

MECHANICAL SPECIFICATIONS

1. GENERAL

- 1.1. ALL WORK SHOWN OR IMPLIED ON THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH:
 - 1.1.1. ALBERTA BUILDING CODE (ABC) 2006
 - 1.1.2. PLUMBING CODE OF CANADA 2010
 - 1.1.3. CAN/CSA-B125-05 PLUMBING FITTINGS.
 - 1.1.4. LOCAL AUTHORITY HAVING JURISDICTION.
 - 1.1.5. NFPA 10-2002 PORTABLE FIRE EXTINGUISHERS.
 - 1.1.6. ULC STANDARDS
- 1.2. PRIOR TO SUBMITTING TENDERS, EACH TRADE SHALL EXAMINE THE SITE TO DETERMINE THE CONDITIONS WHICH MAY AFFECT THE PROPOSED WORK. NO CLAIM FOR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO FULFILL THIS CONDITION. START OF WORK WILL BE DEEMED EVIDENCE OF ACCEPTANCE OF, AND SATISFACTION WITH, EXISTING CONDITIONS.
- 1.3. THE DRAWINGS SHALL BE CONSIDERED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE INSTALLATION SHALL BE COMPLETE WITH ALL ACCESSORIES AND SUPPORTS REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION. THESE MECHANICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- 1.4. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES AND THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING SAFETY REQUIREMENTS TO ITS EMPLOYEES AND COMPLY WITH OCCUPATIONAL HEALTH AND SAFETY ACT.
- 1.5. ARRANGE, COORDINATE AND PAY ALL REQUIRED FEES AND PERMITS. SUBMIT DRAWINGS AND SPECIFICATIONS TO ALL AUTHORITIES AND OBTAIN APPROVAL BEFORE COMMENCING ANY WORK. PAY FOR FEES AND CHARGES LEVIED BY THE MUNICIPALITY, UTILITIES AND OTHER GOVERNING AUTHORITY FOR PERMITS, INSPECTIONS AND CERTIFICATES, AND WORK PERFORMED BY THE MUNICIPALITY OR UTILITIES IN CONNECTION WITH THE MECHANICAL WORK. ARRANGE AND COORDINATE SUCH WORK AND OBTAIN PERMITS. KEEP A COPY OF ALL SUCH PERMITS AND CERTIFICATES ON THE JOB SITE DURING THE PROJECT DURATION.
- 1.6. WORKMANSHIP AND MATERIALS SHALL MATCH OR EXCEED THAT OF THE EXISTING.
- 1.7. ALL WORK TO BE CONDUCTED DURING HOURS SPECIFIED BY THE PROJECT MANAGER. NO DISRUPTION TO BUILDING OPERATIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE OWNER. ALL CHANGES AND CONNECTIONS TO EXISTING SERVICES, REQUIRING THE SHUTDOWN OF THAT SERVICE SHALL BE DONE AT A TIME DESIGNATED BY THE PROJECT MANAGER. ALLOW FOR PREMIUM TIME NEEDED.
- 1.8. CAREFULLY REMOVE EQUIPMENT TO BE REUSED OR HANDED OVER TO THE OWNER. STORE EQUIPMENT FOR RE-INSTALLATION. RELOCATE ANY PIPING, DUCTWORK, OR EQUIPMENT INTERFERING WITH NEW CONSTRUCTION.
- 1.9. THE CONTRACTOR SHALL AT ALL TIMES KEEP PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL TO THE SATISFACTION OF THE PROJECT MANAGER. THE CLEANING OF THE AFFECTED AREA SHALL BE CONTINUOUS. PLACE DUST PROTECTION IN THE FORM OF COVER SHEETS OVER EQUIPMENT AND FURNITURE TO ENSURE NO DUST INFILTRATION.
- 1.10. MANUFACTURER'S INSTRUCTIONS REGARDING THE HANDLING, INSTALLATION AND TESTING OF EQUIPMENT SPECIFIED HEREIN SHALL BE CONSIDERED PART OF THIS SPECIFICATION.
- 1.11. SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLESHOOTING AND SERVICING OF ALL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO ACCEPTANCE.
- 1.12. MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR HOISTING OF MECHANICAL EQUIPMENT. COORDINATE HOISTING SCHEDULE WITH PROJECT MANAGER. ARRANGE AND PAY FOR ANY REQUIRED PERMITS.
- 1.13. INSPECT ALL EQUIPMENT UPON DELIVERY AND NOTIFY PROJECT ENGINEER OF ANY DAMAGE OR DEFICIENCIES.
- 1.14. SUBMIT ONE (1) COPY OF SHOP DRAWINGS AND PRODUCT DATA IN ELECTRONIC PDF FORMAT OF ALL SPECIFIED EQUIPMENT & SYSTEMS. HARD COPY SHOP DRAWINGS WILL NOT BE ACCEPTED. CERTIFY THAT SHOP DRAWINGS HAVE BEEN REVIEWED BY GENERAL CONTRACTOR PRIOR TO SUBMITTING TO CONSULTANT FOR REVIEW. REVIEWED ELECTRONIC SHOP DRAWINGS WILL BE RE-DISTRIBUTED AS PER PROJECT MANAGER'S INSTRUCTIONS.
- 1.15. ALL EQUIPMENT, PIPING, DUCTWORK AND WIRING SHALL BE RUN AT RIGHT ANGLES TO AND BE SUSPENDED FROM THE BUILDING STRUCTURE.
- 1.16. PROVIDE BLACK WITH WHITE WRITING LAMACOID PLATE ON ALL NEW EQUIPMENT. LABEL UNIT AS SHOWN ON DRAWINGS. LETTERING SIZE TO BE MINIMUM 25MM HIGH. MOUNT NEAR CONTROL SECTION OF THE UNIT.
- 1.17. PROVIDE CUTTING, PATCHING AND CORING OF ALL WALLS, CEILING AND OTHER SURFACES AS REQUIRED FOR MECHANICAL WORK. OBTAIN WRITTEN VERIFICATION OF LOCATIONS FROM THE ENGINEER PRIOR TO CUTTING. ALL ROOFING WORK FOR MECHANICAL EQUIPMENT TO BE UNDERTAKEN BY QUALIFIED ROOFING CONTRACTORS UNDER THIS SECTION.
- 1.18. INSTALL ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS WITH ADEQUATE ACCESS.
- 1.19. PIPING LAYOUT ILLUSTRATED ON DRAWINGS INDICATES GENERAL ROUTING OF PIPE WORK AND DOES NOT SHOW ALL FITTINGS AND OFFSETS REQUIRED FOR COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PIPING FITTINGS & OFFSETS REQUIRED FOR COORDINATED INSTALLATION WITH OTHER SYSTEMS (DUCTWORK, PIPING, CONDUITS, LIGHTS, ETC.).
- 1.20. CONTRACTOR SHALL BE RESPONSIBLE FOR DEACTIVATION, DRAINING, REFILLING AND REACTIVATING OF OPERATIONAL SYSTEMS. COORDINATE WITH OWNER AND ENSURE THAT NO UNDUE DISRUPTION OF BUILDING OPERATIONS OCCUR.
- 1.21. MAINTAIN A SET OF WHITE PRINTS MARKED UP TO "AS BUILT" CONDITION ON SITE, UPDATED ON AN ONGOING BASIS THROUGHOUT THE COURSE OF THE PROJECT. PURCHASE, FROM THE CONSULTANT, SET OF CADD FILES OF THE MECHANICAL CONTRACT DRAWINGS AND TRANSFER ALL INFORMATION ONTO THE CAD DRAWINGS. HAND OVER 2 SETS OF WHITE PRINTS AND CD WITH CADD FILES SHOWING THE "AS BUILT" CONDITION TO THE CONSULTANT FOR FINAL REVIEW PRIOR TO FINAL INSPECTIONS.
- 1.22. SUBMIT THREE (3) COPIES OF OPERATION AND MAINTENANCE MANUALS FOR ENGINEER'S APPROVAL.
- 1.23. WARRANTY PERIOD SHALL BE FOR TWELVE (12) MONTHS AFTER THE DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY ENGINEER.

2. INSULATION

- 2.1. ALL COMPONENTS OF INSULATION SYSTEM TO BE SUITABLE FOR PLENUM INSTALLATION, HAVING MAXIMUM FLAME SPREAD RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50 IN ACCORDANCE WITH CAN4-S102
- 2.2. INSULATE DOMESTIC COLD WATER PIPING WITH 1" FIBER GLASS INSULATION WITH FACTORY APPLIED VAPOUR BARRIER JACKED, MOLDED TO CONFORM TO PIPING K VALUE AT 24 C.
- 2.2. PROVIDE ISOLATING VALVES ON MAIN AND/OR BRANCH LINES AND AT ALL EQUIPMENT OR FIXTURES OR WHERE SHOWN. ALL VALVES SHALL BE SUITABLE FOR THE OPERATING PRESSURE OF THE SYSTEM.
- 2.3. ALL THE INDOOR SUPPLY DUCT WORK TO BE INSULATED WITH 25mm THICK FIBERGLASS INSULATION.
- 2.4. OUTDOOR & COMBUSTION AIR DUCT WORKS ARE TO BE INSULATED WITH 50mm OF INSULATION.
- 2.5. INSULATE EXHAUST DUCTS WITH 25mm INSULATION FOR 3000mm FROM OUTSIDE WALL.

