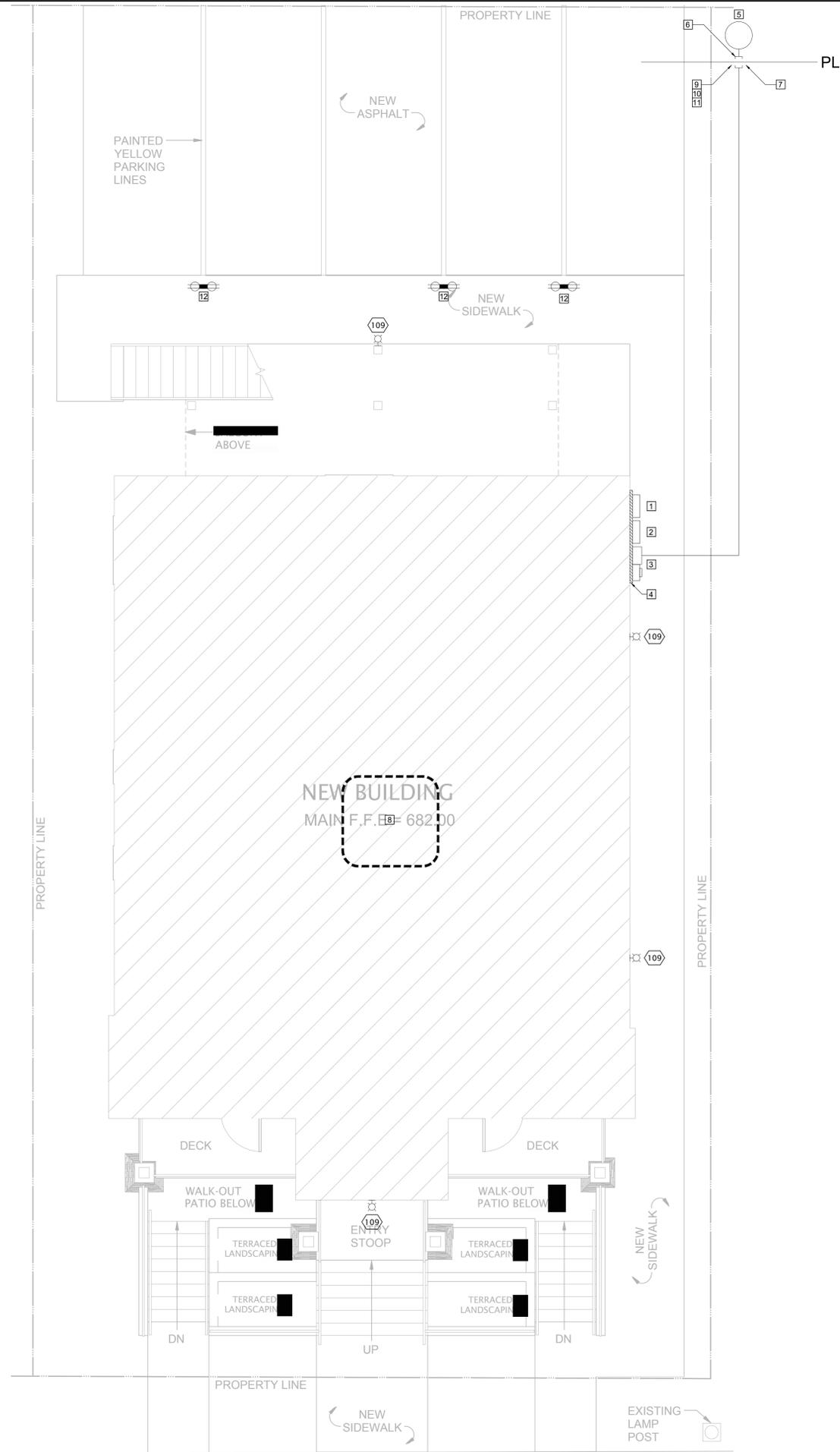




PLOT DATE: August 30, 2017 TIME: 11:55 AM FULL PATH AND FILENAME: I:\DEMPPSS\UPDRIVES\NCEM17-002 - JASPER NATIONAL PARK STAFF HOUSING\500\DELIVERABLES\SHEETS\E01-00-01.DWG PLOTSYCLE TABLE: ingenium.cb



**REFERRAL NOTES:**

- ALL UNDERGROUND UTILITY DUCTING TO BE RIGID PVC
- REFER TO CIVIL DRAWINGS E50-00-05 FOR FEEDER QUANTITIES AND SIZES.

**REFERRAL NOTES:**

- MAIN TELUS UTILITY SERVICE BOX.
- MAIN SHAW UTILITY SERVICE BOX.
- METER STACK MS-01
- FIRE RETARDANT PLYWOOD BACKGROUND, ELECTRICAL CONTRACTOR TO SIZE AS REQUIRED.
- DUCTING AND CABLING INSTALLED BY ATCO.
- SITE UTILITY POLE AND POLE MOUNTED TRANSFORMER BY UTILITY.
- POWER AND TELECOM SECONDARY DUCTWORK TO BE STOPPED AT EDGE OF PROPERTY LINE. COORDINATE FINAL LOCATION WITH UTILITY.
- APPROXIMATE LOCATION OF BUILDING ELECTRICAL ROOM. REFER TO DRAWING E10-00-01 FOR CONTINUATION AND LAYOUT.
- ELECTRICAL CONTRACTOR TO LOCATE SECONDARY STUB OUT AND CONTINUE CONDUIT AND CABLING TO BUILDING MAIN ELECTRICAL ROOM. COORDINATE LOCATIONS WITH UTILITY.
- ELECTRICAL CONTRACTOR TO LOCATE TELUS AND SHAW STUB OUTS AND CONTINUE CONDUIT AND CABLING TO BUILDING MAIN ELECTRICAL ROOM. COORDINATE LOCATIONS WITH UTILITY.
- ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL CONDUITS C/W PULLSTRING, FOR TELUS AND TWO FOR SHAW. REFER TO DETAIL E40-00-01
- REFER TO STRUCTURAL POLE BASE DETAIL ON S50-00-01.

