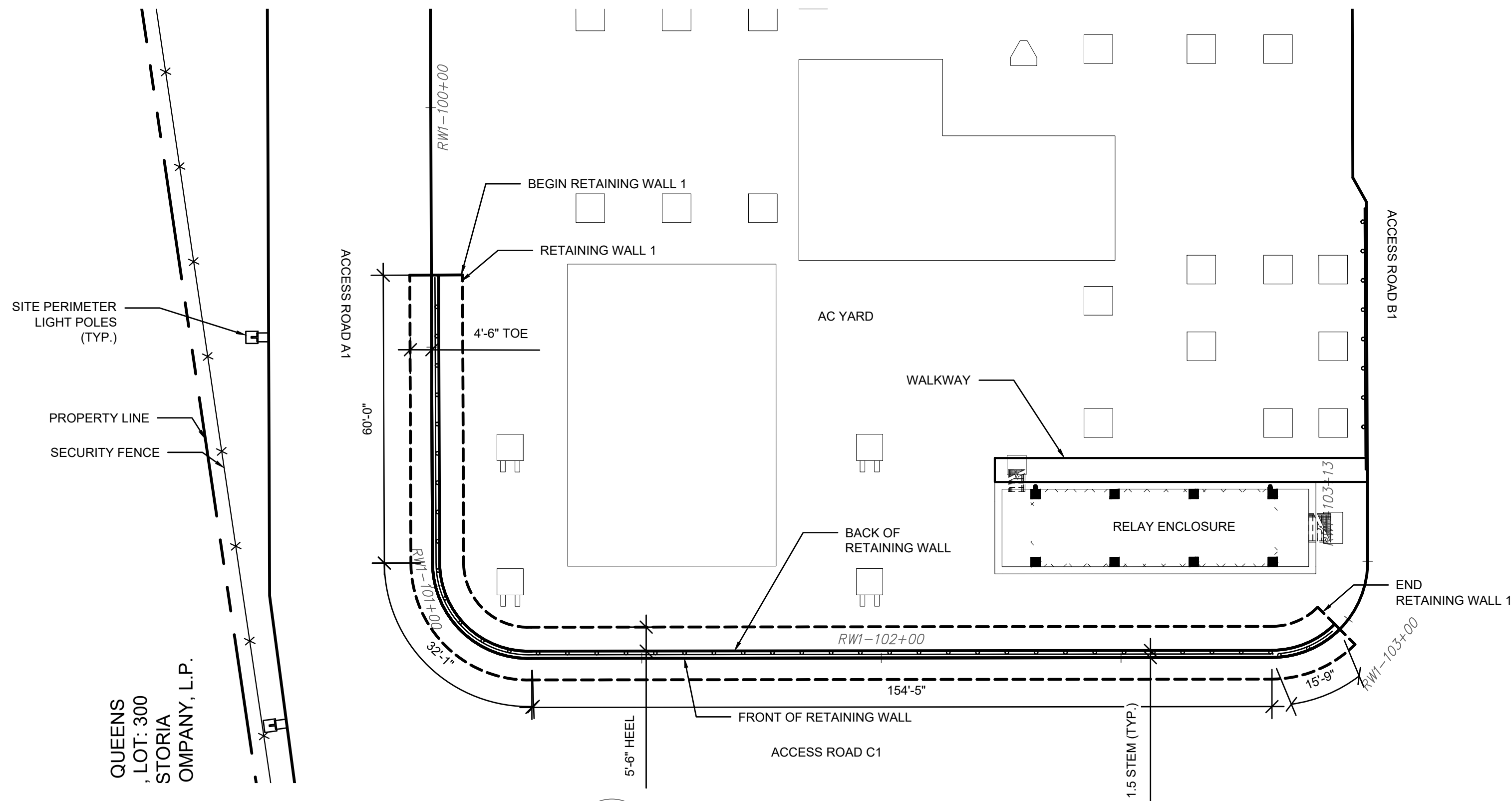
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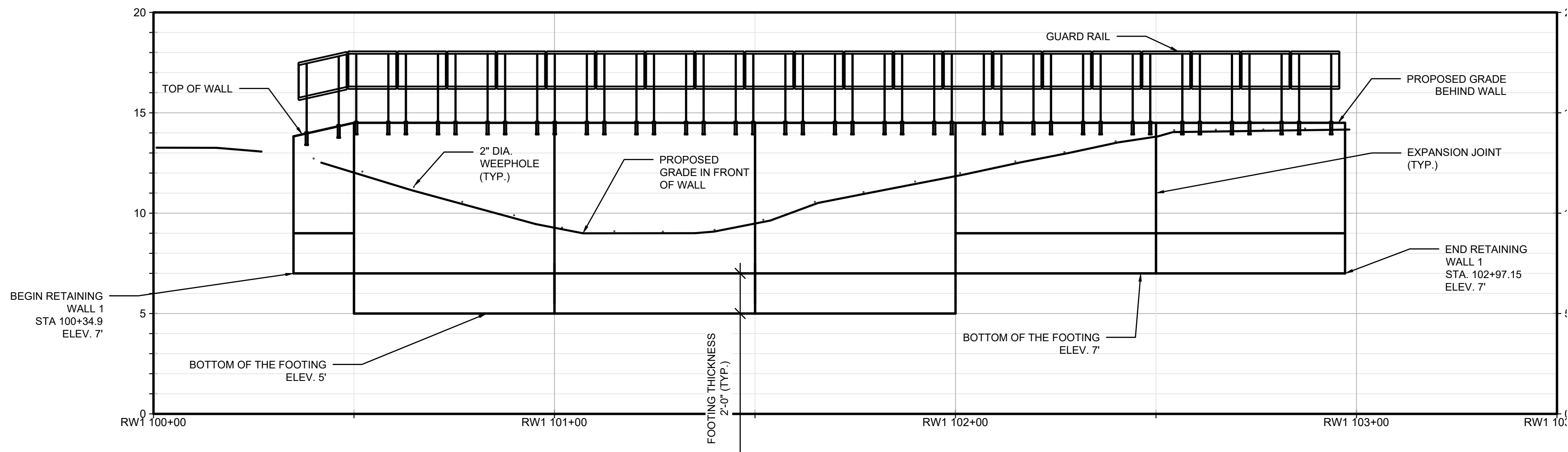
OVERALL RETAINING WALL PLAN



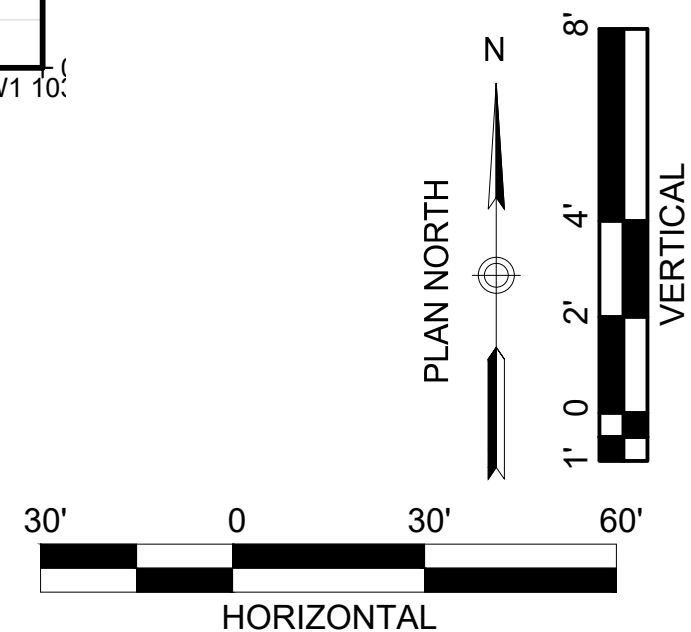
DATE NOVEMBER 8, 2022
PROJECT NO 105121
DRAWING BY E. KOLLI
CHECKED BY R. ABBIATICI
DRAWING NO C-500.00
CADD FILE NO
4 of 12



