


- NOTES:
- INSTALLATION TO COMPLY WITH WITH ALL REQUIREMENTS OF CEC C22.1-18.
 - ALL CABLES TO BE TECK90, CU, 90°C, UNLESS OTHERWISE SPECIFIED.
 - EXISTING TRANSFORMER T2 TO BE RELOCATED INSIDE THE ELECTRICAL SEACAN.
 - EXISTING CABLE TO BE EXCAVATED AND RE-ROUTED TO PANEL-A. A DETAILED SCOPE OF WORK IS INCLUDED IN SPECIFICATION 26 05 19 - SECTION 3.1.9.
 - THE EXISTING DIRECT BURIED CABLE TO BE DECOMMISSIONED. CONTRACTOR TO SUPPLY AND INSTALL A NEW CABLE AND 225A PANEL. XFMR T4 TO BE DECOMMISSIONED BY CONTRACTOR (E4100) AND RELOCATED TO HANGER.

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
G	REVISED FOR TENDER	RD	RD	RD	29JAN19
F	ISSUED FOR TENDER	HSG	RD	RD	03JAN19
E	ADDED 225kVA UNIT SUB	HSG	RD	RD	14NOV18
D	ADDED DVA DISH FEED	RB	RD	RD	20JUN17
C	UPDATED INCOMING FEED	RB	RD	RD	19DEC16
B	AS BUILT	RB	HSG	HSG	11JUL16
A	PRELIMINARY	RJH	RD	RD	13JAN15

REVISIONS

CLIENT:



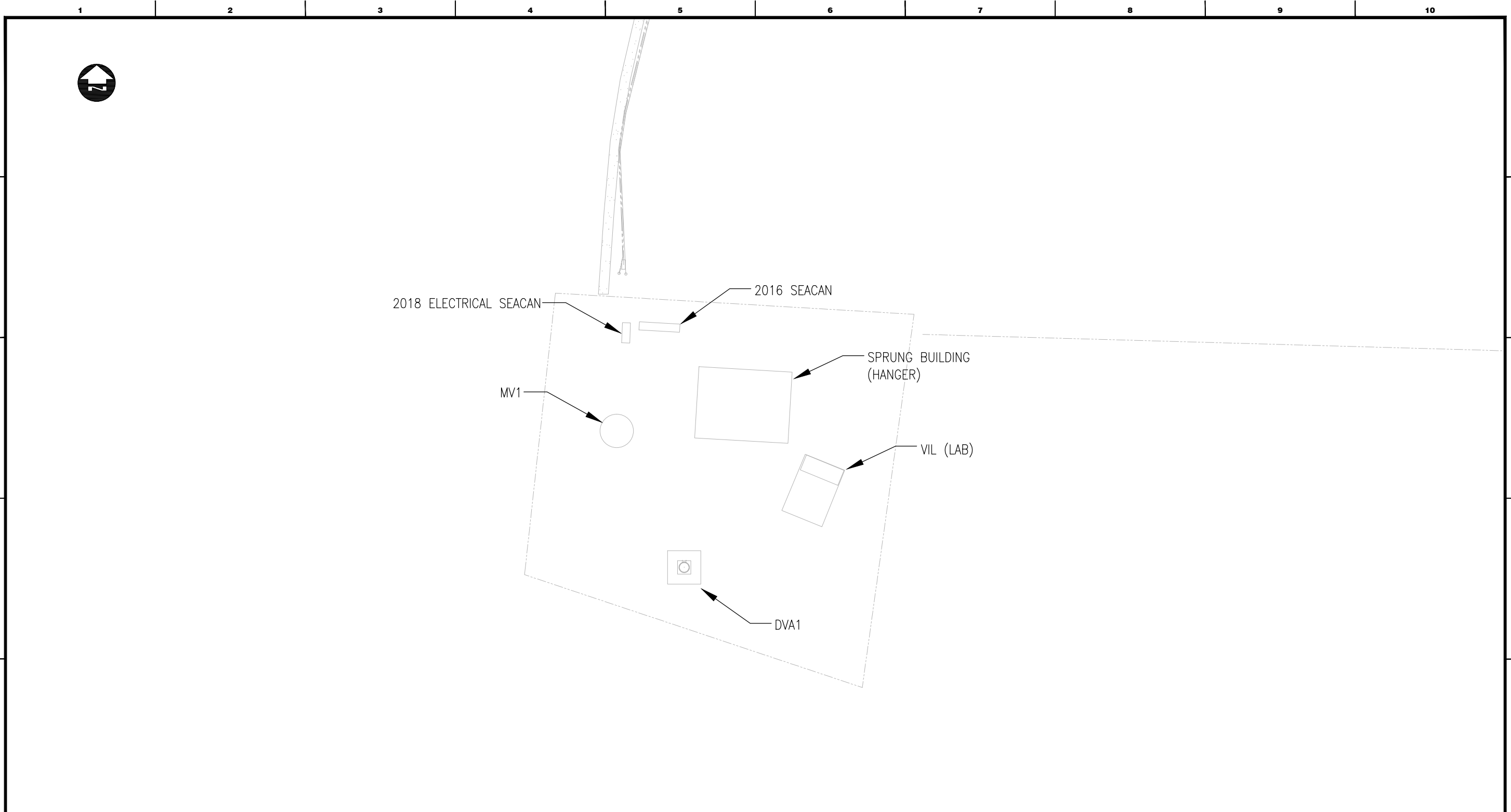
NATIONAL RESEARCH COUNCIL CANADA
DOMINION RADIO ASTROPHYSICAL OBSERVATORY

DESIGN BY:



#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
www.struthers.tech


PROJECT TITLE: DRAO OBSERVATORY			
TITLE: ELECTRICAL SINGLE LINE DIAGRAM CART SITE			
SCALE: N/A	JOB NO.:		
PROJECT 1862	DWG.No. E0005	SHT. 1	REV. G



NOTES:

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
A	ISSUED FOR REVIEW	HSG	RD	RD	29JAN2019
REVISIONS					

CLIENT:



NATIONAL RESEARCH COUNCIL CANADA
DOMINION RADIO ASTROPHYSICAL OBSERVATORY

DESIGN BY:



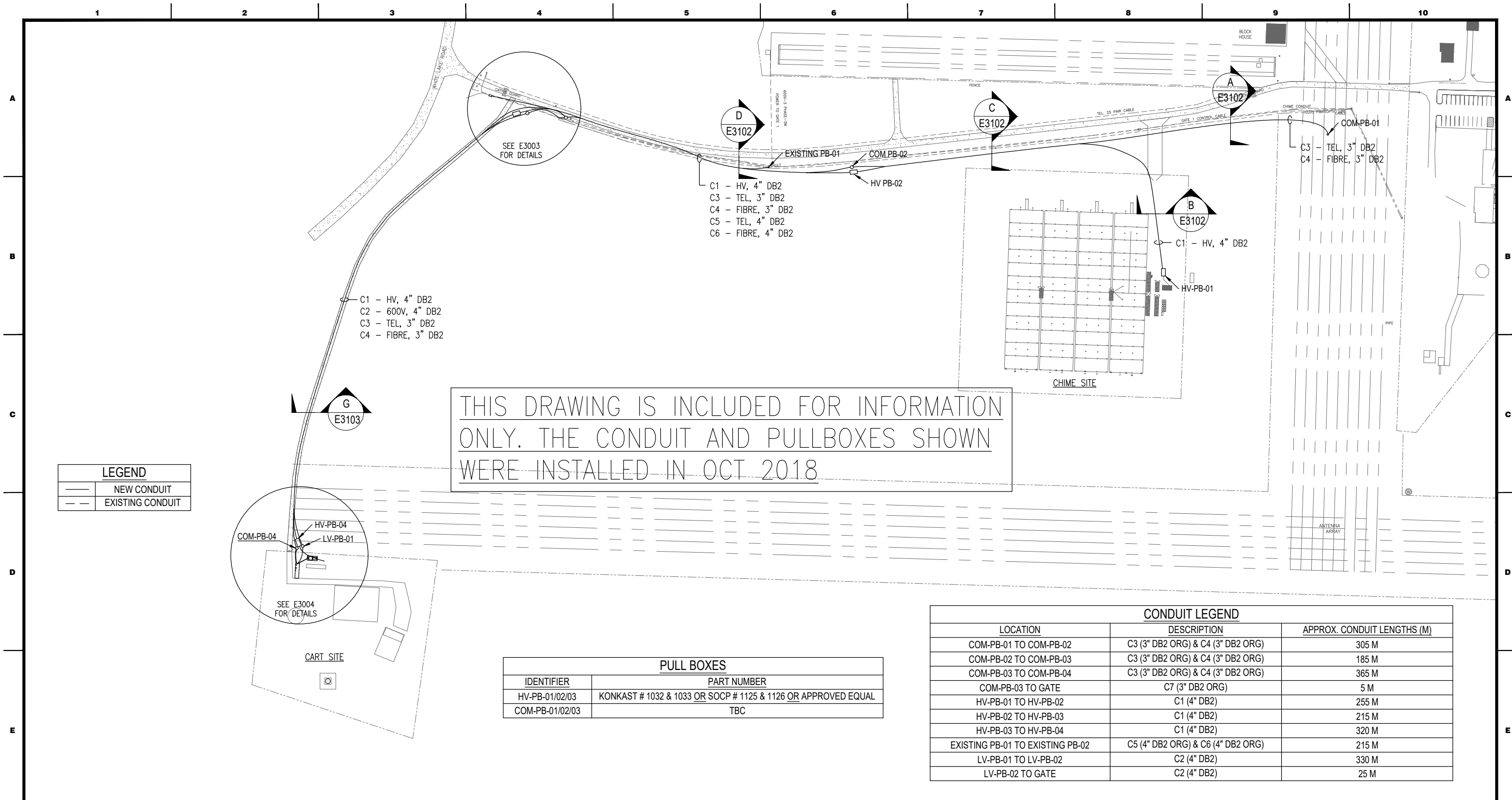
#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
www.strutherstech.com

PROJECT TITLE: **DRAO OBSERVATORY**

TITLE: **CART SITE PLAN**

SCALE: N/A JOB NO.:

PROJECT: DWG.No. **E1001** SHT. **1** REV. **A**




NOTES:
1. INSTALLATION TO COMPLY WITH ALL REQUIREMENTS OF CEC C22.1-18.

