

APPENDIX C.14
CASE 10-T-0139
SITE PLANS AND CONSTRUCTION DRAWINGS
ENERGY PACKAGE - CONVERTER AND SERVICE BUILDING
ASTORIA HVDC CONVERTER STATION - SEGMENT 22

ASTORIA HVDC CONVERTER STATION

CONVERTER AND SERVICE BUILDING ENERGY PACKAGE

SCOPE OF WORK

THE ENERGY SCOPE OF WORK FOR THE ASTORIA CONVERTER STATION INCLUDES THE AREAS BELOW:

1. CONVERTER BUILDING
2. SERVICE BUILDING
3. HVAC ROOM

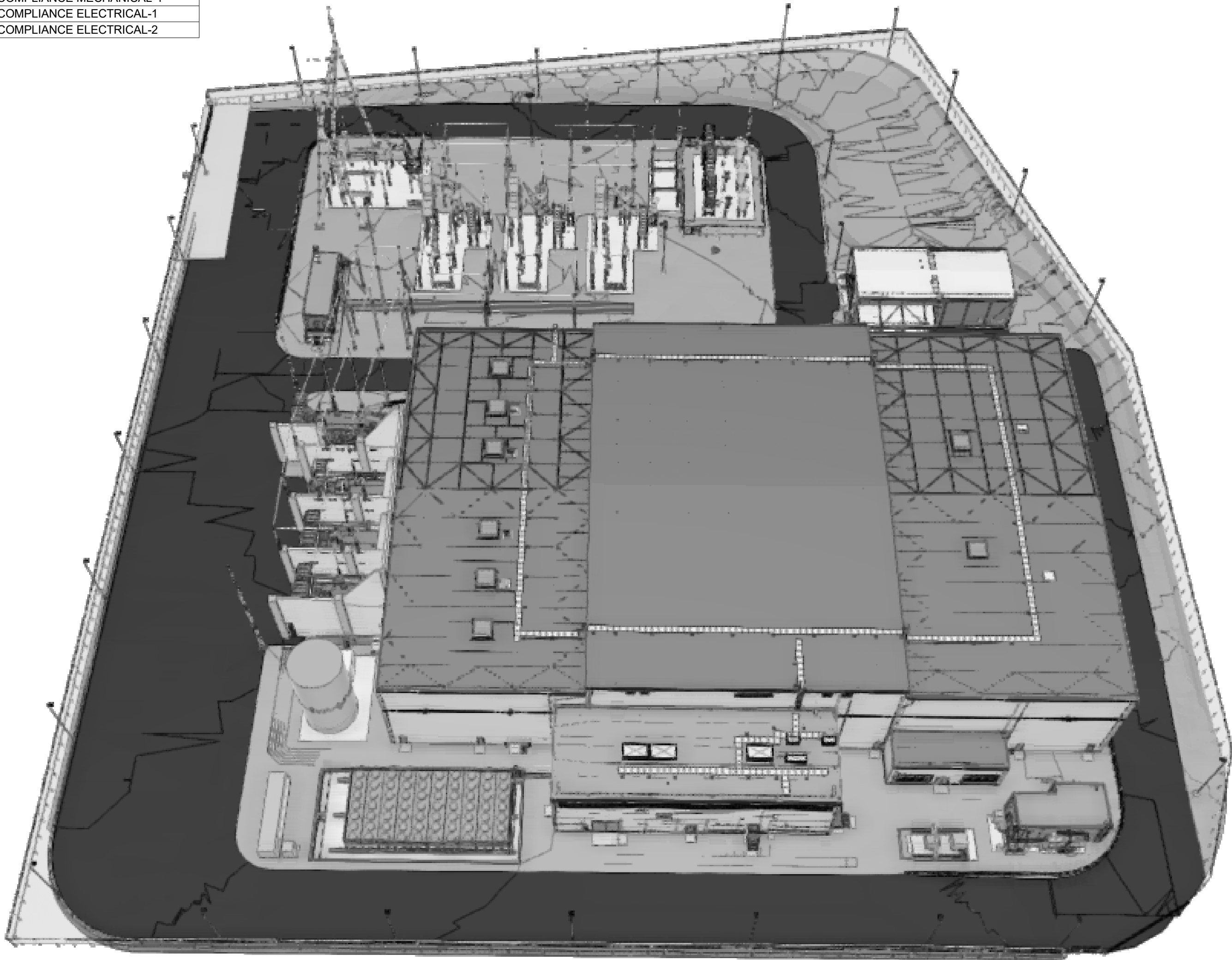
ENERGY SHEET LIST	
NUMBER	NAME
EN-000.00	OVERALL SITE PLAN
EN-001.00	ENERGY COMPLIANCE ARCHITECTURAL-1
EN-002.00	ENERGY COMPLIANCE ARCHITECTURE-2
EN-003.00	ENERGY COMPLIANCE ARCHITECTURE-3
EN-004.00	ENERGY COMPLIANCE MECHANICAL-1
EN-005.00	ENERGY COMPLIANCE MECHANICAL-2
EN-006.00	ENERGY COMPLIANCE MECHANICAL-3
EN-007.00	ENERGY COMPLIANCE MECHANICAL-4
EN-008.00	ENERGY COMPLIANCE ELECTRICAL-1
EN-009.00	ENERGY COMPLIANCE ELECTRICAL-2

FLOOD ZONE DESIGN CERTIFICATION:

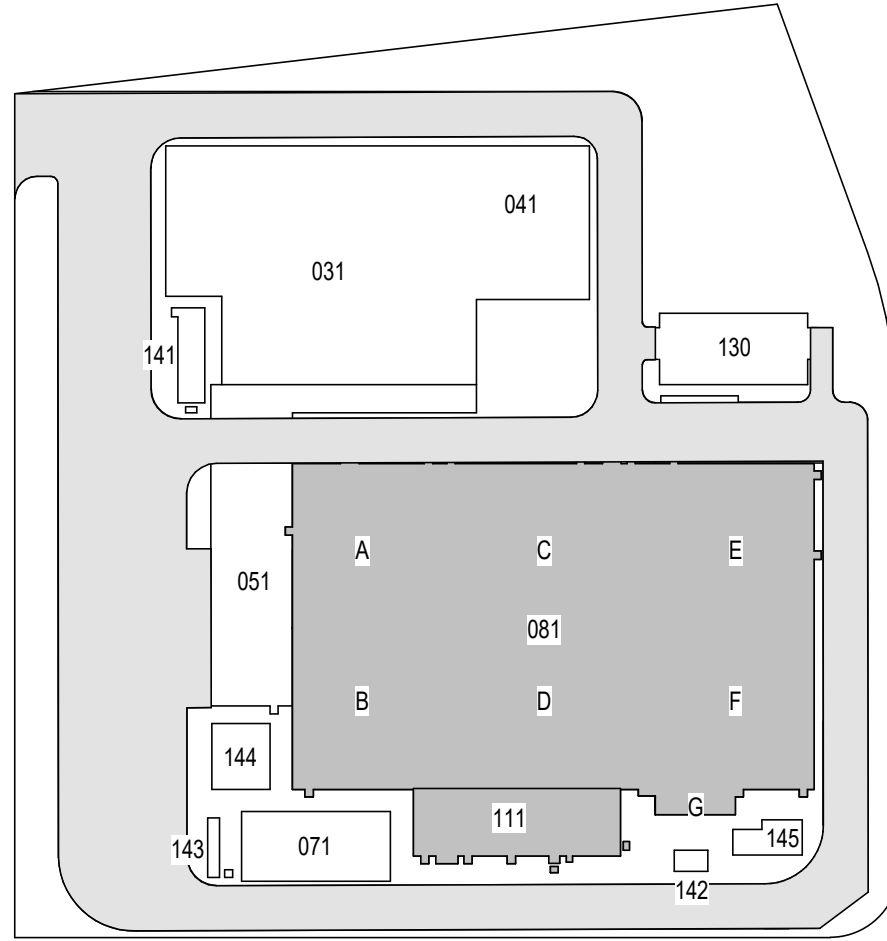
THE EXISTING PROPERTY IS IN THE SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE PER EFFECTIVE 2015 FLOOD INSURANCE RATE MAP(FIRM). THIS IS TO CONFIRM THAT THE PROPOSED INSTALLATION IS IN COMPLIANCE WITH THE REQUIREMENTS SET FORTH IN APPENDIX Q OF THE NYC BUILDING CODE.

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.



ISSUED FOR PERMIT



KEY PLAN
N.T.S.

PLAN
NORTH

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

CONFIDENTIAL

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B	FINAL SUBMISSION	RAC	ZH	12/12/2022
A	INTERIM SUBMISSION	RAC	ZH	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

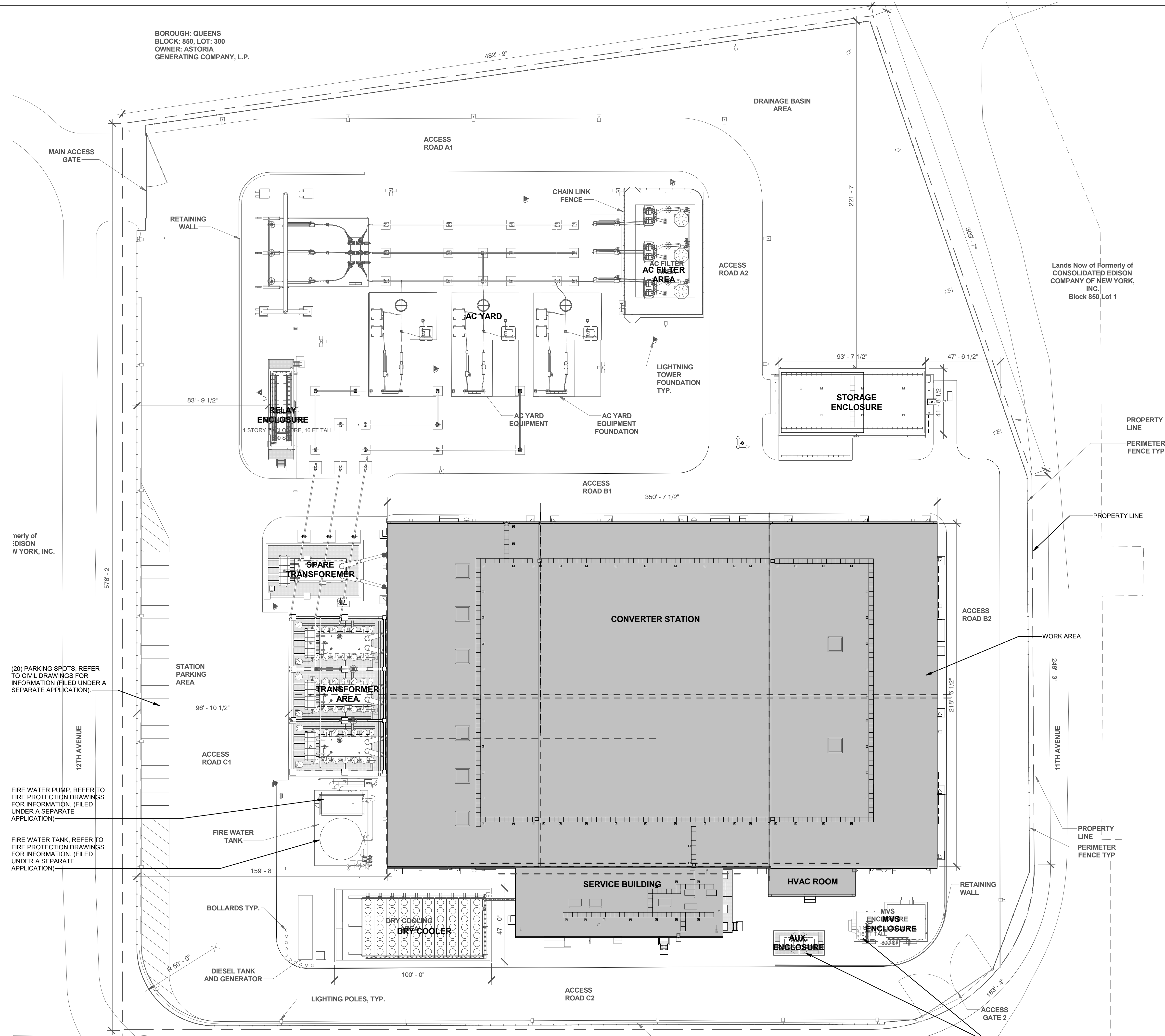
**Astoria HVDC
Converter Station**

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

COVER SHEET

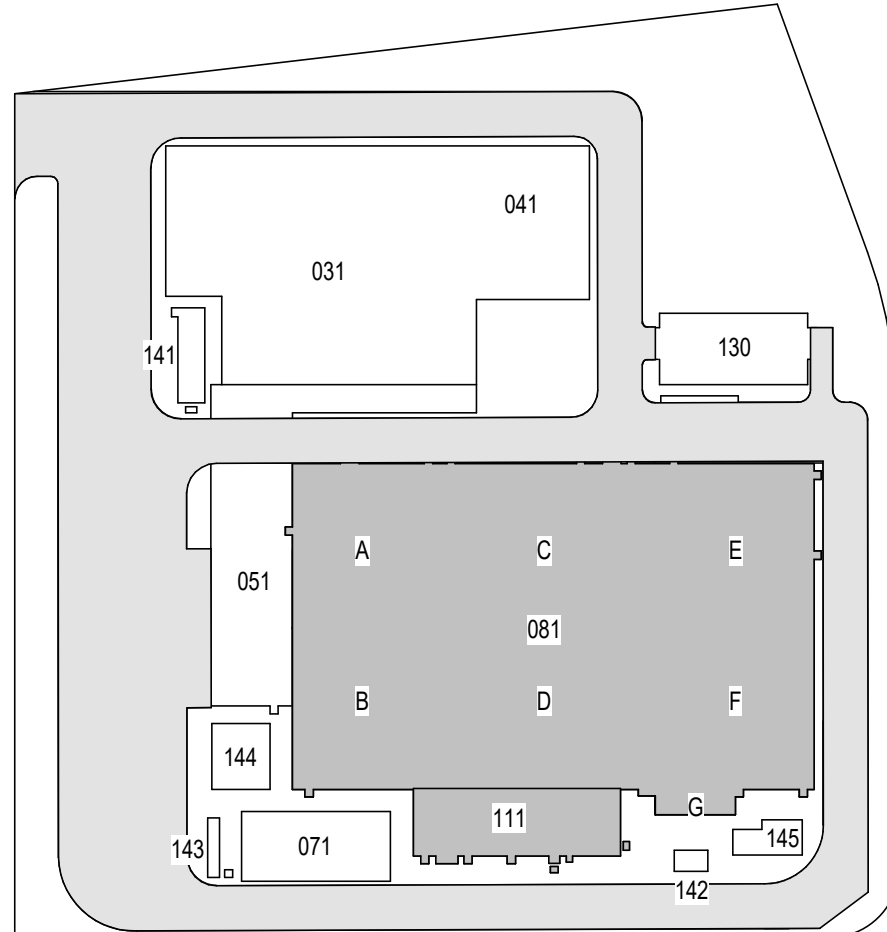
DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO
T-000.00
CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHA-KE-111-ZZ-M3-A-001.rvt

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



1 OVERALL SITE PLAN Copy 1
1" = 30'-0"

ISSUED FOR PERMIT



KEY PLAN
N.T.S.

Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001

SOWINSKI
SULLIVAN
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PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

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

OVERALL SITE PLAN

DATE 12/12/22
PROJECT NO 105121
DRAWING BY R. COLES
CHECKED BY Z. HARR
DRAWING NO
EN-000.00
CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHPE-111-ZZ-M3-A-001.rvt



COMcheck Software Version 4.1.5.5
Envelope Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: CHPE Astoria HVDC Converter Station
Location: New York, New York
Climate Zone: 4a
Project Type: New Construction
Performance Sim. Specs: EnergyPlus 8.1.0.009 (EPW: USA_NY_New.York-LaGuardia.AP.725030_TMY3.epw)

Construction Site: Owner/Agent: Transmission Developers Inc. Designer/Contractor: Kiewit

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
High Performance HVAC, 1.0 credit

Building Area	Floor Area
1-Converter Halls (Warehouse) : Nonresidential	75900
2-Service Bldg (Office) : Nonresidential	5700

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor _{ie}
Roof 1: Insulation Entirely Above Deck, [Bldg. Use 1 - Converter Halls]	32394	---	35.0	0.028	0.030
Roof 2: Other Metal Building Roof, [Bldg. Use 2 - Service Bldg] (b)	1740	---	---	0.031	0.035
NORTHEAST					
Exterior Wall 1: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b)	14994	---	---	0.038	0.048
A104D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A104E: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	217	---	---	0.430	0.370
A104G: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A104H: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A104I: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A104F: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
Exterior Wall 5: Other Metal Building Wall, [Bldg. Use 2 - Service Bldg] (b)	1901	---	---	0.038	0.048
B103: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	35	---	---	0.360	0.370
B102A: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	35	---	---	0.360	0.370
B101: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	35	---	---	0.360	0.370
SOUTHEAST					
Exterior Wall 2: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b)	15291	---	---	0.038	0.048
A103D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A103E: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A102D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A105A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	42	---	---	0.430	0.370
A104K: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
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Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor _{ie}
A104J: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
Exterior Wall 6: Other Metal Building Wall, [Bldg. Use 2 - Service Bldg] (b)	5345	---	---	0.038	0.048
B115A: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	144	---	---	0.360	0.370
B108: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	35	---	---	0.360	0.370
B104: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	35	---	---	0.360	0.370
B203: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	56	---	---	0.360	0.370
SOUTHWEST					
Exterior Wall 3: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b)	14994	---	---	0.038	0.048
A103G: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A103A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
Exterior Wall 7: Other Metal Building Wall, [Bldg. Use 2 - Service Bldg] (b)	1901	---	---	0.038	0.048
B114: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg]	21	---	---	0.360	0.370
NORTHWEST					
Exterior Wall 4: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b)	21319	---	---	0.038	0.048
A103B: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	132	---	---	0.430	0.370
A103C: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A101A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A101B: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A101C: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A101D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	132	---	---	0.430	0.370
A104A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A104B: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A104C: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370
A101E: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls]	21	---	---	0.430	0.370

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Other components require supporting documentation for proposed U-factors.

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title	Signature	Date
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COMcheck Software Version 4.1.5.5
Inspection Checklist

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA

Requirements: 98.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 5.4.3.1.1, 5.7 [PR1] ¹	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] ²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.5.4.2.3 [PR7] ²	In buildings > 2,500 ft ² , any enclosed spaces directly under a roof with ceiling heights > 15 ft. and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse), gymnasium, fitness/exercise area, playing area, gymnasium seating area, convention exhibit/event space, courtroom, automotive service, fire station engine room, manufacturing corridor/transition and bay areas, retail, library reading and stack areas, distribution/sorting area, transportation baggage and seating areas, or workshop, the following requirements apply: The daylight zone under skylights is >= half the floor area and (a) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 or (b) the minimum skylight effective aperture >= 1 percent. The skylights have a measured haze value > 90 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
8.4.5 [PR11] ³	Electrical meters for tenant spaces in covered buildings. Each covered tenant space in a new building shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. See section details and Section 28-311.2 of the Administrative Code. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
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Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
1 [PR12] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
4.2.4 [F01] ²	Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
4.2.4 [F03] ²	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	R-____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.3.5 [F05] ²	Slab edge insulation depth/length.	____ ft	____ ft	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.7 [F06] ²	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7.3 [F07] ²	Insulation in contact with the ground has <=0.3% water absorption rate per ASTM C272.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
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REV	DESCRIPTION	DRW BY	CHK BY	DATE

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Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE
ARCHITECTURAL-1

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer

DRAWING NO

EN-001.00

CADD FILE NO
Astoria CHPE
Astoria CHPE-111-ZZ-M3-A-001.rvt

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.2 [FR1] ¹	Factory-built and site-assembled fenestration and doors are labeled or certified as meeting air leakage requirements.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.4.3.4 [FR4] ¹	Vestibules are installed where building entrances separate conditioned space from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >=7 ft apart (>= 16 ft apart for adjoining floor area >= 40000 sq.ft.). Vestibule floor area <=7 50 sq.ft. or 2 percent of the adjoining conditioned floor area.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.5.4.3a [FR8] ¹	Vertical fenestration U-Factor.	U- ____	U- ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.4.3b [FR9] ¹	Skylight fenestration U-Factor.	U- ____	U- ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.4.4.1 [FR10] ¹	Vertical fenestration SHGC value.	SHGC: ____	SHGC: ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.5.4.4.2 [FR11] ¹	Skylight SHGC value.	SHGC: ____	SHGC: ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.2.1, 5.8.2.3, 5.8.2.4, 5.8.2.5 [FR12] ¹	Fenestration products rated (U-factor, SHGC, VT, and air leakage code defaults are used.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.2.2 [FR13] ¹	Fenestration and door products are labeled, or a signed and dated certificate listing the U-factor, SHGC, VT, and air leakage rate has been provided by the manufacturer.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.5.3.6 [FR14] ¹	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U- ____ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging	U- ____ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.4.3.1 [FR15] ¹	Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1)2 Medium Impact (Tier 2)3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22
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Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.1.3 [FR16] ¹	Whole-building pressurization conducted by an independent third party. Measured air leakage rate of the building envelope <= 0.40 cm/fT2, with this air leakage rate normalized by the sum of the above and below-grade building envelope areas of the conditioned and semiheated space. R-2 buildings may alternatively show compliance through testing in accordance with Section R402.4.1.3 of the New York City Energy Conservation Code. See department rules and code section for conditional exceptions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.4.4 [PR10] ¹	Applications for construction document approval includes thermal bridge documentation including: 1) Clear field thermal bridges, 2) Point thermal bridges, 3) Linear thermal bridges. See section language for details.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

1 High Impact (Tier 1)2 Medium Impact (Tier 2)3 Low Impact (Tier 3)

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Report date: 12/07/22
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [EL10] ²	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Receptacles intended for 24 hour operation of equipment.
8.4.3 [EL11] ²	New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

1 High Impact (Tier 1)2 Medium Impact (Tier 2)3 Low Impact (Tier 3)

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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
4.2.4 [IN2] ¹	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection.	R- ____ <input type="checkbox"/> Above deck <input type="checkbox"/> Metal <input type="checkbox"/> Attic	R- ____ <input type="checkbox"/> Above deck <input type="checkbox"/> Metal <input type="checkbox"/> Attic	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2, 5.8.1.3 [IN3] ¹	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 [IN6] ¹	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R- ____ <input type="checkbox"/> Mass <input type="checkbox"/> Metal <input type="checkbox"/> Steel <input type="checkbox"/> Wood	R- ____ <input type="checkbox"/> Mass <input type="checkbox"/> Metal <input type="checkbox"/> Steel <input type="checkbox"/> Wood	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 [IN7] ¹	Above-grade wall insulation installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.4 [IN8] ²	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R- ____ <input type="checkbox"/> Mass <input type="checkbox"/> Steel <input type="checkbox"/> Wood	R- ____ <input type="checkbox"/> Mass <input type="checkbox"/> Steel <input type="checkbox"/> Wood	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.1 [IN10] ²	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.9 [IN18] ²	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.4 [IN11] ²	Eaves are baffled to deflect air to above the insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.5 [IN12] ²	Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.6 [IN13] ²	Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7.1 [IN15] ²	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1)2 Medium Impact (Tier 2)3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22
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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.8.1.7.2 [IN16] ²	Foundation vents do not interfere with insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.8 [IN17] ¹	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
5.5.3.7 [IN19] ¹	Balconies and parapets that interrupt the building thermal envelope comply with one of the following: 1. Insulated with continuous insulation R-value >= thermal resistance equivalent to the continuous insulation component required in the adjacent wall assembly. Where more than one wall assembly is interrupted by an adjacent balcony, the higher thermal resistance shall be followed. 2. Incorporate >= R-3 thermal break where the structural element penetrates the building thermal envelope.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

1 High Impact (Tier 1)2 Medium Impact (Tier 2)3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22
Page 10 of 12

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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0	FINAL SUBMISSION		RAC	ZH	12/12/2022
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

ENERGY COMPLIANCE
ARCHITECTURE-2

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO
EN-002.00
CADD FILE NO
Astoria\CHPE-111-22-M3-A-001.rvt

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
5.4.3.3 (F11) ¹	Weatherseals installed on all loading dock cargo doors in Climate Zones 4-8.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
5.7.5 (F158) ¹	Air barrier commissioning. Registered or approved agent provides evidence of air barrier commissioning including: 1) Construction documents that include documentation of the continuous air barrier components included in the design and a field inspection checklist that includes all requirements necessary for maintaining air barrier continuity and durability in accordance with Section 5.4.3.1; 2) Reports from field inspections during project construction showing compliance with continuous air barrier requirements. Air barrier continuity shall be determined by testing or inspecting each type of unique air barrier joint or seam in the building envelope for continuity and defects; 3) A final commissioning report indicating compliance with the continuous air barrier requirements shall be provided to the building owner and, upon request, to the code official.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station

Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22

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Project Title: CHPE Astoria HVDC Converter Station

Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22

Page 12 of 12

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Engineering and
Land Surveying, P.C.

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SUITE 1604
New York, NY 10001





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Sparta, NJ 07871

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0	FINAL SUBMISSION	RAC	ZH	12/12/2022
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

ENERGY COMPLIANCE
ARCHITECTURE-3

DATE	12/12/22
PROJECT NO	105121
DRAWING BY	Author
CHECKED BY	Designer
DRAWING NO	
EN-003.00	
CADD FILE NO	
Astoria\Draw\CHPE Astoria\CHA-KIE-111-ZZ-M3-A-001.rvt	



COMcheck Software Version 4.1.5.5
Mechanical Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: Astoria HVDC Converter Station
Location: New York, New York
Climate Zone: 4a
Project Type: New Construction

Construction Site: 31-45m20th Avenue
Astoria, NY 11105
Owner/Agent: Designer/Contractor: Kiewit

Additional Efficiency Package(s)
Credits: 1.0 Required 1.0 Proposed
High Performance HVAC, 1.0 credit

Mechanical Systems List

Quantity System Type & Description

- 1 ACCU-111-01 A/B (Service) (Single Zone):
VRF Condensing Unit, Air Cooled Heat Pump
Heating Mode: Capacity = 18 kBtu/h,
Proposed Efficiency = 10.00 HSPF, Required Efficiency = 8.47 HSPF
Cooling Mode: Capacity = 18 kBtu/h,
Proposed Efficiency = 20.00 SEER, Required Efficiency: 14.30 SEER
Fan System: None
- 1 ACCU-111-02 (Service) (Single Zone):
VRF Condensing Unit, Air Cooled w/ Heat Recovery Heat Pump
Heating Mode: Capacity = 135 kBtu/h,
Proposed Efficiency = 4.00 COP, Required Efficiency = 3.63 COP
Cooling Mode: Capacity = 120 kBtu/h,
Proposed Efficiency = 20.70 EER, Required Efficiency: 11.88 EER + 15.8 IEER
Fan System: None
- 1 ACCU-111-03 (Service) (Single Zone):
VRF Condensing Unit, Air Cooled w/ Heat Recovery Heat Pump
Heating Mode: Capacity = 108 kBtu/h,
Proposed Efficiency = 4.30 COP, Required Efficiency = 3.63 COP
Cooling Mode: Capacity = 86 kBtu/h,
Proposed Efficiency = 17.50 EER, Required Efficiency: 11.88 EER + 15.8 IEER
Fan System: None
- 1 ACCU-111-04 (Service) (Single Zone):
VRF Condensing Unit, Air Cooled w/ Heat Recovery Heat Pump
Heating Mode: Capacity = 19 kBtu/h,
Proposed Efficiency = 10.00 HSPF, Required Efficiency = 8.47 HSPF
Cooling Mode: Capacity = 18 kBtu/h,
Proposed Efficiency = 20.00 SEER, Required Efficiency: 14.30 SEER
Fan System: None
- 1 AC-111-01A/B (Service) (Single Zone):
Cooling: 1 each - VRF Zone Fan Unit, Capacity = 18 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-01A/B | Service -- Compliance (Motor nameplate HP method) : Passes
- Fans:
11101 Supply, Constant Volume, 459 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 1 of 19

Quantity System Type & Description

- 1 AC-111-02 and 03 (Service) (Single Zone):
Cooling: 2 each - VRF Zone Fan Unit, Capacity = 28 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-02 and 03 | Service -- Compliance (Motor nameplate HP method) : Passes
- Fans:
AC1110203 Supply, Constant Volume, 855 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade
- 1 AC-111-04 through 15 (Service) (Single Zone):
Cooling: 12 each - VRF Zone Fan Unit, Capacity = 12 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-04 through 15 | Service -- Compliance (Motor nameplate HP method) : Passes
- Fans:
AC1110415 Supply, Constant Volume, 307 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade
- 1 AC-111-16 (Service) (Single Zone):
Cooling: 1 each - VRF Zone Fan Unit, Capacity = 19 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-16 | Service -- Compliance (Motor nameplate HP method) : Passes
- Fans:
AC11116 Supply, Constant Volume, 459 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade
- 1 AHU-081-01/02/03 (Valve Hall) (Single Zone):
Heating: 2 each - Central Furnace, Electric, Capacity = 757 kBtu/h
No minimum efficiency requirement applies
Fan System: AHU-081-01, 02, 03 | Valve Hall -- Compliance (Brake HP method) : Passes
- Fans:
AHU081010203 Supply, Single-Zone VAV, 32000 CFM, 90.0 motor nameplate hp, 67.6 design brake hp (70.0 max. BHP), 80.0 fan efficiency grade
Pressure Drop Credits:
Particulate filtration credit: MERV 13 through 15, 15.6863 credit
Return and/or exhaust airflow control devices, 8.7146 credit
Energy recover device, other than Coil Runaround Loop, 14.6754 credit
Fully ducted return and/or exhaust air systems, 8.7146 credit
Particulate filtration credit: MERV 9 through 12, 8.7146 credit
Exhaust filters, scrubbers, or other exhaust treatment, 17.4292 credit
- 3 IMH-111-01.02, 03 (Service):
Electric Instantaneous Water Heater, Capacity: 0 gallons
No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Alexander Zabolotsky, PE - Lead Mechanical Engineer
Name - Title Signature Date 12/12/2022

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 2 of 19



COMcheck Software Version 4.1.5.5
Inspection Checklist

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 6.4.4.2.1, 6.7.2 [PR2] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.2, 7.7.1, 10.4.2 [PR3] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] ²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.4 [PR5] ¹	Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft ² .	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
8.4.5 [PR11] ³	Electrical meters for tenant spaces in covered buildings. Each covered tenant space in a new building shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. See section details and Section 28-311.2 of the Administrative Code. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
11 [PR12] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 3 of 19

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Engineering and
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370 7th Avenue
SUITE 1604
New York, NY 10001

SOWINSKI
SULLIVAN
ARCHITECTURE+ENGINEERING

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B	FINAL SUBMISSION	RAC	ZH	12/12/2022
A	INTERIM SUBMISSION	RAC	ZH	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

ENERGY COMPLIANCE
MECHANICAL-1

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO

EN-004.00

CADD FILE NO
Astoria CHA-KE-111-ZZ-M3-A-001.rvt

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 4 of 19

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 5 of 19

Section # & Req. ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.1.4, 6.4.1.5 [ME1] ²	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1.	Efficiency: ____	Efficiency: ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
6.4.3.4.1 [ME3] ³	Stair and elevator shaft vents have motorized dampers that automatically close.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.3.4.2, 6.4.3.3 [ME4] ³	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.4.5 [ME39] ¹	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.3.4.4 [ME5] ³	Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.8 [ME6] ¹	Demand control ventilation provided for spaces >500 ft ² and >25 people/1,000 ft ² occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.2.1 [ME40] ³	DX cooling systems >= 75 kBTuh (>= 65 kBTuh effective 1/2016) and chilled-water and evaporative cooling fan motor hp >= 1/4 designed to vary supply fan airflow as a function of load and comply with operational requirements.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. See the Mechanical Systems list for values.
6.4.4.1.1 [ME7] ¹	Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.4.1.2 [ME8] ²	HVAC ducts and plenums insulated per Table 6.8.2. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	R- ____	R- ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.4.1.3 [ME9] ²	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	____ in.	____ in.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Project Title:	Astoria HVDC Converter Station	Report date:	12/07/22
Data filename:	C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck	Page	6 of 19

Section # & Req. ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.4.1.4 (ME41) ¹	Thermally ineffective panel surfaces of sensible heating panels have insulation \geq R-3.5.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.1 (ME10) ²	Ducts and plenums having pressure class ratings are Seal Class A construction.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.8.1-15, 6.8.1-16 (ME10) ²	Electrically operated DX-DOAS units meet requirements per Tables 6.8.1-15 or 6.8.1-16.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.4.2.2 (ME11) ³	Ductwork operating \geq 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Project Title:	Astoria HVDC Converter Station	Report date:	12/07/22
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Section # & Req. Id.	Mechanical High-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.2.3 [ME19] ³	Dehumidification controls provided to prevent reheating, recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Use of a desiccant systems.
6.5.2.4.1 [ME68] ³	Humidifiers with airstream mounted preheating jackets have preheat auto-shutoff value set to activate when humidification is not required.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.2.4.2 [ME69] ³	Humidification system dispersion tube hot surfaces in the airstreams of ducts or air-handling units insulated $\geq R-0.5$.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.2.5 [ME70] ³	Preheat coils controlled to stop heat output whenever mechanical cooling, including economizer operation, is active.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.2.6 [ME106] ³	Units that provide ventilation air to multiple zones and operate in conjunction with zone heating and cooling systems are prevented from using heating or heat recovery to warm supply air above 60°F when representative building loads or outdoor air temperature indicate that most zones demand cooling.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.3.1.3 [ME74] ³	Fans have efficiency grade (FEG) ≥ 67 . The total efficiency of the fan at the design point of operation $\leq 15\%$ of maximum total efficiency of the fan.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.6 [ME72] ³	Motors for fans $\geq 1/12$ hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.6 [ME72] ³	Motors for fans $\geq 1/12$ hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.6 [ME72] ³	Motors for fans $\geq 1/12$ hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.6 [ME72] ³	Motors for fans $\geq 1/12$ hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req. ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.3.6 [ME12] ²	Motors for fans $\geq 1/2$ hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.3.4 [ME108] ²	Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.3.4 [ME108] ²	Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.3.4 [ME108] ²	Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Project Title:	Astoria HVDC Converter Station	Report date:	12/07/22
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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.3.4 [ME108]	Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.3.4 [ME108]	Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.3.7 [ME109]	Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate; b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment; or c) system includes exhaust air energy recovery complying with Section 6.5.6.1.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Project Title:	Astoria HVDC Converter Station	Report date:	12/07/22
Data filename:	C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck	Page	10 of 19

OR PERMIT

KE 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	RAC	ZH	12/12/2022
A	INTERIM SUBMISSION	RAC	ZH	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


**Champlain Hudson
Power Express**

**Astoria HVDC
Converter Station**

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

ENERGY COMPLIANCE MECHANICAL-2

DATE	12/12/22
PROJECT NO	105121
DRAWING BY	Author
CHECKED BY	Designer
DRAWING NO	
EN-005.00	
CADD FILE NO	
Autodesk Docs://CHPE	
Astoria/GHA-KIE-111-ZZ-M3-A-001.rvt	

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.3.7 [ME109]²	Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment., or c) system includes exhaust air energy recovery complying with Section 6.5.6.1.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.7 [ME109]²	Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment., or c) system includes exhaust air energy recovery complying with Section 6.5.6.1.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.7 [ME109]²	Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment., or c) system includes exhaust air energy recovery complying with Section 6.5.6.1.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.3.7 [ME109]²	Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment., or c) system includes exhaust air energy recovery complying with Section 6.5.6.1.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>
6.5.3.3 [ME42]²	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i>

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.4.2 [ME25]³	HVAC pumping systems with >= 3 control valves designed for variable fluid flow (see section details).			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.6.1 [ME56]¹	Exhaust air energy recovery on systems meeting Tables 6.5.6.1-1, and 6.5.6.1-2.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.7.1 [ME100]²	Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details).			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.7.1 [ME100]²	Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details).			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.7.1 [ME100]²	Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details).			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.7.1 [ME100]²	Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details).			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.5.7.2.1 [ME32]²	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.7.2.4 [ME49]³	Approved field test used to evaluate design air flow rates and demonstrate proper capture and containment of kitchen exhaust systems.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.8.1 [ME34]²	Unenclosed spaces that are heated use only radiant heat.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
7.4.2 [ME36]²	Service water heating equipment meets efficiency requirements.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.3.9 [ME63]²	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.5.10 [ME73]³	Doors separating conditioned space from the outdoors have controls that disable/reset heating and cooling system when open.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Building entrances have automatic closing devices.
6.7.2.3.2.1 [ME53]¹	Mechanical systems, Renewable Systems, and SWH Commissioning: Air outlets and zone terminal devices have means for air balancing. See section details.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Fans with fan motors of 1 hp (0.74 kW) or less.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [EL10]²	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
8.4.3 [EL11]²	New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to control system and displayed graphically.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
10.4.1 [EL9]²	Electric motors meet requirements where applicable.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
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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	RAC	ZH	12/12/2022
A	INTERIM SUBMISSION	RAC	ZH	09/13/2022
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

CHPE
Champlain Hudson
Power Express

Astoria HVDC
Converter Station

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

ENERGY COMPLIANCE
MECHANICAL-3

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO
EN-006.00
CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHPE-111-22-M3-A-001.rvt

12/9/2022 3:23:13 PM

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.4.3.1.2 [F13] ¹	Thermostatic controls have a 5 °F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.2 [F10] ¹	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.3.1 [F121] ¹	HVAC systems equipped with at least one automatic shutdown control.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.3.2 [F122] ¹	Setback controls allow automatic restart and temporary operation as required for maintenance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.3.3 [F14] ¹	Systems with setback controls and DDC include optimum start controls. Optimum start algorithm considers mass radiant slab floor temperature.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Systems designed for continuous operation.
6.4.3.5 [F15] ¹	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.5 [F15] ¹	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
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6.4.3.5 [F15] ¹	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.5 [F15] ¹	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.6 [F16] ¹	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited. Humidity control prohibits the use of fossil fuel or electricity to produce RH > 30% in the warmest zone humidified and RH < 60% in the coldest zone dehumidified.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Zones served by desiccant systems.
6.7.2.1 [F17] ¹	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.2 [F18] ¹	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
Page 16 of 19

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.7.2.3 [F19] ¹	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft2 of conditioned area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.4 [F110] ¹	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
7.4.4.3 [F111] ³	Public lavatory faucet water temperature <=110°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
10.4.3 [F124] ²	Elevators are designed with the proper lighting, ventilation power, and standby mode.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
7.4.3 [F145] ²	First 8 ft of outlet piping in nonrecirculating storage system, or branch piping connected to recirculated, heat traced, or impedance heated piping is insulated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.7.2.3.1 [F128] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: Commissioning plan developed by registered design professional or approved agency. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.3.3.1 [F131] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: HVAC equipment has been tested to ensure proper operation. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.3.3.2 [F110] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.3.4 [F129] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: Preliminary commissioning report completed and certified by registered design professional or approved agency. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.3.5.1 [F17] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: Furnished HVAC as-built drawings submitted within 90 days of system acceptance. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.3.5.3 [F143] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: An air and/or hydronic system balancing report is provided for HVAC systems. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.3.5.4 [F130] ¹	Mechanical systems, Renewable Systems, and SWH Commissioning: Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy. See section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)


Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
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Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
Page 18 of 19

ISSUED FOR PERMIT

 Engineering and Land Surveying, P.C.
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 SOWINSKI SULLIVAN
ARCHITECTURE+ENGINEERING
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B	FINAL SUBMISSION	RAC	ZH	12/12/2022
A	INTERIM SUBMISSION	RAC	ZH	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

ENERGY COMPLIANCE
MECHANICAL-4

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO
EN-007.00
CADD FILE NO
Autodesk Docs: CHPE
Astoria/CHA-KE-111-ZZ-M3-A-001.rvt



COMcheck Software Version 4.1.5.5 Interior Lighting Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: CHPE Astoria Power Converter Station
Project Type: New Construction

Construction Site: Owner/Agent: Transmission Developers Inc. Designer/Contractor: Kiewit

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Converter Halls (Warehouse)	75900	0.37	28007
2-Service Bldg (Office)	5700	0.62	3540
Total Allowed Watts =			31547

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Converter Halls (Warehouse) LED 4: P1: LED Other Fixture Unit 103W:	1	57	100	5700
2-Service Bldg (Office) LED 5: S16: LED Linear 33W:	1	71	37	2627
LED 6: HEM4: LED Linear 33W:	1	12	59	708
LED 7: G22: LED Linear 33W:	1	5	41	205
LED 8: A4: LED Panel 19W:	1	4	22	88
LED 9: EG4: LED Other Fixture Unit 46W:	1	54	48	2592
LED 10: A1: LED Panel 36W:	1	17	36	612
Total Proposed Watts =			12532	

Interior Lighting PASSES: Design 60% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
Data filename: C:\Users\Daniel.Duzan\OneDrive - Kiewit Corporation\Documents\ASTORIA\comcheck\Astoria Page 1 of 7
COMcheck.cck



COMcheck Software Version 4.1.5.5 Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: CHPE Astoria Power Converter Station
Project Type: New Construction
Exterior Lighting Zone: 3 (Other (LZ3))

Construction Site: Owner/Agent: Transmission Developers Inc. Designer/Contractor: Kiewit

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Guarded facility, entrance/inspection area	241130 ft2	0.5	No	120585
Total Tradable Watts (a) =		0		
Total Allowed Watts =		120585		
Total Allowed Supplemental Watts (b) =		500		

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Guarded facility, entrance/inspection area (241130 ft2): Non-tradable Wattage				
LED 11: WP1: LED Roadway-Parking Unit 42W:	1	36	36	1296
LED 12: LED Roadway-Parking Unit 223W:	1	36	321	11556
Total Tradable Proposed Watts =		0		

Exterior Lighting PASSES: Design 0.0% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
Data filename: C:\Users\Daniel.Duzan\OneDrive - Kiewit Corporation\Documents\ASTORIA\comcheck\Astoria Page 2 of 7
COMcheck.cck



COMcheck Software Version 4.1.5.5 Inspection Checklist

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6]²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
4.2.2, 9.4.3, 9.7 [PR4]¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
9.7 [PR8]¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
8.4.5 [PR11]¹	Electrical meters for tenant spaces in covered buildings. Each covered tenant space in a new building shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. See section details and Section 28-311.2 of the Administrative Code. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
11 [PR12]²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
Data filename: C:\Users\Daniel.Duzan\OneDrive - Kiewit Corporation\Documents\ASTORIA\comcheck\Astoria Page 3 of 7
COMcheck.cck

ISSUED FOR PERMIT



Engineering and
Land Surveying, P.C.

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SUITE 1604
New York, NY 10001



25 Mohawk Avenue
Sparta, NJ 07871

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B	FINAL SUBMISSION	RAC	ZH	12/12/2022
A	INTERIM SUBMISSION	RAC	ZH	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
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PROJECT



Astoria HVDC Converter Station

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

ENERGY COMPLIANCE ELECTRICAL-1

DATE: 12/12/22
PROJECT NO: 105121
DRAWING BY: Author
CHECKED BY: Designer

DRAWING NO:

EN-008.00

CADD FILE NO:
Astoria CHA-KE-111-ZZ-M3-A-001.rvt

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
8.7.1 [FI16] ¹	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
8.7.2 [FI17] ¹	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
9.2.2.3 [FI18] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Interior Lighting fixture schedule for values.
9.4.2 [FI19] ¹	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Exterior Lighting fixture schedule for values.
9.4.4 [FI20] ¹	At least 75% of all permanently installed lighting fixtures in dwelling units have >= 55 lm/W efficacy or a >= 45 lm/W total luminaire efficacy.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: CHPE Astoria Power Converter Station

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Project Title: CHPE Astoria Power Converter Station

Report date: 12/09/22

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REV	DESCRIPTION	DRW BY	CHK BY	DATE

Kiewit

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PROJECT

CHPE

Champlain Hudson Power Express

Astoria HVDC Converter Station

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

ENERGY COMPLIANCE ELECTRICAL-2

DATE12/12/22

PROJECT NO105121

DRAWING BYAuthor

CHECKED BYDesigner

DRAWING NO

EN-009.00

CADD FILE NO

Autodesk Doc: CHPE
Astoria\CHA-KIE-111-ZZ-M3-A-001.rvt