3. PLUMBING

- 3.1. PROVIDE DIELECTRIC COUPLINGS/UNION UNIONS WHERE DISSIMILAR METALS ARE JOINED.
- 3.2. PROVIDE ISOLATING VALVES ON MAIN AND/OR BRANCH LINES AND AT ALL EQUIPMENT OR FIXTURES OR WHERE SHOWN. ALL VALVES SHALL BE SUITABLE FOR THE OPERATING PRESSURE OF THE SYSTEM IN WHICH THEY ARE INSTALLED. MAKE AND MODEL SHALL BE AS PER BASE BUILDING STANDARDS AND SPECIFICATIONS UNLESS NOTED OTHERWISE.
- 3.3. INSTALL ALL ABOVE GRADE PIPING TO ALLOW COMPLETE DRAINAGE.
- 3.4. DOMESTIC COLD WATER PIPING: COPPER TUBE, HARD DRAWN, TYPE "L" WITH WROUGHT COPPER FITTINGS USING LEAD FREE SOLDER AND PRESSURE TESTED TO PLUMBING CODE.
- 3.5. BALL VALVES NPS 2 AND UNDER, SCREWED, CLASS 150, BRONZE BODY, STAINLESS STEEL BALL, PTFE TEFLON ADJUSTABLE PACKING, BRASS GLAND AND PTFE TEFLON SEAT, STEEL LEVER HANDLE, CRANE OR APPROVED EQUAL.
- 3.6. HANGERS AND SUPPORTS SHALL BE OF MANUFACTURED TYPE AND ASSEMBLED AS PER MANUFACTURER'S INSTRUCTIONS. DESIGN HANGERS AND SUPPORTS TO OPERATE UNDER ALL OPERATING CONDITIONS. ALLOW FOR FREE EXPANSION AND CONTRACTION AND PREVENT THE TRANSMISSION OF EXCESSIVE STRESSES INTO PIPE WORK OR CONNECTED EQUIPMENT. PROVIDE FOR VERTICAL ADJUSTMENT AFTER INSTALLATION. DESIGN SHALL BE IN ACCORDANCE WITH ANSI B31.1 AND MSS-SP58. SUPPORT FROM TOP OR BOTTOM OF STRUCTURAL MEMBERS. WHERE STRUCTURAL BEARING DOES NOT EXIST OR INSERTS ARE NOT IN SUITABLE LOCATIONS, PROVIDE SUPPLEMENTARY STRUCTURAL STEEL MEMBERS. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN PIPE DIRECTION AND FOR CONCENTRATION OF LOADS DUE TO WEIGHT OF VALVES, STRAINERS, ETC. HANGER SPACING: COPPER PIPING UP TO NPS 1/2 EVERY 5 FT, STEEL PIPING EVERY 10'. HANGERS SHALL BE WITHIN 12" OF EACH ELBOW.
- 3.7. PROVIDE PIPE IDENTIFICATION TO MATCH EXISTING BASE BUILDING STANDARD; IDENTIFY PIPE ON EITHER SIDE OF WALL / SLAB / ROOF PENETRATIONS, AND AT NOT LESS THAN 30' INTERVALS THROUGH LARGE ROOMS.
- 3.8. SHUT-OFF VALVE: BALL TYPE FOR NPS 2 ID AND SMALLER. BUTTERFLY TYPE FOR 65 MM (2-1/2") AND LARGER.
- 3.9. PLUMBING FIXTURES TO BE AS DWG M00-02.

4. HEATING, VENTILATION, AND COOLING

- 4.1. GALVANIZED STEEL DUCT LOCK FORMING QUALITY: TO ASTM A 525M, Z90 ZINC COATING. THICKNESS, FABRICATION, JOINTS AND REINFORCEMENT: TO ASHRAE AND SMACNA. ALL TRANSVERSE JOINTS AND CONNECTIONS SHALL BE SEALED WITH WATER BASED DUCT SEALANT AND TAPE.
- 4.2. HANGERS: ALL DUCTWORK AND HANGERS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST ASHRAE AND SMACNA RECOMMENDATIONS AND STANDARDS.
- 4.3. IDENTIFICATION DUCTWORK SYSTEMS STENCILED LETTERS 50 MM (2") HIGH. DIRECTIONAL ARROWS 150 MM (6") LONG X 50 MM (2") HIGH. COLORS: BLACK, OR CO-ORDINATED WITH BASE COLOR TO ENSURE STRONG CONTRAST.

5. TESTING, ADJUSTING AND BALANCING

- 5.1. TEST, ADJUST AND BALANCE NEW DUCTWORK.
- 5.2. REPORT: PROVIDE REPORT INDICATING AIR VOLUMES AND LOCATION OF TESTING ON A COPY OF CONSTRUCTION DRAWINGS. SUBMIT 3 BOUND COPIES OF TAB REPORTS, COMPLETE WITH INDEX TABS FOR VERIFICATION AND APPROVAL OF ENGINEER.

6. FIRE PROTECTION

- 6.1. MULTI PURPOSE ABC TYPE DRY CHEMICAL, PRESSURIZED WITH HOSE AND SHUT OFF NOZZLE OR INTEGRAL SHUTOFF NOZZLE AND MOUNTING BRACKET. 10 LB CAPACITY.

7. CONTROLS

- 7.1. PROVIDE ALL CONTROLS AND WIRING INCLUDING APPURTENANCES NECESSARY FOR COMPLETE AND OPERATING SYSTEM.

8. LIST OF APPROVED MANUFACTURERS

- 8.1. AIR TERMINALS - GRILLES, REGISTERS, DIFFUSERS: E.H PRICE, TITUS, NAILOR.
- 8.2. ACCESS DOORS: MAXAM, MILCOR, MIFAB, ACUDOR.
- 8.3. AIR VENTS: HOFFMAN, MAID-O-MIST, TACO.
- 8.4. BALANCING AGENTS: KD ENGINEERING, MDT SYSTEMS, WESTERN MECHANICAL SYSTEMS
- 8.5. DRAINS-FLOOR, CLEANOUTS, PRIMERS: ZURN, ANCON, PPP, J.R-SMITH.
- 8.6. FANS: BROAN, GREENHECK, ACME, NUTONE, COOK.
- 8.7. PLUMBING FIXTURES: AMERICAN STANDARDS, KOHLER, CRANE.
- 8.8. WATER HEATERS: A.O.SMITH, STATE, RUUD-RHEEM, RINNAL.
- 8.9. FIRE EXTINGUISHERS: FLAG, NFE, WILSON & COUSINS.
- 8.10. PRESSURE WASHERS: HOTSY.
- 8.11. AIR HANDLING UNIT: ENGINEERED AIR, SILENT AIR, HAAKON.
- 8.12. ELECTRIC HEATERS: OULLET, CHROMALOX, STELPRO, QMARK.
- 8.13. GAS FIRED HEATER: MODINE, REZNOR.
- 8.14. SEWAGE PUMP: MYERS, BARNES, ZOELLER.

DATE	ISSUED FOR	REV
2015-01-21	DESIGN PROGRESS	1
2015-02-24	CLIENT REVIEW	2
2015-03-31	FINAL REVIEW	3
2015-05-08	TENDER	4

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Project Component

Keyplan

North Arrow

Detail Symbol

Symbol not to scale

Consultants

Civil:

Landscape:

Architectural:

Structural:

Mechanical:

Electrical:

Seals(s)

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Chris P. King, A.P.E.C.A.

