



Parks Canada

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Strategic Asset
Management,
Western and Northern
Region

Gestion Stratégique
des Biens,
Région de l'Ouest et
du Nord

Canada

TUNNEL MOUNTAIN CAMPGROUND OPERATIONS AREA

Shallow Utilities Rehabilitation - Phase 1

BANFF NATIONAL PARK, ALBERTA

CONSULTANT PROJECT No. 181-13597-07

DATE: 2022-APR-13



SITE LOCATION PLAN

SCALE 1:2500



WSP Canada Group Limited
237 4th Avenue, Suite 3300
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SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
LIGHTING		COMMUNICATION		FIRE ALARM		SECURITY		SINGLE LINE DIAGRAM SYMBOLS	
	2'x4' RECESSED MOUNTED FLUORESCENT LUMINAIRE		TELEPHONE OUTLET		MANUAL FIRE ALARM PULL STATION		PROXIMITY CARD READER		FUSED DISCONNECT
	1'x4' RECESSED MOUNTED FLUORESCENT LUMINAIRE		DATA OUTLET		SMOKE DETECTOR		PROXIMITY CARD READER - LONG RANGE		LOAD BREAK SWITCH
	2'x2' RECESSED MOUNTED FLUORESCENT LUMINAIRE		COMMUNICATION OUTLET		SMOKE ALARM		PROXIMITY CARD READER - MULLION MOUNT		AUTOMATIC TRANSFER SWITCH
	2'x4' SURFACE MOUNTED FLUORESCENT LUMINAIRE		TV OUTLET		DUCT DETECTOR		KEYPAD		AUTOMATIC TRANSFER SWITCH (DETAILED)
	1'x4' SURFACE MOUNTED FLUORESCENT LUMINAIRE		AUDIO VISUAL OUTLET		HEAT DETECTOR - FIXED TEMPERATURE		KEYPAD WITH DISPLAY		POWER TRANSFORMER
	INDICATES NIGHT LIGHT (NON-SWITCHED LUMINAIRE)		TELEPHONE OUTLET - FLOOR MOUNTED		HEAT DETECTOR - RATE OF RISE		CARD READER WITH KEYPAD		ISOLATION TRANSFORMER
	2'x2' SURFACE MOUNTED FLUORESCENT LUMINAIRE		DATA OUTLET - FLOOR MOUNTED		END OF LINE RESISTOR		CARD READER WITH BIOMETRICS		INSTRUMENT VOLTAGE TRANSFORMER
	FLUORESCENT STRIP LUMINAIRE		COMMUNICATION OUTLET - FLOOR MOUNTED		FIRE ALARM BELL		DOOR SWITCH		INSTRUMENT CURRENT TRANSFORMER
	WALL MOUNTED FLUORESCENT LUMINAIRE		TV OUTLET - FLOOR MOUNTED		FIRE ALARM BELL WITH VISUAL ALARM		MAGNETIC HOLD OPEN		3 WINDING TRANSFORMER
	TRACK LIGHT		AUDIO VISUAL OUTLET - FLOOR MOUNTED		FIRE ALARM HORN		REQUEST TO EXIT PUSHBUTTON		NORMAL POWER PANELBOARD
	VALENCE LIGHT		TELEPHONE OUTLET - CEILING MOUNTED		FIRE ALARM HORN WITH VISUAL ALARM		REQUEST TO EXIT PUSHBUTTON WITH PUSH BAR		EMERGENCY POWER PANELBOARD
	RECESSED MOUNTED POT LUMINAIRE		DATA OUTLET - CEILING MOUNTED		REQUEST TO EXIT SENSOR		GLASS BREAK SENSOR		TRANSIENT VOLTAGE SURGE SUPPRESSOR
	SURFACE/SUSPENDED LUMINAIRE		COMMUNICATION OUTLET - CEILING MOUNTED		FIRE ALARM EXTERIOR BEACON		MOTION SENSOR		DIGITAL METERING SYSTEM
	WALL MOUNTED LUMINAIRE		TV OUTLET - CEILING MOUNTED		FIRE ALARM MONITORING ELEMENT		COMBINATION GLASS BREAK AND MOTION SENSOR		AMMETER
	EXIT LIGHT - CEILING MOUNTED		AUDIO VISUAL OUTLET - CEILING MOUNTED		FIRE ALARM CONTROL ELEMENT		BLUE PULLSTATION FOR FORCED EXIT		VOLTMETER
	EXIT LIGHT - WALL MOUNTED		INTERCOM		FIRE ALARM CONTROL PANEL		HANDICAP DOOR OPERATOR		WATTMETER
	EMERGENCY LIGHT BATTERY PACK C/W DUAL HEAD		EMERGENCY INTERCOM		FIRE ALARM ANNUNCIATOR		ELECTRIC DOOR OPERATOR		TEMPERATURE METER
	EMERGENCY LIGHT SINGLE REMOTE HEAD		EMERGENCY INTERCOM WITH STROBE		FIRE ALARM CONTROL CENTRE		ELECTRIC DOOR CLOSER		DRAW OUT
	EMERGENCY LIGHT DUAL REMOTE HEAD		VIDEO INTERCOM		FIRE ALARM ACTIVE GRAPHIC		ELECTRIC DOOR CLOSER /W SMOKE DETECTOR		LIGHTNING ARRESTOR
	POLE MOUNTED SITE LUMINAIRE		INTERCOM WITH PROGRAM		FIRE ALARM PASSIVE GRAPHIC		OVERHEAD DOOR OPERATOR		MOLDED CASE CIRCUIT BREAKER
	POLE TOP MOUNTED SITE LUMINAIRE		EMERGENCY PHONE		VESDA SMOKE ASPIRATION DETECTOR		DOOR BELL		STAND ALONE MOLDED CASE CIRCUIT BREAKER
	LUMINAIRE TYPE DESIGNATOR		EMERGENCY PHONE WITH STROBE		ISOLATION MODULE		SECURITY SOUNDER		TRANSFORMER
SWITCHES		PUBLIC ADDRESS		NURSE CALL		CONDUIT AND JUNCTION BOXES		NOTES, LINES, AND ABBREVIATIONS	
	LINE VOLTAGE SWITCH		HORN LOUD SPEAKER - CEILING MOUNTED		SINGLE PATIENT STATION		JUNCTION BOX		DRAWING REVISION KEYNOTE
	LINE VOLTAGE 3 WAY SWITCH		HORN LOUD SPEAKER - WALL MOUNTED		DOUBLE PATIENT STATION		ALTERNATE JUNCTION BOX		DRAWING DESCRIPTION/INSTRUCTION KEYNOTE
	LINE VOLTAGE 4 WAY SWITCH		LOUD SPEAKER - WALL MOUNTED		SINGLE PATIENT STATION /W ENTERTAINMENT		JUNCTION BOX - WALL		DRAWING EQUIPMENT/DEVICE KEYNOTE
	LINE VOLTAGE SWITCH WITH PILOT LIGHT		LOUD SPEAKER - CEILING MOUNTED		SINGLE PATIENT STATION /W ENTERTAINMENT		JUNCTION BOX - FLOOR		DRAWING KEYNOTE
	LINE VOLTAGE KEY OPERATED SWITCH		SIGNAL HORN - CEILING MOUNTED		L.V. SWITCH SINGLE PATIENT STATION		CONDUIT		LINE TYPE AND WEIGHT INDICATE CONSTRUCTION
	LINE VOLTAGE 2 POLE SWITCH		SIGNAL HORN - WALL MOUNTED		L.V. SWITCH DOUBLE PATIENT STATION		UNDERGROUND CONDUIT		LINE TYPE AND WEIGHT INDICATE EXISTING
	PUSHBUTTON		BELL		L.V. SWITCH DOUBLE PATIENT STATION /W ENT.		CABLE TRAY		LINE TYPE AND WEIGHT INDICATE DEMOLITION
	DOOR ASSIST PUSHBUTTON		AUDIO OUTLET		STAFF STATION		HOME RUN		ISOLATED GROUND
	EMERGENCY STOP PUSHBUTTON		MICROPHONE OUTLET		STAFF EMERGENCY STATION		PILOT LIGHT		GROUND FAULT INTERRUPTING
	UP/DN/STOP PUSHBUTTON		VOLUME CONTROL		CODE PINK EMERGENCY STATION		KEYED		BLANK OFF EXISTING DEVICE
	FOOT SWITCH		CLOCK SINGLE FACE - WALL MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON		HOUSEKEEPING RECEPTACLE		WEATHER PROOF
	DIMMER SWITCH		CLOCK SINGLE FACE - CEILING MOUNTED		DUTY STATION		TWISTLOCK		SAFETY SHUTTER
	SWITCH W/ INTEGRAL OCCUPANCY SENSOR		CLOCK DUAL FACE - WALL MOUNTED		LAVATORY EMERGENCY PUSHBUTTON		CONDUIT STUB UP		SURGE SUPPRESSION
	SWITCH W/ INTEGRAL DAYLIGHT SENSOR		CLOCK DUAL FACE - CEILING MOUNTED		LAVATORY EMERGENCY PULLCHORD		CONDUIT STUB DOWN		EXISTING TO REMAIN
	SWITCH W/ INTEGRAL OCCUPANCY/DAYLIGHT SENSOR		BATTERY CLOCK SINGLE FACE - WALL MOUNTED		CODE PINK EMERGENCY STATION		CAPPED CONDUIT		TO BE REMOVED
	OCCUPANCY SENSOR		BATTERY CLOCK DUAL FACE - WALL MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON		WIRE IN CONDUIT		EXISTING TO BE RELOCATED
	DAYLIGHT SENSOR	MECHANICAL			BIRTH IMMINENT EMERGENCY STATION				FUTURE DEVICE
	OCCUPANCY/DAYLIGHT SENSOR		MOTOR		DUTY STATION				
	LOW VOLTAGE SWITCH (# = NUMBER OF SWITCHES)		UNFUSED DISCONNECT		LAVATORY EMERGENCY PUSHBUTTON				
	PHOTOCELL		FUSED DISCONNECT		CODE PINK EMERGENCY STATION				
	2 LINE VOLTAGE SWITCHES WITH SWITCH TYPE		VARIABLE FREQUENCY DRIVE		CODE BLUE EMERGENCY PUSHBUTTON				
	3 LINE VOLTAGE SWITCHES WITH SWITCH TYPE		MAGNETIC MOTOR STARTER		CODE BLUE EMERGENCY PUSHBUTTON				
POWER			COMBO MAGNETIC MOTOR STARTER DISCONNECT		CODE BLUE EMERGENCY PUSHBUTTON				
	DUPLEX RECEPTACLE		MANUAL MOTOR STARTER C/W PILOT LIGHT		CODE BLUE EMERGENCY PUSHBUTTON				
	DUPLEX RECEPTACLE ABOVE COUNTER		CEILING FAN		CODE BLUE EMERGENCY PUSHBUTTON				
	QUAD RECEPTACLE		THERMOSTAT		CODE BLUE EMERGENCY PUSHBUTTON				
	QUAD RECEPTACLE ABOVE COUNTER		HUMIDISTAT		CODE BLUE EMERGENCY PUSHBUTTON				
	SPECIAL RECEPTACLE		PRESSURE SWITCH		CODE BLUE EMERGENCY PUSHBUTTON				
	DUPLEX RECEPTACLE - FLOOR MOUNTED		LIMIT SWITCH		CODE BLUE EMERGENCY PUSHBUTTON				
	QUAD RECEPTACLE - FLOOR MOUNTED		AQUASTAT		CODE BLUE EMERGENCY PUSHBUTTON				
	SPECIAL RECEPTACLE - FLOOR MOUNTED		MEDIGAS SENSOR		CODE BLUE EMERGENCY PUSHBUTTON				
	DUPLEX RECEPTACLE - CEILING MOUNTED		ELECTRIC REHEAT COIL		CODE BLUE EMERGENCY PUSHBUTTON				
	SPECIAL RECEPTACLE - CEILING MOUNTED		METER		CODE BLUE EMERGENCY PUSHBUTTON				
	DUPLEX RECEPTACLE		LIGHTNING ROD		CODE BLUE EMERGENCY PUSHBUTTON				
	CLOCK RECEPTACLE		LIGHTNING PROTECTION AIR TERMINAL		CODE BLUE EMERGENCY PUSHBUTTON				
	5-20RA (SLOT) DUPLEX RECEPTACLE		ELECTRICALLY CONTROLLED SOLENOID		CODE BLUE EMERGENCY PUSHBUTTON				
	SPLIT RECEPTACLE		EQUIPMENT DESIGNATION		CODE BLUE EMERGENCY PUSHBUTTON				
	EMERGENCY POWER DUPLEX RECEPTACLE	PANELBOARDS AND DISTRIBUTION			CODE BLUE EMERGENCY PUSHBUTTON				
	EMERG. POWER DUPLEX RECEPTACLE ABOVE COUNTER		PANELBOARD - SURFACE MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON				
	EMERGENCY POWER QUAD RECEPTACLE		PANELBOARD - RECESSED MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON				
	EMERG. POWER QUAD RECEPTACLE ABOVE COUNTER		TELEPHONE PANEL - SURFACE MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON				
	CORD REEL		TELEPHONE PANEL - RECESSED MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON				
	PACPOLE		LOW VOLTAGE RELAY CABINET - SURFACE MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON				
	MODULAR JUNCTION BOX - # INDICATES MODULES		LOW VOLTAGE RELAY CABINET - RECESSED MOUNTED		CODE BLUE EMERGENCY PUSHBUTTON				
	DIRECT CONNECTION TO EQUIPMENT		POWER TRANSFORMER		CODE BLUE EMERGENCY PUSHBUTTON				
	CAR RECEPTACLE		MOTOR CONTROL CENTRE		CODE BLUE EMERGENCY PUSHBUTTON				
			DIGITAL METERING SYSTEM		CODE BLUE EMERGENCY PUSHBUTTON				
			PLYWOOD BACKBOARD		CODE BLUE EMERGENCY PUSHBUTTON				
			GROUND BUS		CODE BLUE EMERGENCY PUSHBUTTON				

DRAWING LIST:

EO.0	DRAWING LIST, SYMBOL LEGEND & LINE TYPES
ED1.0	SITE POWER & SYSTEMS DEMOLITION LAYOUT
E1.0	SITE POWER & SYSTEMS RENOVATION LAYOUT
E1.0A	TUNNEL MOUNTAIN SITE PLAN FORTIS REQUIREMENT
E1.1	VEHICLE PORT & SITE LIGHTING LAYOUT
E1.2	ELECTRICAL DETAILS
E1.3	ELECTRICAL DETAILS
E2.0	SINGLE LINE DIAGRAM
M1.0	SITE GAS LAYOUT

LINE TYPES

	EXISTING UNDERGROUND GAS LINE
	EXISTING UNDERGROUND WATER LINE
	EXISTING UNDERGROUND SANITARY LINE
	EXISTING UNDERGROUND TELUS LINE
	EXISTING UNDERGROUND PCA CONDUIT/COMM LINE
	NEW UNDERGROUND COMMUNICATIONS CONDUIT
	NEW UNDERGROUND FORTIS CONDUIT
	NEW UNDERGROUND SECONDARY POWER CONDUIT
	EXISTING OVERHEAD MV UTILITY
	P: POWER CONDUIT
	C: COMMUNICATIONS CONDUIT (PARKS OR TELUS)
	F: FORTIS CONDUIT



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PERMIT TO PRACTICE
WSP CANADA INC.
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RM APEGA ID #: 63127
DATE: 2022-04-13
PERMIT NUMBER: P007641
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

REVISIONS	DESCRIPTION	DATE
M	ISSUED FOR TENDER	2022-04-13
L	ISSUED FOR TENDER	2021-11-18
K	ISSUED FOR PCA REVIEW	2021-04-09
J	ISSUED FOR PCA REVIEW	2021-04-01
H	ISSUED FOR PCA REVIEW	2021-03-19
G	ISSUED FOR PCA REVIEW	2020-04-16
F	ISSUED FOR COORDINATION	2019-12-09
E	ISSUED FOR TENDER	2019-03-01
D	ISSUED FOR FORTIS AFC	2019-02-08
C	CLIENT REVIEW	2019-01-25
B	ISSUED FOR FORTIS AFC (COORDINATION)	2019-01-09
A	ISSUED FOR 80% REVIEW	2018-11-16

A detail number
number du detail
B source drawing no.
de dessin no.
C detail on drawing no.
detail sur dessin no.

project title
titre du projet
**TUNNEL MOUNTAIN CAMPGROUND
OPERATION AREA
ELECTRICAL REPLACEMENT**

BANFF NATIONAL PARK

drawing title
titre du dessin
**DRAWING LIST,
SYMBOL LEGEND
& LINE TYPES**

designed by conçu par	CM	
drawn by dessiné par	CM	
approved by approuvé par	KR	
PCA Project Manager Administrateur de Projets APC	-	
scale échelle		sheet feuille
project no. proj. no.	181-13597	E0.0
date	2018-08-14	

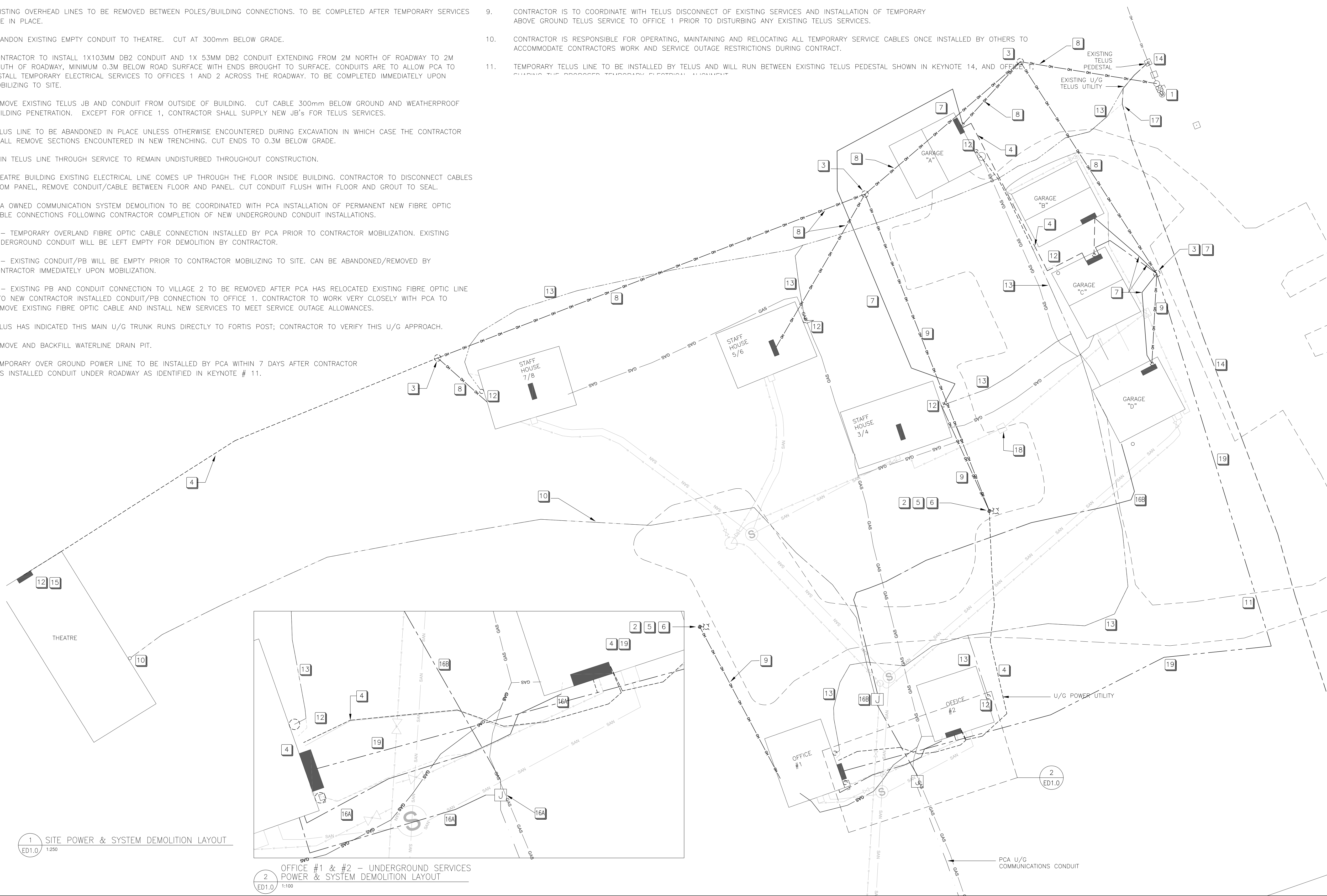
KEYNOTES:

- 1 EXISTING FORTIS POLE TO REMAIN.
- 2 EXISTING POLE TO BE REMOVED, POST TO BE CUT 0.3M BELOW GRADE AND HOLE TO BE FILLED, TAMPED AND SEEDED. REMOVAL TO BE COMPLETED AFTER NECESSARY TEMPORARY SERVICES ARE IN PLACE AND COMMISSIONED.
- 3 EXISTING OVERHEAD ELECTRICAL POLE TO REMAIN. DOWNSTREAM OVERHEAD SERVICES MAY BE REQUIRED TO BE REMOVED ACCORDING TO DEMOLITION PLAN.
- 4 UNDERGROUND ELECTRICAL SERVICE; DISCONNECT AND ABANDON/REMOVE ASSOCIATED CONDUCTOR/CONDUIT OR DIRECT BURY CABLE AFTER TEMPORARY SERVICES ARE IN PLACE AND COMMISSIONED. UNDERGROUND CONDUIT/CABLE TO BE CUT 0.3M BELOW GRADE AND ABANDONED IN PLACE UNLESS EXPOSED DURING EXCAVATIONS, THEN REMOVED.
- 5 DISCONNECT OVERHEAD LINE TO LUMINAIRE. REMOVE LUMINAIRE AND POLE AS PER KEYNOTE #2 & RECYCLE. BACKFILL & TAMP HOLE.
- 6 DISCONNECT AND REMOVE WEATHERPROOF RECEPTACLES, AND ASSOCIATED CONDUCTOR AND RETURN TO SOURCE.
- 7 TEMPORARY OVER GROUND POWER LINE/INFRASTRUCTURE TO BE INSTALLED BY PCA PRIOR TO CONTRACTOR MOBILIZATION. TEMPORARY SERVICES INFRASTRUCTURE TO REMAIN IN PLACE THROUGHOUT PROJECT. OVERLAND CABLES WILL INCLUDE ENOUGH SLACK TO ALLOW THE CONTRACTOR TO MAKE MINOR ALIGNMENT CHANGES TO ACCOMMODATE WORK.
- 8 EXISTING OVERHEAD LINES TO REMAIN IN PLACE TO MAINTAIN TEMPORARY SERVICES.
- 9 EXISTING OVERHEAD LINES TO BE REMOVED BETWEEN POLES/BUILDING CONNECTIONS. TO BE COMPLETED AFTER TEMPORARY SERVICES ARE IN PLACE.
- 10 ABANDON EXISTING EMPTY CONDUIT TO THEATRE. CUT AT 300mm BELOW GRADE.
- 11 CONTRACTOR TO INSTALL 1X103MM DB2 CONDUIT AND 1X 53MM DB2 CONDUIT EXTENDING FROM 2M NORTH OF ROADWAY TO 2M SOUTH OF ROADWAY, MINIMUM 0.3M BELOW ROAD SURFACE WITH ENDS BROUGHT TO SURFACE. CONDUITS ARE TO ALLOW PCA TO INSTALL TEMPORARY ELECTRICAL SERVICES TO OFFICES 1 AND 2 ACROSS THE ROADWAY. TO BE COMPLETED IMMEDIATELY UPON MOBILIZING TO SITE.
- 12 REMOVE EXISTING TELUS JB AND CONDUIT FROM OUTSIDE OF BUILDING. CUT CABLE 300mm BELOW GROUND AND WEATHERPROOF BUILDING PENETRATION. EXCEPT FOR OFFICE 1, CONTRACTOR SHALL SUPPLY NEW JB'S FOR TELUS SERVICES.
- 13 TELUS LINE TO BE ABANDONED IN PLACE UNLESS OTHERWISE ENCOUNTERED DURING EXCAVATION IN WHICH CASE THE CONTRACTOR SHALL REMOVE SECTIONS ENCOUNTERED IN NEW TRENCHING. CUT ENDS TO 0.3M BELOW GRADE.
- 14 MAIN TELUS LINE THROUGH SERVICE TO REMAIN UNDISTURBED THROUGHOUT CONSTRUCTION.
- 15 THEATRE BUILDING EXISTING ELECTRICAL LINE COMES UP THROUGH THE FLOOR INSIDE BUILDING. CONTRACTOR TO DISCONNECT CABLES FROM PANEL, REMOVE CONDUIT/CABLE BETWEEN FLOOR AND PANEL. CUT CONDUIT FLUSH WITH FLOOR AND GROUT TO SEAL.
- 16 PCA OWNED COMMUNICATION SYSTEM DEMOLITION TO BE COORDINATED WITH PCA INSTALLATION OF PERMANENT NEW FIBRE OPTIC CABLE CONNECTIONS FOLLOWING CONTRACTOR COMPLETION OF NEW UNDERGROUND CONDUIT INSTALLATIONS.
 A - TEMPORARY OVERLAND FIBRE OPTIC CABLE CONNECTION INSTALLED BY PCA PRIOR TO CONTRACTOR MOBILIZATION. EXISTING UNDERGROUND CONDUIT WILL BE LEFT EMPTY FOR DEMOLITION BY CONTRACTOR.
 B - EXISTING CONDUIT/PB WILL BE EMPTY PRIOR TO CONTRACTOR MOBILIZING TO SITE. CAN BE ABANDONED/REMOVED BY CONTRACTOR IMMEDIATELY UPON MOBILIZATION.
 C - EXISTING PB AND CONDUIT CONNECTION TO VILLAGE 2 TO BE REMOVED AFTER PCA HAS RELOCATED EXISTING FIBRE OPTIC LINE INTO NEW CONTRACTOR INSTALLED CONDUIT/PB CONNECTION TO OFFICE 1. CONTRACTOR TO WORK VERY CLOSELY WITH PCA TO REMOVE EXISTING FIBRE OPTIC CABLE AND INSTALL NEW SERVICES TO MEET SERVICE OUTAGE ALLOWANCES.
- 17 TELUS HAS INDICATED THIS MAIN U/G TRUNK RUNS DIRECTLY TO FORTIS POST; CONTRACTOR TO VERIFY THIS U/G APPROACH.
- 18 REMOVE AND BACKFILL WATERLINE DRAIN PIT.
- 19 TEMPORARY OVER GROUND POWER LINE TO BE INSTALLED BY PCA WITHIN 7 DAYS AFTER CONTRACTOR HAS INSTALLED CONDUIT UNDER ROADWAY AS IDENTIFIED IN KEYNOTE # 11.

GENERAL NOTES:

1. REFER TO SPECIFICATIONS AND APPENDICES 'A' & 'B' FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. COORDINATE DEMOLITION WORK WITH TEMPORARY SERVICES INSTALLATIONS (TO BE COMPLETED BY OTHERS) TO MAINTAIN ELECTRICAL AND COMMUNICATION SERVICES ACCORDING TO TEMPORARY SERVICE REQUIREMENTS INCLUDED IN SPECIFICATIONS.
3. DEMOLITION SCOPE IS TO INCLUDE REMOVAL OF SELECT SECONDARY ELECTRICAL DISTRIBUTION AND ASSOCIATED CONDUIT AND BOXES ONLY. EXISTING FORTIS SERVICE IS TO REMAIN UNDISTURBED.
4. REMOVE FROM SITE ALL DEMOLISHED POLES AND ASSOCIATED ANCHORS, OVERHEAD CABLING AND OTHER ELECTRICAL APPARATUS AND RECYCLE MATERIALS IN ACCORDANCE WITH PARKS CANADA SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL MATERIAL COLLECTED AS A RESULT OF DEMOLITION ACTIVITIES TO APPROPRIATE WASTE FACILITIES OUTSIDE OF BANFF PARK. PROVIDE NECESSARY DOCUMENTATION TO PARKS CANADA WHEN COMPLETE.
5. SEE DRAWING M1.0 FOR GAS SYSTEM DEMOLITION REQUIREMENTS.
6. CONTRACTOR IS TO COMPLETE WALK THROUGH WITH PCA TO DISCUSS DEMOLITION STAGING REQUIREMENTS TO ACCOMMODATE THIRD PARTY TEMPORARY SERVICE INSTALLATIONS WORK AND SERVICE OUTAGE RESTRICTIONS.
7. WORK IS NOT TO IMPACT WATER OR SANITARY SERVICES AT ANY TIME.
8. CONTRACTOR SHALL HYDRO-VAC WHEN EXCAVATING NEAR ALL EXISTING UTILITIES.
9. CONTRACTOR IS TO COORDINATE WITH TELUS DISCONNECT OF EXISTING SERVICES AND INSTALLATION OF TEMPORARY ABOVE GROUND TELUS SERVICE TO OFFICE 1 PRIOR TO DISTURBING ANY EXISTING TELUS SERVICES.
10. CONTRACTOR IS RESPONSIBLE FOR OPERATING, MAINTAINING AND RELOCATING ALL TEMPORARY SERVICE CABLES ONCE INSTALLED BY OTHERS TO ACCOMMODATE CONTRACTORS WORK AND SERVICE OUTAGE RESTRICTIONS.
11. TEMPORARY TELUS LINE TO BE INSTALLED BY TELUS AND WILL RUN BETWEEN EXISTING TELUS PEDESTAL SHOWN IN KEYNOTE 14, AND OFFICE #1, CARRYING THE PROPOSED TEMPORARY ELECTRICAL LOAD.

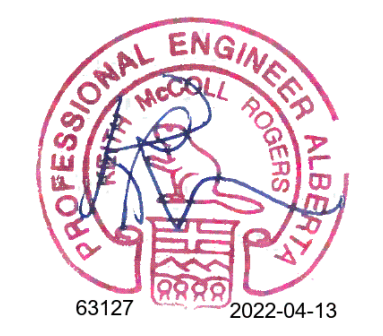
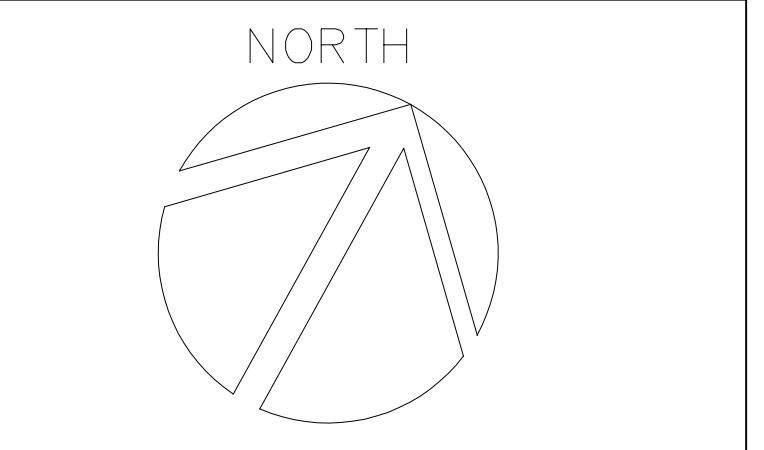
UTILITY LINE TYPES	
	UNDERGROUND GAS LINE
	UNDERGROUND WATER LINE
	UNDERGROUND SANITARY LINE
	OVERHEAD MV UTILITY
	OVERHEAD LV UTILITY - TO BE DEMOLISHED
	UNDERGROUND TELUS LINE - TO REMAIN
	UNDERGROUND TELUS LINE - TO BE ABANDONED
	UNDERGROUND PCA CONDUIT/COMM LINE - TO BE ABANDONED
	UNDERGROUND PCA CONDUIT/COMM LINE - TO REMAIN
	UNDERGROUND POWER - TO BE ABANDONED
	UNDERGROUND POWER - TO REMAIN
	APPROXIMATE EDGE OF GRAVEL ROAD WAY
	TEMPORARY POWER LINE



1 SITE POWER & SYSTEM DEMOLITION LAYOUT
ED1.0 1:250

2 OFFICE #1 & #2 - UNDERGROUND SERVICES
POWER & SYSTEM DEMOLITION LAYOUT
ED1.0 1:100

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J	ISSUED FOR PCA REVIEW	2021-04-01
H	ISSUED FOR PCA REVIEW	2021-03-19
G	ISSUED FOR PCA REVIEW	2020-04-16
F	ISSUED FOR COORDINATION	2019-12-09
E	ISSUED FOR TENDER	2019-03-01
D	ISSUED FOR FORTIS AFC	2019-02-08
C	CLIENT REVIEW	2019-01-25
B	ISSUED FOR FORTIS AFC (COORDINATION)	2019-01-09
A	ISSUED FOR 60% REVIEW	2018-11-16

	A detail number number du detail	
	B source drawing no. de dessin no.	
	C detail on drawing no. detail sur dessin no.	

project title / titre du projet: **TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT**

BANFF NATIONAL PARK

drawing title / titre du dessin: **POWER & SYSTEMS DEMOLITION LAYOUT**

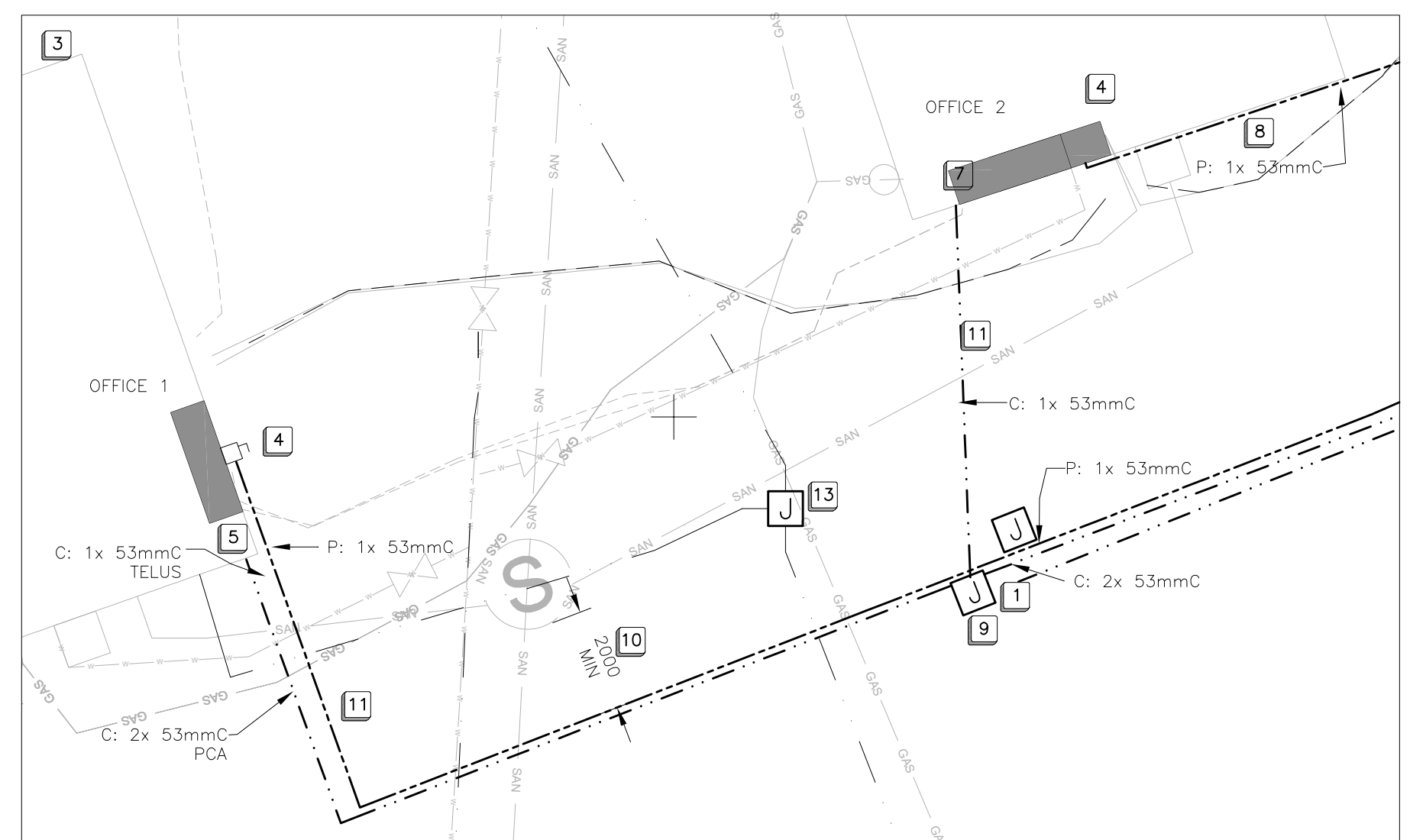
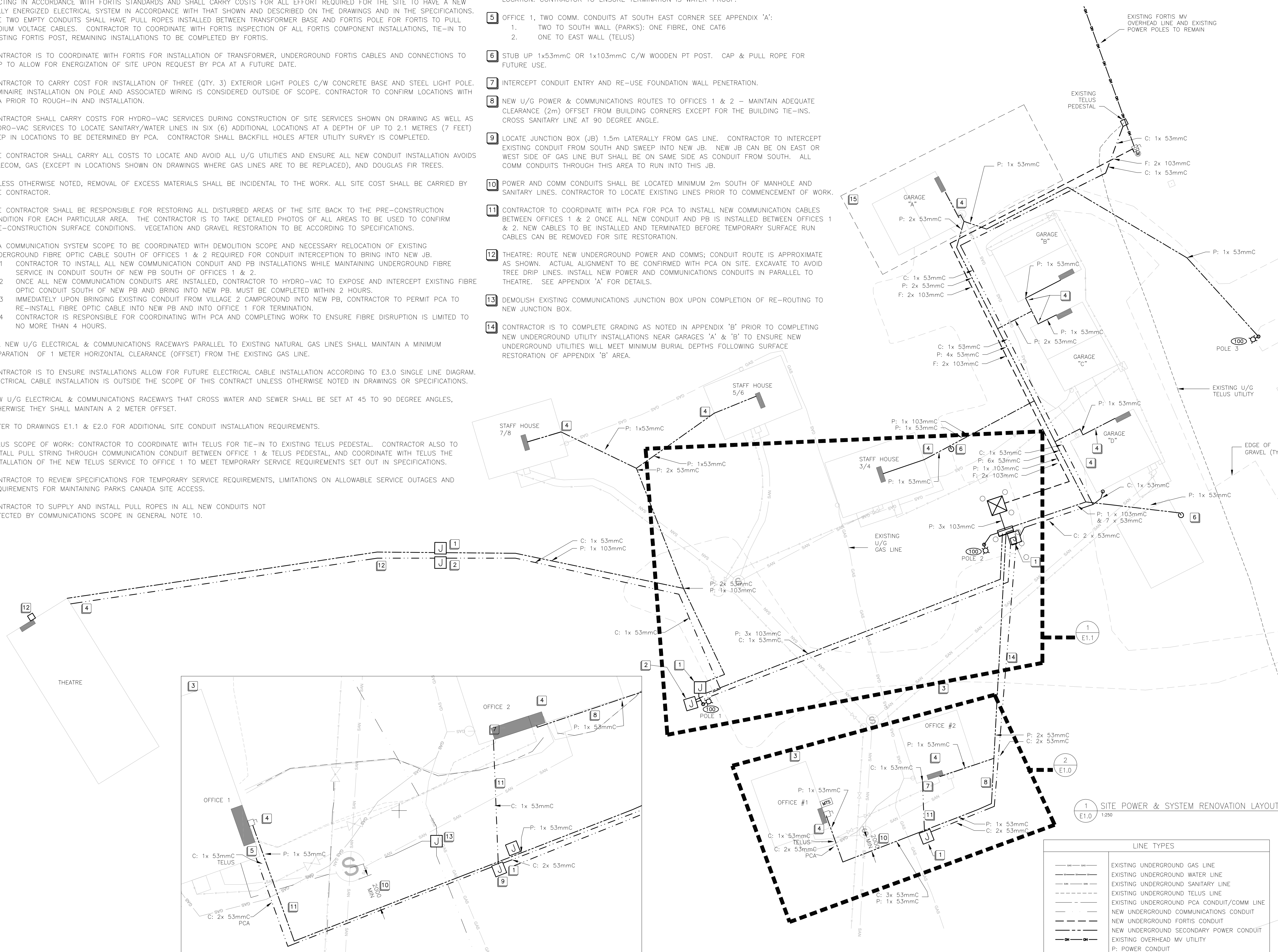
designed by / conçu par: CM	drawn by / dessiné par: CM	approved by / approuvé par: KR
PCA Project Manager / Administrateur de Projets APC: KR	scale / échelle: ED1.0	sheet / feuille: ED1.0
project no. / projet no.: 181-13597	date / date: 2018-08-14	