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
D	REVISED LEGEND	HGS	RD	RD	29JAN19
C	UPDATED CART LAYOUT	HSG	RD	HSG	14NOV18
B	CONDUIT LAYOUT CHANGED	HSG	RD	HSG	10SEPT18
A	ISSUED FOR REVIEW	HSG	RD	HSG	04SEPT18


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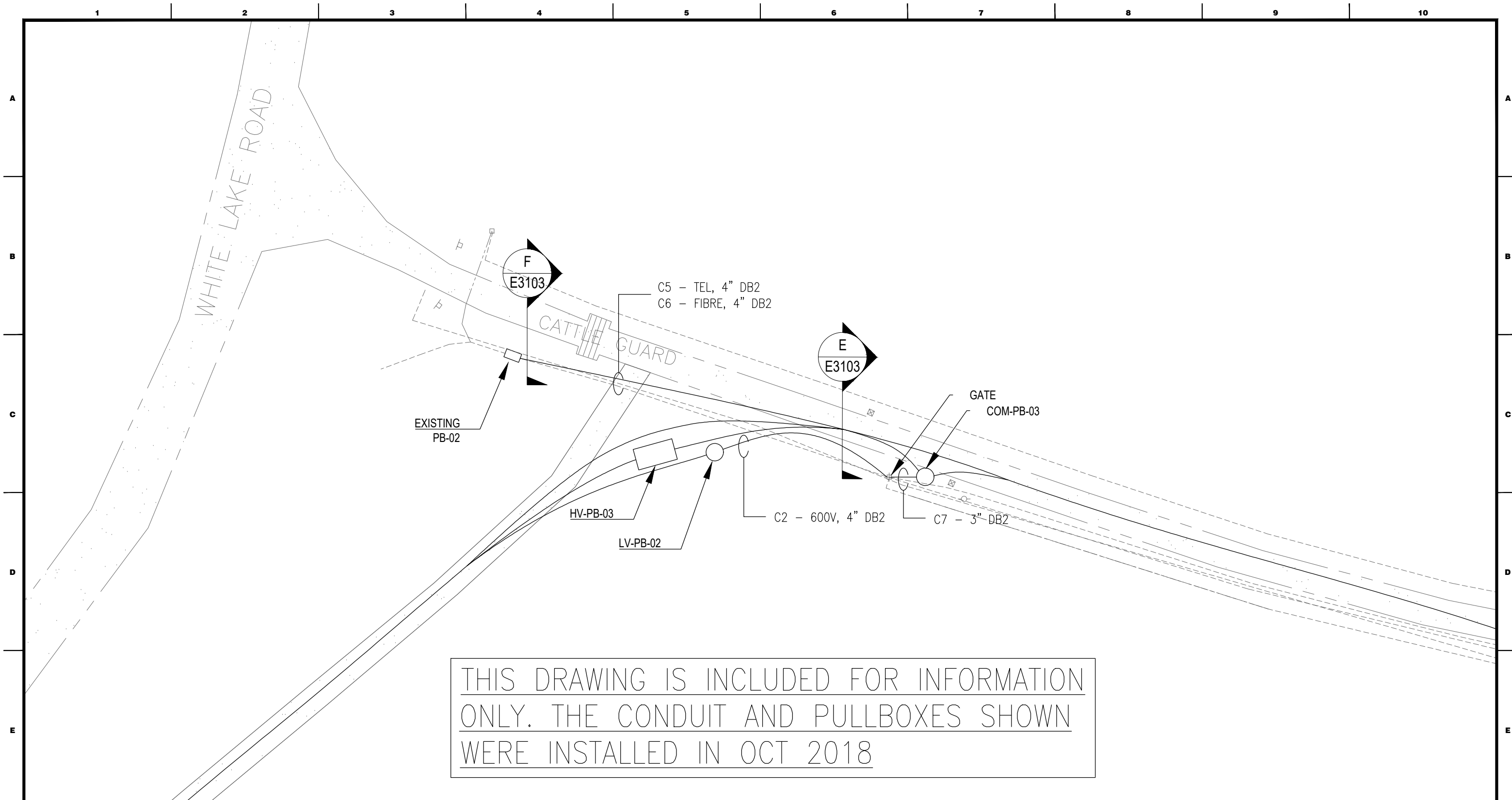
#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
www.strutherstech.com

PROJECT TITLE: **DRAO - OBSERVATORY**

TITLE: **ELECTRICAL
15KV CABLE ROUTING
CART**

SCALE: NA JOB NO.: SHT. **1** REV. **D**

PROJECT **1862** DWG.No. **E3002**




THIS DRAWING IS INCLUDED FOR INFORMATION ONLY. THE CONDUIT AND PULLBOXES SHOWN WERE INSTALLED IN OCT 2018

NOTES:
1. INSTALLATION TO COMPLY WITH ALL REQUIREMENTS OF CEC C22.1-18.


REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
B	ISSUED FOR TENDER	RD	RD	RD	29JAN19
A	ISSUED FOR REVIEW	HSG	RD	HSG	12SEPT18
REVISIONS					

CLIENT:



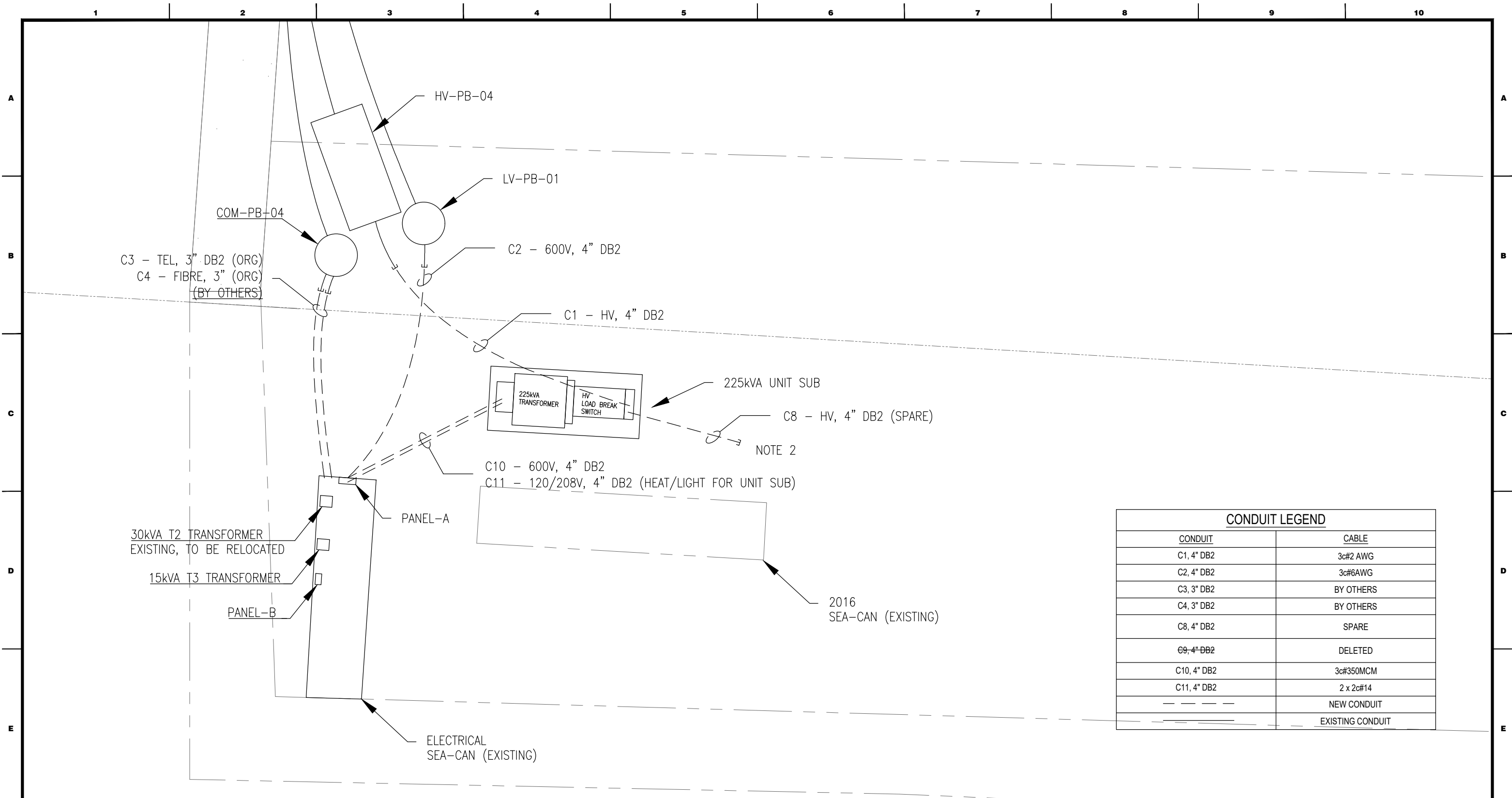
NATIONAL RESEARCH COUNCIL CANADA
DOMINION RADIO ASTROPHYSICAL OBSERVATORY

DESIGN BY:



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www.strutherstech.com

PROJECT TITLE: DRAO - OBSERVATORY		SCALE: NA		JOB NO.:	
TITLE: ELECTRICAL CONDUIT ROUTING DETAILS WHITE LAKE ROAD ENTRANCE					
PROJECT 1862	DWG.No. E3003	SHT. 1	REV. B		




CONDUIT LEGEND	
CONDUIT	CABLE
C1, 4" DB2	3c#2 AWG
C2, 4" DB2	3c#6AWG
C3, 3" DB2	BY OTHERS
C4, 3" DB2	BY OTHERS
C8, 4" DB2	SPARE
C9, 4" DB2	DELETED
C10, 4" DB2	3c#350MCM
C11, 4" DB2	2 x 2c#14
---	NEW CONDUIT
---	EXISTING CONDUIT

NOTES:
 1. INSTALLATION TO COMPLY WITH ALL REQUIREMENTS OF CEC C22.1-18
 2. SPARE CONDUIT TO BE INSTALLED FOR 'FUTURE' MUST EXTEND A MINIMUM OF 3 METERS BEYOND CONCRETE PAD

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
E	REVISED FOR TENDER	RD	RD	RD	29JAN19
D	ISSUED FOR TENDER	HG	RD	RD	22-JAN-19
C	REVISED CONDUIT 'C11' CABLE SIZE	RD	RD	RD	08JAN19
B	REMOVED JB1 AND CONDUITS C8 & C9	HSG	RD	RD	03JAN19
A	ISSUED FOR REVIEW	HSG	RD	HSG	13NOV18