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A. TODELIA	N. ALY
Project Leader	Checked
D. HIDER	M. ALVIRI

Client

GOVERNMENT OF CANADA

Project

QUONSET FITUP

Drawing Title

MECHANICAL SPECIFICATIONS

Check Scale (may be photo reduced)

0 1 inch 0 10mm

Project No. **NCCA-140204**

Drawing No. **M00-01**

PLOT DATE: May 8, 2015 5:46 PM FULL PATH AND FILENAME: C:\D:\TMSDATA\NCCA\140204\300-DEIV\99 SHEETS\M00-02.DWG PLOTSTYLE TABLE: Ingentium.ctb

EXHAUST FAN SCHEDULE

TAG	SERVICE	MANUF. AND MODEL	AIR FLOW (L/S)	E.S.P. (Pa)	R.P.M.	V/C/P	FLA	HP	W	NOTES
EF-1	WASHROOM, JANITOR ROOM EXHAUST	GREENHECK - CSP-A250	102	62	1000	115/60/1	-	-	83	C/W BACKDRAFT DAMPER
EF-2	CAR WASH EXHAUST	GREENHECK -CW-095-VG	439	75	1722	115/60/1	3.4	1/6	-	C/W ECM MOTOR & REMOTE DIAL SPEED CONTROLLER

AIR HANDLING UNIT SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	NET COOLING CAPACITY (KW)	SENSIBLE CAPACITY (KW)	HEATING INPUT (KW)	HEATING OUTPUT (KW)	AIR FLOW (L/S)	E.S.P (PA)	V/HZ/P	MCA (AMPS)	NOTES
AHU-1	OUTDOOR SOUTH SIDE	ENGINEERED AIR	FWE92/DJS60	33.66	33.66	175.8	140.6	1652	373.7	208/3/60	61.1	C/W DISCHARGE AIR & ROOM RE-SET

HEATER SCHEDULE

TAG	SERVICE	MANUFACTURER	TYPE	MODEL	HEATING CAPACITY (KW)	RPM	HP	VOLTAGE	ELECTRICAL POWER (KW)	NOTES
UH-1	WASHROOM	OUELLET	OFM ELECTRIC BASEBOARD HEATER	OFM2008	2	-	-	208/1	2	
UH-2	MECHANICAL ROOM	OUELLET	OAS SUSPENDED UNIT HEATER	OASU05008	5	1550	1/30	208/1	5	

GAS UNIT HEATER SCHEDULE

TAG	SERVICE	MANUFACTURER	TYPE	MODEL	HEAT INPUT (KW)	HEAT OUTPUT (KW)	AIR FLOW (L/S)	VOLTAGE	ELEC MOTOR (HP)	ELEC MOTOR (RPM)	NOTES
UH-3	CAR WASH	MODINE	GAS FIRED UNIT HEATER	HDS 30SS0111FBAN	7.5	6	238	115/60/1	1/15	1550	DIRECT VENT, SEALED COMBUSTION

FORCED FLOW UNIT HEATER SCHEDULE

TAG	SERVICE	MANUFACTURER	TYPE	MODEL	NET CAPACITY (KW)	CFM	VOLTAGE	NOTES
CUH-1	COORIDOR & SCENT TRAINING AREA	OUELLET	OCA FORCED-AIR CABINET UNIT HEATER	OCAU05038	5	250	208/3	C/W BUILT IN T-STAT
CUH-2	COORIDOR & SCENT TRAINING AREA	OUELLET	OCA FORCED-AIR CABINET UNIT HEATER	OCAU05038	5	250	208/3	C/W BUILT IN T-STAT

DOMESTIC WATER HEATER SCHEDULE

TAG	MANUF. AND MODEL	SOURCE	FLOW RATE (L/S)	HEAT INPUT (KW)	V/HZ/P	NOTES
DHW-1	RINNAI RL94i(VC2837FFUD-US)	GAS	0.606	58	120 / 60	INSTANTANEOUS WATER HEATER

HIGH PRESSURE WASHER SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	MODEL	FLOW (L/S)	HEATING CAPACITY (KW)	PRESSURE (KPA)	ELECTRICAL POWER (HP)	AMP	MOTOR (RPM)	V/HZ/P	NOTES
PW-1	MECHANICAL ROOM	CAR WASH & SCENT TRAINING AREA	HOTSY	942N	HH406R.1	0.303	107	13789.5	5	18	1725	208/60/3	C/W HYDROMETER, DETERGENT DRUM, MACHINE STAND, DRAFT DIVERTER, MOTORIZED DAMPER, GUN WAND, HOSE & HOSE REEL.

PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE	COLD WATER (mm)	HOT WATER (mm)	SANITARY (mm)	MANUFACTURER	SPECIFICATIONS
WC-1	10	-	80	AMERICAN STANDARD	WHITE VITREOUS CHINA FLOOR MOUNTED FLOOR OUTLET - CADET FLUSHING SYSTEM WITH POWER WASH RIM SIPHON FLUSHING SYSTEM - TWO PIECES SPEED CONNECT TANK ASSEMBLY - LINED TANK AS CADET PRO ELONGATED MODEL # 215CA.054, HEAVY DUTY FOR ELONGATED BOWL OPEN FRONT WHITE SOLID PLASTIC LESS COVER AS CENTOCO MODEL # 500STSCC.001
LAV-1	10	10	32	AMERICAN STANDARD	WALL HUNG BASIN - VITREOUS CHINA - FRONT OVERFLOW - SELF DRAINING FAUCET LEDGE - CONTOURED BACK AND SIDE SPLASH SHIELD AS LUCERNE 0355.012, CHICAGO FAUCET SINGLE LEVER - CHROME PLATED AS 420-E2805-ABCP.
JAN-1	10	10	40	AMERICAN STANDARD	FLOOR MOUNTED, 2'x2' SERVICE MOP SINK TERRAZZO AS SP-900 CHICAGO FAUCETS WALL MOUNTED TWO HANDEL UTILITY MOP MANUAL FAUCET AS 897-RCF.
SH-1	15	15	40	AMERICAN STANDARD	PRECAST TERRAZZO, TRANSFER TYPE SHOWER FLOOR - 25mm GALVANIZED-BONDERIZED STEEL TILING FLANGE ON THREE SIDES - INTECRAL CAST BRASS FLOOR DRAIN 50mm WITH S.S. STRAINER - SHOWER DRAIN GASEKET CONNECTION AS PARIAN WDA-3660, CHICAGO FAUCET AS SH-PB1-00-000.

DRAINS SCHEDULE

TAG	MANUFACTURER	MODEL	COATING	SIZE		SERVICE	NOTES
				AREA (MM)	PIPE DIAMETER (MM)		
FD-1	WATTS DRAINAGE	FD-200-C-A5-1	EPOXY COATED CAST IRON	127Ø	100Ø	FLOOR DRAIN	MECHANICAL ROOM
FD-2	WATTS DRAINAGE	FD-200-FC	EPOXY COATED CAST IRON	150Ø	100Ø	FLOOR DRAIN	FINISHED AREA

DRAWING LIST

DRAWING NO.	DRAWING NAME
M00-01	MECHANICAL SPECIFICATIONS
M00-02	MECHANICAL LEGENDS AND SCHEDULES
M00-03	MECHANICAL SCHEDULES
M01-01	MECHANICAL DETAILS
M20-01	MECHANICAL PLUMBING LAYOUT
M50-01	MECHANICAL VENTILATION LAYOUT

MECHANICAL DRAWING LEGEND

DESIGNATION	SERVICE	DESIGNATION	SERVICE
	DOMESTIC COLD WATER		PUMP
	DOMESTIC HOT WATER		FAN
	DOMESTIC HOT WATER RETURN		FLOOR DRAIN WITH HINGED GATE
	VENT		FIRE EXTINGUISHER
	SANITARY ABOVE GRADE		PENDANT SPRINKLER
	NATURAL GAS		CONCEALED SPRINKLER
	CLEANOUT TURNED UP THROUGH FLOOR		GAS METER
	CLEANOUT ABOVE GRADE OR FLOOR		WATER METER
	BALANCING VALVE		THERMOSTAT
	PRESSURE REDUCING VALVE		FIRE DAMPER
	BALL VALVE		BALANCING DAMPER
	GATE VALVE		DIFFUSER/GRILLE TYPE SIZE AIRFLOW
	HOSE BIB		UNIT HEATER HORIZONTAL
	HOSE REEL		PRESSURE WASHER

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Project Component

Keyplan

North Arrow

Detail Symbol

UNIT HEATER HORIZONTAL

Symbol not to scale

Consultants

Civil:

Landscape:

Architectural:

Structural:

Mechanical:

Electrical:

Seal(s)

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Project Manager	Drawn
A. TODELIA	N. ALY
Project Leader	Checked
D. HIDER	M. ALVIRI
Client	
GOVERNMENT OF CANADA	
Project	
QUONSET FITUP	
Drawing Title	
MECHANICAL LEGENDS SCHEDULES	
Check Scale (may be photo reduced)	
0 1 inch 0 10mm	
Project No.	
NCCA-140204	
Drawing No.	
M00-02	