GENERAL NOTES:

- DRAWINGS SHOWN AS DIAGRAMMATIC ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING UTILITIES AND SHALL COMPLETE A SITE WALK-THROUGH WITH PARKS CANADA TO CONFIRM ALL ALIGNMENTS AND LOCATIONS PRIOR TO STARTING WORK. PARKS CANADA RESERVES THE RIGHT TO MAKE MINOR CHANGES ON SITE AS A MEANS TO MINIMIZE DISTURBANCE.
- THE SITE IS OPERATIONAL DURING CONSTRUCTION. PHASING OF WORK SHALL BE REQUIRED TO ACCOMMODATE OPERATIONS. CONTRACTOR SHALL INSTALL CONDUIT AND BACKFILL IN SECTIONS TO PREVENT SITE WIDE DISRUPTION AND PROVIDE ACCESS TO THE SITE BY VEHICLE AND PEDESTRIAN TRAFFIC. REFER TO SPECIFICATIONS.
- FORTIS APPROVED CONTRACTOR SHALL CARRY ALL COSTS RELATED TO THE INSTALLATION OF THE TRANSFORMER BASE, GROUNDING AND DUCTING IN ACCORDANCE WITH FORTIS STANDARDS AND SHALL CARRY COSTS FOR ALL EFFORT REQUIRED FOR THE SITE TO HAVE A NEW FULLY ENERGIZED ELECTRICAL SYSTEM IN ACCORDANCE WITH THAT SHOWN AND DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS. THE TWO EMPTY CONDUITS SHALL HAVE PULL ROPES INSTALLED BETWEEN TRANSFORMER BASE AND FORTIS POLE FOR FORTIS TO PULL MEDIUM VOLTAGE CABLES. CONTRACTOR TO COORDINATE WITH FORTIS INSPECTION OF ALL FORTIS COMPONENT INSTALLATIONS, TIE-IN TO EXISTING FORTIS POST, REMAINING INSTALLATIONS TO BE COMPLETED BY FORTIS.
- CONTRACTOR IS TO COORDINATE WITH FORTIS FOR INSTALLATION OF TRANSFORMER, UNDERGROUND FORTIS CABLES AND CONNECTIONS TO CDP TO ALLOW FOR ENERGIZATION OF SITE UPON REQUEST BY PCA AT A FUTURE DATE.
- CONTRACTOR TO CARRY COST FOR INSTALLATION OF THREE (QTY. 3) EXTERIOR LIGHT POLES C/W CONCRETE BASE AND STEEL LIGHT POLE. LUMINAIRE INSTALLATION ON POLE AND ASSOCIATED WIRING IS CONSIDERED OUTSIDE OF SCOPE. CONTRACTOR TO CONFIRM LOCATIONS WITH PCA PRIOR TO ROUGH-IN AND INSTALLATION.
- CONTRACTOR SHALL CARRY COSTS FOR HYDRO-VAC SERVICES DURING CONSTRUCTION OF SITE SERVICES SHOWN ON DRAWING AS WELL AS HYDRO-VAC SERVICES TO LOCATE SANITARY/WATER LINES IN SIX (6) ADDITIONAL LOCATIONS AT A DEPTH OF UP TO 2.1 METRES (7 FEET) DEEP IN LOCATIONS TO BE DETERMINED BY PCA. CONTRACTOR SHALL BACKFILL HOLES AFTER UTILITY SURVEY IS COMPLETED.
- THE CONTRACTOR SHALL CARRY ALL COSTS TO LOCATE AND AVOID ALL U/G UTILITIES AND ENSURE ALL NEW CONDUIT INSTALLATION AVOIDS TELECOM, GAS (EXCEPT IN LOCATIONS SHOWN ON DRAWINGS WHERE GAS LINES ARE TO BE REPLACED), AND DOUGLAS FIR TREES.
- UNLESS OTHERWISE NOTED, REMOVAL OF EXCESS MATERIALS SHALL BE INCIDENTAL TO THE WORK. ALL SITE COST SHALL BE CARRIED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL DISTURBED AREAS OF THE SITE BACK TO THE PRE-CONSTRUCTION CONDITION FOR EACH PARTICULAR AREA. THE CONTRACTOR IS TO TAKE DETAILED PHOTOS OF ALL AREAS TO BE USED TO CONFIRM PRE-CONSTRUCTION SURFACE CONDITIONS. VEGETATION AND GRAVEL RESTORATION TO BE ACCORDING TO SPECIFICATIONS.
- PCA COMMUNICATION SYSTEM SCOPE TO BE COORDINATED WITH DEMOLITION SCOPE AND NECESSARY RELOCATION OF EXISTING UNDERGROUND FIBRE OPTIC CABLE SOUTH OF OFFICES 1 & 2 REQUIRED FOR CONDUIT INTERCEPTION TO BRING INTO NEW JB.
 - CONTRACTOR TO INSTALL ALL NEW COMMUNICATION CONDUIT AND PB INSTALLATIONS WHILE MAINTAINING UNDERGROUND FIBRE SERVICE IN CONDUIT SOUTH OF NEW PB SOUTH OF OFFICES 1 & 2.
 - ONCE ALL NEW COMMUNICATION CONDUITS ARE INSTALLED, CONTRACTOR TO HYDRO-VAC TO EXPOSE AND INTERCEPT EXISTING FIBRE OPTIC CONDUIT SOUTH OF NEW PB AND BRING INTO NEW PB. MUST BE COMPLETED WITHIN 2 HOURS.
 - IMMEDIATELY UPON BRINGING EXISTING CONDUIT FROM VILLAGE 2 CAMPGROUND INTO NEW PB, CONTRACTOR TO PERMIT PCA TO RE-INSTALL FIBRE OPTIC CABLE INTO NEW PB AND INTO OFFICE 1 FOR TERMINATION.
 - CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH PCA AND COMPLETING WORK TO ENSURE FIBRE DISRUPTION IS LIMITED TO NO MORE THAN 4 HOURS.
- ALL NEW U/G ELECTRICAL & COMMUNICATIONS RACEWAYS PARALLEL TO EXISTING NATURAL GAS LINES SHALL MAINTAIN A MINIMUM SEPARATION OF 1 METER HORIZONTAL CLEARANCE (OFFSET) FROM THE EXISTING GAS LINE.
- CONTRACTOR IS TO ENSURE INSTALLATIONS ALLOW FOR FUTURE ELECTRICAL CABLE INSTALLATION ACCORDING TO E3.0 SINGLE LINE DIAGRAM. ELECTRICAL CABLE INSTALLATION IS OUTSIDE THE SCOPE OF THIS CONTRACT UNLESS OTHERWISE NOTED IN DRAWINGS OR SPECIFICATIONS.
- NEW U/G ELECTRICAL & COMMUNICATIONS RACEWAYS THAT CROSS WATER AND SEWER SHALL BE SET AT 45 TO 90 DEGREE ANGLES, OTHERWISE THEY SHALL MAINTAIN A 2 METER OFFSET.
- REFER TO DRAWINGS E1.1 & E2.0 FOR ADDITIONAL SITE CONDUIT INSTALLATION REQUIREMENTS.
- TELUS SCOPE OF WORK; CONTRACTOR TO COORDINATE WITH TELUS FOR TIE-IN TO EXISTING TELUS PEDESTAL. CONTRACTOR ALSO TO INSTALL PULL STRING THROUGH COMMUNICATION CONDUIT BETWEEN OFFICE 1 & TELUS PEDESTAL, AND COORDINATE WITH TELUS THE INSTALLATION OF THE NEW TELUS SERVICE TO OFFICE 1 TO MEET TEMPORARY SERVICE REQUIREMENTS SET OUT IN SPECIFICATIONS.
- CONTRACTOR TO REVIEW SPECIFICATIONS FOR TEMPORARY SERVICE REQUIREMENTS, LIMITATIONS ON ALLOWABLE SERVICE OUTAGES AND REQUIREMENTS FOR MAINTAINING PARKS CANADA SITE ACCESS.
- CONTRACTOR TO SUPPLY AND INSTALL PULL ROPES IN ALL NEW CONDUITS NOT AFFECTED BY COMMUNICATIONS SCOPE IN GENERAL NOTE 10.

KEYNOTES:

- 600mm x 900mm x 900mm HDPE STRUCTURAL VAULT (PULLBOX AKA JUNCTION BOX (JB)).
- 350mm x 575mm x 600mm HDPE STRUCTURAL VAULT (PULLBOX AKA JUNCTION BOX (JB)).
- WORK TO AVOID EXISTING CONCRETE RETAINING WALL AND EXISTING WOOD DECK IN FRONT OF BUILDING OFFICE 1 & OFFICE 2 RESPECTIVELY.
- REFER TO APPENDIX 'A' IN SPECIFICATIONS FOR CONDUIT TERMINATION DETAILS FOR EACH LOCATION. CONTRACTOR TO ENSURE TERMINATION IS WATER-PROOF.
- OFFICE 1, TWO COMM. CONDUITS AT SOUTH EAST CORNER SEE APPENDIX 'A':
 - TWO TO SOUTH WALL (PARKS): ONE FIBRE, ONE CAT6
 - ONE TO EAST WALL (TELUS)
- STUB UP 1x53mmC OR 1x103mmC C/W WOODEN PT POST. CAP & PULL ROPE FOR FUTURE USE.
- INTERCEPT CONDUIT ENTRY AND RE-USE FOUNDATION WALL PENETRATION.
- NEW U/G POWER & COMMUNICATIONS ROUTES TO OFFICES 1 & 2 - MAINTAIN ADEQUATE CLEARANCE (2m) OFFSET FROM BUILDING CORNERS EXCEPT FOR THE BUILDING TIE-INS. CROSS SANITARY LINE AT 90 DEGREE ANGLE.
- LOCATE JUNCTION BOX (JB) 1.5m LATERALLY FROM GAS LINE. CONTRACTOR TO INTERCEPT EXISTING CONDUIT FROM SOUTH AND SWEEP INTO NEW JB. NEW JB CAN BE ON EAST OR WEST SIDE OF GAS LINE BUT SHALL BE ON SAME SIDE AS CONDUIT FROM SOUTH. ALL COMM CONDUITS THROUGH THIS AREA TO RUN INTO THIS JB.
- POWER AND COMM CONDUITS SHALL BE LOCATED MINIMUM 2m SOUTH OF MANHOLE AND SANITARY LINES. CONTRACTOR TO LOCATE EXISTING LINES PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR TO COORDINATE WITH PCA FOR PCA TO INSTALL NEW COMMUNICATION CABLES BETWEEN OFFICES 1 & 2 ONCE ALL NEW CONDUIT AND PB IS INSTALLED BETWEEN OFFICES 1 & 2. NEW CABLES TO BE INSTALLED AND TERMINATED BEFORE TEMPORARY SURFACE RUN CABLES CAN BE REMOVED FOR SITE RESTORATION.
- THEATRE: ROUTE NEW UNDERGROUND POWER AND COMMS; CONDUIT ROUTE IS APPROXIMATE AS SHOWN. ACTUAL ALIGNMENT TO BE CONFIRMED WITH PCA ON SITE. EXCAVATE TO AVOID TREE DRIP LINES. INSTALL NEW POWER AND COMMUNICATIONS CONDUITS IN PARALLEL TO THEATRE. SEE APPENDIX 'A' FOR DETAILS.
- DEMOLISH EXISTING COMMUNICATIONS JUNCTION BOX UPON COMPLETION OF RE-ROUTING TO NEW JUNCTION BOX.
- CONTRACTOR IS TO COMPLETE GRADING AS NOTED IN APPENDIX 'B' PRIOR TO COMPLETING NEW UNDERGROUND UTILITY INSTALLATIONS NEAR GARAGES 'A' & 'B' TO ENSURE NEW UNDERGROUND UTILITIES WILL MEET MINIMUM BURIAL DEPTHS FOLLOWING SURFACE RESTORATION OF APPENDIX 'B' AREA.



1 SITE POWER & SYSTEM RENOVATION LAYOUT
E1.0 1:250

LINE TYPES	
	EXISTING UNDERGROUND GAS LINE
	EXISTING UNDERGROUND WATER LINE
	EXISTING UNDERGROUND SANITARY LINE
	EXISTING UNDERGROUND TELUS LINE
	EXISTING UNDERGROUND PCA CONDUIT/COMM LINE
	NEW UNDERGROUND COMMUNICATIONS CONDUIT
	NEW UNDERGROUND FORTIS CONDUIT
	NEW UNDERGROUND SECONDARY POWER CONDUIT
	EXISTING OVERHEAD MV UTILITY
	P: POWER CONDUIT
	C: COMMUNICATIONS CONDUIT (PARKS OR TELUS)
	F: FORTIS CONDUIT

Client: Parks Canada / L'Agence Parcs Canada
 Consultant: WSP
 237 - 4 Avenue SW, Suite 3300
 Calgary, Alberta Canada T2P 4K3
 T: 403.255.7948 | wsp.com

NORTH

PROFESSIONAL ENGINEER ALBERTA
 63127 2022-04-13

PERMIT TO PRACTICE
 WSP CANADA INC.
 RM SIGNATURE: [Signature]
 RM APEGA ID #: 63127
 DATE: 2022-04-13
PERMIT NUMBER: P007641
 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

M	ISSUED FOR TENDER	2022-04-13
L	ISSUED FOR TENDER	2021-11-18
K	ISSUED FOR PCA REVIEW	2021-04-09
J	ISSUED FOR PCA REVIEW	2021-04-01
H	ISSUED FOR PCA REVIEW	2021-03-19
G	ISSUED FOR PCA REVIEW	2020-04-16
F	ISSUED FOR COORDINATION	2019-12-09
E	ISSUED FOR TENDER	2019-03-01
D	ISSUED FOR FORTIS AFC	2019-02-08
C	CLIENT REVIEW	2019-01-25
B	ISSUED FOR FORTIS AFC (COORDINATION)	2019-01-09
A	ISSUED FOR 80% REVIEW	2018-11-16

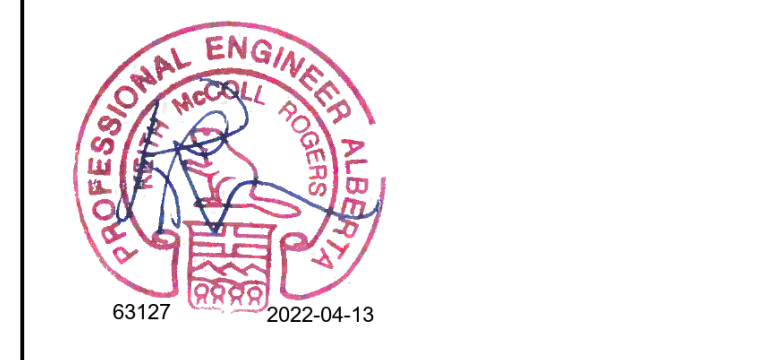
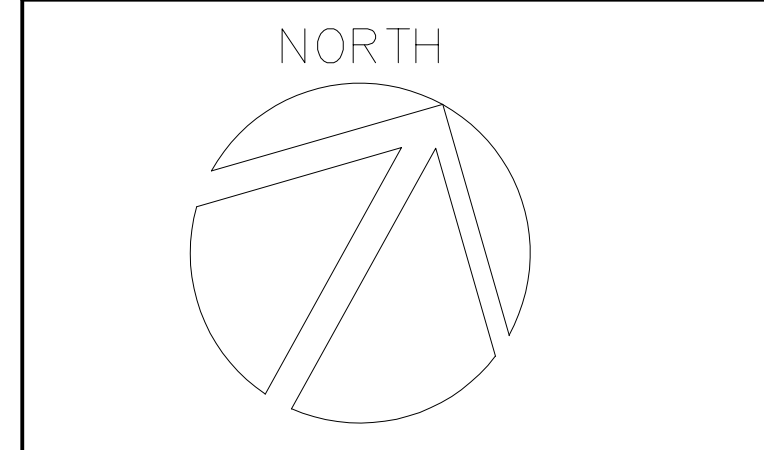
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 B source drawing no. de dessin no.
 C detail on drawing no. detail sur dessin no.

project title / titre du projet
TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT

BANFF NATIONAL PARK

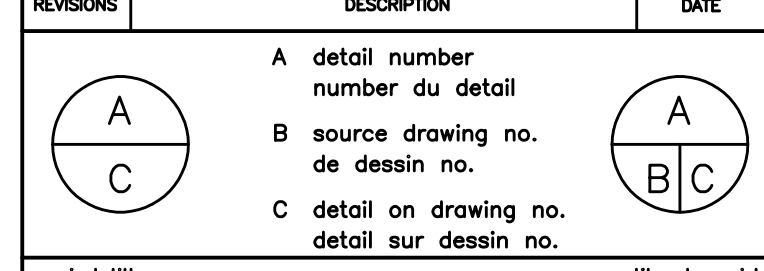
drawing title / titre du dessin
SITE POWER & LIGHTING RENOVATION LAYOUT

designed by / conçu par	CM	sheet / feuille	E1.0
drawn by / dessiné par	CM	project no. / projet no.	181-13597
approved by / approuvé par	KR	date	
PCA Project Manager / Administrateur de Projets APC			



PERMIT TO PRACTICE
WSP CANADA INC.
 RM SIGNATURE: _____
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A	ISSUED FOR 80% REVIEW	2018-11-16

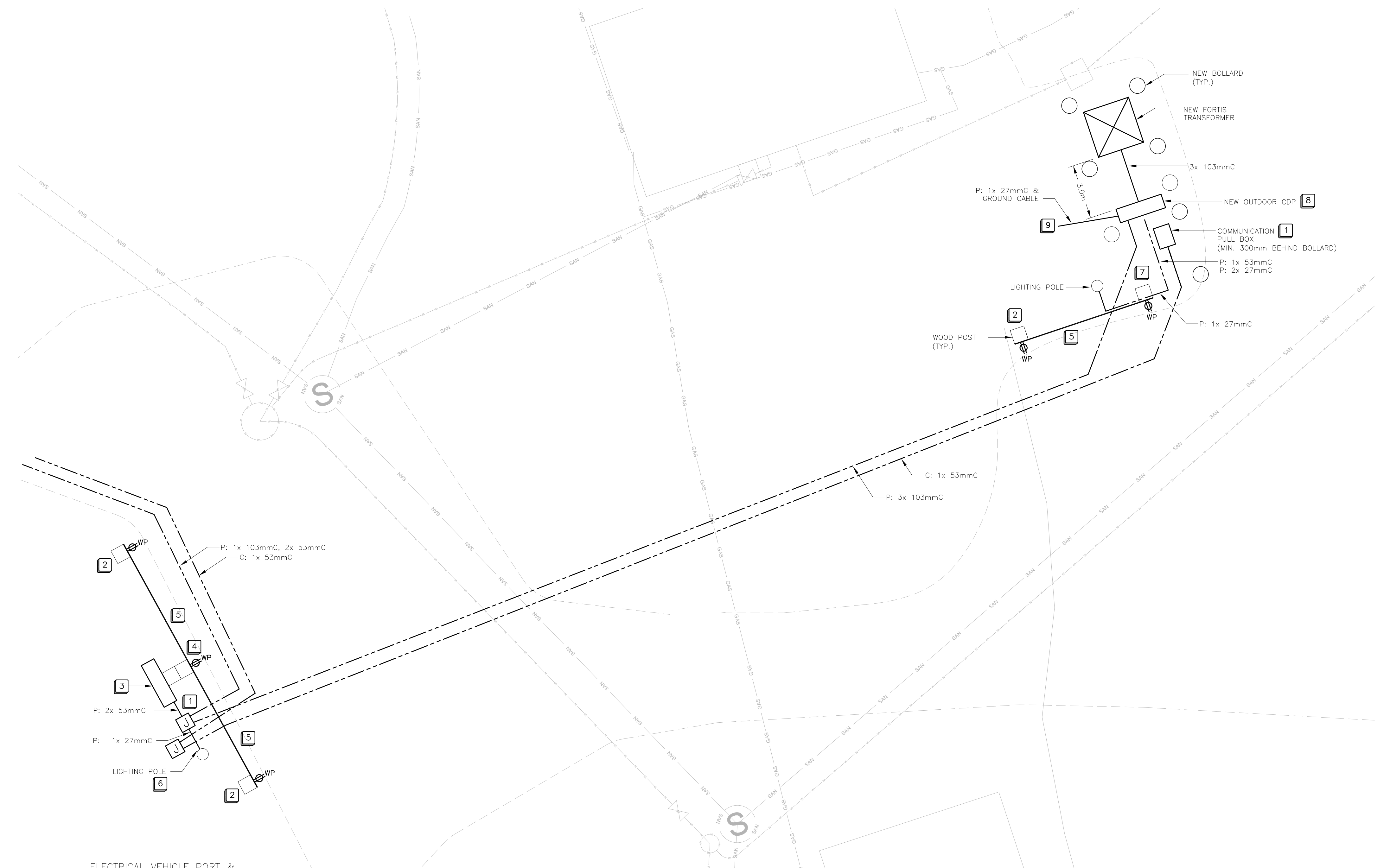


project title
TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT
 titre du projet

BANFF NATIONAL PARK

drawing title
VEHICLE PORT & SITE LIGHTING DETAIL
 titre du dessin

designed by	CM	conçu par	
drawn by	CM	dessiné par	
approved by	KR	approuvé par	
PCA Project Manager		Administrateur de Projets APC	
scale		echelle	
project no.	181-13597	proj. no.	E1.1
date		date	



1 ELECTRICAL VEHICLE PORT & SITE LIGHTING DETAIL
 E1.1 1:100

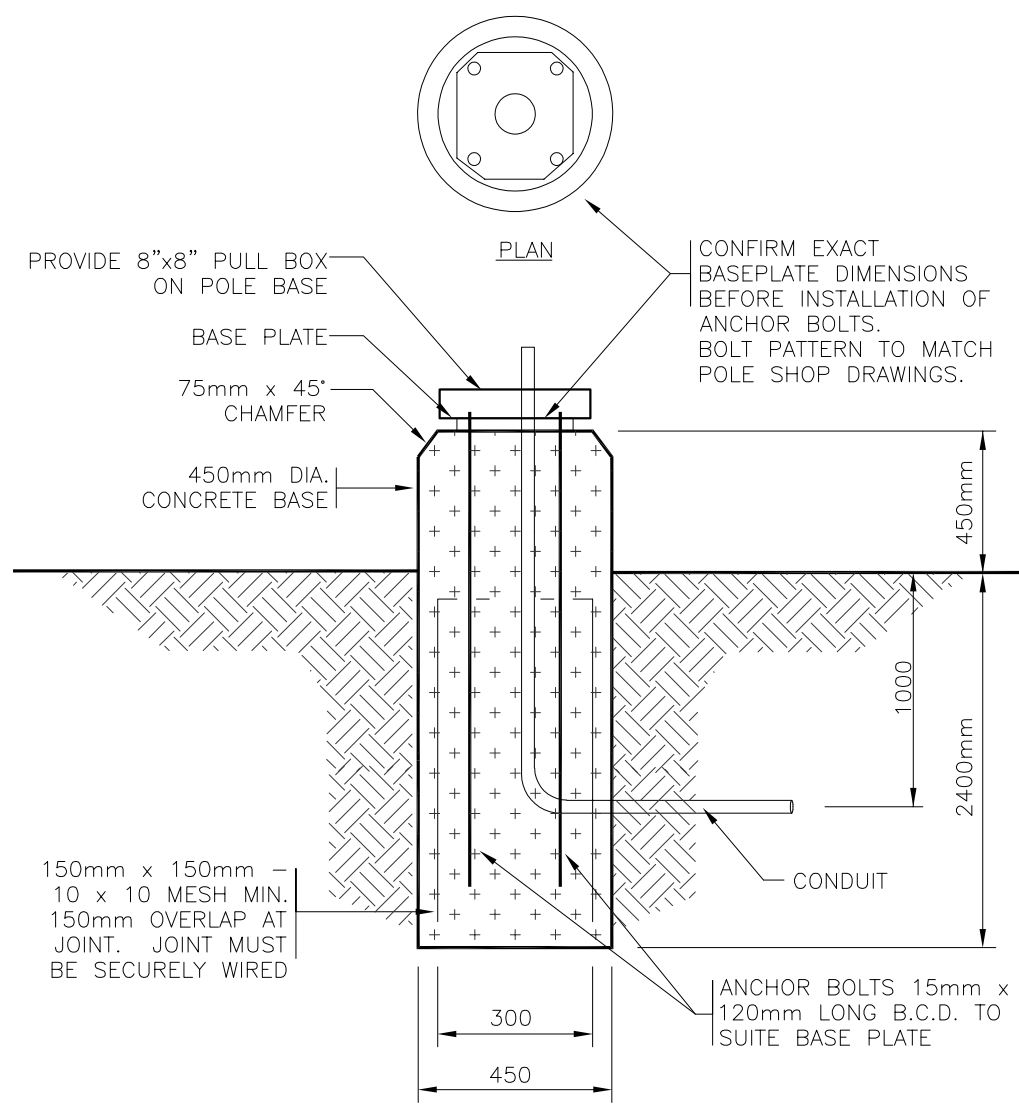
KEYNOTES:

- 1** 600mm x 900mm x 900mmD HDPE STRUCTURAL VAULT (PULLBOX AKA JUNCTION BOX (JB))
- 2** 8"x8" PRESSURE TREATED WOOD POST.
 - TOP OF WOOD POST TO BE FINISHED 1.8M HIGH ABOVE FINISHED GROUND WITH TOP CUT AT 30 DEGREE ANGLE.
- 3** OUTDOOR WEATHERPROOF PANEL
 - 'AUTO-1' TO BE INSTALLED ON OPPOSITE SIDE OF POST FROM VEHICLE PARKING. OUT OF SCOPE.
 - 2x 53mm PVC CONDUITS FROM UNDERGROUND JUNCTION BOX TO BE TERMINATED INTO 300mm X 300mm PVC JUNCTION BOX MOUNTED BELOW FUTURE PANEL 'AUTO-1', WITH BOTTOM OF JUNCTION BOX 0.6M ABOVE GROUND IN CONTRACTOR SCOPE
- 4** TWO (2) 8"x8" PRESSURE TREATED WOOD POSTS
 - TOP OF WOOD POST TO BE FINISHED 1.8M HIGH ABOVE FINISHED GROUND WITH TOP CUT AT 30 DEGREE ANGLE AWAY FROM PANEL.
 - POSTS TO BE FASTENED TOGETHER TO MAKE ONE (1) 8"x16" POST WITH 'AUTO-1' PANEL MOUNTED ON THE 8" SIDE OF POST.
- 5** 2"x12" PRESSURE TREATED WOOD RAIL
 - RAIL TO BE MOUNTED WITH BOTTOM AT 0.6M ABOVE GROUND
- 6** LIGHT POLE IN WEST PARKING AREA
 - 1x 27mm CONDUIT INTO POLE BASE TO COME DIRECTLY FROM UNDERGROUND JUNCTION BOX BETWEEN LIGHT POLE AND 'AUTO-1'. DOES NOT COME FROM 'AUTO-1'.
- 7** 8"x8" PRESSURE TREATED WOOD POST
 - TOP OF WOOD POST TO BE FINISHED 1.8M HIGH ABOVE FINISHED GROUND WITH TOP CUT AT 30 DEGREE ANGLE.
 - 1x 53mm PVC CONDUIT FROM CDP TO BE TERMINATED INTO 300mm X 300mm PVC JUNCTION BOX MOUNTED ON SIDE OF POST WITH BOTTOM AT 0.6M ABOVE GROUND.
 - 1x 27mm CONDUIT FROM CDP TO BE TERMINATED INTO 100mm x 100mm JUNCTION BOX ON WOOD RAIL ON OPPOSITE SIDE OF POST FROM GARAGE WITH BOTTOM AT 0.7M.
- 8** NEW CDP OUTDOOR CDP
 - CONCRETE PAD CDP BASE, CAST IN PLACE REINFORCED CONCRETE WITH ALL CONDUITS TERMINATED 0.025M ABOVE TOP OF CONCRETE. CONCRETE CDP DIMENSIONS: 0.559M(W) x 1.524M(L) x 0.45M(D). CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL. IN CONTRACT SCOPE.
 - CDP GROUNDING PLATE, CONDUIT AND CABLE. IN CONTRACT SCOPE.
 - CDP (ALL PORTIONS ABOVE TOP OF CONCRETE BASE PAD.) OUT OF SCOPE.
- 9** CDP GROUNDING PLATE.

GENERAL NOTES:

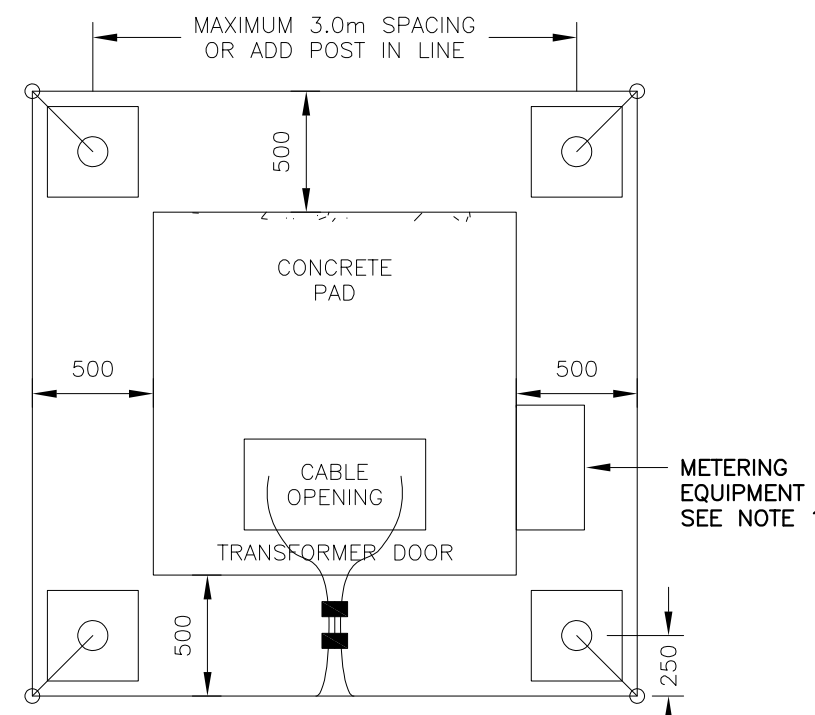
- CONTRACTOR TO CONFIRM WITH PCA LAYOUT PRIOR TO STARTING WORK. DRAWINGS ARE INTENDED TO SHOW GENERAL LAYOUT ONLY. CONTRACTOR IS TO CONFIRM ACTUAL LAYOUT ON SITE WITH PCA PRIOR TO BEGINNING WORK.
- CONTRACTOR SHALL ENSURE CONDUIT PLACEMENT INTO CDP PAD IS SUITABLE FOR THE SPECIFIED CDP. CONDUIT PLACEMENT TO BE INSPECTED AND APPROVED BY PCA PRIOR TO PLACING CONCRETE BASE.

LINE TYPES	
---	EXISTING UNDERGROUND GAS LINE
---	EXISTING UNDERGROUND WATER LINE
---	EXISTING UNDERGROUND SANITARY LINE
---	EXISTING UNDERGROUND TELUS LINE
---	EXISTING UNDERGROUND PCA CONDUIT/COMM LINE
---	NEW UNDERGROUND COMMUNICATIONS CONDUIT
---	NEW UNDERGROUND FORTIS CONDUIT
---	NEW UNDERGROUND SECONDARY POWER CONDUIT
---	EXISTING OVERHEAD MV UTILITY
P: ---	P: POWER CONDUIT
C: ---	C: COMMUNICATIONS CONDUIT (PARKS OR TELUS)
F: ---	F: FORTIS CONDUIT



1 LIGHT POLE BASE DETAIL **
E1.2 NTS

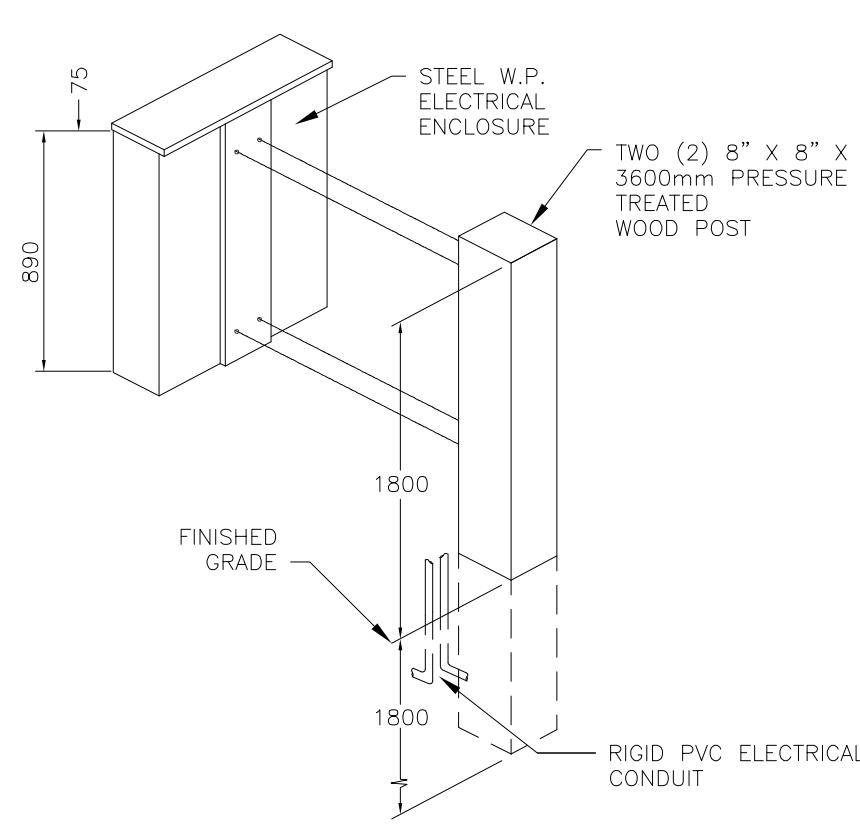
** ENGINEERED PRE-CAST CONCRETE EQUALS MAY BE ACCEPTED



3 FORTIS GUARD POST LOCATION DETAIL
E1.2 NTS

NOTE:

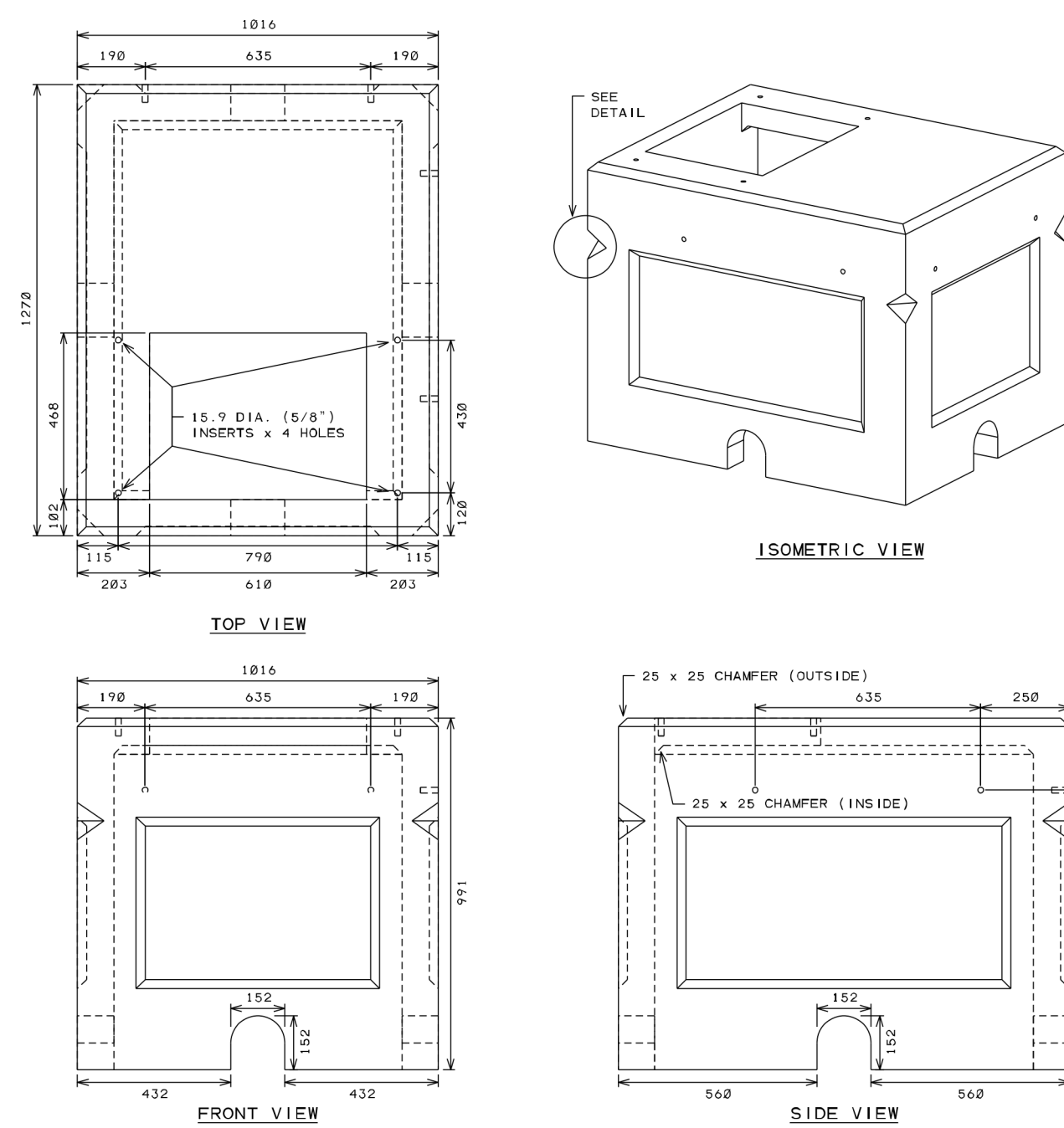
- IF THERE IS A SECONDARY PEDESTAL ATTACHED TO THE EQUIPMENT/TRANSFORMER PAD, THE GUARD POST AND GROUND GRID SHOULD BE EXTENDED IN SUCH A WAY TO PROTECT THE PERIPHERAL EQUIPMENT ALSO.