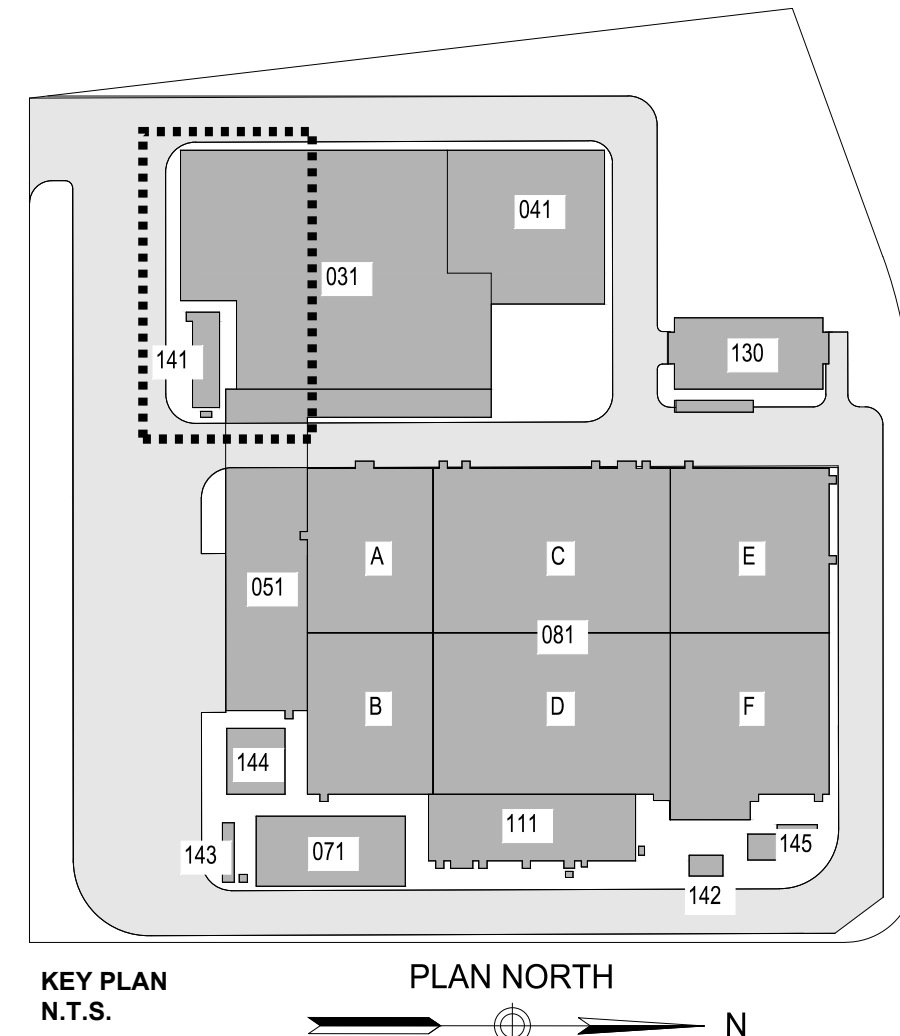
1 RETAINING WALL 1 PLAN
C-501.00 SCALE 1" = 20'



2 RETAINING WALL 1 PROFILE
C-501.00 HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'



ISSUED FOR PERMIT



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RETAINING WALL 1 PLAN
AND PROFILE



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DRAWING BY E. KOLLI
CHECKED BY R. ABBIATICI
DRAWING NO
C-501.00
CADD FILE NO 5 of 12

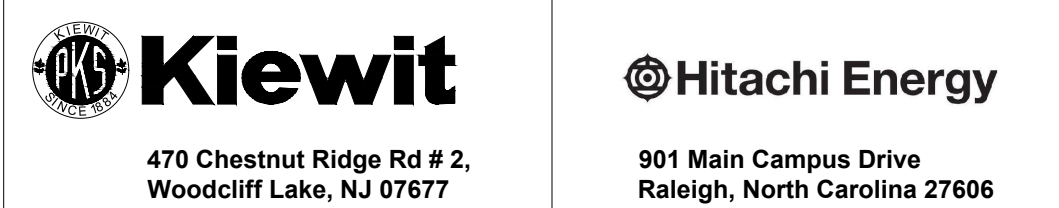
The site plan shows a proposed development with several building footprints. The central building is a large rectangular structure divided into six sections labeled A, B, C, D, E, and F. To the left of this central building is a smaller structure labeled 051. Above the central building is a structure labeled 031, and to its right is a structure labeled 041. To the right of the central building is a structure labeled 130. Below the central building is a structure labeled 111. To the left of the central building is a structure labeled 144. To the right of the central building is a structure labeled 145. To the left of the central building is a structure labeled 143. To the right of the central building is a structure labeled 142. The plan also shows a parking area with 141 spaces. A key plan inset is located in the bottom left corner, showing the site's location within a larger context. A north arrow is located in the bottom center of the plan.

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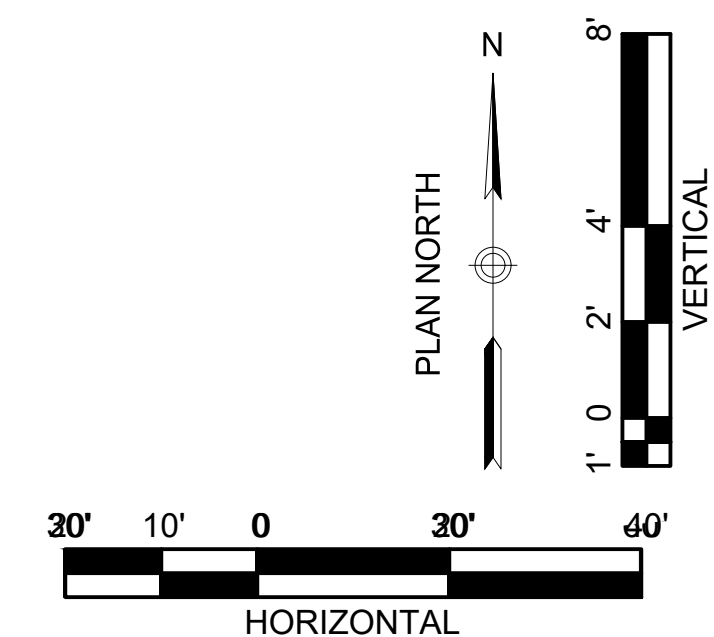
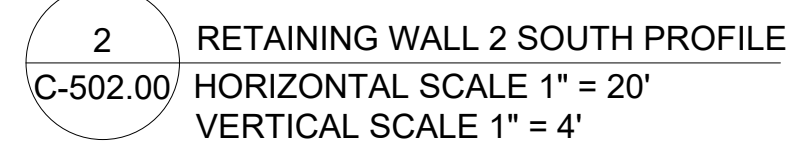
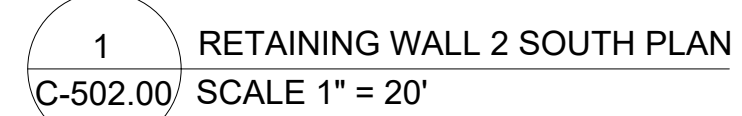
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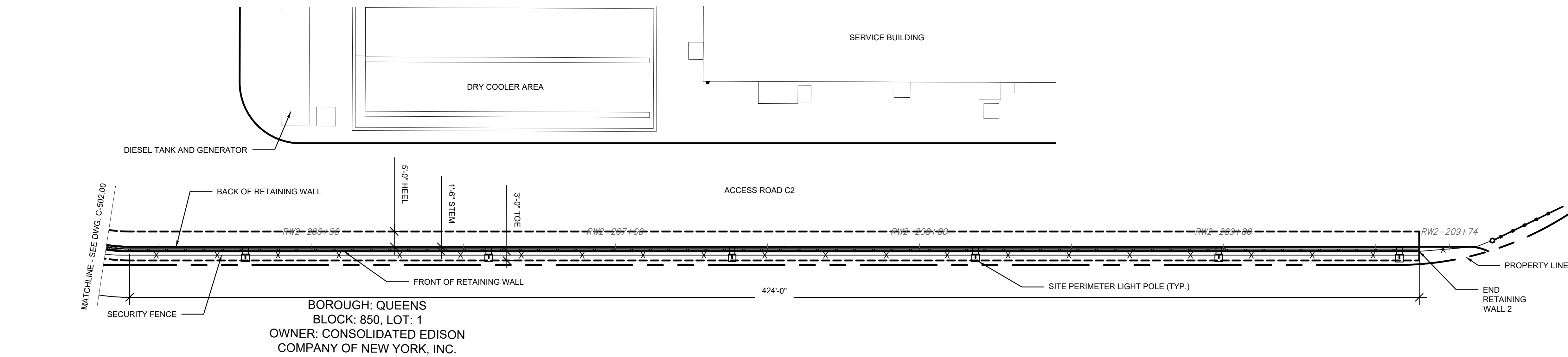
B	FINAL SUBMISSION	EK	RA	11/8/22		
A	INTERIM SUBMISSION	EK	RA	6/23/22		
REV	DESCRIPTION	DRW BY	CHK BY	DATE		



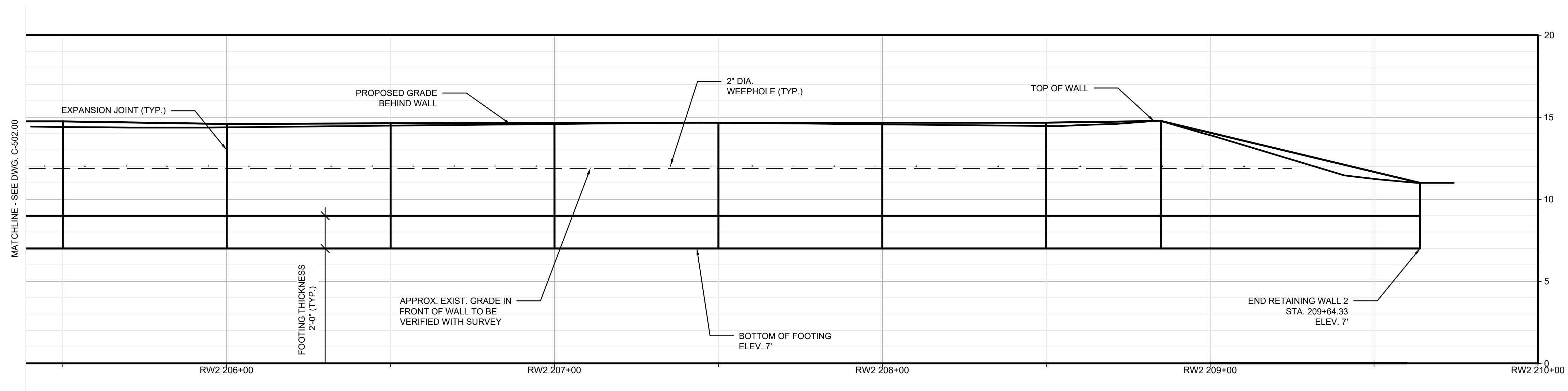
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