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May 8th, 2015

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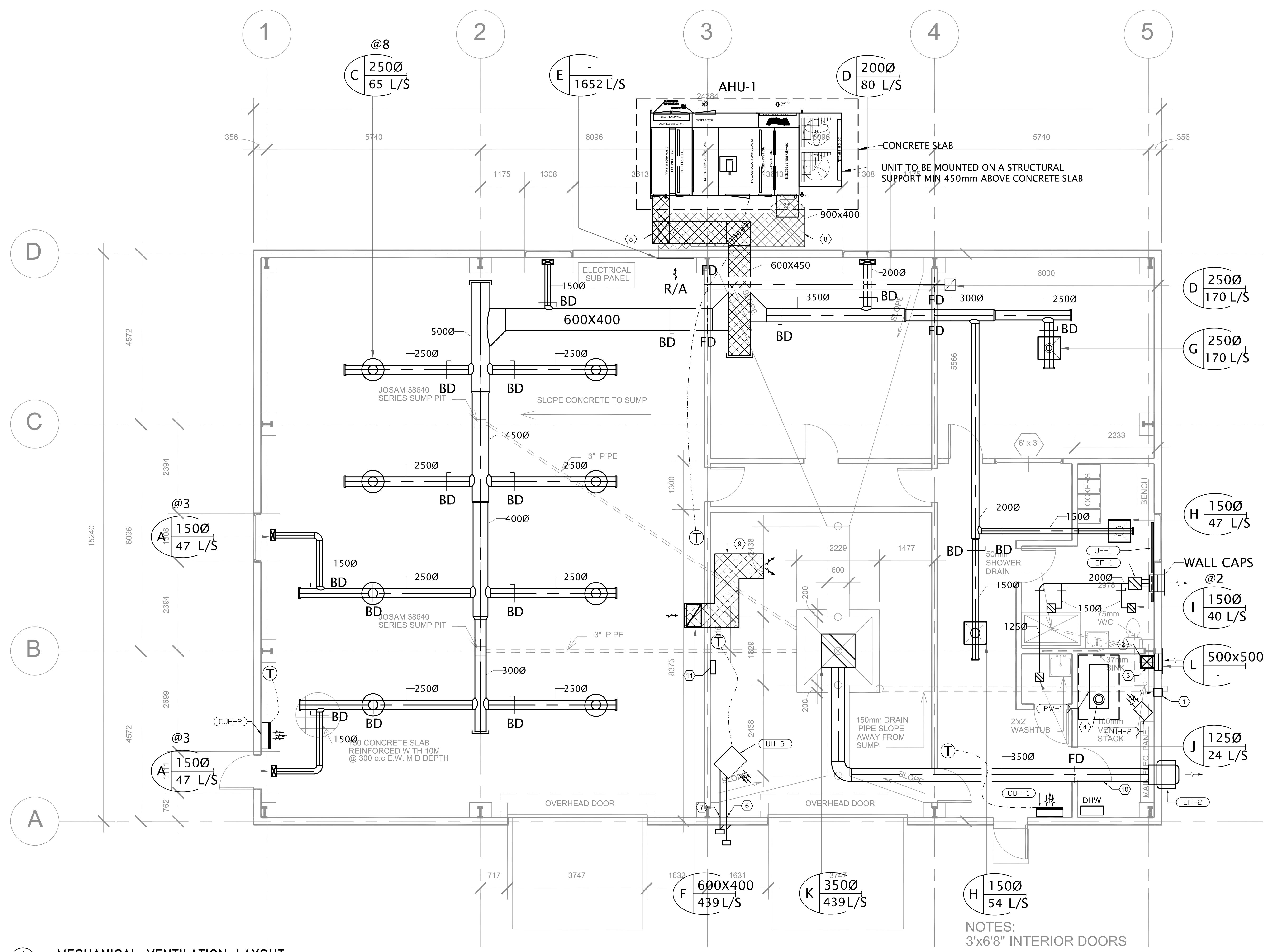
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Project
QUONSET FITUP

Drawing Title
MECHANICAL VENTILATION LAYOUT

Check Scale (may be photo reduced)
0 1 inch 0 10mm

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Drawing No.
M50-01



1 MECHANICAL VENTILATION LAYOUT
M50-01 1:50

- GENERAL NOTES:
- SUPPLY AND INSTALL ALL FIRE STOPPING MATERIAL AND ENSURE THAT ALL FIRE PENETRATIONS ARE PROTECTED AS REQUIRED BY ALBERTA BUILDING CODE AND THE LOCAL AUTHORITIES.
 - PROVIDE ACCESS PANELS FOR ALL BALANCING DAMPERS AT DRYWALL CEILING AS REQUIRED. COORDINATE WITH GENERAL CONTRACTOR.

- DRAWING KEY NOTES:
- 200X100mm RELIEF AIR OPENING C/W BIRD SCREEN.
 - 450X450 COLD AIR TRAP.
 - 300X300 COMBUSTION AIR DUCT TO 300mm ABOVE FLOOR LEVEL C/W COLD TRAP TO 450mm AFF.
 - 200mm VENT UP THROUGH THE ROOF (TYPE B VENT).
 - 500X500mm COMBUSTION AIR LOUVER.
 - EXHAUST VENT THROUGH WALL.
 - COMBUSTION AIR INTAKE THROUGH WALL.
 - STEEL SUPPORT BY STRUCTURE.
 - 25mm ACOUSTIC INSULATION.

- EXHAUST DUCT TO BE INSULATED FOR 3000mm FROM OUTSIDE WALL.
- SPEED CONTROLLER FOR EXHAUST FAN (EF-2).

NOTES:
3'x6'8" INTERIOR DOORS

PLOT DATE: May 8, 2015 5:51 PM FULL PATH AND FILENAME: C:\D:\TIMSDATA\NCCA\140204\500-DEIV\99 SHEETS\M50-01.DWG PLOTSTYLE TABLE: Ingenium.ctb

PLOT DATE: April 23, 2015 TIME: 3:20 PM FULL PATH AND FILENAME: C:\D:\TIMSDATA\NCCA\140204\500-DELIV\E00-00.DWG PLOT STYLE TABLE:

LEGEND OF SYMBOLS				OCT 2014			
LIGHTING		MECHANICAL		COMMUNICATION SYSTEMS	FIRE ALARM		
	RECESSED LED / INCANDESCENT / COMPACT FLUORESCENT LUMINAIRE		MOTOR		VOICE OUTLET		SMOKE ALARM
	SURFACE LED / INCANDESCENT / COMPACT FLUORESCENT LUMINAIRE		MOTOR C/W DISCONNECT SWITCH		DATA OUTLET		SMOKE ALARM/CARBON MONOXIDE ALARM
	WALL LED / INCANDESCENT / COMPACT FLUORESCENT LUMINAIRE		MOTOR C/W MANUAL STARTER		COMBINATION VOICE/DATA OUTLET		SMOKE ALARM/CARBON MONOXIDE ALARM C/W STROBE
	LED / INCANDESCENT / COMPACT FLUORESCENT WALL WASHER		UNFUSED DISCONNECT SWITCH		TELEVISION OUTLET		SMOKE DETECTOR
	RECESSED LED / INCANDESCENT / COMPACT FLUORESCENT LUMINAIRE ON EMERGENCY POWER		FUSED DISCONNECT SWITCH		COMBINATION VOICE/TELEVISION OUTLET		SMOKE DETECTOR IN CEILING PLENUM
	SURFACE LED / INCANDESCENT / COMPACT FLUORESCENT LUMINAIRE ON EMERGENCY POWER		COMBINATION MAGNETIC STARTER/DISCONNECT SWITCH		FLOOR MOUNTED VOICE OUTLET		SMOKE DETECTOR UNDER FLOOR
	WALL LED / INCANDESCENT / COMPACT FLUORESCENT LUMINAIRE ON EMERGENCY POWER		MAGNETIC STARTER		FLOOR MOUNTED DATA OUTLET		RATE OF RISE HEAT DETECTOR
	RECESSED FLUORESCENT LUMINAIRE		FAN SPEED CONTROLLER		FLOOR MOUNTED COMBINATION VOICE/DATA OUTLET		FIXED HIGH TEMPERATURE 200 F HEAT DETECTOR (88 C)
	SURFACE FLUORESCENT LUMINAIRE		THERMOSTAT		FLOOR MOUNTED TELEVISION OUTLET		FIXED HIGH TEMPERATURE 135 F HEAT DETECTOR (58 C)
	WALL FLUORESCENT LUMINAIRE		SENSOR		CEILING MOUNTED DATA OUTLET		DUCT SMOKE DETECTOR - 'SA' DENOTES SUPPLY AIR, 'RA' DENOTES RETURN AIR
	WALL FLUORESCENT LUMINAIRE ON EMERGENCY POWER		MOTOR IDENTIFICATION TAG (REFER TO MECHANICAL SCHEDULE)		CEILING MOUNTED TELEVISION OUTLET		DUCT SMOKE DETECTOR C/W SHUTDOWN RELAY
	FLUORESCENT STRIP LUMINAIRE		BASEBOARD HEATER		MICROPHONE OUTLET		FIRE ALARM PULL STATION
	FLUORESCENT STRIP LUMINAIRE				PA SPEAKER - CEILING MOUNTED		SPRINKLER FLOW SWITCH
	RECESSED FLUORESCENT LUMINAIRE ON EMERGENCY POWER	POWER			PA SPEAKER - WALL MOUNTED		SPRINKLER TAMPER SWITCH
	SURFACE FLUORESCENT LUMINAIRE ON EMERGENCY POWER		SINGLE/SPECIAL PURPOSE RECEPTACLE		VOLUME CONTROLLER		SPRINKLER PRESSURE SWITCH
	TRACK LIGHTING C/W LIGHTING HEADS AS SHOWN		DUPLEX RECEPTACLE		CHIME		END OF LINE RESISTOR
	POLE MOUNTED LUMINAIRE		ISOLATED GROUND RECEPTACLE		CLOCK - CEILING MOUNTED		FIRE ALARM BELL
	LIGHTING BOLLARD		GROUND FAULT RECEPTACLE		CLOCK - WALL MOUNTED		FIRE ALARM COMBINATION BELL AND STROBE
	LIGHTING LUMINAIRE TYPE TAG		SPLIT/SWITCHED CIRCUIT RECEPTACLE		PAC-POLE		FIRE ALARM HORN
	EXIT LIGHT - CEILING (C/W ARROWS AS INDICATED)		20A T-SLOT RECEPTACLE		WATER DETECTOR		FIRE ALARM COMBINATION HORN AND STROBE
	EXIT LIGHT - WALL (C/W ARROWS AS INDICATED)		FOURPLEX RECEPTACLE		GROUND BAR		FIRE ALARM MINI HORN/STROBE WITH SILENCE BUTTON
	EMERGENCY POWER BATTERY PACK		ISOLATED GROUND FOURPLEX RECEPTACLE		BACKBOARD		FIRE ALARM MINI HORN WITH SILENCE BUTTON
	EMERGENCY POWER BATTERY PACK C/W LIGHTING HEADS		COMPUTER DUPLEX RECEPTACLE (FED W/ DEDICATED NEUTRAL)				FIRE ALARM STROBE
	EMERGENCY POWER BATTERY PACK C/W R. HEADS & EXIT LIGHT		COMPUTER FOURPLEX RECEPTACLE (FED W/ DEDICATED NEUTRAL)	SECURITY SYSTEMS			FIRE ALARM MINI SPEAKER WITH SILENCE BUTTON
	SINGLE REMOTE EMERGENCY LIGHTING HEAD - CEILING MOUNT		FLOOR MOUNTED RECEPTACLE		SECURITY HORN		FIRE ALARM SPEAKER - CEILING MOUNTED
	DOUBLE REMOTE EMERGENCY LIGHTING HEAD - CEILING MOUNT		FLOOR MOUNTED ISOLATED GROUND RECEPTACLE		PUSH BUTTON		FIRE ALARM COMBINATION SPEAKER/STROBE - CEILING MOUNTED
	SINGLE REMOTE EMERGENCY LIGHTING HEAD - WALL MOUNT		FLOOR MOUNTED FOURPLEX ISOLATED GROUND RECEPTACLE		MAGNETIC DOOR HOLD OPEN		FIRE ALARM SPEAKER - WALL MOUNTED
	DOUBLE REMOTE EMERGENCY LIGHTING HEAD - WALL MOUNT		FLOOR MOUNTED COMPUTER DUPLEX RECEPTACLE W/DEDICATED NEUTRAL		MAGNETIC LOCK		FIRE ALARM COMBINATION SPEAKER/STROBE - WALL MOUNTED
	SWITCH - SINGLE, TWO, AND THREE GANG		CEILING MOUNTED SINGLE/SPECIAL PURPOSE RECEPTACLE		ELECTRIC STRIKE		FIRE PHONE
	2 POLE SWITCH		CEILING MOUNTED DUPLEX RECEPTACLE		DOOR POSITION SWITCH		ISOLATION MODULE
	SWITCH - 3 WAY		CEILING MOUNTED JUNCTION/SLAB BOX		REQUEST TO EXIT SENSOR		SUITE AUDIBLE ISOLATOR
	SWITCH - LOW VOLTAGE		FLOOR MOUNTED JUNCTION/SLAB BOX		SECURITY MOTION SENSOR		CONTROL MODULE
	SWITCH - KEY SWITCH		WALL MOUNTED JUNCTION BOX		CARD READER		MONITORING MODULE
	SWITCH - MANUAL STARTER		ELECTRICAL PANELBOARD - SURFACE MOUNTED		2-WAY VOICE/PANIC	GENERAL	
	SWITCH - DIMMER SWITCH		ELECTRICAL PANELBOARD - RECESSED		INTERCOM		CONDUIT CONCEALED IN WALL OR CEILING
	SWITCH - OCCUPANCY SENSOR SWITCH		CONTACTOR		SECURITY STROBE		CONDUIT CONCEALED IN SLAB OR RUN UNDERGROUND
	SWITCH C/W PILOT LIGHT - SINGLE GANG		CAR PLUG POST		CCTV CAMERA		CONDUIT UP
	SWITCH - TIMER SWITCH		TIME CLOCK		GLASS BREAKAGE SENSOR		CONDUIT DOWN
	PHOTO ELECTRIC CELL		SINGLE PHASE DIRECT CONNECTION		KEYPAD		CONDUIT STUB
	OCCUPANCY SENSOR - CEILING MOUNTED		THREE PHASE DIRECT CONNECTION		INTERCOM		CONDUIT CONTINUATION
	DAYLIGHT HARVESTING LIGHT SENSOR		DROP CORD		RELAY MODULE		WP DENOTES WEATHERPROOF DEVICE
			VFD CONTROL				NL DENOTES UNSWITCHED LUMINAIRE (NIGHT LIGHT)
							R DENOTES DEVICE TO REMOVE OR RELOCATE
							RL DENOTES RELOCATED DEVICE
							• DENOTES FURNITURE MOUNTED DEVICE
							E DENOTES EXISTING TO REMAIN

LIST OF DRAWINGS	
E00-00	ELECTRICAL COVER SHEET
E00-01	ELECTRICAL SITE PLAN
E01-00	LIGHTING LAYOUT
E02-00	POWER & SYSTEMS LAYOUT
E03-00	ELECTRICAL DETAILS
E04-00	PANEL SCHEDULES & SINGLE LINE

DATE	ISSUED FOR	REV
02-26-15	ISSUED FOR 30% PROGRESS	0
03-31-15	ISSUED FOR FINAL REVIEW	1
04-22-15	ISSUED FOR TENDER	2

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Keyplan

North Arrow

Detail Symbol

Symbol not to scale

Consultants	
Civil:	
Landscape:	
Architectural:	
Structural:	
Mechanical:	NORR
Electrical:	NORR

Seal(s)

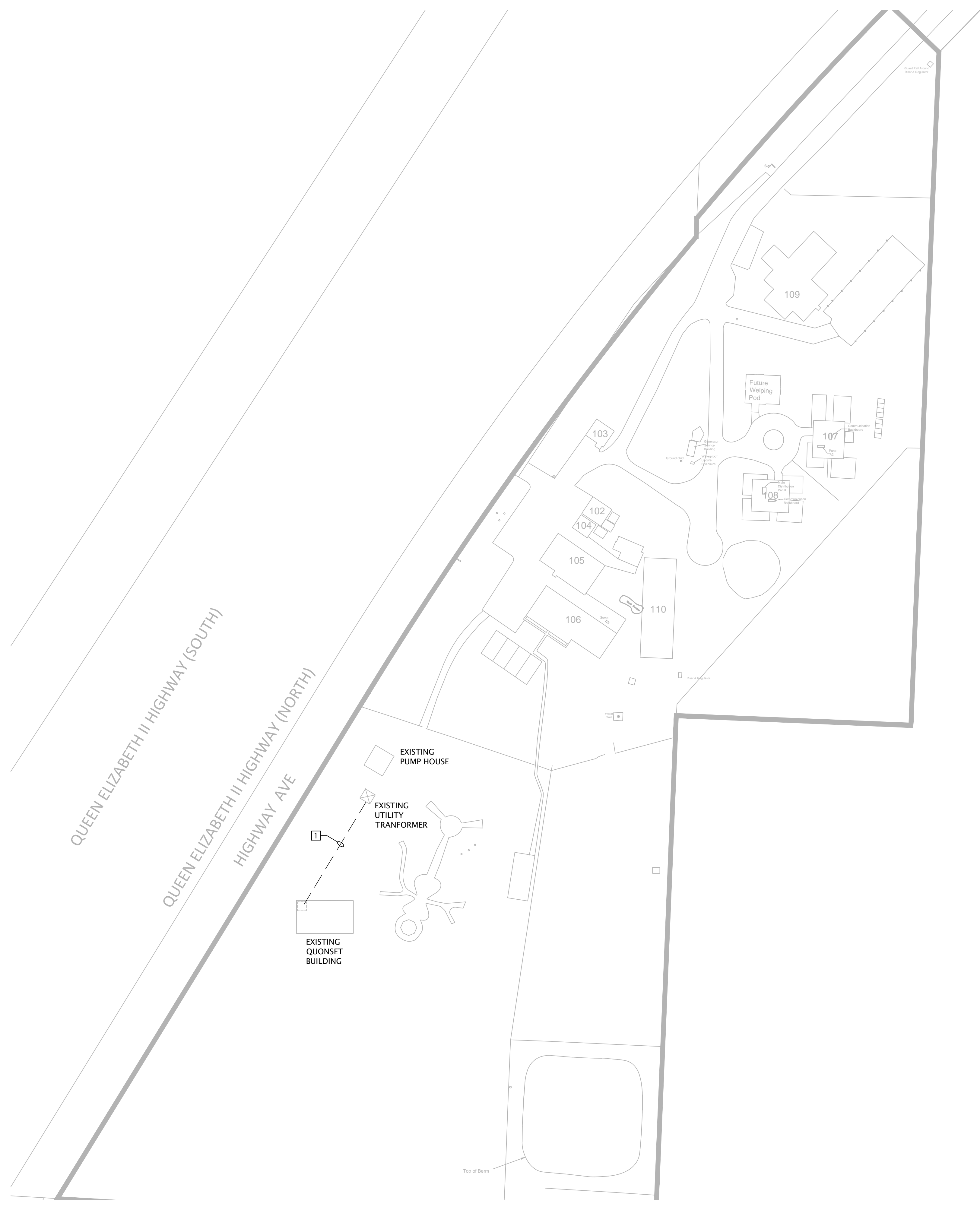
PP-11944
April 24, 2015

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Aldair Todellia, P.Eng., P.R.C.
Clive P.H., P.Eng., A.R.C.A.