3 WEATHERPROOF PANEL MOUNTING DETAIL
E1.2 NTS

NOTE:

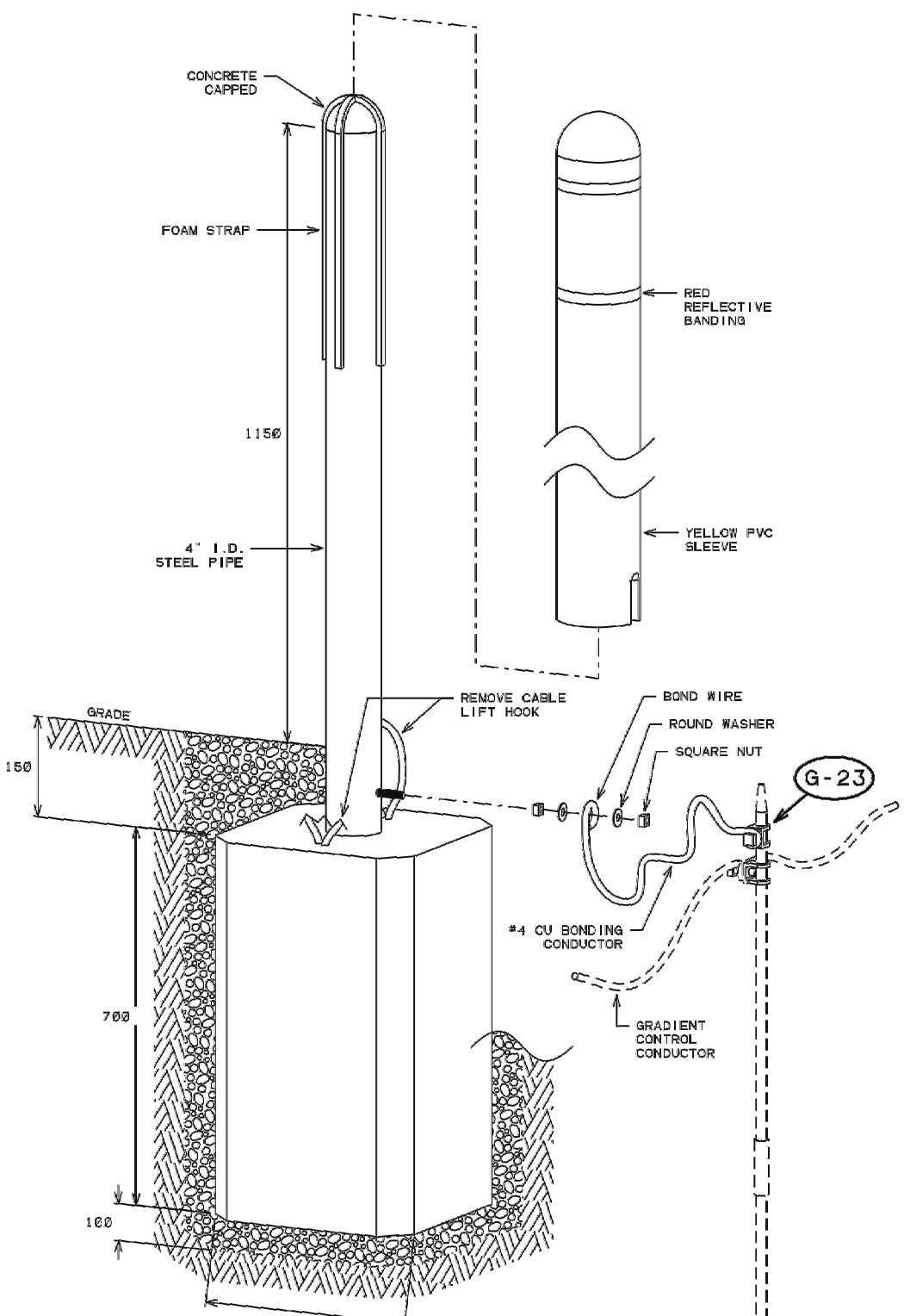
- ALL METAL SURFACES SHALL BE PRIME COATED AND 2 COATS OF PAINT: STANDARD GREY COLOUR.



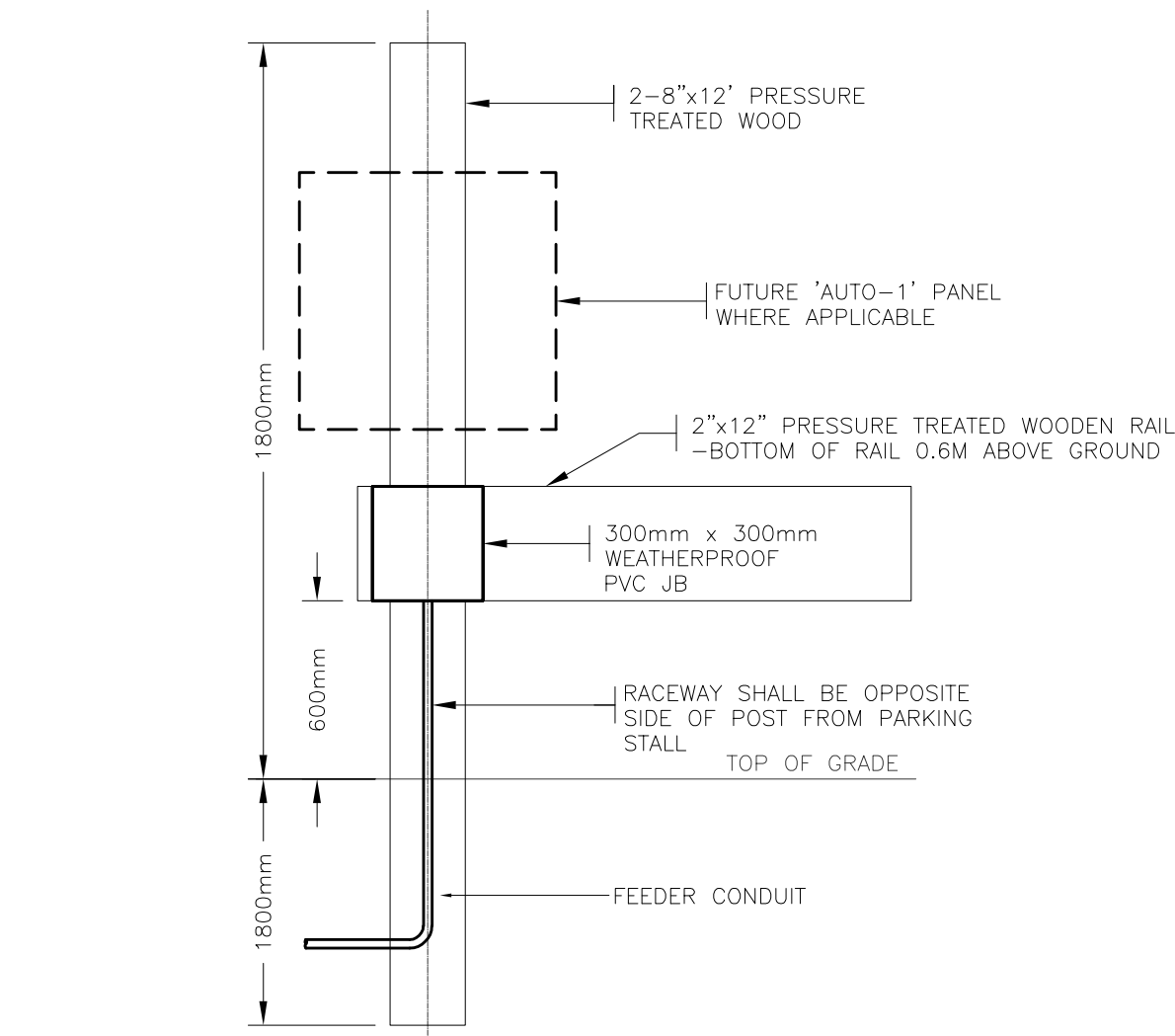
NOTE:

- CONCRETE TO BE SULPHATE RESISTANT CONFORMING TO CSA A23.4 "PRECAST CONCRETE" - 4% MIN AIR ENTRAINMENT
- MAXIMUM SUPERIMPOSED LOAD 1000 KG.
- CABLE ACCESS OPENINGS ARE TO BE INCLUDED ON ALL FOUR SIDES
- PLASTIC COVERS FOR COVERING THE HOLES OF MOUNTING INSERTS ARE REQUIRED
- UNLESS OTHERWISE INDICATED, ALL DIMENSIONS ARE IN MILLIMETRES (INCHES)

4 PRE-CAST CONCRETE PAD DETAIL FOR FORTIS TRANSFORMER
E1.2 NTS

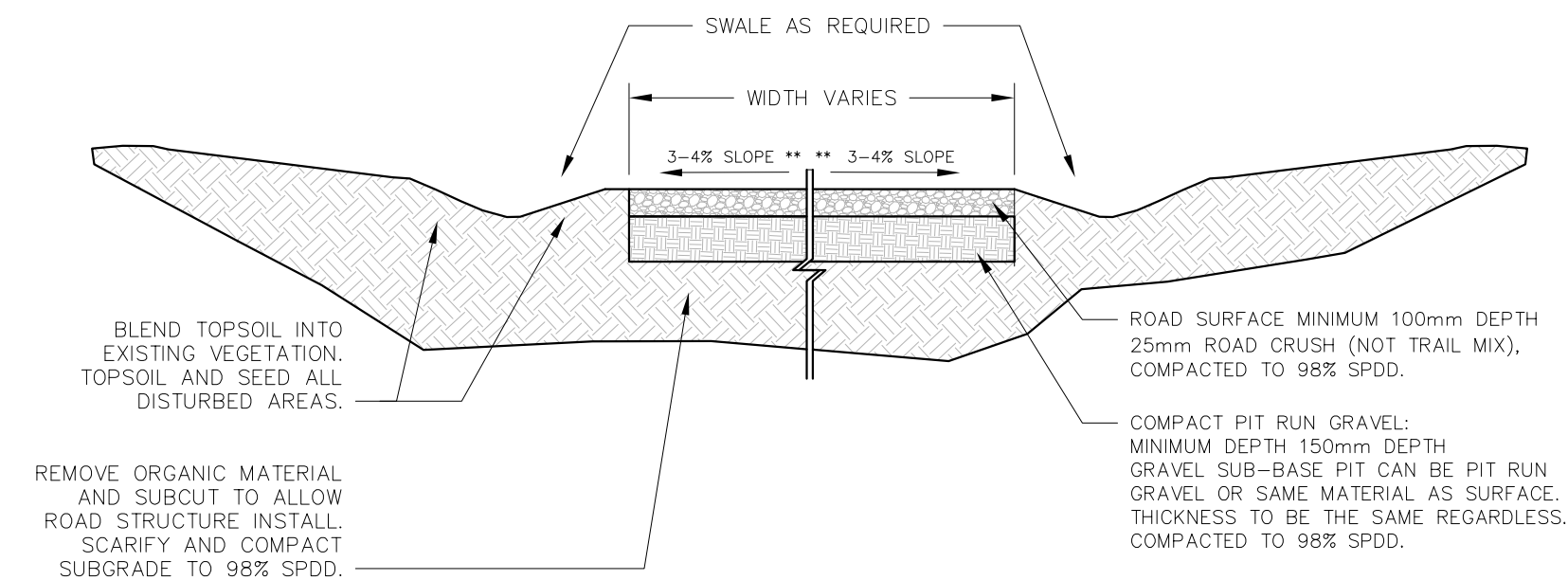


5 BOLLARD DETAIL (TYP.)
E1.2 NTS



6 VEHICLE PLUG-IN POST DETAIL BACKSIDE VIEW
E1.2 NTS

NOTE: FOR POST CONTAINING FUTURE 'AUTO-1' PANEL, WOODEN POST IS TO BE COMPRISED OF TWO (2) 8\"/>



8 GRAVEL ROADWAY STRUCTURE REPLACEMENT DETAIL
E1.2 NTS

** SLOPE TO MATCH EXISTING GRADE ON EITHER SIDE OF TRENCH OR TO PROVIDE POSITIVE DRAINAGE.

Item #	Description	QTY	UNIT	PRICE	TOTAL
5141104	WPT, SQUARE, 1/2 INCH, UNC 13, GALV	2			
5142102	WASHER, ROUND, 9/16\"/>				

REMARKS:
Bill of material is for one guard post only, order additional guard posts where required.

9 BOLLARD BILL OF MATERIALS (OR EQUIVALENT)
E1.2 NTS

TYPE	MANUFACTURER	DESCRIPTION	CATALOGUE NO.	LAMP	MOUNTING	PICTURE	NOTES
100	McGRAW-EDISON	LED AREA FIXTURE	GLEON-AF-01-LED-E1-SL3-BK OR EQUIVALENT	5517 LUMENS 3000°K	24FT - 25FT, 4\"/>		

NOTE: LUMINAIRE SCHEDULE FOR REFERENCE ONLY. NOT IN CONTRACT SCOPE.

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G	ISSUED FOR PCA REVIEW	2020-04-16
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E	ISSUED FOR TENDER	2019-03-01
D	ISSUED FOR FORTIS AFC	2019-02-08
C	CLIENT REVIEW	2019-01-25
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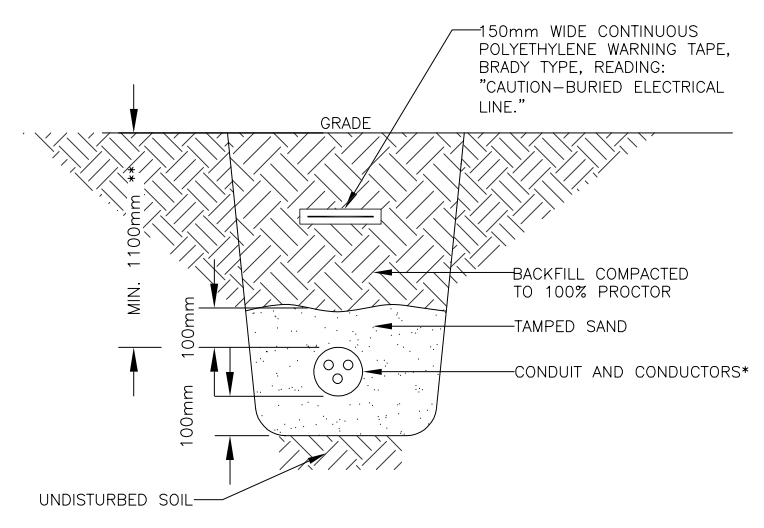
A	A detail number of detail	A
B	B source drawing no. de dessin no.	B/C
C	C detail on drawing no. detail sur dessin no.	

project title / titre du projet
TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT

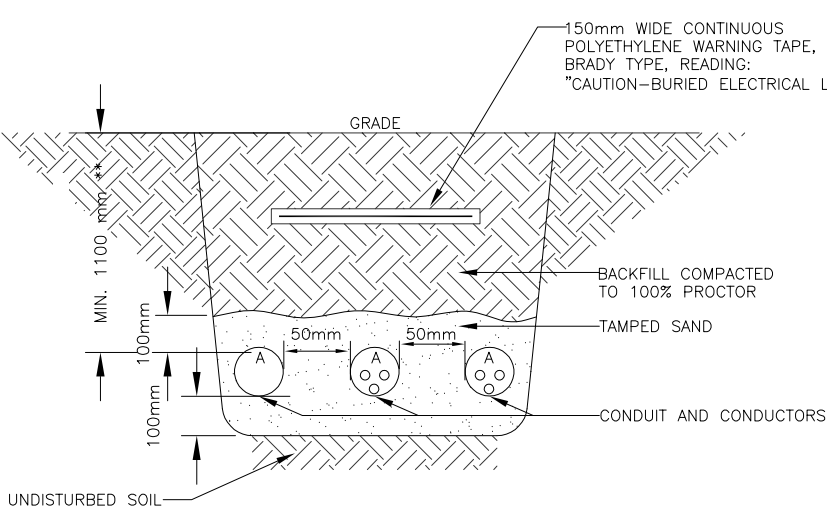
BANFF NATIONAL PARK

drawing title / titre du dessin
ELECTRICAL DETAILS

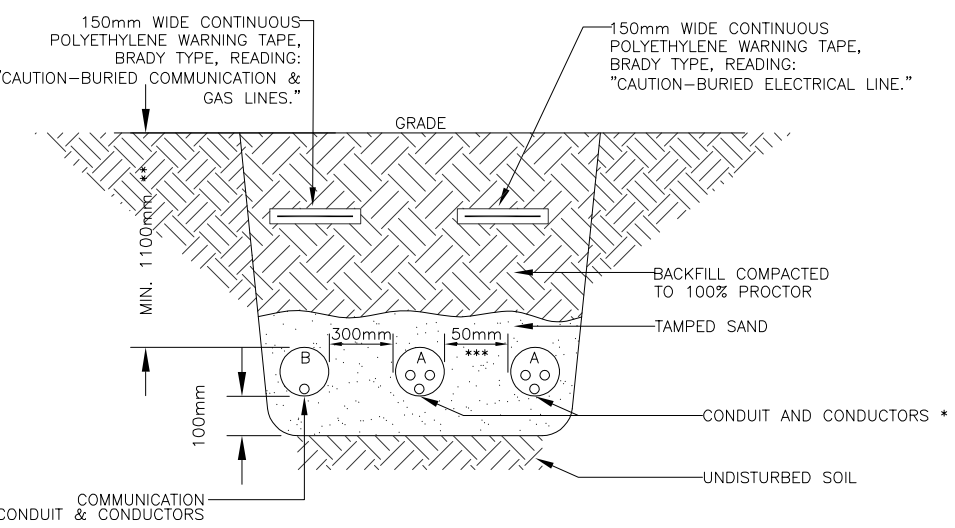
designed by / conçu par	CM	conçu par	
drawn by / dessiné par	CM	dessiné par	
approved by / approuvé par	KR	approuvé par	
PCA Project Manager / Administrateur de Projets APC			
scale / échelle		sheet / feuille	
project no. / projet no.	181-13597	date / date	E1.2



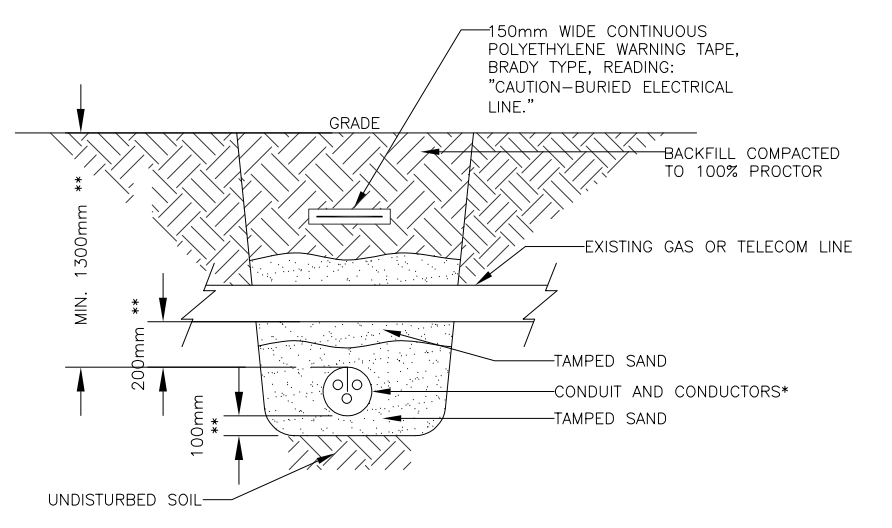
• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • MIN. 900mm DEPTH WHERE RUN IS REQUIRED TO CROSS OVER OTHER BURIED RACEWAYS



• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • MIN. 900mm DEPTH WHERE RUN IS REQUIRED TO CROSS OVER OTHER BURIED RACEWAYS.



• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • MIN. 900mm DEPTH WHERE RUN IS REQUIRED TO CROSS OVER OTHER BURIED RACEWAYS.
 • FOR ADDITIONAL PARALLEL DUCTS, FOLLOW 50mm SPACING BETWEEN ALL DUCTS AS SHOWN FOR THREE.



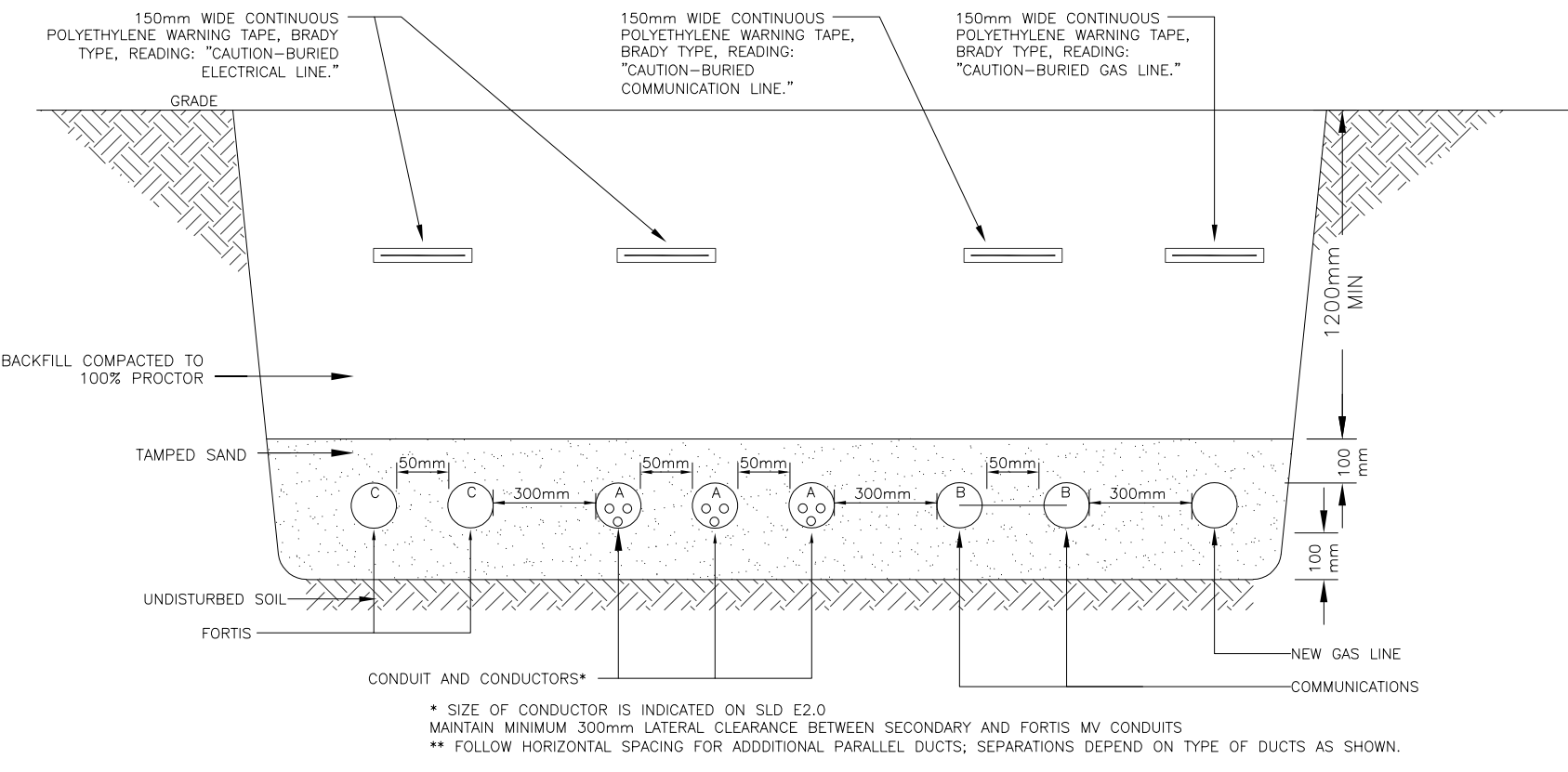
• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • SURROUND ALL UNDERGROUND RACEWAYS WITH MINIMUM 100mm SAND.
 • MAINTAIN MINIMUM 200mm VERTICAL CLEARANCE BETWEEN CONDUITS CROSSING OVER.

1 SINGLE SECONDARY U/G CONDUIT DETAIL FROM CDP TO BUILDINGS
 E1.3 NTS

2 SECONDARY U/G DETAIL FROM TRANSFORMER TO CDP
 E1.3 NTS

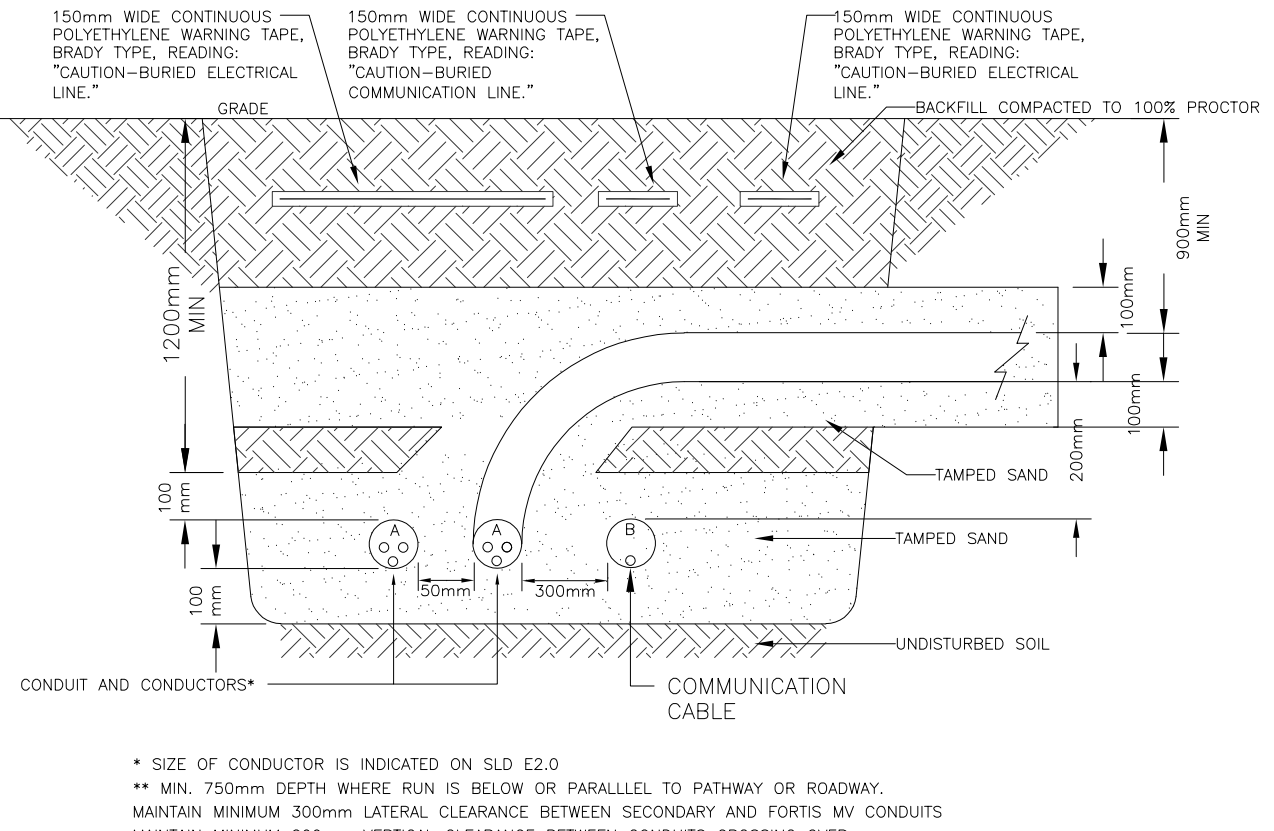
3 THREE OR MORE FEEDER U/G DETAIL FOR POWER AND/OR COMMUNICATION DUCTS.
 E1.3 NTS

4 HORIZONTAL CONDUIT CROSSING OF EXISTING UTILITIES
 E1.3 NTS



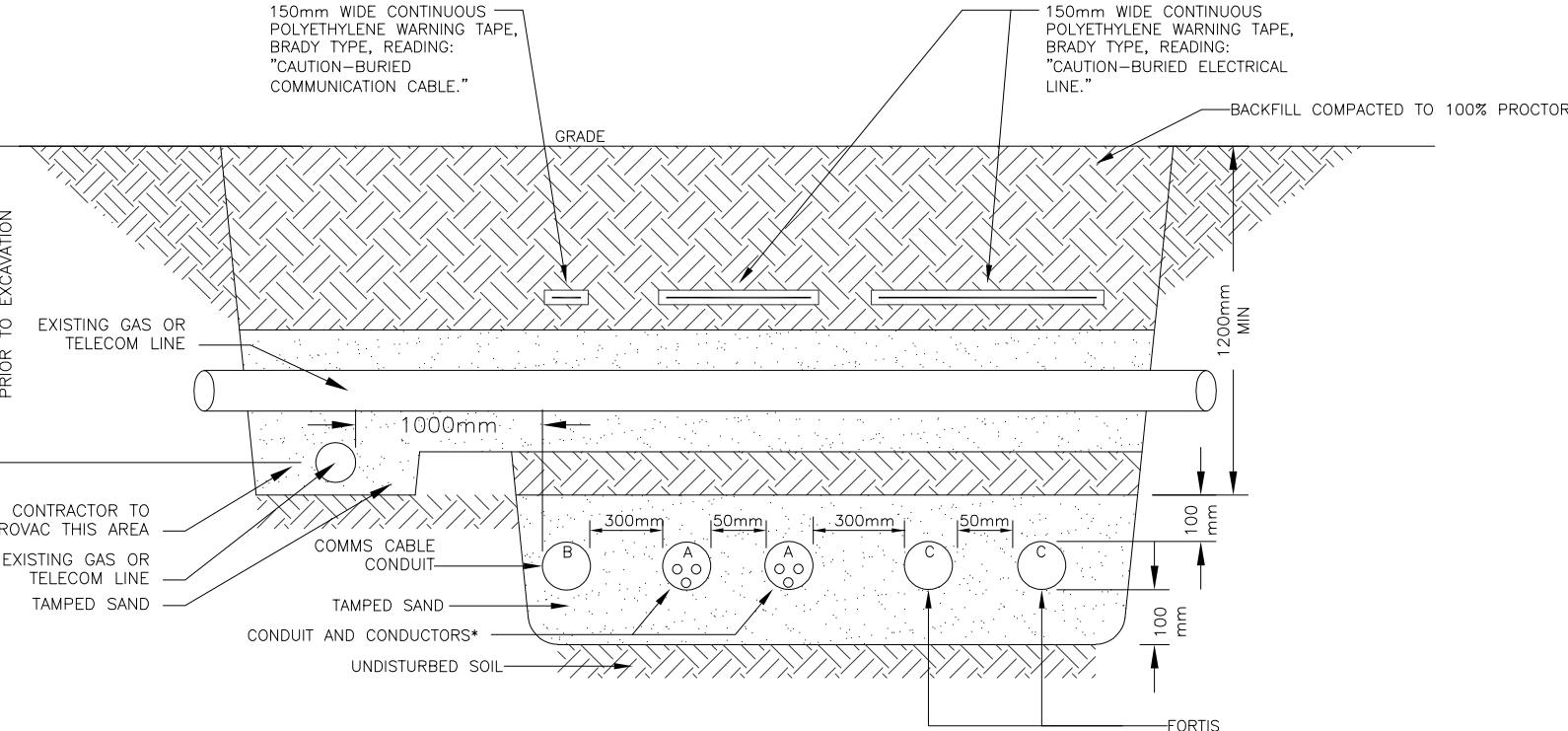
• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • MAINTAIN MINIMUM 300mm LATERAL CLEARANCE BETWEEN SECONDARY AND FORTIS MV CONDUITS
 • FOLLOW HORIZONTAL SPACING FOR ADDITIONAL PARALLEL DUCTS; SEPARATIONS DEPEND ON TYPE OF DUCTS AS SHOWN.

5 FORTIS, SECONDARY POWER & COMMUNICATIONS U/G SHARED NEW SERVICES TRENCH DETAIL
 E1.3 NTS



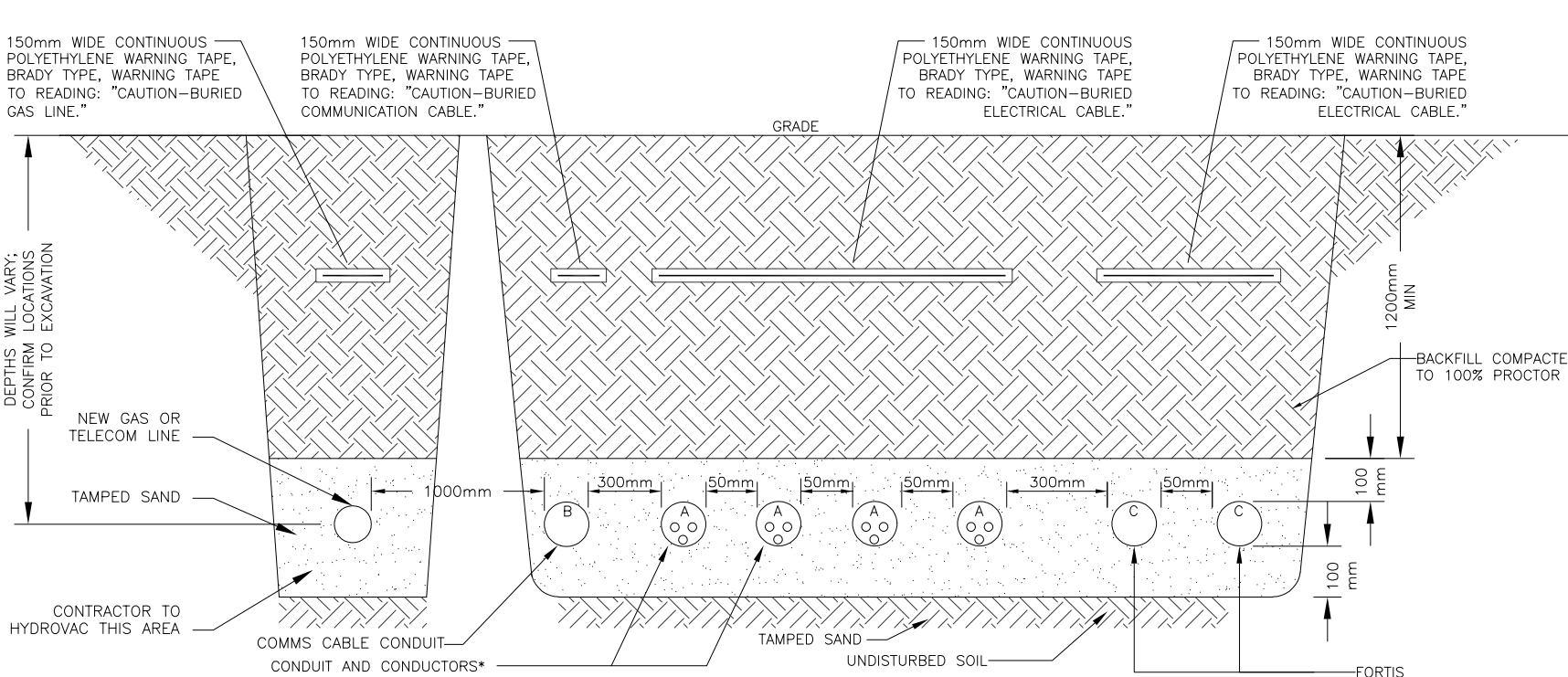
• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • MIN. 750mm DEPTH WHERE RUN IS BELOW OR PARALLEL TO PATHWAY OR ROADWAY.
 • MAINTAIN MINIMUM 300mm LATERAL CLEARANCE BETWEEN SECONDARY AND FORTIS MV CONDUITS
 • MAINTAIN MINIMUM 200mm VERTICAL CLEARANCE BETWEEN CONDUITS CROSSING OVER.

6 CONDUIT CROSSING DETAIL
 E1.3 NTS



• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • FOLLOW HORIZONTAL SEPARATIONS FOR ADDITIONAL PARALLEL DUCTS; SEPARATIONS DEPEND ON TYPE OF DUCTS AS SHOWN.
 • MAINTAIN MINIMUM 300mm LATERAL CLEARANCE BETWEEN SECONDARY AND FORTIS MV CONDUITS
 • MAINTAIN MINIMUM 200mm VERTICAL CLEARANCE BETWEEN CONDUITS AND/OR GAS LINES CROSSING OVER.
 • MAINTAIN MINIMUM 1000mm HORIZONTAL SEPARATIONS FROM EXISTING SHALLOW UTILITIES.

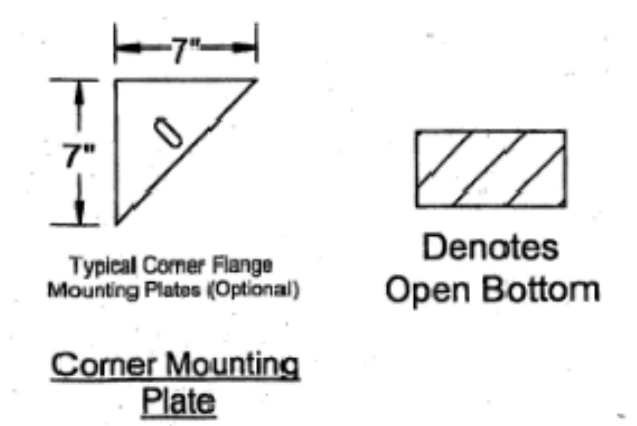
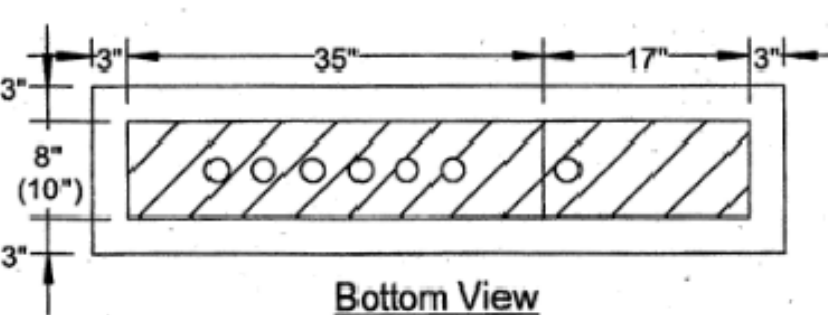
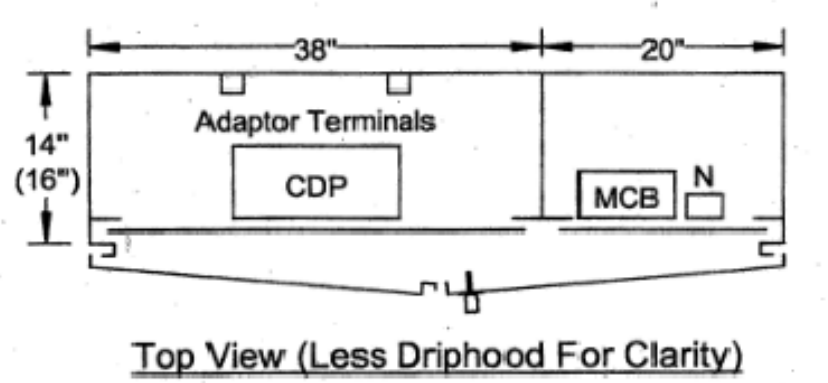
7 INSTALLATION OF PARALLEL RUNS IN A SHARED TRENCH IN COORDINATION WITH EXISTING UTILITIES
 E1.3 NTS



• SIZE OF CONDUCTOR IS INDICATED ON SLD E2.0
 • FOLLOW HORIZONTAL SEPARATIONS FOR ADDITIONAL PARALLEL DUCTS; SEPARATIONS DEPEND ON TYPE OF DUCTS AS SHOWN.
 • MAINTAIN MINIMUM 300mm LATERAL CLEARANCE BETWEEN SECONDARY AND FORTIS MV CONDUITS
 • MAINTAIN MINIMUM 1000mm HORIZONTAL SEPARATIONS FROM EXISTING SHALLOW UTILITIES.

8 INSTALLATION OF PARALLEL RUNS IN A SHARED TRENCH WITH NEW TELECOMM OR GAS LINES IN SEPARATE TRENCH
 E1.3 NTS

WEATHERPROOF PAD MOUNT PANEL BOARDS



11 OUTDOOR CDP ENCLOSURE DETAIL
 E1.3 NTS

CDP DETAIL GENERAL NOTES:

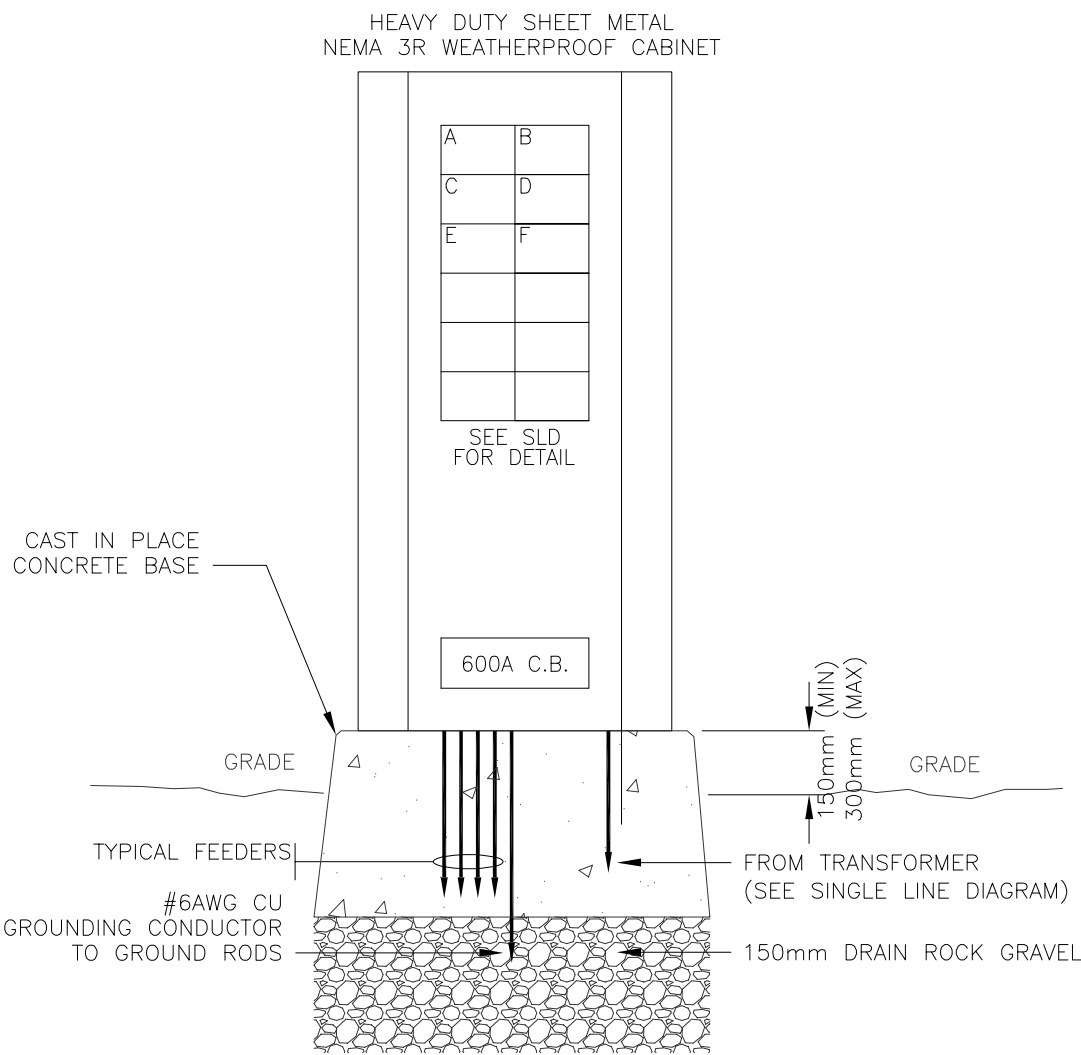
- FOR REFERENCE ONLY. CDP SUPPLY/INSTALL OUT OF SCOPE.
- 1φ 3WIRE 120/240V OUTDOOR RATED CDP.
 - PROVIDE MINIMUM 42 SPACES ON CDP.
 - REFER TO DRAWING E2.0 FOR BRANCH CABLE SIZES.
 - 2P BRANCH CIRCUIT BREAKERS MUST BE ABLE TO ACCEPT SIZE #1/0 AWG ALUMINUM AS BRANCH CIRCUITS.
 - THEATRE DISTRIBUTION REQUIRES 2x#1/0AWG FEEDERS FOR VOLTAGE DROP.
 - BOTTOM OF THE CDP CABINET IS EQUIPPED WITH AN INNER FLANGE AND OPENING TO ALLOW FOR CABLE ACCESS AND INSTALLATION.
 - MARINE GRADE ALUMINUM CABINET WITH A POWDER PAINT FINISH FOR CORROSION RESISTANCE.
 - PANEL ENCLOSURE IS TO BE SECURELY BOLTED TO CONCRETE BASE.
 - PANEL ENCLOSURE TO BE PAINTED CUSTOM PARKS GREEN.
 - PANEL ENCLOSURE SHALL NOT HAVE MANUFACTURER BRANDING ON EXTERIOR OF ENCLOSURE.
 - FOR THEATRE DISTRIBUTION, PROVIDE INTERPOSING TERMINALS FOR DOUBLE 1/0 AWG TIE-IN TO ACCOMMODATE VOLTAGE DROP. REFER TO CONDUCTOR SCHEDULE AND SINGLE LINE DIAGRAM.
 - LOCKABLE DOOR REQUIRED.
 - AC-DANDY TYPE PDC-RV-AB2 C/W BREAKERS FOR #1/0 AWG BRANCH CIRCUITS OR EQUAL

CDP DETAIL FOR REFERENCE ONLY. CDP SUPPLY/INSTALL OUT OF SCOPE
 MATCH CONCRETE BASE TO PDC-RV-AB2 DIMENSIONS

NOTES:

1. INFORMATION SHALL GUIDE INSTALLATION FOR BOTH COMBINED TRENCHES AND ALSO STANDALONE SECONDARY AND UTILITY INSTALLATION.
2. SCARIFY 300mm DEEP AND COMPACT SUBGRADE.
3. BLEND TOPSOIL TO SHOULDERS OF ROADS.
4. DISPOSE OF SURPLUS TOPSOIL & EXCAVATE MATERIAL WHERE DESIGNATED BY DEPARTMENTAL REPRESENTATIVE.
5. ANY CONDUIT BENDS TO BE ENCASED IN 25MPa CONCRETE.
6. EXPANSION JOINTS SHALL BE INSTALLED AT INTERVALS AS PER MANUFACTURER'S REQUIREMENTS AND IN ACCORDANCE TO SPECIFICATIONS.
7. DEPTH OF WARNING TAPE SHALL MINIMUM OF 450mm.
8. USE SPACERS TO MAINTAIN A MINIMUM SEPARATION BETWEEN CONDUITS.
9. SURROUND CONDUITS WITH A MINIMUM 50mm OF SCREENED SAND HORIZONTALLY & VERTICALLY.

A	DB2 HORIZONTAL DUCTS WITH DB2 HORIZONTAL BENDS BELOW GRADE AND RIGID PVC FOR ALL OTHER LOCATIONS INCLUDING VERTICAL BENDS FROM BELOW GRADE AND LOCATIONS ABOVE GRADE FOR 120/240V SECONDARY CONDUCTORS.
B	DB2 HORIZONTAL DUCTS WITH DB2 HORIZONTAL BENDS BELOW GRADE AND RIGID PVC FOR ALL OTHER LOCATIONS INCLUDING VERTICAL BENDS FROM BELOW GRADE AND LOCATIONS ABOVE GRADE FOR COMMUNICATIONS CABLES.
C	DB2 HORIZONTAL DUCTS WITH DB2 HORIZONTAL BENDS BELOW GRADE AND RIGID PVC FOR ALL OTHER LOCATIONS INCLUDING VERTICAL BENDS FROM BELOW GRADE AND LOCATIONS ABOVE GRADE FOR FORTIS MEDIUM VOLTAGE CONDUCTORS.



10 OUTDOOR CDP ENCLOSURE MOUNTING DETAIL
 E1.3 NTS

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 L'Agence Parcs Canada

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Conseiller

PROFESSIONAL ENGINEER ALBERTA
 McCOLL ROBERTS
 63127 2022-04-13

PERMIT TO PRACTICE
 WSP CANADA INC.
 RM SIGNATURE: [Signature]
 RM APEGA ID #: 63127
 DATE: 2022-04-13
 PERMIT NUMBER: P007641
 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

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B	ISSUED FOR FORTIS AFC (COORDINATION)	2019-01-09
A	ISSUED FOR 80% REVIEW	2018-11-16

A detail number
 number du detail
 B source drawing no.
 de dessin no.
 C detail on drawing no.
 detail sur dessin no.

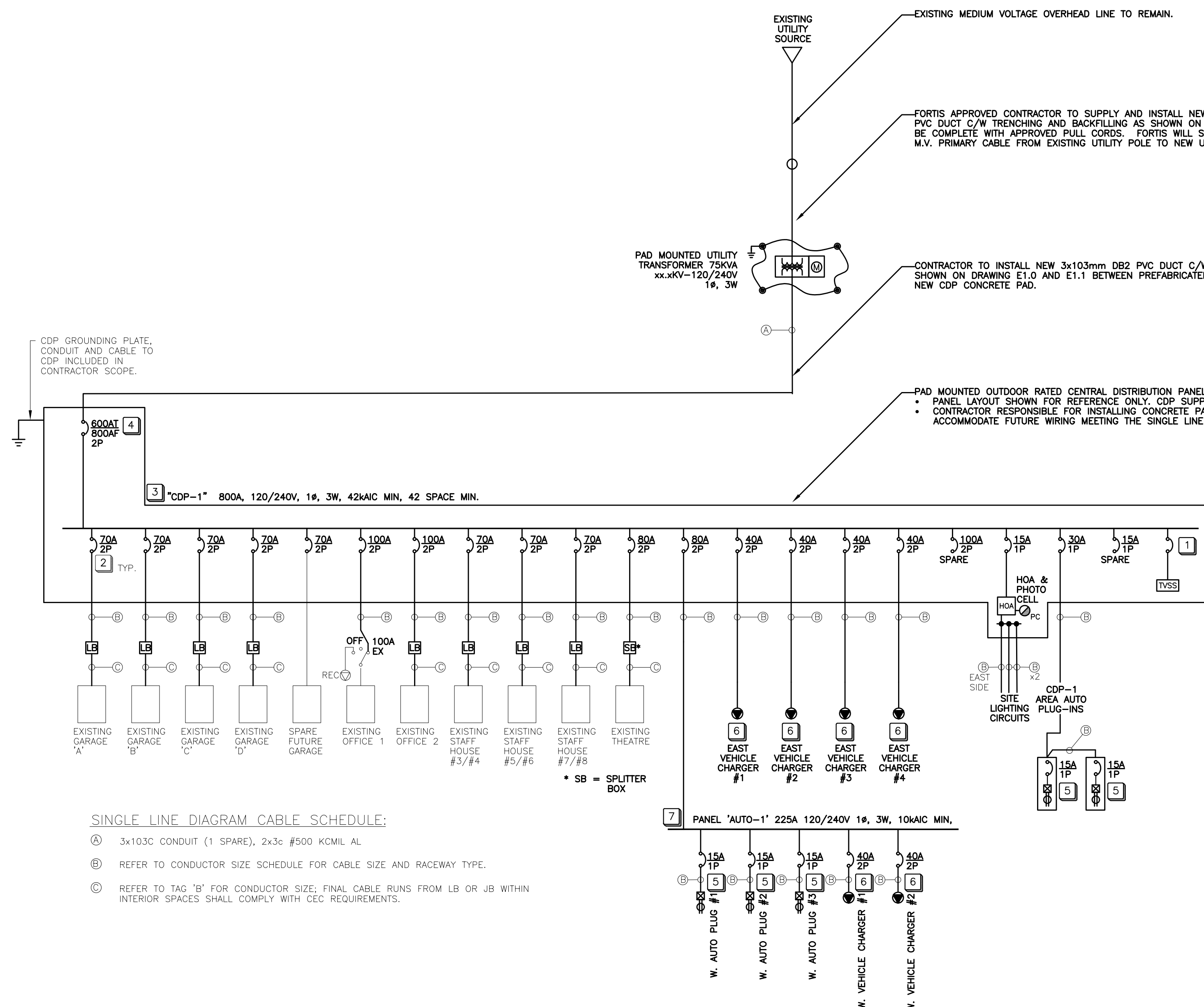
project title / titre du projet
TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT

BANFF NATIONAL PARK

drawing title / titre du dessin

ELECTRICAL DETAILS

designed by / conçu par	CM	sheet / feuille	E1.3
drawn by / dessiné par	CM		
approved by / approuvé par	KR		
PCA Project Manager / Administrateur de Projets APC			
scale / échelle			
project no. / projet no.	181-13597		
date / date			



SINGLE LINE DIAGRAM CABLE SCHEDULE:

- Ⓐ 3x103C CONDUIT (1 SPARE), 2x3c #500 KCMIL AL
- Ⓑ REFER TO CONDUCTOR SIZE SCHEDULE FOR CABLE SIZE AND RACEWAY TYPE.
- Ⓒ REFER TO TAG "B" FOR CONDUCTOR SIZE; FINAL CABLE RUNS FROM LB OR JB WITHIN INTERIOR SPACES SHALL COMPLY WITH CEC REQUIREMENTS.

FOR REFERENCE ONLY

BUILDING/PANEL	CONDUCTORS	CONDUIT SIZE	FED FROM	DISTANCE (m)	VOLTS	AMPS ****	MAX VOLTAGE DROP (%)
GARAGE A	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	70	120/240	60A	1.82
GARAGE B	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	65	120/240	60A	1.69
GARAGE C	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	55	120/240	60A	1.56
GARAGE D	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	45	120/240	60A	1.17
GARAGE E *	N/A	53mmC	'CDP 1'	40	-	-	-
STAFF HOUSE 3/4	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	57	120/240	60A	1.17
STAFF HOUSE 5/6	3c#1/0 AWG AL + #8AWG CU GND	53mmC ***	'CDP 1'	102	120/240	60A	2.59
STAFF HOUSE 7/8	3c#1/0 AWG AL + #8AWG CU GND	53mmC ***	'CDP 1'	96	120/240	60A	2.46
OFFICE 1	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	72	120/240	100A	2.81
OFFICE 2	3c#1/0 AWG AL + #8AWG CU GND	53mmC	'CDP 1'	45	120/240	100A	1.73
THEATRE JB	2x3c#1/0 AWG AL+#8AWG CU GND	103mmC	'CDP 1'	155	120/240	80A	2.48
THEATRE	3c#1/0 AWG AL + #8AWG CU GND	53mmC	THEATRE JB	7	120/240	100A	0.04
CDP 1	2x3c#500KCMIL AL	3-103mmC	'UTILITY'	8	120/240	600A	0.5
PANEL 'AUTO-1'	3c#1/0 AWG AL + #8AWG CU GND	103mmC	'CDP 1'	53	120/240	85A	2.21
EAST CHARGER #1	2c#8 AWG CU + #10AWG CU GND	27mmC	'CDP 1'	12	120/240	40A	0.11
EAST CHARGER #2	2c#8 AWG CU + #10AWG CU GND	27mmC	'CDP 1'	12	120/240	40A	0.24
EAST CHARGER #3	2c#8 AWG CU + #10AWG CU GND	27mmC	'CDP 1'	17	120/240	40A	0.11
EAST CHARGER #4	2c#8 AWG CU + #10AWG CU GND	27mmC	'CDP 1'	17	120/240	40A	0.24
WEST CHARGER #1	2c#8 AWG CU + #10AWG CU GND	27mmC	'AUTO-1'	12.5	120/240	40A	0.09
WEST CHARGER #2	2c#8 AWG CU + #10AWG CU GND	27mmC	'AUTO-1'	12.5	120/240	40A	0.09
WEST AUTO PLUGS	2c#12 AWG CU+#12AWG CU GND	27mmC	'AUTO-1'	12.5	120	11A	1.1
WEST LIGHTING P1	2c#12 AWG CU+#12AWG CU GND	27mmC	'CDP 1'	56	120	2A	1.13
CENTRE LIGHTING P2	2c#12 AWG CU+#12AWG CU GND	27mmC	'CDP 1'	16	120	2A	0.25
EAST LIGHTING P3	2c#10 AWG CU+#12AWG CU GND	53mmC	'CDP 1'	110	120	2A	1.71
EAST AUTO PLUGS	2c#10 AWG CU+#12AWG CU GND	27mmC	'CDP 1'	27	120	11A	0.5

* GARAGE E IS A FUTURE PROJECT FOR THE SITE. CONTRACTOR SHALL SUPPLY, INSTALL, TRENCH AND BACKFILL EMPTY 53mmC CONDUIT TO LOCATION SHOWN ON DRAWING.

** THE DISTANCE GIVEN IN THE VOLTAGE DROP SCHEDULE HAS BEEN INDICATED STRICTLY FOR THE PURPOSE OF VOLTAGE DROP CALCULATIONS. ACTUAL TAKE OFFS FOR BIDDING AND CABLE ROUTING ON SITE SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR AND COORDINATED WITH PARKS CANADA. FINALIZED SITE CABLE DISTANCES ARE TO BE SUBMITTED TO CLIENT BY CONTRACTOR PRIOR TO PRICING.

*** STAFF HOUSES 5/6 & 7/8 SHALL SHARE ONE 103mmC CONDUIT BETWEEN CDP-1 AND THE PULL BOX SHOWN ON DRAWING E1.0. FROM THE PULL BOX, TWO 53mmC CONDUITS SHALL BE ROUTED; ONE TO EACH HOUSE.

**** VOLTAGE DROP IS BASED ON 80% FLA (EXCEPT CDP-1 = 100%), 80% POWER FACTOR.

GENERAL NOTES:

- ALL GENERAL NOTES FOR REFERENCE ONLY.
- REFER TO SPECIFICATIONS AND APPENDIX 'A' FOR ADDITIONAL REQUIREMENTS & DETAILS.
 - REFER TO PHASING REQUIREMENTS OF WORK DESCRIBED ON LAYOUT DRAWINGS AND SPECIFICATIONS.
 - ALL PANELS TO HAVE LAMACOIDS LABELS; ALL LAMACOIDS TO BE RIVETTED.
 - CONTRACTOR SCOPE EXTENDS TO TIE-IN WITHIN EACH BUILDING ELECTRICAL PANEL, EXCEPT OFFICE 1 WHERE THE CABLES ARE TERMINATED AT THE EXISTING EXTERIOR MANUAL TRANSFER SWITCH.
 - CHARGER ON SAME POST ARE TO SHARE ONE (1) CONDUIT WITH ONE ANOTHER.

KEYNOTES:

- ALL KEYNOTES FOR REFERENCE ONLY.
- CIRCUIT BREAKER SHALL BE SIZED BY SUPPLIER ACCORDING TO TVSS MANUFACTURERS RECOMMENDATIONS.
 - 120/240V, 1φ, 3W DISCONNECT IS TO BE SELECTED AND USED FOR POWER REQUIREMENTS FOR EACH BUILDING AS INDICATED. CIRCUIT BREAKERS AND DISCONNECTS MUST BE ABLE TO ACCEPT CONDUCTOR SIZES AS NOTED ON CABLE SCHEDULE. DISCONNECTS TO BE RATED NEMA 3R. REFER TO MOUNTING DETAILS.
 - OUTDOOR RATED ENCLOSURE SHALL BE A DISTRIBUTION PANEL TO ACCOMMODATE BOTTOM ENTRY OF FEEDER CABLES AND BRANCH CIRCUITS. APPARATUS SHALL BE SUPPLIED WITH CONCRETE BASE FOR INSTALLATION AT SITE. VENDOR SHALL SUPPLY BRANCH CIRCUIT BREAKERS THAT CAN ACCOMMODATE CABLES SPECIFIED ON VOLTAGE DROP TABLE.
 - 600A (TRIP) 2P MAIN BREAKER TO BE INSTALLED IN 800A RATED PANEL FOR FUTURE DEMAND.
 - OUTDOOR RATED AUTO PLUG-IN RECEPTACLE C/W INTEGRAL 15A CIRCUIT BREAKER.
 - VEHICLE CHARGER - BRAND; FLO, MODEL: HOME X5, SUPPLIED BY PARKS. CHARGER INSTALLED AND CABLES TERMINATED BY CONTRACTOR.
 - DISTRIBUTION PANEL SHALL BE HOUSED IN WEATHER-PROOF ENCLOSURE.

NOTES PERTAINING TO CDP AND WIRING ARE FOR REFERENCE ONLY

FOR REFERENCE ONLY

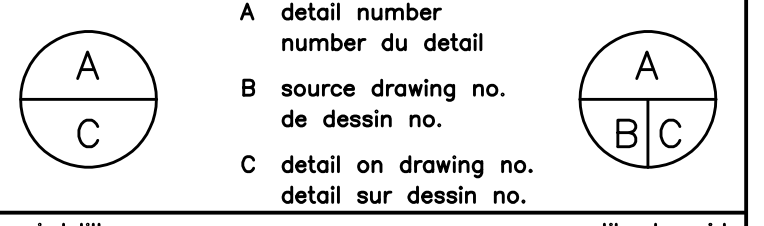
PANEL 'AUTO-1'						
DESCRIPTION	KW	BKR.	CIRCUIT NO.	BKR.	KW	DESCRIPTION
AUTO PLUG-IN #1	0.65	15A	1	2	15A	SPARE
AUTO PLUG-IN #2	0.65	15A	3	4	15A	SPARE
AUTO PLUG-IN #3	0.65	15A	5	6	15A	SPARE
W. VEHICLE CHARGER #1	7.2	40A	7	8	15A	SPARE
W. VEHICLE CHARGER #2	7.2	40A	9	10	15A	SPARE
-	-	-	11	12	15A	SPARE
-	-	-	13	14	15A	SPARE
-	-	-	15	16	-	-
-	-	-	17	18	-	-
-	-	-	19	20	-	-
-	-	-	21	22	-	-
-	-	-	23	24	-	-
TOTAL	16.35		16.35KW		OKW	TOTAL
			x100% DIVERSITY		16.35KW	85 AMPS @ 0.8PF, 240V/1P
MAINS:	225 AMP			VOLTS:	120/240V	
MOUNTING:	SURFACE			PHASE:	1φ, 3W	
MAIN BKR.:	100A			LOCATION:	WEST SIDE PARKING LOT	
FEEDER:	SEE SINGLE LINE			FED FROM:	CDP-1	

PANEL SHALL BE HOUSED IN A WEATHERPROOF ENCLOSURE.



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A	ISSUED FOR 80% REVIEW	2018-11-16



TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT

BANFF NATIONAL PARK

SINGLE LINE DIAGRAM

designed by	CM	conçu par	
drawn by	CM	dessiné par	
approved by	KR	approuvé par	
PCA Project Manager		Administrateur de Projets APC	
scale	echelle	sheet	feuille
project no.	181-13597	project no.	E2.0
date	2018-08-14	date	

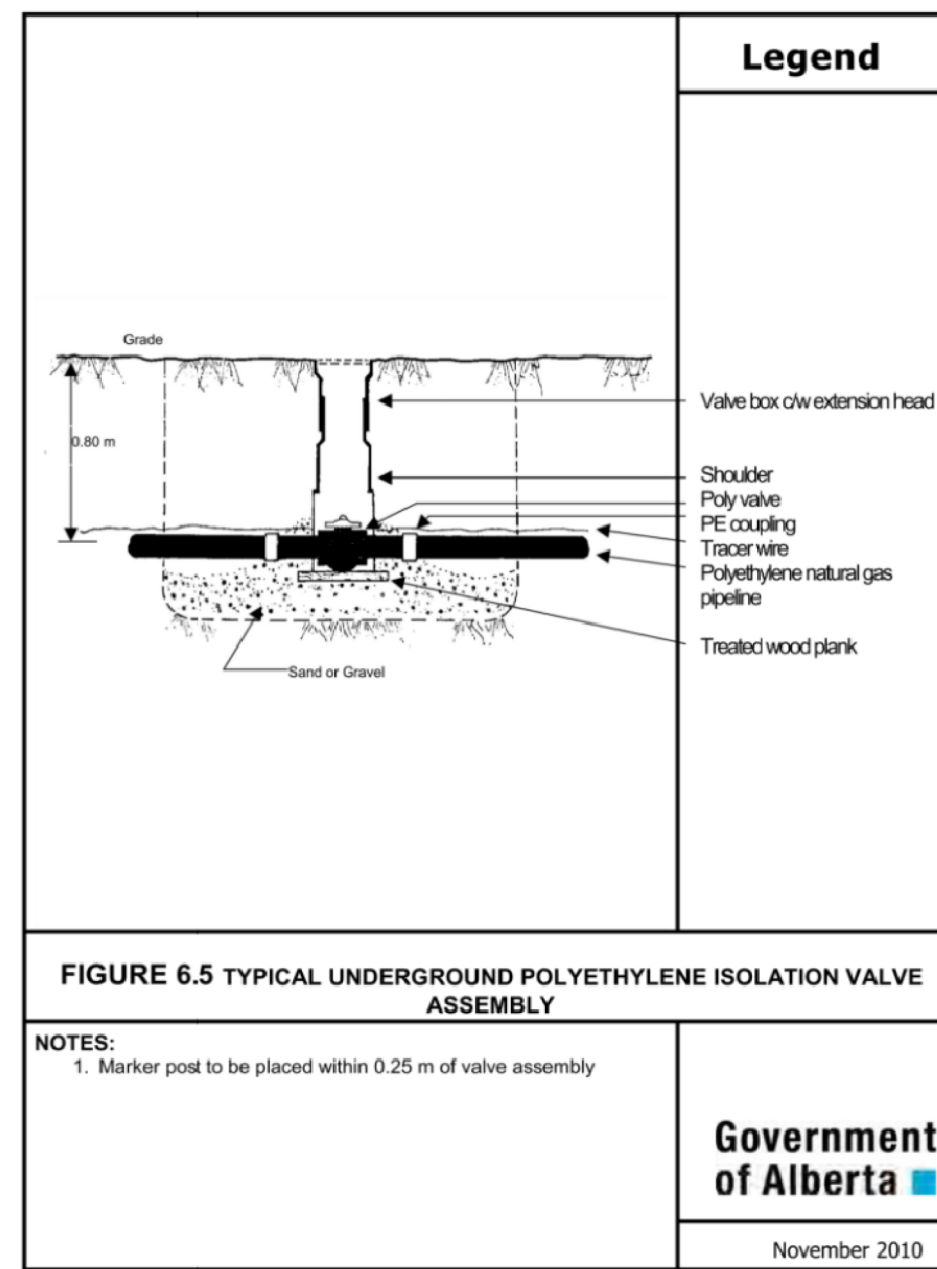


FIGURE 6.5 TYPICAL UNDERGROUND POLYETHYLENE ISOLATION VALVE ASSEMBLY

NOTES:
1. Marker post to be placed within 0.25 m of valve assembly

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November 2010

2
M1.0
TYPICAL UNDERGROUND POLYETHYLENE ISOLATION VALVE ASSEMBLY

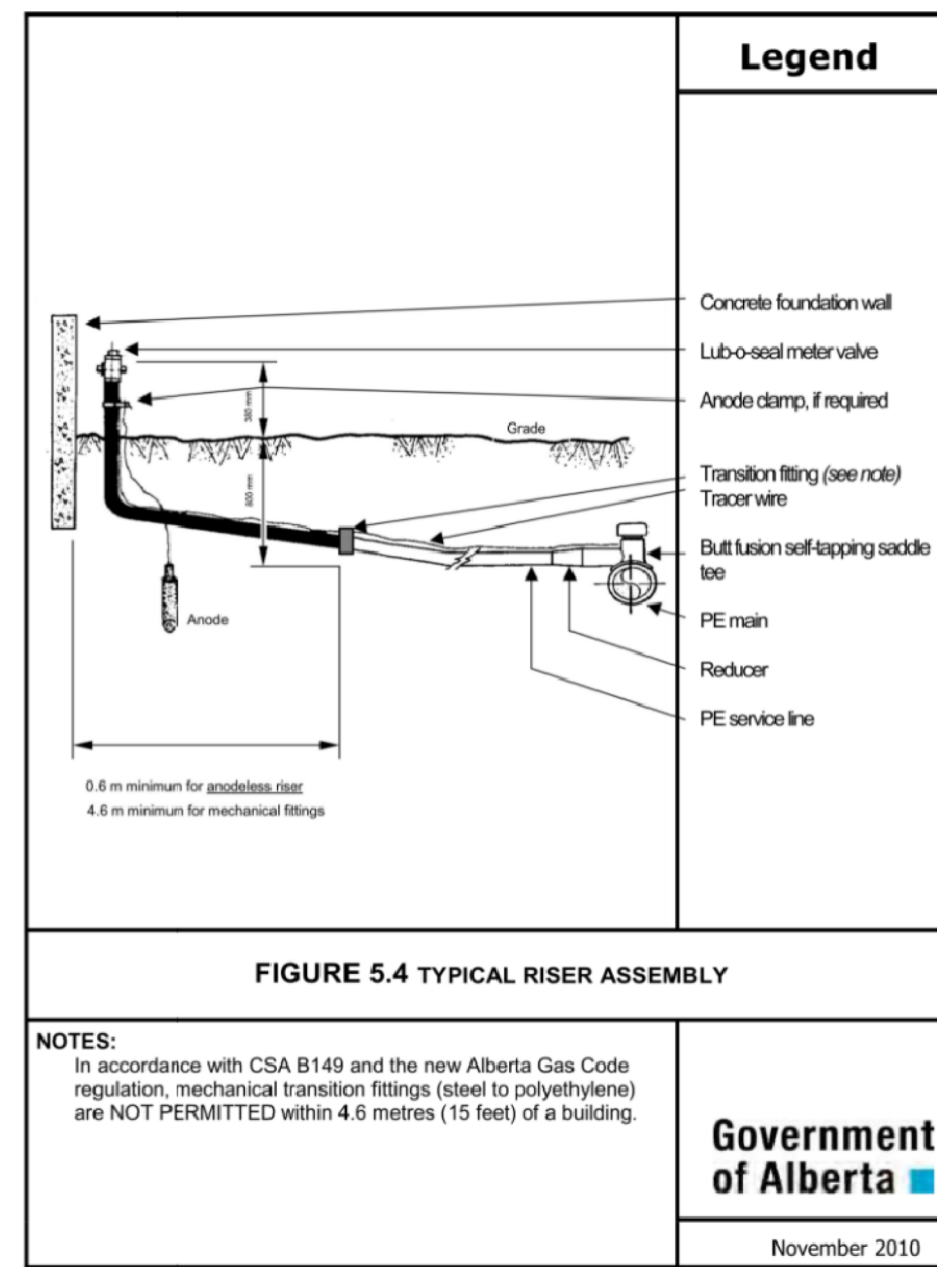
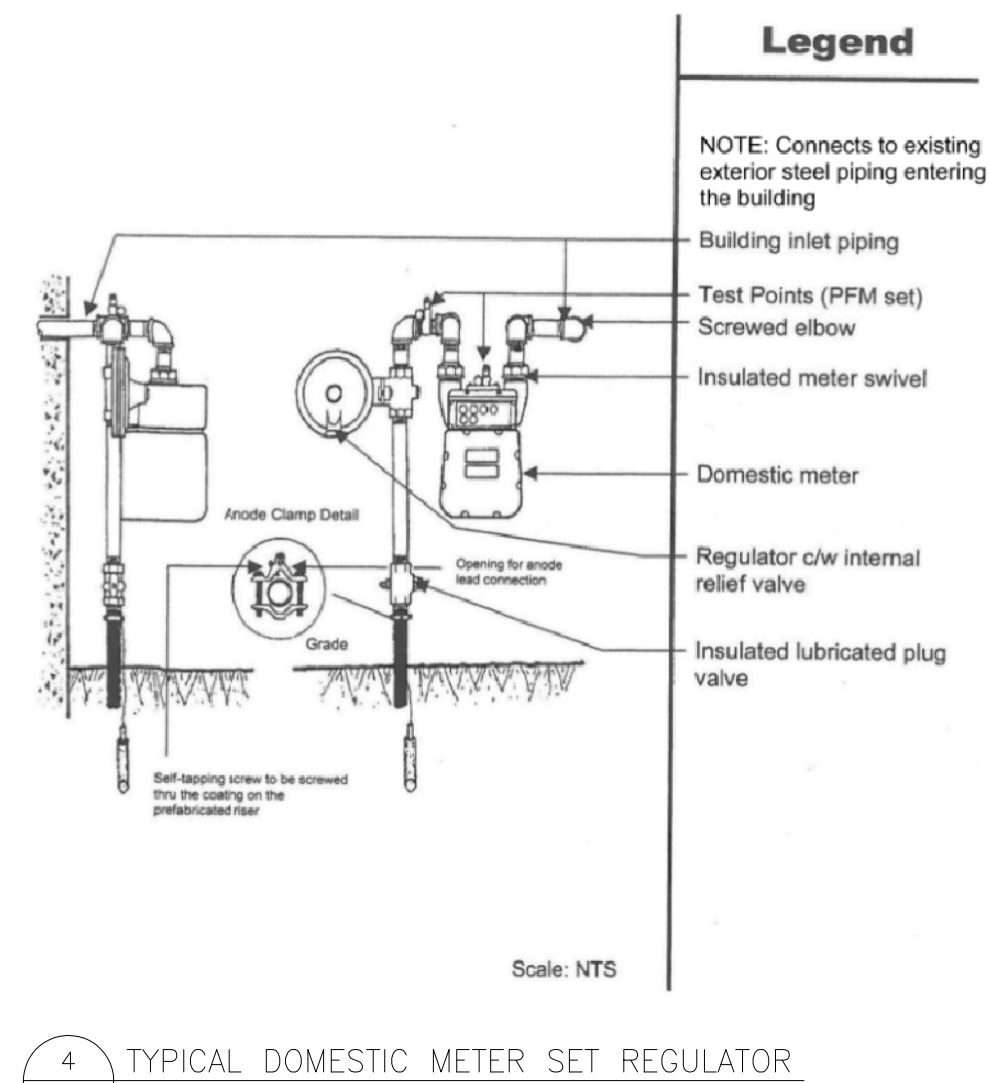


FIGURE 5.4 TYPICAL RISER ASSEMBLY

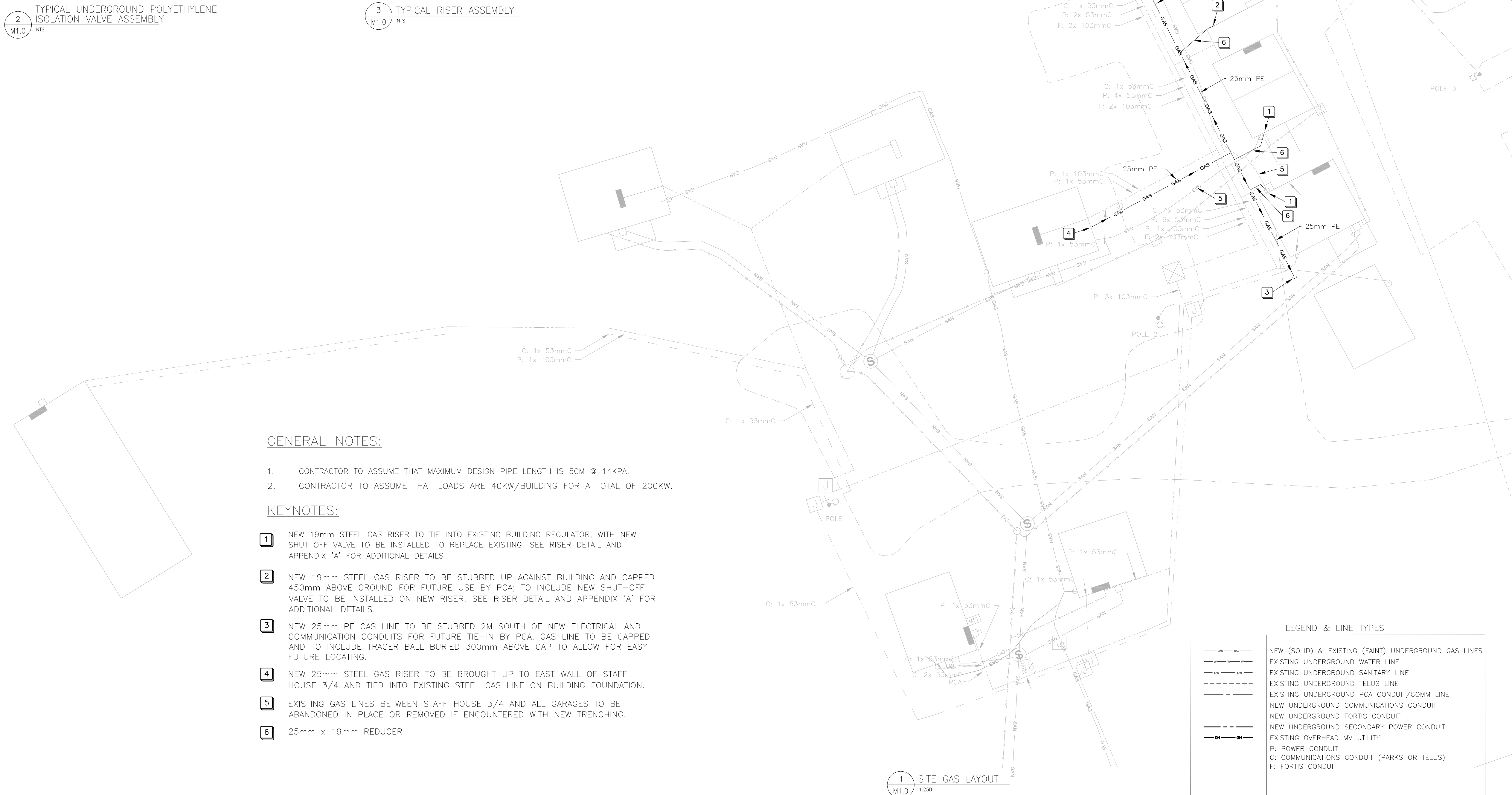
NOTES:
In accordance with CSA B149 and the new Alberta Gas Code regulation, mechanical transition fittings (steel to polyethylene) are NOT PERMITTED within 4.6 metres (15 feet) of a building.

Government of Alberta
November 2010

3
M1.0
TYPICAL RISER ASSEMBLY



4
M1.0
TYPICAL DOMESTIC METER SET REGULATOR



GENERAL NOTES:

- CONTRACTOR TO ASSUME THAT MAXIMUM DESIGN PIPE LENGTH IS 50M @ 14KPA.
- CONTRACTOR TO ASSUME THAT LOADS ARE 40KW/BUILDING FOR A TOTAL OF 200KW.

KEYNOTES:

- NEW 19mm STEEL GAS RISER TO TIE INTO EXISTING BUILDING REGULATOR, WITH NEW SHUT OFF VALVE TO BE INSTALLED TO REPLACE EXISTING. SEE RISER DETAIL AND APPENDIX 'A' FOR ADDITIONAL DETAILS.
- NEW 19mm STEEL GAS RISER TO BE STUBBED UP AGAINST BUILDING AND CAPPED 450mm ABOVE GROUND FOR FUTURE USE BY PCA; TO INCLUDE NEW SHUT-OFF VALVE TO BE INSTALLED ON NEW RISER. SEE RISER DETAIL AND APPENDIX 'A' FOR ADDITIONAL DETAILS.
- NEW 25mm PE GAS LINE TO BE STUBBED 2M SOUTH OF NEW ELECTRICAL AND COMMUNICATION CONDUITS FOR FUTURE TIE-IN BY PCA. GAS LINE TO BE CAPPED AND TO INCLUDE TRACER BALL BURIED 300mm ABOVE CAP TO ALLOW FOR EASY FUTURE LOCATING.
- NEW 25mm STEEL GAS RISER TO BE BROUGHT UP TO EAST WALL OF STAFF HOUSE 3/4 AND TIED INTO EXISTING STEEL GAS LINE ON BUILDING FOUNDATION.
- EXISTING GAS LINES BETWEEN STAFF HOUSE 3/4 AND ALL GARAGES TO BE ABANDONED IN PLACE OR REMOVED IF ENCOUNTERED WITH NEW TRENCHING.
- 25mm x 19mm REDUCER

LEGEND & LINE TYPES	
	NEW (SOLID) & EXISTING (FAINT) UNDERGROUND GAS LINES
	EXISTING UNDERGROUND WATER LINE
	EXISTING UNDERGROUND SANITARY LINE
	EXISTING UNDERGROUND TELUS LINE
	EXISTING UNDERGROUND PCA CONDUIT/COMM LINE
	NEW UNDERGROUND COMMUNICATIONS CONDUIT
	NEW UNDERGROUND FORTIS CONDUIT
	NEW UNDERGROUND SECONDARY POWER CONDUIT
	EXISTING OVERHEAD MV UTILITY
	P: POWER CONDUIT
	C: COMMUNICATIONS CONDUIT (PARKS OR TELUS)
	F: FORTIS CONDUIT

Client
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Conseiller

NORTH

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project title / titre du projet
TUNNEL MOUNTAIN CAMPGROUND OPERATION AREA ELECTRICAL REPLACEMENT

BANFF NATIONAL PARK

drawing title / titre du dessin
SITE GAS LAYOUT

designed by	CM	conçu par
drawn by	CM	dessiné par
approved by	KR	approuvé par
PCA Project Manager		Administrateur de Projets APC
scale		échelle
sheet		feuille
project no.	181-13597	proj. no.
date	2018-08-14	date
		M1.0