DATE	NOVEMBER 6, 2022
PROJECT NO	105121
DRAWING BY	E. KOLLI
CHECKED BY	R. ABBIATICI
DRAWING NO	
C-502.00	
CADD FILE NO	6 of 12

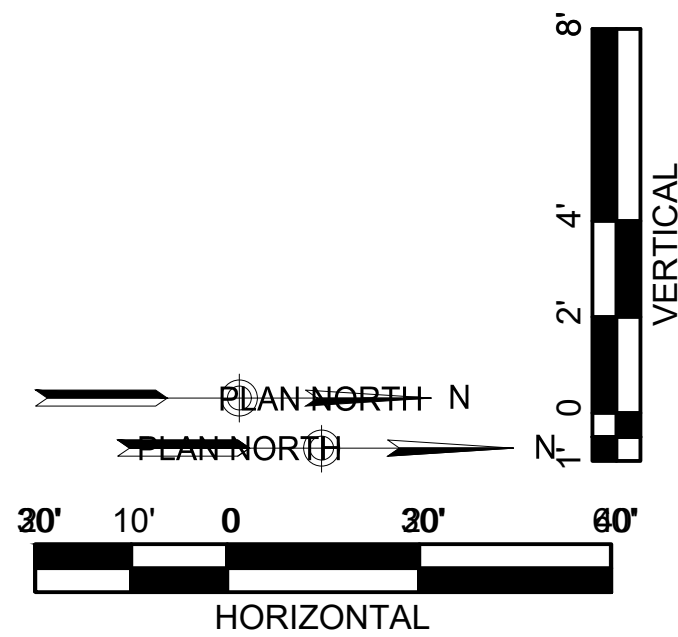




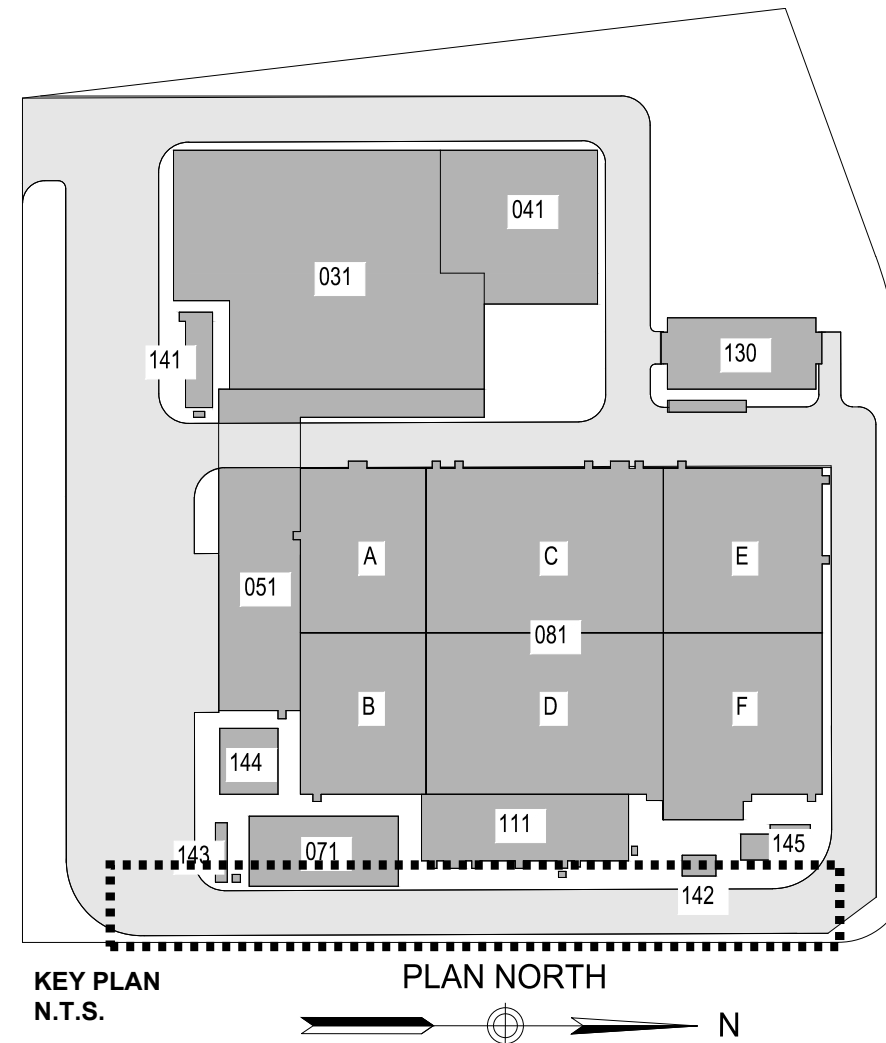
1 RETAINING WALL 2 EAST PLAN
C-503.00 SCALE 1" = 20'



2 RETAINING WALL 2 EAST PROFILE
C-503.00 HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'



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B	FINAL SUBMISSION	EK	RA	11/8/22
A	INTERIM SUBMISSION	EK	RA	8/23/22
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

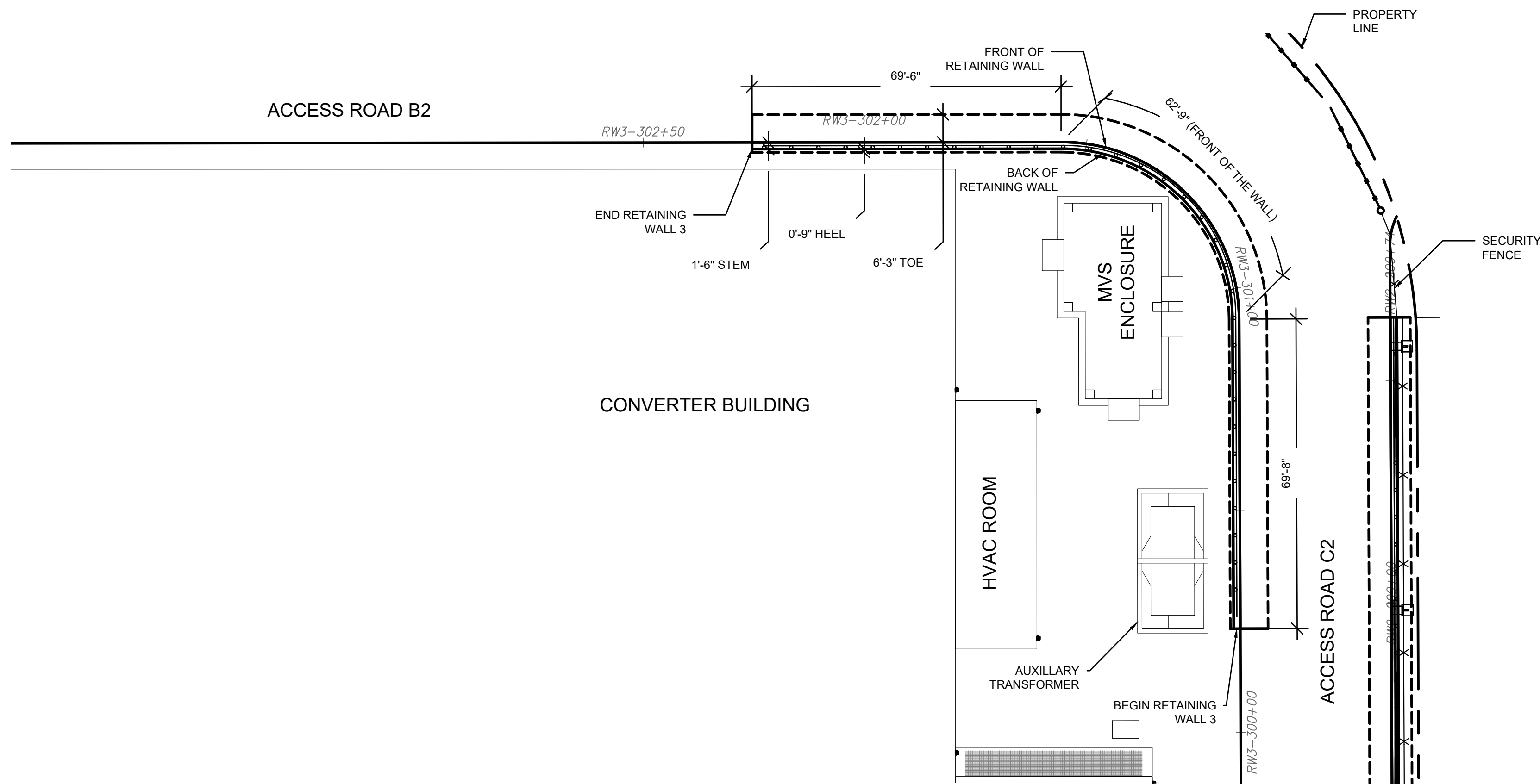
**Astoria HVDC
Converter Station**

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

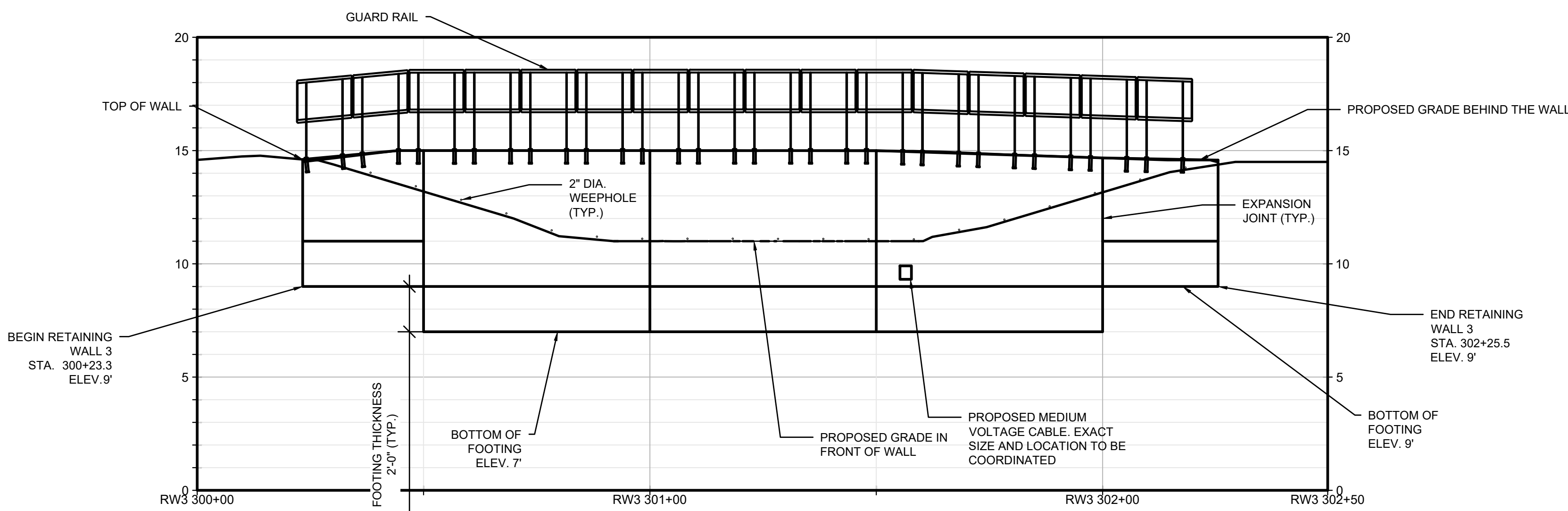
**RETAINING WALL 2 EAST
PLAN AND PROFILE**



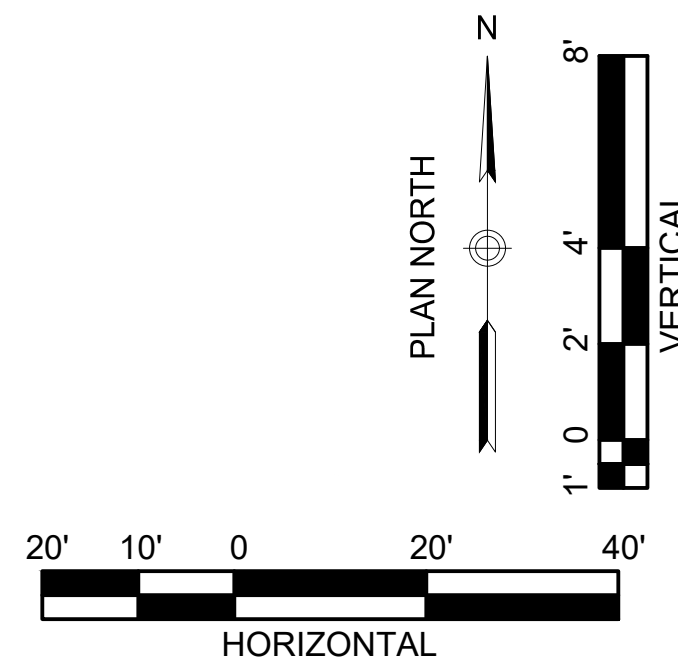
DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: E. KOLLI
CHECKED BY: R. ABBATICCHIO
DRAWING NO:
C-503.00
CADD FILE NO: 7 of 12



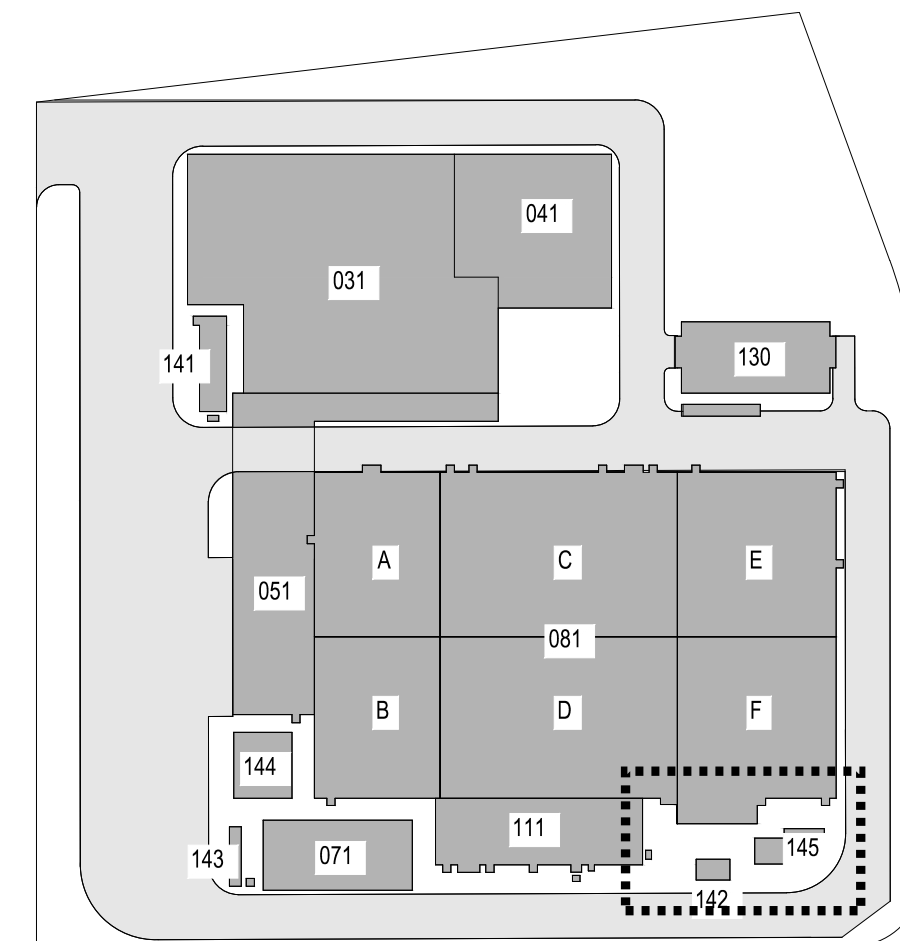
1 RETAINING WALL 3 PLAN
C-504.00 SCALE 1" = 20'



2 RETAINING WALL 3 PROFILE
C-504.00 HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'



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KEY PLAN
N.T.S. PLAN NORTH

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

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

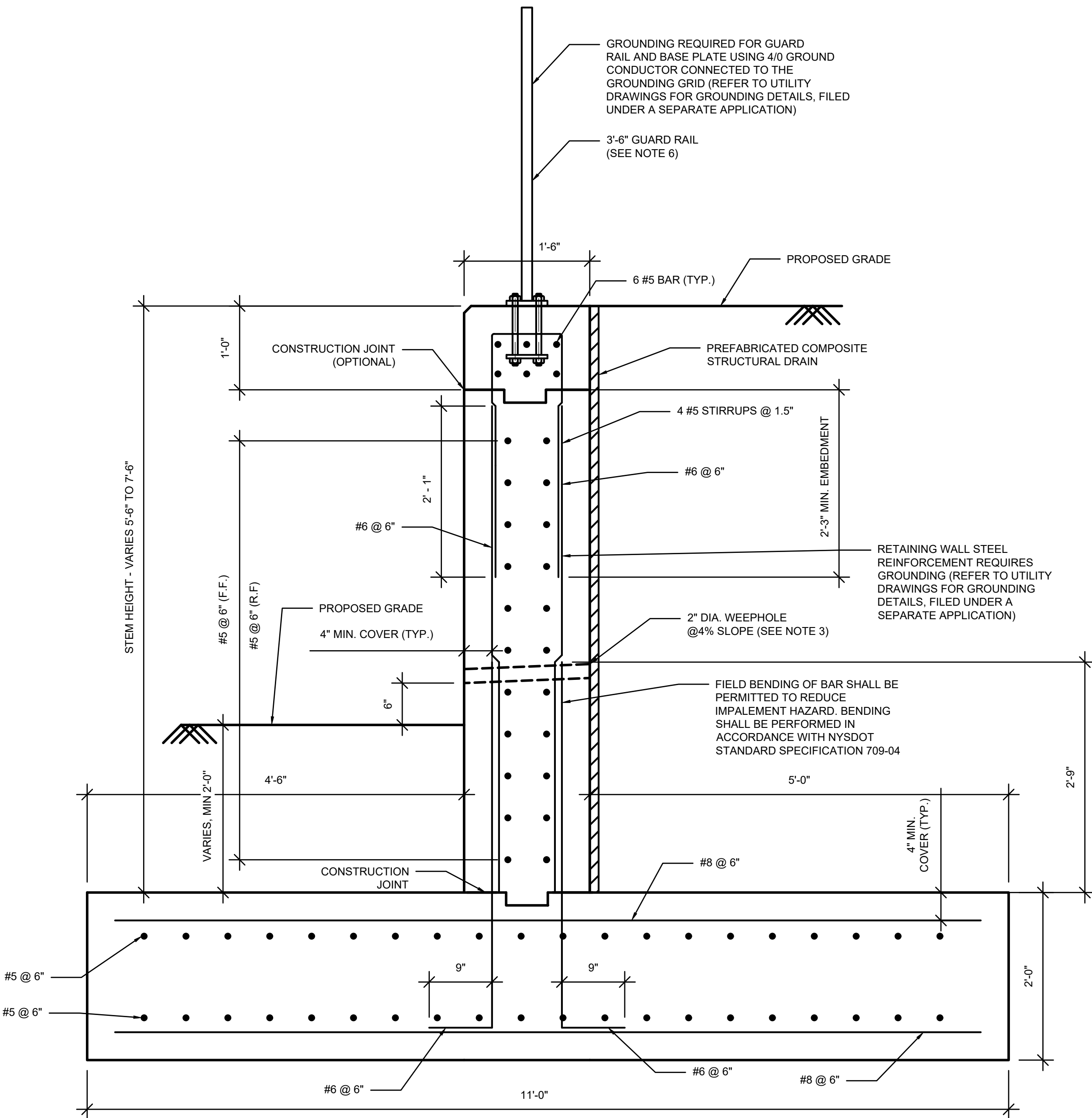
RETAINING WALL 3 PLAN
AND PROFILE



DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: E. KOLLI
CHECKED BY: R. ABBIATICI
DRAWING NO: C-504.00
CADD FILE NO: 8 of 12

ISSUED FOR PERMIT

- NOTES:
1. FOR WEEPHOLE LOCATIONS ON WALL 1 SEE DWG C-501.00
 2. IF THE WEEPHOLE IS WITHIN 4'-0" OF THE TOP OF THE FOOTING, EXTEND THE PREFABRICATED COMPOSITE STRUCTURAL DRAIN TO THE TOP OF THE FOOTING. OTHERWISE, STOP THE DRAIN 1'-0" BELOW THE WEEPHOLE INVERT ELEVATION.
 3. WEEPHOLES TO BE SPACED AT 10FT ALONG WALL LENGTH.
 4. SEE DWG C-508.00 FOR SHEAR KEY DETAILS.
 5. SEE DWG C-121.00 IN THE CIVIL SITE PLANS FOR GUARD RAIL DETAILS.



1	RETAINING WALL 1 TYPICAL SECTION
C-505.00	SCALE 1" = 1'

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



PROJECT

CHPE
Champlain Hudson
Power Express

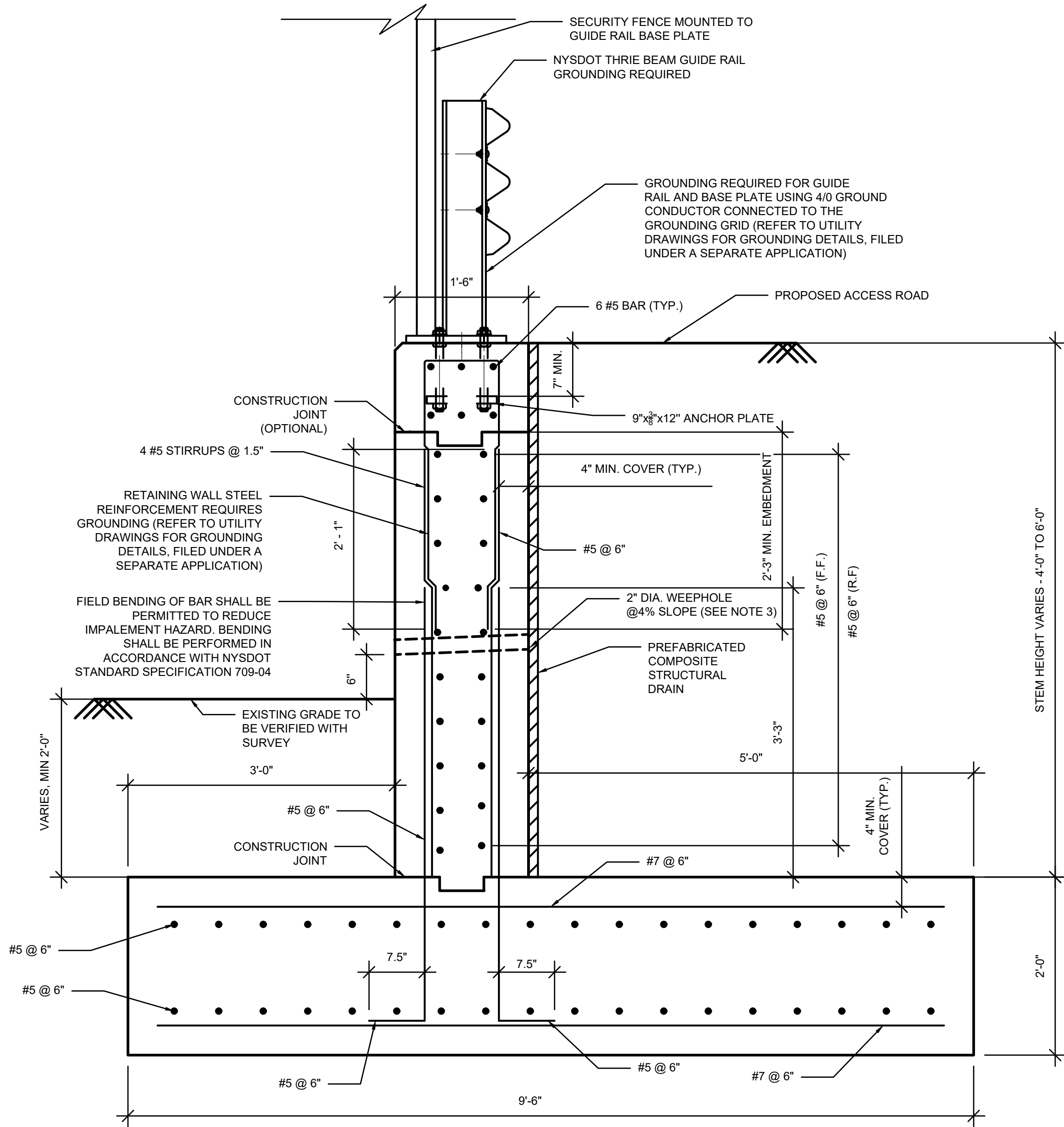
Astoria HVDC Converter Station

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

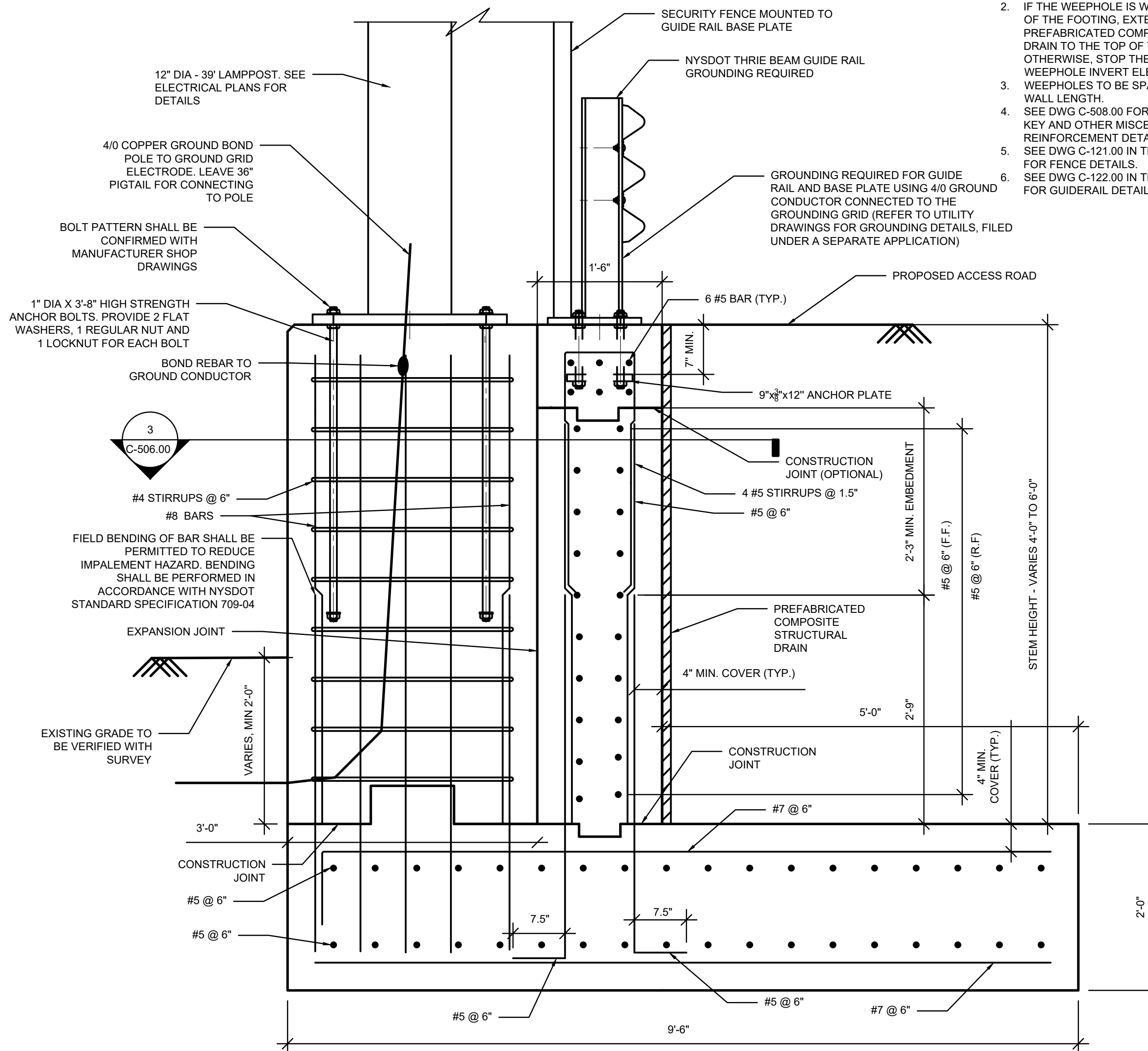
RETAINING WALL TYPICAL SECTIONS



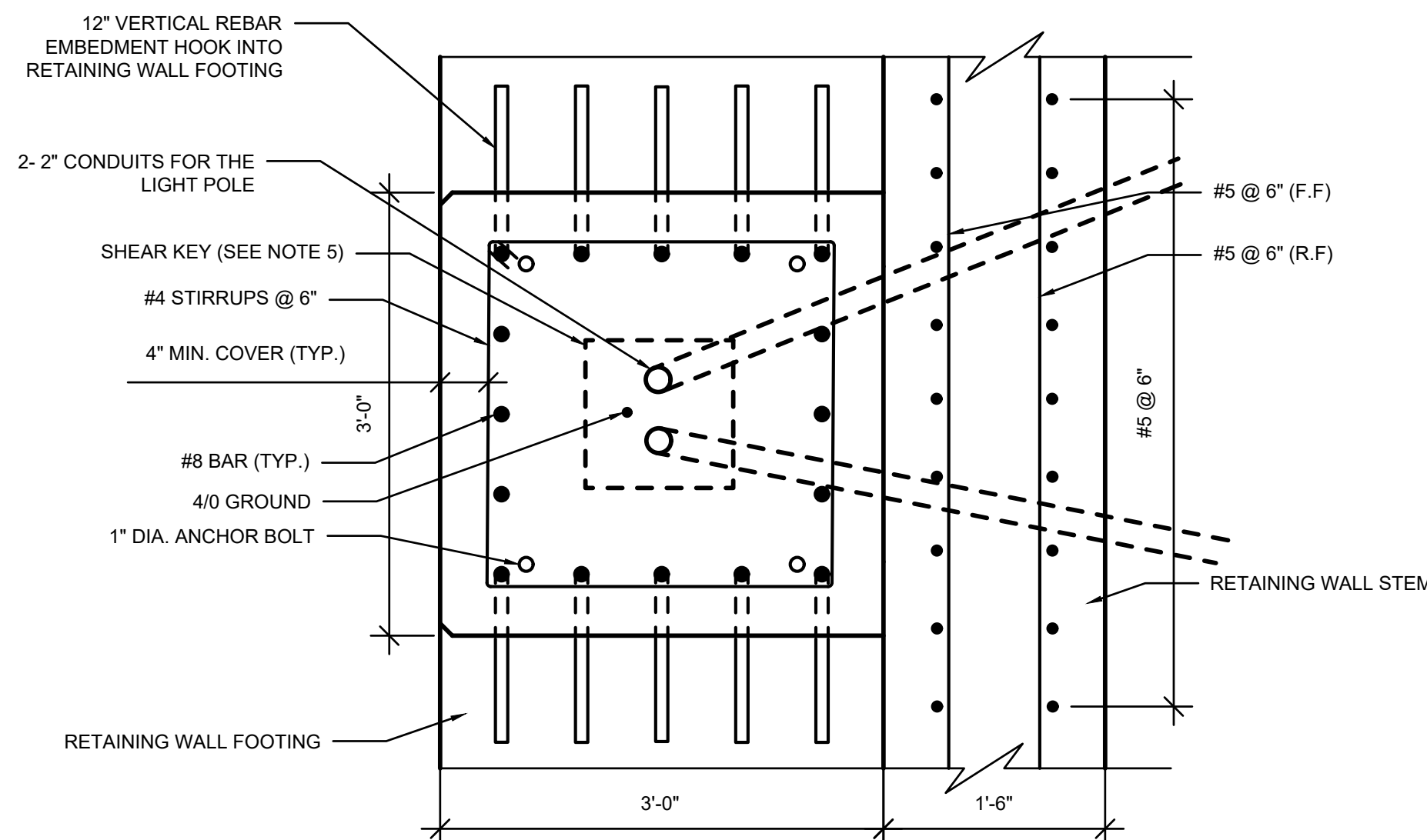
DATE	NOVEMBER 8, 2022
PROJECT NO	105121
DRAWING BY	E. KOLLI
CHECKED BY	R. ABBIATICI
DRAWING NO	C-505.00
CADD FILE NO	9 of 12



1 RETAINING WALL 2 TYPICAL SECTION
C-506.00 SCALE 1" = 1'



2 RETAINING WALL 2 TYPICAL SECTION AT LIGHT POLE
C-506.00 SCALE 1" = 1'



3 RETAINING WALL 2 PLAN
C-506.00 SCALE 1" = 1'

NOTES:

- FOR WEEPHOLE LOCATIONS ON WALL 2 SEE DWG. C-502.00 AND C-503.00
- IF THE WEEPHOLE IS WITHIN 4'-0" OF THE TOP OF THE FOOTING, EXTEND THE PREFABRICATED COMPOSITE STRUCTURAL DRAIN TO THE TOP OF THE FOOTING. OTHERWISE, STOP THE DRAIN 1'-0" BELOW THE WEEPHOLE INVERT ELEVATION.
- WEEPHOLES TO BE SPACED AT 10FT ALONG WALL LENGTH.
- SEE DWG C-508.00 FOR BASE PLATE, SHEAR KEY AND OTHER MISCELLANEOUS REINFORCEMENT DETAILS.
- SEE DWG C-121.00 IN THE CIVIL SITE PLANS FOR FENCE DETAILS.
- SEE DWG C-122.00 IN THE CIVIL SITE PLANS FOR GUIDERAIL DETAILS.

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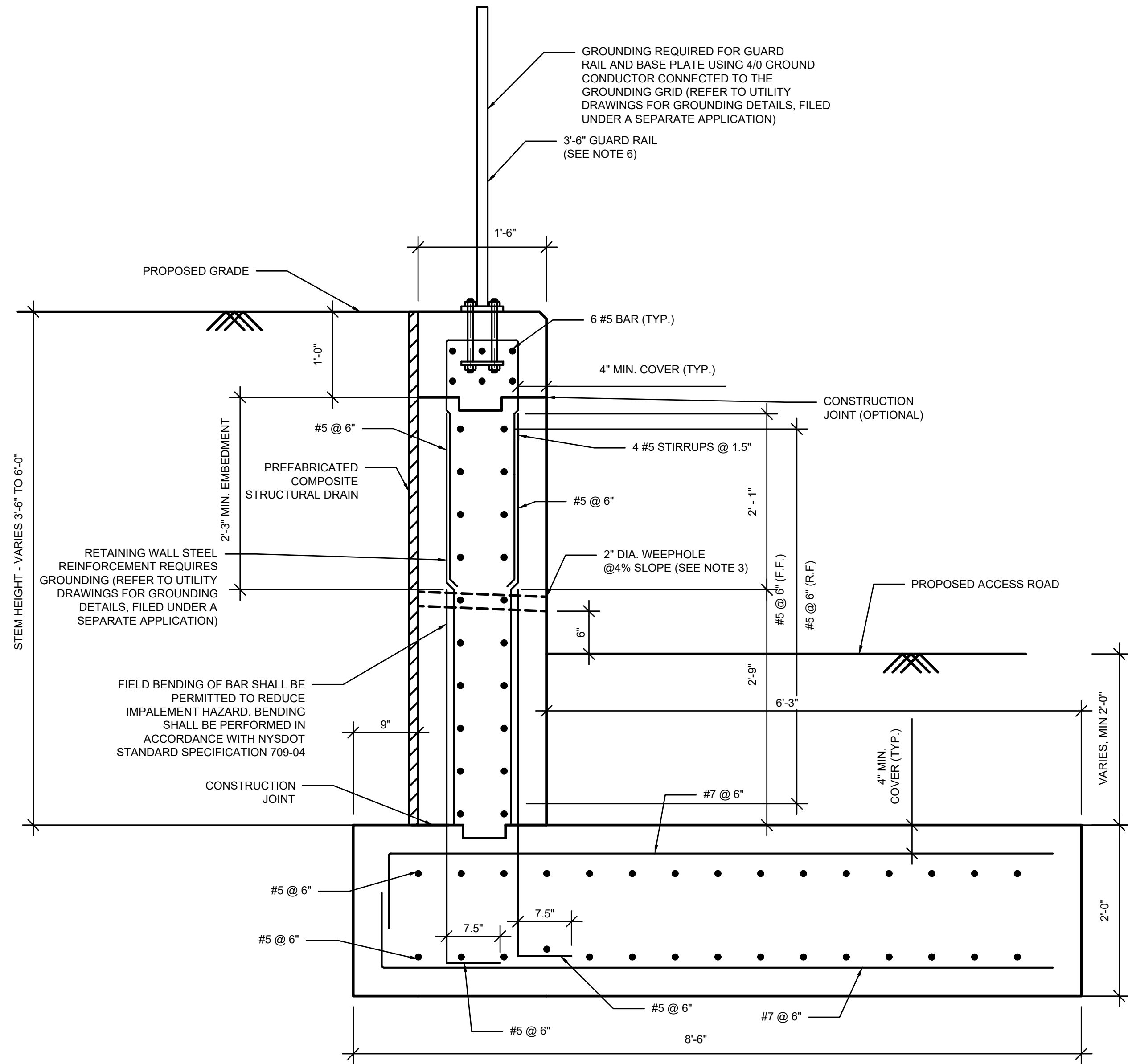
REV	DESCRIPTION	DRW BY	CHK BY	DATE
B	FINAL SUBMISSION	EK	RA	11/8/22
A	INTERIM SUBMISSION	EK	RA	8/29/22

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Hitachi Energy
901 Main Campus Drive
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

RETAINING WALL TYPICAL
SECTIONS

DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: E. KOLLI
CHECKED BY: R. ABBIATICI
DRAWING NO: C-506.00
CADD FILE NO: 10 of 12



1 RETAINING WALL 3 TYPICAL SECTION
C-507.00 SCALE 1" = 1'

NOTES:

- FOR WEEPHOLE LOCATIONS ON WALL 3 SEE DWG C-504.00
- IF THE WEEPHOLE IS WITHIN 4'-0" OF THE TOP OF THE FOOTING, EXTEND THE PREFABRICATED COMPOSITE STRUCTURAL DRAIN TO THE TOP OF THE FOOTING. OTHERWISE, STOP THE DRAIN 1'-0" BELOW THE WEEPHOLE INVERT ELEVATION.
- WEEPHOLES TO BE SPACED AT 10FT ALONG WALL LENGTH.
- SEE DWG C-508.00 FOR SHEAR KEY DETAILS.
- SEE DWG C-121.00 IN THE SITE CIVIL PLANS FOR GUARD RAIL DETAILS.

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

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Woodcliff Lake, NJ 07677

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

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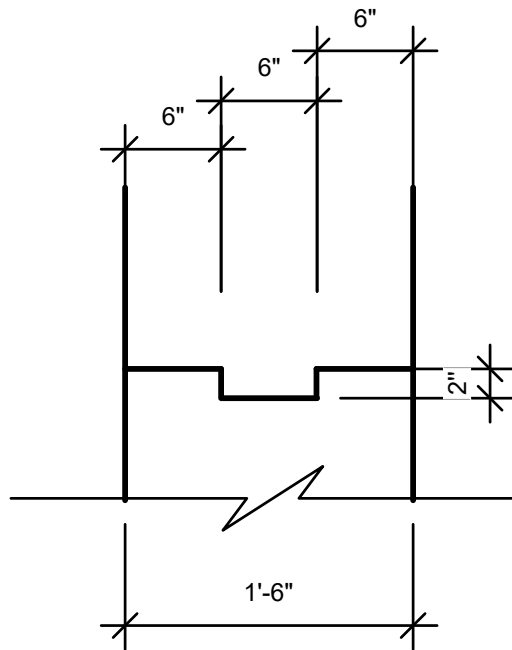
**Astoria HVDC
Converter Station**

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

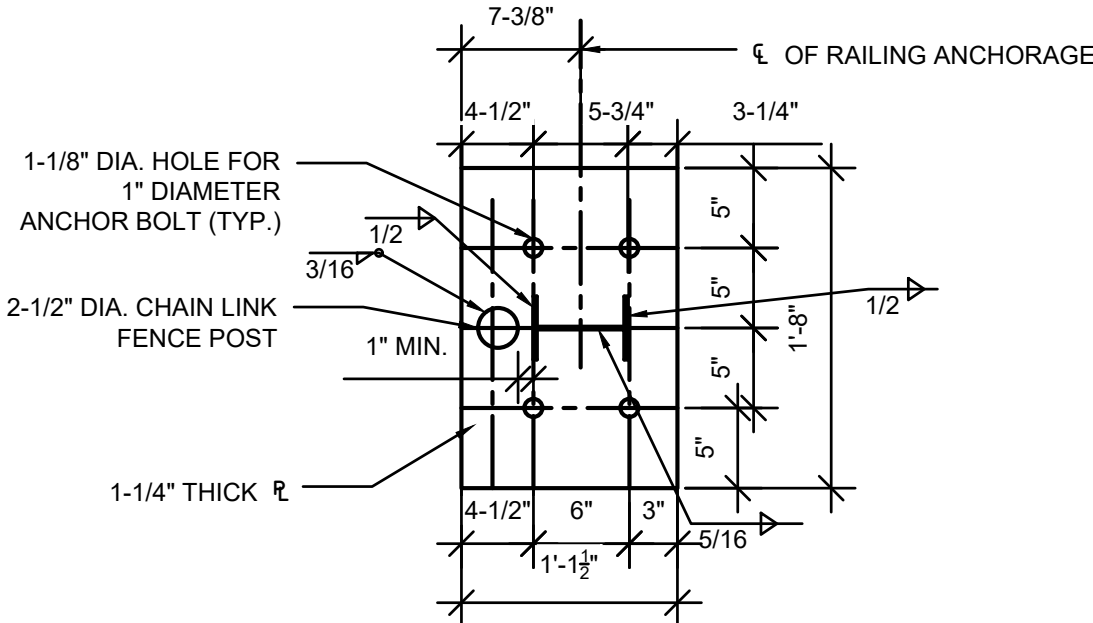
RETAINING WALL TYPICAL
SECTIONS



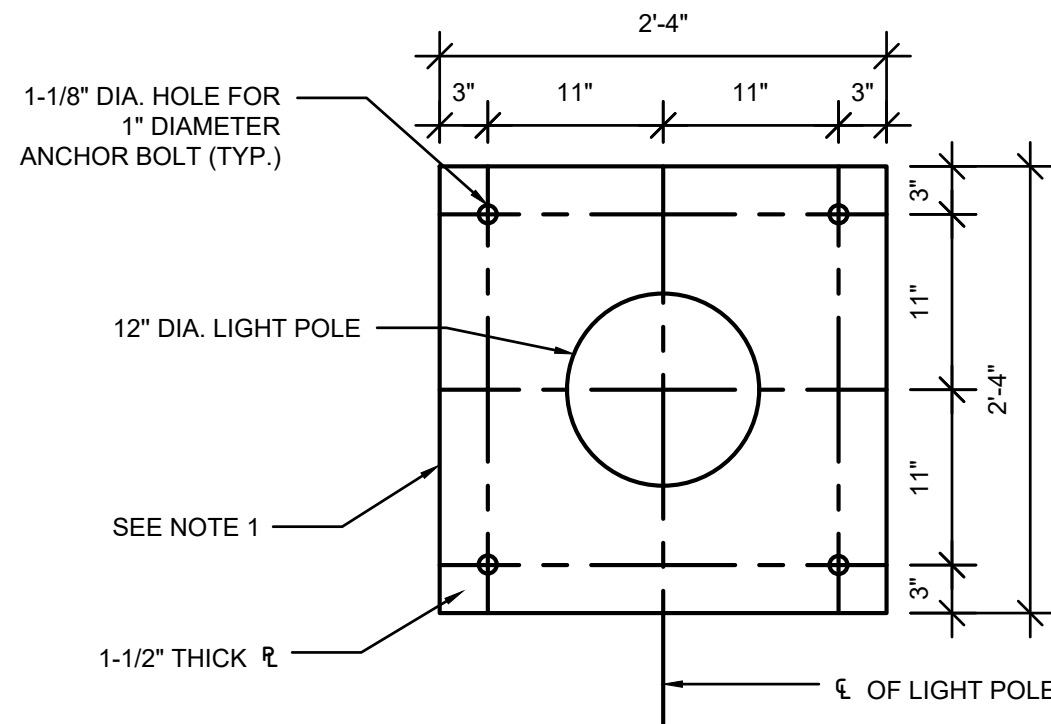
DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: E. KOLLI
CHECKED BY: R. ABBIATICI
DRAWING NO:
C-507.00
CADD FILE NO: 11 of 12



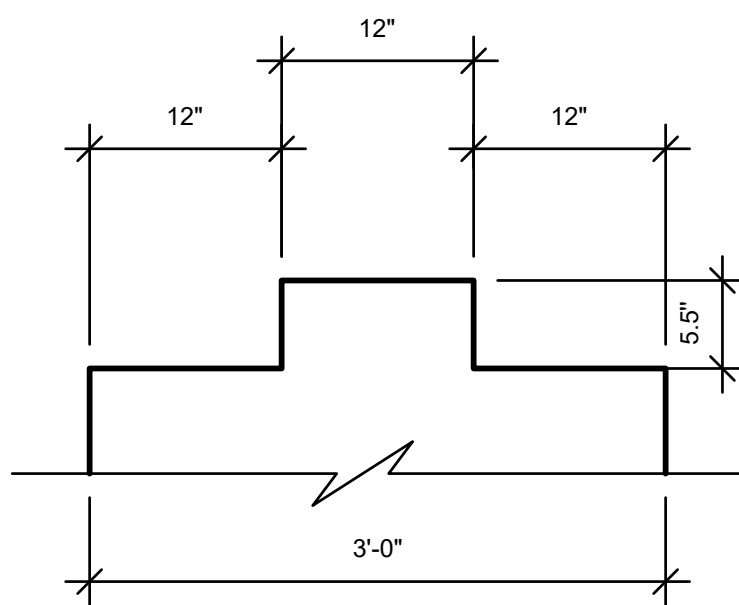
1 RETAINING WALL TYPICAL SHEAR KEY DETAIL
C-508.00 SCALE 1" = 1'



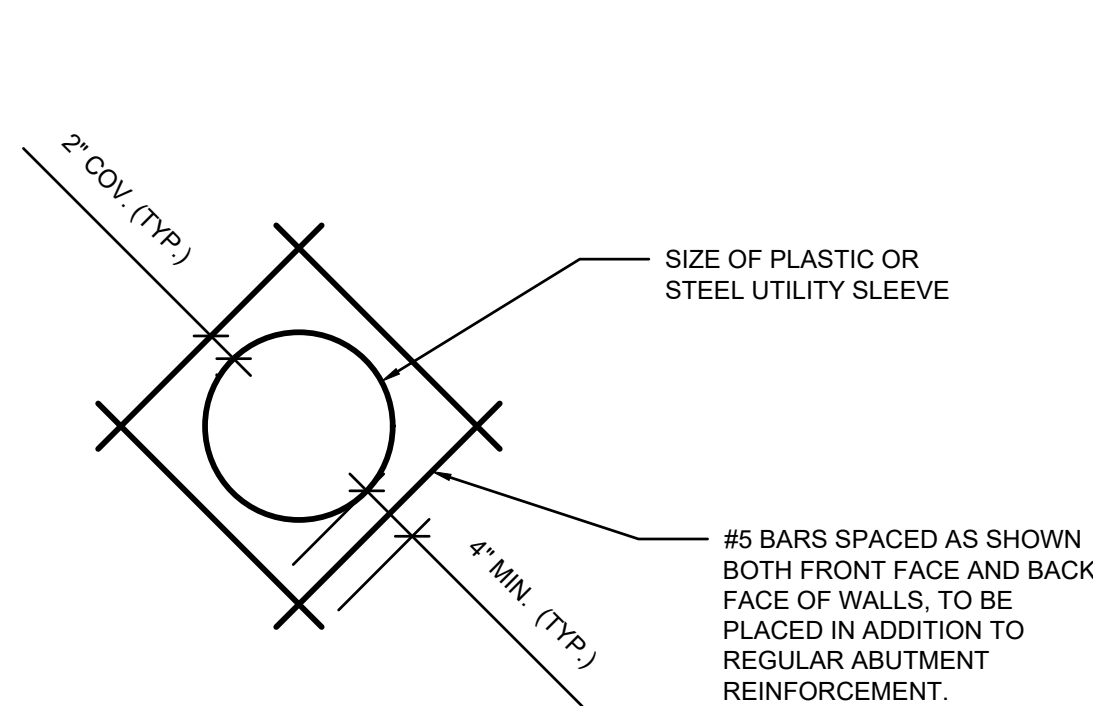
2 GUIDE RAIL AND FENCE POST BASE PLATE DETAIL
C-508.00 SCALE 1" = 1'



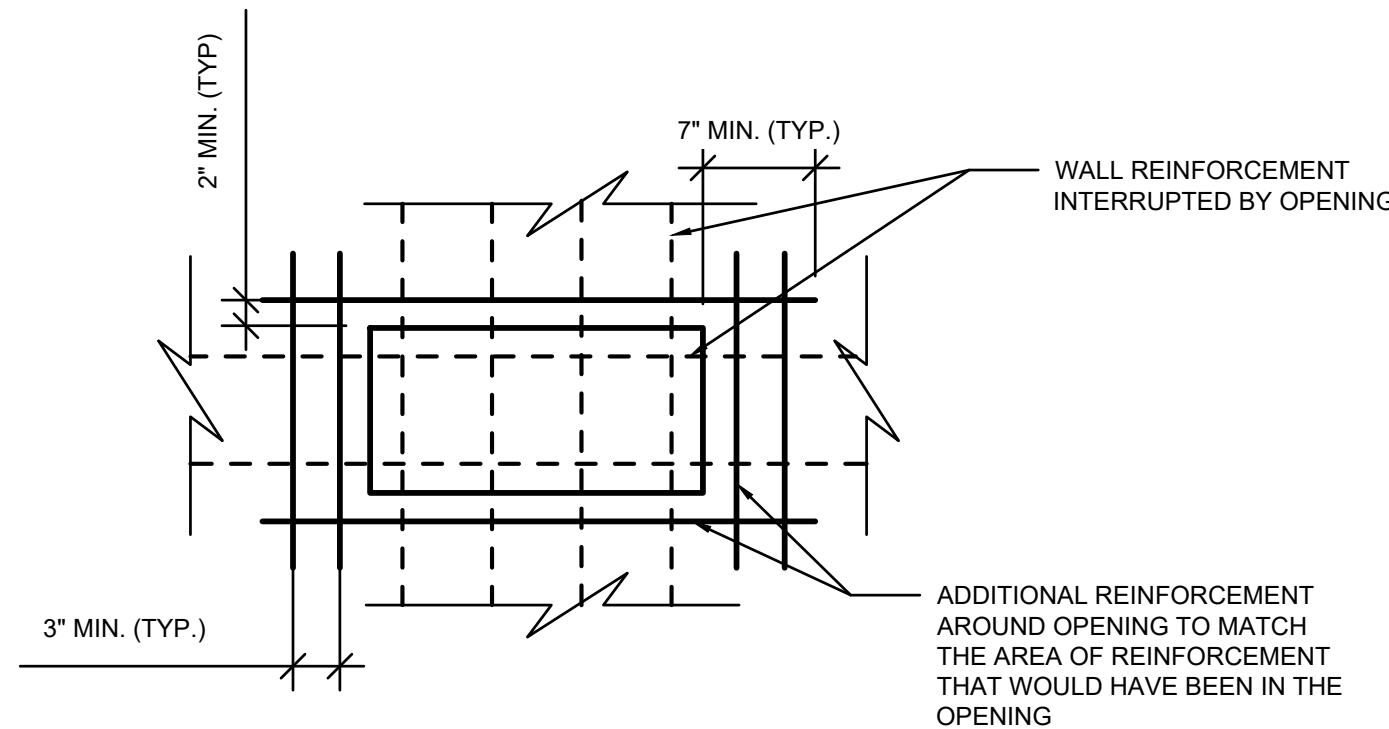
3 LIGHT POST BASE PLATE DETAIL
C-508.00 SCALE 1" = 1'



4 RETAINING WALL TYPICAL SHEAR KEY DETAIL WITH LIGHT POLE
C-508.00 SCALE 1" = 1'



5 RECTANGULAR UTILITY OPENING REINFORCEMENT
C-508.00 SCALE 1" = 1'



6 RECTANGULAR UTILITY OPENING REINFORCEMENT
C-508.00 SCALE 1" = 1'

- NOTES:
1. ANCHOR BOLT PATTERN SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL BOLT PATTERN TO BE DETERMINED BY LAMP POST HARDWARE PROVIDER. CONTRACTOR TO SUBMIT ANCHORAGE DETAILS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
 2. ANCHOR BOLTS SHALL MEET MATERIAL REQUIREMENTS OF SPECIFICATION 340001, SECTION 606.
 3. TYPE 'D' PVC WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS.

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B	FINAL SUBMISSION	EK	RA	11/8/22
A	INTERIM SUBMISSION	EK	RA	8/23/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE

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PROJECT

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Power Express

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

**BASE PLATE, SHEAR KEY
AND UTILITY OPENING
REINFORCEMENT DETAILS**



DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: E. KOLLI
CHECKED BY: R. ABBIATICI
DRAWING NO: **C-508.00**
CADD FILE NO: 12 of 12