

1
E-157.00
GROUNDING PLAN CONVERTER DC HALL - 2 OF 2
1/8" = 1'-0"

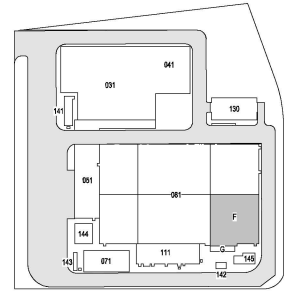
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. SEE SHEET E-626.00 FOR BUILDING RING DETAIL AROUND DOORS.
2. BOND BUILDING RING CONDUCTOR TO BUILDING ELECTRODE CONDUCTOR WITH A MINIMUM 250 MCM CONDUCTOR EVERY 33' FOR EXTERIOR WALLS. SEE E-410.00 AND E-411.00.
3. BOND EXTERIOR WALL WITH A #2 AWG RING TO PERIMETER ELECTRODE EVERY 33'. SEE E-414.00.
4. BOND INTERIOR WALL WITH A #2 AWG RING TO INTERIOR BUILDING RING CONDUCTOR EVERY 33'. SEE E-413.00.
5. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER GLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
6. MAIN GROUND GRID AND ALL GROUND TAPS TO BE 40 AWG COPPER CONDUCTORS BURIED AT AN APPROPRIATE DEPTH OF 24" BELOW THE FINISHED GRADE.
7. SEE DRAWING E-152.00 FOR OVERALL SITE GROUNDING PLAN.
8. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS, GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.
9. WITHIN THE CONVERTER BUILDING, ALL METALLIC COMPONENTS SHALL BE BONDED TO THE BUILDING OR BUILDING RING CONDUCTOR. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

ISSUED FOR PERMIT



Engineering and Land Surveying, P.C.
370 7th Avenue
SUITE 1804
New York, NY 10001

SOWINSKI SULLIVAN
25 Mechanic Avenue
Sparta, NJ 07871

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REV	DESCRIPTION	DATE
B	100% SUBMISSION	12/13/2022
A	INTERIM SUBMISSION	09/13/2022

Kiewit
470 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

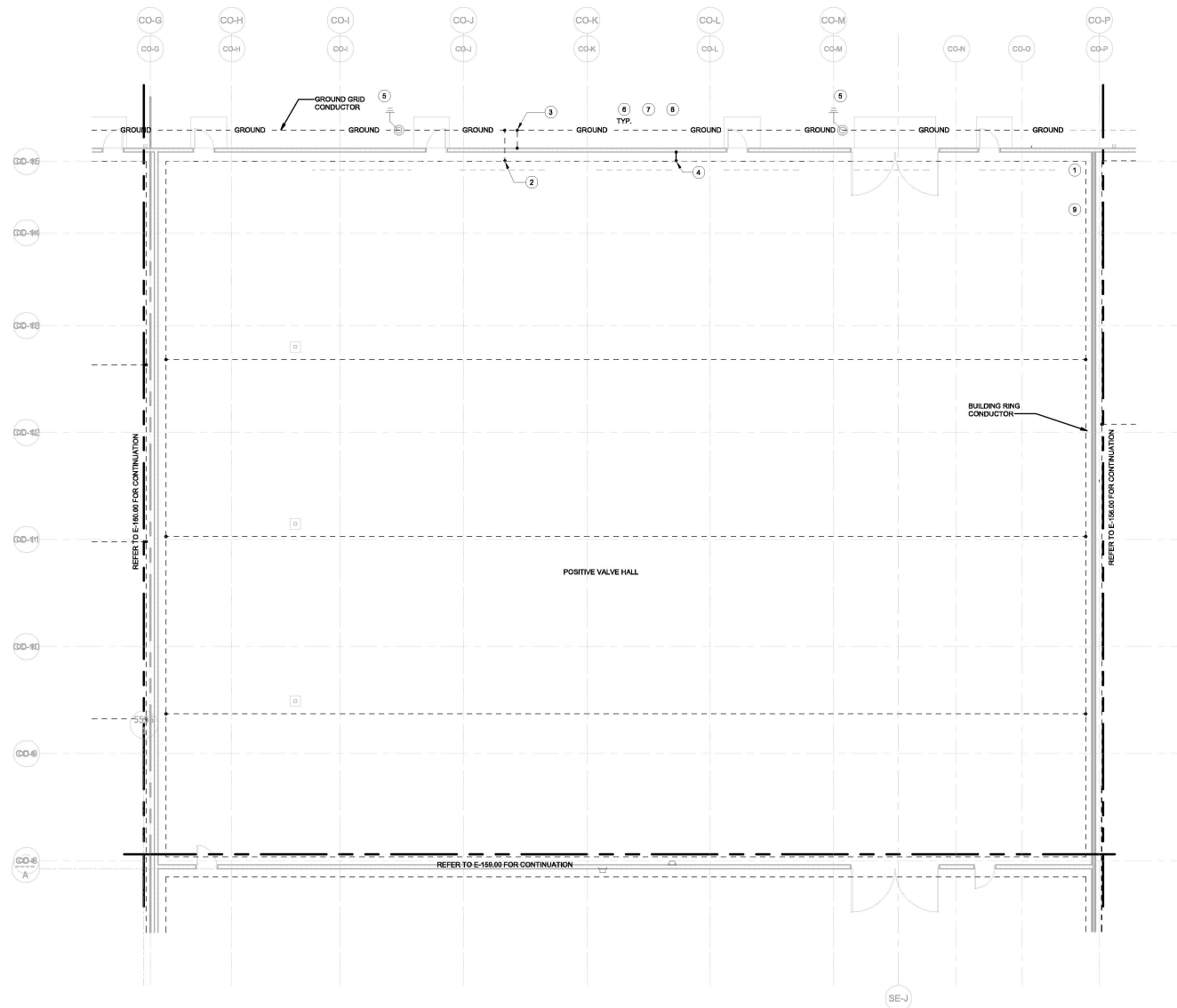
PROJECT
CHPE
Champlain Hudson PowerExpress
Astoria HVDC Converter Station
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

CONVERTER DC HALL GROUNDING PLAN (2 OF 2)

STATE OF NEW YORK
Office of the State Engineer
Division of Engineering
Professional Engineer
E-157.00

DATE: 12/13/2022
INQUIRY NO: 159121
DRAWING BY: AJO/MS/SC/LINE
CHECKED BY: C.D./JEN
DRAWING NO:
CADD FILE NO:
REVISIONS: 01/13/2022

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1
E-158.00
GROUNDING PLAN CONVERTER VALVE HALL (POSITIVE) - 1 OF 2
1/8" = 1'-0"

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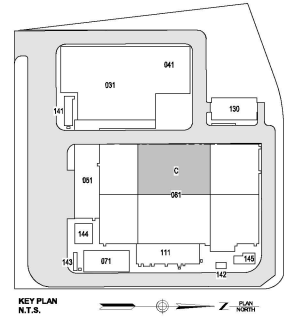
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AVG. GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. SEE SHEET E-620.00 FOR BUILDING RING DETAIL AROUND DOORS.
2. BOND BUILDING RING CONDUCTOR TO BUILDING ELECTRODE CONDUCTOR WITH A MINIMUM 250 MCM CONDUCTOR EVERY 33' FOR EXTERIOR WALLS. SEE E-610.00 AND E-611.00.
3. BOND EXTERIOR WALL WITH A #2 AVG. ROUN TO PERIMETER ELECTRODE EVERY 33'. SEE E-614.00.
4. BOND INTERIOR WALL WITH A #2 AVG. ROUN TO INTERIOR BUILDING RING CONDUCTOR EVERY 33'. SEE E-613.00.
5. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
6. MAIN GROUND GRID AND ALL GROUND TAPS TO BE 4/0 AVG. COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
7. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
8. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.
9. WITHIN THE CONVERTER BUILDING, ALL METALLIC COMPONENTS SHALL BE BONDED TO THE BUILDING OR BUILDING RING CONDUCTOR. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

ISSUED FOR PERMIT



Engineering and Land Surveying, P.C.
370 7th Avenue
SUITE 1804
New York, NY 10001

SOWINSKI SULLIVAN
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Sparks, NJ 07871

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B	100% SUBMISSION	A:KIMAB	D:DAJAN	12/13/2022
A	INTERIM SUBMISSION	N:WU	D:DAJAN	09/13/2022
REV	DESCRIPTION	DRW BY	CHK BY	DATE