Project Manager A.TODELLIA	Drawn R.ALLEN
Project Leader D.HIDER	Checked D.HIDER
Client GOVERNMENT OF CANADA	
Project QUONSET FITUP Innisfail, AB	
Drawing Title ELECTRICAL COVER SHEET	
Check Scale (may be photo reduced) 0 1 inch 0 10mm	
Project No.	NCCA-14-0204
Drawing No.	E00-00

PLOT DATE: April 23, 2015 TIME: 3:21 PM FULL PATH AND FILENAME: C:\AD\TIMSDATA\NCCA\140204\500-DELIV\E00-01.DWG PLOTSYLE TABLE:



GENERAL NOTES:
 A. LOCATIONS FOR EXISTING QUONSET BUILDING AND UTILITY TRANSFORMER ARE APPROXIMATE. ELECTRICAL CONTRACTOR TO VERIFY LENGTH OF CONDUIT AND CABLING PRIOR TO BID.

REFERRAL NOTES:
 1. CONDUIT AND CABLING FROM EXISTING TRANSFORMER TO EXISTING QUONSET BUILDING. REFER TO SINGLE LINE FOR DETAILS.

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 Architectural:
 Structural: NORR
 Mechanical: NORR
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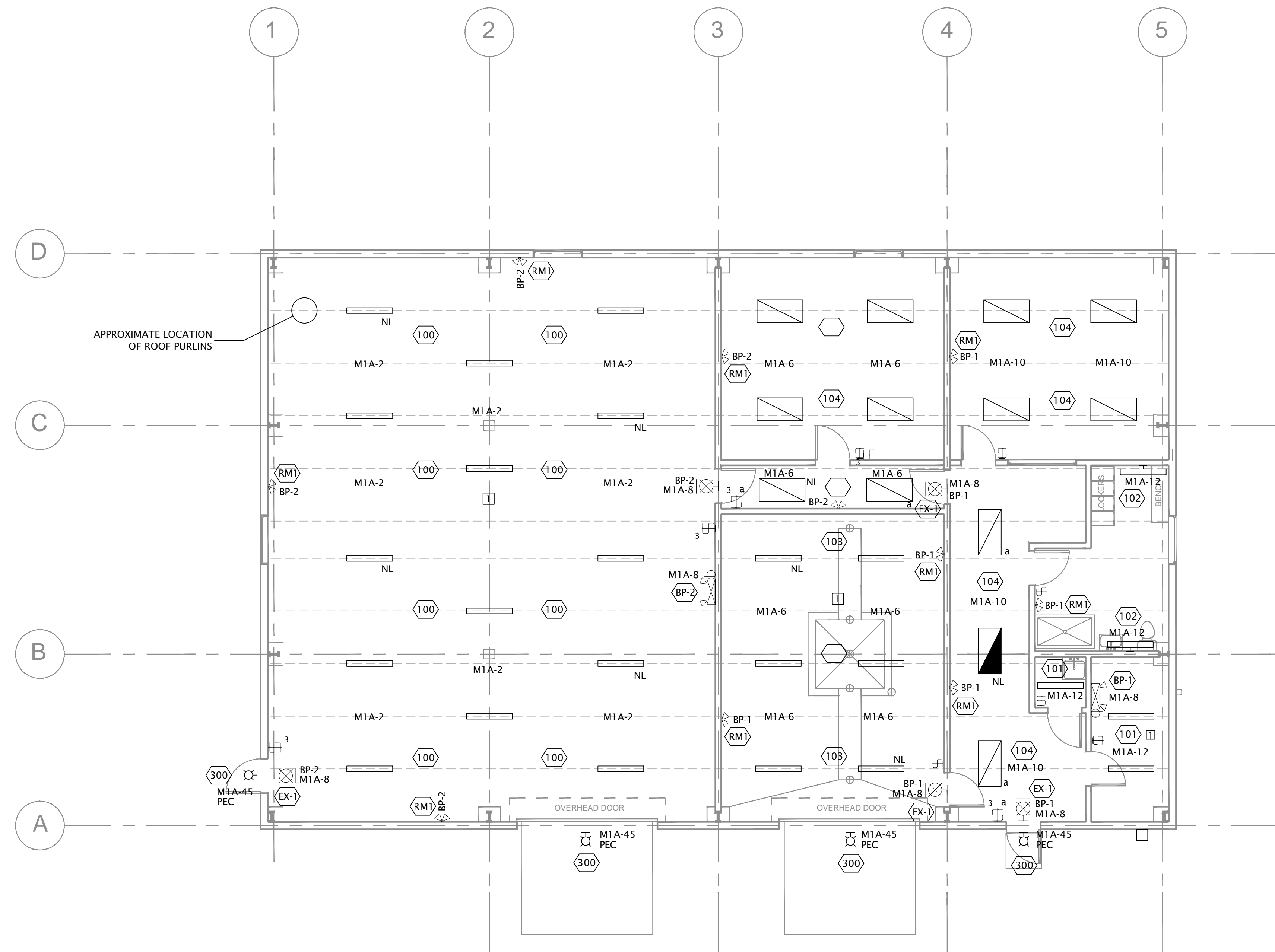
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 Chris Pui, P.Eng., ARECA

Project Manager A.TODELLIA	Drawn R.ALLEN
Project Leader D.HIDER	Checked D.HIDER
Client GOVERNMENT OF CANADA	
Project QUONSET FITUP Innisfail, AB	
Drawing Title ELECTRICAL SITE PLAN	
Check Scale (may be photo reduced) 0 1 inch 0 10mm	
Project No.	NCCA-14-0204
Drawing No.	E00-01

SITE PLAN
 N.T.S.

PLOT DATE: April 23, 2015 TIME: 3:21 PM FULL PATH AND FILENAME: C:\D:\TIMSDATA\NCCA\140204\500-DELIVERED\1-00.DWG PLOTSYLE TABLE:



LIGHTING PLAN
1:75

GENERAL NOTES:
 A. REFER TO LUMINAIRE SCHEDULE ON DRAWING E04-00.
 B. REFER TO PANEL SCHEDULE ON DRAWING E04-00.

REFERRAL NOTES:
 1. LUMINAIRES LOCATED IN THE SCENT TRAINING AREA, CAR WASH AND MECHANICAL ROOM TO BE SUSPENDED FROM STRUCTURAL BEAMS AT 3350mm A.F.F.

DATE	ISSUED FOR	REV
02-26-15	ISSUED FOR 30% PROGRESS	0
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04-22-15	ISSUED FOR TENDER	2