REVISIONS

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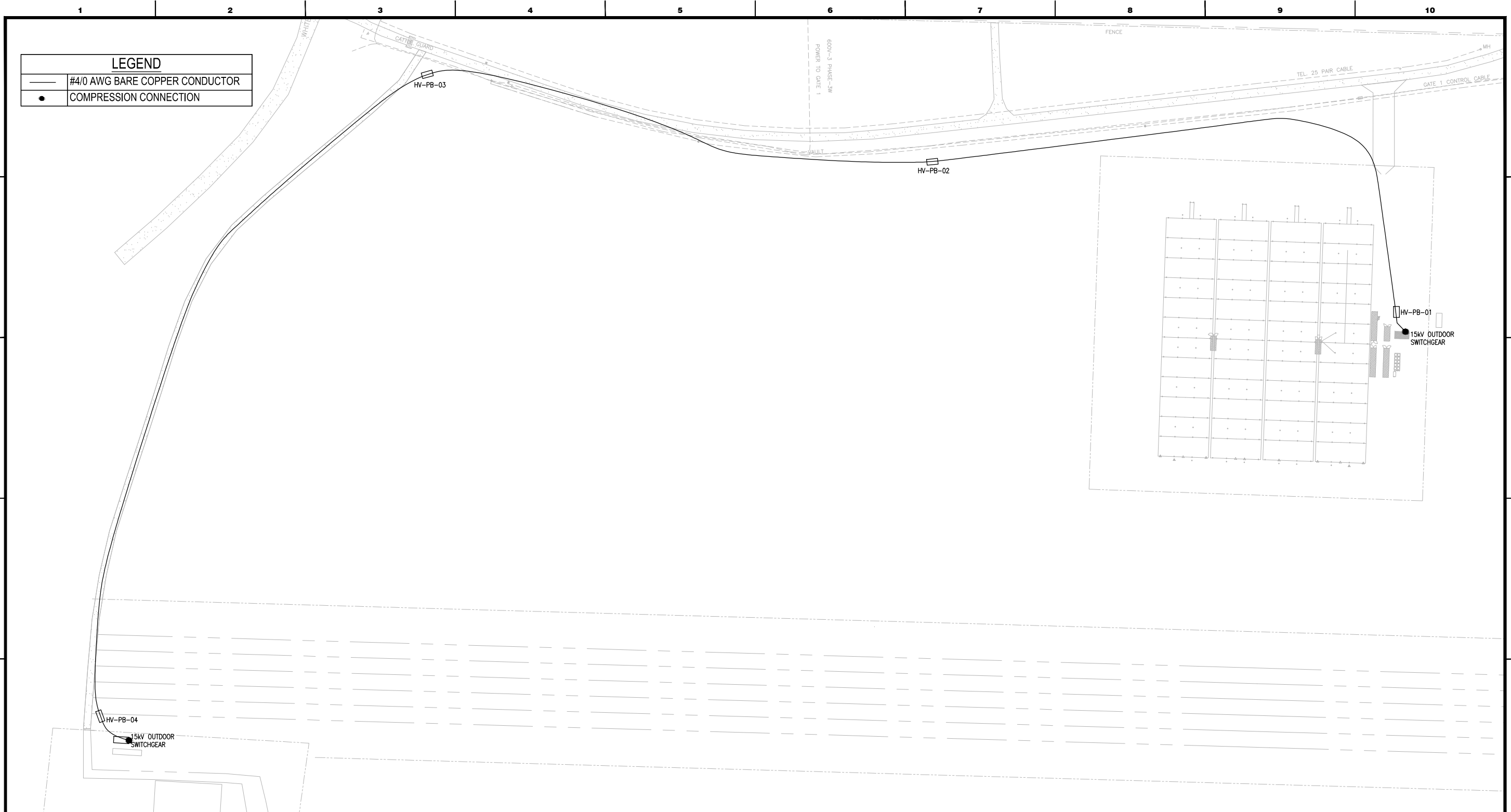
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PROJECT TITLE: DRAO - OBSERVATORY			
TITLE: ELECTRICAL CONDUIT LAYOUT CART			
SCALE: NA	JOB NO.:		
PROJECT 1862	DWG.No. E3004	SHT. 1	REV. E



- NOTES:
- GROUNDING AT EACH LOCATION TO BE CONNECTED WITH #4/0 BARE COPPER CONDUCTOR PULLED THROUGH EACH 15kV CONDUIT. GROUNDING TO BE CONNECTED TO THE EXISTING GROUND GRID AT THE CHIME 15kV UNIT SUBSTATION.
 - ALL INTERCONNECTING GROUND CONNECTIONS BETWEEN CONDUITS MUST BE INSTALLED SUCH THAT IT IS POSSIBLE TO INSPECT THE INTEGRITY OF THE CONNECTION WITHOUT DE-ENERGIZING THE EQUIPMENT (I.E. CONNECTION IS VISIBLE THROUGH THE VIEWING WINDOW OR INSTALLED IN AN INSPECTION WELL).
 - TYPICAL TRENCH DETAILS ARE SHOWN ON E3104.
 - INSTALLATION TO COMPLY WITH ALL REQUIREMENTS OF CEC C22.1-18.