Kiewit
478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

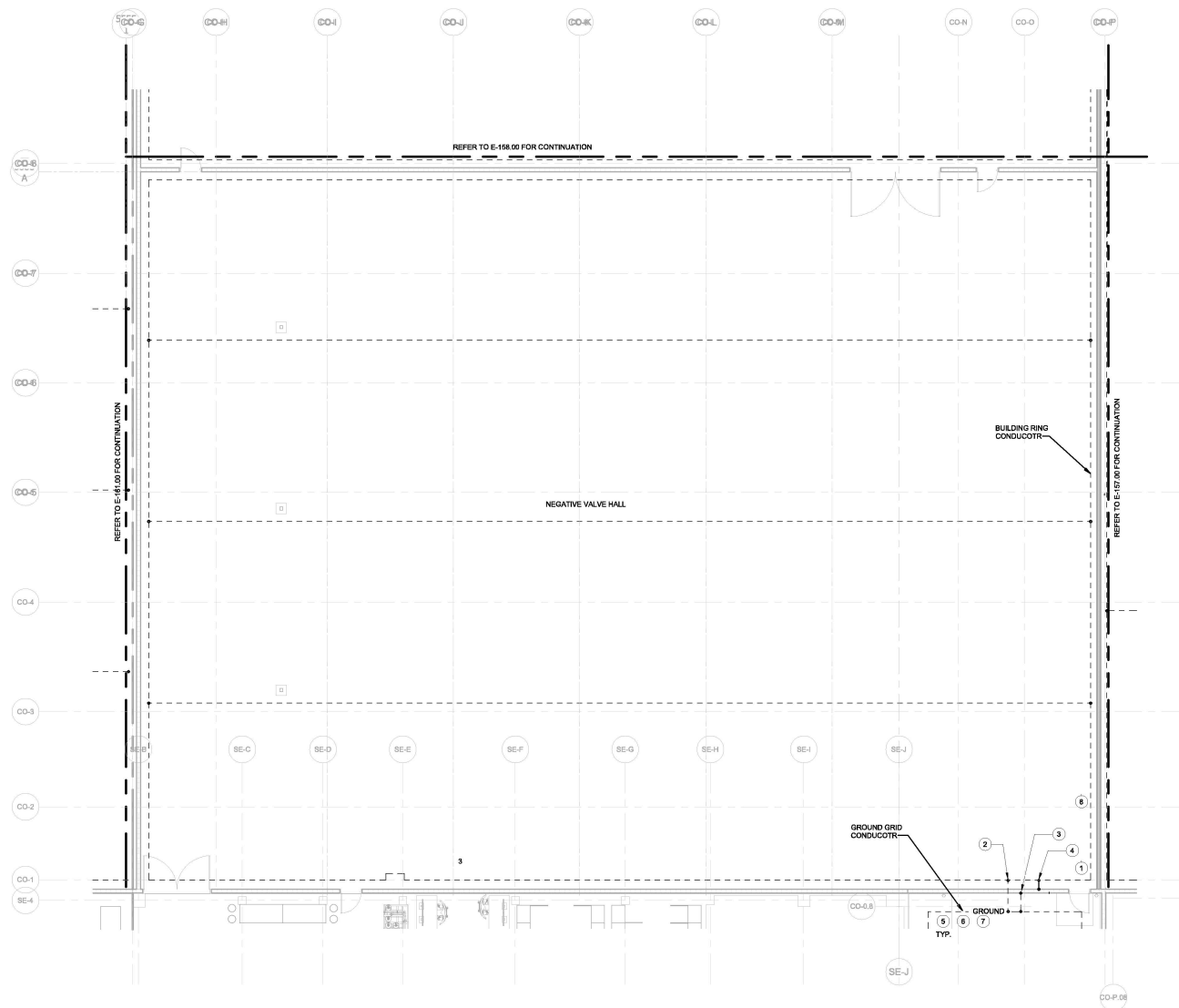
CHPE
Champlain Hudson PowerExpress

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

CONVERTER POSITIVE VALVE HALL GROUNDING PLAN

STATE OF NEW YORK
JAMES H. COOPER, Governor

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: A:KIMAB/CULLE
CHECKED BY: D:DAJAN
DRAWING NO: E-158.00
CADD FILE NO: 12/13/2022
AUTOCAD VERSION: 2014



1 GROUNDING PLAN CONVERTER VALVE HALL (NEGATIVE) - 2 OF 2
E-159.00 1/8" = 1'-0"

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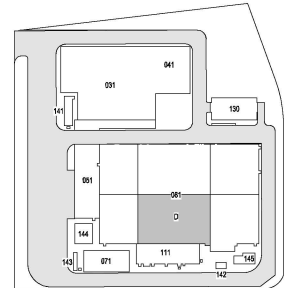
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. SEE SHEET E-420.00 FOR BUILDING RING DETAIL AROUND DOORS.
2. BOND BUILDING RING CONDUCTOR TO BUILDING ELECTRODE CONDUCTOR WITH A MINIMUM 250 MCM CONDUCTOR EVERY 33' FOR EXTERIOR WALLS. SEE E-610.00 AND E-611.00.
3. BOND EXTERIOR WALL WITH A #2 AWG ROUND TO PERIMETER ELECTRODE EVERY 33'. SEE E-614.00.
4. BOND INTERIOR WALL WITH A #2 AWG ROUND TO INTERIOR BUILDING RING CONDUCTOR EVERY 33'. SEE E-615.00.
5. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #4 AWG, COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
6. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
7. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.
8. WITHIN THE CONVERTER BUILDING, ALL METALLIC COMPONENTS SHALL BE BONDED TO THE BUILDING OR BUILDING RING CONDUCTOR. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

ISSUED FOR PERMIT



KEY PLAN
N.T.S.

Engineering and Land Surveying, P.C. 370 7th Avenue
SUITE 1804
New York, NY 10001

SOWINSKI SULLIVAN 25 Mechanic Avenue
Sparks, NJ 07871

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B	100% SUBMISSION	A. KHAN	D. DUDAN	12/13/2022
A	INTERIM SUBMISSION	N. MU	D. DUDAN	09/13/2022
REV	DESCRIPTION	DRAWN BY	CHK BY	DATE

Kiewit 470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07877

Hitachi Energy 901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

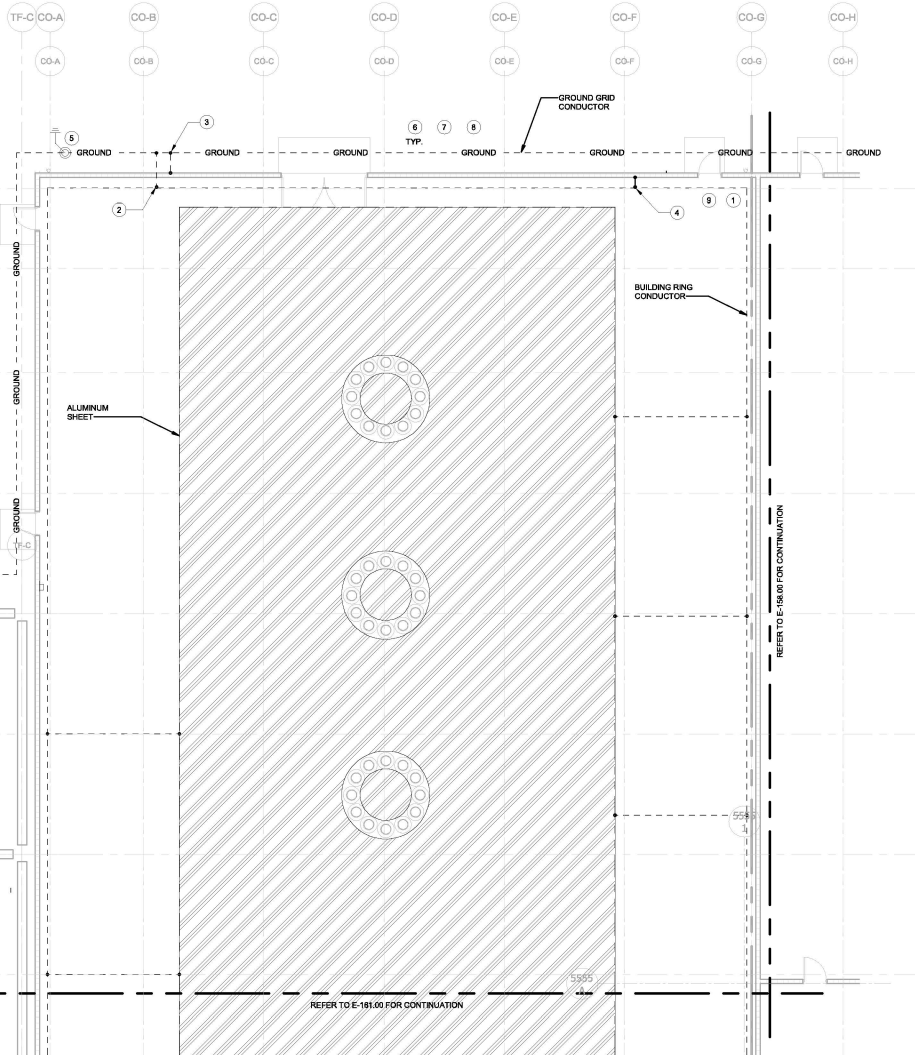
CHPE
Champlain Hudson PowerExpress

Astoria HVDC Converter Station
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #462437

CONVERTER NEGATIVE VALVE HALL GROUNDING PLAN

STATE OF NEW YORK
Office of the State Engineer
Professional Engineer

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: A. KHAN/RSCL/INE
CHECKED BY: D. DUDAN
DRAWING NO: E-159.00
CADD FILE NO: 12/13/2022
AutoCAD 2013 LSP: E-159.00



1
E-160.00
GROUNDING PLAN CONVERTER REACTOR HALL - 1 OF 2
1/8" = 1'-0"

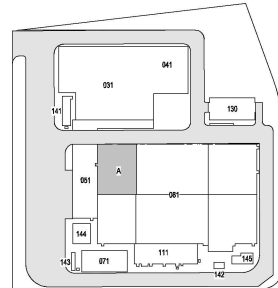
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. SEE SHEET E-620.00 FOR BUILDING RING DETAIL, AROUND DOORS.
2. BOND BUILDING RING CONDUCTOR TO BUILDING ELECTRODE CONDUCTOR WITH A MINIMUM 250 MCM CONDUCTOR EVERY 33' FOR EXTERIOR WALLS. SEE E-610.00 AND E-611.00.
3. BOND EXTERIOR WALL WITH A #2 AWG ROUND TO PERIMETER ELECTRODE EVERY 33'. SEE E-614.00.
4. BOND INTERIOR WALL WITH A #2 AWG ROUND TO INTERIOR BUILDING RING CONDUCTOR EVERY 33'. SEE E-613.00.
5. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
6. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #4 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
7. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
8. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.
9. WITHIN THE CONVERTER BUILDING, ALL METALLIC COMPONENTS SHALL BE BONDED TO THE BUILDING OR BUILDING RING CONDUCTOR. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

ISSUED FOR PERMIT



KEY PLAN
N.T.S.

**Engineering and
Land Surveying, P.C.**

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New York, NY 10001

**SOWINSKI
SULLIVAN**

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B	100% SUBMISSION	A.KHAB	D.DJAN	10/10/2022
A	INTERIM SUBMISSION	N.WU	D.DJAN	09/13/2022
REV	DESCRIPTION	DRW BY	CHK BY	DATE

Kiewit
478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT
CHPE
Champlain Hudson
PowerExpress

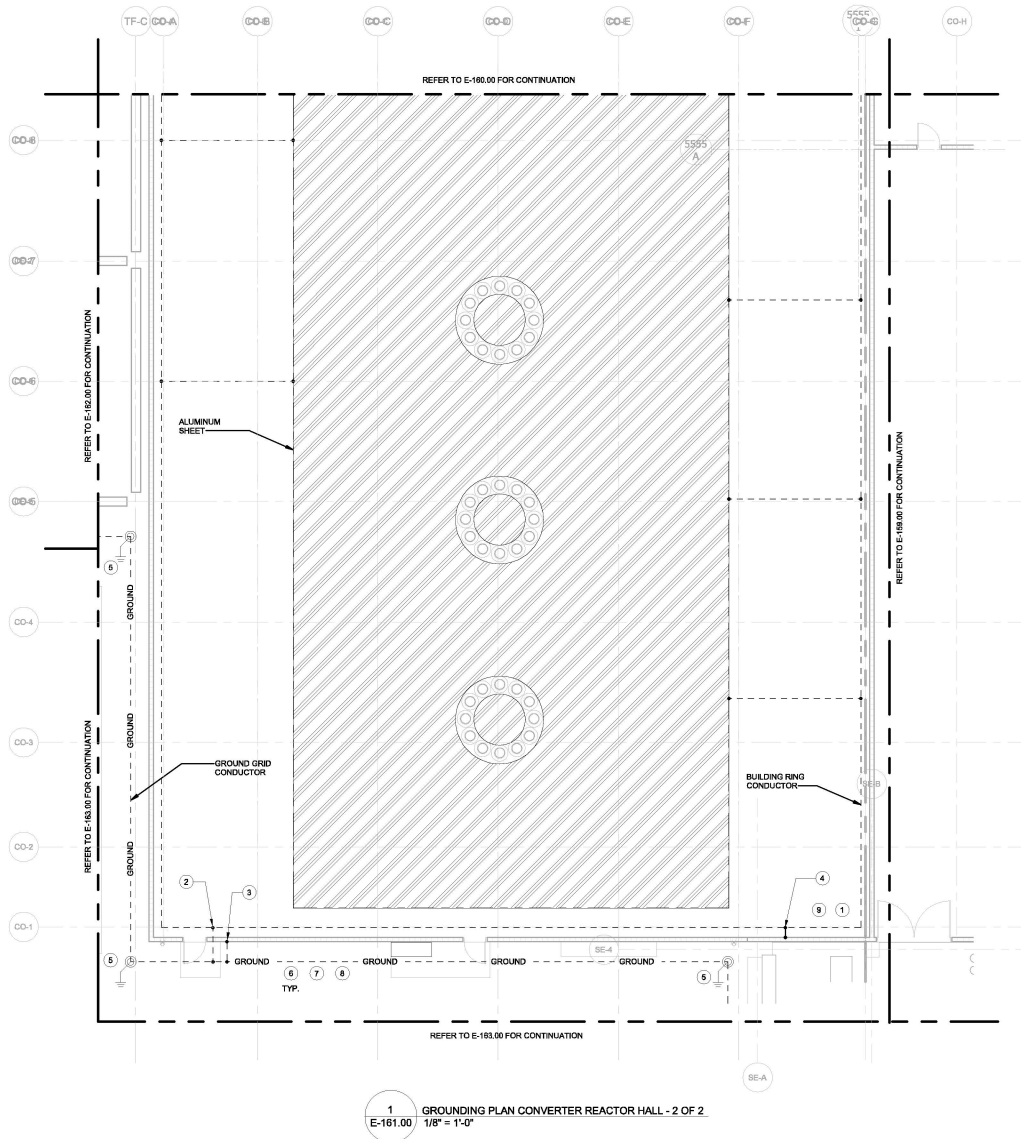
**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

**CONVERTER REACTOR
HALL GROUNDING PLAN
(1 OF 2)**



DATE: 10/10/2022
INQUIRY NO: 169121
DRAWING BY: A.KHAB/SULLIVAN
CHECKED BY: D.DJAN
DRAWING NO:
E-160.00
CADD FILE NO:
AUTOCAD VERSION: 2014

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1
E-161.00
GROUNDING PLAN CONVERTER REACTOR HALL - 2 OF 2
1/8" = 1'-0"

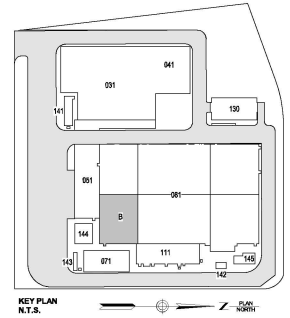
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

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3. BOND EXTERIOR WALL WITH #2 AWG RING TO PERIMETER ELECTRODE EVERY 33'. SEE E-414.00.
4. BOND INTERIOR WALL WITH #2 AWG RING TO INTERIOR BUILDING RING CONDUCTOR EVERY 33'. SEE E-413.00.
5. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER GLAD STEEL. SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
6. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #2 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
7. SEE DRAWING E-152.00 FOR OVERALL SITE GROUNDING PLAN.
8. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS, GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.
9. WITHIN THE CONVERTER BUILDING, ALL METALLIC COMPONENTS SHALL BE BONDED TO THE BUILDING OR BUILDING RING CONDUCTOR. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

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REV	DESCRIPTION	CHK	BY	DATE
B	100% SUBMISSION	A.KHAB	D.SALAN	12/13/2022
A	INTERIM SUBMISSION	N.WU	D.SALAN	09/13/2022

Kiewit
478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson PowerExpress

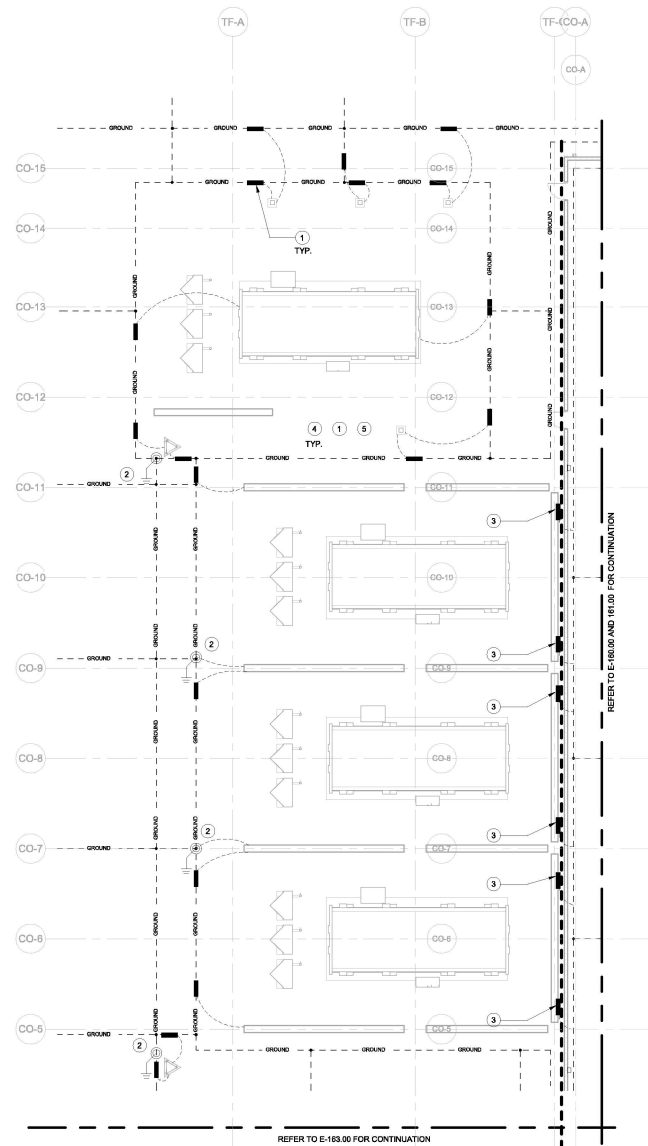
Astoria HVDC Converter Station
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #462437

CONVERTER REACTOR HALL GROUNDING PLAN (2 OF 2)

STATE OF NEW YORK
JAMES B. GREGG
SEAL
REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL ENGINEERING
No. 10113
EXPIRATION DATE 12/31/2024

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: A.KHAB/SCULLINE
CHECKED BY: D.SALAN
DRAWING NO: E-161.00
CADD FILE NO: E-161.00.dwg
DATE: 12/13/2022

WARNING - IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 7202.2, FOR ANY PERSON, UNLESS SHE OR HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 7202.2.



1
E-162.00
GROUNDING PLAN TRANSFORMER BAYS
3/32" = 1'-0"

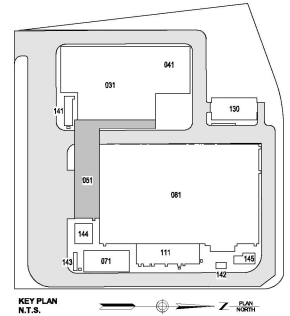
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
2. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
3. BOND THE RISER CONNECTIONS FROM COPPER BARS IN THE TRANSFORMER BOOTH TO THE REACTOR HALL RING CONDUCTOR.
4. MAIN GROUND GRID AND ALL GROUND TAPPS TO BE 4/0 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
5. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS, GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

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Sparta, NJ 07871

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B	100% SUBMISSION	A. KHAN	D. DULAN	12/13/2022
A	INTERIM SUBMISSION	N. MU	D. DULAN	08/13/2022
REV	DESCRIPTION	DRAWN BY	CHK BY	DATE

Kiewit 470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07877

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

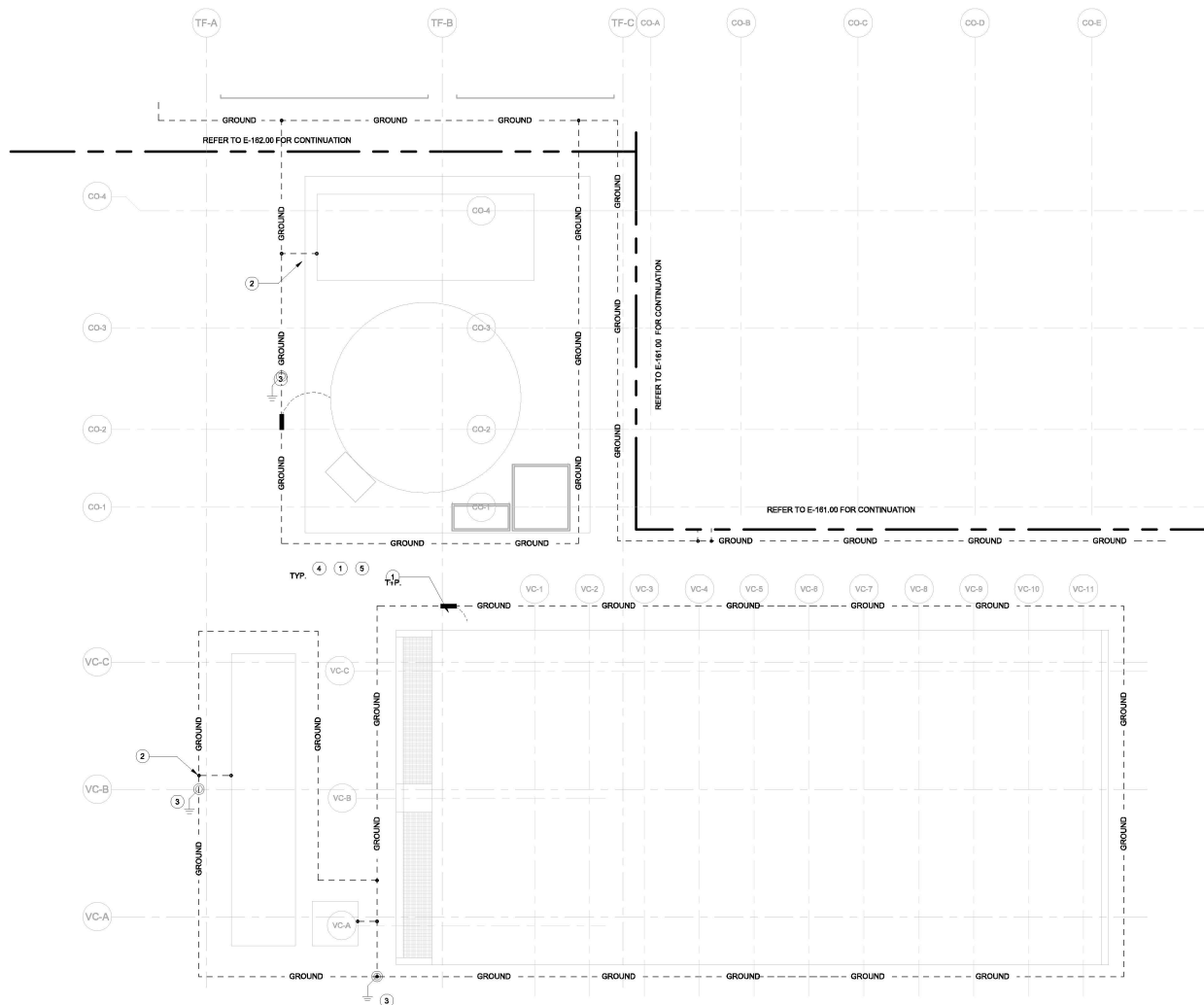
**TRANSFORMER BAYS
GROUNDING PLAN**

STATE OF NEW YORK

DATE: 12/13/2022
PROJECT NO: 169121
DRAWING BY: A. KHAN/BSULLIVAN
CHECKED BY: D. DULAN
DRAWING NO: E-162.00

CHPE FILE NO: 169121-001
SIGNED AND SEALED BY ME: 12/13/2022

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1 GROUNDING PLAN DRY COOLING AREA, FIRE WATER TANK, AND GENERATOR
E-163.00 1/8" = 1'-0"

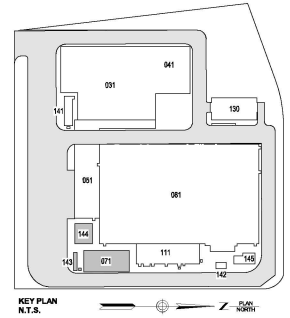
ELECTRICAL GENERAL NOTES

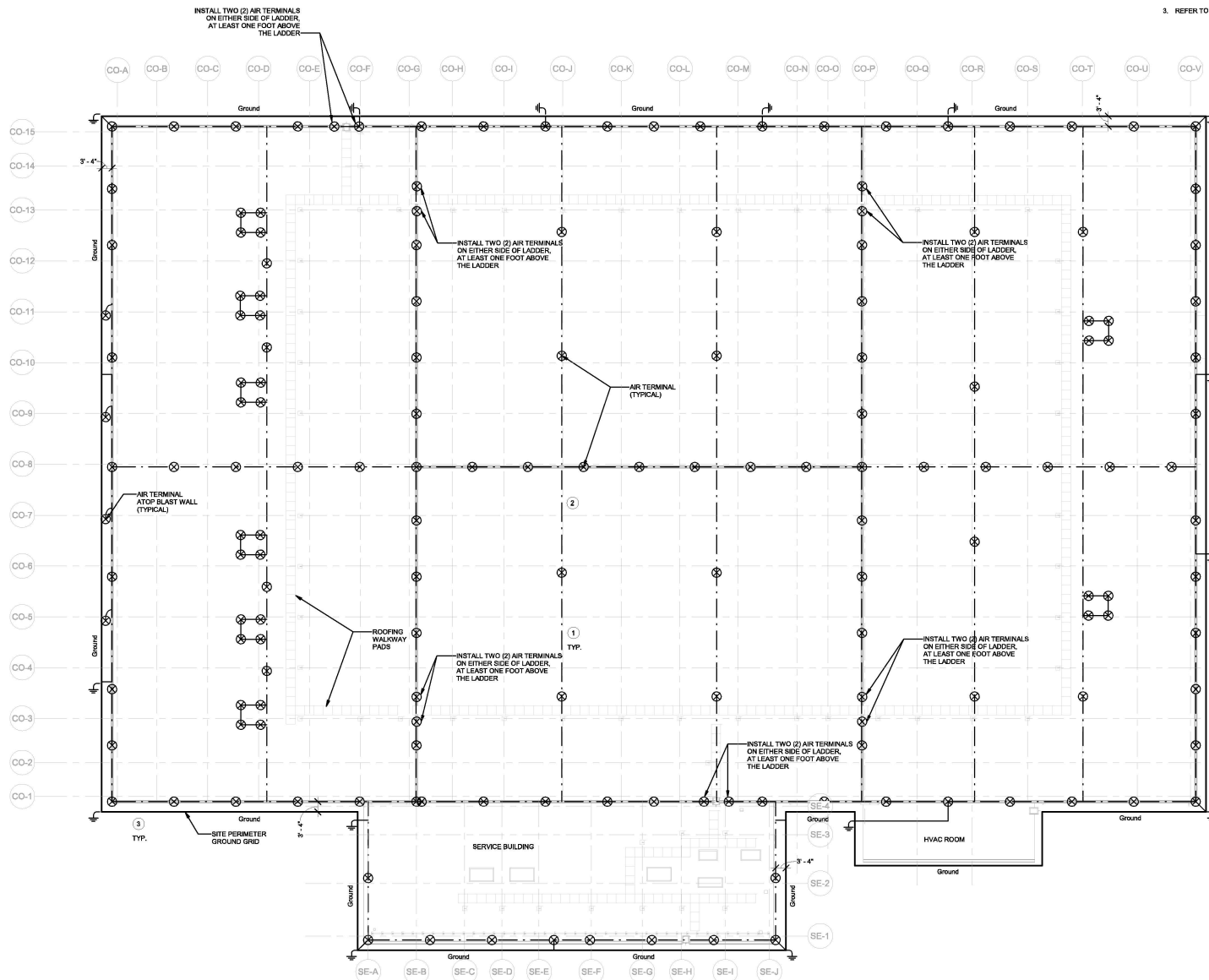
1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTORS.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
2. BOND EXTERIOR WALL WITH A #2 AWG ROUND TO PERIMETER ELECTRODE EVERY 30'. SEE E-614.00.
3. GROUND RODS SHALL CONSIST OF 10" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
4. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #4 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
5. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS, GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

ISSUED FOR PERMIT





1
E-165.00
CONVERTER AND SERVICE BUILDING ROOF LIGHTNING PROTECTION PLAN
1/16" = 1'-0"

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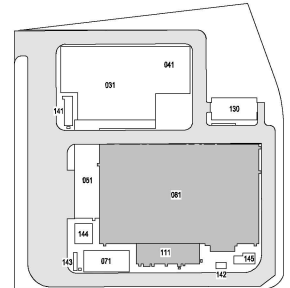
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. REFER TO SHEET E-100.00 FOR OVERALL SITE LIGHTING PLAN.
3. REFER TO SHEET E-330.00 FOR LIGHT FIXTURE SCHEDULE.

ELECTRICAL KEYNOTES

1. FURNISH AND INSTALL AIR TERMINALS ON ROOF AS REQUIRED BY NFPA 780.
2. FURNISH AND INSTALL LIGHTNING PROTECTION SYSTEM FOR THE FACILITY THAT MEETS NFPA 780. THE LIGHTNING PROTECTIONS SHALL BE INSTALLED BY A U.L. MASTER LABELED CONTRACTOR.
3. FURNISH AND INSTALL GROUND RODS AROUND THE BUILDING BOND GROUND ROD TO ROOF LIGHTNING PROTECTION GRID AT EACH LOCATION.

