

APPENDIX C.1
CASE 10-T-0139
SITE PLANS AND CONSTRUCTION DRAWINGS SITE PLAN –
CIVIL PACKAGE
ASTORIA HVDC CONVERTER STATION - SEGMENT 22

ASTORIA HVDC CONVERTER STATION

SITE CIVIL PACKAGE

SCOPE OF WORK

THE SITE CIVIL SITE SCOPE OF WORK INCLUDES THE FOLLOWING:

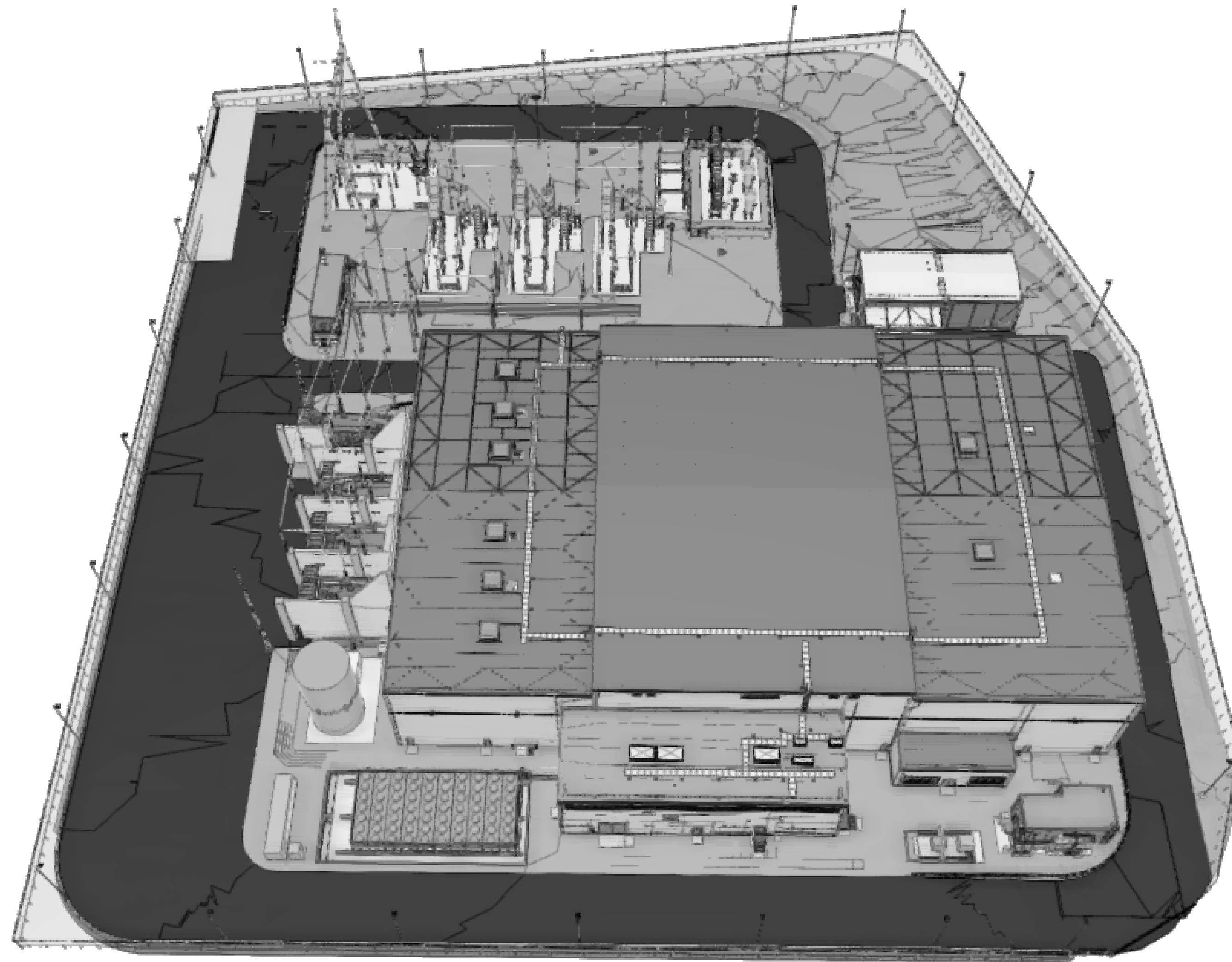
1. OVERALL SITE GRADING PLAN
2. ACCESS ROAD LAYOUT AND ROADWAY DESIGN
3. SECURITY FENCE
4. VEHICULAR GUIDE RAIL

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.

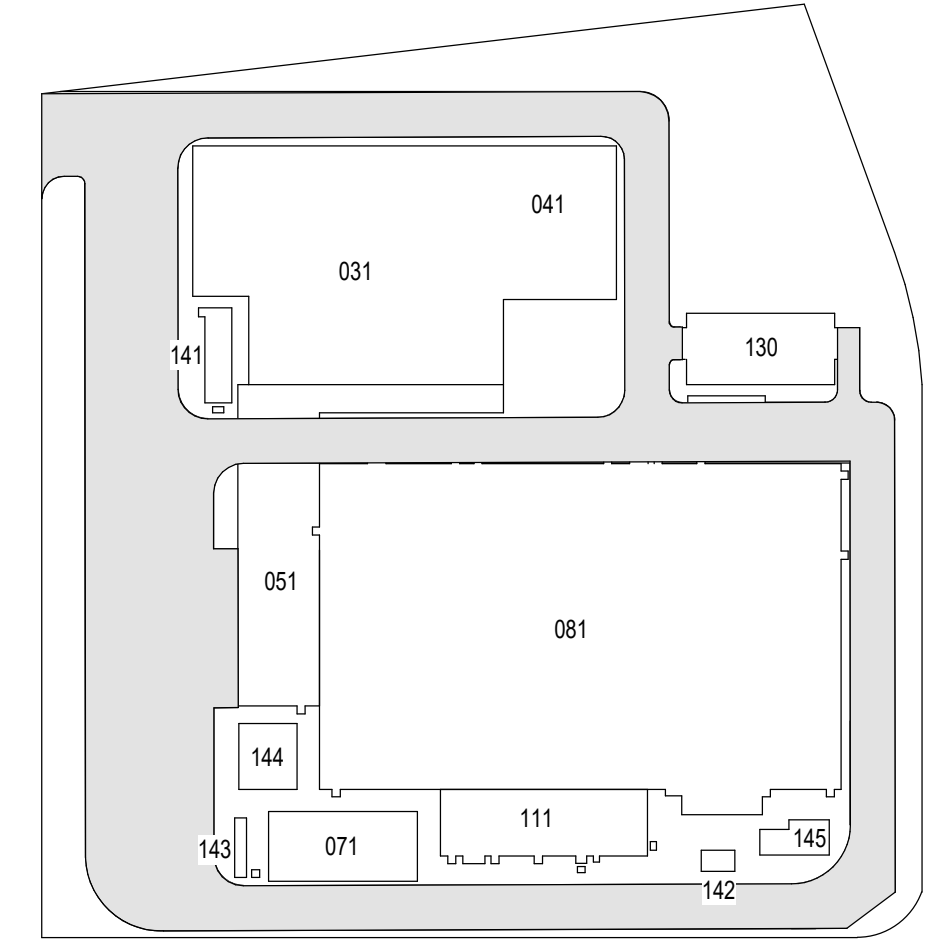
NYC ENERGY CODE COMPLIANCE:

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

**Engineering and
Land Surveying, P.C.** 370 7th Avenue
SUITE 1604
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REV	DESCRIPTION	DRW BY	CHK BY	DATE
B	FINAL SUBMISSION	VSP	EK	11/08/2022
A	INTERIM SUBMISSION	VSP	EK	09/13/2022

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

STATE OF NEW YORK
NEELKUMAR PATIL
101413
LICENSED PROFESSIONAL ENGINEER

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 26

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 (UPO) 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.

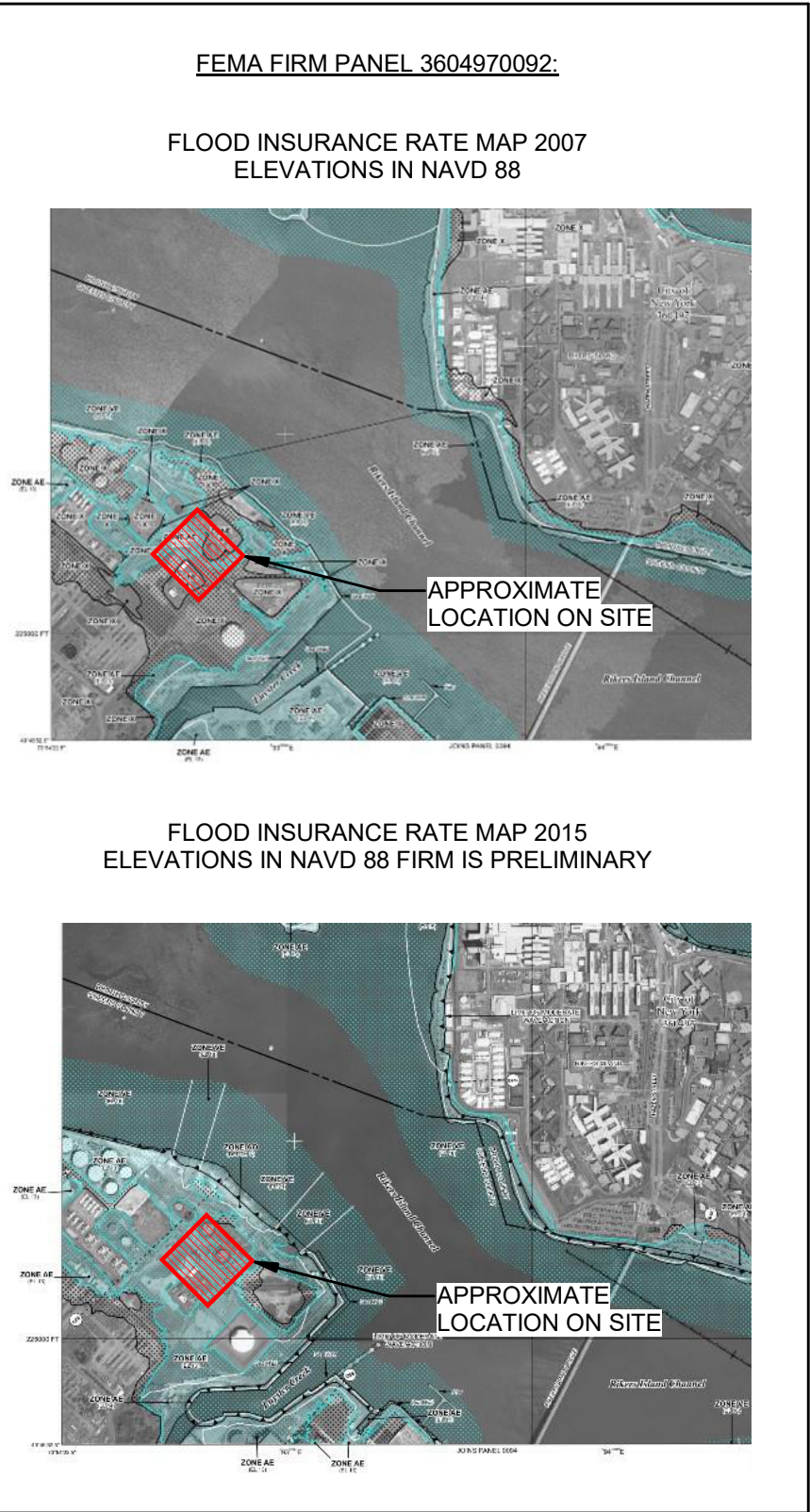
10.B. EXAMINE THE SITE AND INCLUDE IN HIS WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.

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 CIVIL SHEET INDEX

DRAWING TITLE	DWG. NO.
GENERAL NOTES	C-001.00
LEGEND AND ABBREVIATIONS	C-002.00
OVERALL SITE PLAN	C-100.00
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SITE SECTIONS 2	C-103.00
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ACCESS ROAD PROFILES 2	C-105.00
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TURNING MOVEMENT PLAN - FDNY SEAGRAVE TRUCK (ALTERNATIVE 2)	C-107.00
TURNING MOVEMENT PLAN - FDNYSEAGRAVE TRUCK (ALTERNATIVE 3)	C-108.00
TURNING MOVEMENT PLAN - HL-93 TRUCK (ALTERNATIVE 1)	C-109.00
TURNING MOVEMENT PLAN - HL-93 TRUCK (ALTERNATIVE 2)	C-110.00
TURNING MOVEMENT PLAN - HL-93 TRUCK (ALTERNATIVE 3)	C-111.00
TURNING MOVEMENT PLAN - HL-93 TRUCK STORAGE ENCLOSURE DRIVEWAY	C-112.00
TURNING MOVEMENT VEHICLE DETAILS	C-113.00
TURNING MOVEMENT VERTICAL PROFILE - FDNY SEAGRAVE TRUCK	C-114.00
TURNING MOVEMENT VERTICAL PROFILE - FDNY SEAGRAVE TRUCK	C-115.00
TURNING MOVEMENT VERTICAL PROFILE - FDNY SEAGRAVE TRUCK	C-116.00
TURNING MOVEMENT VERTICAL PROFILE - AASHTO HL-93 TRUCK	C-117.00
TURNING MOVEMENT VERTICAL PROFILE - AASHTO HL-93 TRUCK	C-118.00
TURNING MOVEMENT VERTICAL PROFILE - AASHTO HL-93 TRUCK	C-119.00
GUIDE RAIL LAYOUT DETAILS	C-120.00
FENCE, GUARD RAIL, AND BOLLARD DETAILS	C-121.00
NYSDOT THRIE BEAM BRIDGE RAIL DETAILS	C-122.00

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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



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

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 26

	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
	PROPOSED ALIGNMENT CENTERLINE
	PROPOSED ALIGNMENT STATIONING
	PROPOSED FENCE
	PROPOSED GUIDE RAIL
	PROPOSED RETAINING WALL
	PROPOSED SECURITY GATE
	PROPOSED SPOT ELEVATION
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED LIGHT POLE

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 = BEGINNING OF VERTICAL CURVE ELEVATION	PVMT = PAVEMENT
BVCS = BEGINNING 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	8/29/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE


Kiewit

470 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07677



901 Main Campus Drive
Raleigh, North Carolina 27606

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Power Express

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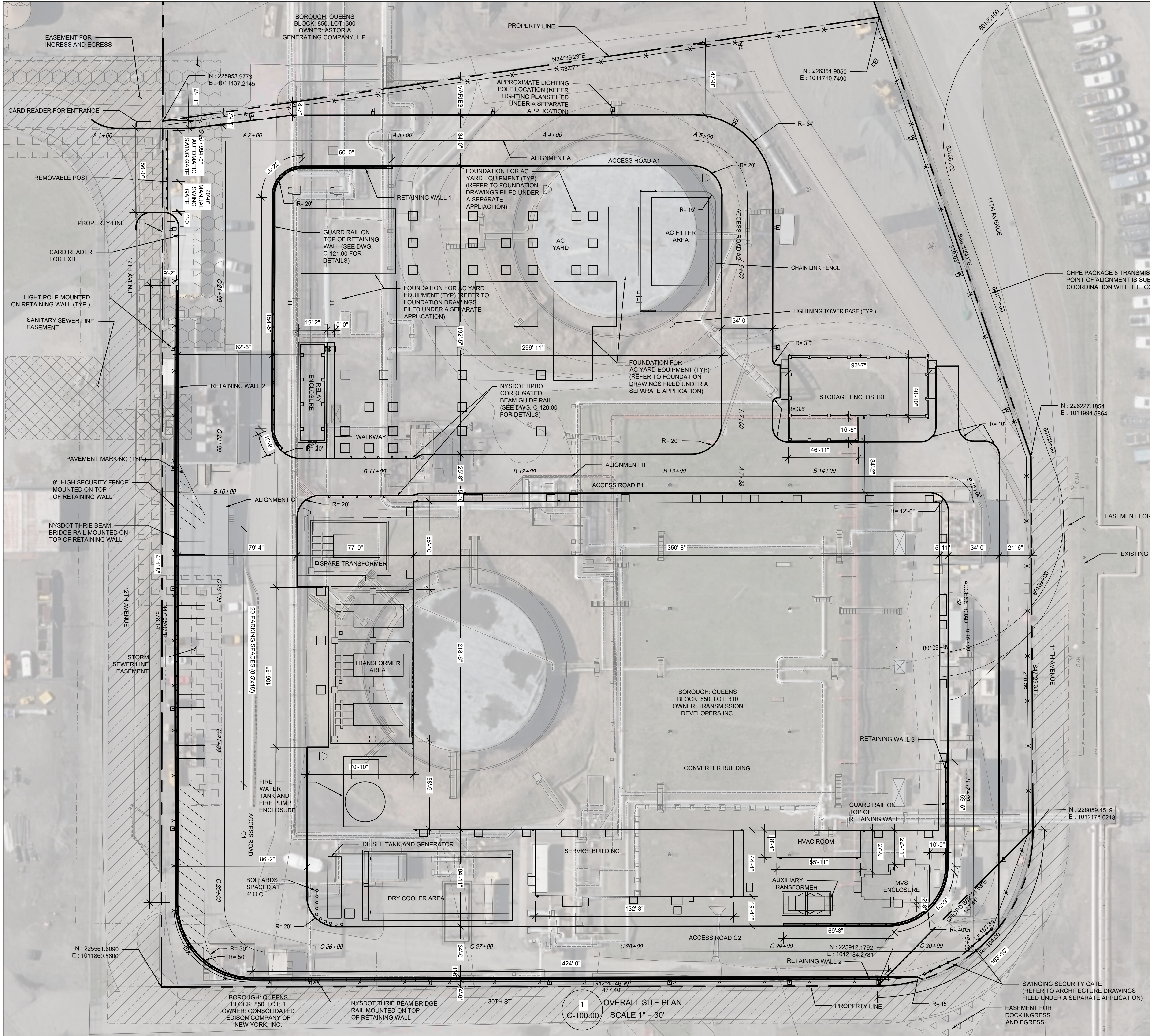
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

DATE	November 8, 202
PROJECT NO	105121
DRAWING BY	M. KWOK
CHECKED BY	J. LLORENTE

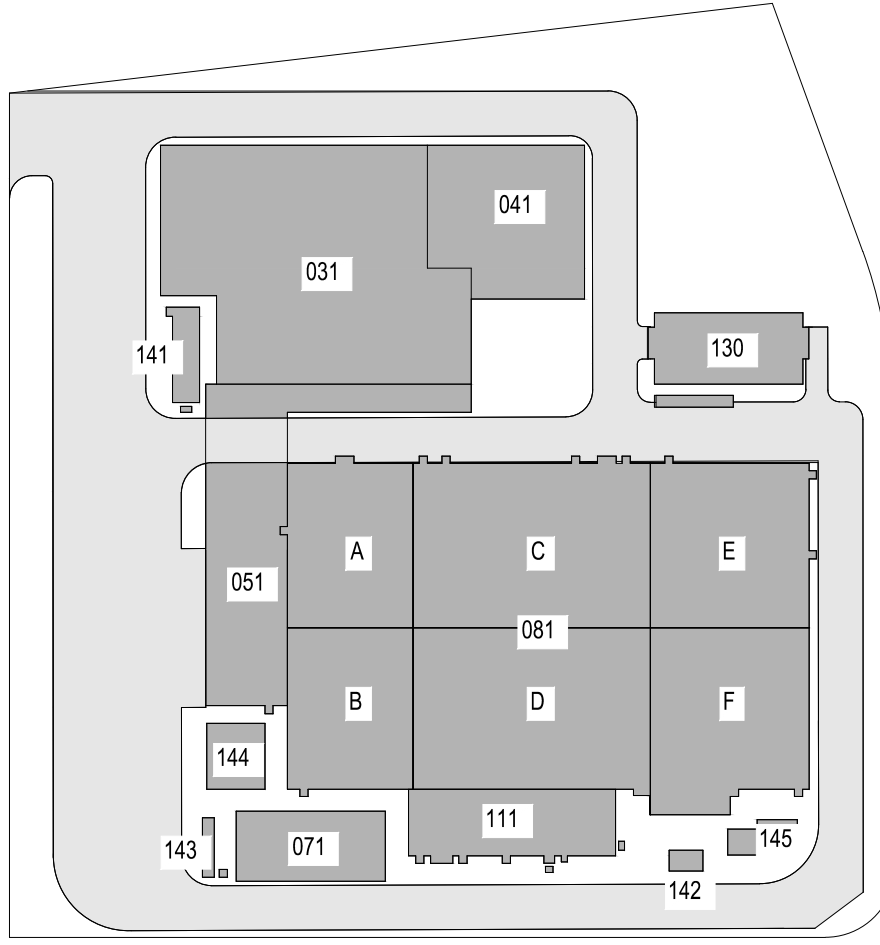
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CADD FILE N

3 of 26



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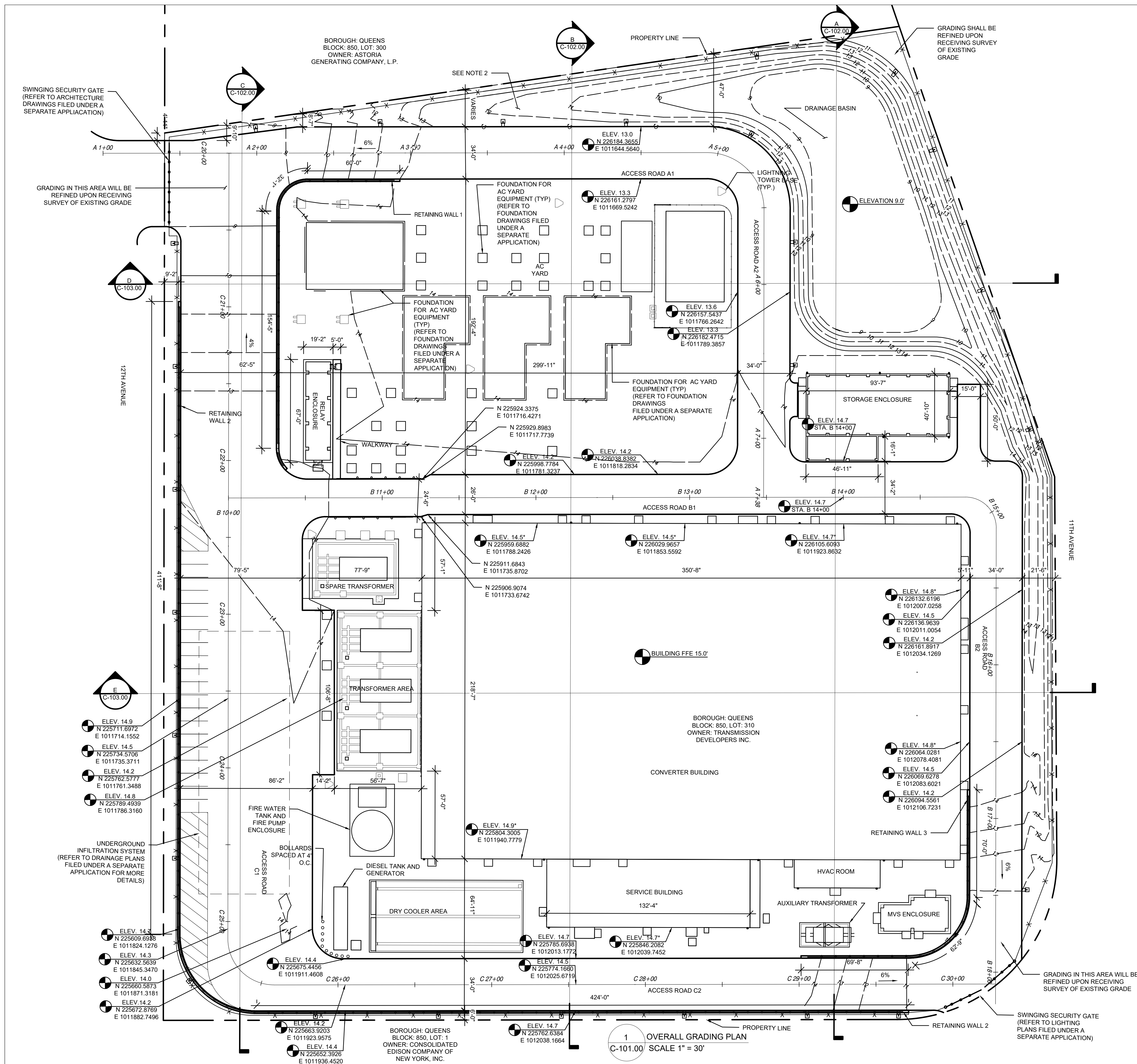
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OVERALL SITE PLAN

DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARUPU
CHECKED BY N. PATEL
DRAWING NO
C-100.00
CADD FILE NO
4 of 26

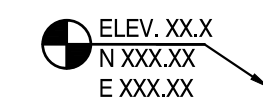


NOTES:

1. GRADING AT THE SITE PERIMETER WILL BE REFINED AFTER RECEIVING THE SURVEY OF THE EXISTING GRADE.
2. REFER TO PAVEMENT PLAN FOR PROPOSED FINISHED GRADING MATERIAL (FILED UNDER A SEPARATE APPLICATION).

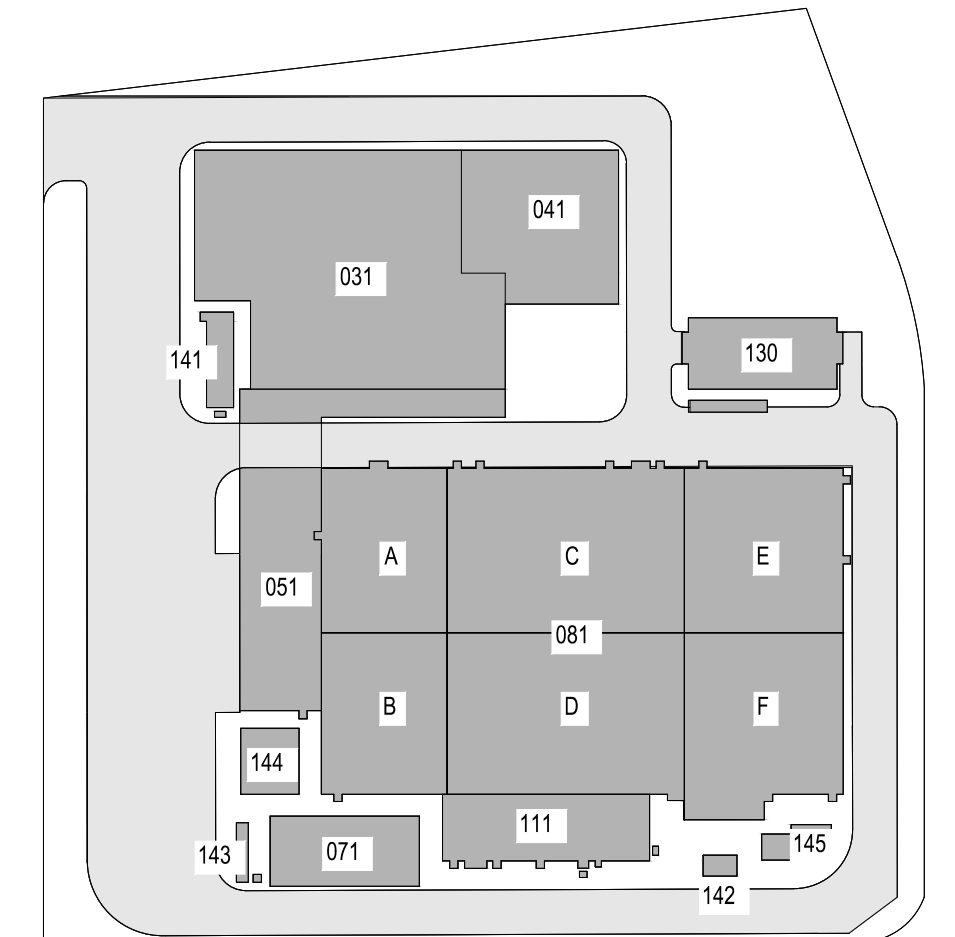
LEGEND:

SPOT ELEVATION:



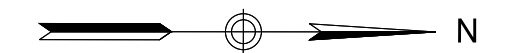
*SPOT ELEVATION IS OUTSIDE THE BUILDING AT THE BUILDING FACE

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KEY PLAN
N.T.S.

PLAN NORTH



KE Engineering and
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—ARCHITECTURE+ENGINEERING—

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REV	DESCRIPTION	DRW BY	CHK BY	DATE



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



01 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT



Astoria HVDC Converter Station

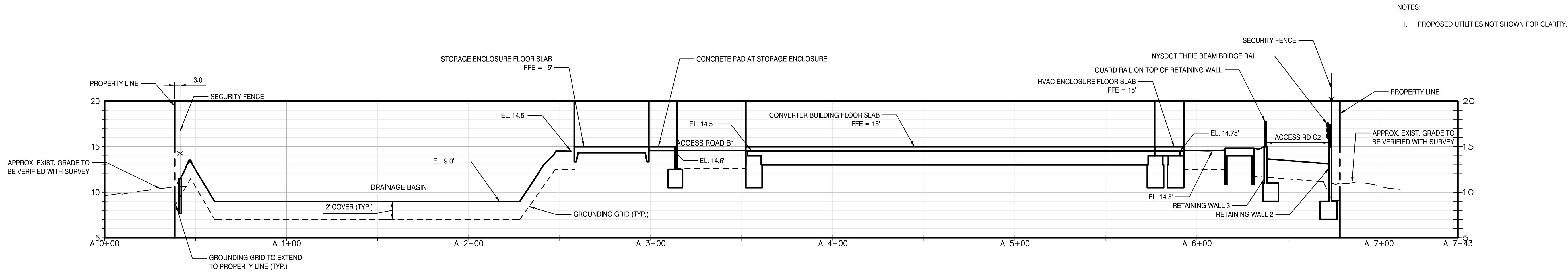
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

OVERALL GRADING PLAN

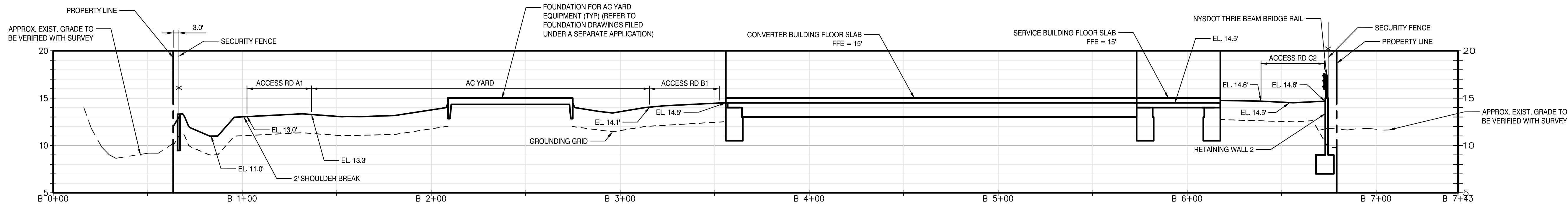


DATE	November 8, 2022
PROJECT NO	105121
DRAWING BY	M. PATEL
CHECKED BY	N. PATEL
DRAWING NO	C-101.00
CADD FILE NO	

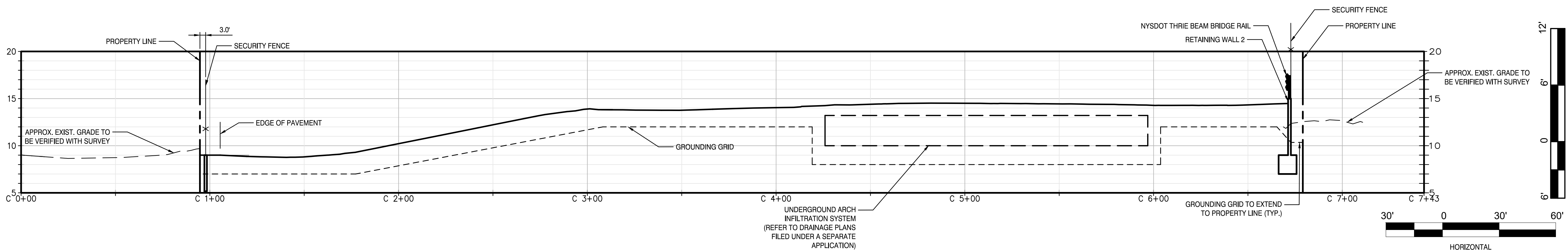
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A SITE SECTION A
C-101.00 HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 6'



B SITE SECTION B
C-101.00 HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 6'



C SITE SECTION C
C-101.00 HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 6'

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CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

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

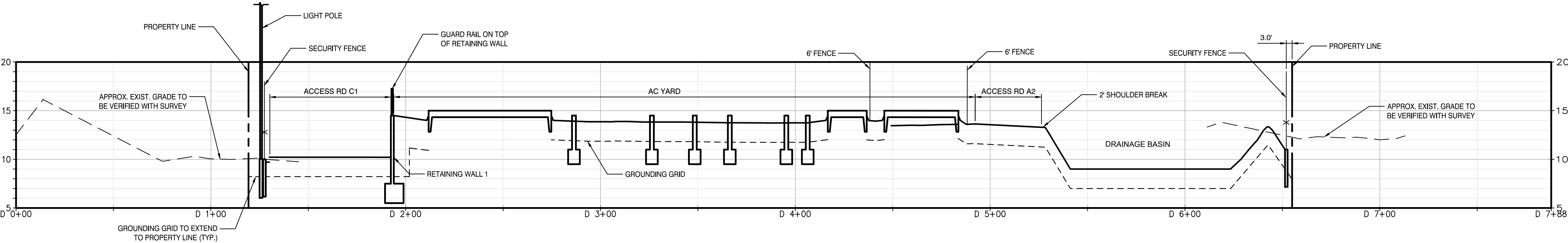
SITE SECTIONS 1



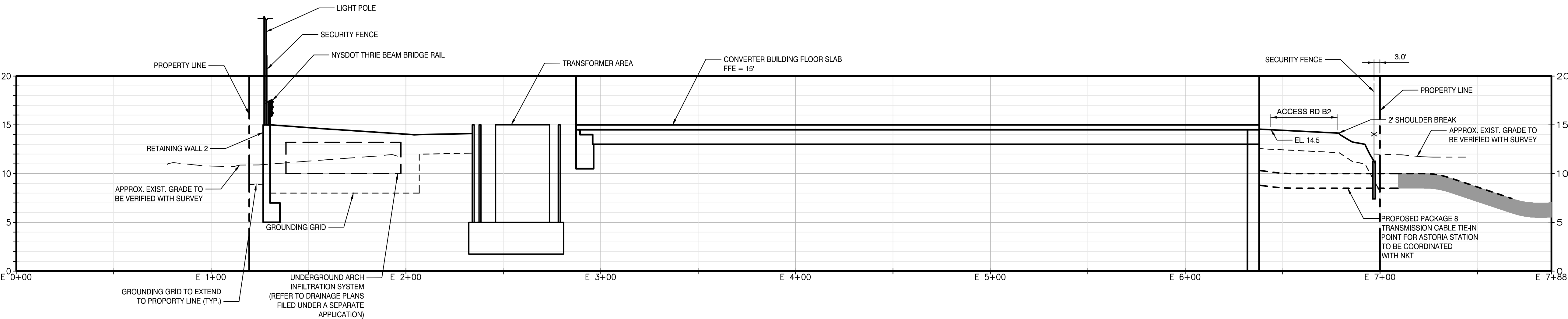
DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A. BUDARAPU
CHECKED BY: N. PATEL
DRAWING NO: **C-102.00**
CADD FILE NO: 6 of 26

NOTES:
1. PROPOSED UTILITIES NOT SHOWN FOR CLARITY.

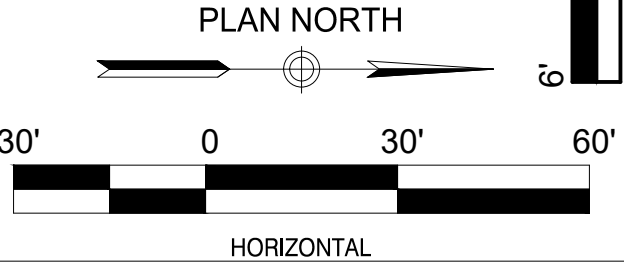
ISSUED FOR PERMIT



D SITE SECTION D
C-101.00 HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 6'



E SITE SECTION E
C-101.00 HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 6'



Engineering and Land Surveying, P.C.
370 7th Avenue
SUITE 1604
New York, NY 10001

SOWINSKI SULLIVAN
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B	FINAL SUBMISSION	AB	NP	11/8/22
A	INTERIM SUBMISSION	AB	NP	08/29/22
REV	DESCRIPTION	DRW BY	CHK BY	DATE

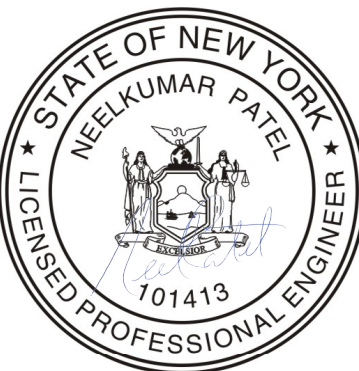
Kiewit
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

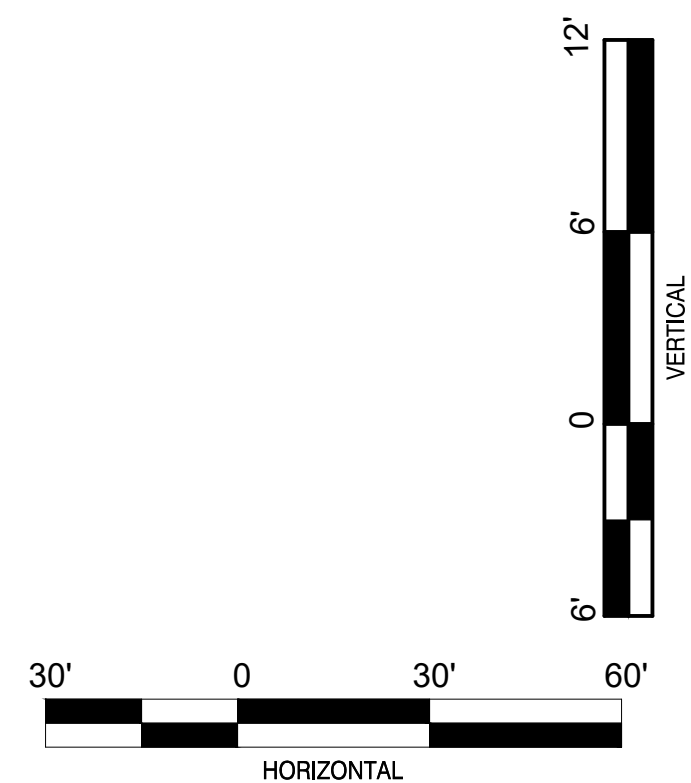
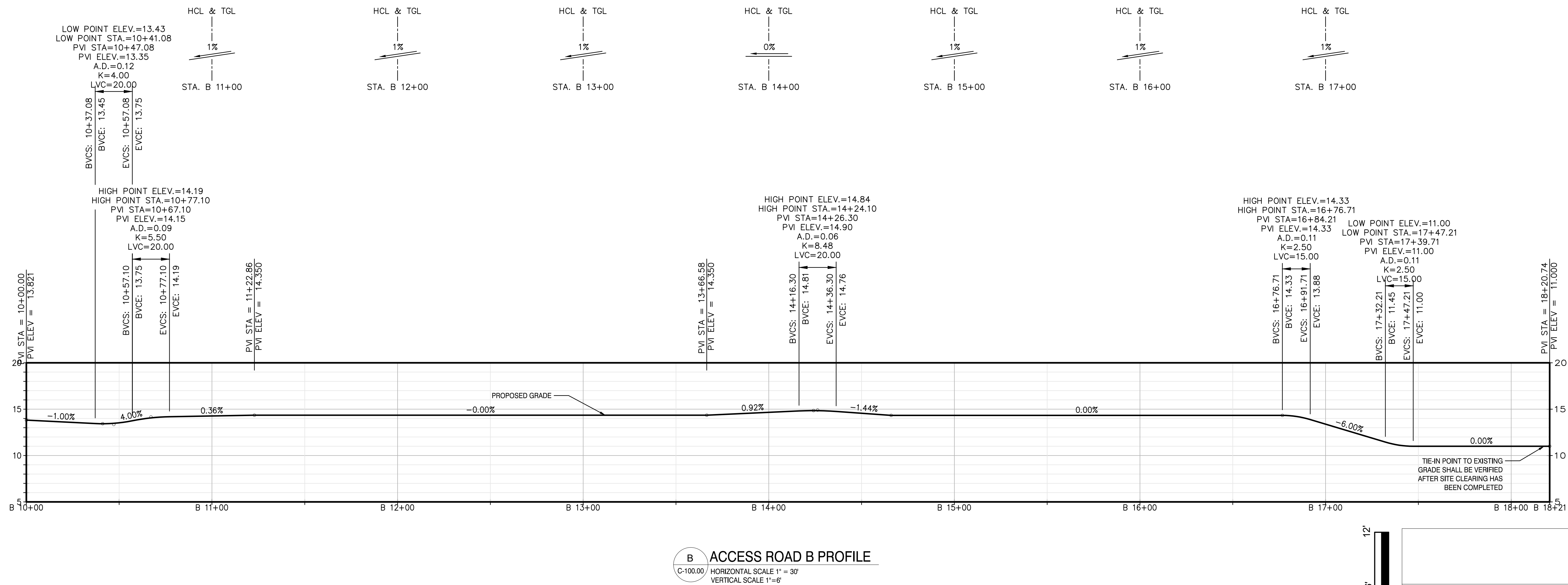
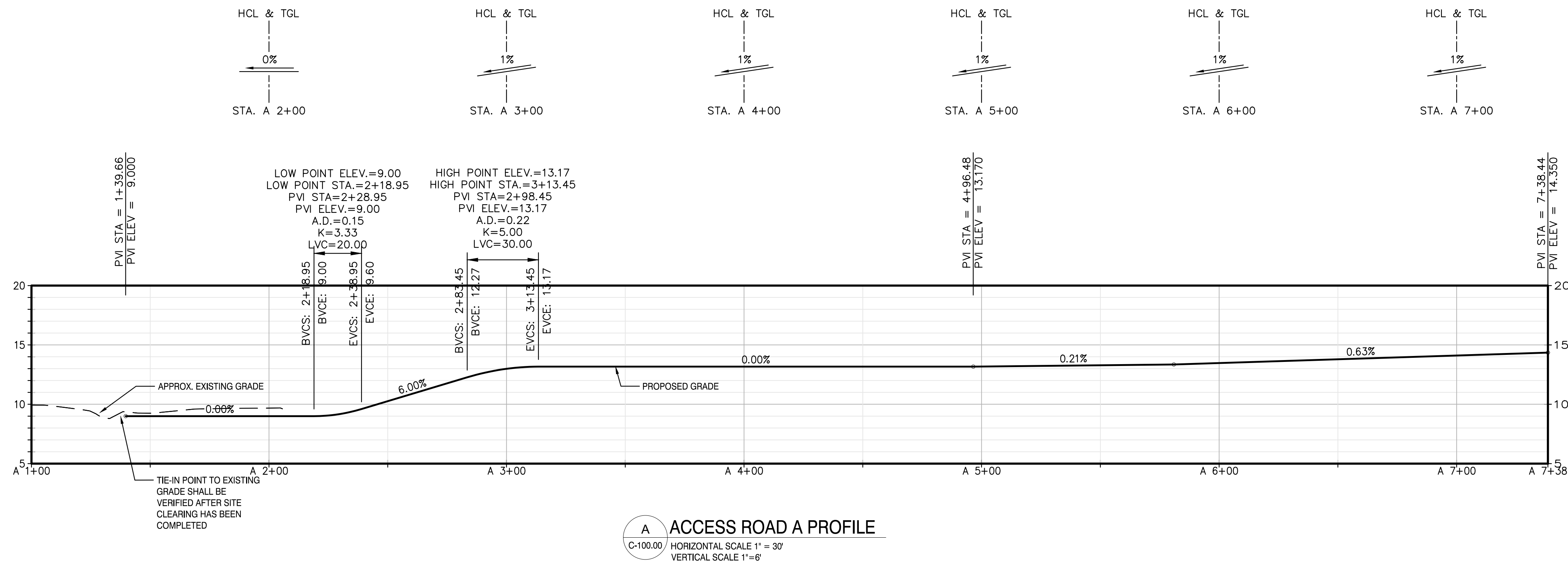
PROJECT
CHPE
Champlain Hudson
Power Express

