PLS-CADD DRAWING







| 4 | 3 | 1 | 2 | | | 1 | |
|--|--|--------|----------------|---------|---------------------------------|-----------------------------------|---|
| | | | | | HOL | D INFORMATION | |
| | | | | NO. | | DESCRIPTION | _ |
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| | | | | APPRO | PRIATE PREC | AUTIONS TO ENSURE THE | |
| | | | | WORK | SITE, INCLUDI | NG CONTRACTOR'S/ | |
| | | | | SUB-CC | NTRACTOR(S |)) PERFORMING THE WORK. | |
| | | | | REV | | | _ |
| | | | | A A | 08-08-2024 | ISSUED FOR 60% REVIEW | _ |
| | | | | В | 10-16-2024 | ISSUED FOR EM&CP SUBMISSION | N |
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| | | | | | | | |
| | | | | ISSUE F | PURPOSE: | ISSUED FOR EM&CP SUBMISSION | |
| \checkmark | | | | SPECIF | | 15004 002 | |
| | | | | | <u>51 INU</u> | 10034.002 | - |
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| | | | | | | HPE-PHASING-001 | _ |
| | | | | REVIEV | VED BY: KF | Υ RM | _ |
| | | | | APPRO | VED BY: KF | | |
| | | | | | NG BY AN ORG | GANIZATION OTHER THAN | |
| | | | | RESPO | NT & LUNDY, I NSIBILITY OF S | S NOT THE SARGENT & LUNDY. | |
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| | | | | | _ | | |
| | | | | | Sarg | ent & Lunay | |
| | | | | | | | |
| | | | | | SARO 55 FAS | GENT & LUNDY ST MONROE STREET | |
| | | | | | CHICAG | O, ILLINOIS 60603-5780 | |
| | | | | | | | |
| | | | | | (| CHPE | |
| | | | | | N. | Champlain Hudson Power Express | |
| | | | | | | | |
| | | | | | | PROJECT | + |
| | | | | AS | TORIA CO | NVERTER - ASTORIA | - |
| | | | | | ANNEX 3 | 345kV OVERHEAD | |
| | | | | | TRAN | SMISSION LINE | |
| | | | | | CHAM | PLAIN HUDSON | |
| | | | | | POWEF | R EXPRESS, LLC | |
| | | |] | | D | RAWING TITLE | |
| B 10/16/24 ISSUED FOR EM&CP SUBMISSION A 08/08/24 ISSUED FOR 60% REVIEW | N MR KRM KRM CPW KRM KRM | | | | | | |
| | | | | | PHAS | | |
| THIS I REPRO | DRAWING HAS BEEN DRAWN BY, OR DDUCED FROM, A DRAWING PREPARED BY AN | | | | | | _ |
| Sargent & Lundy *** ORGAN SARGE | NIZATION OTHER THAN SARGENT & LUNDY. INT & LUNDY IS NOT RESPONSIBLE FOR | | | | | | - |
| | $\frac{1}{10000000000000000000000000000000000$ | DRAWIN | G NOT TO SCALE | | | | |
| 」 55 EAST MONROE ST., CHICAGO, ILL. 「「へい 」 | $\frac{1}{2}$ | | 2 | | | <u>Ur 4</u> 1 | |
| , | | | | | I | | |



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SCALE: 1" = 80'

| STRUCTURE LOCATION TABLE | | | | | | | | | | |
|--------------------------|-----------|------------------------|-------------|--|--|--|--|--|--|--|
| POLE | NAD83 / | NEW YORK LONG ISLAND (| (US FEET) | | | | | | | |
| NUMBER | NORTHING | EASTING | Height (ft) | | | | | | | |
| GANTRY | 225974.05 | 1011564.69 | 85.00 | | | | | | | |
| STR. #1 | 225913.05 | 1011508.71 | 140.00 | | | | | | | |
| STR. #2 | 225756.60 | 1011089.17 | 145.00 | | | | | | | |
| STR. #3 | 225362.00 | 1010793.00 | 145.00 | | | | | | | |
| STR. #4C | 225190.29 | 1010979.29 | 97.00 | | | | | | | |
| STR. #4B | 225156.03 | 1011015.84 | 119.00 | | | | | | | |
| STR. #4A | 225121.95 | 1011052.41 | 155.00 | | | | | | | |

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| | PR |
| <u> </u> | EXI |
| | PR |

LEGEND

PROPOSED TRANSMISSION POLE ROPOSED CHPE RIGHT-OF-WAY XISTING INGRESS/EGRESS EASEMENT ROPOSED TRANSMISSION CENTERLINE/ALIGNMENT EXISTING CON-ED LNG FENCE PROPOSED 345kV OVERHEAD WIRE

PROPOSED 345kV UNDERGROUND LINE

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F 10/17/24 ISSUED FOR EM&CP SUBMISSION MR KRM KRM F10/17/24ISSUEDFOREIM&CFSOBMISSIONE08/08/24ISSUEDFOR60%REVIEWD05/17/24ISSUEDFOR30%REVIEWC04/01/24ISSUEDFORPRELIMINARYREVIEWB03/20/24ISSUEDFORPRELIMINARYREVIEWREVDATEDESCRIPTION MR KRM KRM MR KRM KRM MR KRM KRM MR KRM KRM PREPARED REVIEWED APPROVED THIS DRAWING HAS BEEN DRAWN BY, OR REPRODUCED FROM, A DRAWING PREPARED BY AN ORGANIZATION OTHER THAN SARGENT & LUNDY. Sargent & Lundy "
SARGENT & LUNDY IS NOT RESPONSIBLE FOR WORK BY OTHER ORGANIZATIONS. PROJ. No. 15094-002 55 EAST MONROE ST., CHICAGO, ILL. 3 4



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| | B 03-20-2024 ISSUED FOR PRELIMINARY REVIEW | |
|--|--|---|
| | C 04-01-2024 ISSUED FOR PRELIMINARY | |
| | D 05-17-2024 ISSUED FOR 30% REVIEW | |
| | E 08-08-2024 ISSUED FOR 60% REVIEW | |
| | F 10-17-2024 ISSUED FOR EM&CP | |
| | | |
| | SPECIFICATION: | D |
| | PROJECT NO.: 15094.002 | |
| | | |
| | CAD FILE NAME:CHPE-PLAN VIEW-001PREPARED BY:MRREVIEWED BY:KRMAPPROVED BY:KRM | С |
| | ANY MODIFICATION OR ADDITION TO THIS DRAWING BY AN ORGANIZATION OTHER THAN SARGENT & LUNDY, IS NOT THE RESPONSIBILITY OF SARGENT & LUNDY. | |
| | Sargent & Lundy SARGENT & LUNDY 55 EAST MONROE STREET | В |
| GENERAL NOTES: 1) ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (a) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS; (b) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S); (c) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK. | CHICAGO, ILLINOIS 60603-5780 | |
| 2) CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL | | |
| (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK. 3) ALL SURVEY DATA WAS PROVIDED BY C.T. MALE ASSOCIATES FROM DRAWINGS DATED 09/21/2023. ALL LINES ARE GEOFERENCED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NAD 83/2011. 4) PRELIMINARY CLEARANCE OF BOTTOM PHASE CONDUCTOR TO GROUND IS 70FT OVER LNG PROPERTY, ACCESS ROADS AND CON-ED LAY DOWN YARD. | ASTORIA CONVERTER - ASTORIA ANNEX 345kV OVERHEAD TRANSMISSION LINE CHAMPLAIN HUDSON POWER EXPRESS 11 C | |
| | | А |
| MR KRM KRM MR KRM KRM MR KRM KRM MR KRM KRM PREPARED REVIEWED APPROVED Image: Constraint of the second sec | PLAN VIEW | |
| AWING HAS BEEN DRAWN BY, OR JCED FROM, A DRAWING PREPARED BY AN | | |
| ALUNDY IS NOT RESPONSIBLE FOR Y OTHER ORGANIZATIONS. | CHPE-PLAN VIEW-001 F | |
| J. No. 15094-002 | SHEET 1 OF 2 | ļ |
| 3 2 | 1 | |

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CONTRACTOR/INSTALLER SHALL TAKE ALL

DATE

APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/ INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.

RELEASE INFORMATION

DESCRIPTION



| STRUCTURE LOCATION TABLE | | | | | | | | | |
|--|---|--|--|--|--|--|--|--|--|
| NAD83 / NEW YORK LONG ISLAND (US FEET) | | | | | | | | | |
| NORTHING | EASTING | Height (ft) | | | | | | | |
| 225974.05 | 1011564.69 | 85.00 | | | | | | | |
| 225913.05 | 1011508.71 | 140.00 | | | | | | | |
| 225756.60 | 1011089.17 | 145.00 | | | | | | | |
| 225362.00 | 1010793.00 | 145.00 | | | | | | | |
| 225190.29 | 1010979.29 | 97.00 | | | | | | | |
| 225156.03 | 1011015.84 | 119.00 | | | | | | | |
| 225121.95 | 1011052.41 | 155.00 | | | | | | | |
| | STRUCTU NAD83 / NORTHING 225974.05 225913.05 225756.60 225362.00 225190.29 225156.03 225121.95 | STRUCTURE LOCATION TABLE NAD83 / NEW YORK LONG ISLAND (NORTHING EASTING 225974.05 1011564.69 225913.05 1011508.71 225756.60 1011089.17 225362.00 1010793.00 225190.29 1010979.29 225156.03 101105.84 225121.95 1011052.41 | | | | | | | |

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| EASEMENT LEG |
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| INGRE EASEME EASEME |
| SANITA EASEME |
| STORM EASEME EASEME |
| WATER EASEME EASEME EASEME |
| LEGE ○ BOL ○ CIRF □ CB ○ CO ○ EMH △ EMTR ○ FP ← ○ HH ④ HYD ○ IRF ○ LP ○ MNF ● LP ○ MNF ○ SMH ○ SMH |

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GENERAL NOTES:

1) ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUAN TO THE GOVERNING CONTRACT DOCUMENTS; (b) BE PERFO COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROG SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCI PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFO

2) CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIAT OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING ((OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE \

3) ALL SURVEY DATA WAS PROVIDED BY C.T. MALE ASSOCI ALL LINES ARE GEOFERENCED ON THE NEW YORK STATE F ISLAND ZONE, NAD 83/2011.

4) PRELIMINARY CLEARANCE OF BOTTOM PHASE CONDUCT PROPERTY, ACCESS ROADS AND CON-ED LAY DOWN YARD

| F 10/17/24 ISSUED |) FOR EM&CP SUE | BMISSION | | MR | KRM | KRM | | | |
|-----------------------|-------------------|---|--|--|---|---------------------|---|----|---------|
| E 08/08/24 ISSUED |) FOR 60% REVIEW | 1 | | MR | KRM | KRM | _ | | |
| D 05/17/24 ISSUED | FOR 30% REVIEW | 1 | | MR | KRM | KRM | | | |
| C 04/01/24 ISSUED |) FOR PRELIMINARY | (REVIEW | | MR | KRM | KRM | | | N I |
| B 03/20/24 ISSUED |) FOR PRELIMINARY | (REVIEW | | MR | KRM | KRM | | | |
| REV DATE | DESCRIP | TION | | PREPARED | REVIEWED | APPROVED | | | |
| | | | | | | | | | |
| Sargents | Lundy | THIS DRAWING HAS REPRODUCED FROM, ORGANIZATION OTHEI SARGENT & LUNDY WORK BY OTHER OF | BEEN D A DRA R THAN IS NOT RGANIZA |)RAWN B WING PF SARGEN RESPON TIONS. | Y, OR REPARED IT & LU ISIBLE F | BY AN NDY. OR | | CC |) [\] (|
| 55 EAST MONROE ST | Г., CHICAGO, ILL. | PROJ. No. | 150 |)94– | -002 | | | | |
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LEGEND

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PROPOSED TRANSMISSION POLE PROPOSED CHPE RIGHT-OF-WAY PROPOSED TRANSMISSION CENTERLINE/ALIGNMENT EXISTING CON-ED LNG FENCE

PROPOSED 345kV OVERHEAD WIRE

PROPOSED 345kV UNDERGROUND LINE

| | 2 | | | | 1 | | |
|---|---|--|---|---|--|------------------------|---|
| | | | | HOL | | | |
| T LEGEN | ID | NO. | | | DESCRIPTION | | |
| NGRESS/ ASEMENT | EGRESS EASEMENT 1(II) 2(II) | | | | | | |
| SANITARY ASEMENT | SEWER LINE EASEMENT 1(IV) | CONT APPR SAFE WORF INSTA SUB-C | RACTO OPRIAT TY OF A (SITE, I LLER'S CONTRA | R/INSTAL E PRECA LL PEOP NCLUDIN PERSON CTOR(S) RELEA | LER SHALL TAKE AL AUTIONS TO ENSURE LE LOCATED ON THE NG CONTRACTOR'S/ INEL (OR THAT OF IT)) PERFORMING THE ASE INFORMATION DESCRIPT | L THE S WORK. | E |
| STORM SE | | В | 03-20 |)-2024 | | | |
| ASEMENT | 2(III) | | 04-0 | 7-2024 | REVIEW | | |
| | | E | 08-08 | 3-2024 | ISSUED FOR 60% R | REVIEW | |
| VATER LI | NE EASEMENT | F | 10-17 | 7-2024 | ISSUED FOR EM&C | Р | |
| | 1(I) | | | | REVIEW | | |
| ASEMENT | 2(I)(9) | SPEC | E PURPO | DSE: | ISSUED FOR EM&CP | SUBMISSION | D |
| | | PROJ | ECT NO | | 15094.002 | | |
| LEGEND | <u>);</u> | | | | | | |
| | BOLLARD CAPPED IRON ROD FOUND CATCH BASIN CLEANOUT DECIDUOUS TREE | | | | | | |
| OEMH | ELECTRIC MANHOLE | | | | | | |
| ΔEMTR | ELECTRIC METER | | | | | | |
| ∘FP ← — | FENCE POST | | | | | | |
| онн | HAND HOLE | | | | | | |
| Q HYD | HYDRANT | | | | | | |
| OIRF | IRON ROD FOUND | | | | | | |
| ◆LP O MNE | LIGHT POLE | | | | | | C |
| O MW | MONITOR WELL | | | | | | Ŭ |
| OSMH | SANITARY MANHOLE | CAD F | FILE NAM | ΛE: C⊢ | IPE-PLAN VIEW-001 | | |
| ÷ | SIGN | | | Y: MF | 2 | | |
| OUMH | UNKNOWN MANHOLE | | | r: KR Y [.] KR | IM IM | | |
| OWMH | WATER MANHOLE | ANY | /ODIFIC | ATION O | R ADDITION TO THIS | | |
| o WV | WATER VALVE | | /ING BY | | ANIZATION OTHER T | HAN | |
| O WLF A4 | WETLAND FLAG | RESP | ONSIBIL | ITY OF S | SARGENT & LUNDY. | | |
| | FLOOD ZONE BOUNDARY | | | | | | |
| === . | JERSEY BARRIER | | | | | | |
| | OVERHEAD WIRES | | | Sarge | ent & Lundy | | |
| | PARCEL BOUNDARY | | | | | | |
| | UNDERGROUND ELECTRIC LINE | | | | | | |
| | UNDERGROUND SANITARY LINE | | | SARC 55 EAS | SENT & LUNDY | | - |
| | UNDERGROUND TELEPHONE LINE | | | CHICAGO | D, ILLINOIS 60603-578 | 0 | В |
| | UNDERGROUND WATER LINE | | | | | | |
| RSUANT TO E PERFORME HAT OF ITS 5, PROGRAM FE, INCLUDIN | THIS DRAWING SHALL: (a) CONFORM ED EXCLUSIVELY BY ITS TRAINED, SUBCONTRACTOR(S); (c) COMPLY S AND PRACTICES TO ENSURE THE NG THE CONTRACTOR'S/INSTALLER'S | | | | CHPE Champlain Hudson Power Express | | |
| PERFORMIN | IG THE WORK. | | | | PROJECT | | |
| DRIATE PRE | ECAUTIONS TO ENSURE THE SAFETY RACTOR'S/INSTALLER'S PERSONNEL | AS | STOR | IA CO | NVERTER - AS | STORIA | |
| | | | AN | NEX 3 | 45kV OVERHE | AD | |
| SSOCIATES | E COORDINATE SYSTEM, LONG | | ٦ | FRANS | SMISSION LINE | Ξ | |
| | | | C | CHAM | PLAIN HUDSO | N | |
| | O GROUND IS 70FT OVER LNG | | P | OWEF | R EXPRESS, LL | .C | |
| · · / · · / · · · · · · · · · · · · · · | | | | DI | RAWING TITLE | | A |
| | FOR | | | Р | LAN VIEW | | |
| $\land \land \frown \neg$ | | | | | | | |
| VS | KUCHONI | | DF | RAWING | NUMBER | REVISION | |
| | | (| HPF. | -PL AN | VIEW-001 | F | |
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| | 2 | | | | I | | |



DRAWING SCALE 3/32" = 1'-0"







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NOTE: ENGINEER BEFORE FABRICATION.



1. STEEL POLE MANUFACTURER TO VERIFY CABLE CLAMP BOLT HOLE PATTERNS WITH



| | 5 | | 4 | | 3 | | |
|----------------|----|-------------|------------|--|-----------------------------------|-------------|-------------|
|) SURGE ARREST | OR | | | MATERIAL | | | |
| | # | MFG | MFG # | DESCRIPTION | | | |
| | 1 | SOUTHWIRE | - | 500 KCMIL BARE CC | PPER CABLE | | |
| | 2 | SOUTHWIRE | - | 250 KCMIL BARE CC | PPER CABLE | | |
| | 3 | PRYSMIAN | - | 250 KCMIL INSULAT | ED COPPER CABLE | | |
| V | 4 | NEHRING | 941100000 | GROUND ROD 10', 1 | /2" COPPER CLAD STEEL | | |
| חו | 5 | NUENT ERICO | TAC 3Q2V | CADWELD PLUS CARTRIDGE, 500 KCMIL TO 250 KCMIL | | | |
| | 6 | AFL | FD0AB5B6 | DOWN LEAD CLAMP | | | |
| - | 7 | WR MEADOWS | 6 03 15 00 | CERAMAR FLEXIBLE | E FOAM EXPANSION JOINT 48" WIDTH, | , 10' LENGT | H, 1" THICK |
| | 8 | HILTI | 3001006 | 3/4" X 4.75" CONCRE | ETE ANCHOR | | |
| | 9 | NEHRING | 945000000 | 1/2" GROUND ROD C | CLAMP | | |
| | 10 | BURNDY | GC34 | 500 KCMIL GROUND | CONNECTORS | | |
| | 11 | PANDUIT | DS5 | DUCT SEALING COM | IPOUND, 5LB PACKAGE | | |
| ATTERNS WITH | 12 | NUENT ERICO | TLF 3Q3Q | CADWELD, 500 KCM | IIL TO 500 KCMIL | | |
| | 13 | BLACKBURN | GUV 7825 | U-BOLT GROUND CL | _AMP | | |
| | 14 | BLACKBURN | GUV 2025 | U-BOLT GROUND CL | _AMP | | |
| | 15 | PENDING | PENDING | ADSS | | | |

HOLD -



GROUNDING DETAIL

NOTE: MAINTAIN ALL ABOVE GRADE GROUNDING UNDER CABLE SHROUD

DETAIL 7

| | | Z | | | 1 | | |
|-------|----------|------|---|---|--|---|--------|
| | | | | НО | LD INFORMATION | | |
| — T | | 1 | NO. | | DESCRIPTION | | |
| | QTY | UNIT | Α | PENDING ADS | SS INFORMATION | | |
| | 60 | FEET | | | | | |
| | _ | FFFT | | | | | |
| | | | | | | | |
| | - | FEET | | RACTOR/INSTA | ALLER SHALL TAKE AL | THF | Е |
| | 2 | EA. | SAFE | TY OF ALL PEO | PLE LOCATED ON THE | | |
| | 10 | EA. | INSTA | LLER'S PERSO | NNEL (OR THAT OF IT: | S | |
| | 14 | FA | SUB-C | ONTRACTOR(S | S)) PERFORMING THE | WORK. | |
| | | | REV. | DATE | DESCRIPT | ION | |
| ` | 40 | EA. | Α | 07/30/24 | ISSUED FOR 60% R | EVIEW | |
| | 4 | EA. | В | 10/18/2024 | ISSUED FOR EM&C | P SUBMISSION | |
| | 2 | EA. | | | | | |
| | 2 | EA. | | | | | |
| | 2 | | | | | | |
| | <u> </u> | | | | | | |
| | 6 | EA. | ISSUE | EPURPOSE: | ISSUED FOR EM&CP | SUBMISSION | - |
| | 2 | EA. | SPEC | FICATION: | SPEC | | D |
| | 2 | EA. | PROJ | ECT NO.: | A15094.002 | | |
| | _ | FFFT | | | | | |
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| | | | | | | | С |
| | | | CAD F | CERT OF AUT | <u>THORIZATION (WHEN F</u> HPE-RISER DETAIL-00 | REQ'D) 4.dwg | С |
| | | | CAD F PREP | CERT OF AUT ILE NAME: C ARED BY: TI | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME | REQ'D) 4.dwg | С |
| | | | CAD F PREP REVIE | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE | REQ'D) 4.dwg | С |
| | | | CAD F PREP REVIE APPR ANY M | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M 10DIFICATION (| THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS | REQ'D) 4.dwg | С |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M OVED BY: M ODIFICATION O ING BY AN OR ENT & LUNDY | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE | REQ'D) 4.dwg HAN | С |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M OVED BY: M ODIFICATION OF ING BY AN ORO ENT & LUNDY, ONSIBILITY OF | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. | REQ'D) 4.dwg HAN | С |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT ILE NAME: C ARED BY: T WED BY: E OVED BY: M ODIFICATION O ING BY AN OR ENT & LUNDY, ONSIBILITY OF | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. | REQ'D) 4.dwg HAN | С |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M OVED BY: M ODIFICATION OF ING BY AN OR ENT & LUNDY, ONSIBILITY OF | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. | REQ'D) 4.dwg HAN | С |
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| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M ODIFICATION O ING BY AN ORO ENT & LUNDY, ONSIBILITY OF Sarg | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. | REQ'D) 4.dwg HAN | С |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M TODIFICATION OF ING BY AN ORO ENT & LUNDY, ONSIBILITY OF Sarg | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. | REQ'D) 4.dwg HAN | С |
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| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M MODIFICATION OF MODIFICATION OF STORIA CO ANNIEY 244 | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEEE O, ILLINOIS 60603-578 CEEEEE ONVERTER - AS | | В |
| | | | CAD F PREP/ REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M MODIFICATION OF MODIFICATION OF Sarg SAR 55 EA CHICAG CHICAG | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STAGENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEEE SO, ILLINOIS 60603-578 CEEEEE DOUBLES CONTINUE | REQ'D) 4.dwg HAN 0 | В |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M ODIFICATION OF TODIFICATION OF Sarg Sarg SAR 55 EA CHICAG CHICAG | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STARGENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEEE O, ILLINOIS 60603-578 CEEEE STREET ONVERTER - AS SKV UNDERGRO SMISSION LINE | ALCOND | В |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M MODIFICATION OF MODIFICATION OF Sarg Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STARGENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEE Champlain Hudson PROJECT ONVERTER - AS 5KV UNDERGRO SMISSION LINE PLAIN HUDSON R EXPRESS 11 | REQ'D) 4.dwg HAN 0 O O O O O O O O O O O O O O O O O O | В |
| | | | CAD F PREP/ REVIE APPRO ANY M DRAW SARG RESPO | CERT OF AUT ILE NAME: C ARED BY: T WED BY: E OVED BY: M ODIFICATION OF ING BY AN ORO ENT & LUNDY, ONSIBILITY OF Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. GENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEE SMISSION LINE PROJECT DNVERTER - AS SKV UNDERGRO SMISSION LINE PLAIN HUDSOI REXPRESS, LL | REQ'D) 4.dwg HAN 0 0 0 0 0 0 0 | C B |
| | | | CAD F PREP/ REVIE APPR(ANY M DRAW SARG RESP(A A A A A A A A A A A | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M ODIFICATION OF TORIA CON Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG CHICAG CHICAG | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STAGENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEEE Champlain Hudson PROJECT PROJECT DNVERTER - AS SKV UNDERGRO SMISSION LINE PLAIN HUDSON REXPRESS, LL | REQ'D) 4.dwg HAN O O O O O O O O O O O O O O O O O O O | C B |
| | | | CAD F PREP/ REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M ODIFICATION OF TODIFICATION OF Sarg Sarg SAR 55 EA CHICAG | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY. GENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEEEE STRONROE STREET O, ILLINOIS 60603-578 PROJECT PROJECT DNVERTER - AS SKV UNDERGRO SMISSION LINE PLAIN HUDSOF REXPRESS, LL DRAWING TITLE SER DETAIL | REQ'D) 4.dwg HAN O O O O O O O O O O O O O O O O O O O | C B |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M ODIFICATION OF TARES AN ORE ENT & LUNDY, ONSIBILITY OF Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STATE LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEESS ONVERTER - AS SARGENT LUNDY ST MONROE STREET ONVERTER - AS SARGENT LUNDY PROJECT ONVERTER - AS SARGENT LINE PLAIN HUDSOF PLAIN HUDSOF SMISSION LINE PLAIN HUDSOF REXPRESS, LL DRAWING TITLE SER DETAIL | REQ'D) 4.dwg HAN O STORIA DUND N C | C B |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP ANY M ANY M SARG RESP ANY M SARG RESP | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M MODIFICATION OF TARESTREE OVED BY: M MODIFICATION OF Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG SAR 55 EA CHICAG CHICAG CHICAG CHAM POVEL [R] | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STAGENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 CEECE SMISSION LINE PROJECT ONVERTER - AS 5KV UNDERGRO SMISSION LINE PLAIN HUDSOF REXPRESS, LL DRAWING TITLE SER DETAIL | REQ'D) 4.dwg HAN O O O O O O O O O O O O O O O O O O O | C B |
| | | | CAD F PREP/ REVIE APPR(ANY M DRAW SARG RESP(ANY M SARG RESP(ANY M SARG ANY M ANY M ANY M SARG ANY M ANY M ANY M ANY M ANY | CERT OF AUT TILE NAME: C ARED BY: T WED BY: E OVED BY: M MODIFICATION OF ING BY AN ORO ENT & LUNDY, ONSIBILITY OF Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG CHICAG CHICAG CHAM POWEI C RI DRAWING | HORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY STAGENT & LUNDY ST MONROE STREET 60, ILLINOIS 60603-578 CEEEE Champlain Hudson POVERTER - AS SKV UNDERGRO SMISSION LINE PLAIN HUDSON R EXPRESS, LL DRAWING TITLE SER DETAIL | REVISION | C B |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP | CERT OF AUT TILE NAME: C ARED BY: T WED BY: M ODIFICATION OF TODIFICATION OF Sarg Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG CHPE-RISE CHPE-RISE | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY IS NOT THE SARGENT & LUNDY ST MONROE STREET 60, ILLINOIS 60603-578 CEESE PROJECT ONVERTER - AS SKV UNDERGER SMISSION LINE PLAIN HUDSON R EXPRESS, LL DRAWING TITLE SER DETAIL | REVISION REVISION | C B |
| | | | CAD F PREP REVIE APPR ANY M DRAW SARG RESP ANY M SARG RESP ANY M SARG RESP | CERT OF AUT TILE NAME: C ARED BY: TI WED BY: E OVED BY: M MODIFICATION OF ING BY AN ORG ENT & LUNDY, ONSIBILITY OF Sarg SAR 55 EA CHICAG SAR 55 EA CHICAG CHPE-RISE HEET 4 | THORIZATION (WHEN F HPE-RISER DETAIL-00 ME DE JM OR ADDITION TO THIS GANIZATION OTHER T IS NOT THE SARGENT & LUNDY GENT & LUNDY ST MONROE STREET O, ILLINOIS 60603-578 ILINOIS 60603-578 PROJECT PROJECT ONVERTER - AS SKV UNDERGRO SMISSION LINE PLAIN HUDSOR SMISSION LINE PLAIN HUDSOR SMISSION LINE PLAIN HUDSOR SER DETAIL OF 6 | REVISION REVISION | C B |

3/32" = 1'-0"











3/32" = 1'-0"

ASTORIA ANNEX 345KV TRANSMISSION LINE - STAKING REPORT

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| | | | | CONSTRUCTION STA | KING TABLE | | | | | | |
|-------|--------------------|------------------------|--------------|-----------------------------------|------------------------------------|----------------|-------------------------|------------------|------------|-----------|-------|
| STR # | AHEAD SPAN (FT) | LINE ANGLE (DEG) | STATION (FT) | STAKE DESCRIPTION (LOOKING AHEAD) | LENGTH TO STRUCTURE HUB (FT) | X EASTING (FT) | Y NORTHING (FT) | Z ELEVATION (FT) | | | |
| | | | | Left Ref Stake C/L Hub | 20 | 1011519.88 | 225896.46 | 10.00 | | | |
| P1 | | | | Right Ref Stake C/L Hub | 20 | 1011497.54 | 225929.64 | 9.67 | | | |
| | 447.76 | 27.01 | 82.79 | C/L Hub | 0 | 1011508.71 | 225913.05 | 10.00 | | | |
| | | | | Back Ref Stake C/L Hub | 20 | 1011525.30 | 225924.22 | 10.00 | | | |
| | | | | Ahead Ref Stake C/L Hub | 20 | 1011492.12 | 225901.88 | 10.00 | | | |
| | | | | Left Ref Stake C/L Hub | 20 | 1011101.14 | 225740.58 | 9.77 | | | |
| | | | | Right Ref Stake C/L Hub | 20 | 1011077.19 | 225772.62 | 8.17 | | | |
| P2 | 493.38 | -32.66 | 536.18 | C/L Hub | 0 | 1011089.17 | 225756.60 | 8.94 | | | |
| | | | | Back Ref Stake C/L Hub | 20 | 1011105.19 | 225768.58 | 9.00 | | | |
| | | | | Ahead Ref Stake C/L Hub | 20 | 1011073.15 | 225744.63 | 9.11 | | | |
| | | | | Left Ref Stake C/L Hub | 20 | 1010812.92 | 225363.80 | 14.28 | | | |
| | | | | Right Ref Stake C/L Hub | 20 | 1010773.08 | 225360.20 | 13.73 | | | |
| Р3 | 253.35 | -84.11 | 1037.33 | C/L Hub | 0 | 1010793.00 | 225362.00 | 13.94 | | | |
| | | | | Back Ref Stake C/L Hub | 20 | 1010791.20 | 225381.92 | 14.22 | | | |
| | | | | Ahead Ref Stake C/L Hub | 20 | 1010794.80 | 225342.08 | 13.98 | | | |
| | | | | Left Ref Stake C/L Hub | 20 | 1010992.54 | 225204.61 | 14.37 | | | |
| | | 0.00 | | - | | - | Right Ref Stake C/L Hub | 20 | 1010965.37 | 225175.25 | 14.86 |
| P4C | 50.10 | | 1277.29 | C/L Hub | 0 | 1010978.95 | 225189.93 | 14.61 | | | |
| | | | | Back Ref Stake C/L Hub | 20 | 1010964.27 | 225203.51 | 14.72 | | | |
| | | | | Ahead Ref Stake C/L Hub | 20 | 1010993.63 | 225176.34 | 14.46 | | | |
| | | | | Left Ref Stake C/L Hub | 20 | 1011029.31 | 225170.58 | 14.05 | | | |
| | | | | Right Ref Stake C/L Hub | 20 | 1011002.14 | 225141.22 | 14.45 | | | |
| P4B | 49.99 | 0.00 | 1327.39 | C/L Hub | 0 | 1011015.72 | 225155.90 | 14.24 | | | |
| | | | | Back Ref Stake C/L Hub | 20 | 1011001.04 | 225169.49 | 14.38 | | | |
| | | | | Ahead Ref Stake C/L Hub | 20 | 1011030.40 | 225142.32 | 14.18 | | | |
| | | | | Left Ref Stake C/L Hub | 20 | 1011065.99 | 225136.63 | 13.95 | | | |
| | | | | Right Ref Stake C/L Hub | 20 | 1011038.83 | 225107.27 | 14.31 | | | |
| P4A | 0.00 | 0.00 | 1377.37 | C/L Hub | 0 | 1011052.41 | 225121.95 | 14.06 | | | |
| | | | | Back Ref Stake C/L Hub | 20 | 1011037.73 | 225135.53 | 14.13 | | | |
| | | | | Ahead Ref Stake C/L Hub | 20 | 1011067.09 | 225108.37 | 14.02 | | | |
| | | | | BEARINGS ARE GRID, NAD83 US NE | W YORK; LONG ISLAN | D | | | | | |

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| В | 10/16/24 | ISSUED FOR EM&CP SUE | BMISSION | MR | KRM | KRM | | | | | |
|-----|-----------|--------------------------|--|---|---|---------------------|----------------------|---------------|--|----------------------|--|
| Α | 08/08/24 | ISSUED FOR 60% REVIEW | I | MR | KRM | KRM | | | | $F() \neq$ | |
| REV | DATE | DESCRIP | TION | PREPARED | REVIEWED | APPROVED | | $ \vee \cup$ | | $ \cup \setminus$ | |
| | | | 1 | | | | | | | | |
| | Sarge | | THIS DRAWING HAS REPRODUCED FROM, ORGANIZATION OTHE SARGENT & LUNDY WORK BY OTHER OI | BEEN DRAWN B , A DRAWING PF R THAN SARGEN IS NOT RESPON RGANIZATIONS. | Y, OR REPARED IT & LU ISIBLE F | BY AN NDY. OR | | CONS | | RUCTI | |
| | | | | | | | | | | | |
| | 55 EAST M | ONROE ST., CHICAGO, ILL. | PROJ. No. | 15094- | -002 | | DRAWING NOT TO SCALE | | | | |
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345KV HVAC TRANSMISSION LINE

OF ASTORIA ANNEX SUBSTATION MODIFICATION STRINGING CHARTS





| | Conductor Design Tensions @ NESC 250B Heavy (4psf Wind, 0.5" Ice, 0°F) | | | | | | | | | | | | | |
|-------|--|-------------|---------------------------|---------------|-----------|--|--|--|--|--|--|--|--|--|
| Row # | Start Str. # | End Str. # | Wire Type | Tension (lbs) | Condition | | | | | | | | | |
| 1 | Gantry | P1 | (2) 795 ACSS 26/7 'DRAKE' | 6000 | Initial | | | | | | | | | |
| 2 | P1 | Р3 | (2) 795 ACSS 26/7 'DRAKE' | 6000 | Initial | | | | | | | | | |
| 3 | Р3 | P4A/P4B/P4C | (2) 795 ACSS 26/7 'DRAKE' | 6000 | Initial | | | | | | | | | |

Note: Tensions are for reference only. Horizontal tensions shall not be used for sagging operations. Transit method shall be performed by contractor for wire sagging.

| | OPGW Design Tensions @ NESC 250B Heavy (4psf Wind, 0.5" Ice, 0°F) | | | | | | | | | | | | | |
|-------|---|-------------|-------------------|---------------|-----------|--|--|--|--|--|--|--|--|--|
| Row # | Start Str. # | End Str. # | Wire Type | Tension (lbs) | Condition | | | | | | | | | |
| 1 | Gantry | P1 | OPGW-AC-34-52-646 | 4000 | Initial | | | | | | | | | |
| 2 | P1 | Р3 | OPGW-AC-34-52-646 | 4000 | Initial | | | | | | | | | |
| 3 | Р3 | P4A/P4B/P4C | OPGW-AC-34-52-646 | 4000 | Initial | | | | | | | | | |

Note: Tensions are for reference only. Horizontal tensions shall not be used for sagging operations. Transit method shall be performed by contractor for wire sagging.





Stringing Chart Report

Circuit 'Phase Conductor' Section #1 from structure #Gantry to structure #P1, start set #3 '', end set #4 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\DRAKE_795kcmil-ACSS_AW2 NESC250B 6000#.wir', Ruling span (ft) 72.8979 Sagging data: Catenary (ft) 3984.6, Horiz. Tension (lbs) 4140 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 6.2 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 38.8 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

| Span | Mid | Mid | Mid | Left | Span |
|--------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|------------|
| Length | Span | Span | Span | Struct | Vertical |
| | Sag | Sag | Sag | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | | (ft) |
| 81.0 | 0.16 | 0.17 | 0.18 | 0.19 | 0.20 | 0.21 | 0.23 | 0.25 | 0.27 | 0.29 | 0.31 | 0.34 | 0.38 | Gantry | 39.37 |
| Span | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Left | Span |
| Length | Wave | Wave | Wave | Struct | Vertical |
| | Time | Time | Time | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | Sec. | Sec. | Sec. | | (ft) |
| 81.0 | 1.20 | 1.23 | 1.27 | 1.30 | 1.34 | 1.38 | 1.43 | 1.48 | 1.54 | 1.60 | 1.67 | 1.75 | 1.84 | Gantry | 39.37 |

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 5895 | 5598 | 5301 | 5009 | 4718 | 4428 | 4140 | 3859 | 3574 | 3298 | 3029 | 2764 | 2507 |

Sargent & Lundy



Stringing Chart Report

Circuit 'Phase Conductor' Section #2 from structure #P1 to structure #P3, start set #5 '', end set #4 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\DRAKE_795kcmil-ACSS_AW2 NESC250B 6000#.wir', Ruling span (ft) 469.403 Sagging data: Catenary (ft) 2820.98, Horiz. Tension (lbs) 2931 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 4.7 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 45.5 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

| Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Left | Span |
|------|---|--|---|--|--|---|---|---|---|---|---|--|---|--|
| Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Struct | Vertical |
| Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Number | Projection |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | | (ft) |
| 7.33 | 7.58 | 7.82 | 8.07 | 8.31 | 8.56 | 8.80 | 9.03 | 9.27 | 9.51 | 9.74 | 9.97 | 10.20 | P1 | -3.00 |
| 8.90 | 9.19 | 9.49 | 9.79 | 10.08 | 10.38 | 10.67 | 10.96 | 11.25 | 11.53 | 11.82 | 12.10 | 12.37 | P2 | 13.05 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | Mid Span Sag 0 F (ft) 7.33 8.90 | Mid Mid Span Span Sag Sag 0 F 10 F (ft) (ft) 7.33 7.58 8.90 9.19 | MidMidMidSpanSpanSpanSagSagSag0 F10 F20 F(ft)(ft)(ft)7.337.587.828.909.199.49 | Mid Mid Mid Mid Span Span Span Span Sag Sag Sag Sag 0 F 10 F 20 F 30 F (ft) (ft) (ft) (ft) 7.33 7.58 7.82 8.07 8.90 9.19 9.49 9.79 | MidMidMidMidMidSpanSpanSpanSpanSpanSagSagSagSagSag0 F10 F20 F30 F40 F(ft)(ft)(ft)(ft)(ft)7.337.587.828.078.318.909.199.499.7910.08 | MidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSagSagSagSagSagSag0 F10 F20 F30 F40 F50 F(ft)(ft)(ft)(ft)(ft)7.337.587.828.078.318.568.909.199.499.7910.0810.38 | Mid Span Span | MidMidMidMidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSpanSpanSpanSagSagSagSagSagSagSagSagSag0 F10 F20 F30 F40 F50 F60 F70 F(ft)(ft)(ft)(ft)(ft)(ft)(ft)7.337.587.828.078.318.568.809.038.909.199.499.7910.0810.3810.6710.96 | Mid Mid <td>Mid Mid Mid<td>Mid Mid Mid<td>Mid Mid Mid<td>MidMi</td><td>Mid Mid Left Sag Sag</td></td></td></td> | Mid Mid <td>Mid Mid Mid<td>Mid Mid Mid<td>MidMi</td><td>Mid Mid Left Sag Sag</td></td></td> | Mid Mid <td>Mid Mid Mid<td>MidMi</td><td>Mid Mid Left Sag Sag</td></td> | Mid Mid <td>MidMi</td> <td>Mid Mid Left Sag Sag</td> | MidMi | Mid Left Sag Sag |

| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Leit | Span |
|------|--|--|--|--|--|--|---|---|---|---|---|---|---|---|
| Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Struct | Vertical |
| Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Number | Projection |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | | (ft) |
| 8.10 | 8.23 | 8.37 | 8.49 | 8.62 | 8.75 | 8.87 | 8.99 | 9.11 | 9.22 | 9.33 | 9.44 | 9.55 | P1 | -3.00 |
| 8.92 | 9.07 | 9.21 | 9.36 | 9.50 | 9.64 | 9.77 | 9.90 | 10.03 | 10.16 | 10.28 | 10.40 | 10.52 | P2 | 13.05 |
| | 3 Wave Time 0 F Sec. 8.10 8.92 | 3 3 Wave Wave Time Time 0 F 10 F Sec. Sec. 8.10 8.23 8.92 9.07 | 3 3 3 Wave Wave Wave Time Time Time 0 F 10 F 20 F Sec. Sec. Sec. 8.10 8.23 8.37 8.92 9.07 9.21 | 3 3 3 3 3 Wave Wave Wave Wave Time Time Time Time 0 F 10 F 20 F 30 F Sec. Sec. Sec. Sec. 8.10 8.23 8.37 8.49 8.92 9.07 9.21 9.36 | 3 3 3 3 3 3 Wave Wave Wave Wave Wave Time Time Time Time Time 0 F 10 F 20 F 30 F 40 F Sec. Sec. Sec. Sec. Sec. 8.10 8.23 8.37 8.49 8.62 8.92 9.07 9.21 9.36 9.50 | 3 3 3 3 3 3 3 3 Wave Wave Wave Wave Wave Wave Wave Time Time Time Time Time Time Time 0 F 10 F 20 F 30 F 40 F 50 F Sec. Sec. Sec. Sec. Sec. Sec. 8.10 8.23 8.37 8.49 8.62 8.75 8.92 9.07 9.21 9.36 9.50 9.64 | 3 5 3 | 3 3 | 3 3 | 3 3 | 3 3 | 3 3 | 3 3 | 3 1 |

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 3513 | 3400 | 3293 | 3195 | 3101 | 3012 | 2930 | 2853 | 2780 | 2711 | 2646 | 2585 | 2527 |





Stringing Chart Report

Circuit 'Phase Conductor' Section #3 from structure #P3 to structure #P4A, start set #5 '', end set #5 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\DRAKE_795kcmil-ACSS_AW2 NESC250B 6000#.wir', Ruling span (ft) 349.693 Sagging data: Catenary (ft) 3047.55, Horiz. Tension (lbs) 3166.4 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 5.1 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 49.4 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

| Span | Mid | Mid | Mid | Left | Span |
|--------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|------------|
| Length | Span | Span | Span | Struct | Vertical |
| | Sag | Sag | Sag | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | | (ft) |
| 349.9 | 3.83 | 4.01 | 4.20 | 4.40 | 4.61 | 4.81 | 5.02 | 5.24 | 5.46 | 5.68 | 5.89 | 6.11 | 6.33 | P3 | 11.15 |
| Span | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Left | Span |
| Length | Wave | Wave | Wave | Struct | Vertical |
| | Time | Time | Time | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | Sec. | Sec. | Sec. | | (ft) |
| 349.9 | 5.85 | 5.99 | 6.13 | 6.28 | 6.42 | 6.56 | 6.70 | 6.85 | 6.99 | 7.13 | 7.26 | 7.40 | 7.52 | РЗ | 11.15 |

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 4155 | 3965 | 3784 | 3614 | 3452 | 3305 | 3167 | 3037 | 2916 | 2803 | 2700 | 2602 | 2514 |

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Stringing Chart Report

Circuit 'Phase Conductor' Section #4 from structure #P3 to structure #P4B, start set #6 '', end set #6 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\DRAKE_795kcmil-ACSS_AW2 NESC250B 6000#.wir', Ruling span (ft) 299.635 Sagging data: Catenary (ft) 3204.23, Horiz. Tension (lbs) 3329.19 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 5.1 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 51.2 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

| Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Mid | Left | Span |
|------|---|--|--|--|---|--|---|--|--|--|--|--|--|--|
| Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Span | Struct | Vertical |
| Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Sag | Number | Projection |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | | (ft) |
| 2.58 | 2.72 | 2.86 | 3.01 | 3.17 | 3.34 | 3.51 | 3.69 | 3.88 | 4.06 | 4.25 | 4.45 | 4.64 | P3 | 9.34 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Left | Span |
| Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Wave | Struct | Vertical |
| Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Number | Projection |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | Sec. | | (ft) |
| 4.80 | 4.93 | 5.06 | 5.19 | 5.32 | 5.46 | 5.60 | 5.74 | 5.89 | 6.03 | 6.17 | 6.31 | 6.44 | РЗ | 9.34 |
| | Mid Span Sag O F (ft) 2.58 3 Wave Time O F Sec. 4.80 | Mid Mid Span Span Sag Sag 0 F 10 F (ft) (ft) 2.58 2.72 3 3 Wave Wave Time Time 0 F 10 F Sec. Sec. 4.80 4.93 | Mid Mid Mid Span Span Span Sag Sag Sag 0 F 10 F 20 F (ft) (ft) (ft) 2.58 2.72 2.86 3 3 3 Wave Wave Wave Time Time Time 0 F 10 F 20 F Sec. Sec. Sec. 4.80 4.93 5.06 | MidMidMidMidSpanSpanSpanSpanSagSagSagSag0 F10 F20 F30 F(ft)(ft)(ft)(ft)2.582.722.863.013333WaveWaveWaveWaveTimeTimeTimeTime0 F10 F20 F30 FSec.Sec.Sec.Sec.4.804.935.065.19 | MidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSagSagSagSagSagSag0 F10 F20 F30 F40 F(ft)(ft)(ft)(ft)(ft)2.582.722.863.013.1733333WaveWaveWaveWaveWaveTimeTimeTimeTimeTime0 F10 F20 F30 F40 FSec.Sec.Sec.Sec.Sec.4.804.935.065.195.32 | MidMidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSpanSagSagSagSagSagSagSag0 F10 F20 F30 F40 F50 F(ft)(ft)(ft)(ft)(ft)(ft)2.582.722.863.013.173.34333333WaveWaveWaveWaveWaveWaveTimeTimeTimeTimeTime0 F10 F20 F30 F40 F50 FSec.Sec.Sec.Sec.Sec.4.804.935.065.195.325.46 | MidMidMidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSpanSpanSagSagSagSagSagSagSagSag0 F10 F20 F30 F40 F50 F60 F(ft)(ft)(ft)(ft)(ft)(ft)2.582.722.863.013.173.343.513333333WaveWaveWaveWaveWaveWaveTimeTimeTimeTimeTimeTime0 F10 F20 F30 F40 F50 F60 FSec.Sec.Sec.Sec.Sec.Sec.Sec.4.804.935.065.195.325.465.60 | MidMidMidMidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSpanSpanSpanSpanSagSagSagSagSagSagSagSagSagSagSag0 F10 F20 F30 F40 F50 F60 F70 F(ft)(ft)(ft)(ft)(ft)(ft)(ft)2.582.722.863.013.173.343.513.6933333333WaveWaveWaveWaveWaveWaveWaveTimeTimeTimeTimeTimeTime0 F10 F20 F30 F40 F50 F60 F70 FSec.Sec.Sec.Sec.Sec.Sec.Sec.4.804.935.065.195.325.465.605.74 | MidMidMidMidMidMidMidMidMidMidSpanSpanSpanSpanSpanSpanSpanSpanSpanSpanSpanSagSagSagSagSagSagSagSagSagSagSagSag0 F10 F20 F30 F40 F50 F60 F70 F80 F(ft)(ft)(ft)(ft)(ft)(ft)(ft)(ft)2.582.722.863.013.173.343.513.693.883333333333WaveWaveWaveWaveWaveWaveWaveWaveWaveTimeTimeTimeTimeTimeTimeTimeTime0 F10 F20 F30 F40 F50 F60 F70 F80 FSec.Sec.Sec.Sec.Sec.Sec.Sec.Sec.Sec.4.804.935.065.195.325.465.605.745.89 | MidMidMidMidMidMidMidMidMidMidMidMidSpan | MidM | MidM | MidM | MidM |

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 4529 | 4301 | 4085 | 3880 | 3687 | 3500 | 3329 | 3165 | 3013 | 2875 | 2746 | 2626 | 2517 |

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Stringing Chart Report

Circuit 'Phase Conductor' Section #5 from structure #P3 to structure #P4C, start set #7 '', end set #7 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\DRAKE_795kcmil-ACSS_AW2 NESC250B 6000#.wir', Ruling span (ft) 249.349 Sagging data: Catenary (ft) 3393.65, Horiz. Tension (lbs) 3526 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 5.4 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 48.3 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

| Span | Mid | Mid | Mid | Left | Span |
|--------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|------------|
| Length | Span | Span | Span | Struct | Vertical |
| | Sag | Sag | Sag | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | | (ft) |
| 249.5 | 1.64 | 1.73 | 1.83 | 1.93 | 2.05 | 2.17 | 2.29 | 2.43 | 2.57 | 2.73 | 2.88 | 3.04 | 3.21 | P3 | 7.70 |
| Span | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Left | Span |
| Length | Wave | Wave | Wave | Struct | Vertical |
| | Time | Time | Time | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | Sec. | Sec. | Sec. | | (ft) |
| 249.5 | 3.83 | 3.94 | 4.04 | 4.16 | 4.28 | 4.40 | 4.53 | 4.66 | 4.80 | 4.94 | 5.08 | 5.22 | 5.36 | РЗ | 7.70 |

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 4924 | 4670 | 4421 | 4184 | 3953 | 3733 | 3526 | 3325 | 3142 | 2967 | 2805 | 2657 | 2520 |

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Stringing Chart Report

Circuit 'Shield Wire #1' Section #6 from structure #Gantry to structure #P1, start set #11 '', end set #1 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\OPGW-AC-34-52-646 - NESC250B 4000#.wir', Ruling span (ft) 71.761 Sagging data: Catenary (ft) 6189.69, Horiz. Tension (lbs) 2581.1 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 10.0 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 13.2 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

Mid Mid Mid Mid Mid Span Mid Mid Mid Mid Mid Mid Mid Mid Left Span Length Span Struct Span Vertical Sag Sag Saq Sag Saq Saq Sag Saq Saq Sag Sag Sag Sag Number Projection 0 F 10 F 20 F 30 F 40 F 50 F 60 F 70 F 80 F 90 F 100 F 110 F 120 F (ft) 85.0 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.19 0.21 0.23 0.26 0.30 0.35 Gantry 54.09 3 3 3 3 3 3 3 3 3 3 3 3 3 Left Span Span Wave Struct Length Wave Vertical Time Number Projection 0 F 10 F 20 F 30 F 40 F 50 F 60 F 70 F 80 F 90 F 100 F 110 F 120 F (ft) Sec. Sec. Sec. Sec. Sec. Sec. Sec. (ft) Sec. Sec. Sec. Sec. Sec. Sec. 85.0 1.04 1.11 1.15 1.19 1.25 1.30 1.37 1.44 1.54 1.77 Gantry 54.09 1.01 1.07 1.64

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 3925 | 3704 | 3478 | 3253 | 3030 | 2804 | 2578 | 2355 | 2133 | 1915 | 1693 | 1479 | 1270 |





Stringing Chart Report

Circuit 'Shield Wire #1' Section #7 from structure #P1 to structure #P3, start set #11 '', end set #1 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\OPGW-AC-34-52-646 - NESC250B 4000#.wir', Ruling span (ft) 474.098 Sagging data: Catenary (ft) 3246.52, Horiz. Tension (lbs) 1353.8 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 4.4 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 25.1 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

Mid Mid Span Mid Left Span Span Struct Length Span Vertical Sag Number Projection 0 F 10 F 20 F 30 F 40 F 50 F 60 F 70 F 80 F 90 F 100 F 110 F 120 F (ft) 448.8 5.83 6.15 6.47 6.79 7.12 7.44 7.76 8.08 8.39 8.70 9.01 9.31 9.60 Ρ1 4.27 495.9 7.11 7.50 7.90 8.29 8.69 9.09 9.47 9.86 10.24 10.62 10.99 11.36 11.72 P2 4.78 Span 3 3 3 3 3 3 3 3 3 3 3 3 3 Left Span Length Wave Wave Wave Wave Wave Wave Wave Wave Wave Struct Vertical Wave Wave Wave Wave Time Time Time Number Projection Time 0 F 10 F 20 F 30 F 40 F 50 F 60 F 70 F 80 F 90 F 100 F 110 F 120 F Sec. Sec. Sec. Sec. Sec. (ft) (ft) Sec. Sec. Sec. Sec. Sec. Sec. Sec. Sec. 448.8 7.22 7.41 7.61 7.79 7.98 8.16 8.33 8.50 8.66 8.82 8.98 9.12 9.27 Ρ1 4.27 495.9 7.98 8.19 8.61 8.82 9.01 9.20 9.39 9.57 9.75 9.92 10.08 10.24 Ρ2 4.78 8.40

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 1803 | 1709 | 1623 | 1547 | 1475 | 1411 | 1354 | 1301 | 1252 | 1207 | 1167 | 1129 | 1095 |





Stringing Chart Report

Circuit 'Shield Wire #2' Section #8 from structure #P3 to structure #P4A, start set #11 '', end set #1 '' Cable 'D:\CHPE\PLS-CADD\08082024\Cable\0PGW-AC-34-52-646 - NESC250B 4000#.wir', Ruling span (ft) 352.217 Sagging data: Catenary (ft) 3824.94, Horiz. Tension (lbs) 1595 Condition I Temperature (deg F) 60 Weather case for final after creep Temp. 60F, Equivalent to 5.4 (deg F) temperature increase Weather case for final after load NESC Heavy (250B), Equivalent to 22.7 (deg F) temperature increase Results below for condition 'Initial RS' Calculations done using actual span lengths and vertical projections

| Span | Mid | Mid | Mid | Left | Span |
|--------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|------------|
| Length | Span | Span | Span | Struct | Vertical |
| | Sag | Sag | Sag | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | | (ft) |
| 352.4 | 2.63 | 2.82 | 3.04 | 3.27 | 3.52 | 3.78 | 4.06 | 4.35 | 4.64 | 4.94 | 5.24 | 5.53 | 5.83 | P3 | 10.57 |
| Span | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Left | Span |
| Length | Wave | Wave | Wave | Struct | Vertical |
| | Time | Time | Time | Number | Projection |
| | 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F | | |
| (ft) | Sec. | Sec. | Sec. | | (ft) |
| 352.4 | 4.85 | 5.02 | 5.21 | 5.41 | 5.61 | 5.82 | 6.03 | 6.24 | 6.44 | 6.65 | 6.84 | 7.03 | 7.22 | P.3 | 10.57 |

| Horiz |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tension |
| 0 F | 10 F | 20 F | 30 F | 40 F | 50 F | 60 F | 70 F | 80 F | 90 F | 100 F | 110 F | 120 F |
| (lbs) |
| 2467 | 2295 | 2133 | 1981 | 1839 | 1712 | 1593 | 1490 | 1395 | 1311 | 1237 | 1171 | 1112 |

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SAFETY NOTES

1. ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS:

(B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL, OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S);

AND (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/ INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.

2. UNDERGROUND OR EMBEDDED UTILITIES MAY EXIST WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK. THE LOCATION OR IDENTIFICATION OF SUCH UTILITIES HAS NOT BEEN VERIFIED BY OWNER OR BY S&L. CONTRACTOR/INSTALLER IS RESPONSIBLE FOR FIELD LOCATING AND IDENTIFYING UNDERGROUND OR EMBEDDED UTILITIES AND ANY OTHER UNDERGROUND OR EMBEDDED UTILITY DIMENSIONS.

3. REFERENCES USED HAVE BEEN IDENTIFIED ON EXCAVATION/FOUNDATION/DEMOLITION DRAWINGS AND HAVE BEEN PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING EXISTING UTILITIES AND OTHER POTENTIAL UNDERGROUND OR EMBEDDED INTERFERENCES. THESE REFERENCES ONLY SHOW THE APPROXIMATE LOCATION OF POTENTIAL UNDERGROUND OR EMBEDDED UTILITIES AND MAY NOT INDICATE OR REFLECT ALL EXISTING UNDERGROUND OR EMBEDDED UTILITIES OR THEIR ACTUAL LOCATIONS.

4. REFERENCES IDENTIFIED SHALL NOT SUBSTITUTE FOR THE CONTRACTOR'S/INSTALLER'S OBLIGATION TO FIELD LOCATE ANY UNDERGROUND OR EMBEDDED UTILITIES OR INTERFERENCES THAT MAY AFFECT THE WORK.

5. DUE CAUTION SHALL BE TAKEN DURING ANY EXCAVATION/FOUNDATION/DEMOLITION WORK WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK DUE TO POSSIBLE INTERFERENCES THAT MAY NOT BE REFLECTED ON THE REFERENCES IDENTIFIED.

6. UNDERGROUND OR EMBEDDED UTILITIES ARE (OR MAY BE) LOCATED WITHIN OR ADJACENT TO THE AREA IN WHICH EXCAVATION, DEMOLITION, FOUNDATION, OR MODIFICATION WORK IS TO BE PERFORMED.

REFERENCES RELATING TO THE UNDERGROUND OR EMBEDDED UTILITIES ARE PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING THOSE UTILITIES AND OTHER POSSIBLE UNDERGROUND OR EMBEDDED INTERFERENCES WITH THE WORK.

THE CONTRACTOR/INSTALLER SHALL EXERCISE DUE CAUTION DURING ALL EXCAVATION/FOUNDATION/DEMOLITION WORK.

7. ALL EXISTING CONCRETE MAY CONTAIN EMBEDDED CONDUIT WITH ENERGIZED CIRCUITS OR OPERABLE UTILITIES THAT ARE NOT IDENTIFIED ON, OR ARE IN LOCATIONS OTHER THAN AS INDICATED ON, S&L DESIGN DRAWINGS OR OTHER DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE AND IDENTIFY ALL EMBEDDED ITEMS PRIOR TO STARTING THE WORK.

8. THIS DRAWING HAS BEEN DRAWN BY OR REPRODUCED FROM A DRAWING PREPARED BY AN ORGANIZATION OTHER THAN SARGENT & LUNDY. SARGENT & LUNDY IS NOT RESPONSIBLE FOR WORK COMPLETED BY OTHER ORGANIZATIONS.



GRAPHIC SCALE

DRAWING SCALE 1" = 40' I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ENTER NAME.

NOT FOR CONSTRUCTION

> ENTER NAME ENTER DATE

MY LICENSE RENEWAL DATE IS: ENTER DATE PAGES OR SHEETS COVERED BY THIS SEAL: THIS DOCUMENT ONLY.

CERTIFICATE OF AUTHORIZATION (WHEN REQ'D)

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| MFG | MFG #'s | Description | QTY Requested | Unit of |
|---------------------|----------|---|---------------|-------------|
| Champion | | 8" Dia. Champion Fiberglass Conduit (FRE) | 46 | F۸ |
| Champion | | 20' Lengths | 40 | LA. |
| Champion | | 8" Dia. Champion Fiberglass Conduit (FRE) | 8 | F۸ |
| Champion | | 50' Radius, 5' Lengths, 5° Sweeps | 0 | LA. |
| Champion | | 8" Dia. Champion Fiberglass Conduit (FRE) | 14 | Ē٨ |
| Champion | | 25' Radius, 5' Lengths, 5° Sweeps | 74 | LA. |
| Champion | | 8" Dia. Champion Fiberglass Conduit (FRE) | 40 | Ē٨ |
| Champion | | 10' Radius, 5' Lengths, 5° Sweeps | 40 | LA. |
| Champion | | 8" Dia. Plugs | 21 | EA. |
| Champion | | 8" Dia. Riser Caps | 12 | EA. |
| Champion | | 4" Dia. Champion Fiberglass Conduit (FRE) | 10 | E۸ |
| Champion | | 20' Lengths | 10 | EA. |
| Champion | | 4" Dia. Champion Fiberglass Conduit (FRE) | 10 | ГЛ |
| Champion | | 25' Radius, 5' Lengths, 5° Sweeps | 10 | EA. |
| Champion | | 4" Dia. Champion Fiberglass Conduit (FRE) | 15 | |
| Champion | | 10' Radius, 5' Lengths, 5° Sweeps | 15 | EA. |
| Champion | | 4" Dia. Plugs | 21 | EA. |
| Champion | | 4" Dia. Riser Caps | 4 | EA. |
| | | 2" Dia. Champion Fiberglass Conduit (FRE) | | |
| Champion | | 20' Lengths | 1/ | EA. |
| | | 2" Dia. Champion Fiberglass Conduit (FRE) | | |
| Champion | | 50' Radius, 5' Lengths, 5° Sweeps | 3 | EA. |
| | | 2" Dia. Champion Fiberglass Conduit (FRE) | | |
| Champion | | 25' Radius, 5' Lengths, 5° Sweeps | 2 | EA. |
| | | 2" Dia, Champion Eiberglass Conduit (ERE) | | |
| Champion | | 10' Radius, 5' Lengths, 5° Sweeps | 13 | EA. |
| Champion | | 2" Dia. Plugs | 21 | FA. |
| Champion | | 2" Dia, Riser Caps | 4 | FA. |
| Brady | 91296 | Warning Tape, 1,000' Roll | 1 | Rolls |
| Champion | | | 7 | Gallons |
| | | 5000 kcmil CU XI PE w/CU. Concentric Neutrals | 1625 | Feet |
| | | Fiber | 650 | Feet |
| | | Cu. Ground Wire (GCC) | 650 | Feet |
| Nentco | WP2500P | Mule Tape 3 000 Reel | 1 | Reels |
| Inderground Devices | 90-14032 | Snacer | 26 | FΔ |
| Inderground Devices | 8\W/34-2 | Snacer | 104 | ΕΛ. |
| Inderground Devices | 4W30 2 | Snacer | 13 | Ε/ (. ΕΔ |
| Inderground Devices | 4W30.2 | Spacer | 15 | FΔ |
| | 1003121 | Surge Arrestors | 3 | Ε/ (. ΕΔ |
| | | Thermal Concrete 3 000 PSI | 59 | Cubic Vard |
| | | Thermal Backfill | 425 | Cubic Varo |
| | | GIS Torminators | | EA |
| | | | 6 | EA. |
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NOT FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ENTER NAME.

ENTER NAME ENTER DATE

MY LICENSE RENEWAL DATE IS: ENTER DATE PAGES OR SHEETS COVERED BY THIS SEAL: THIS DOCUMENT ONLY.

CERTIFICATE OF AUTHORIZATION (WHEN REQ'D)

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| GEN | IFRAL NOTES | | | | FROSION |
| <u>- 1</u> . | ALL ABANDONED PIPES IN | | IALL BE LOCATED, VEI | RIFIED AS | 1. MINIMIZ |
| 2. | PLUG, SEAL OR CAP ANY (| DPEN PIPE OR PI | PE SECTION AS A RES | SULT OF | 2. STOCKF |
| 3. | PROTECT AND SUPPORT A | ALL CONDUITS AN | ND UTILITIES AS REQU | IIRED | |
| N.ST | | | | | |
| 1. | PROVIDE ALL LABOR AND | -) EQUIPMENT, IN(ATION FOR THE C | CLUDING TRAFFIC CO | NTROL AS REQUIRED TO | |
| 2. | FOLLOW ALL SAFETY RUI | LES, REGULATION | NS AND LAWS OF LOC | AL, CITY, STATE AND | |
| 3. | HAVE AND MAINTAIN ALL | PERMITS UP TO I | DATE PRIOR TO BEGIN | NNING WORK AT A | |
| 4. | CAUTION FIRE HYDRANT: CONTACT WATER/FIRE D REQUIRES BLOCKING OR | | OR TO ANY WORK IN F | IYDRANT AREA THAT | |
| 5. | PROVIDE TRAFFIC CONTR | ROL PLAN AND CO | | NTATION WITH NYSDOT. | GENERAL |
| 6. | CROSSING AND ADJACEN THE SOFT DIG METHOD. | NT UTILITIES THA | T MUST BE UNCOVERI | ED SHALL BE DONE SO BY | , 1. THESE MONOLI SPACER |
| 7. | CONTRACTOR SHALL SU | PPORT ALL UNCC | VERED UTILITIES AS | NECESSARY. | 2. THE SIZ |
| 8. | DAMAGE THAT OCCURS I RESPONSIBILITY OF THE | FROM CONSTRUC | CTION RELATED ACTIV ONTRACTOR. | /ITIES SHALL BE THE | 3. ALL COM |
| 9. | EXERCISE DUE CAUTION | DURING ALL EXC | AVATION/FOUNDATIO | N/DEMOLITION WORK. | |
| | | | | | TRENCH |
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| ADD | ITIONAL NOTES | | | | 2. READY- |
| 1. | ALL PAVEMENT AND SOILS MATERIAL DUE TO MIXING RESPONSIBILITY OF THE IN | SHALL BE PLACI SHALL BE DISPO | ED INTO SEPARATE PI SED OF AND SHALL BI NTRACTOR. | ILES AND ANY E THE | |
| 2. | HAZARDOUS AND OR UNSI TOPSOIL, ORGANIC MATTE DISPOSED OF TO AN APPR | JITABLE SOILS IN R, AND BITUMEN OVED LOCATION | ICLUDING, BUT NOT LI SHALL BE EXCAVATE | MITED TO PEAT D AND | |
| 3. | TAKE ALL PRECAUTION TO WEATHER, TRAFFIC, OR V/ CONTRACTOR'S EXPENSE |) PROTECT FRESI ANDALISM. DAMA | H PAVEMENT FROM DA AGE SHALL BE REPAIR | AMAGE BY THE RED AT THE | |
| 4. | POSTAL EQUIPMENT LOCA REMOVED AND PROTECTE DEVICES SHALL BE PROVII COMPLETION OF CONSTRU REINSTALLED. | TED WITHIN THE D FROM ANY DAM DED AND MAINTA JCTION THE ORIC | LIMITS OF CONSTRUC MAGE. TEMPORARY D INED DURING THE PR GINAL POSTAL EQUIPN | CTION SHALL BE ELIVERY OJECT. UPON MENT SHALL BE | |
| 5. | TRAFFIC CONTROL DEVICE REMOVED AND REPLACED OVER THE STREETS OR RO SHALL FIND AND LOCATE T ARRANGE FOR REMOVAL O | ES INTERFERING BY THE AGENCY DADS IN THE CON THE AGENCY OR OF THE TRAFFIC | WITH CONSTRUCTION OR AGENCIES HAVIN ISTRUCTION AREA. CO AGENCIES HAVING JU CONTROL DEVICES. C | N WILL BE IG JURISDICTION ONTRACTOR IRISDICTION TO CONTRACTOR | |

6. ALL PAVEMENTS SHALL KEEP TO CURRENT DRAINAGE PATTERNS AND SHALL NOT RE-ROUTE DRAINAGE.

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WITH REMOVAL AND REPLACEMENT.

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6

CONTROL NOTES

E SEDIMENT TRACKING FROM THE SITE AND PERFORM STREET SWEEPING WHERE D AS OFTEN AS DAILY.

PILE PERIMETER CONTROL SHOULD INCLUDE THE USE OF SAND BAGS AND/OR OGS. LOCATIONS TO BE FIELD DETERMINED.

CONDUIT RUN TRENCH INSTALLATION MONOLITHIC METHOD

NOTES SHALL BE FOLLOWED WHEN INSTALLING CONCRETE ENCASED CONDUIT BY THE ITHIC METHOD. THIS METHOD CONSISTS OF BUILDING UP THE LAYERS OF CONDUIT ON RS AND THEN POURING THE CONCRETE ENCASEMENT IN A MOUNTING MASS.

ZE AND TYPE OF CONDUIT SHALL BE AS SPECIFIED ON THE INSTALLATION DRAWINGS.

NDUIT WITH BROKEN ENDS SHALL BE CUT, AND USED WHENEVER POSSIBLE.

HOLD 1

PREPARATION

EPARATION OF THE TRENCH FOR CONDUIT RUNS SHALL BE AS PRESCRIBED IN THE IGS.

HOLD 1

CONCRETE MIX FOR CONDUIT ENCASEMENT (SHEATHING)

MIXED CONCRETE DELIVERED TO THE JOB SHALL BE SPECIFIED AS 3000 PSI MINIMUM DAYS) CONCRETE WHICH INCLUDES A SLUMP RANGE PER APPROVED SPECIFICATION XXXX.

MIXED CONCRETE SHALL BE PLACED WITHIN 1 HOUR AFTER WATER HAS BEEN ADDED MIX.

UNFINISHED CONSTRUCTION

- 1. IF THE CONDUIT RUN MUST BE TEMPORARILY LEFT UNFINISHED DURING CONSTRUCTION CONDUIT SHALL BE CLOSED WITH PLASTIC CONDUIT PLUGS. IF THE CONDUIT RUN IS TO BE DEAD-ENDED, FOR COMPLETION AT SOME FUTURE TIME, THE END OF EACH CONDUIT SHALL BE PLUGGED AND STAGGERED APPROXIMATELY 3 INCHES FROM THE ADJACENT CONDUIT. THE END OF THE CONCRETE SHEATHING SHALL BE STEPPED BACK APPROXIMATELY 6 INCHES FOR EACH HORIZONTAL ROW OF CONDUIT. THE ENDS OF THE INSTALLED CONDUIT SHALL EXTEND BEYOND THE SHEATHING TO PERMIT CONNECTION TO FUTURE CONDUIT.
- 2. IN INSTANCES WHERE THE CONDUIT ENDS MAY NOT BE EASILY LOCATED, INSTALL AN ELECTRONIC MARKER BALL TO ASSIST IN LOCATING AFTER THE CONDUIT IS INSTALLED BACKFILL THE HOLE COVERING THE CONDUIT ENDS APPROXIMATELY 6 TO 12 INCHES AND INSERT MARKER IN HOLE ABOVE THE CONDUIT END, LAY MARKER ON FLAT GROUND AND CONTINUE BACKFILLING, ENSURING THAT THE MARKER STAYS IN A HORIZONTAL POSITION SO THAT IT MAY BE LOCATED BY THE LOCATOR TOOL.

CONDUIT BELLS

1. ALL CONDUITS SHALL TERMINATE AT A MANHOLE IN PLASTIC CONDUIT ENTRANCE BELL ENDS. IF CONDUIT PLUGS ARE USED, THEY SHOULD BE REMOVED AFTER CONSTRUCTION IS COMPLETED UNLESS OTHERWISE SPECIFIED.

BACKFILLING

1. AFTER THE CONCRETE HAS ATTAINED IT'S INITIAL SET, THE TRENCH SHALL BE BACKFILLED WITH A MATERIAL THAT HAS BEEN TESTED AND APPROVED BY THE ENGINEER PER SPECIFICATION XXXXXX-XXXX.

PAVING, CURBS, SIDEWALKS

1. REPLACEMENT OF PAVING, CURBS, AND SIDEWALKS SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS.

CONDUIT INSTALLATION

- 1. THE STANDARD ARRANGEMENT AND SEPARATION OF DUCTS AND THE THICKNESS OF CONCRETE SHEATHING SHALL BE AS SHOWN ON DRAWINGS. IF SPECIAL ARRANGEMENTS ARE REQUIRED, THE SECTIONAL OUTLINE OF THE DUCTS SHALL BE SHOWN ON THE INSTALLATION DRAWINGS. TRANSPOSITION OF THE DUCTS MADE NECESSARY BY OBSTRUCTIONS SHALL BE MADE FOLLOWING THIS STANDARD, BUT SHALL BE DONE ONLY WHEN SPECIFIED ON THE DRAWINGS OR WHEN SPECIALLY AUTHORIZED BY THE ENGINEER AFTER UNFORESEEN OBSTRUCTIONS ARE UNCOVERED.
- 2. THE FIRST LAYER OF THE CONDUIT SHALL BE LAID ON PLASTIC BASE SPACERS HORIZONTALLY LOCKED, WHICH WILL PROVIDE A 3 INCH LAYER OF CONCRETE BELOW THE CONDUIT. THEY SHALL BE PLACED AT INTERVALS OF APPROXIMATELY 5 FEET. ALL OF THE SUCCEEDING LAYERS ARE PLACED ON PLASTIC INTERMEDIATE SPACERS VERTICALLY LOCKED TO PREVIOUSLY PLACED SPACERS. THE CONDUIT COUPLING SHALL BE STAGGERED SO THAT NO COUPLING IS IN-LINE WITH THE COUPLING ON AN ADJACENT CONDUIT. WHEN THE REQUIRED LAYERS OF CONDUIT ARE BUILT UP. THE ENTIRE ASSEMBLY SHALL BE BRACED TO PREVENT LATERAL AND VERTICAL MOVEMENT.
- 3. THE CONCRETE SHALL BE THOROUGHLY SPADED AND PUDDLE IN AND AROUND THE CONDUIT PACKAGE. BRACING SHALL BE REMOVED WHEN CONCRETE HAS STARTED TO SET AND THERE IS NO FURTHER DANGER THAT DUCTS WILL FLOAT OR MOVE OUT OF ALIGNMENT. HOLES BY BRACING SHOULD THEN BE FILLED WITH GROUT.



EXCAVATION

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1. THE STANDARD WIDTH OF THE TRENCH SHALL BE 2' TO EACH SIDE OF THE OVERALL WIDTH OF THE CONDUIT RUN AS SHOWN FOR REGULAR FORMATIONS AND SHALL BE ADJUSTED WHERE TRANSPOSITIONS ARE NECESSARY TO PASS OBSTRUCTIONS AND WHERE REQUIRED BY THE MINIMUM DIMENSION OF THERMAL BACKFILL. THE SIDES OF THE EXCAVATION SHALL BE SHORED IN ACCORDANCE WITH SAFETY REGULATING COMMISSION PRACTICES TO PREVENT CAVE-INS. ALL EXCAVATED MATERIALS SHALL BE REMOVED AND DISPOSED OF ACCORDING TO THE CONTRACT REQUIREMENTS.

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DEPTH OF TRENCH

- 1. THE HEIGHT OF THE DUCT SECTION FOR VARIOUS STANDARD CONDUIT FORMATIONS OF DUCTS IS SHOWN ON DRAWINGS AND SHALL BE ADJUSTED FOR TRANSPOSITION SECTIONS.
- 2. OBSTRUCTIONS AFFECT THE DEPTH OF THE TRENCH IN THAT THE GRADE OF THE CONDUIT RUN MUST BE ADJUSTED TO AVOID THEM. SIGNIFICANT TRENCH LENGTH SHOULD BE EXCAVATED BEFORE CONDUIT PLACEMENT TO ENSURE THAT ALL OBSTRUCTIONS KNOWN AND UNKNOWN CAN BE AVOIDED.

PAVING, CURBS, SIDEWALKS

- 1. ALL PAVEMENT, CURBS, AND SIDEWALKS REMOVED SHALL BE REPLACED IN KIND BY THE UNDERGROUND INSTALLATION CONTRACTOR. PAVEMENT, CURBS, AND SIDEWALKS SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE LOCAL CITY, COUNTY, STATE OR FEDERAL AGENCY HAVING JURISDICTION OVER THE AFFECTED INSTALLATION.
- 2. NEW PAVEMENT, CURBS, AND SIDEWALK SHALL KEEP TO CURRENT DRAINAGE PATTERNS AND SHALL NOT **RE-ROUTE DRAINAGE.**
- 3. UNDERGROUND INSTALLATION CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PROTECT FRESH PAVEMENT, CURBS, AND SIDEWALKS FROM DAMAGE BY THE WEATHER, TRAFFIC, OR VANDALISM. DAMAGED PAVING, CURBS, OR SIDEWALKS SHALL BE REPLACED AT THE UNDERGROUND INSTALLATION CONTRACTOR'S EXPENSE.

CONDUIT PREPARATION

- 1. THE DUCT BANK INSTALLATION CONTRACTOR SHALL CLEAN AND MANDREL ALL CONDUITS FOLLOWING THE INITIAL SET OF THE CONCRETE SHEATHING FOR A DUCT BANK SECTION.
- 2. THE SIZE AND MATERIAL FOR THE DUCT BRUSH AND MANDREL SHALL BE AS SPECIFIED IN THE PROJECT SPECIFICATION.
- 3. ALL DIFFICULTY ENCOUNTERED IN CLEANING AND MANDRELING THE CONDUIT SHALL BE IMMEDIATELY REPORTED IN WRITING TO THE OWNER FOR DETERMINATION OF ANY REPAIRS REQUIRED. THIS SHALL INCLUDE SCRATCHES OBSERVED IN THE MANDREL.
- 4. THE DUCT BANK INSTALLATION CONTRACTOR SHALL, AS PART OF THE MANDRELING OPERATION, PULL IN AND LEAVE IN EACH CONDUIT A PULL ROPE OR MULE TAPE WHICH SHALL BE OF THE PROPER LENGTH AND STRENGTH AND IN ACCORDANCE WITH THE PROJECT SPECIFICATION.

SAFEGUARDING UNDERGROUND FACILITIES

1. IN ORDER TO SAFEGUARD THE UNDERGROUND FACILITIES OF OTHERS UTILITIES, APPLICABLE INSTRUCTIONS AND PROCEDURES COVERING THE PROVISIONS OF ANY AGREEMENT BETWEEN CHPE AND OTHER UTILITIES CONCERNING INTERCHANGE OF INFORMATION AND CONSTRUCTION WORK PRACTICES SHALL BE FOLLOWED. BEFORE ANY SOIL IS DISTURBED. LOCATORS MUST BE NOTIFIED TO MARK ALL UTILITIES IN THE AREA TRENCH.

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SECTION A-A



SECTION B-B



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2. 36" MINIMUM COVER TO CONCRETE ENCASEMENT





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