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

25 Mechanics Avenue
Sparks, NJ 07871

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REV	DESCRIPTION	DATE	BY	CHK	DATE
B	100% SUBMISSION	12/13/2022	A.H.W.	D.S.D.	12/13/2022
A	INTERIM SUBMISSION	09/13/2022	N.W.	D.S.D.	09/13/2022

REV	DESCRIPTION	DATE	BY	CHK	DATE
B	100% SUBMISSION	12/13/2022	A.H.W.	D.S.D.	12/13/2022
A	INTERIM SUBMISSION	09/13/2022	N.W.	D.S.D.	09/13/2022

470 Chestnut Ridge Rd #2
Woodcliff Lake, NJ 07877

901 Main Campus Drive
Raleigh, North Carolina 27606

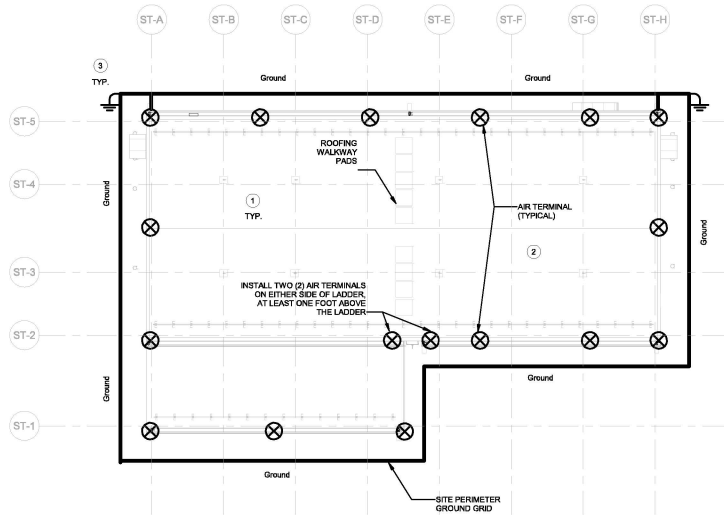
PROJECT

CHPE
Champlain Hudson
Power-Express

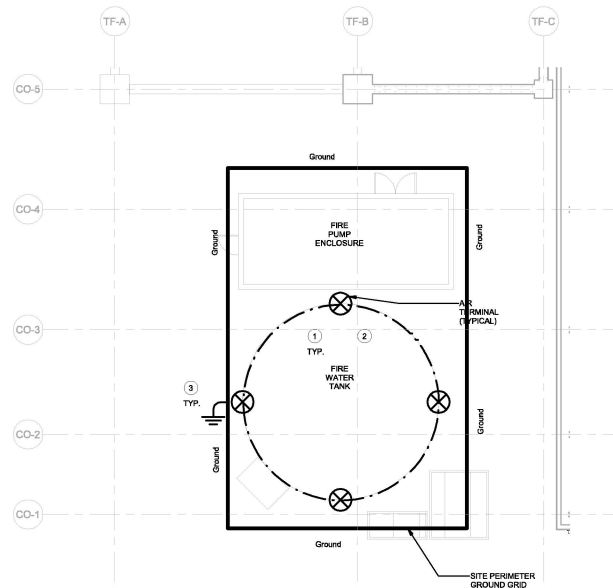
**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

CONVERTER AND SERVICE
BUILDING ROOF
LIGHTNING PROTECTION
PLAN

DATE: 12/13/2022
PROJECT NO: 159121
DRAWING BY: A.H.W./S.C.L.L.
CHECKED BY: D.S.D.
DRAWING NO: E-165.00
CADD FILE NO: E-165.00.dwg
PLOT FILE NO: E-165.00.dwg



1
E-166.00 STORAGE ENCLOSURE LIGHTNING PROTECTION PLAN
3/32" = 1'-0"



2
E-166.00 FIRE WATER TANK LIGHTNING PROTECTION PLAN
1/8" = 1'-0"

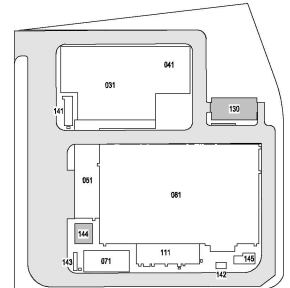
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. REFER TO SHEET E-100.00 FOR OVERALL SITE LIGHTING PLAN.
3. REFER TO SHEET E-330.00 FOR LIGHT FIXTURE SCHEDULE.

ELECTRICAL KEYNOTES

1. FURNISH AND INSTALL AIR TERMINALS ON ROOF AS REQUIRED BY NFPA 780.
2. FURNISH AND INSTALL LIGHTNING PROTECTION SYSTEM FOR THE FACILITY THAT MEETS NFPA 780. THE LIGHTNING PROTECTIONS SHALL BE INSTALLED BY A U.L. MASTER LABELED CONTRACTOR.
3. FURNISH AND INSTALL GROUND RODS AROUND THE BUILDING. BOND GROUND RODS TO ROOF LIGHTNING PROTECTION GRID AT EACH LOCATION.

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KEY PLAN
N.T.S.

Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001

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SULLIVAN

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REV	DESCRIPTION	DATE
B	100% SUBMISSION	12/13/2022
A	INTERIM SUBMISSION	08/13/2022

Kiewit
478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

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 #650 - Lot #310 - BIN #4624437

**SPARE PARTS BUILDING
AND WATER TOWER
LIGHTNING PROTECTION
PLAN**

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: A.M. BIRCHALL, INC.
CHECKED BY: D. DUBOW
DRAWING NO: E-166.00
CADD FILE NO: E-166.00.dwg
PLOT FILE NO: E-166.00.dwg

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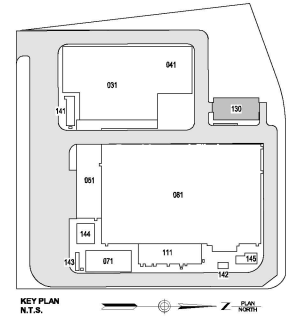
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR ELECTRICAL GENERAL NOTES & SHEET E-004.00 FOR ELECTRICAL SYMBOLS.
2. ALL INTERIOR CIRCUITS SHALL BE MIN. 3/4" EMT OR EMBEDDED PVC CONDUIT IN SLAB UNLESS EXPOSED TO DAMAGE OR NOTED OTHERWISE. CONDUITS SUSCEPTABLE TO DAMAGE SHALL BE RMC.
3. EXTERIOR CIRCUITS SHALL BE 2W12+12G IN 3/4" RMC UNLESS NOTED OTHERWISE.

ELECTRICAL KEYNOTES

- 1 WEATHERPROOF EXTERIOR PHOTOCELL FOR CONTROL OF EXTERIOR BUILDING-MOUNTED LIGHTING. PROVIDE WEATHERPROOF JUNCTION BOX MOUNTED TO EXTERIOR FACADE APPROXIMATELY 12" BELOW EAVE HEIGHT. MOUNT PHOTOCELL TO JUNCTION BOX AND AIM NORTH. COORDINATE FINAL LOCATION WITH OTHER DISCIPLINES TO PREVENT OBSTRUCTIONS TO PHOTOCELL SENSOR LINE OF SIGHT IN THE IMMEDIATE VICINITY. REFER TO DETAIL 2 THIS SHEET FOR MORE INFORMATION.

ISSUED FOR PERMIT



K Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1634
New York, NY 10001

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25 Mohawk Avenue
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[illegible]

PROJECT

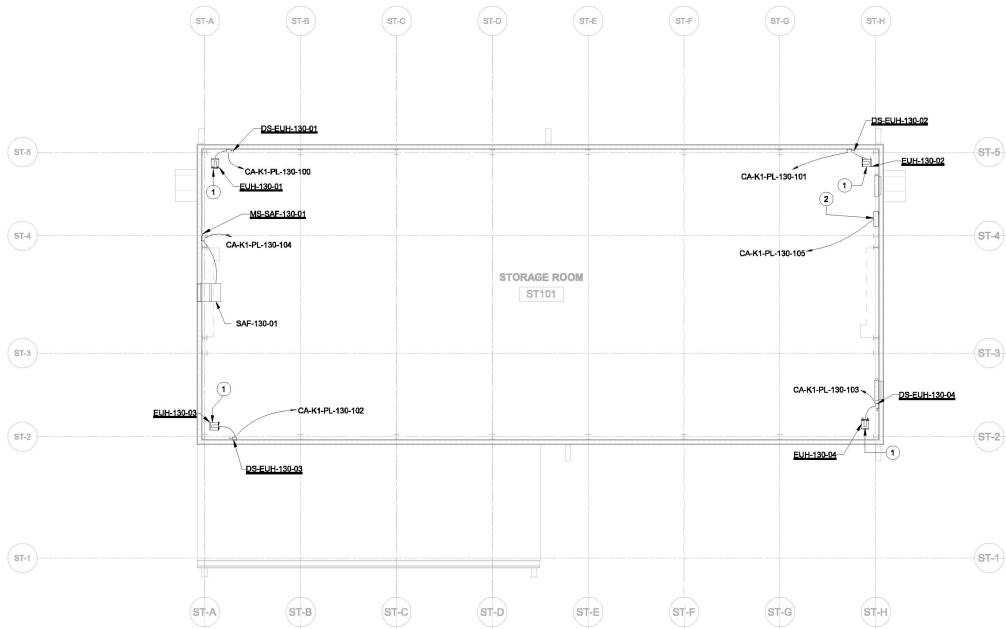

CHPE
Champlain Hudson
PowerExpress

**Astoria HVDC
Converter Station**

31-45 20th Avenue, Astoria, Queens NY 111
Block #850 - Lot #310 - BIN #A624437

STORAGE ENCLOSURE LIGHTING PLAN





1 ELECTRICAL HVAC POWER PLAN
E-172.00 1/8" = 1'-0"

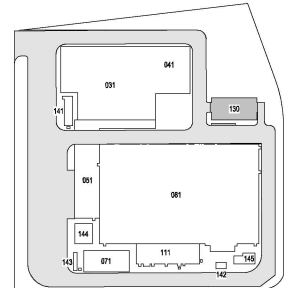
ELECTRICAL GENERAL NOTES

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2. ALL INTERIOR CIRCUITS SHALL BE MIN. 3/4" EMT OR EMBEDDED PVC CONDUIT IN SLAB UNLESS EXPOSED TO DAMAGE OR NOTED OTHERWISE. CONDUITS SUSCEPTIBLE TO DAMAGE SHALL BE RMC.
3. EXTERIOR CIRCUITS SHALL BE 3/4" RIGID IN 3/4" RMC UNLESS NOTED OTHERWISE.

ELECTRICAL KEYNOTES

1. INSTALL ELECTRIC UNIT HEATERS WITH A LOCAL DISCONNECT. SEE MECHANICAL PLANS FOR SCHEDULE AND MOUNTING DETAILS.
2. INSTALL 120 VAC CIRCUIT FOR HVAC CONTROL PANEL. SEE MECHANICAL PLANS FOR DETAILS.

ISSUED FOR PERMIT



KEY PLAN
N.T.S.

Engineering and
Land Surveying, P.C. 370 7th Avenue
SUITE 1804
New York, NY 10001

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REV	DESCRIPTION	DATE	BY	CHK	DATE
B	100% SUBMISSION	10/10/2022	J. WATTS	D. GILMAN	10/10/2022
A	INTERIM SUBMISSION	08/10/2022	J. WATTS	D. GILMAN	08/10/2022

470 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

901 Main Campus Drive
Raleigh, North Carolina 27608

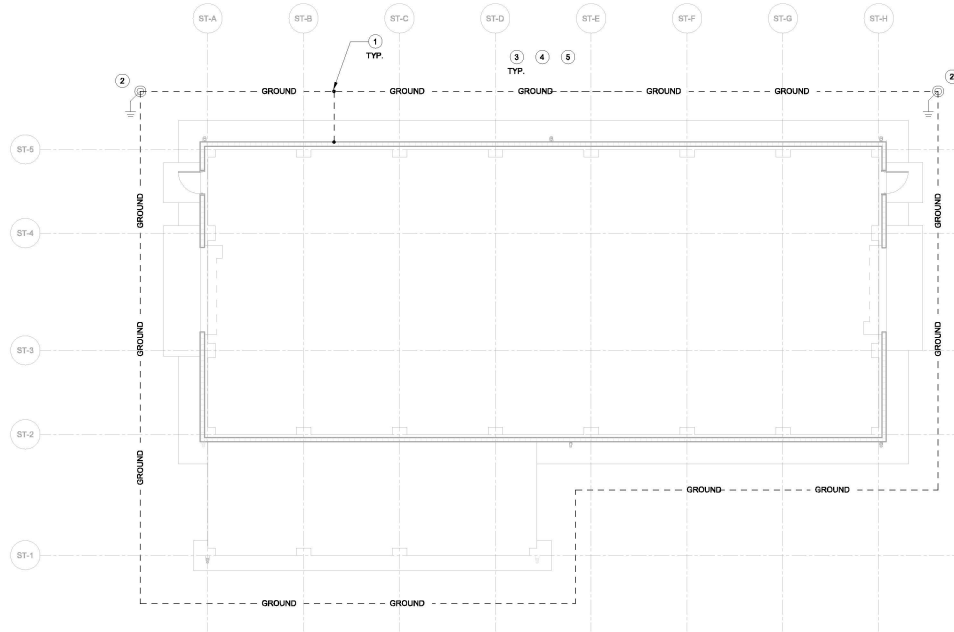
PROJECT

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

STORAGE ENCLOSURE
HVAC POWER PLAN

DATE: 08/29/2022
PROJECT NO: 100121
DRAWING BY: JMS
CHECKED BY: CND
DRAWING NO: E-172.00
CADD FILE NO: 100121-001
AUTOCAD: 2022 RELEASE 12.0.0

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1
E-173.00 1/8" = 1'-0"

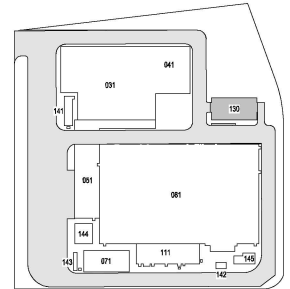
ELECTRICAL GENERAL NOTES

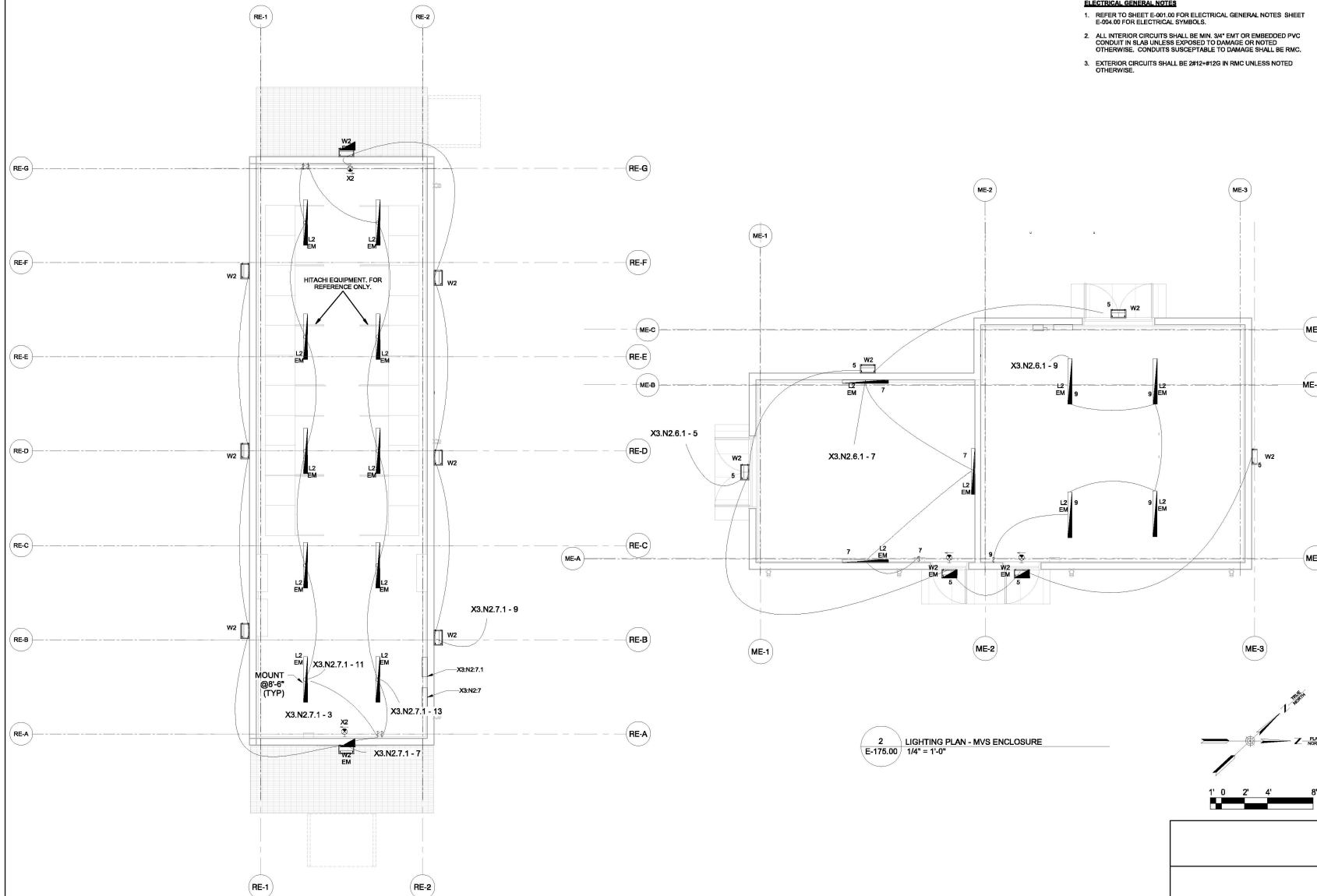
1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. BOND EXTERIOR WALL WITH A #2 AWG ROUND TO PERIMETER ELECTRODE EVERY 30'. SEE E-014.00.
2. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
3. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #10 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
4. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
5. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS, GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

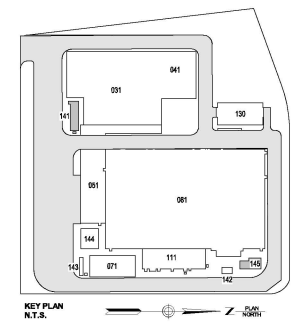
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ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR ELECTRICAL GENERAL NOTES SHEET E-004.00 FOR ELECTRICAL SYMBOLS.
2. ALL INTERIOR CIRCUITS SHALL BE MIN. 3/4" EMT OR EMBEDDED PVC CONDUIT IN SLAB UNLESS EXPOSED TO DAMAGE OR RMC. OTHERWISE, CONDUITS SUSCEPTIBLE TO DAMAGE SHALL BE RMC.
3. EXTERIOR CIRCUITS SHALL BE #12-1" IN RMC UNLESS NOTED OTHERWISE.



K_r Engineering and
Land Surveying, P.C.

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New York, NY 10001

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B	10% SUBMISSION	XLIU	O.DJAN	12/12/2022
A	INTERIM SUBMISSION	J.GRFFIN	O.DJAN	09/13/2022
REV	DESCRIPTION	DRW BY	CHEK BY	DATE

 <p>Kiewit 470 Chestnut Ridge Rd # 2, Woodcliff Lake, NJ 07877</p>	 <p>Hitachi Energy 901 Main Campus Drive Raleigh, North Carolina 27606</p>
--	--


PROJECT


CHPE
Champlain Hudson
PowerExpress

**Astoria HVDC
Converter Station**

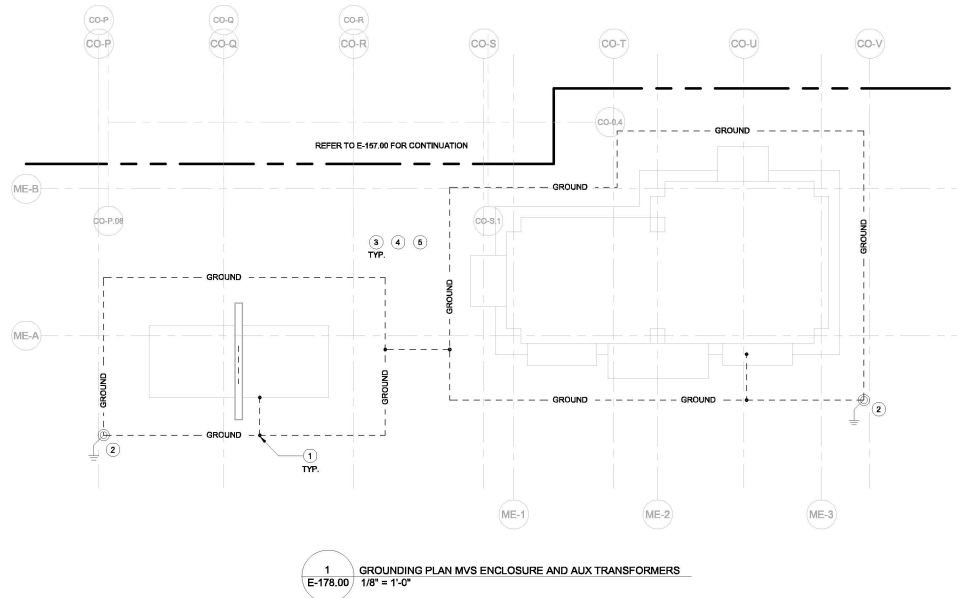
3145 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

**MVS & AC RELAY
ENCLOSURES LIGHTING
PLAN**

 <p>THE STATE OF NEW YORK JESSE B. GUNAWAN GOVERNOR JULIO A. GARCIA COMMISSIONER NEW YORK STATE DEPARTMENT OF TAXATION AND FINANCE</p>	DATE:	06/26/2022
	PRODUCT NO:	166121
	DRAWING BY:	JMC
	CHECKED BY:	DND
	DRAWING NO:	
	<h1>E-175.00</h1>	
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WARNING - IT IS A VIOLATION, OF THE NEW YORK STATE EDUCATION LAW, SECTION 7209.2, FOR ANY PERSON, UNLESS SHE OR HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 7209.2.

12/21/2022 10:41:04 AM



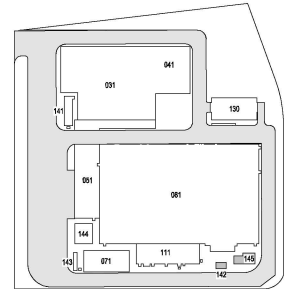
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. BOND EXTERIOR WALL WITH A #2 AWG ROUND TO PERIMETER ELECTRODE EVERY 30'. SEE E-014.00.
2. GROUND RODS SHALL CONSIST OF 1/2\"/>

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Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1804
New York, NY 10001

SOWINSKI
SULLIVAN

25 Mechanic Avenue
Sparta, NJ 07871

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B	100% SUBMISSION	A. KHAN	D. DUDAN	12/13/2022
A	INTERIM SUBMISSION	N. MU	D. DUDAN	09/13/2022

REV	DESCRIPTION	CHK	BY	DATE
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478 Chestnut Ridge Rd # 2, Woodcliff Lake, NJ 07877	901 Main Campus Drive Raleigh, North Carolina 27608

PROJECT

CHPE
Chempaint Hydropower Express

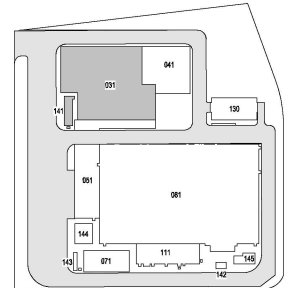
Astoria HVDC Converter Station
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

MVS ENCLOSURE &
AUXILIARY
TRANSFORMERS
GROUNDING PLAN

	DATE: 12/13/2022 INQUIRY NO: 109121 DRAWING BY: A. KHAN/RECEIVED: N.E. CHECKED BY: D. DUDAN DRAWING NO: E-178.00 CADD FILE NO: AUTOCAD VERSION: 2014
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WARNING - IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 2208.2, FOR ANY PERSON, UNLESS SHE OR HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 2208.2.

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KEY PLAN
N.T.S.

**Engineering and
Land Surveying, P.C.** 370 7th Avenue
SUITE 1804
New York, NY 10001

**SOWINSKI
SULLIVAN** 25 Mechanic Avenue
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B	100% SUBMISSION	A.KHAB	D.SALAN	12/13/2022
A	INTERIM SUBMISSION	N.WU	D.SALAN	09/13/2022
REV	DESCRIPTION	DRW BY	CHK BY	DATE

Kiewit
478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champion Power
PowerExpress

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

AC YARD GROUNDING
PLAN (1 OF 3)

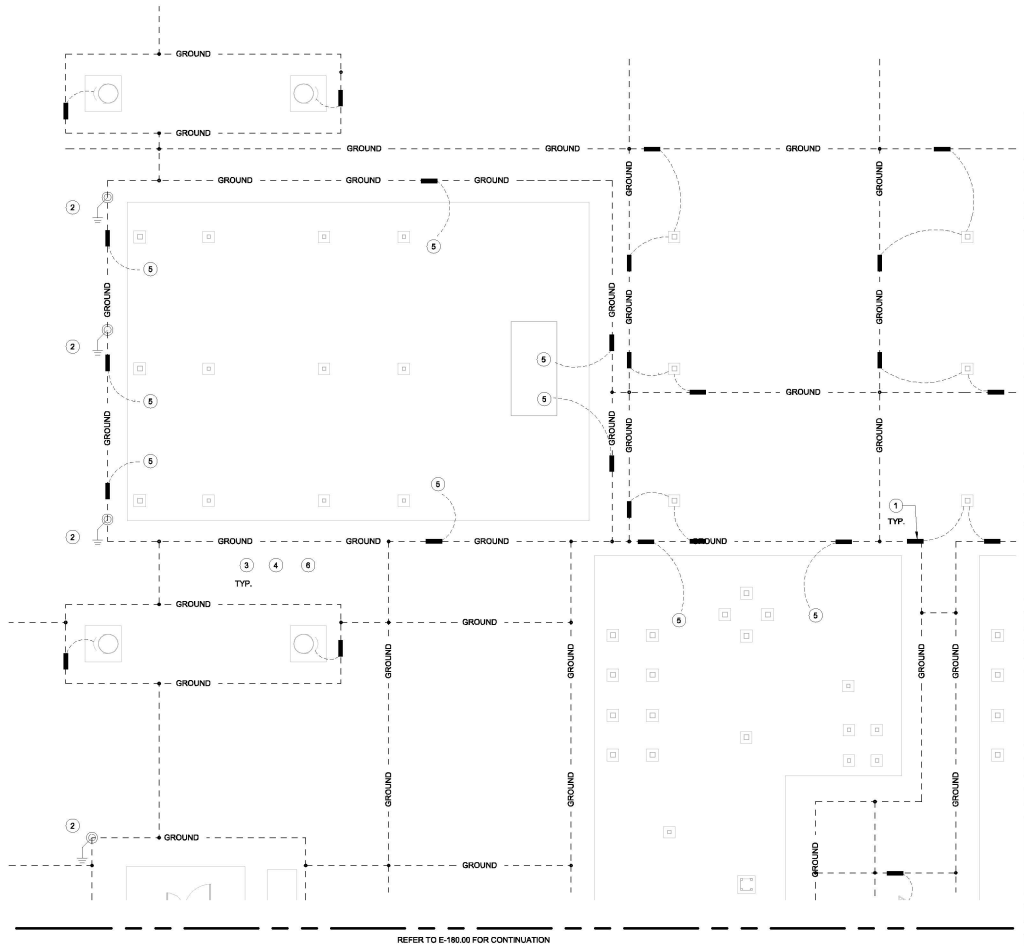
DATE: 12/13/2022
INQUIRY NO: 109121
DRAWING BY: A.KHAB
CHECKED BY: A.KHAB
DRAWING NO: E-179.00
CADD FILE NO: E-179.00
AUTOCAD VERSION: 2013

ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

1. BOND THE FOUNDATION EQUIPMENT TO THE GROUND GRID.
2. GROUND RODS SHALL CONSIST OF 10' - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
3. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #4 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
4. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
5. CONNECTIONS FROM MAIN GROUND GRID TO BE CONNECTED TO COPPER BAR LOCATED ON THE FOUNDATION.
6. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.



1 GROUNDING PLAN AC YARD - 1 OF 3
E-179.00 1/8" = 1'-0"

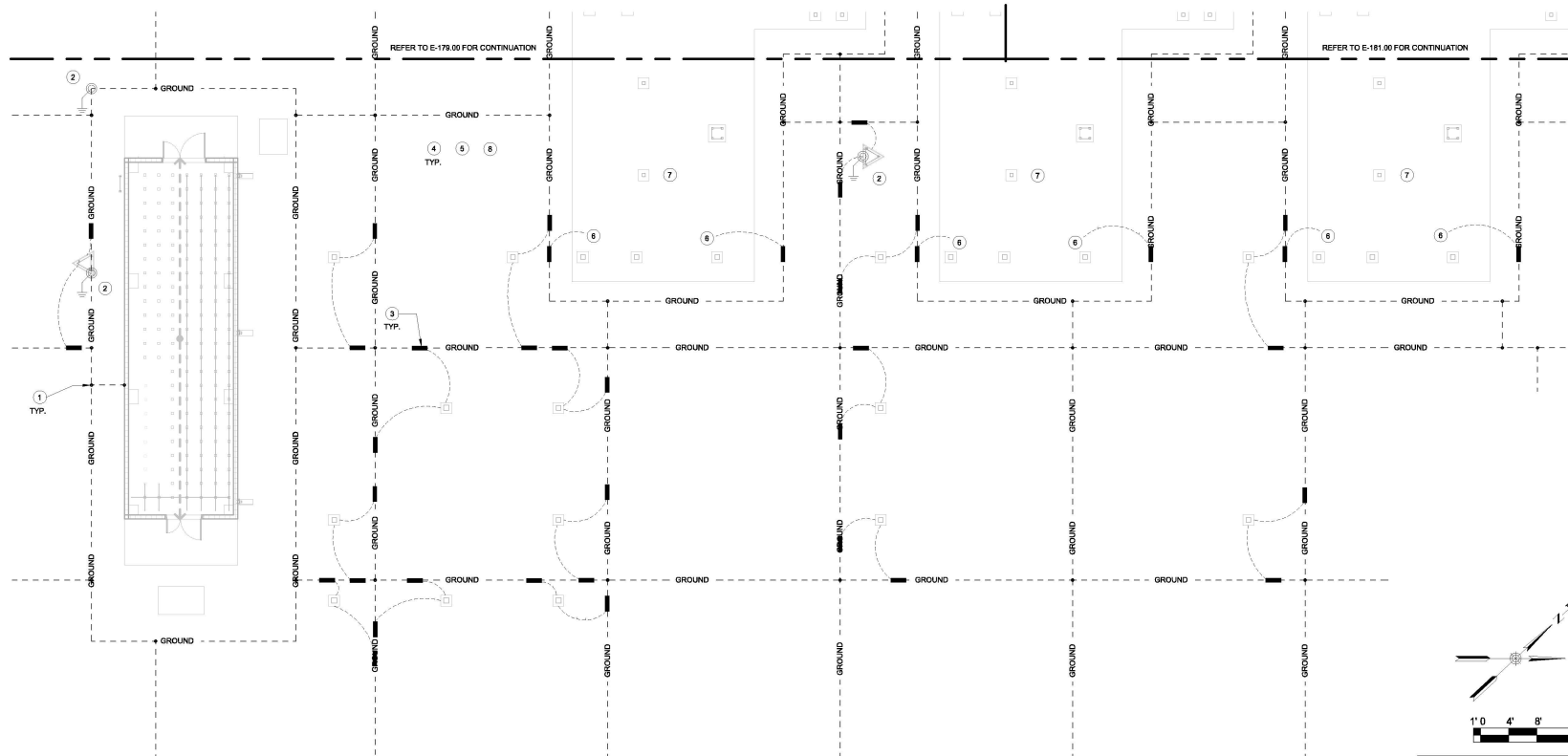
WARNING - IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 2209.2, FOR ANY PERSON, UNLESS SHE OR HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 2209.2.

ELECTRICAL KEYNOTES

1. BOND EXTERIOR WALL WITH A #2 AWG ROUND TO PERMETER ELECTRODE EVERY 33'. SEE E-614.00.
2. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
3. BOND THE FOUNDATION EQUIPMENT TO THE GROUND GRID.
4. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #6 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
5. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
6. CONNECTIONS FROM MAIN GROUND GRID TO BE CONNECTED TO COPPER BAR LOCATED ON THE FOUNDATION.
7. INSTALL A MINIMUM 8' X 8' GROUND MAT FOR THE DISCONNECTOR WITH GROUND SWITCH. SEE E-669.00.
8. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

ELECTRICAL GENERAL NOTES

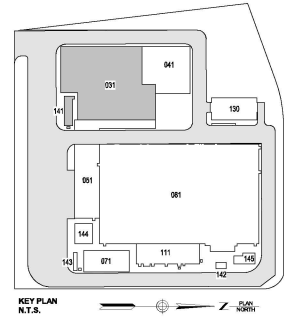
1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.



1
E-180.00
GROUNDING PLAN AC YARD - 2 OF 3
1/8" = 1'-0"

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Engineering and
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370 7th Avenue
SUITE 1804
New York, NY 10001

SOWINSKI
SULLIVAN

25 Mechanic Avenue
Sparks, NJ 07871

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B	100% SUBMISSION	A. KHAN	D. DUDAN	12/13/2022
A	INTERIM SUBMISSION	N. MU	D. DUDAN	08/13/2022
REV	DESCRIPTION	DRW BY	CHK BY	DATE

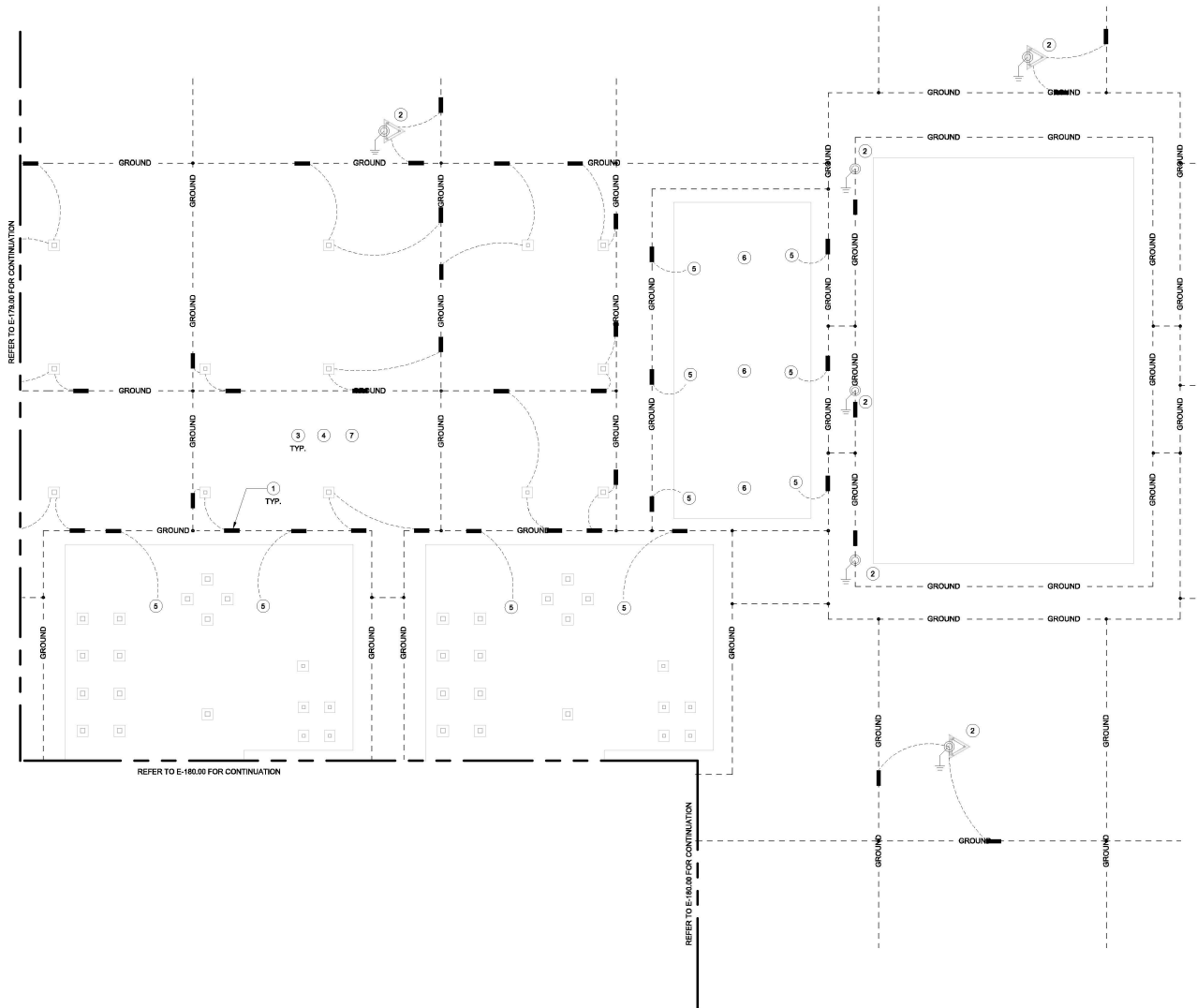
Kiewit
478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

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

AC YARD GROUNDING
PLAN (2 OF 3)

DATE: 12/13/2022
INQUIRY NO: 100121
DRAWING BY: A. KHAN/SULLIVAN
CHECKED BY: D. DUDAN
DRAWING NO:
E-180.00
CADD FILE NO:
AUTOCAD PROJECT FILE NO: E-180.00



1
E-181.00 1/8" = 1'-0"

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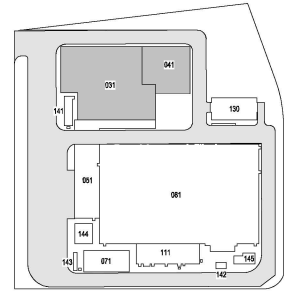
ELECTRICAL GENERAL NOTES

1. REFER TO SHEET E-001.00 FOR GENERAL NOTES.
2. BOND ALL COLUMNS, DOORS, LIGHT FIXTURES, WALL PIPES, DUCT WORK OR ANY OTHER METALLIC COMPONENTS WITH A MINIMUM #2 AWG GROUND CONDUCTOR.
3. SEE ARCHITECTURAL PLANS FOR WALL AND DOOR DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.
4. SEE MECHANICAL PLANS FOR VENTILATION DUCT DETAILS. DRAWINGS ARE FILED UNDER A SEPARATE APPLICATION.

ELECTRICAL KEYNOTES

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2. GROUND RODS SHALL CONSIST OF 1/2" - 3/4" THICKNESS COPPER CLAD STEEL SECTIONAL RODS COUPLED TOGETHER BY EXOTHERMIC CONNECTIONS.
3. MAIN GROUND GRID AND ALL GROUND TAPS TO BE #4 AWG COPPER CONDUCTORS BURIED AT AN APPROXIMATE DEPTH OF 24" BELOW THE FINISHED GRADE.
4. SEE DRAWING E-132.00 FOR OVERALL SITE GROUNDING PLAN.
5. CONNECTIONS FROM MAIN GROUND GRID TO BE CONNECTED TO COPPER BAR LOCATED ON THE FOUNDATION.
6. INSTALL A MINIMUM 8" X 8" GROUND MAT FOR THE DISCONNECTOR WITH GROUND SWITCH. SEE E-489.00.
7. METALLIC EQUIPMENT SUCH AS FENCE, HAND RAILS GUARD RAIL, SUPPORT FRAMES OR ANY OTHER MISCELLANEOUS DEVICE LOCATED OUTDOORS SHALL BE BONDED TO GROUND. COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR REQUIREMENTS.

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KEY PLAN
N.T.S.

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SUITE 1804
New York, NY 10001

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Sparks, NJ 07871

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REV	DESCRIPTION	CHK	BY	DATE
B	100% SUBMISSION	A.PHAB	D.DJAN	12/13/2022
A	INTERIM SUBMISSION	N.WJ	D.DJAN	09/13/2022

Kiewit 478 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07877

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 - B/N #4624437

**AC YARD GROUNDING
PLAN (3 OF 3)**

STATE OF NEW YORK
SEAL OF THE STATE ENGINEER
OFFICE OF THE STATE ENGINEER
DIVISION OF PROFESSIONAL ENGINEERING

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: A.M. HERRICK
CHECKED BY: D.DJAN
DRAWING NO: E-181.00
CADD FILE NO: E-181.00
AUTOCAD FILE NO: E-181.00