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Keyplan

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 Electrical: NORR

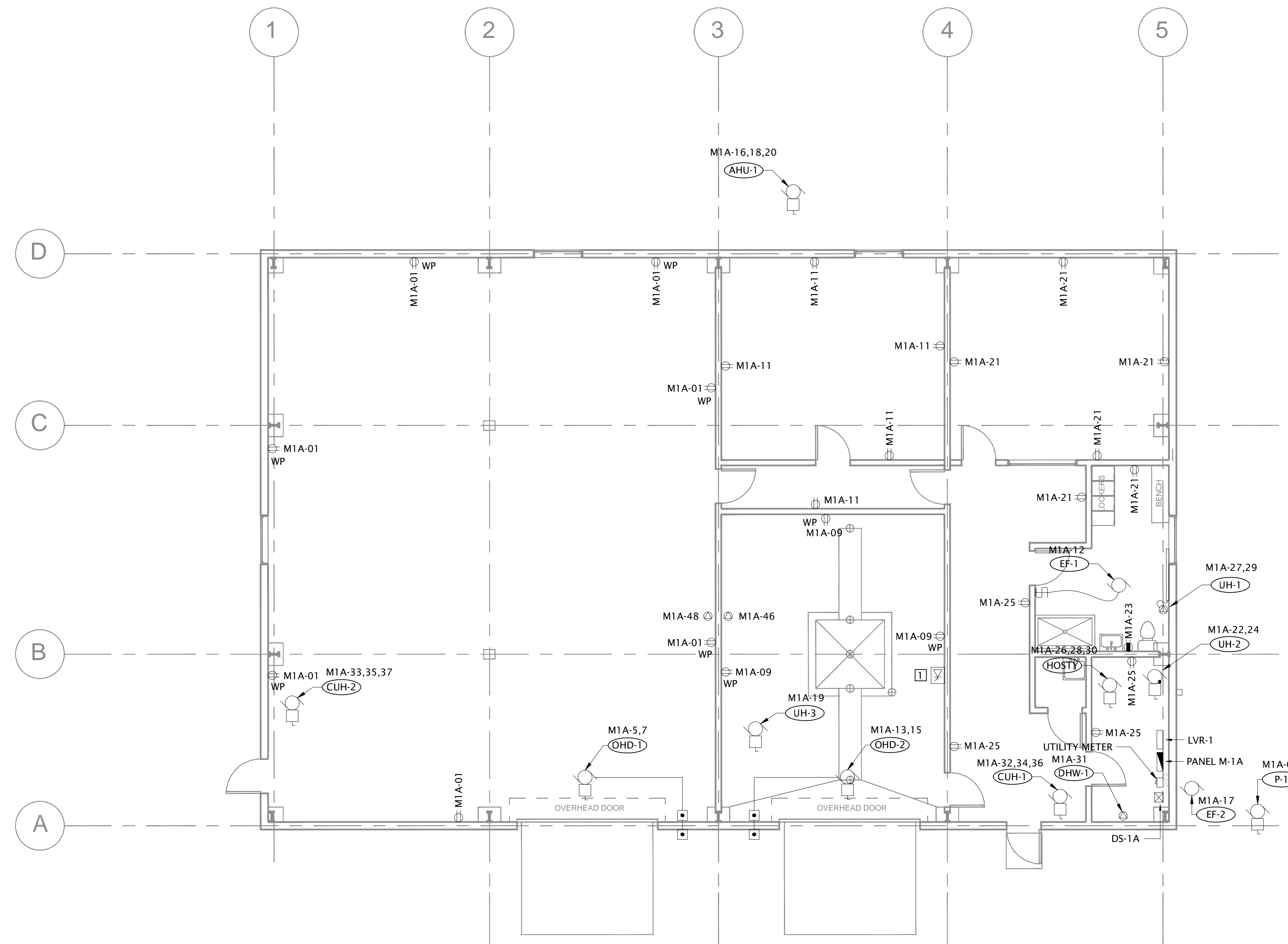
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Project Manager A.TODELIA	Drawn R.ALLEN
Project Leader D.HIDER	Checked D.HIDER
Client GOVERNMENT OF CANADA	
Project QUONSET FITUP Innisfail, AB	
Drawing Title LIGHTING LAYOUT	
Check Scale (may be photo reduced) 0 1inch 0 10mm	
Project No.	NCCA-14-0204
Drawing No.	E01-00

PLOT DATE: April 23, 2015 TIME: 3:21 PM FULL PATH AND FILENAME: C:\D:\TIMSDATA\NCCA\140204\500-DELIV\E02-00.DWG PLOTSYLE TABLE:



GENERAL NOTES:
 A. REFER TO PANEL SCHEDULE ON DRAWING E04-00.

REFERRAL NOTES:
 [1] VFD CONTROL FOR EXHAUST FAN EF-2.

DATE	ISSUED FOR	REV
02-26-15	ISSUED FOR 30% PROGRESS	0
03-31-15	ISSUED FOR FINAL REVIEW	1
04-22-15	ISSUED FOR TENDER	2

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Keyplan

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 Chris Pui, P.Eng., A.P.E.C.A.

POWER & SYSTEMS PLAN
 1:75

Project Manager A.TODELLIA	Drawn R.ALLEN
Project Leader D.HIDER	Checked D.HIDER
Client GOVERNMENT OF CANADA	
Project QUONSET FITUP Innisfail, AB	
Drawing Title POWER & SYSTEMS PLAN	
Check Scale (may be photo reduced) 0 1inch 0 10mm	
Project No.	NCCA-14-0204
Drawing No.	E02-00

LUMINAIRE SCHEDULE							
TYPE	DESCRIPTION	Lamps			MANUFACTURER	MOUNTING	REMARKS
		TYPE	WATTS	NO.			
100	4' LOW BAY LIGHTING	T8	32	2	LITHONIA CATH Z-2-32-SBL-MVOLT-GE810IS	SUSPENDED	
101	4' STRIP LIGHTING	T8	32	2	COOPER - METALUX CATH 55F-232-120V-EB81-U	SUSPENDED	
102	VANITY LIGHTING	T8	32	2	COOPER - METALUX CATH CR-232A-120V-EB81-U	WALL / SURFACE	
103	4' VAPOR TIGHT INDUSTRIAL STRIP LIGHTING	T8	32	2	COOPER - METALUX CATH VT3-232DR-120V-EB81-WL-U	SUSPENDED	
104	2 X 4 TROFFER	T8	32	3	COOPER - METALUX CATH 2GC8-332A-120V-EB81-U	RECESSED	
300	EXTERIOR WALL PACK	LED	-	-	COOPER - METALUX CATH VT3-232DR-120V-EB81-WL-U	WALL / SURFACE	
BP1	EMERGENCY LIGHTING BATTERY PACK	LED	14	-	BEGHELLI MODEL# INV-12-180-BTMR2-12V/7W-AT OR EQUIVALENT	WALL SURFACE	
RM1	EMERGENCY LIGHTING REMOTE MOUNTED HEAD	LED	14	-	BEGHELLI MODEL# BTMR2-LED-MR16-12V/7W-WH OR EQUIVALENT	AS NOTED ON PLANS	
EX1	UTILITY/BACK OF HOUSE AREA EXIT LIGHTING	LED	5	-	BEGHELLI MODEL# EC-E-L-R-U-M-120/347V-UDC OR EQUIVALENT	AS NOTED ON PLANS	

NOTES:

Cct No.	Load Description	Volt-Amperes			Breaker Pole	Wire Size	Breaker			Volt-Amperes			Load Description	Cct No.
		A	B	C			A	Pole	A	B	C			
1	SCENT TRAINING AREA RECEPTACLES	700			1	15	15	1	900			SCENT TRAINING LIGHTING	2	
3	SPARE				1	15	15	1	400			P-1	4	
5	OHD-1			450	2	15	15	1			800	STORAGE / WASHBAY LIGHTING	6	
7		450					15	1	400			BATTERY PACKS	8	
9	WASHBAY RECEPTACLES		300		1	15	15	1	800			PUPPY TESTING / ENTRY LIGHTING	10	
11	STORAGE / CORRIDOR RECEPTACLES			500	1	15	15	1			800	WASHROOM / MECH. RM. / JAN. LIGHTING	12	
13		450			2	15	15	1	500			EXTERIOR LIGHTING	14	
15	OHD-2		450						8400				16	
17	EF-2			200	1	15	70	3			8400	AHU-1	18	
19	UH-3				1	15			8400				20	
21	PUPPY TESTING RECEPTACLES		500		1	15	30	2	2500			UH-2	22	
23	WASHROOM RECEPTACLES			200	1	15			2500				24	
25	ENTRY / MECH. RM. RECEPTACLES	400			1	15			1500			HOSTY	26	
27			1000		2	15	20	3			1500		28	
29	UH-1			1000							1500		30	
31	DHW-1				1	15			1500				32	
33			1500				20	3		1500		CUH-1	34	
35	CUH-2			1500	3	20					1500		36	
37		1500					15	1				SPARE	38	
39							15	1				SPARE	40	
41	SPARE				3	20						SPARE	42	
43							15	1				SPARE	44	
45	EXTERIOR LIGHTING		500		1	15	15	1				HOTSY CONTROLS	46	
47	EXTERIOR LIGHTING CONTROL			100	1	15	15	1				HOTSY CONTROLS	48	
49													50	
51													52	
53													54	
55													56	
57													58	
59													60	

Odd Circuit Number Subtotals	3500	4250	3950	Features:	13200	15100	15500
Bus and Lugs Rating (A):	SLD	Total Phase A Load:	16.7 kVA	Remarks:			
Main Circuit Breaker Rating (A):	SLD	Total Phase B Load:	19.4 kVA				
Circuit Breaker IC Rating (kA):		Total Phase C Load:	19.5 kVA				
Phase:	3	Total Connected Load:	55.5 kVA				
Wires:	4	Demand Factor:	100 %				
Line to Line Voltage (V):	208	Demand Load:	55.5 kVA				
Line to Neutral Voltage (V):	120	Future Load:	0.0 kVA				
Number of Poles:	60	Total Demand Load:	55.5 kVA				
Mounting:		Total Demand Current:	154.1 A				