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
A	ISSUED FOR REVIEW	HSG	RD	HSG	14NOV18
REVISIONS					

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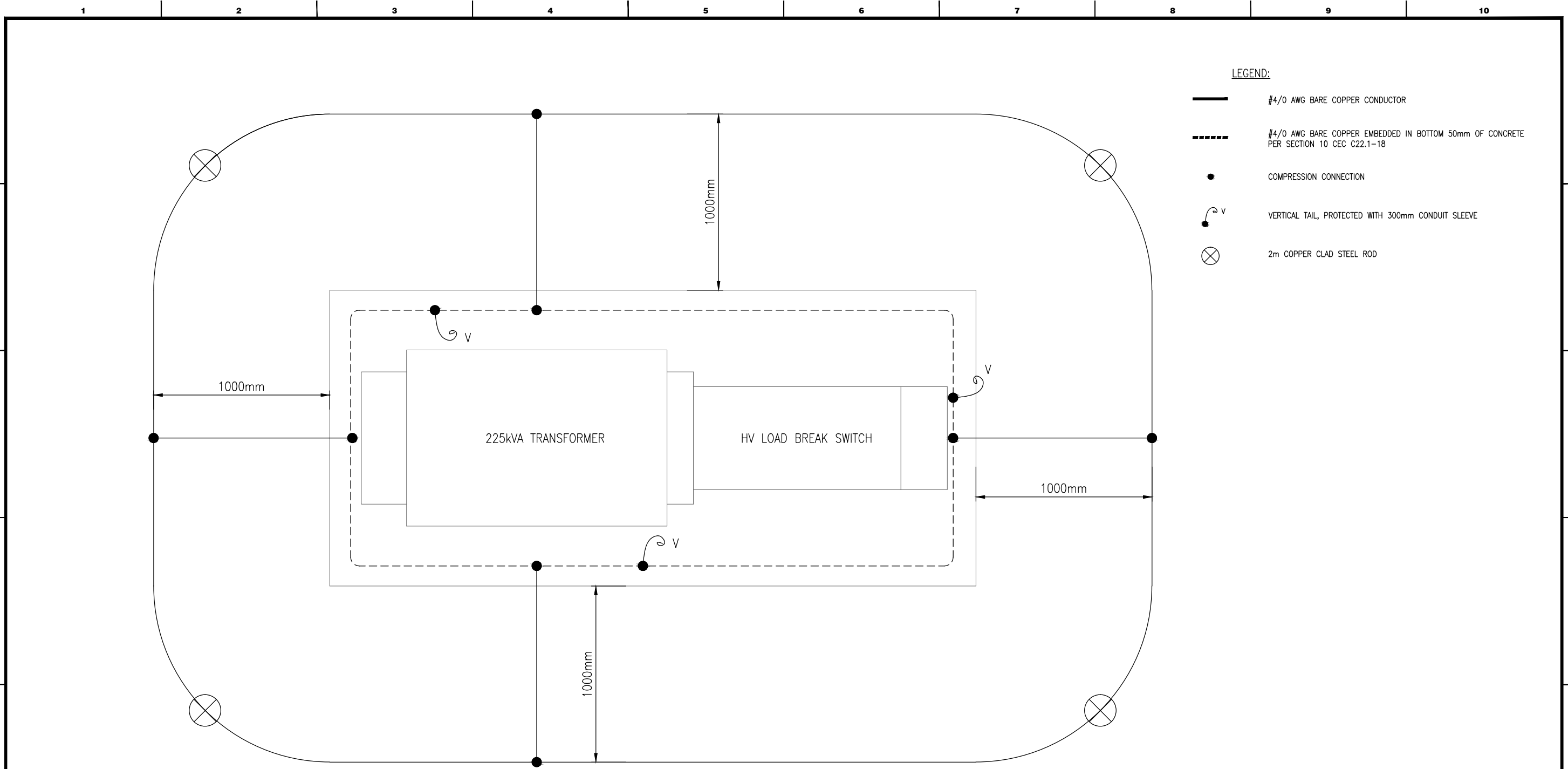
#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
www.strutherstech.com

PROJECT TITLE: **DRAO - OBSERVATORY**

TITLE: **ELECTRICAL SITE GROUNDING LAYOUT CHIME & CART**

SCALE: NA JOB NO.:


PROJECT **1862** DWG.No. **E3005** SHT. **1** REV. **A**



NOTES:
 1. PERIMETER GROUNDING LOOP TO BE BURIED 0.5M BELOW FINISHED GRADE.
 2. INSTALLATION TO COMPLY WITH ALL REQUIREMENTS OF CEC C22.1-18

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
A	ISSUED FOR REVIEW	HSG	RD	HSG	14NOV18
REVISIONS					

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DESIGN BY:



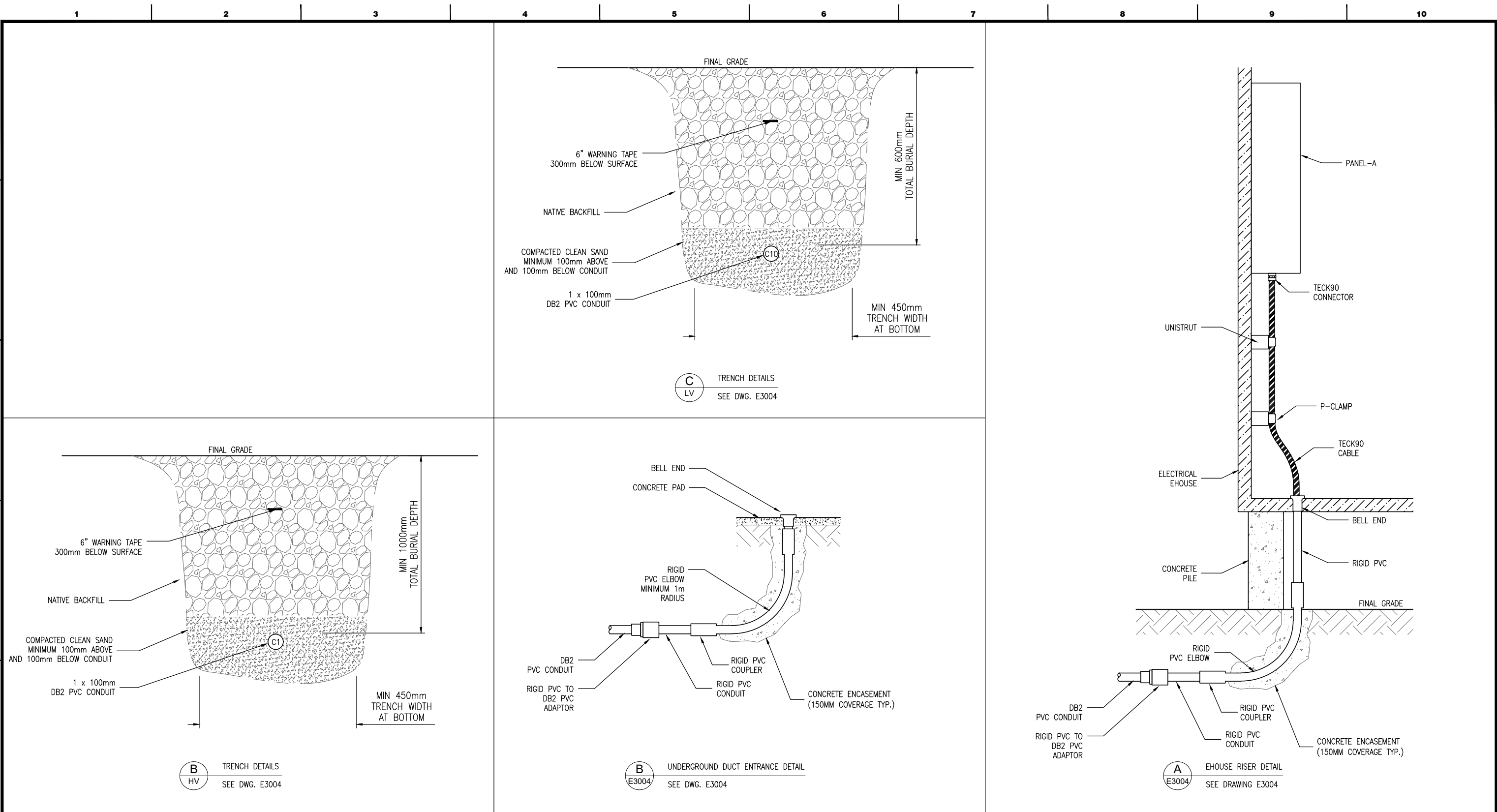
#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
 www.strutherstech.com

PROJECT TITLE: **DRAO - OBSERVATORY**

TITLE: **ELECTRICAL
 225kVA SUB GROUNDING
 CART SITE**

SCALE: NA JOB NO.:

PROJECT **1862** DWG.No. **E3006** SHT. **1** REV. **A**




NOTES:
1.

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
B	REMOVED CONDUITS C8 & C9	HSG	RD	RD	03JAN19
A	ISSUED FOR REVIEW	HSG	RD	HSG	14NOV18


REVISIONS

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NATIONAL RESEARCH COUNCIL CANADA
DOMINION RADIO ASTROPHYSICAL OBSERVATORY

DESIGN BY:



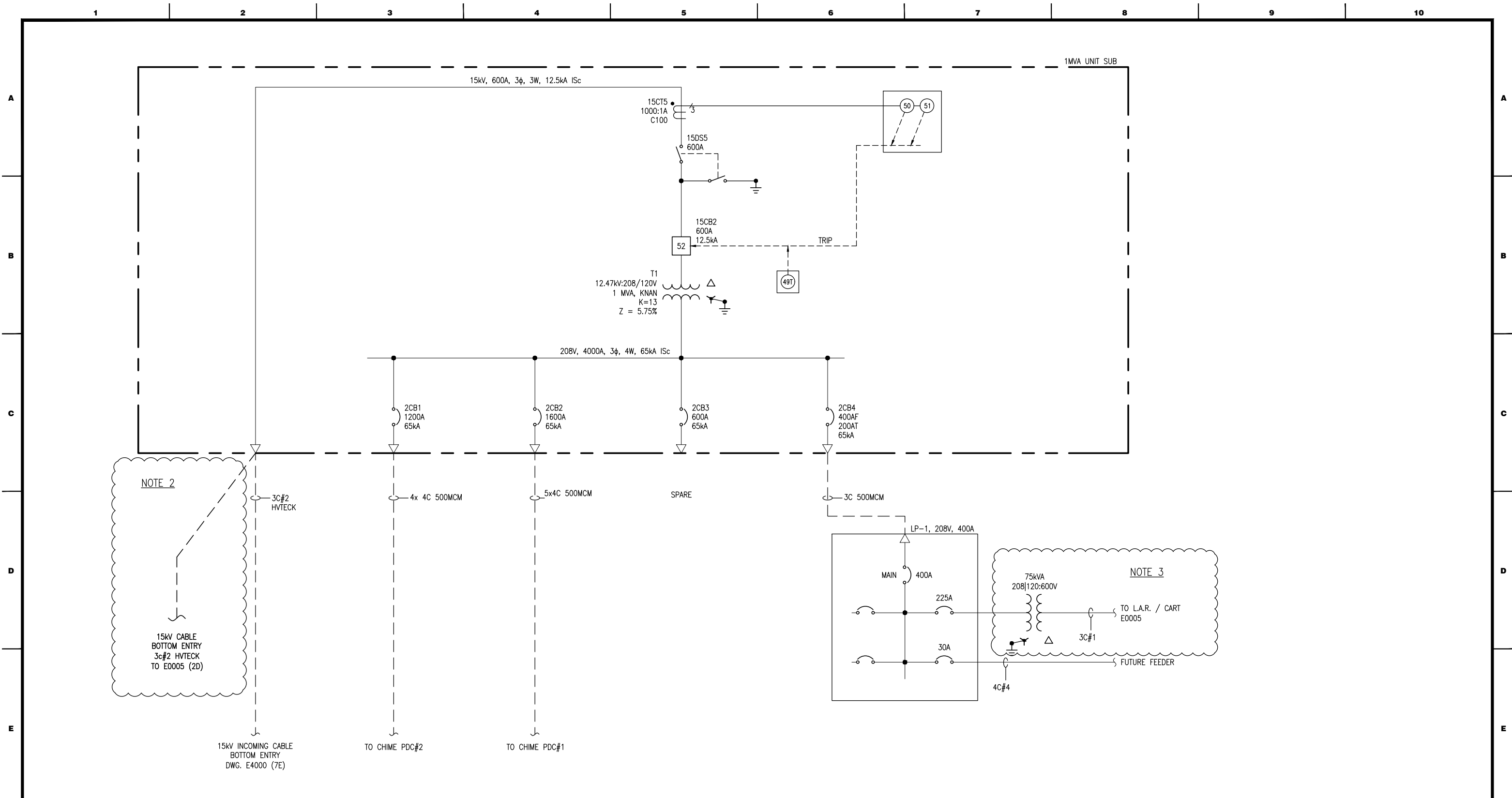
#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
www.struthers-tech.com

PROJECT TITLE: **DRAO OBSERVATORY**

TITLE: **ELECTRICAL CONDUIT SECTION DETAILS CART SITE**

SCALE: N/A JOB NO.:

PROJECT **1862** DWG.No. **E3104** SHT. **1** REV. **B**



NOTES:
 1. INSTALLATION TO COMPLY WITH WITH ALL REQUIREMENTS OF CEC C22.1-15.
 2. CONTRACTOR TO SUPPLY AND INSTALL DEAD BREAK CONNECTORS FOR THE 15kV TAP CONNECTION TO CART.
 3. EXISTING 75kVA TRANSFORMER FEEDING CART TO BE DECOMMISSIONED BY CONTRACTOR AND RELOCATED TO THE SPRUNG HANGER (SEE NOTE 5 - E0005).

REV.	DESCRIPTION	DRAWN	CHECKED	DESIGNED	DATE
N	ISSUED FOR TENDER	RD	RD	RD	29JAN19
M	ADDED NOTES 2 & 3	RD	RD	RD	08JAN19
L	ADDED L.A.R. / CART FEED TO LP-1	RB	RD	RD	19DEC16
K	AS BUILT	RB	HSG	HSG	11JUL16
J	LP1 PANEL RATING CHANGED	HSG	RD	RD	15MAR16
I	REVISED DRAWING REFERENCE	HSG	RD	RD	12JAN16
H	REVISED CHIME FEEDER CABLES	SAN	RD	RD	17DEC15

REVISIONS

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DESIGN BY:



#105 - 78 Industrial Ave. W Penticton BC. V2A6M2
www.strutherstech.com

PROJECT TITLE: **DRAO OBSERVATORY**

TITLE: **CHIME SITE ELECTRICAL SINGLE LINE DIAGRAM**

SCALE: N/A JOB NO.:

PROJECT DWG.No. **E4100** SHT. **1** REV. **N**

Polypropylene Fillers
(Fully filled)

Binder Tape Applied Over
Assembly

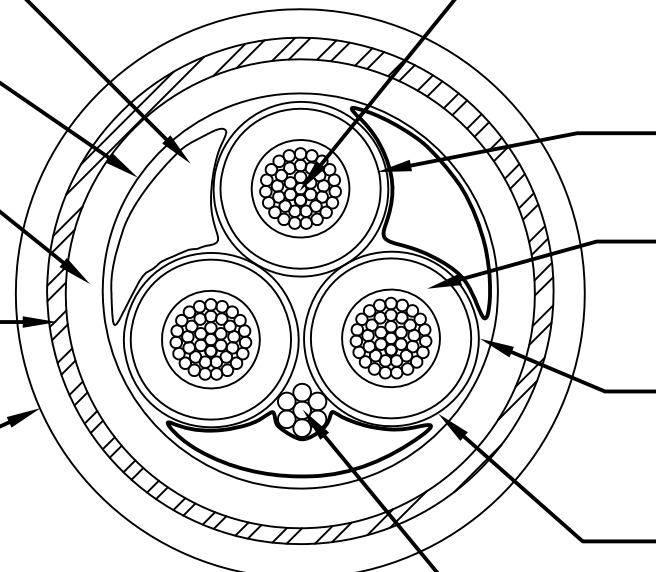
0.110" Nom. Extruded Black
Inner Pvc Jacket
Nominal OD: 2.005"

0.040" Aluminum
Interlocked Armor
Nominal OD: 2.250"

0.060" (Minimum Point)
Extruded Black Pvc Jacket
Nominal OD: 2.390"

Nominal Weight/1000Ft. 2340 lbs.

Print: "General Cable 3/c 2Awg Aluminum Cpt 5.59mm(220Mils) XLPE
15kV 133% Ins Level Acid-Flame-Check 90c CSA HL HVTECK FT4
(-40c) LTGG Dir Bur Sun Res" Month/Year, Seq Mtr Marks



2AWG (7/w) Compact Aluminum
Class B Stranded Conductor
Nominal OD: 0.268"

0.018" Nom. Extruded
Semi-conducting Conductor Shield

0.220" Extruded Crosslinked
Polyethylene Insulation (TR-XLPE)
Nominal OD: 0.750"

0.030" Nom. Extruded
Semi-conducting Insulation Shield
Nominal OD: 0.810"

0.003" Plain Copper Tape Helical
Applied With 15% Nominal Gap
Phase ID Colored Marker Tape
Black, Red, Blue.
(Under Copper Shield Tape)

One #8AWG (7/w) Bare Copper
Bonding Conductor

Dimensions are Nominal and Subject to Nominal Manufacturing Tolerances

<p>THREE CONDUCTOR CABLE 15KV RATED 133% INSULATION LEVEL HL HVTECK FT-4 (-40C) MANUFACTURED IN ACCORDANCE WITH CSA C68.10</p>	<p>PART NUMBER</p>		<p>General Cable</p>	
			<p>Drawn By: CAD Date: 9/3/2014</p>	<p>Approved By: PMG Drawing No. H-1464</p>