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

SITE SECTIONS 2



DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A. BUDARAPU
CHECKED BY: N. PATEL
DRAWING NO: **C-103.00**
CADD FILE NO: 7 of 26



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A	INTERIM SUBMISSION	AB	NP	08/29/22

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PROJECT

CHPE
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Power Express

**Astoria HVDC
Converter Station**

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

ACCESS ROAD PROFILES 1



DATE
PROJECT NO
DRAWING BY
CHECKED BY
DRAWING NO
CADD FILE NO

NOVEMBER 8, 2022
105121
A.BUDARAPU
N.PATEL
C-104.00
8 of 26

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A	INTERIM SUBMISSION	AB	NP	08/29/22

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Woodcliff Lake, NJ 07677

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

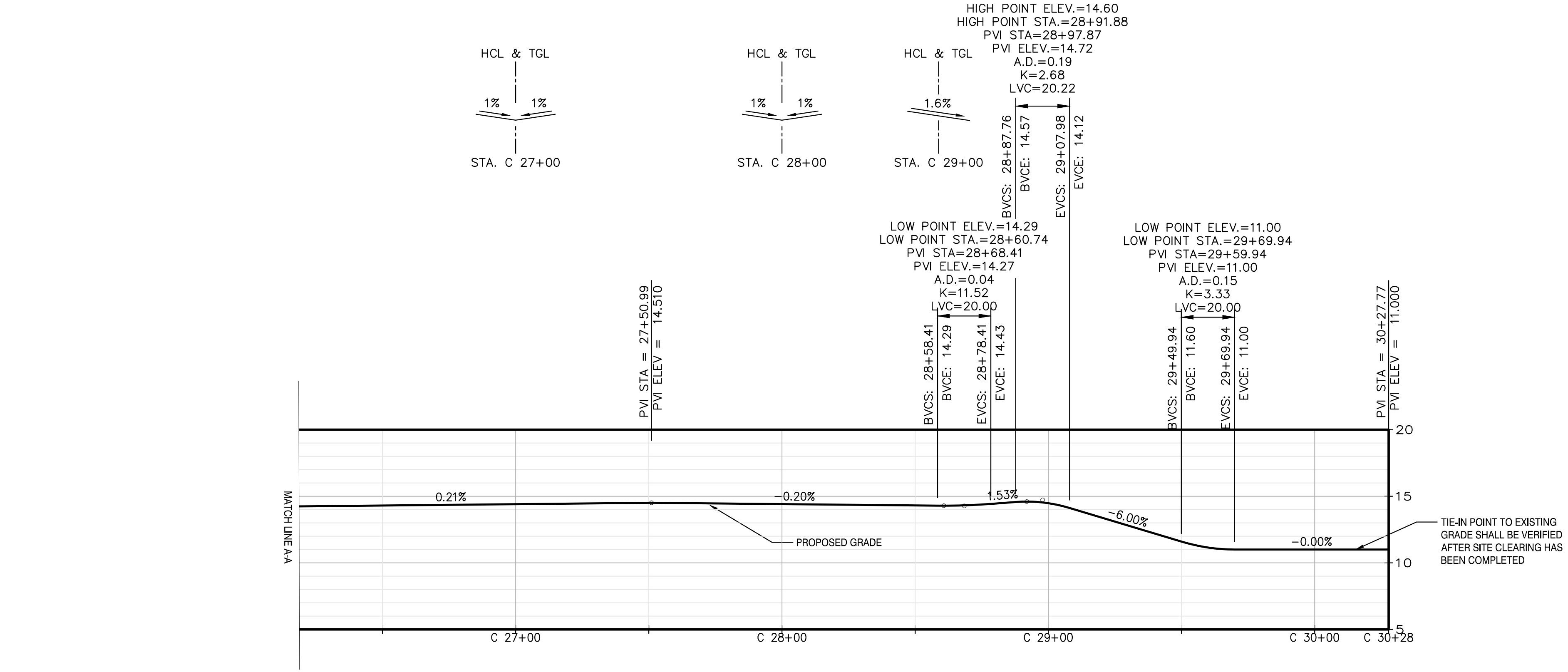
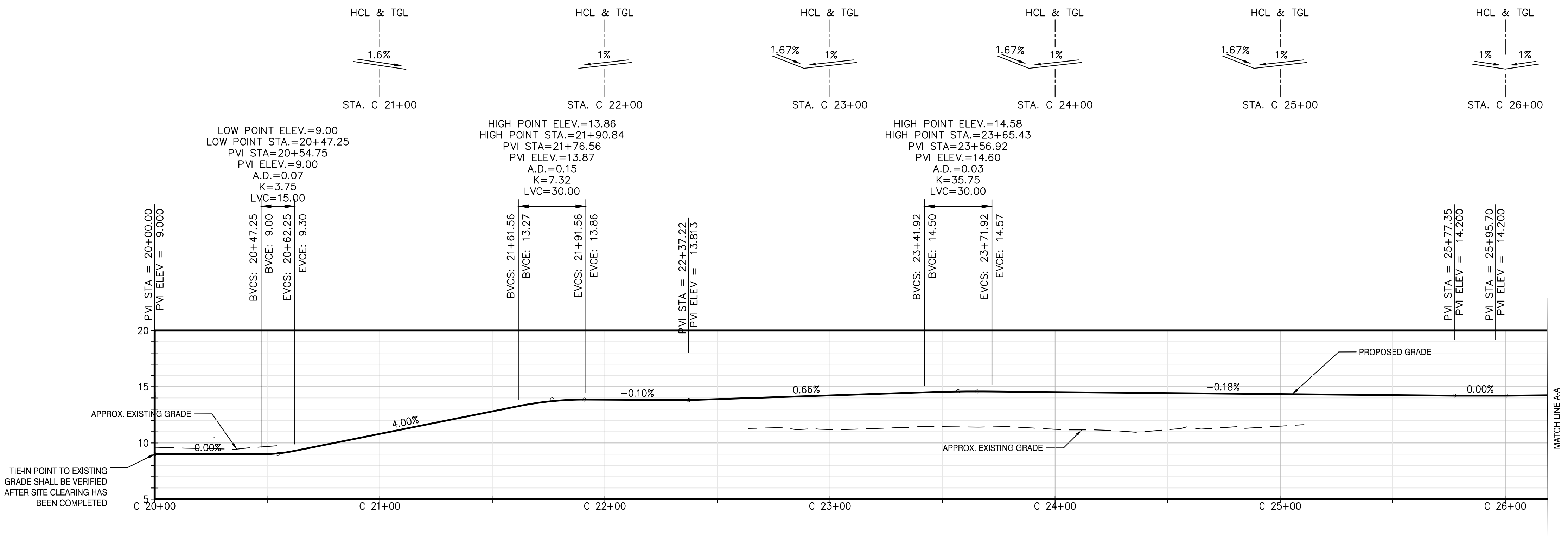
**Astoria HVDC
Converter Station**

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

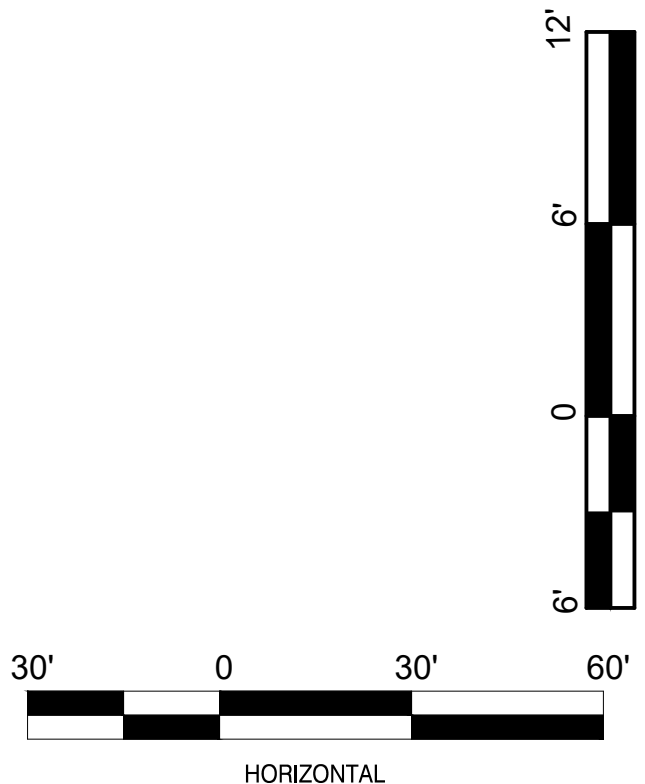
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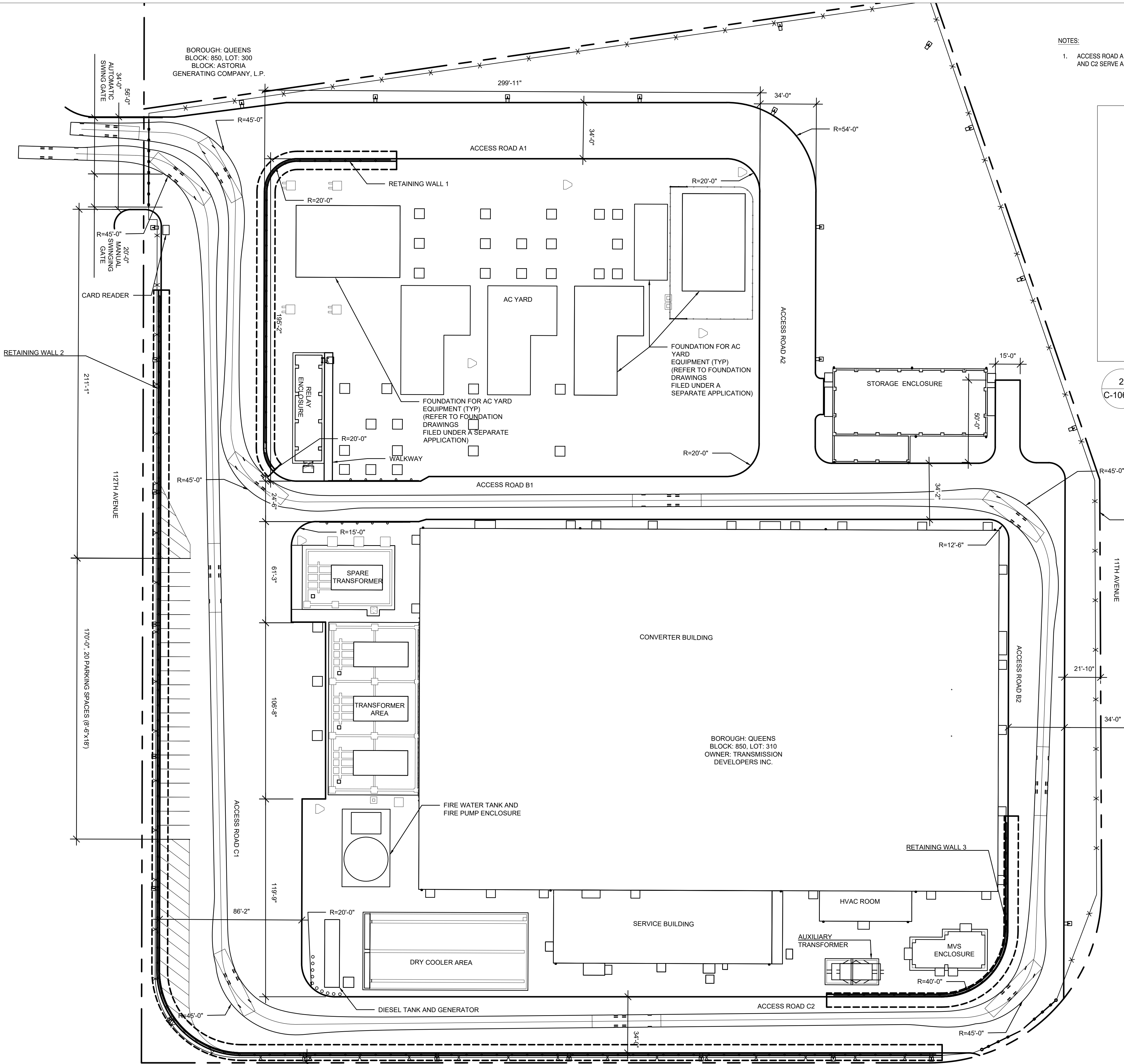


DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A.BUDARAPU
CHECKED BY: N.PATEL
DRAWING NO: **C-105.00**
CADD FILE NO: 9 of 26

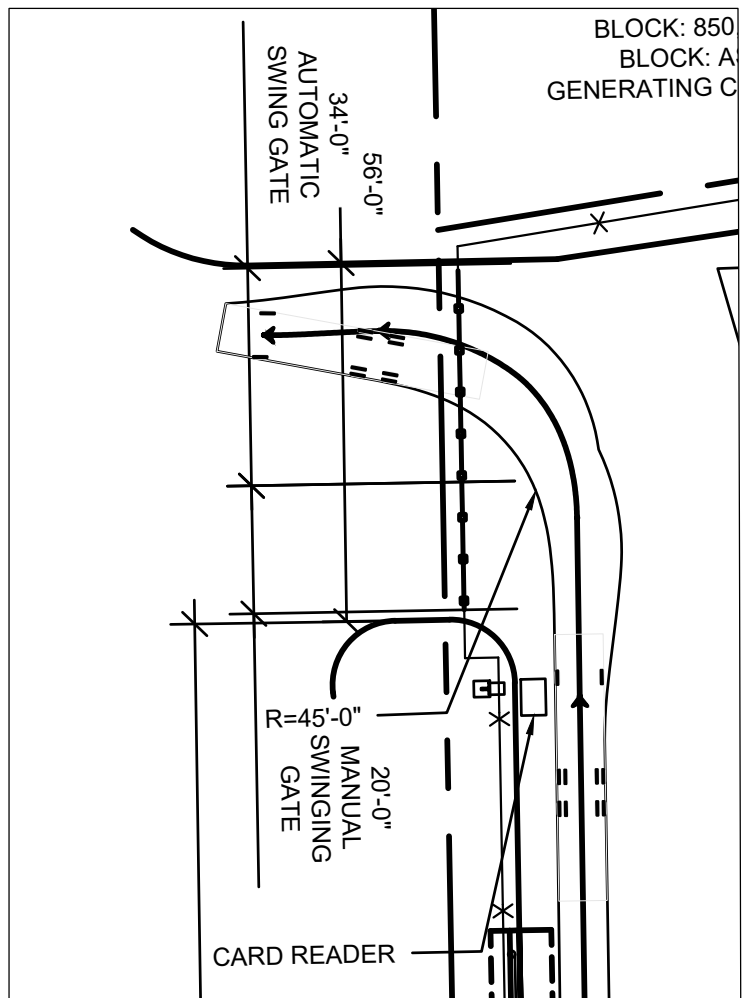


C ACCESS ROAD C PROFILE
C-105.00 HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 8'

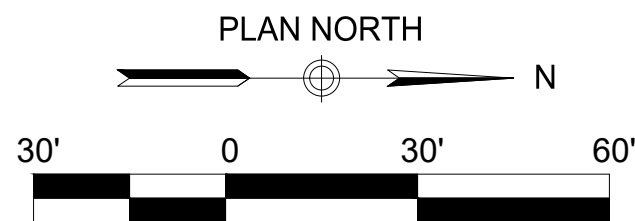




- NOTES:
1. ACCESS ROAD A1, A2, THE NORTHERN PORTION OF B1, B2, C1 AND C2 SERVE AS THE FIRE APPARATUS ACCESS ROADS.

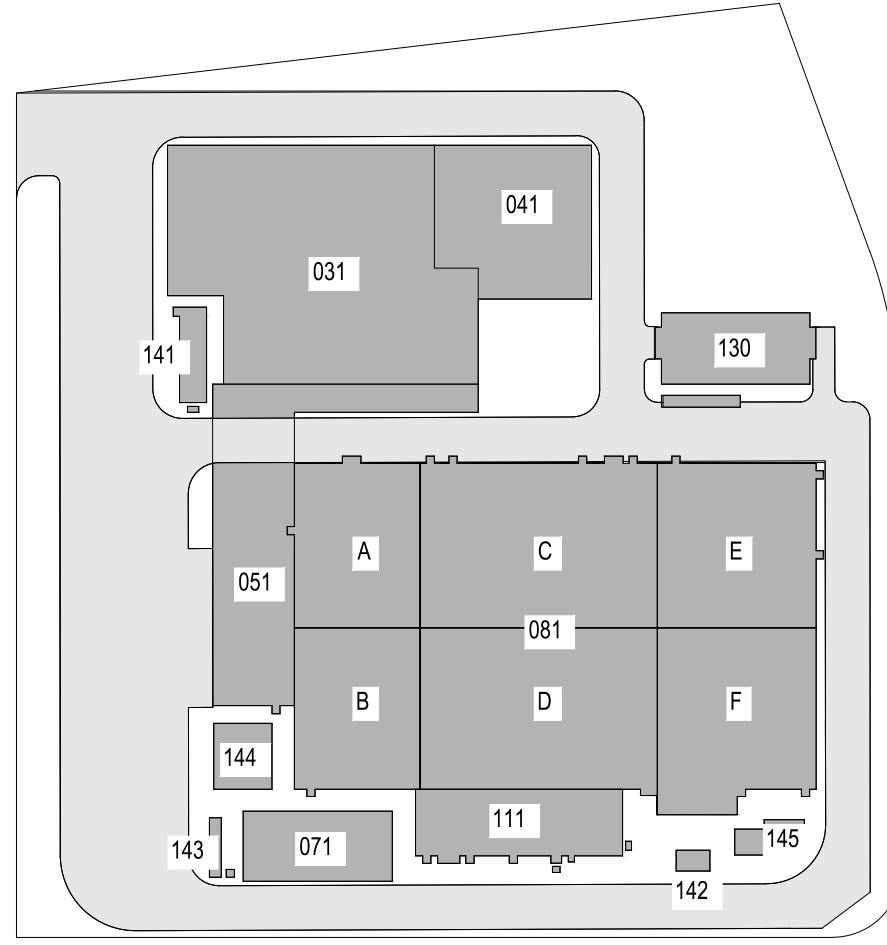


2 EXIT GATE DETAIL
C-106.00 SCALE 1" = 30'



TURNING MOVEMENT PLAN -
FDNY SEAGRAVE TRUCK
(ALTERNATIVE 1)
1
C-106.00 SCALE 1" = 30'

ISSUED FOR PERMIT



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N.T.S.

PLAN NORTH



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

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

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

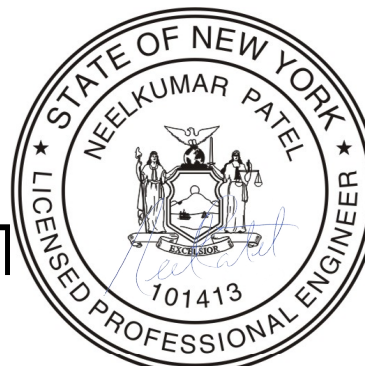
PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

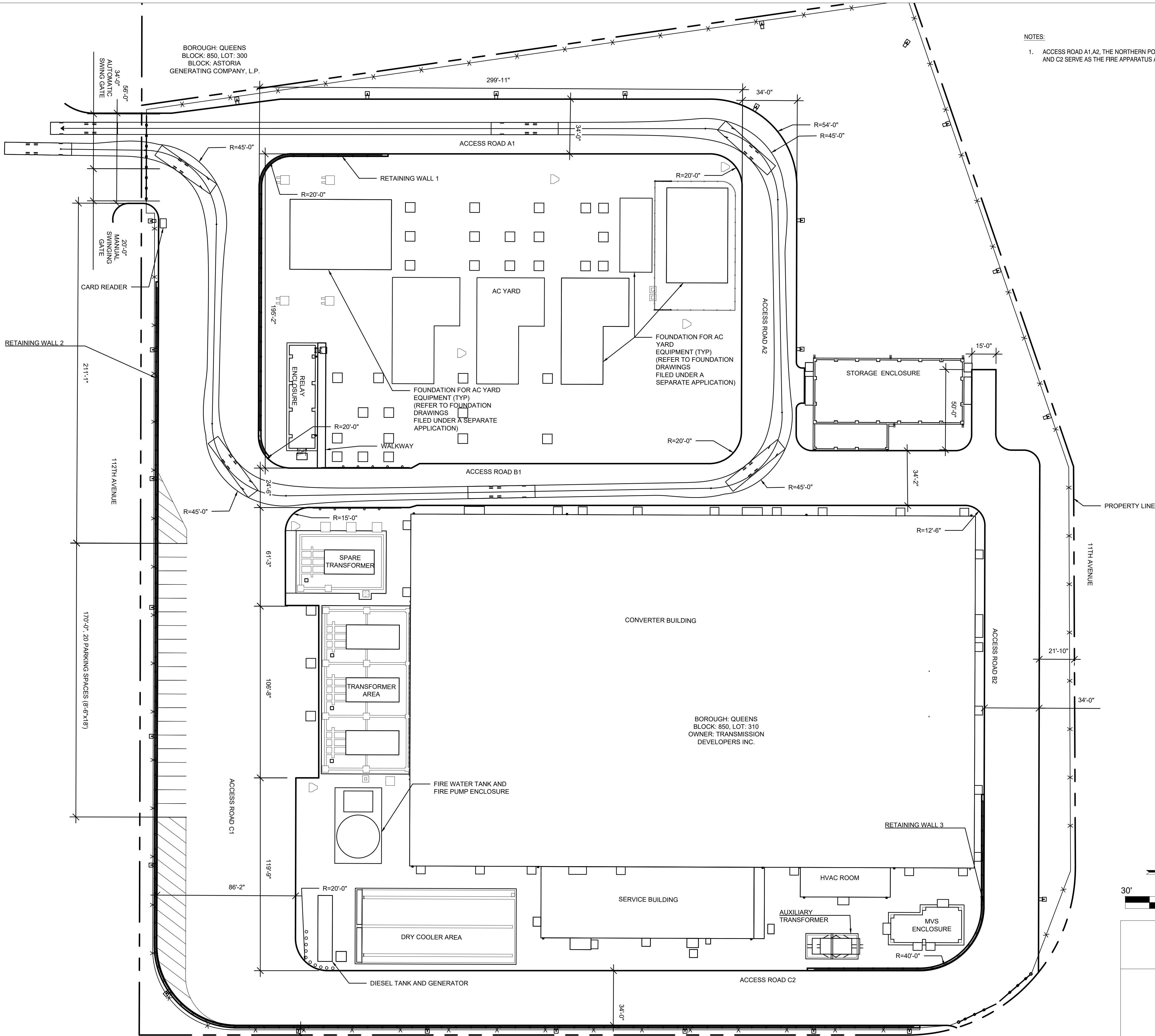
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

**TURNING MOVEMENT PLAN
FDNY SEAGRAVE TRUCK
(ALTERNATIVE 1)**



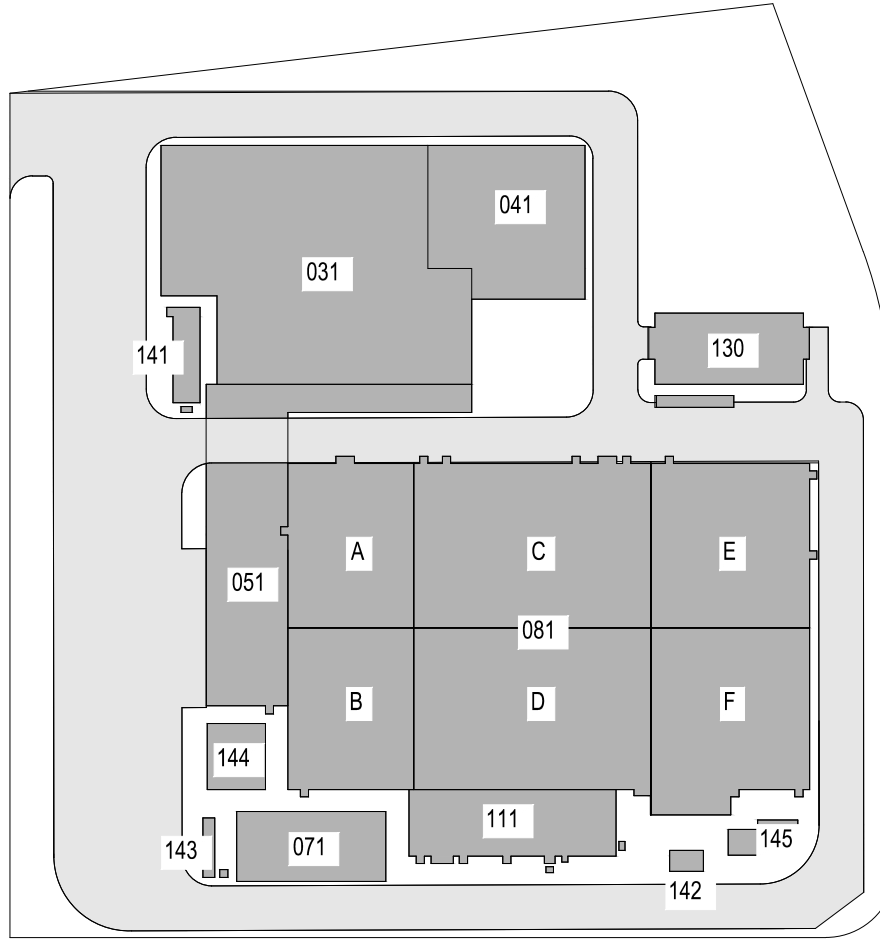
DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARAPU
CHECKED BY N. PATEL
DRAWING NO
C-106.00
CADD FILE NO 10 of 26

SITE LAYOUT



- NOTES:
1. ACCESS ROAD A1 A2, THE NORTHERN PORTION OF B1, B2, C1 AND C2 SERVE AS THE FIRE APPARATUS ACCESS ROADS.

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470 Chestnut Ridge Rd # 2,
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Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

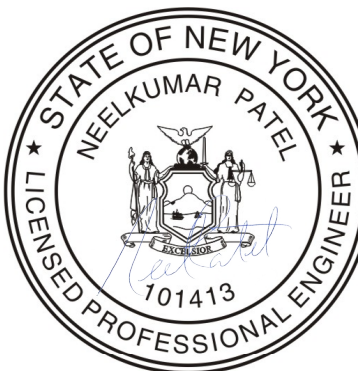
PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

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

**TURNING MOVEMENT PLAN
FDNY SEAGRAVE TRUCK
(ALTERNATIVE 2)**

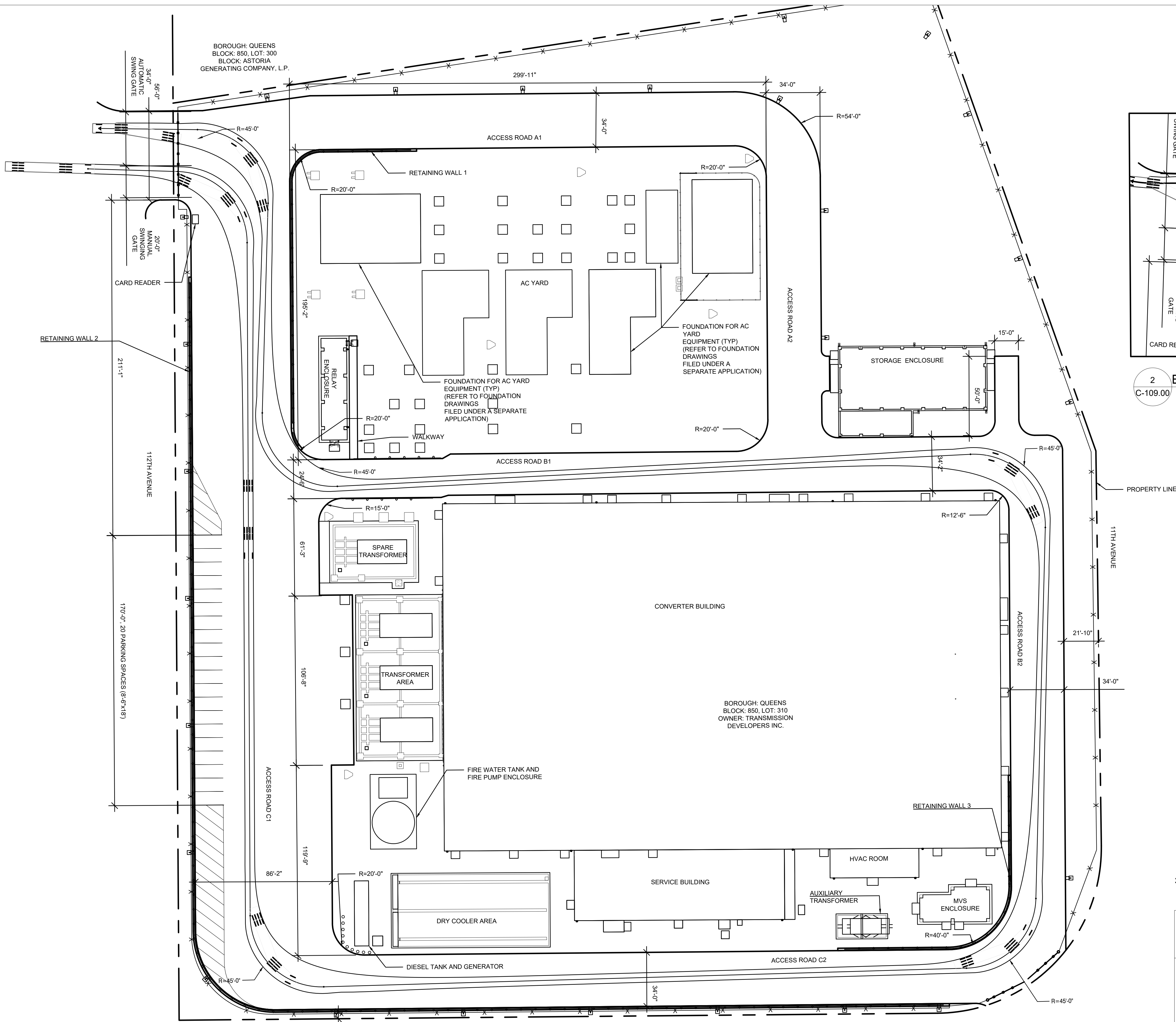


DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARAPU
CHECKED BY N. PATEL
DRAWING NO
C-107.00
CADD FILE NO 11 of 26

**TURNING MOVEMENT PLAN -
FDNY SEAGRAVE TRUCK
(ALTERNATIVE 2)**

SCALE 1" = 30'

1
C-107.00



CARD READER
20'-0"
MANUAL
SWINGING
GATE

RETAINING WALL 2

112TH AVENUE

170'-0" 20 PARKING SPACES (8'-6"x18')

BOROUGH: QUEENS
BLOCK: 850, LOT: 300
BLOCK: ASTORIA
GENERATING COMPANY, L.P.

ACCESS ROAD A1

RETAINING WALL 1

AC YARD

FOUNDATION FOR AC
YARD
EQUIPMENT (TYP)
(REFER TO FOUNDATION
DRAWINGS
FILED UNDER A SEPARATE
APPLICATION)

WALKWAY

ACCESS ROAD B1

SPARE
TRANSFORMER

TRANSFORMER
AREA

FIRE WATER TANK AND
FIRE PUMP ENCLOSURE

DRY COOLER AREA

DIESEL TANK AND GENERATOR

CONVERTER BUILDING

BOROUGH: QUEENS
BLOCK: 850, LOT: 310
OWNER: TRANSMISSION
DEVELOPERS INC.

SERVICE BUILDING

HVAC ROOM

AUXILIARY
TRANSFORMER

MVS
ENCLOSURE

ACCESS ROAD C2

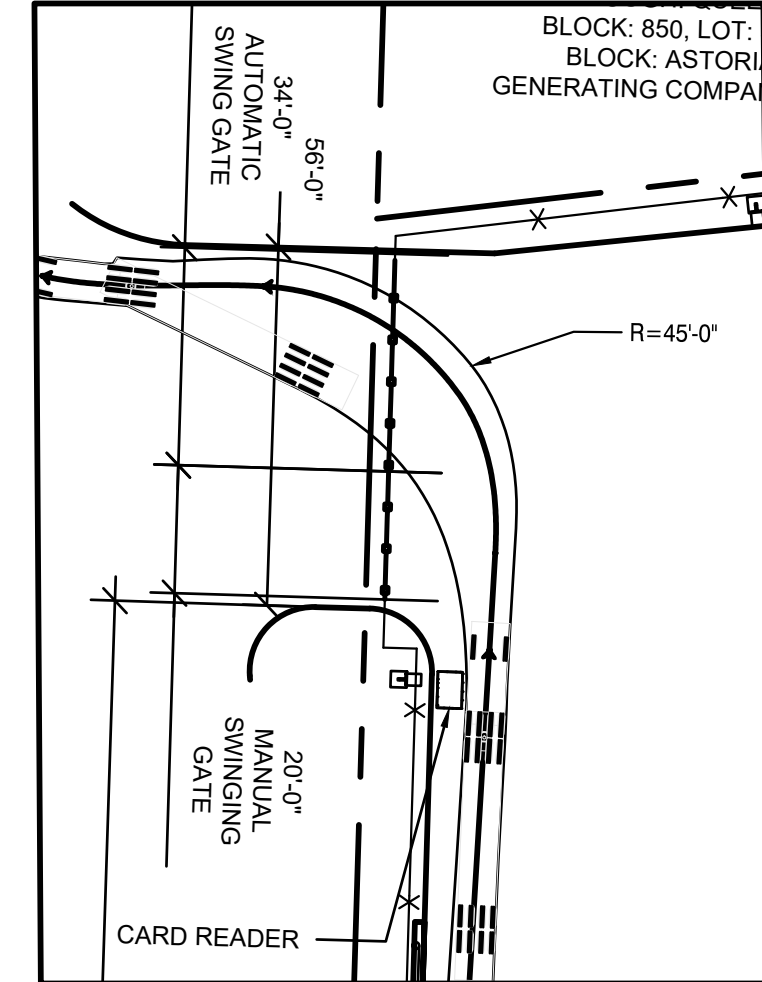
ACCESS ROAD A2

STORAGE ENCLOSURE

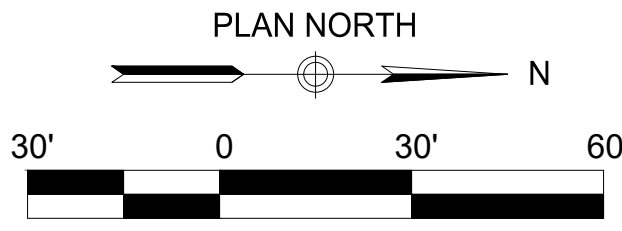
ACCESS ROAD B2

11TH AVENUE

PROPERTY LINE



2 EXIT GATE DETAIL
C-109.00 SCALE 1" = 30'

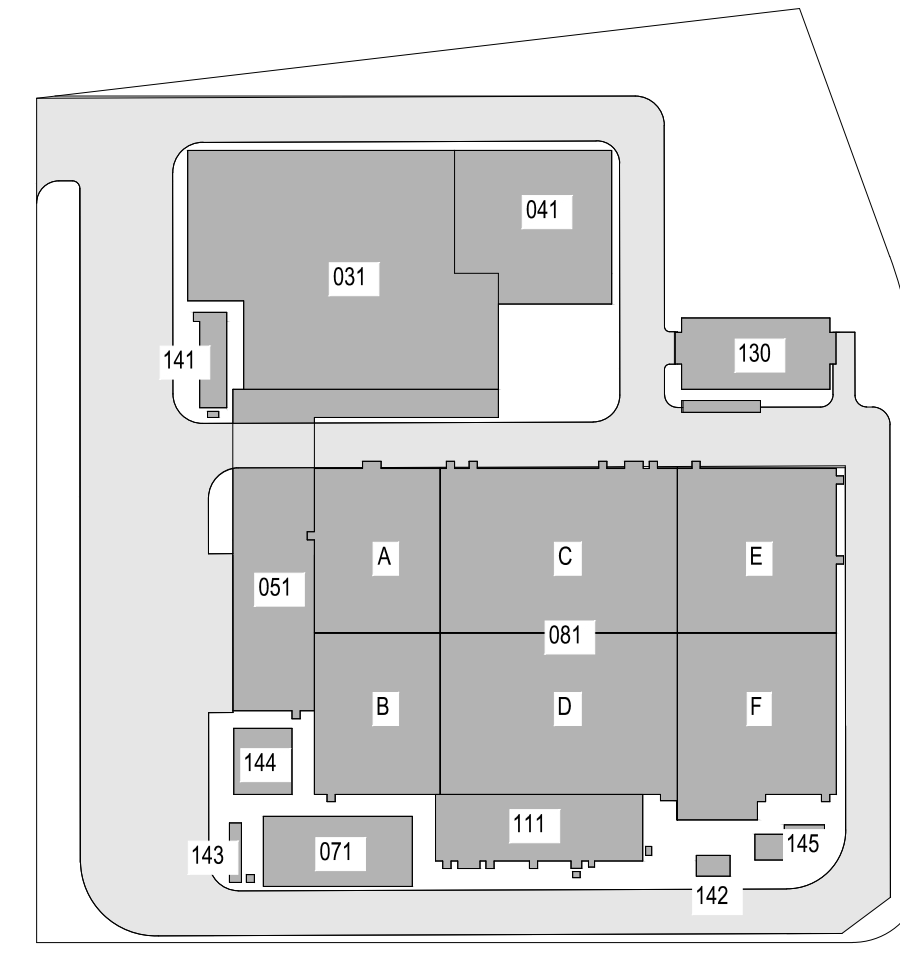


TURNING MOVEMENT
PLAN - HL 93 TRUCK
(ALTERNATIVE 1)

1
C-109.00 SCALE 1" = 30'

BOROUGH: QUEENS
BLOCK: 850, LOT: 1
OWNER: CONSOLIDATED EDISON
COMPANY OF NEW YORK, INC.

ISSUED FOR PERMIT



KEY PLAN
N.T.S. PLAN NORTH

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

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

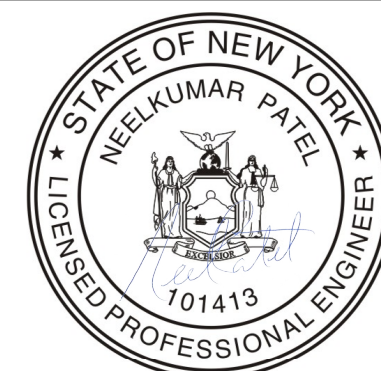
PROJECT

CHPE
Champlain Hudson
Power Express

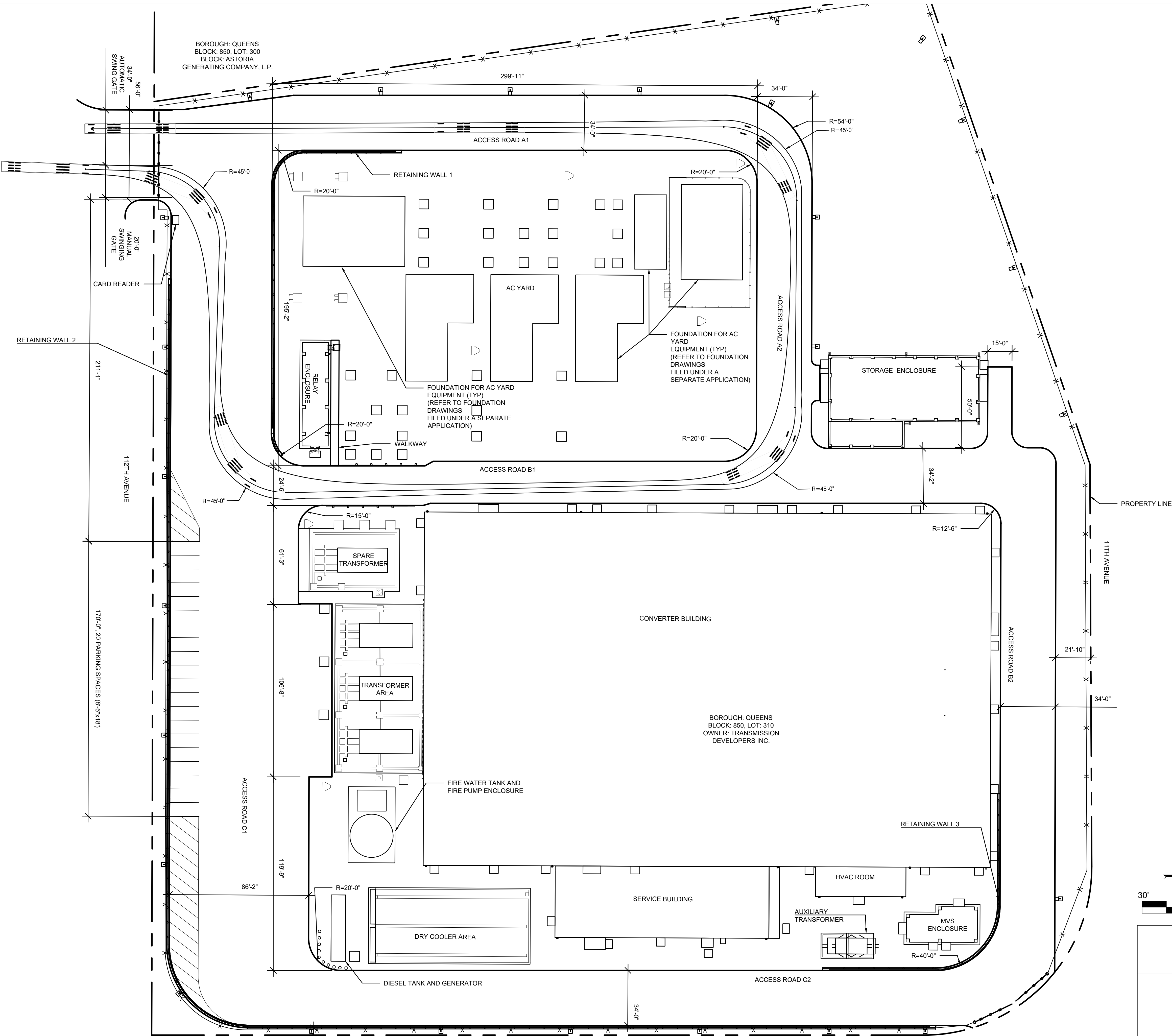
**Astoria HVDC
Converter Station**

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

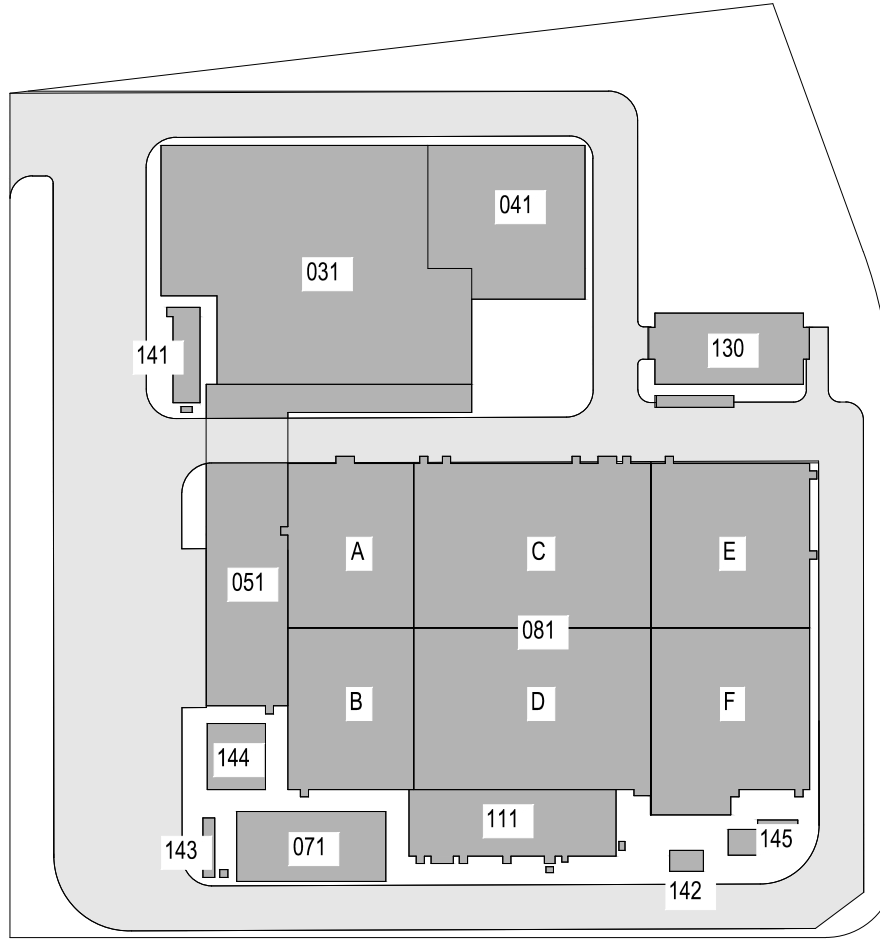
**TURNING MOVEMENT PLAN
HL-93 TRUCK (ALTERNATIVE 1)**



DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARAPU
CHECKED BY N. PATEL
DRAWING NO
C-109.00
CADD FILE NO 13 of 26



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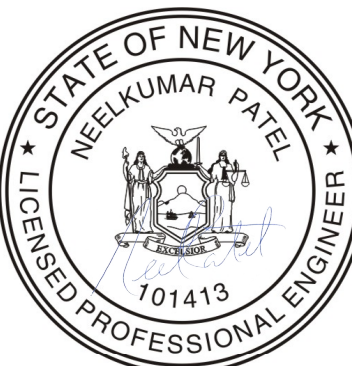
PROJECT

CHPE
Champlain Hudson
Power Express

Astoria HVDC
Converter Station

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Block #850 - Lot #310 - BIN #4624437

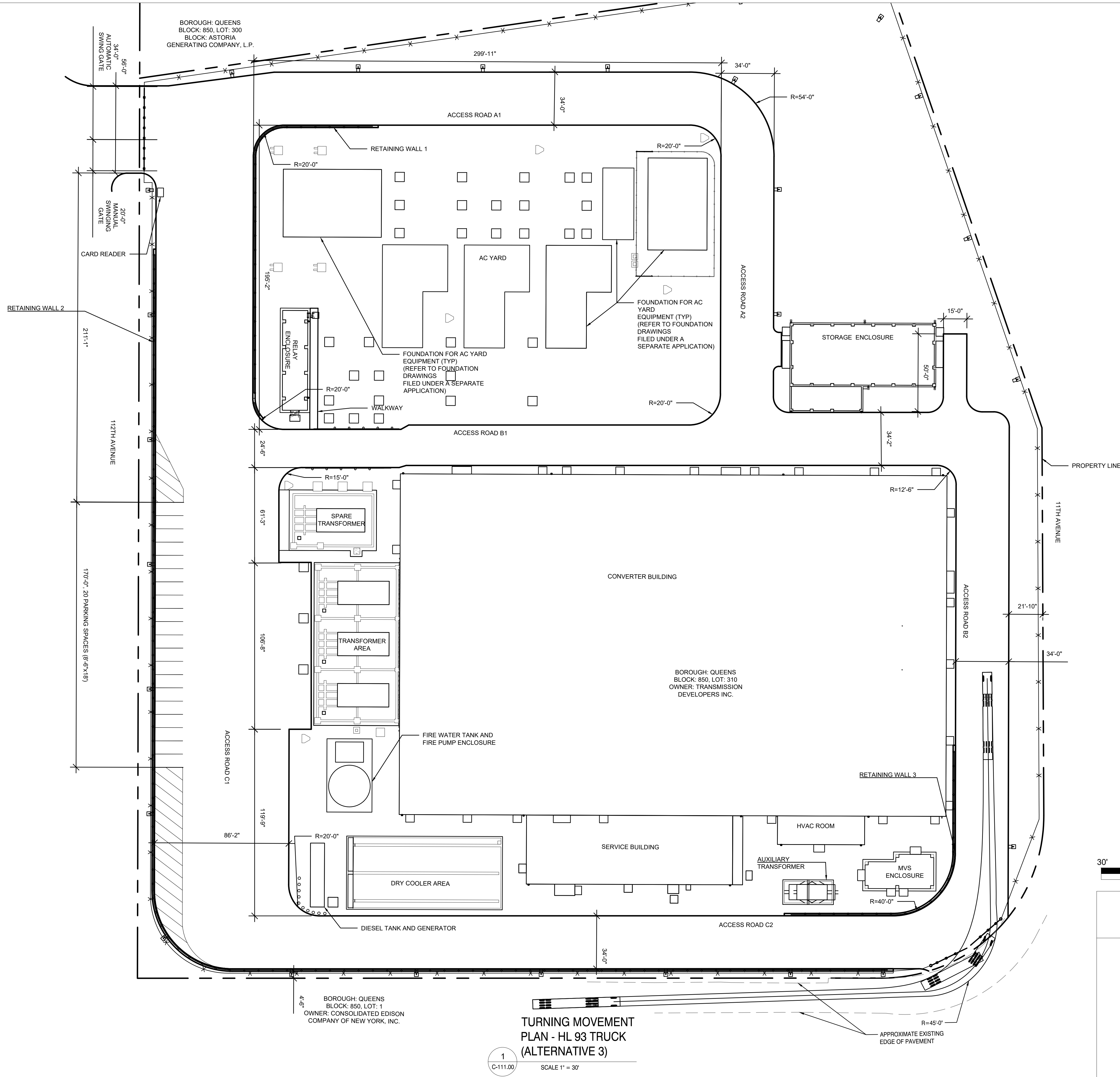
TURNING MOVEMENT PLAN
HL-93 TRUCK (ALTERNATIVE 2)



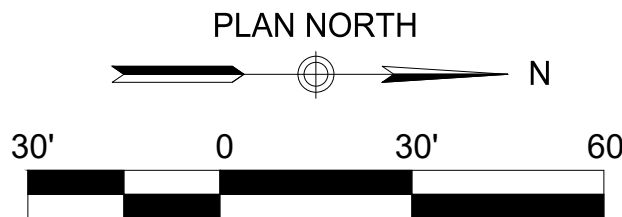
DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARAPU
CHECKED BY N. PATEL
DRAWING NO C-110.00
CADD FILE NO 14 of 26

TURNING MOVEMENT
PLAN - HL 93 TRUCK
(ALTERNATIVE 2)

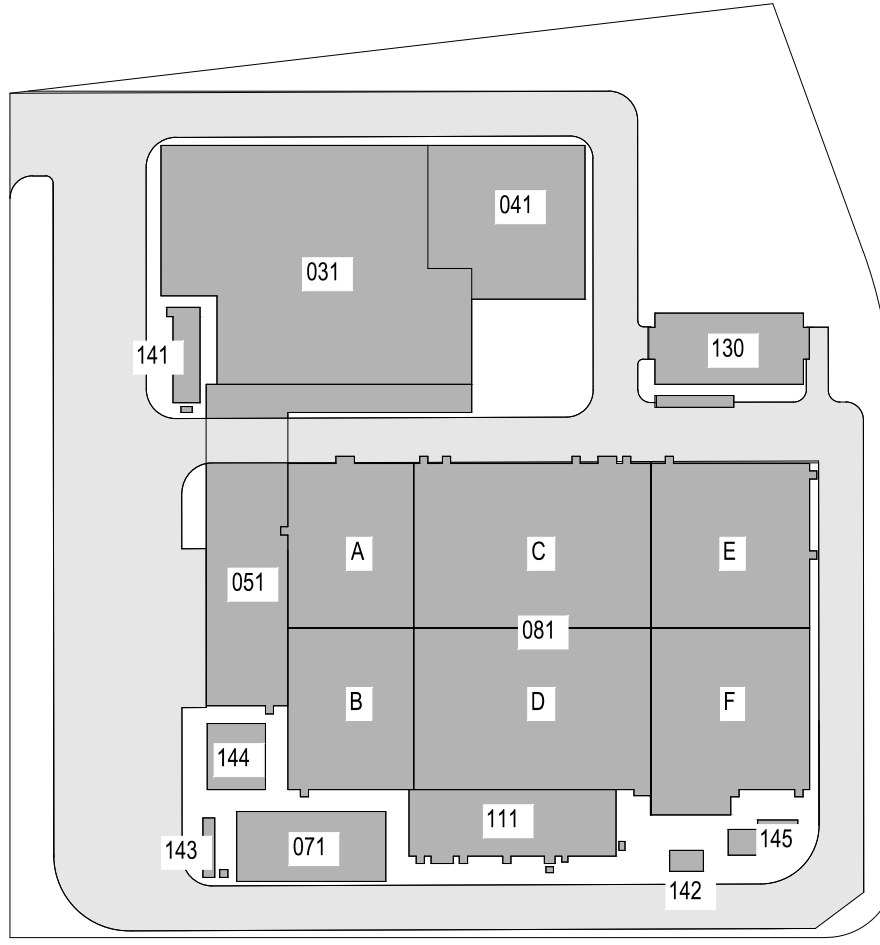
1
C-110.00
SCALE 1" = 30'



TURNING MOVEMENT
PLAN - HL 93 TRUCK
(ALTERNATIVE 3)



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470 Chestnut Ridge Rd # 2,
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Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

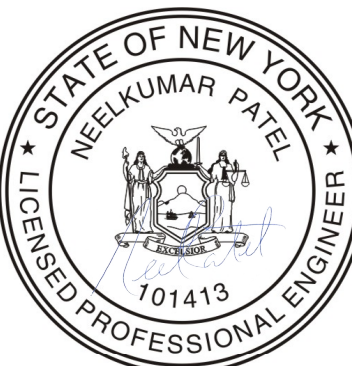
PROJECT

CHPE
Champlain Hudson
Power Express

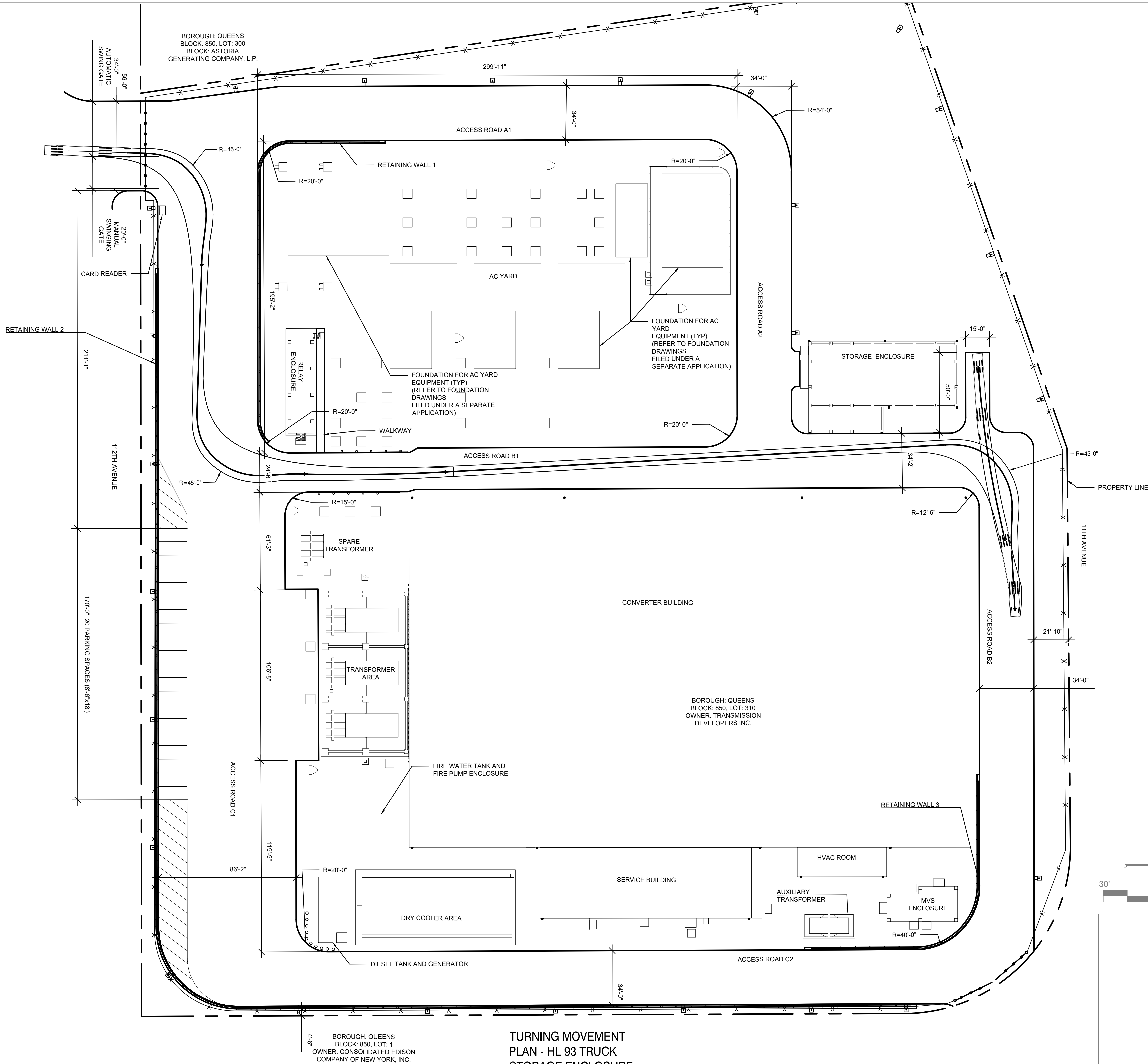
**Astoria HVDC
Converter Station**

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

**TURNING MOVEMENT PLAN
HL-93 TRUCK (ALTERNATIVE 3)**

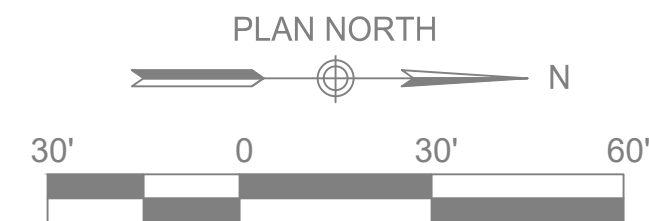


DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARAPU
CHECKED BY N. PATEL
DRAWING NO
C-111.00
CADD FILE NO 15 of 26

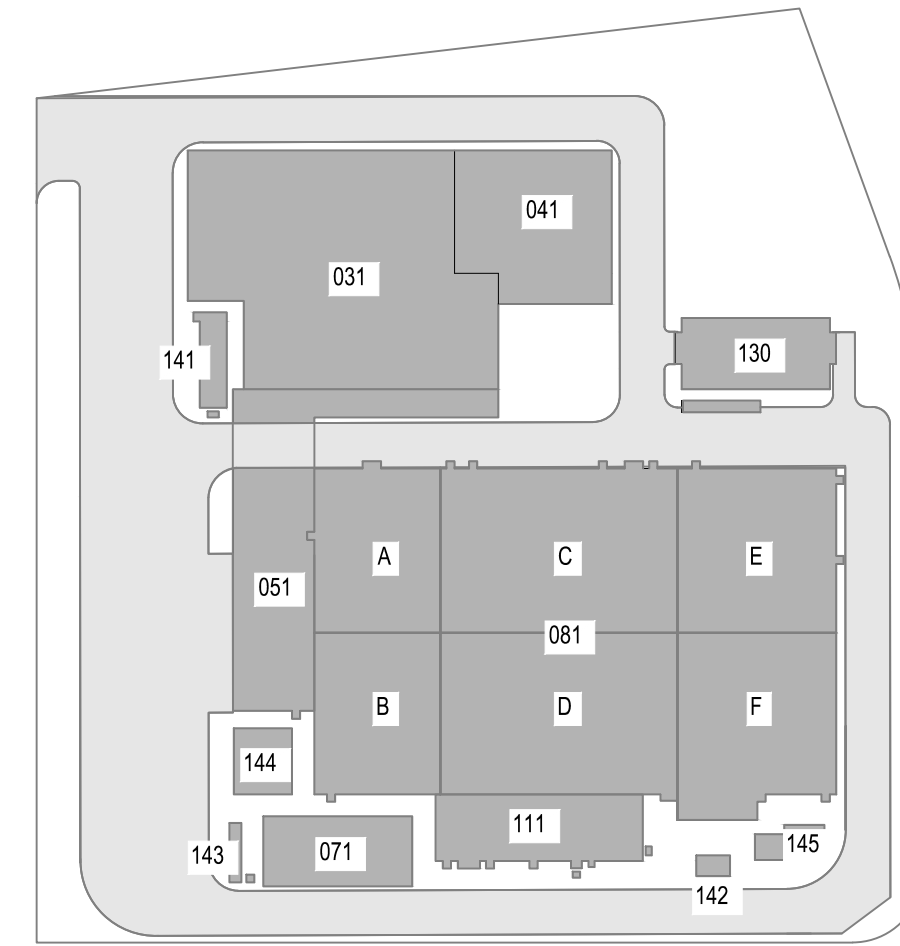


TURNING MOVEMENT
PLAN - HL 93 TRUCK
STORAGE ENCLOSURE
DRIVEWAY

1
C-112.00
SCALE 1" = 30'



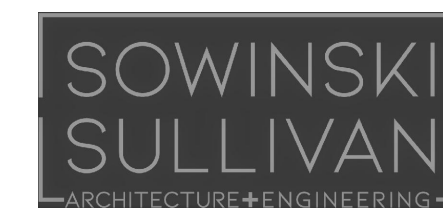
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N.T.S.
PLAN NORTH
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Sparta, NJ 07871

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B	FINAL SUBMISSION	AB	NP	11/8/22
A	INTERIM SUBMISSION	AB	NP	8/29/22
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



Astoria HVDC
Converter Station

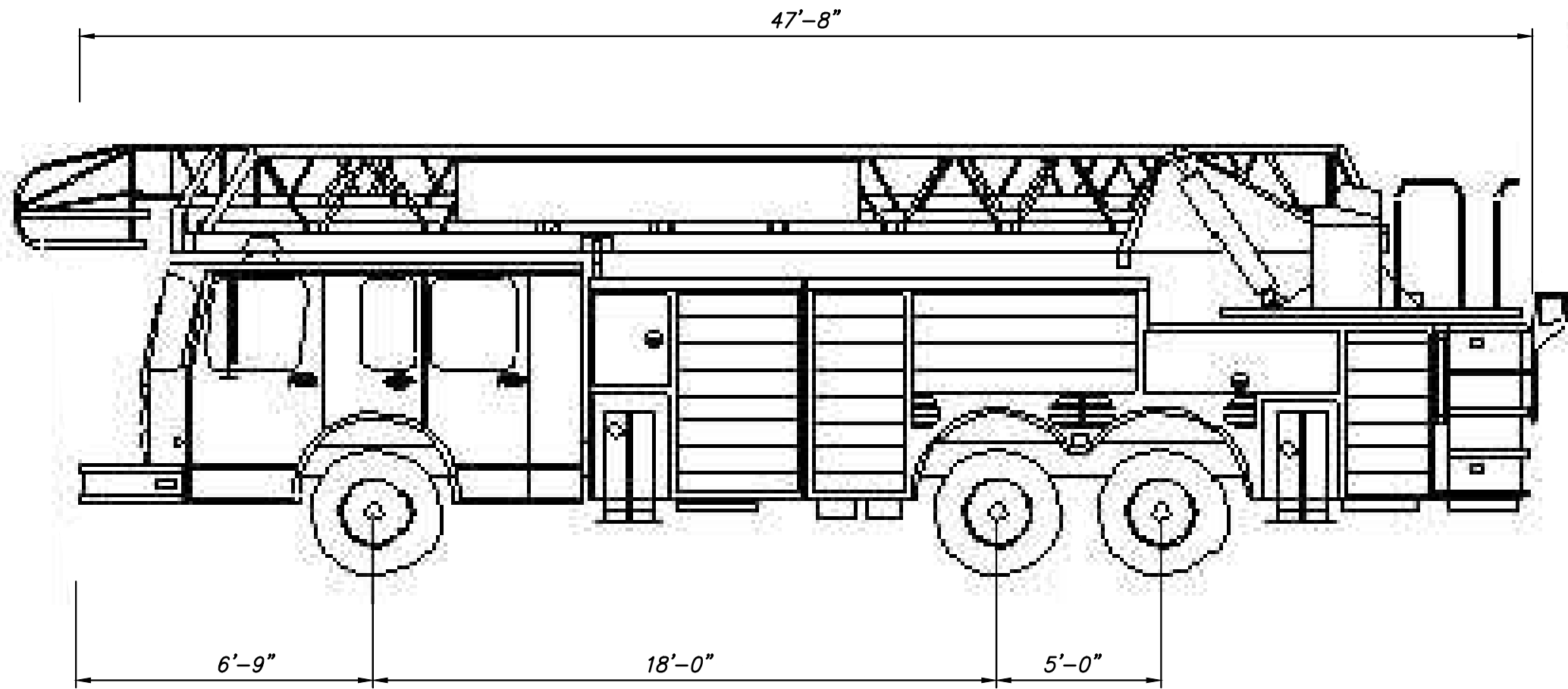
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TURNING MOVEMENT PLAN
HL 93 TRUCK STORAGE
ENCLOSURE DRIVEWAY

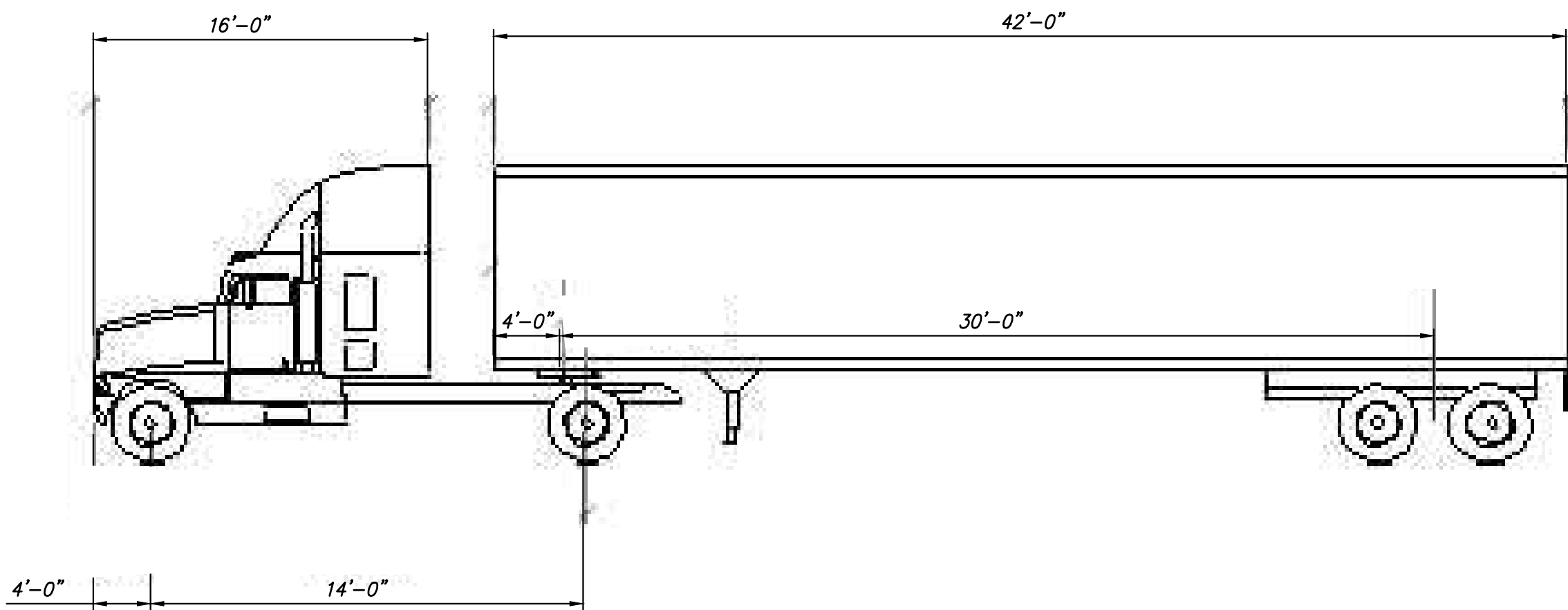


DATE	November 8, 2022
PROJECT NO	105121
DRAWING BY	A. BUDARAPU
CHECKED BY	N. PATEL
DRAWING NO	C-112.00
CADD FILE NO	16 of 26

NOTE:
1. ALL DIMENSIONS IN FEET.



1
C-113.00
FDNY SEAGRAVE FIRE TRUCK
NOT TO SCALE



2
C-113.00
AASHTO HL-93 TRUCK
NOT TO SCALE

ISSUED FOR PERMIT

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

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

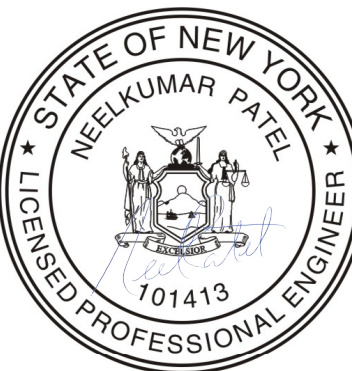
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

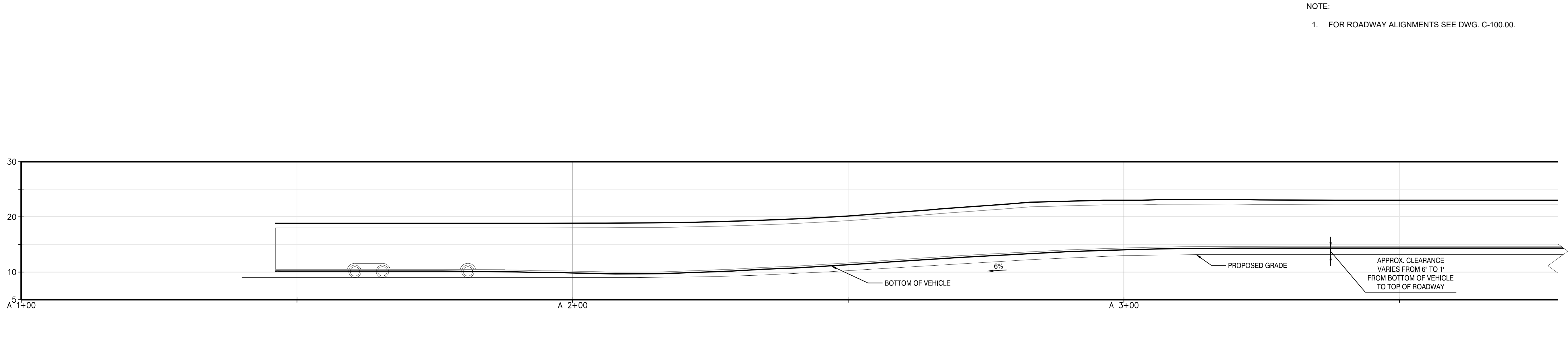
**Astoria HVDC
Converter Station**

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

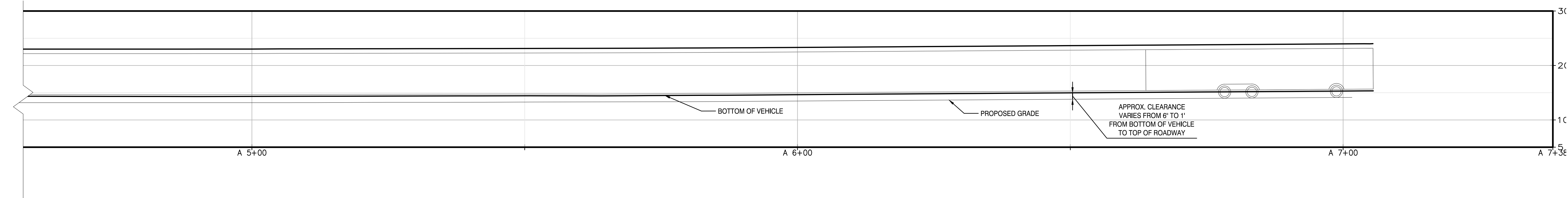
TURNING MOVEMENT
VEHICLE DETAILS



DATE November 8, 2022
PROJECT NO 105121
DRAWING BY A. BUDARAPU
CHECKED BY N. PATEL
DRAWING NO
C-113.00
CADD FILE NO
17 of 26



1 ACCESS ROAD A1 VERTICAL PROFILE - FDNY FIRE TRUCK
C-114.00 / SCALE 1" = 10'



2 ACCESS ROAD A2 VERTICAL PROFILE - FDNY FIRE TRUCK
C-114.00 / SCALE 1" = 10'

Ground Clearance (units: ft)			
Part #	Front	Wheelbase	Rear
#1	1.50	1.50	1.50



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SUITE 1604
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REV	DESCRIPTION	DRW BY	CHK BY	DATE
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A	INTERIM SUBMISSION	AB	NP	08/29/22

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**

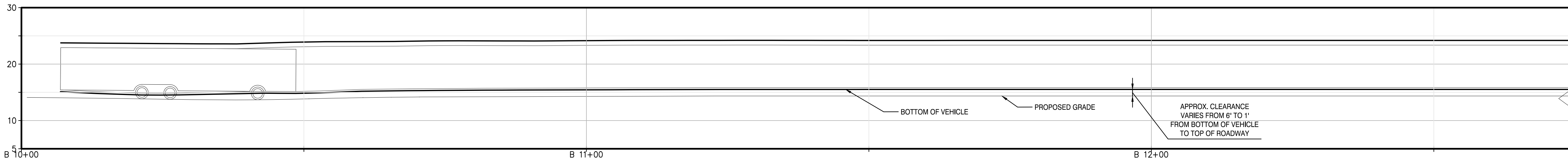
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TURNING MOVEMENT
VERTICAL PROFILE
FDNY SEAGRAVE TRUCK

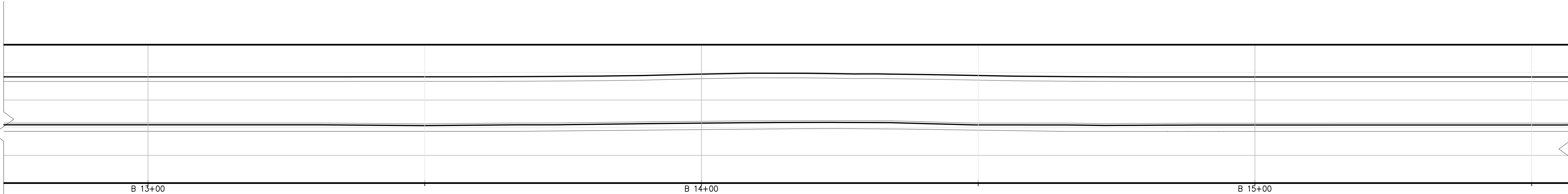


DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A. BUDARAPU
CHECKED BY: N. PATEL
DRAWING NO:
C-114.00
CADD FILE NO:
18 of 26

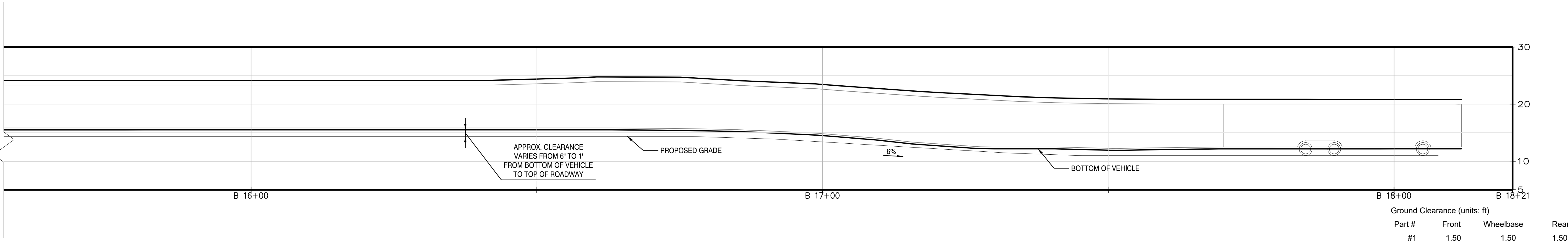
NOTE:
1. FOR ROADWAY ALIGNMENTS SEE DWG. C-100.00.



1 ACCESS ROAD B1 VERTICAL PROFILE - FDNY FIRE TRUCK
C-115.00 / SCALE 1" = 10'



2 ACCESS ROAD B1/B2 VERTICAL PROFILE - FDNY FIRE TRUCK
C-115.00 / SCALE 1" = 10'



3 ACCESS ROAD B2 VERTICAL PROFILE - FDNY FIRE TRUCK
C-115.00 / SCALE 1" = 10'



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A	INTERIM SUBMISSION	AB	NP	08/29/22

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

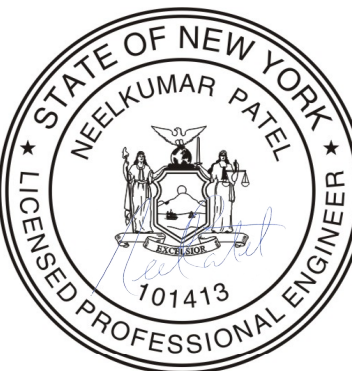
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

Astoria HVDC
Converter Station

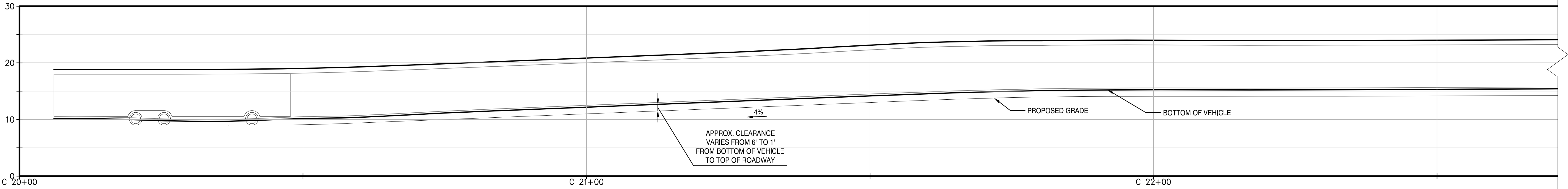
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TURNING MOVEMENT
VERTICAL PROFILE
FDNY SEAGRAVE TRUCK

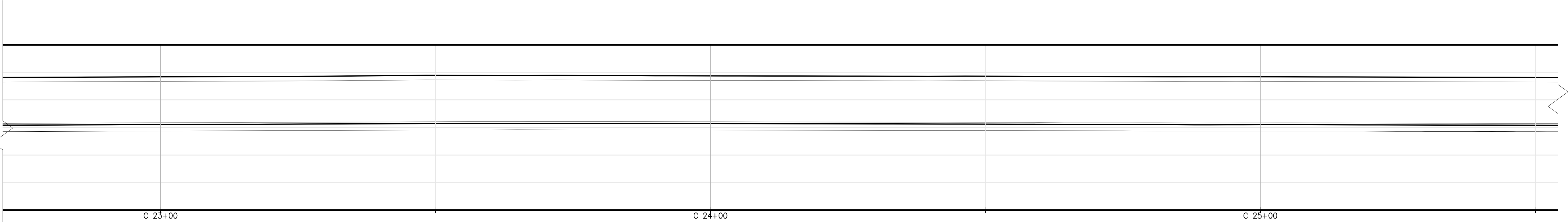


DATE NOVEMBER 8, 2022
PROJECT NO 105121
DRAWING BY A.BUDARAPU
CHECKED BY N.PATEL
DRAWING NO
C-115.00
CADD FILE NO
19 of 26

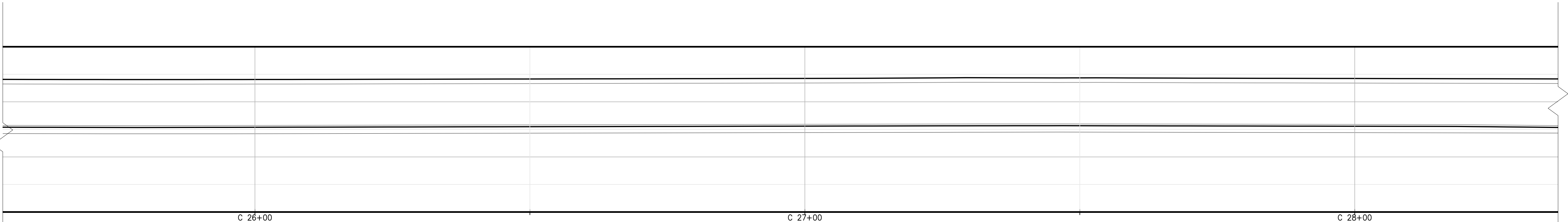
NOTE:
1. FOR ROADWAY ALIGNMENTS SEE DWG. C-100.00.



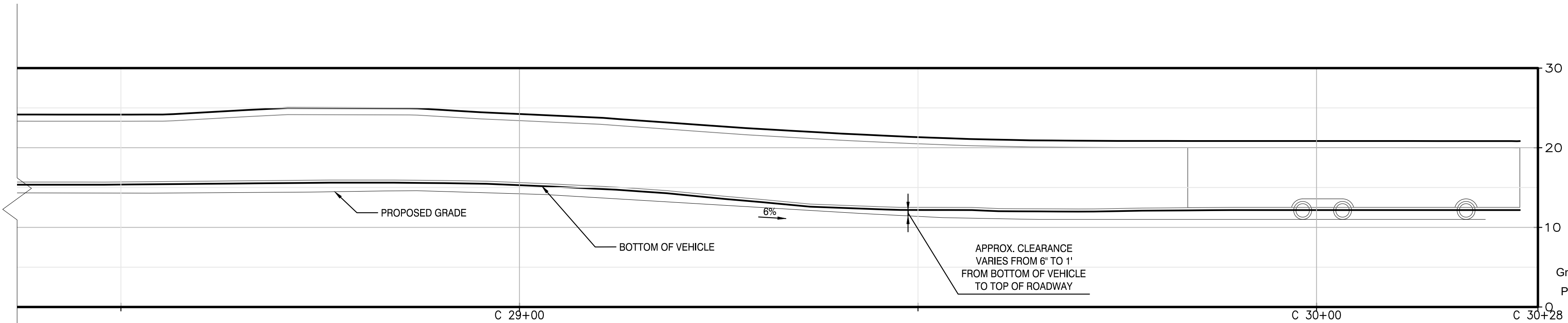
1 ACCESS ROAD C1 VERTICAL PROFILE - FDNY FIRE TRUCK
C-116.00 SCALE 1" = 10'



2 ACCESS ROAD C1 VERTICAL PROFILE - FDNY FIRE TRUCK
C-116.00 SCALE 1" = 10'



3 ACCESS ROAD C2 VERTICAL PROFILE - FDNY FIRE TRUCK
C-116.00 SCALE 1" = 10'



4 ACCESS ROAD C2 VERTICAL PROFILE - FDNY FIRE TRUCK
C-116.00 SCALE 1" = 10'

Ground Clearance (units: ft)			
Part #	Front	Wheelbase	Rear
#1	1.50	1.50	1.50



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New York, NY 10001

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Sparta, NJ 07871

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A	INTERIM SUBMISSION	AB	NP	08/29/22

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

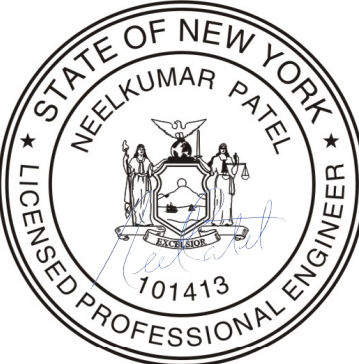
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

Astoria HVDC Converter Station

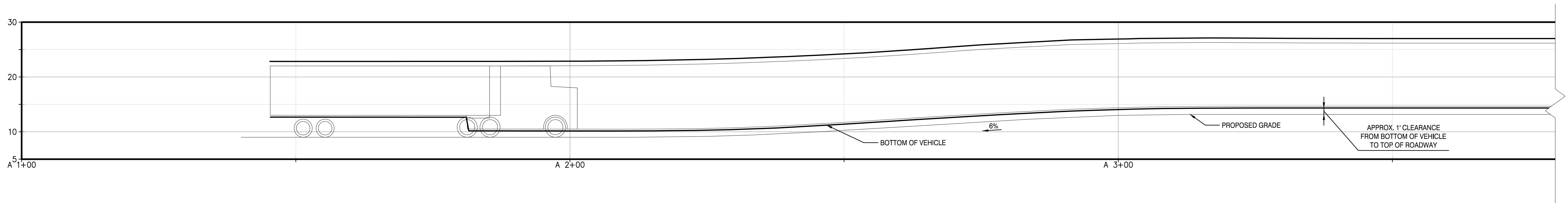
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TURNING MOVEMENT
VERTICAL PROFILE
FDNY SEAGRAVE TRUCK

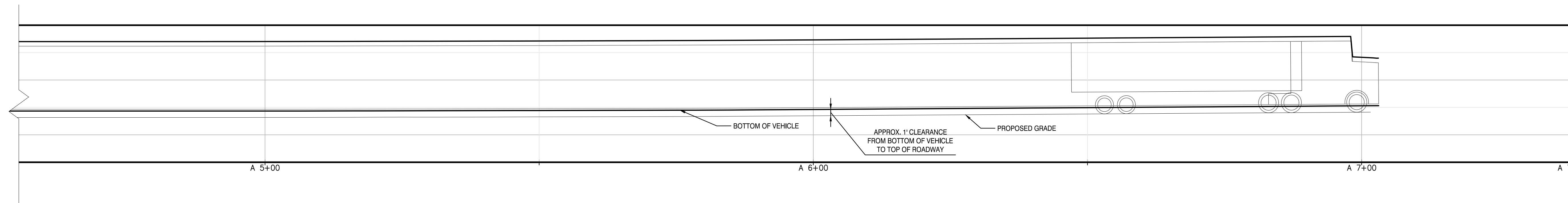


DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A.BUDARAPU
CHECKED BY: N.PATEL
DRAWING NO: **C-116.00**
CADD FILE NO: 20 of 26

NOTE:
1. FOR ROADWAY ALIGNMENTS SEE DWG. C-100.00.



1 ACCESS ROAD A1 VERTICAL PROFILE - HL 93 TRUCK
C-117.00 / SCALE 1" = 10'



2 ACCESS ROAD A2 VERTICAL PROFILE - HL 93 TRUCK
C-117.00 / SCALE 1" = 10'

Ground Clearance (units: ft)			
Part #	Front	Wheelbase	Rear
#1	1.50	1.50	0.75
#2	0.75	4.00	4.00



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A	INTERIM SUBMISSION	AB	NP	08/29/22

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

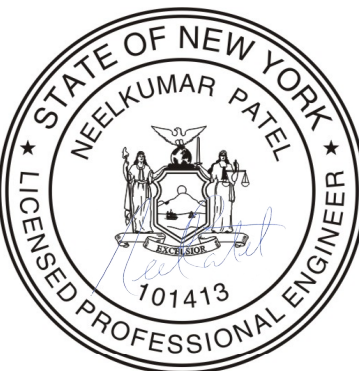
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

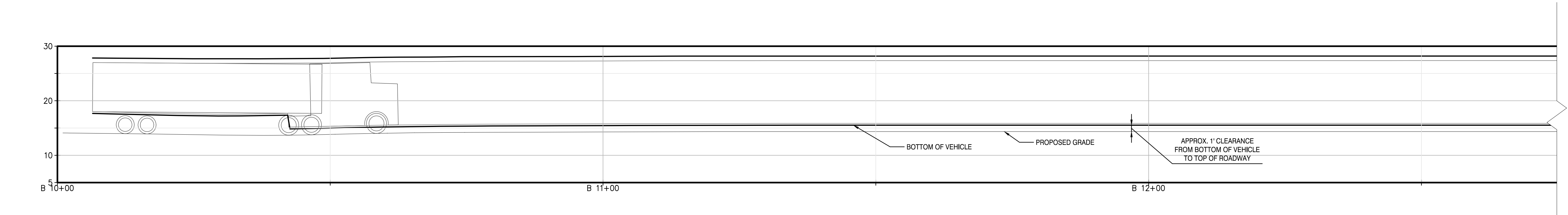
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TURNING MOVEMENT
VERTICAL PROFILE
HL-93 TRUCK

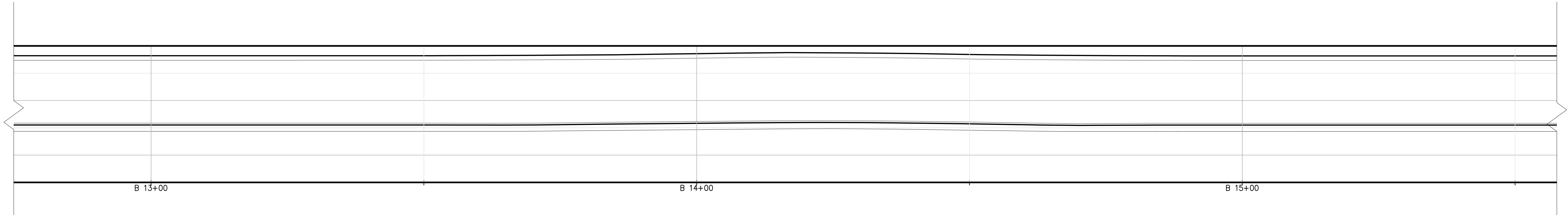


DATE NOVEMBER 8, 2022
PROJECT NO 105121
DRAWING BY A.BUDARAPU
CHECKED BY N.PATEL
DRAWING NO
C-117.00
CADD FILE NO 21 of 26

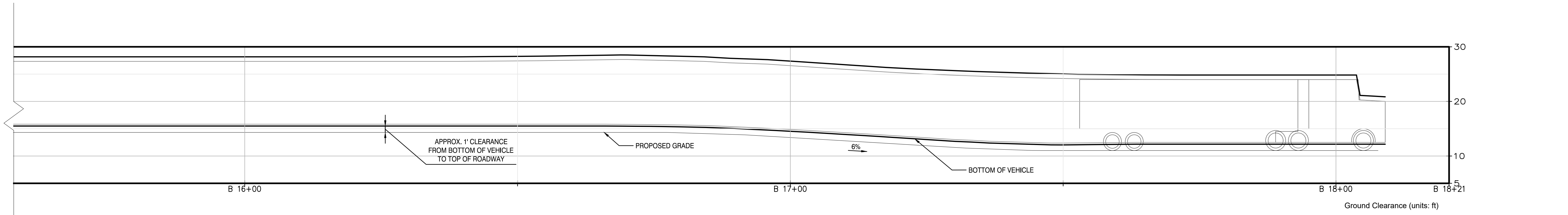
NOTE:
1. FOR ROADWAY ALIGNMENTS SEE DWG. C-100.00.



1 ACCESS ROAD B1 VERTICAL PROFILE - HL 93 TRUCK
C-118.00 / SCALE 1" = 10'



2 ACCESS ROAD B1/B2 VERTICAL PROFILE - HL 93 TRUCK
C-118.00 / SCALE 1" = 10'



3 ACCESS ROAD B2 VERTICAL PROFILE - HL 93 TRUCK
C-118.00 / SCALE 1" = 10'

Ground Clearance (units: ft)			
Part #	Front	Wheelbase	Rear
#1	1.50	1.50	0.75
#2	0.75	4.00	4.00



ISSUED FOR PERMIT

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

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

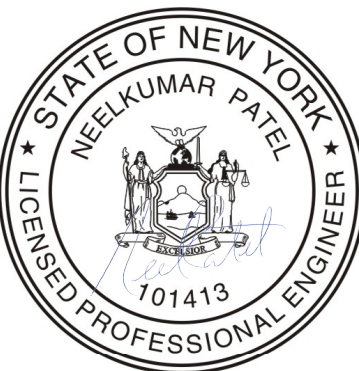
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

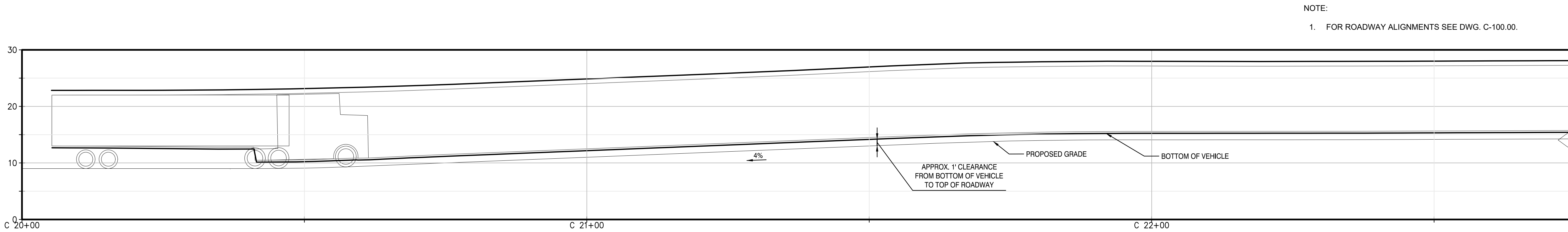
**Astoria HVDC
Converter Station**

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

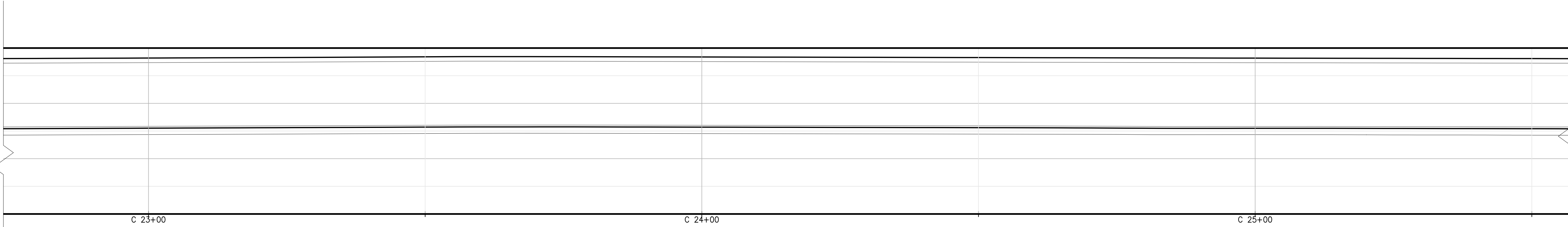
TURNING MOVEMENT
VERTICAL PROFILE
HL-93 TRUCK



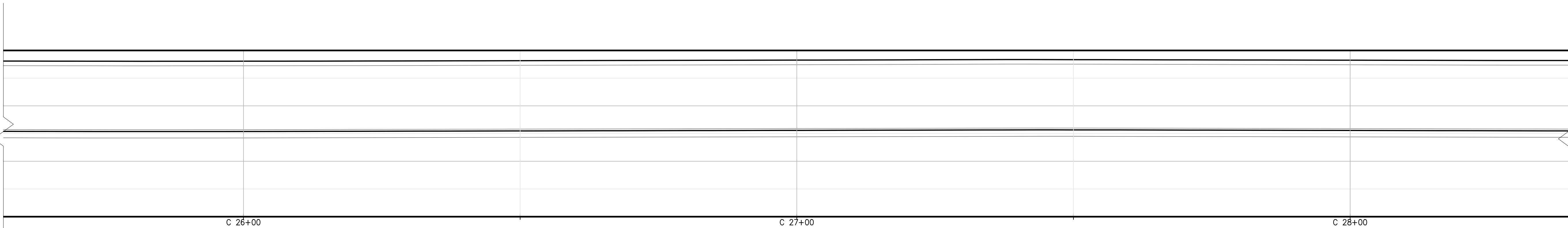
DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A.BUDARAPU
CHECKED BY: N.PATEL
DRAWING NO: **C-118.00**
CADD FILE NO: 22 of 26



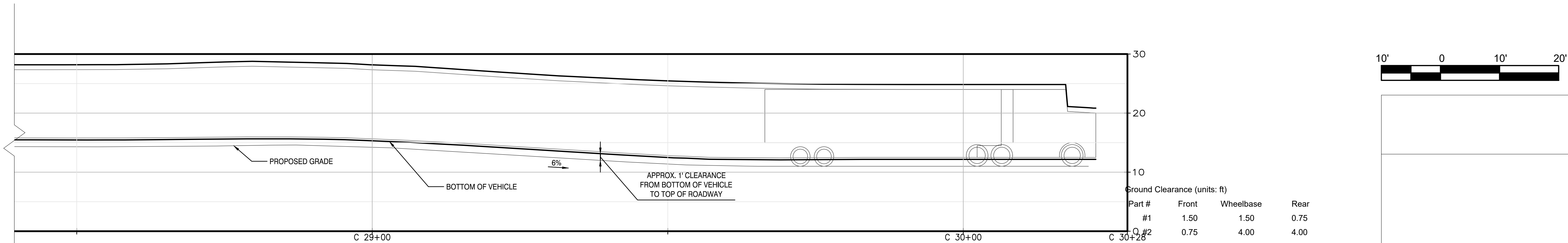
1 ACCESS ROAD C1 VERTICAL PROFILE - HL 93 TRUCK
C-119.00 / SCALE 1" = 10'



2 ACCESS ROAD C1 VERTICAL PROFILE - HL 93 TRUCK
C-119.00 / SCALE 1" = 10'



3 ACCESS ROAD C2 VERTICAL PROFILE - HL 93 TRUCK
C-119.00 / SCALE 1" = 10'



4 ACCESS ROAD C2 VERTICAL PROFILE - HL 93 TRUCK
C-119.00 / SCALE 1" = 10'

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Land Surveying, P.C.**
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New York, NY 10001

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

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

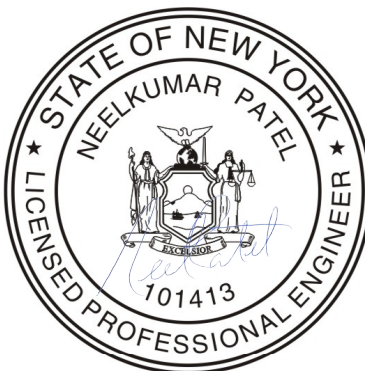
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
Power Express

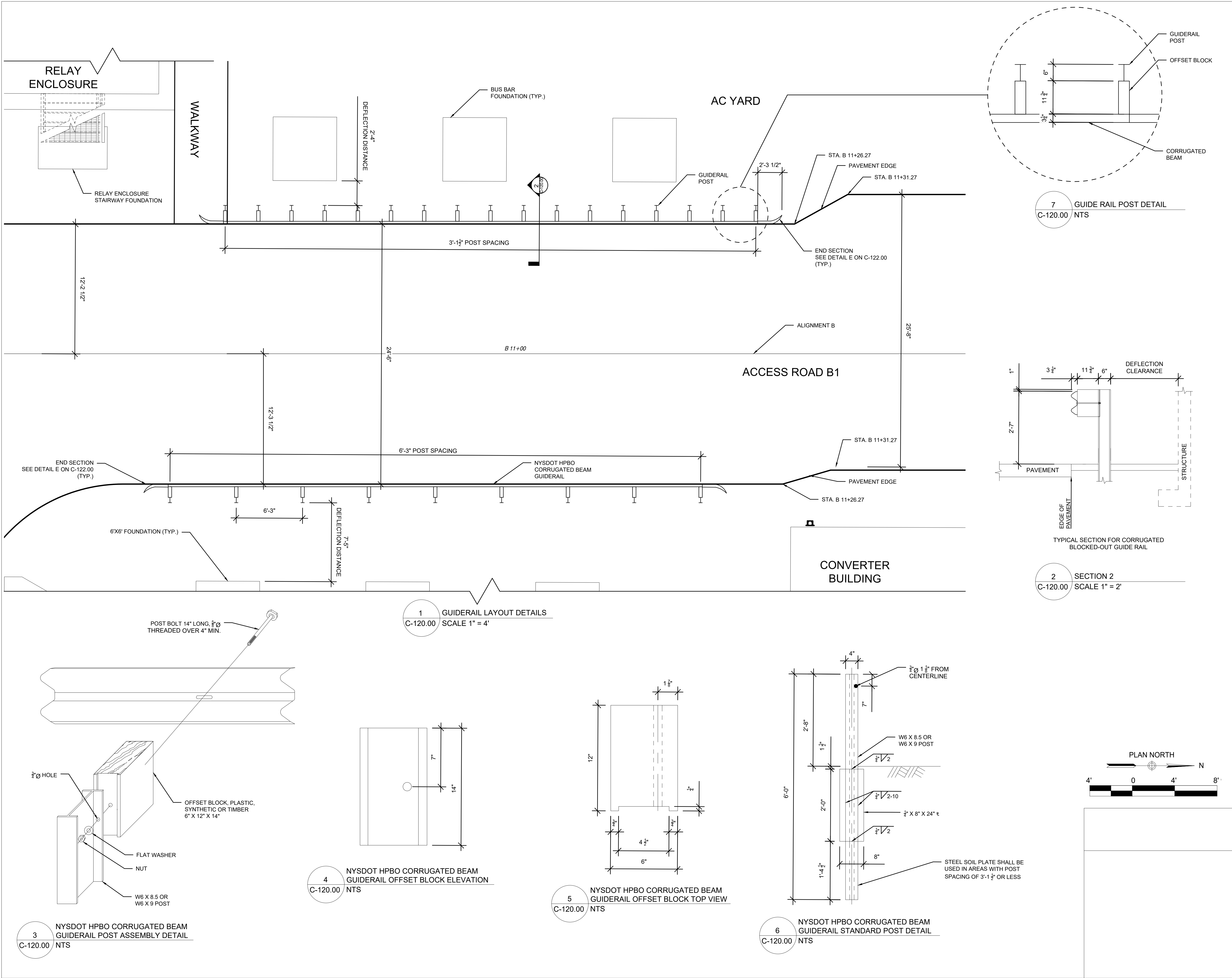
**Astoria HVDC
Converter Station**

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

**TURNING MOVEMENT
VERTICAL PROFILE
HL-93 TRUCK**



DATE NOVEMBER 8, 2022
PROJECT NO 105121
DRAWING BY A.BUDARAPU
CHECKED BY N.PATEL
DRAWING NO
C-119.00
CADD FILE NO 23 of 26



ISSUED FOR PERMIT

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370 7th Avenue
SUITE 1604
New York, NY 10001

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25 Mohawk Avenue
Sparta, NJ 07871

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A	FINAL SUBMISSION	AY	NP	11/8/2022

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

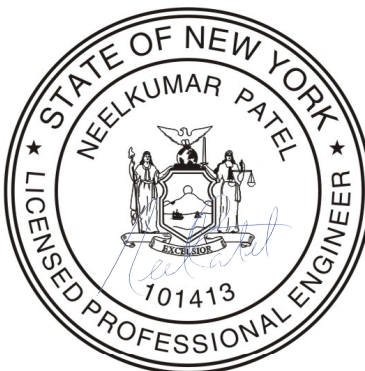
Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

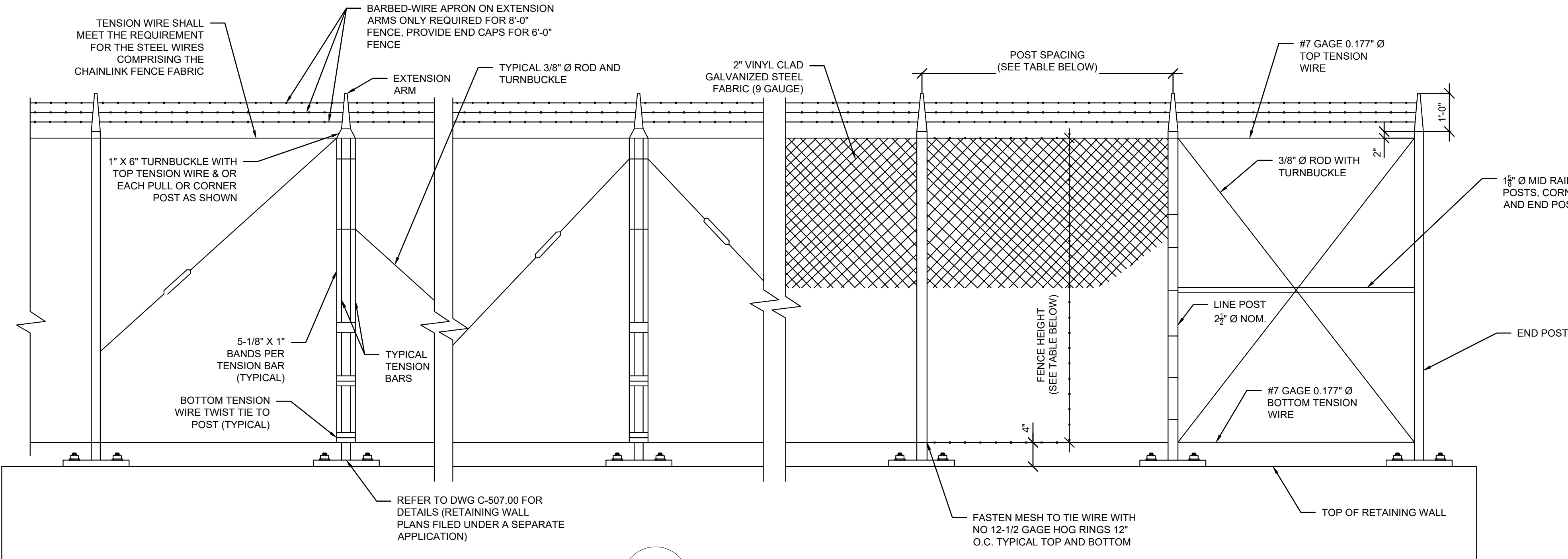
CHPE
Champlain Hudson
Power Express

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

GUIDE RAIL LAYOUT
DETAILS



DATE: NOVEMBER 8, 2022
PROJECT NO: 105121
DRAWING BY: A. YOUSEF
CHECKED BY: N. PATEL
DRAWING NO: **C-120.00**
CADD FILE NO: 24 of 26

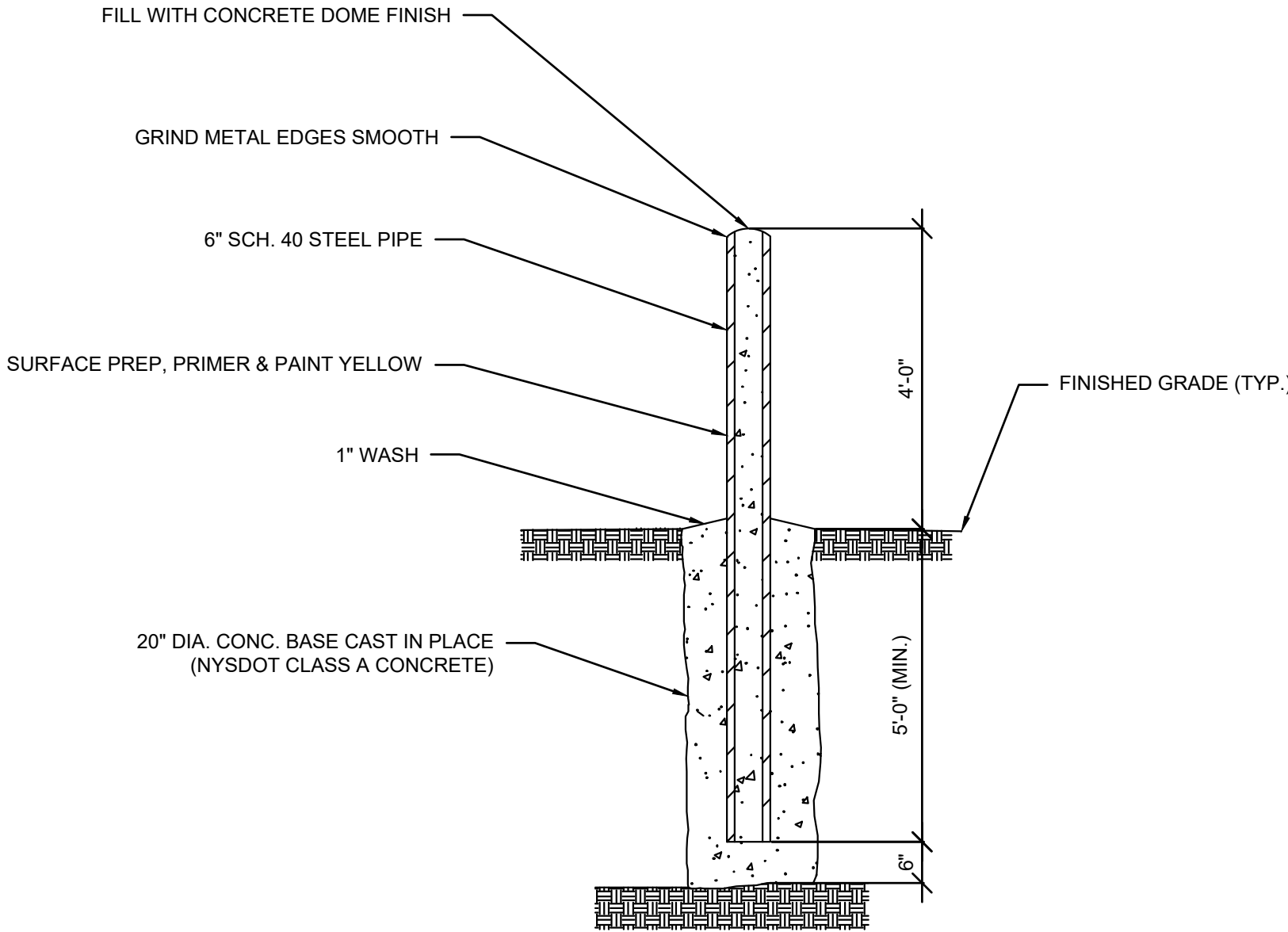


- NOTES:
1. THE TENSION WIRE SHALL BE SECURED AT THE TOP WITH A TWO-WAY CLAMP AT EACH SEVENTH POST FOR 6'-0" HIGH OR AT EACH FIFTH POST FOR 8'-0" HIGH FENCING SO THAT THE MAX. UNITED SPAN OF TENSION WIRE DOES NOT EXCEED 36'-0" FOR 6'-0" HIGH OR 32'-0" FOR 8'-0" HIGH FENCE. WHEREAS, IF THE TOTAL LENGTH OF DAMAGED FABRIC TO BE REPLACED IS LESS THAN 16'-0", NO TENSION WIRE SHALL BE INSTALLED, BUT THE DAMAGED TOP RAIL SHALL BE REPLACED WITH NEW TOP RAIL. NEW TENSION WIRES SHALL BE INSTALLED ONLY WHEN DAMAGES TO TOP OR BOTTOM RAILS HAVE BEEN INCURRED AND REPLACEMENT IS NECESSARY.
 2. CORNER POSTS SHALL BE USED AT SHARP BREAKS IN VERTICAL GRADE AND CHANGES IN HORIZONTAL ALIGNMENT OF 15' AND OVER. INTERMEDIATE PULL POSTS SHALL BE INSTALLED ALONG TANGENT FENCE RUNS AND SHALL BE SPACED AT INTERVALS NOT EXCEEDING 180'.
 3. ALL FABRICATION AND INSTALLATION DETAILS OF THIS FENCING ARE SHOWN ON THE CONTRACT PLANS. ANY PROPOSED CHANGES BY THE CONTRACTOR SHALL BE SUBMITTED IN WRITING, EXPLAINING THE REASON FOR SUCH REQUESTED CHANGE AND SUPPLEMENTED BY CLEAR SHOP DRAWINGS DEFINING THE CONTRACTORS PROPOSAL.
 4. LAYOUT OF CHAIN LINK FENCE POST LOCATIONS SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE INTENT OF THE CONTRACT PLANS. ALL SUCH LAYOUT SHALL BE CHECKED AND APPROVED BY THE ENGINEER PRIOR TO ERECTION OF FENCE.
 5. THE FENCE SHALL BE CAREFULLY ALIGNED TO A UNIFORM GRADE BY THE CONTRACTOR. BEFORE THE POSTS ARE PERMANENTLY AFFIXED, THE ENGINEER SHALL INSPECT THE LINE AND GRADE. ORDER ANY NECESSARY ADJUSTMENTS AND APPROVE THE FINAL ALIGNMENT IN THAT SECTION OF FENCING.

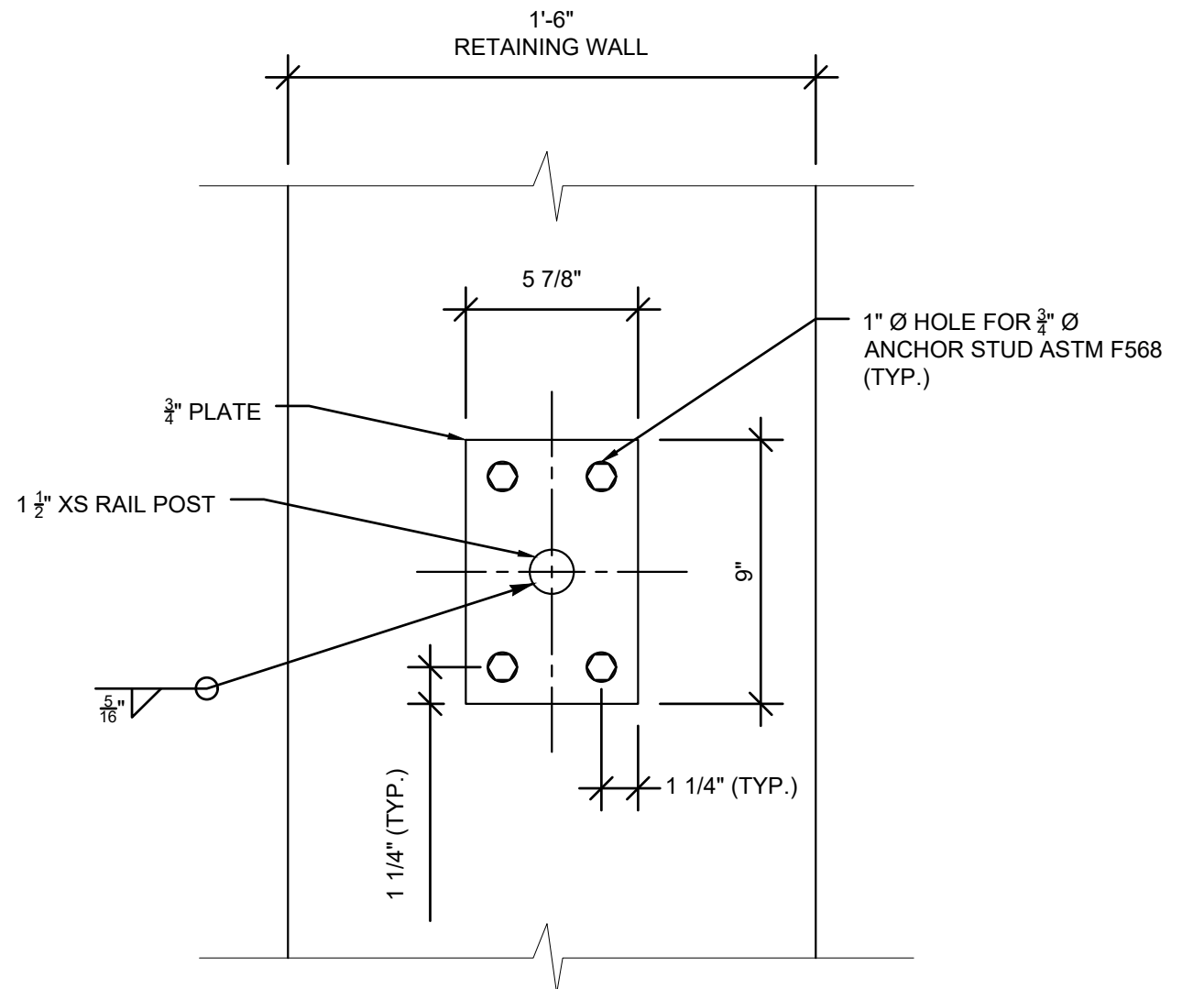
1 RETAINING WALL FENCE DETAIL
C-121.00 / N.T.S.

SCHEDULE OF SIZES OF MEMBERS - AS PER ASTM A53, ALL SIZES NPS

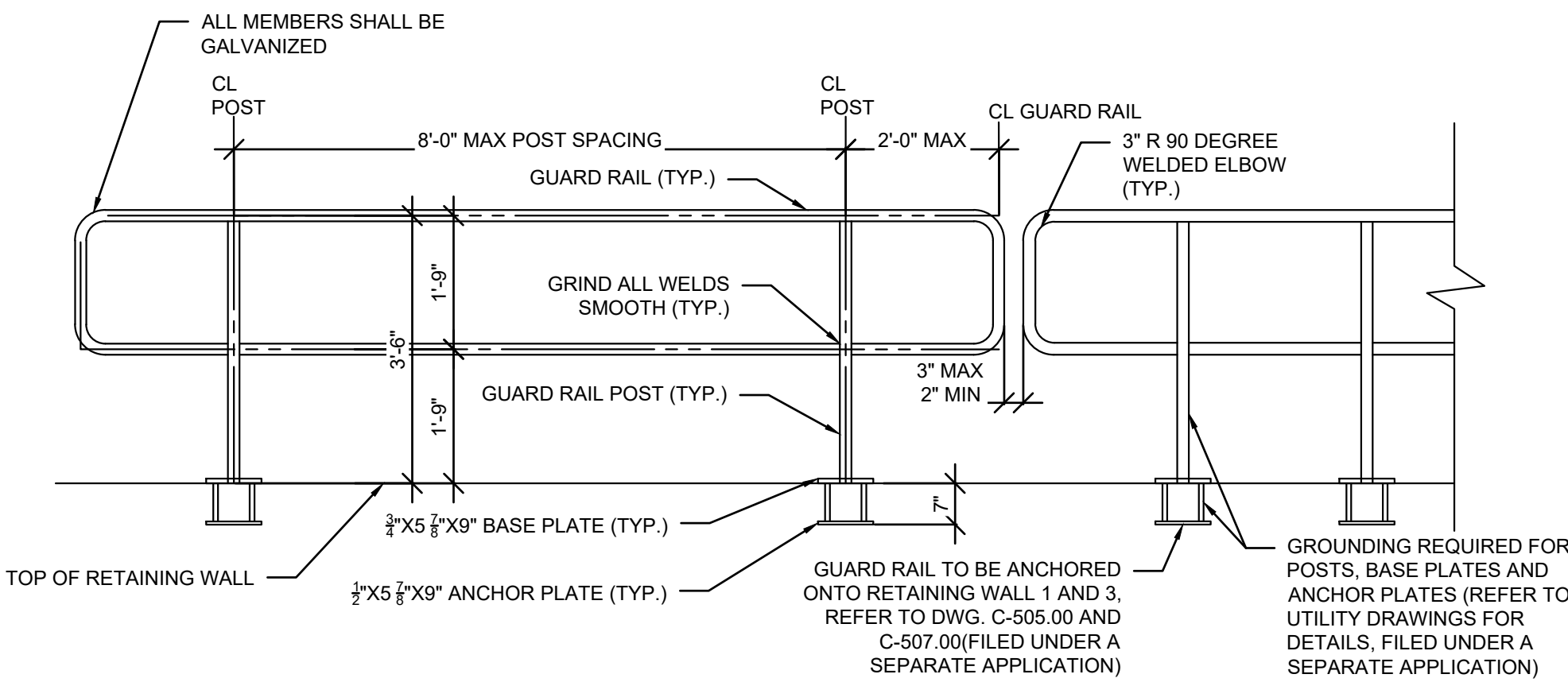
HEIGHT OF FENCE	DIAMETER OF LINE POSTS	POST SPACING MAXIMUM	CORNER END POST	TOP RAIL	MID RAILS	BOTTOM RAIL	DEPTH OF POST INTO CURB AND FTG AT:		HORIZONTAL BRACES AT CORNER & END POST	DIAGONAL BRACES
							LINE POST	END/CORNER /GATE POST		
6'-0"	2"	6'-0"	2 1/2"	1 5/8"	0	1 5/8"	1'-8"	1'-8"	0	1/2" DIA.
8'-0"	2 1/2"	8'-0"	3"	1 5/8"	0	1 5/8"	1'-8"	1'-8"	1 AT 1 5/8"	1/2" DIA.



2 BOLLARD DETAIL
C-121.00 / N.T.S.



4 GUARD RAIL BASE PLATE
C-121.00 / N.T.S.

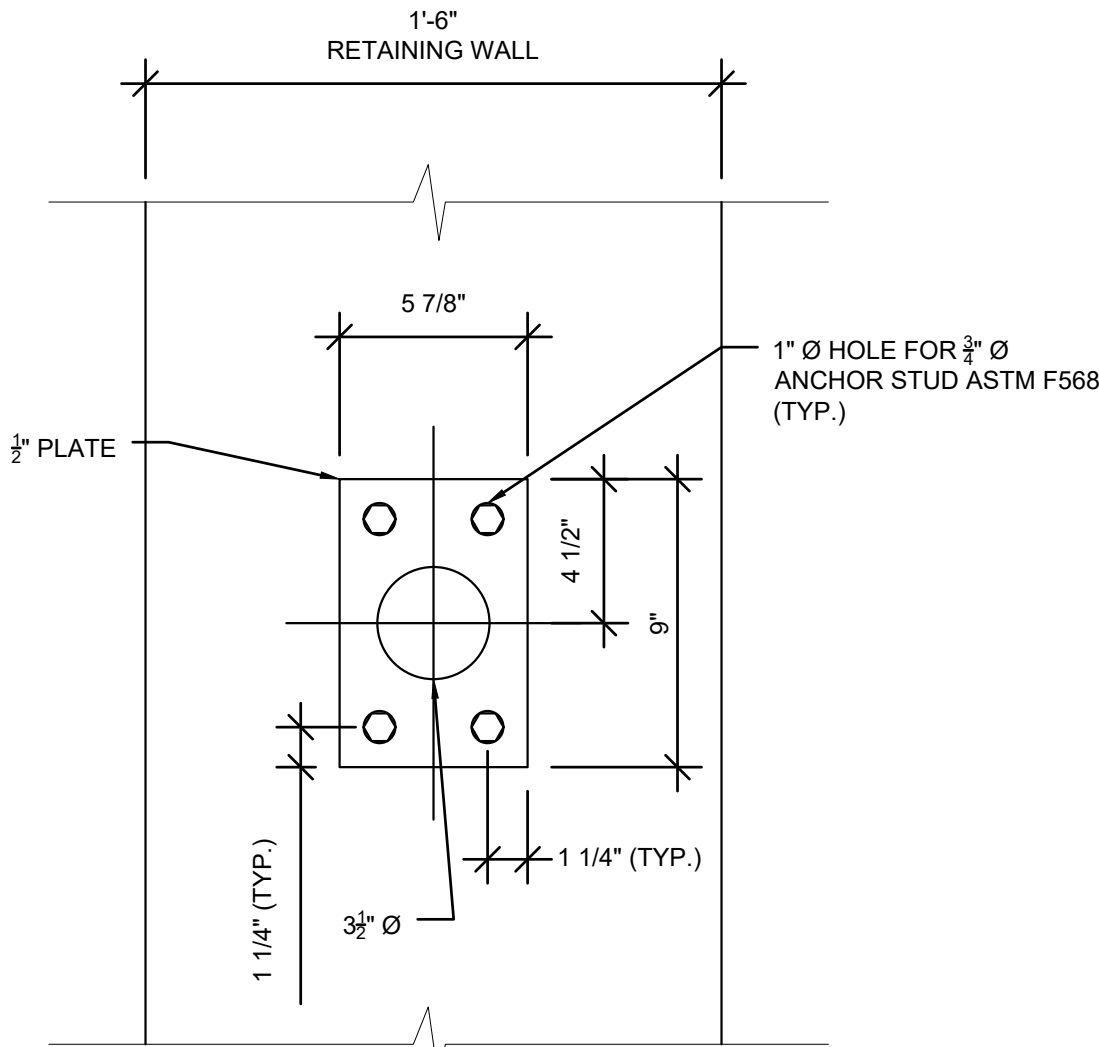


3 GUARD RAIL DETAIL
C-121.00 / N.T.S.

GUARD RAIL NOTES

GUARD RAIL MEMBERS SHALL BE THE MATERIAL AND SIZE SHOWN BELOW FOR THE RESPECTIVE TYPE IN ORDER OF PREFERENCE:

- a. POST
- PIPE 1-1/2XS.....ASTM A53 GRADE B, TYPE E OR S
 - HSS1.900X0.188.....ASTM A1085 OR ASTM A500 GRADE B/C
- a. SLEEVES
- PIPE 2STD.....ASTM A53 GRADE B, TYPE E OR S
 - HSS2.375X0.154.....ASTM A1085 OR ASTM A500 GRADE B/C
- b. OTHER MEMBERS
- PIPE1-1/2STD.....ASTM A53 GRADE B, TYPE E OR S
 - HSS1.900X0.145.....ASTM A1085 OR ASTM A500 GRADE B/C



5 GUARD RAIL ANCHOR PLATE
C-121.00 / N.T.S.

ISSUED FOR PERMIT

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	AY	NP	11/8/2022
A	INTERIM SUBMISSION	AY	NP	9/12/2022
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

FENCE, GUARD RAIL, AND
BOLLARD DETAILS



DATE NOVEMBER 8, 2022
PROJECT NO 105121
DRAWING BY A. YOUSEF
CHECKED BY N. PATEL
DRAWING NO
C-121.00
CADD FILE NO 25 of 26