Panelboard M-1A

NORR 221-10th Avenue SE Suite 100, Calgary AB Canada T2G 0V9

DATE	ISSUED FOR	REV
02-26-15	ISSUED FOR 30% PROGRESS	0
03-31-15	ISSUED FOR FINAL REVIEW	1
04-22-15	ISSUED FOR TENDER	2

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Keyplan

North Arrow

Detail Symbol

Project Title:
Project Number:
Plan Drawing Number:
Date: 2014-xx-xx

Revision: 1

Symbol not to scale

Consultants

Civil:
Landscape:
Architectural:
Structural:
Mechanical: NORR
Electrical: NORR

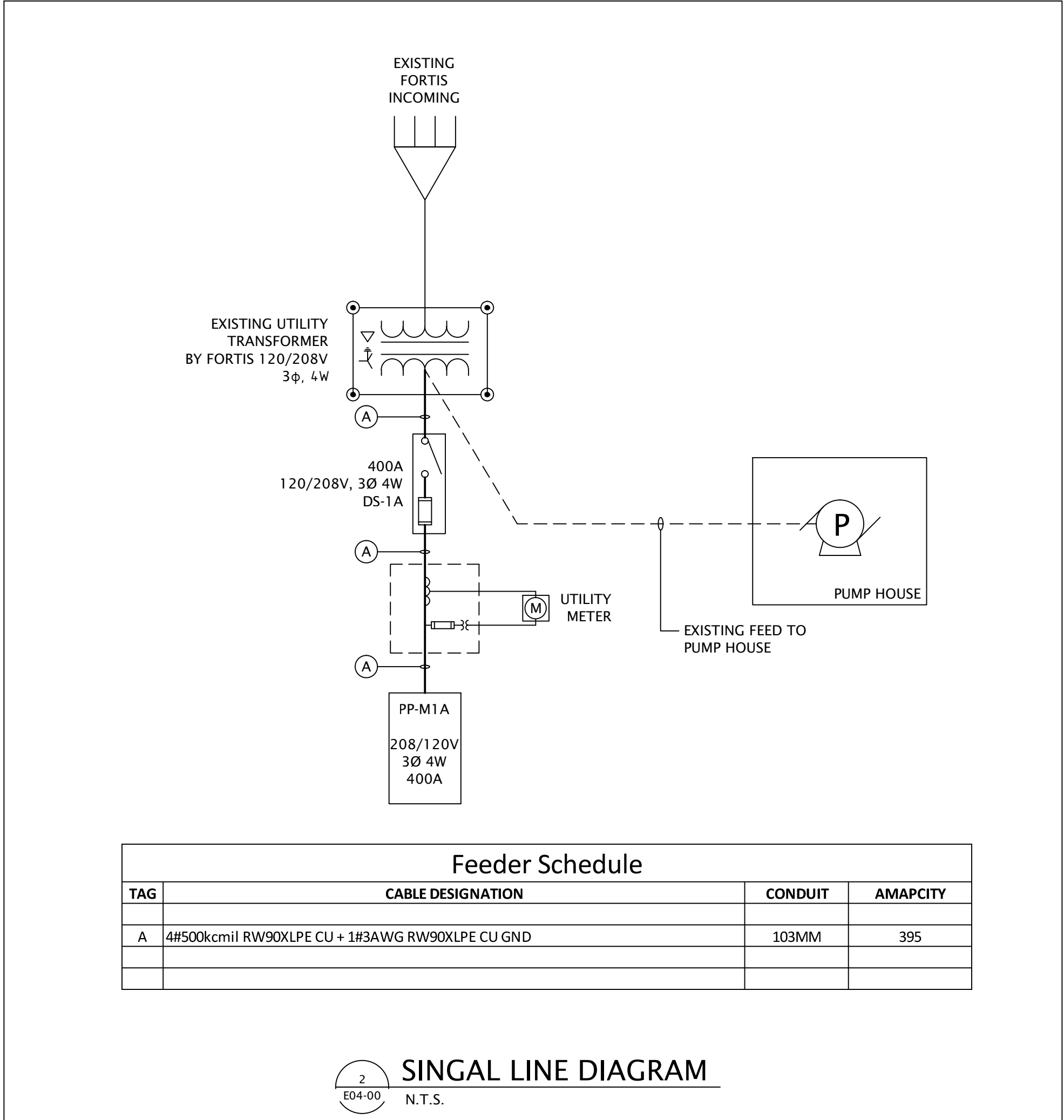
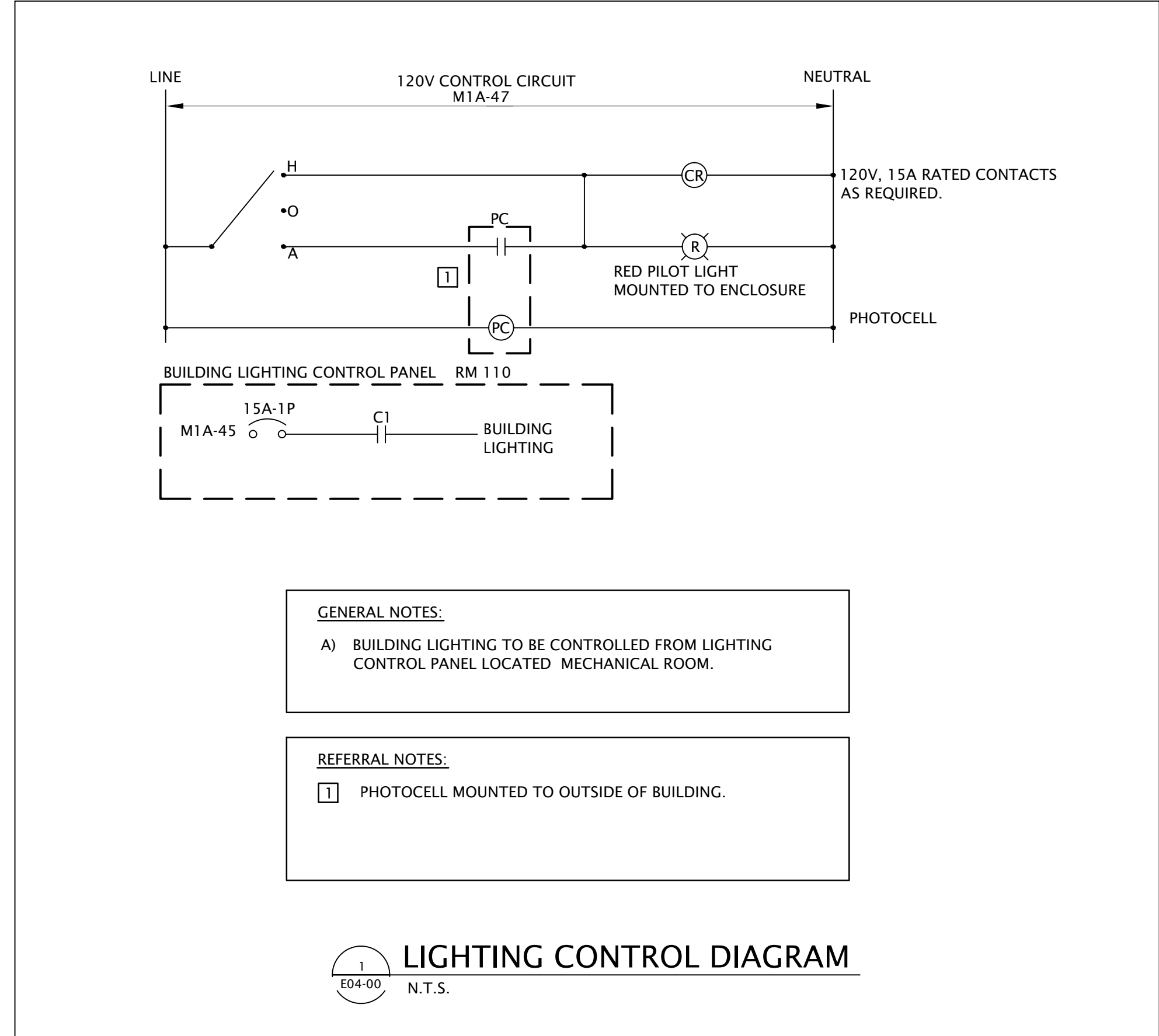
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PP-11944
April 24, 2015

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Project Manager A.TODELLIA	Drawn R.ALLEN
Project Leader D.HIDER	Checked D.HIDER
Client GOVERNMENT OF CANADA	
Project QUONSET FITUP Innisfail, AB	
Drawing Title PANEL SCHEDULES & SINGLE LINE DIAGRAM	
Check Scale (may be photo reduced) 0 1 inch 0 10mm	
Project No.	NCCA-14-0204
Drawing No.	E03-00



Feeder Schedule			
TAG	CABLE DESIGNATION	CONDUIT	AMAPCITY
A	4#500kcmil RW90XLPE CU + 1#3AWG RW90XLPE CU GND	103MM	395

PLOT DATE: April 23, 2015 TIME: 3:21 PM FULL PATH AND FILENAME: C:\D:\TIMSDATA\NCCA\140204\500-DELIVERED\03-00.DWG PLOTSTYLE TABLE:

