

## **Appendix B**

### **Construction Installation Package**

CONSTRUCTION INSTALLATION PACKAGE

| DRAWINGS    |   |      |         |
|-------------|---|------|---------|
| DRAWING NO. | DRAWING TITLE   | REV. | REMARKS |
| T3404 - 00  | LIST OF DRAWINGS  | 1    |         |
| T3404 - 01  | SCOPE OF WORK: 45.72m MTG362KD TOWER INSTALLATION PACKAGE                         | 1    |         |
| T3404 - 02  | TOWER PROFILE, Tx ARRANGEMENT AND WAVEGUIDE PORT INFORMATION                      | 1    |         |
| T3404 - 03  | ANTENNA LIST  | 1    |         |
| T3404 - 04A | ANTENNA LAYOUT (PAGE 1 OF 3)  | 1    |         |
| T3404 - 04B | ANTENNA LAYOUT (PAGE 2 OF 3)  | 1    |         |
| T3404 - 04C | ANTENNA LAYOUT (PAGE 3 OF 3)  | 1    |         |
| T3404 - 05  | COMPOUND LAYOUT   | 1    |         |
| T3404 - 06A | SUPPORT FOR ANTENNAS AT ELEVATION 45.70m (ELEVATION VIEW) (PAGE 1 OF 6)           | 1    |         |
| T3404 - 06B | SUPPORT FOR ANTENNAS AT ELEVATION 35.03m TO 37.47m (ELEVATION VIEW) (PAGE 2 OF 6) | 1    |         |
| T3404 - 06C | SUPPORT FOR ANTENNAS AT ELEVATION 27.41m (ELEVATION VIEW) (PAGE 3 OF 6)           | 1    |         |
| T3404 - 06D | SUPPORT FOR ANTENNAS AT ELEVATION 17.35m TO 20.56m (ELEVATION VIEW) (PAGE 4 OF 6) | 1    |         |
| T3404 - 06E | SUPPORT FOR ANTENNAS AT ELEVATION 15.57m (ELEVATION VIEW) (PAGE 5 OF 6)           | 1    |         |
| T3404 - 06F | SUPPORT FOR ANTENNAS AT ELEVATION 10.45m (ELEVATION VIEW) (PAGE 6 OF 6)           | 1    |         |
| T3404 - 07  | CANADIAN COAST GUARD RF SPECIFICATION   | 1    |         |
| T3404 - 08  | EXISTING SITE GROUNDING DETAILS   | 1    |         |

**NOTE:** CONTRACTOR TO REFERENCE THE TECHNICAL SPECIFICATION FOR INSTALLATION OF A VHF TOWER.

SITE COORDINATES

|                  |                 |
|------------------|-----------------|
| SITE NAME:       | CUSLETT VHF, NL |
| LATITUDE:        | N 46° 58' 27.9" |
| LONGITUDE:       | W 54° 09' 14.8" |
| ELEVATION (ASL): | 134.5m (441ft)  |

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SITE : CUSLETT VHF, NL

CODE : T3404

DRAWING TITLE :

LIST OF DRAWINGS

|               |                   |             |           |           |           |
|---------------|-------------------|-------------|-----------|-----------|-----------|
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| R1            | ISSUED FOR TENDER | 2019-JUN-12 | J.D.      | J.W.      | J.W.      |
| R0            | ISSUED FOR TENDER | 2018-JUL-30 | J.D.      | J.W.      | J.W.      |
| REV.          | DESCRIPTION       | DATE        | DWN<br>BY | CHK<br>BY | APP<br>BY |
| SCALE :       |                   | AS SHOWN    |           |           |           |
| DATE :        |                   | 2018-JUL-30 |           |           |           |
| DRAWN BY :    |                   | J. DOYLE    |           |           |           |
| APPROVED BY : |                   | J. WALSH    |           |           |           |
| FILE No :     |                   | 2018-44     |           |           |           |
| DRAWING No :  |                   | T3404-00    |           |           |           |

SCOPE OF WORK AND INSTALLATION PACKAGE

THE CONTRACTOR SHALL SUPPLY (IF APPLICABLE) AND INSTALL THE FOLLOWING ITEMS:

- REPLACE EXISTING MILLER FALL ARREST SAFETY RAIL WITH NEW TRYLON SAFETY RAIL
- TOWER, WAVEGUIDE BRIDGE AND GUY ANCHOR FOUNDATIONS.
- ALL REQUIRED GROUNDING MATERIALS. (INCLUDING LIGHTNING ROD AND GUY ANCHOR GROUNDING)
- ALL REQUIRED MATERIALS AND TOOLS REQUIRED TO RESTACK/REINSTALL THE DESTACKED TOWER FROM PEARCE PEAK.
- ALL GUYWIRE MATERIAL AND GUY HARDWARE ASSEMBLY.
- ANTI-CLIMB ASSEMBLY C/W ALL MOUNTING HARDWARE (SUPPLIED – INSTALL ONLY)
- WAVEGUIDE BRIDGE AND ALL ASSOCIATED MATERIALS.
- TOWER LIGHTING SYSTEM C/W ALL MATERIALS, CABLING, BEACON MOUNT AND MOUNTING HARDWARE (BEACON SYSTEM SUPPLIED).
- ALL ANTENNAS AND ALL REQUIRED ANTENNA MOUNTING HARDWARE.
- ALL Tx-LINES, CABLING AND REQUIRED MOUNTING HARDWARE AND GROUNDING MATERIALS.
- ALL REQUIRED MOUNTING HARDWARE.
- ALL REQUIRED CABLING AND GROUNDING MATERIALS.
- ALL MATERIALS REQUIRED TO DEMOLISH/DESTACK EXISTING 39.6m GUYED TOWER AT CUSLETT INCLUDING REMOVING EXISTING ANTENNAS, MOUNTS, CABLING, TOWER AND GUY ANCHOR FOUNDATIONS AND RESTORATION OF SITE.

CANADIAN COAST GUARD SUPPLIED EQUIPMENT:

- LIGHTING SYSTEM (BEACON ONLY – CONTRACTOR TO SUPPLY AND INSTALL REMAINING HARDWARE, BEACON MOUNT AND CABLING)
- EXISTING DESTACKED TOWER C/W LADDER AND ANTI-CLIMB ASSEMBLY (CURRENTLY DE-STACKED IN CAHILL STORAGE YARD ON TORBAY ROAD, ST. JOHN’S)

THE CONTRACTOR SHALL CARRY OUT THE FOLLOWING ITEMS:

- TRANSPORTATION TO SITE OF ALL REQUIRED MATERIALS AND EQUIPMENT.
- CONTRACTOR TO STORE OR DISPOSE OF ALL MATERIALS OTHER THAN THOSE TO BE RE USED UNDER THE DIRECTION OF THE OWNER.
- CONTRACTOR TO SUPPLY AND INSTALL TRYLON FALL ARREST SAFETY RAIL TO REPLACE EXISTING MILLER FALL ARREST SAFETY RAIL. INSTALL AS PER TRYLON INSTALLATION DRAWINGS.
- CONTRACTOR TO DESIGN, SUPPLY AND INSTALL TOWER, WAVEGUIDE BRIDGE AND GUY ANCHOR FOUNDATIONS. ALL FOUNDATIONS TO BE DESIGNED BY CONTRACTOR AND ANY DESIGN DRAWINGS ARE TO BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF NEWFOUNDLAND AND LABRADOR.
- CONTRACTOR TO SUPPLY AND INSTALL GROUNDING DETAILS AROUND TOWER, WAVEGUIDE BRIDGE AND GUY ANCHORS AS SHOWN ON DWG T3404-09 (OR ENGINEERED APPROVED EQUIVALENT).
- CONTRACTOR TO INSTALL/RESTACK THE DESTACKED TOWER C/W LADDER SUPPLIED BY CCG.
- CONTRACTOR TO SUPPLY AND INSTALL ALL GUYWIRE MATERIAL AND GUY HARDWARE ASSEMBLY.
- CONTRACTOR TO SUPPLY AND INSTALL LIGHTING ROD AT TOWER TOP C/W ASSOCIATED MOUNTS, MOUNTING HARDWARE, CABLING AND GROUNDING MATERIALS.
- CONTRACTOR TO INSTALL ANTI-CLIMB ASSEMBLY C/W ALL MOUNTING HARDWARE SUPPLIED BY CCG.
- CONTRACTOR TO SUPPLY AND INSTALL WAVEGUIDE BRIDGE (APPROX. WAVEGUIDE BRIDGE LENGTH = 6.0m±).
- CONTRACTOR TO SUPPLY AND INSTALL TOWER LIGHTING SYSTEM C/W ALL MATERIALS, CABLING, BEACON MOUNT AND MOUNTING HARDWARE. CANADIAN COAST GUARD TO SUPPLY TOWER BEACON ONLY.
- CONTRACTOR TO SUPPLY AND INSTALL ALL ANTENNAS AND ALL REQUIRED ANTENNA MOUNTING HARDWARE.
- CONTRACTOR TO SUPPLY AND INSTALL ALL Tx-LINES, CABLING AND REQUIRED MOUNTING HARDWARE AND GROUNDING MATERIALS FOR ANTENNA INSTALLATIONS.
- CONTRACTOR TO COMPLETE A Tx-LINE SWEEP AND REPORTING FOR EACH INSTALLED ANTENNA.
- CONTRACTOR TO SUPPLY ALL MATERIALS REQUIRED TO DEMOLISH/DESTACK EXISTING 39.6m GUYED TOWER AT CUSLETT INCLUDING REMOVING EXISTING ANTENNAS, MOUNTS, CABLING, TOWER AND GUY ANCHOR FOUNDATIONS AND RESTORATION OF SITE. CONTRACTOR TO STORE OR DISPOSE OF ALL MATERIALS OTHER THAN THOSE TO BE RE USED UNDER THE DIRECTION OF THE OWNER.

CONTRACTOR TO TAKE NOTE OF THE FOLLOWING ITEMS:

- IT IS RECOMMENDED A SITE VISIT SHALL BE CARRIED OUT BY THE BIDDER BEFORE PREPARING THEIR BID IN ORDER TO CONSIDER AND ACCOUNT FOR EXISTING SITE CONDITIONS.
- NEW TRANSMISSION LINES MUST BE INSTALLED AS SHOWN ON DRAWING T3404-02.
- THE CONTRACTOR SHALL DESIGN, FURNISH AND INSTALL STEEL ELEMENTS IN ORDER TO PROTECT THE NON VERTICAL PORTION OF THE TRANSMISSION LINES BETWEEN THE ANTENNA AND THE WAVEGUIDE SUPPORT ON THE TOWER AGAINST ANY FALLING ICE.
- CONTRACTOR TO MAINTAIN PROPER HOUSEKEEPING AND TO ENSURE THE SITE IS CLEAN UPON COMPLETION OF ALL WORK.
- CONTRACTOR SHALL BE RESPONSIBLE TO CHECK ALL MATERIALS AGAINST THE MATERIAL LIST AND PROTECT THE MATERIALS UNTIL INSTALLED AND ACCEPTED BY THE OWNER.
- GROUNDING SYSTEM MUST BE INSTALLED AS PER CANADIAN COAST GUARD NATIONAL GROUNDING STANDARDS.

GENERAL TOWER NOTES:

- ALL STEEL FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE CSA STANDARDS CSA S16.1 AND CSA S37.
- ALL WELDING SHALL BE DONE IN ACCORDANCE WITH STANDARD CSA W59 AND USING E49R.N. (Fu=450 MPa) ELECTRODES. ALL WELDING TO BE PREFORMED IN A CWB REGISTERED SHOP. FIELD-WELDING IS NOT PERMITTED UNLESS NOTED OTHERWISE.
- ALL NEW STEEL SHALL CONFORM TO CSA G40.20/G40.21 300W (PLATE AND ANGLES EQUAL TO OR SMALLER THAN 51X51) AND 350W (HSS SECTIONS AND ANGLES LARGER THAN 51X51).
- ALL NEW BOLTS, WASHERS AND NUTS SHALL CONFORM TO ASTM 325 UNLESS NOTED OTHERWISE. ALL CONNECTIONS TO BE BEARING WITH THE BOLT THREADS OUTSIDE POSSIBLE SHEAR PLANES. ALL BOLTS SHALL BE TIGHTENED USING THE TURN-OF-THE-NUT METHOD AS DESCRIBED IN THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. DO NOT RE-USE EXISTING BOLTS ONCE REMOVED. THREADED CONNECTIONS OTHER THAN HIGH STRENGTH BOLTS SHALL HAVE A MEANS TO PREVENT LOOSENING. ACCEPTABLE METHODS ARE LOCK WASHER OR LOCK NUTS.
- ALL U-BOLTS HAVE TO BE MINIMUM SAE J429 GRADE 2 OR EQUIVALENT WITH ROLLED THREADS. CUT THREADS ARE NOT ACCEPTABLE. EACH THREADED PART OF THE U-BOLT SHALL HAVE A ROUND FLAT WASHER ASTM F436, A SPRING LOCK WASHER EXTRA DUTY TYPE CONFORMING TO ANSI B27.1 AND A SAE GRADE 2 HEX NUT.
- THE FINISHED DIAMETER OF BOLT HOLES SHALL NOT BE MORE THAN 2mm LARGER THAN THE NOMINAL BOLT DIAMETER UNLESS NOTED OTHERWISE.
- CUT EDGES SHALL BE TRUE, SMOOTH AND FREE FROM EXCESSIVE BURRS AND RAGGED BREAKS. SHEAR EDGES OF THICK PLATES SHALL BE PLANNED TO A DEPTH OF 6mm. RE-ENTRANT CUTS SHALL BE AVOIDED; IF USED, THEY SHALL BE FILLETED BY DRILLING PRIOR TO CUTTING.
- TOLERANCES AS INDICATED IN CSA S16.1 SHALL BE CAREFULLY FOLLOWED DURING FABRICATION.
- PRIOR TO GALVANIZING, ALL FABRICATED STEEL SHALL BE THOROUGHLY SHOP INSPECTED.
- EXCEPT WHERE NOTED OTHERWISE, ALL NEW STEEL MEMBERS, BOLTS AND HARDWARE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH STANDARD CSA G164. DOUBLE=DIPPING IN GALVANIZING BATHS IS NOT PERMITTED.
- ANY DAMAGES TO GALVANIZED SURFACES AND AROUND FIELD-DRILLED HOLES SHALL BE CLEANED AND TOUCHED-UP WITH TWO COATS OF ZINC-RICH PAINT IN ACCORDANCE WITH STANDARD CSA G189.
- ALL STEEL FABRICATION AND INSTALLATION SHALL USE THE GAUGE LINES AND END DISTANCES FROM THE TABLES BELOW UNLESS NOTED OTHERWISE ON DETAIL DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL PART DIMENSIONS, SIZES AND LOCATIONS THROUGH EITHER MOCKUP OR TRIAL FIT, PRIOR TO FABRICATION.
- THE PROVISION ON THE PART OF THE CONSULTANT TO PROVIDE PART DRAWINGS DOES NOT ABSOLVE THE CONTRACTOR THE RESPONSIBILITY FOR CONFIRMING ALL DIMENSIONS. CONTRACTOR TO PRODUCE THEIR OWN SHOP DRAWINGS.
- ALL WORK TO BE DONE BY A QUALIFIED AERIAL CONTRACTOR TRAINED TO PERFORM TOWER TELECOM WORK. ALL WORK TO BE DONE IN ACCORDANCE WITH CSA S37-13 "ANTENNAS, TOWERS, AND ANTENNA-SUPPORTING STRUCTURES", ALL MUNICIPAL, FEDERAL AND PROVINCIAL SAFETY REGULATIONS.
- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING.

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SITE : CUSLETT VHF, NL

CODE : T3404

DRAWING TITLE :

SCOPE OF WORK: 45.72m MTG362KD  
TOWER INSTALLATION PACKAGE

|               |                   |             |        |        |        |
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| SCALE :       |                   | AS SHOWN    |        |        |        |
| DATE :        |                   | 2018-JUL-30 |        |        |        |
| DRAWN BY :    |                   | J. DOYLE    |        |        |        |
| APPROVED BY : |                   | J. WALSH    |        |        |        |
| FILE No :     |                   | 2018-44     |        |        |        |
| DRAWING No :  |                   | T3404-01    |        |        |        |

| GUY TERMINATION |         |         |
|-----------------|---------|---------|
| GUY             | TOWER   | ANCHOR  |
| G-1             | PREFORM | PREFORM |
| G-2             | PREFORM | PREFORM |
| G-3             | PREFORM | PREFORM |

| GUY ANCHOR INFORMATION |            |               |
|------------------------|------------|---------------|
| AZIMUTH (°)            | RADIUS (m) | ELEVATION (m) |
| 1A-3°                  | 42.694±    | + 2.802±      |
| 2A-123°                | 41.056±    | + 1.119±      |
| 3A-243°                | 43.266±    | + 3.405±      |

**NOTES:**

- 1: NUMBER OF PLATES AND BOLTS GIVEN FOR LEG SPLICE IS THE TOTAL NUMBER OF ELEMENTS FORMING THE SPLICE (2 LEGS INCLUDED TOP AND BOTTOM).
- 2: TOWER ORIGINALLY DESIGNED BY: MAXTOWER  
YEAR OF ORIGINAL CONSTRUCTION: 2002  
YEAR OF RELOCATION FROM PEARCE PEAK: 2018  
DRAWING NO: M2007  
MODEL: 45.72m MTG362KD TOWER
- 3: TEI STRUCTURAL ANALYSIS DATED: 2018-JUL-30.


**LEGEND:**


S1: (28) 16mm $\varnothing$  x 70mm $\pm$  A325 BOLTS  
C/W SPLICE PLATES

S2: (16) 16mm $\varnothing$  x 64mm $\pm$  A325 BOLTS  
C/W SPLICE PLATES

D1: L44x44x4.8

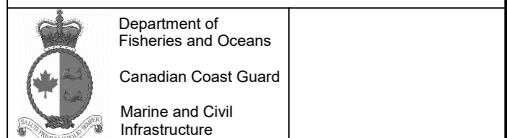
H1: L51x51x4.8

 EXISTING ANTENNA

 THIS PROJECT ANTENNA



|  |                    |
|--|--------------------|
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SITE : CUSLETT VHF, NL

CODE : T3404

|                 |
|-----------------|
| DRAWING TITLE : |
|-----------------|

TOWER PROFILE, Tx ARRANGEMENT  
AND WAVEGUIDE PORT INFORMATION

|               |                   |             |             |           |           |
|---------------|-------------------|-------------|-------------|-----------|-----------|
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| DRAWN BY :    |                   |             | J. DOYLE    |           |           |
| APPROVED BY : |                   |             | J. WALSH    |           |           |
| FILE No :     |                   |             | 2018-44     |           |           |
| DRAWING No :  |                   |             | T3404-02    |           |           |

| ANTENNA LIST |                       |               |             |                           |                                      |               |                    |         |
|--------------|-----------------------|---------------|-------------|---------------------------|--------------------------------------|---------------|--------------------|---------|
| ANTENNA NO.  | ANTENNA TYPE          | ELEVATION (m) | AZIMUTH (°) | MAIN TX-LINE              | EQUIPMENT AT ANTENNA ELEVATION LEVEL | ANTENNA OWNER | ANTENNA IDENTIFIER | STATUS  |
| 1            | «SINCLAIR» SRL-210C-4 | 45.70         | 275         | PLANNED (1) 22mmØ COAXIAL | -                                    | CCG           | -                  | PLANNED |
| 2            | «SINCLAIR» SRL-210C-2 | 37.47         | 150         | PLANNED (1) 13mmØ COAXIAL | -                                    | CCG           | -                  | PLANNED |
| 3            | «SINCLAIR» SRL-210C-4 | 35.95         | 275         | PLANNED (1) 22mmØ COAXIAL | -                                    | RCMP          | -                  | PLANNED |
| 4            | «SINCLAIR» SRL-227    | 35.03         | 36          | PLANNED (1) 13mmØ COAXIAL | -                                    | CCG           | -                  | PLANNED |
| 5            | «SINCLAIR» SRL-210C-4 | 27.41         | 275         | PLANNED (1) 22mmØ COAXIAL | -                                    | CCG           | -                  | PLANNED |
| 6            | «SINCLAIR» SRL-210C-2 | 20.56         | 275         | PLANNED (1) 22mmØ COAXIAL | -                                    | CCG           | -                  | PLANNED |
| 7            | «SINCLAIR» SRL-210C-2 | 15.57         | 275         | PLANNED (1) 22mmØ COAXIAL | -                                    | RCMP          | -                  | PLANNED |
| 8            | «SINCLAIR» SRL-210C-2 | 10.45         | 275         | PLANNED (1) 22mmØ COAXIAL | -                                    | RCMP          | -                  | PLANNED |

NOTES:

1-THE ELEVATIONS OF THE ANTENNAS ARE GIVEN TO THE CENTER OF THE ANTENNA (ANTENNA MIDPOINT) WITH RESPECT TO ELEVATION 0.0m ON THE TOWER (TOP OF THE BASE PLATE).

LEGEND:

CCG = CANADIAN COAST GUARD

RCMP = ROYAL CANADIAN MOUNTED POLICE

PROVINCE OF NEWFOUNDLAND AND LABRADOR



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JONATHAN E. WALSH  
SIGNATURE  
JUN 12/19  
DATE  
NEWFOUNDLAND & LABRADOR



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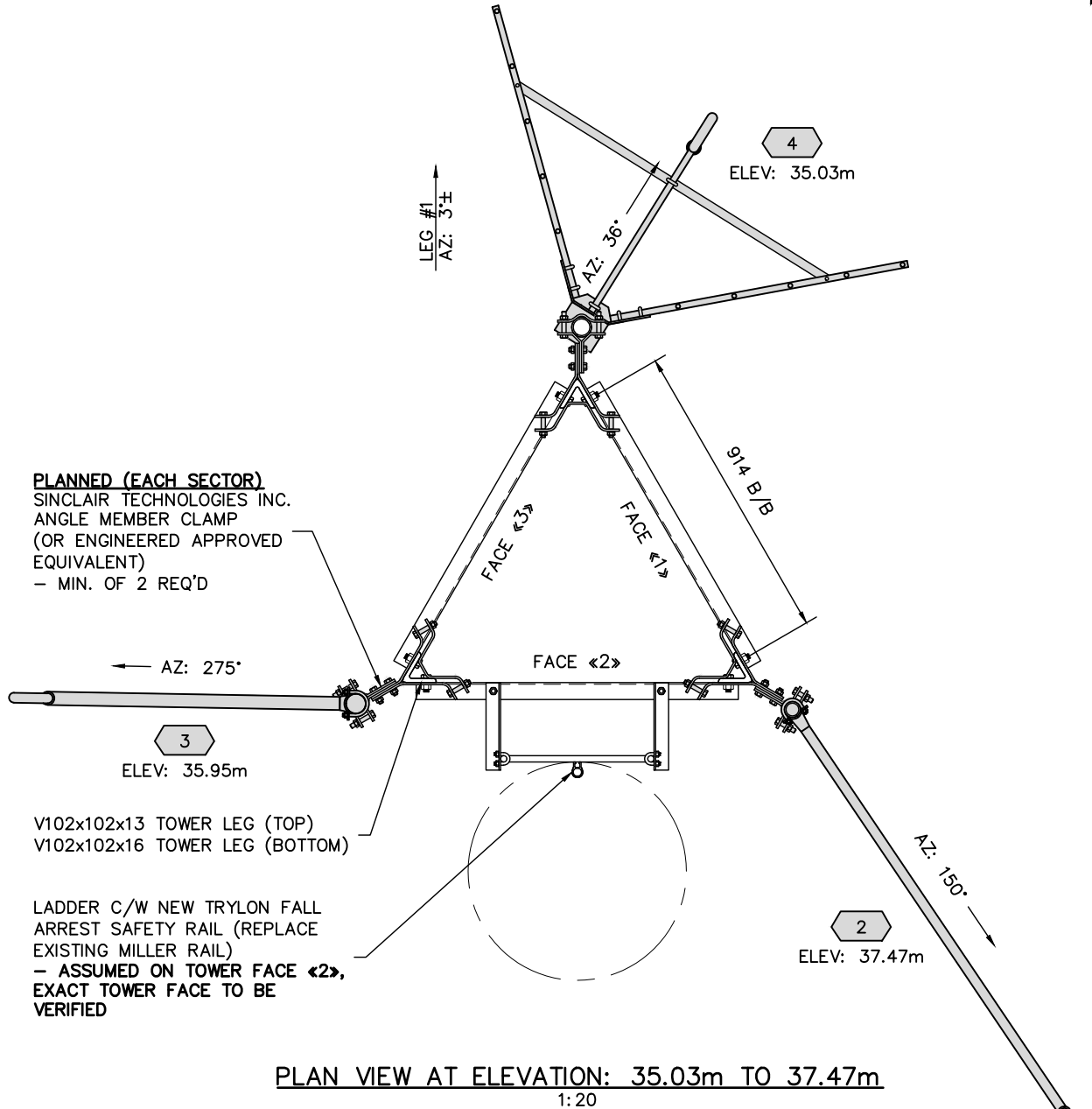
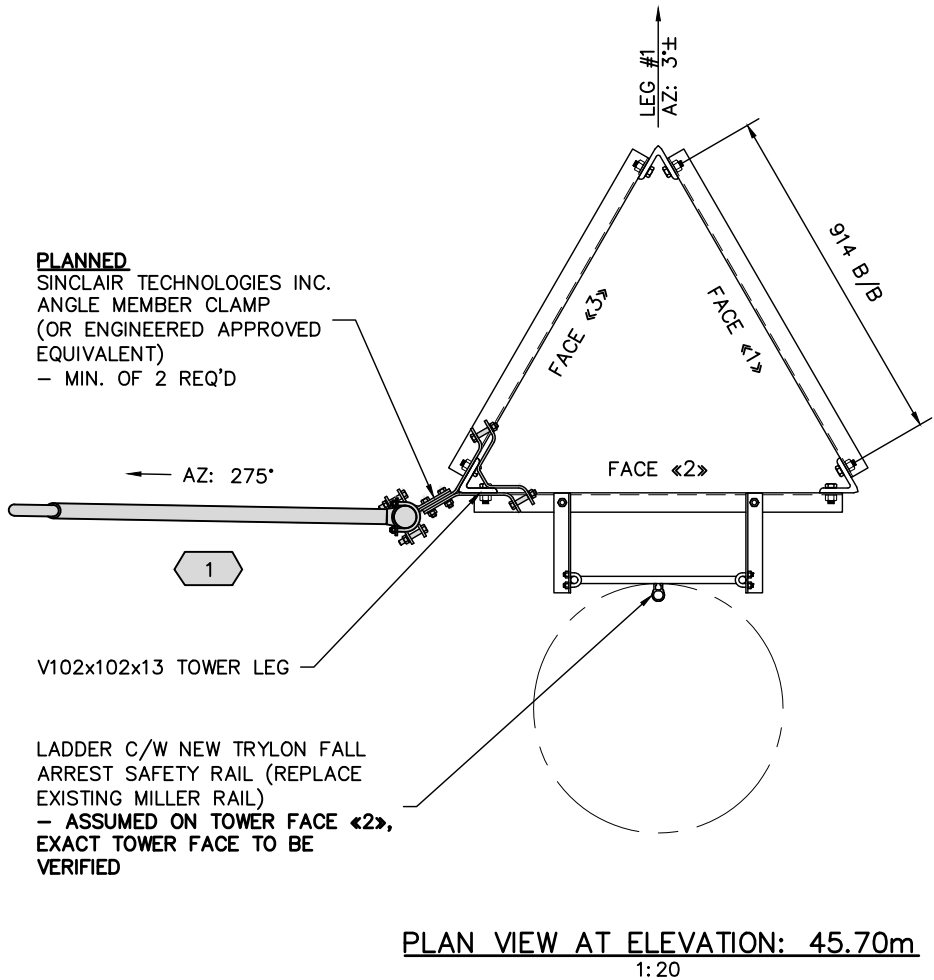
CODE : T3404

DRAWING TITLE :

ANTENNA LIST

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| DRAWN BY :    |                   | J. DOYLE    |           |           |           |
| APPROVED BY : |                   | J. WALSH    |           |           |           |
| FILE No :     |                   | 2018-44     |           |           |           |
| DRAWING No :  |                   | T3404-03    |           |           |           |





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SITE : CUSLETT VHF, NL

CODE : T3404

DRAWING TITLE :

**ANTENNA LAYOUT**  
(PAGE 1 OF 3)

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| DRAWN BY :    |                   |             | J. DOYLE    |           |           |
| APPROVED BY : |                   |             | J. WALSH    |           |           |
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| DRAWING No :  |                   |             | T3404-04A   |           |           |




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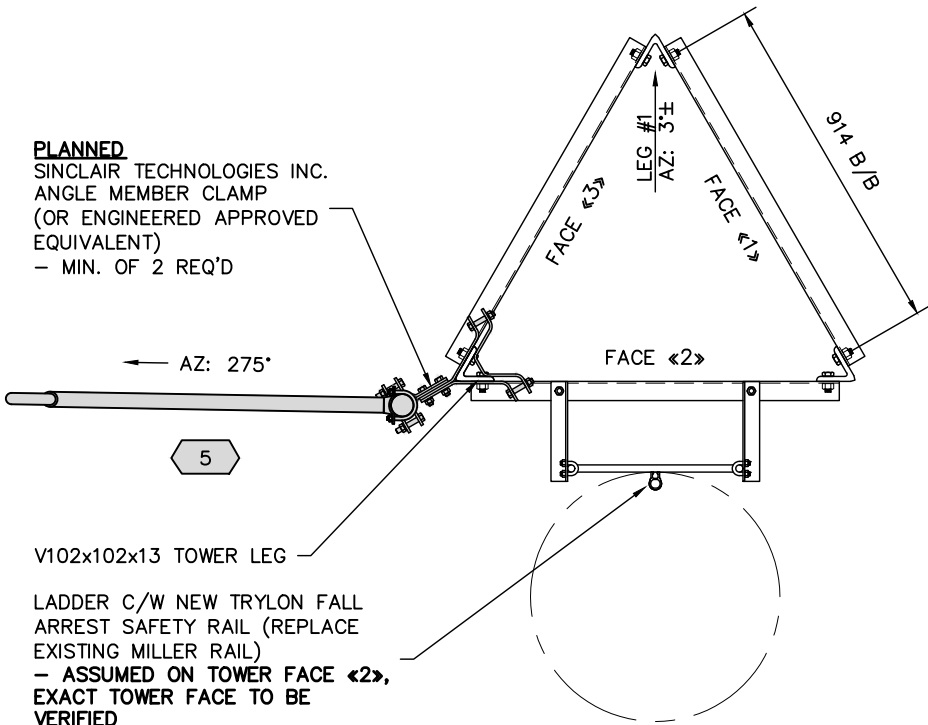
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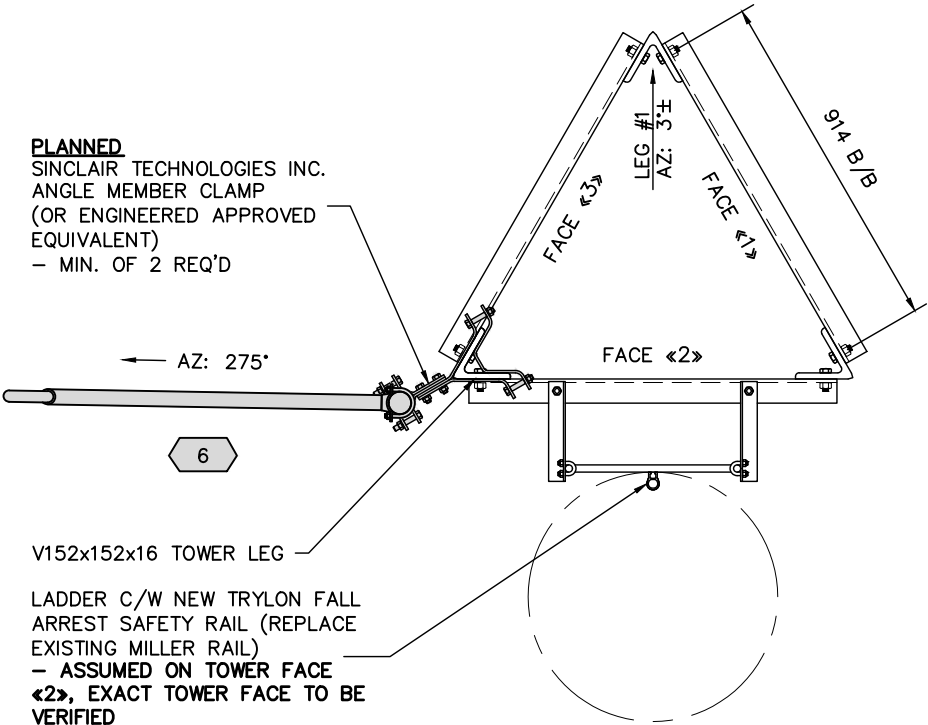
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ANTENNA LAYOUT  
(PAGE 2 OF 3)

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| DRAWN BY :    |                   |             | J. DOYLE    |           |           |
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PLAN VIEW AT ELEVATION: 27.41m  
1: 20



PLAN VIEW AT ELEVATION: 20.56m  
1: 20




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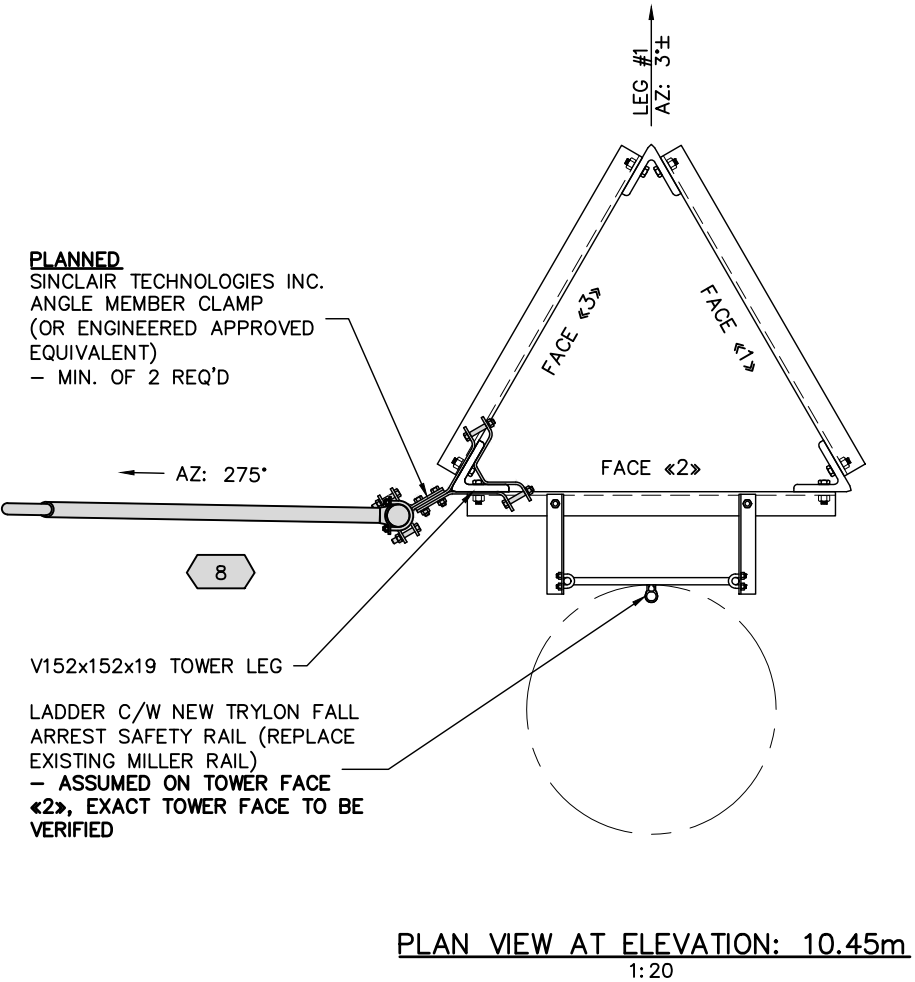
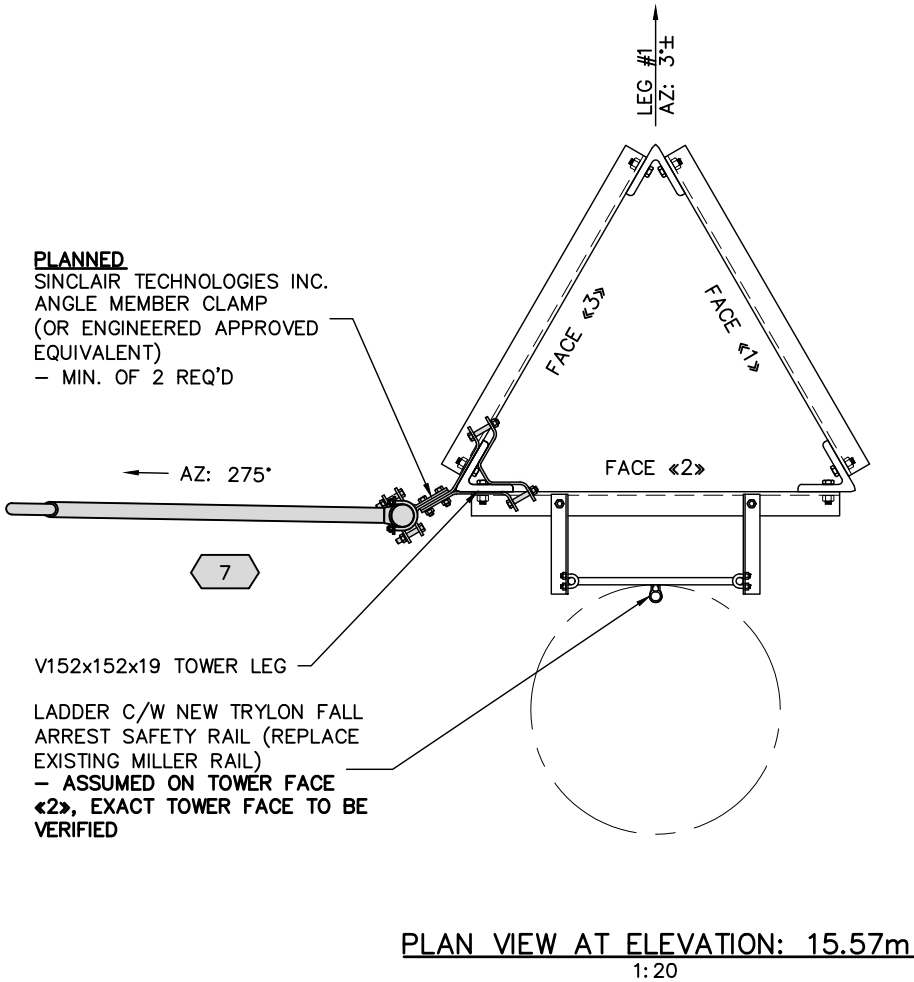
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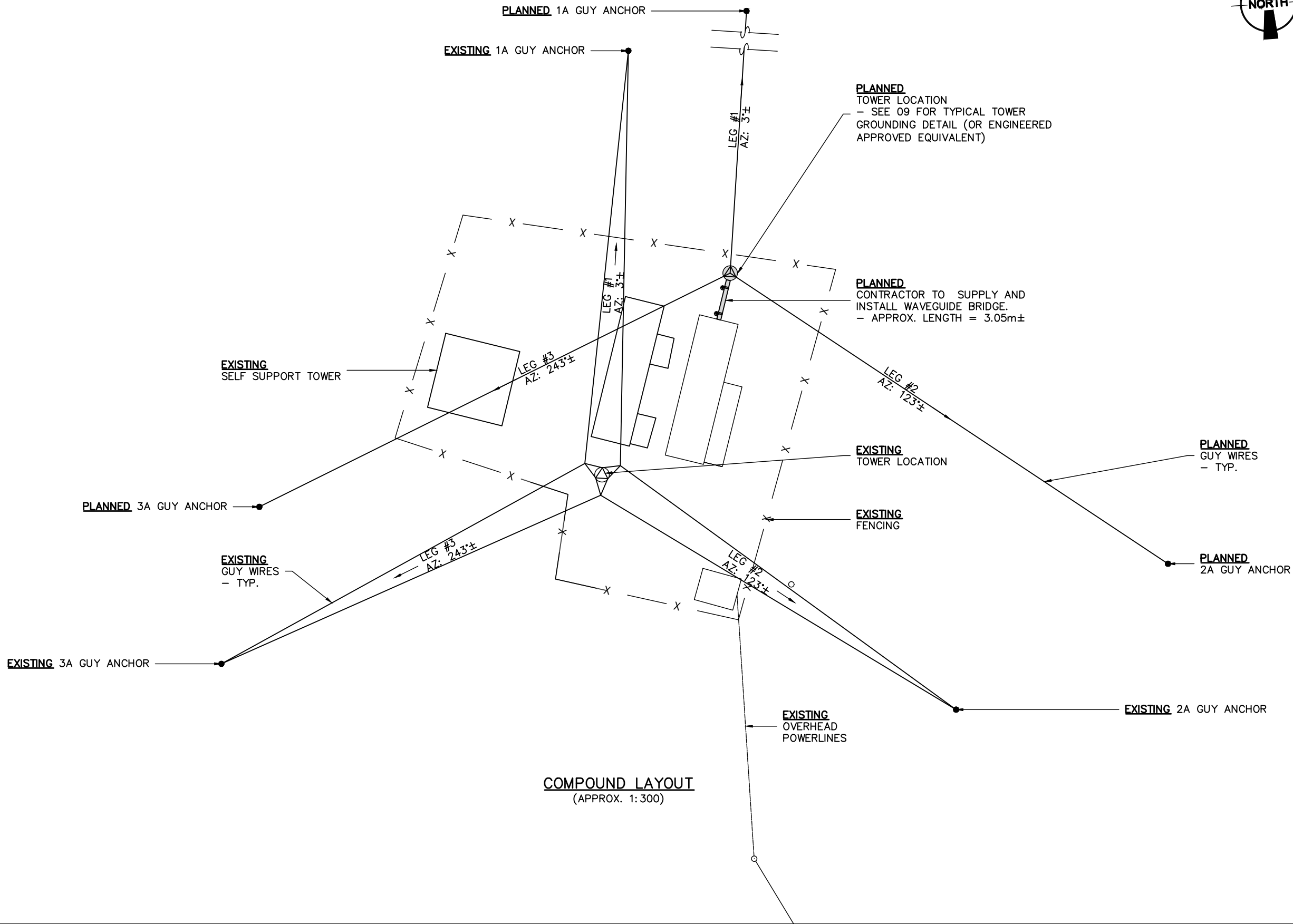
ANTENNA LAYOUT  
(PAGE 3 OF 3)

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| DRAWN BY :    | J. DOYLE    |
| APPROVED BY : | J. WALSH    |
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| DRAWING No :  | T3404-04C   |



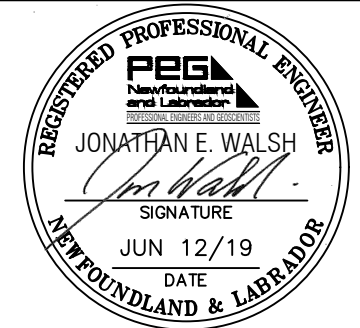




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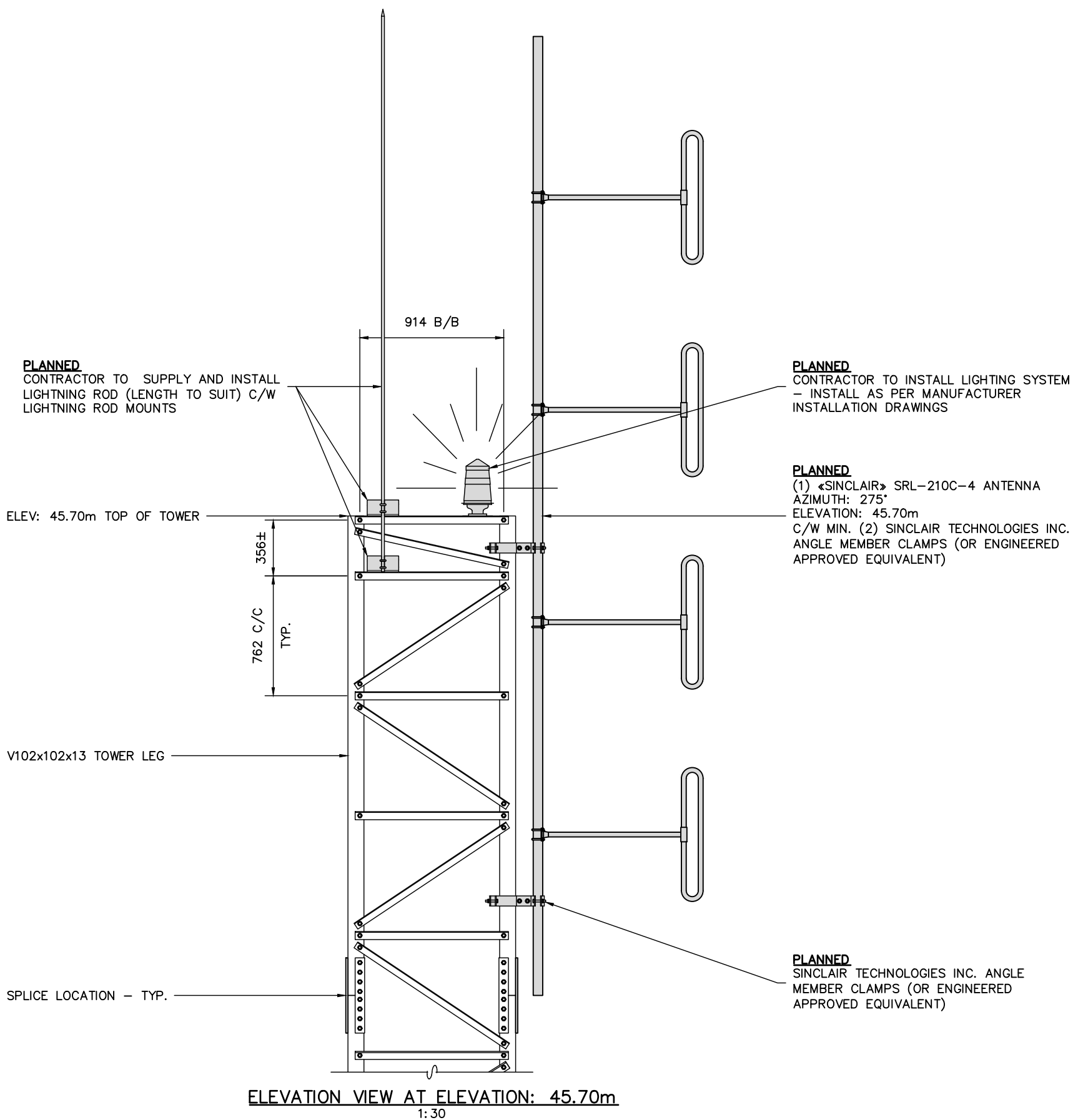
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DRAWING TITLE :

**COMPOUND LAYOUT**

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| DRAWN BY :    |                   | J. DOYLE    |        |        |        |
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SITE : CUSLETT VHF, NL

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DRAWING TITLE :  
SUPPORT FOR ANTENNAS AT  
ELEVATION 45.70m  
(ELEVATION VIEW)  
(PAGE 1 OF 6)

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| DRAWN BY :    |                   | J. DOYLE    |      |      |      |
| APPROVED BY : |                   | J. WALSH    |      |      |      |
| FILE No :     |                   | 2018-44     |      |      |      |
| DRAWING No :  |                   | T3404-06A   |      |      |      |

V102x102x13 TOWER LEG

**PLANNED (TOWER LEG #2)**  
(1) «SINCLAIR» SRL-210C-2 ANTENNA  
AZIMUTH: 150°  
ELEVATION: 37.47m  
C/W MIN. (2) SINCLAIR TECHNOLOGIES INC.  
ANGLE MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)

SPLICE LOCATION - TYP.

**PLANNED**  
SINCLAIR TECHNOLOGIES INC. ANGLE  
MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)

914 B/B

762 C/C  
TYP.

V102x102x16 TOWER LEG

**ELEVATION VIEW AT ELEVATION: 35.03m TO 37.47m**

1:30

**PLANNED (TOWER LEG #3)**  
(1) «SINCLAIR» SRL-210C-4 ANTENNA  
AZIMUTH: 275°  
ELEVATION: 35.95m  
C/W MIN. (2) SINCLAIR TECHNOLOGIES INC.  
ANGLE MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)

**PLANNED (TOWER LEG #1)**  
(1) «SINCLAIR» SRL-227 ANTENNA  
AZIMUTH: 36°  
ELEVATION: 35.03m  
C/W MIN. (2) SINCLAIR TECHNOLOGIES INC.  
ANGLE MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT) AND (1) HSS60øx4.8x1300mm  
LONG ANTENNA MOUNTING PIPE

**PLANNED**  
SINCLAIR TECHNOLOGIES INC. ANGLE  
MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)

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DRAWING TITLE :  
**SUPPORT FOR ANTENNAS AT  
ELEVATION 35.03m TO 37.47m  
(ELEVATION VIEW)  
(PAGE 2 OF 6)**

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| DRAWING No :  | T3404-06B         |             |      |      |      |

SPLICE LOCATION – TYP.

V102x102x13 TOWER LEG

914 B/B  
762 C/C  
TYP.

SPLICE LOCATION – TYP.

ELEVATION VIEW AT ELEVATION: 27.41m  
1: 30

PLANNED  
SINCLAIR TECHNOLOGIES INC. ANGLE  
MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)

PLANNED  
(1) «SINCLAIR» SRL-210C-4 ANTENNA  
AZIMUTH: 275°  
ELEVATION: 27.41m  
C/W MIN. (2) SINCLAIR TECHNOLOGIES INC.  
ANGLE MEMBER CLAMPS (OR ENGINEERED  
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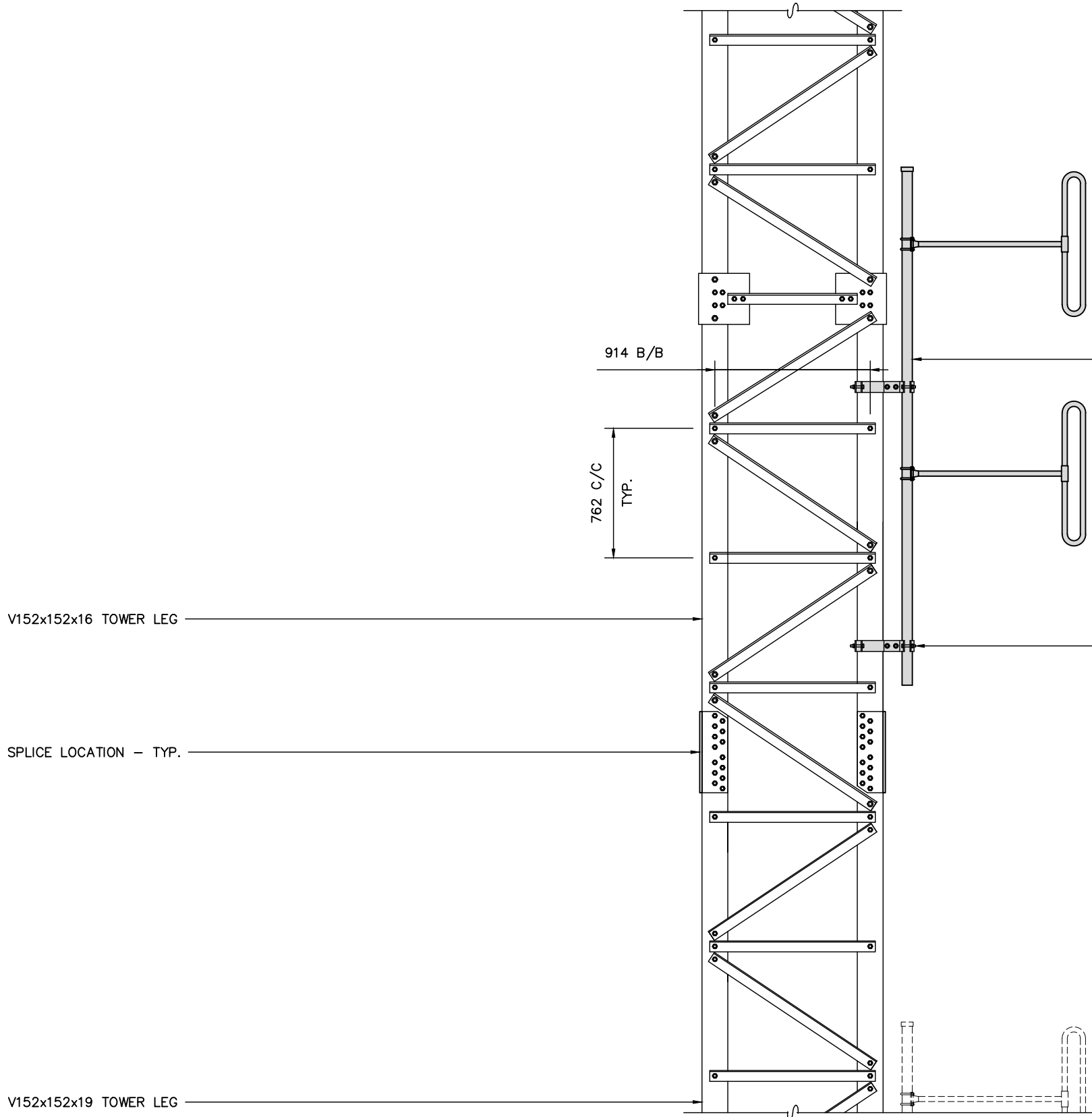
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DRAWING TITLE :  
SUPPORT FOR ANTENNAS AT  
ELEVATION 27.41m  
(ELEVATION VIEW)  
(PAGE 3 OF 6)

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| DRAWN BY :    |                   | J. DOYLE    |        |        |        |
| APPROVED BY : |                   | J. WALSH    |        |        |        |
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ELEVATION VIEW AT ELEVATION: 17.35m TO 20.56m  
1:30

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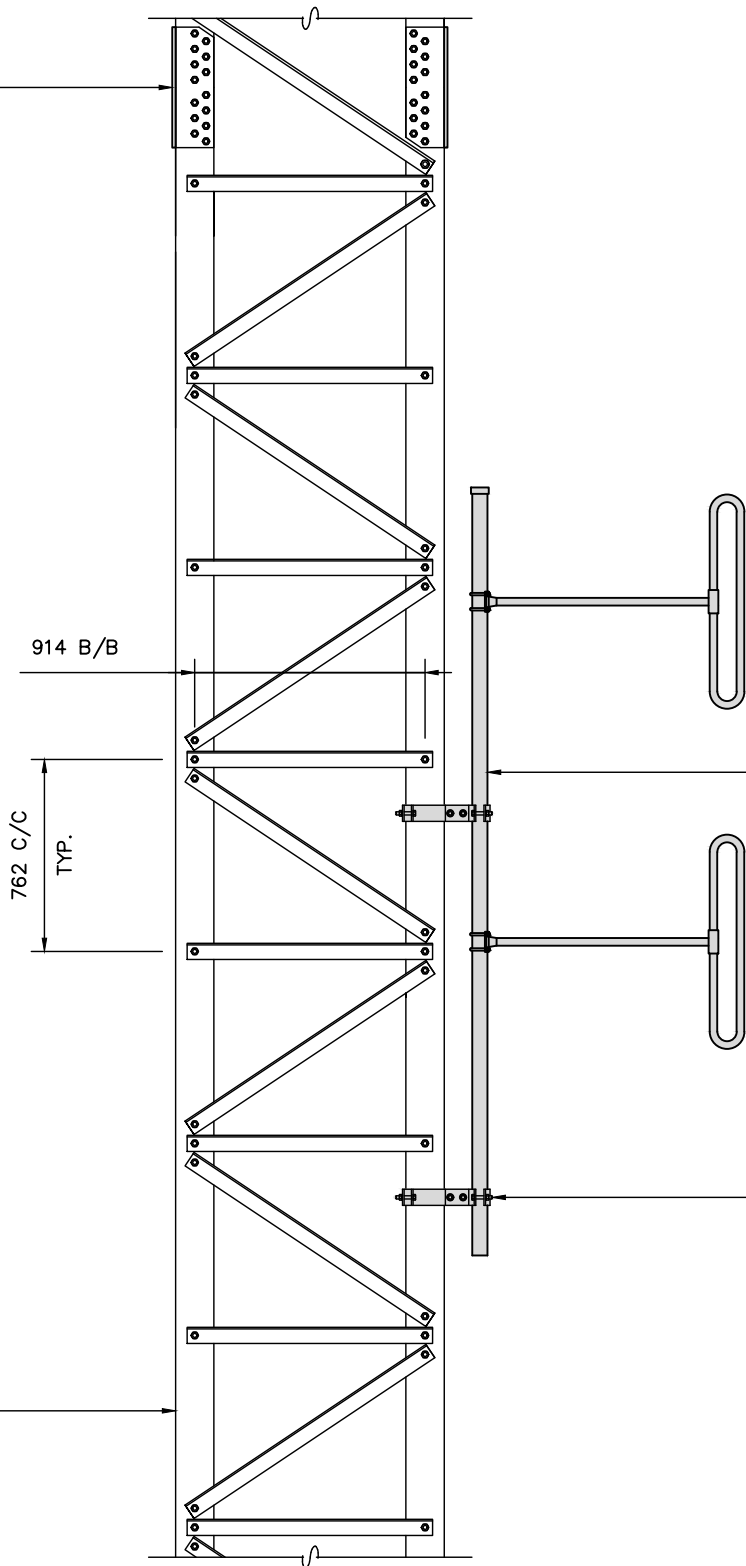
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DRAWING TITLE :  
SUPPORT FOR ANTENNAS AT  
ELEVATION 17.35m TO 20.56m  
(ELEVATION VIEW)  
(PAGE 4 OF 6)

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SPLICE LOCATION – TYP.



**PLANNED**  
(1) «SINCLAIR» SRL–210C–2 ANTENNA  
AZIMUTH: 275°  
ELEVATION: 15.57m  
C/W MIN. (2) SINCLAIR TECHNOLOGIES INC.  
ANGLE MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)  
– RCMP SUPPLIED (ANTENNA/CABLING) TO BE  
CONTRACTOR INSTALL ONLY WITH CABLES  
TERMINATED WITHIN SHELTER.  
– OWNER TO PROVIDE ANTENNA/CABLING  
UPON CONTRACT AWARD

**PLANNED**  
SINCLAIR TECHNOLOGIES INC. ANGLE  
MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)


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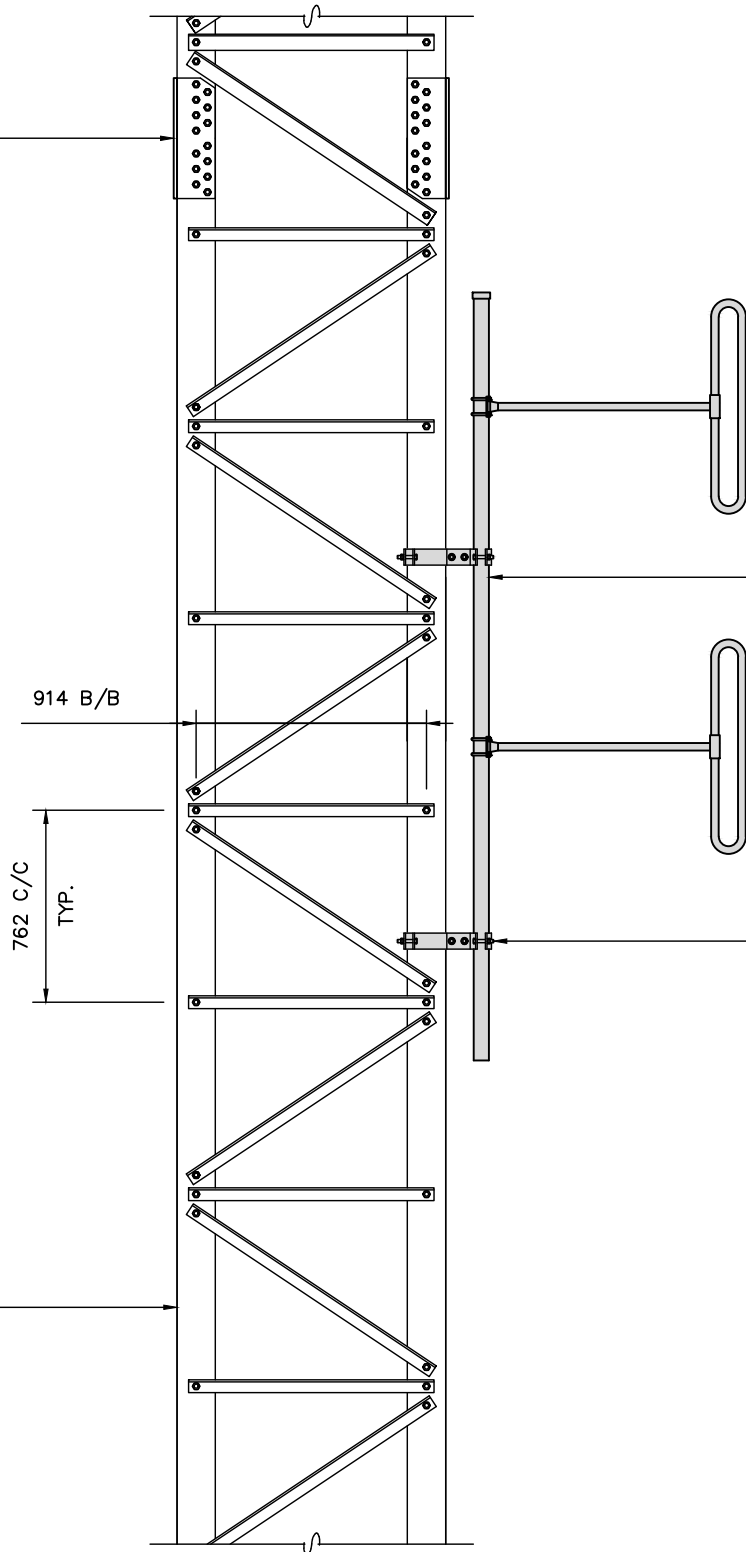
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| DRAWING TITLE :<br>SUPPORT FOR ANTENNAS AT<br>ELEVATION 15.57m<br>(ELEVATION VIEW)<br>(PAGE 5 OF 6) |                   |             |      |        |        |  |
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SPLICE LOCATION – TYP.



**PLANNED**  
(1) «SINCLAIR» SRL-210C-2 ANTENNA  
AZIMUTH: 275°  
ELEVATION: 10.45m  
C/W MIN. (2) SINCLAIR TECHNOLOGIES INC.  
ANGLE MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)  
– RCMP SUPPLIED (ANTENNA/CABLING) TO  
BE CONTRACTOR INSTALL ONLY WITH  
CABLES TERMINATED WITHIN SHELTER.  
– OWNER TO PROVIDE ANTENNA/CABLING  
UPON CONTRACT AWARD

**PLANNED**  
SINCLAIR TECHNOLOGIES INC. ANGLE  
MEMBER CLAMPS (OR ENGINEERED  
APPROVED EQUIVALENT)

V152x152x19 TOWER LEG

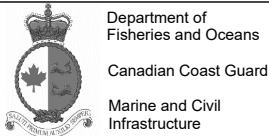
ELEVATION VIEW AT ELEVATION: 10.45m  
1: 30

PROVINCE OF NEWFOUNDLAND AND LABRADOR



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**TILLER ENGINEERING INC.**  
MIRC #02255

To practice Professional Engineering  
In Newfoundland and Labrador.  
Permit No. as Issued by PEG P0227  
which is valid for the year 2019





119 Springdale Street  
St. John's, NL  
Tel. (709) 579-6700  
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www.tillerengineering.com

A founding member of STAC CSPA.  
Structure, Tower & Antenna Council.  
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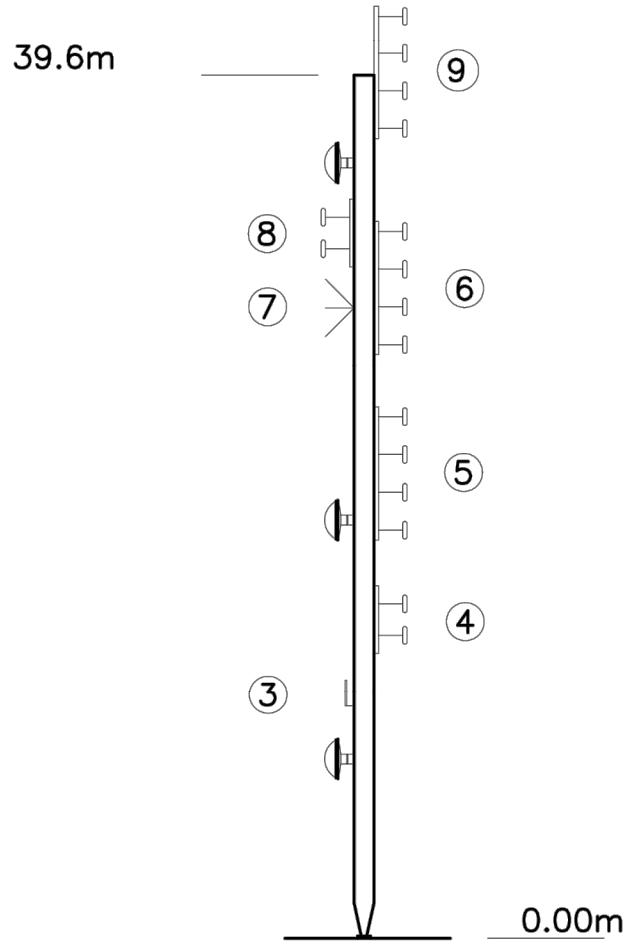
SITE : CUSLETT VHF, NL

CODE : T3404

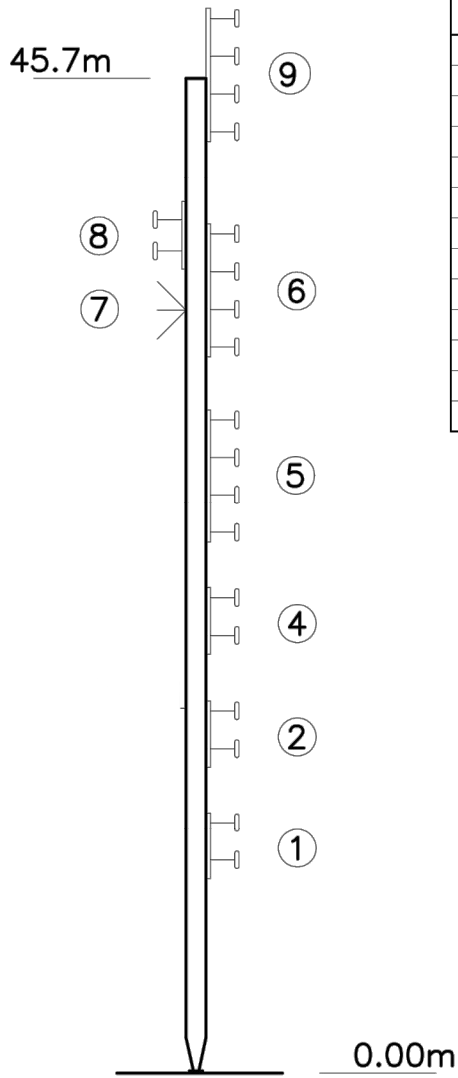
DRAWING TITLE :  
SUPPORT FOR ANTENNAS AT  
ELEVATION 10.45m  
(ELEVATION VIEW)  
(PAGE 6 OF 6)

|               |                   |             |        |        |        |
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| R1            | ISSUED FOR TENDER | 2019-JUN-12 | J.D.   | J.W.   | J.W.   |
| R0            | ISSUED FOR TENDER | 2018-JUL-30 | J.D.   | J.W.   | J.W.   |
| REV.          | DESCRIPTION       | DATE        | DNW BY | CHK BY | APP BY |
| SCALE :       |                   | AS SHOWN    |        |        |        |
| DATE :        |                   | 2018-JUL-30 |        |        |        |
| DRAWN BY :    |                   | J. DOYLE    |        |        |        |
| APPROVED BY : |                   | J. WALSH    |        |        |        |
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| DRAWING No :  |                   | T3404-06F   |        |        |        |

EXISTING



PROPOSED



| ANTENNA SYSTEMS |                           |                              |      |          |              |
|-----------------|---------------------------|------------------------------|------|----------|--------------|
| ITEM            | TYPE                      | ELEV.<br>(ANTENNA MID POINT) | AZ.  | LOCATION | TX LINE      |
| 1               | SRL-210C-2                | 10.45M                       | 275° | LEG 3    | 22mm COAXIAL |
| 2               | SRL-210C-2                | 15.57M                       | 275° | LEG 3    | 22mm COAXIAL |
| 3               | BLUEWAVE (V) (BWY 146Y-4) | 17.35M                       | 44°  | LEG 1    | 13mm COAXIAL |
| 4               | SRL-210C-2                | 20.56M                       | 275° | LEG 3    | 22mm COAXIAL |
| 5               | SRL-210C-4                | 27.41M                       | 275° | LEG 3    | 22mm COAXIAL |
| 6               | SRL-210C-4                | 35.95M                       | 275° | LEG 3    | 22mm COAXIAL |
| 7               | SRL-227                   | 35.03                        | 36°  | LEG 1    | 13mm COAXIAL |
| 8               | SRL-210C-2                | 37.47                        | 150° | LEG 2    | 13mm COAXIAL |
| 9               | SRL-210C-4                | 45.70M                       | 275° | LEG 3    | 22mm COAXIAL |
|                 |                           |                              |      |          |              |
|                 |                           |                              |      |          |              |
|                 |                           |                              |      |          |              |

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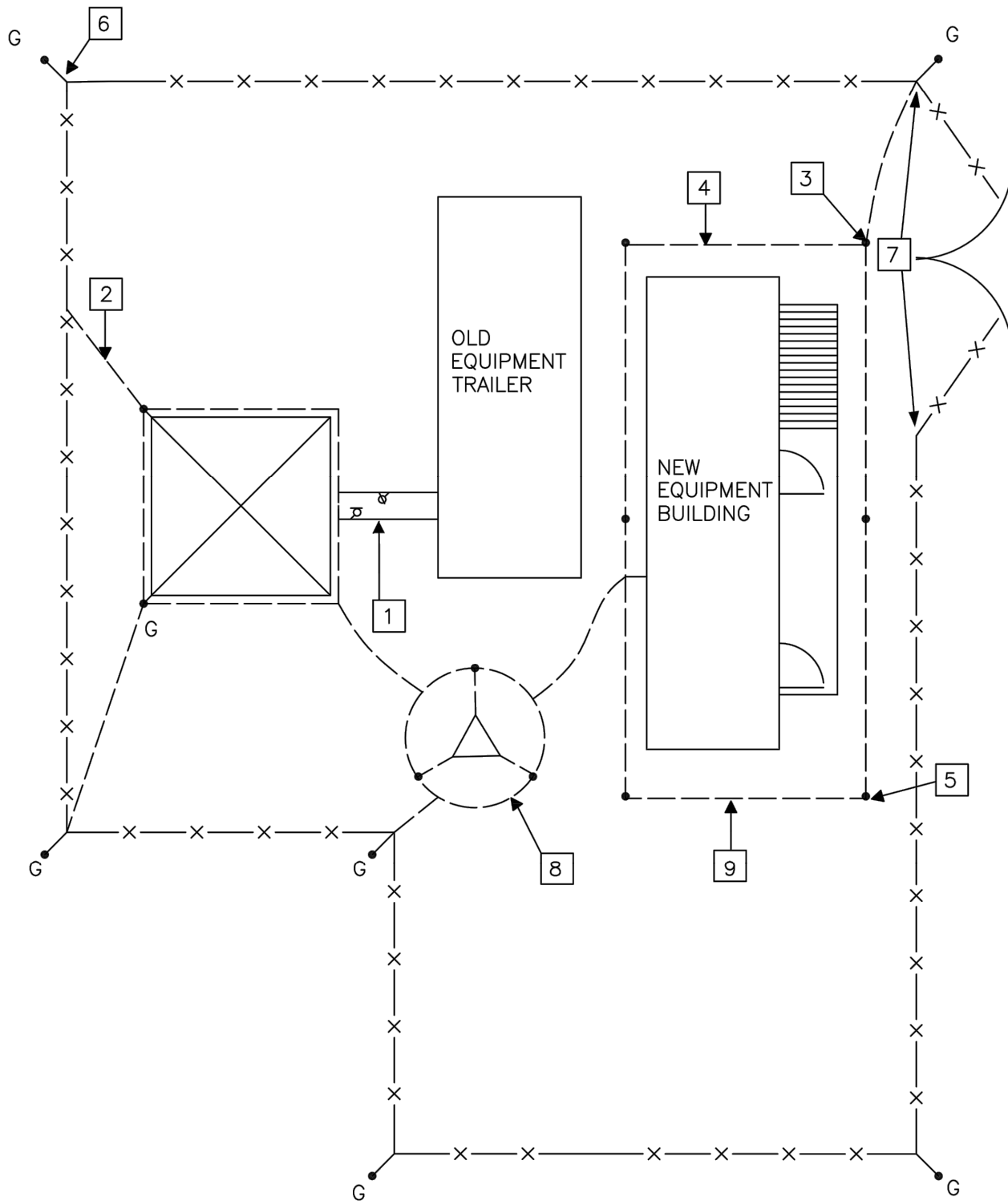
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DRAWING TITLE :

CANADIAN COAST GUARD  
RF SPECIFICATION

|               |                   |             |           |           |           |
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| DRAWN BY :    |                   | J. DOYLE    |           |           |           |
| APPROVED BY : |                   | J. WALSH    |           |           |           |
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| DRAWING No :  |                   | T3404-07    |           |           |           |



DRAWING NOTES:

- 1 WAVE GUIDE BRIDGE SUPPORTS TO BE EXOTHERMICALLY CONNECTED TO GROUND LOOP UPON REMOVAL OF OLD EQUIPMENT TRAILER
- 2 CONFIRMED FENCE GROUNDING TO BE TIED INTO EXTERNAL GROUND LOOP USING 2/0 BARE COPPER WIRE AND EXOTHERMIC CONNECTIONS
- 3 CONFIRMED EXOTHERMIC WELDED CONNECTION TYP
- 4 CONFIRMED 2/0 BARE COPPER WIRE
- 5 CONFIRMED 3/4" COPPER GROUND ROD TYP 4 CORNER POSTS
- 6 BONDED CORNERS OF FENCE AND GATE POSTS TO PERIMETER OR RADIAL GROUND USING AWG #2/0 TINNED STRANDED COPPER.
- 7 FENCE GATE WAS GROUNDED TO GATE POST USING 2/0 COPPER WIRE
- 8 CONFIRM INSTALLATION OF TOP AND BOTTOM GROUNDING FOR THE 7/8"Ø COAXIAL TX LINE TO THE SRL 227 ANTENNA
- 9 INSTALLED EXTERNAL GROUND LOOP AROUND NEW EQUIPMENT BUILDING USING 2/0 BARE COPPER WIRE..

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DRAWING TITLE :

EXISTING SITE GROUNDING DETAILS

|               |                   |             |      |      |      |
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| DRAWING No :  |                   | T3404-08    |      |      |      |