DATE	ISSUED FOR	REV
17-07-06	60% REVIEW	A
17-08-15	TENDER	0
17-09-01	BP	1

This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any party with whom NORR Architects Engineers Planners has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component  
**Phase # - Description**  
 Keyplan

North Arrow

Detail Symbol

Symbol not to scale

**Consultants**

Civil:	McElhanney Consulting Services Ltd.
Landscaping:	NORR Architects Engineers Planners
Architectural:	NORR Architects Engineers Planners
Structural:	NORR Architects Engineers Planners
Mechanical:	NORR Architects Engineers Planners
Electrical:	NORR Architects Engineers Planners

Seal(s)

**NORR**

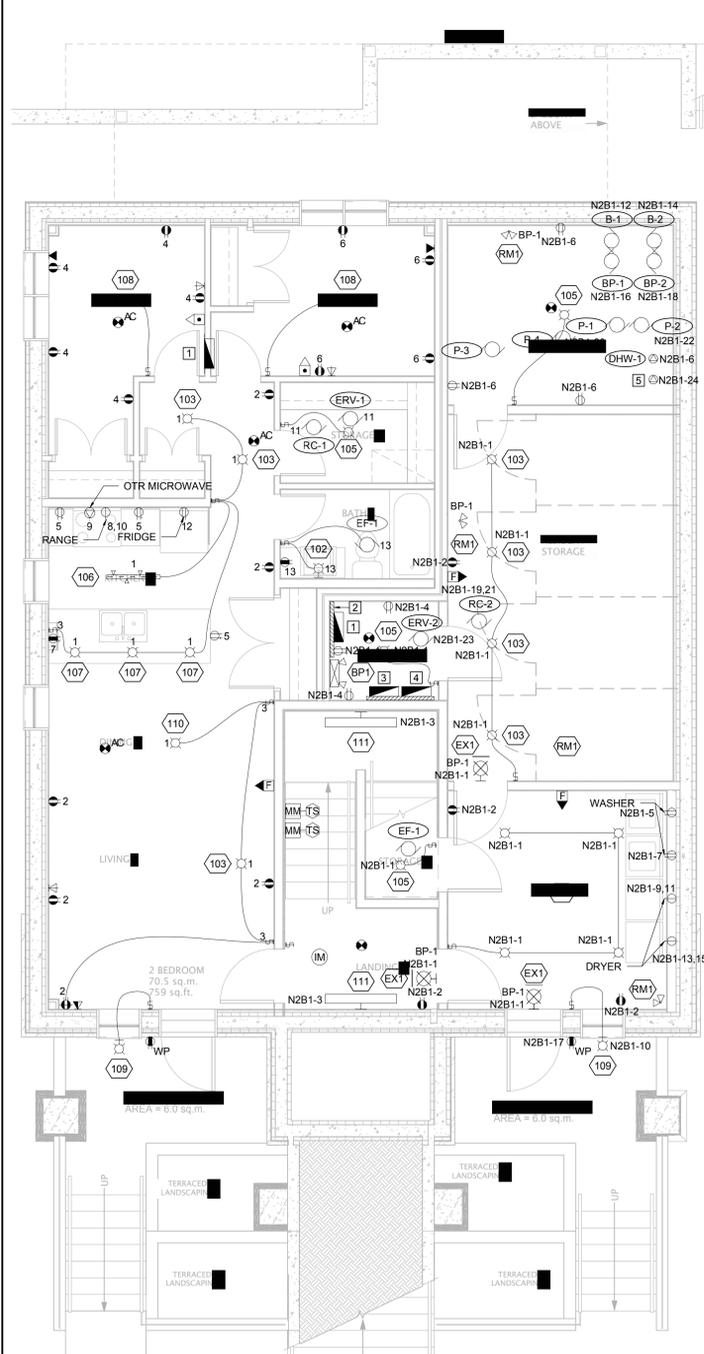
2300, 411 - 1st Street SE,  
 Calgary, AB Canada T2G 4Y5  
 T: 403.264.4000 F: 403.269.7215  
 www.norr.com

NORR ARCHITECTS ENGINEERS PLANNERS  
 A Partnership of Limited Companies  
NORR is a trademark owned by Norman Group Inc. and is used under license.  
 Victor Grech, Architect, A.A.A. B.Sc., M.A.S.C.  
 Ronald H. Hider, Architect, A.A.A. M.A.S.C., M.B.A.C.  
 Ross G. Macdonald, Architect, A.A.A. M.A.S.C., M.B.A.C.  
 Andrew Trosaki, P.Eng., A.P.E.C.A.  
 Chantal P. King, A.P.E.C.A.

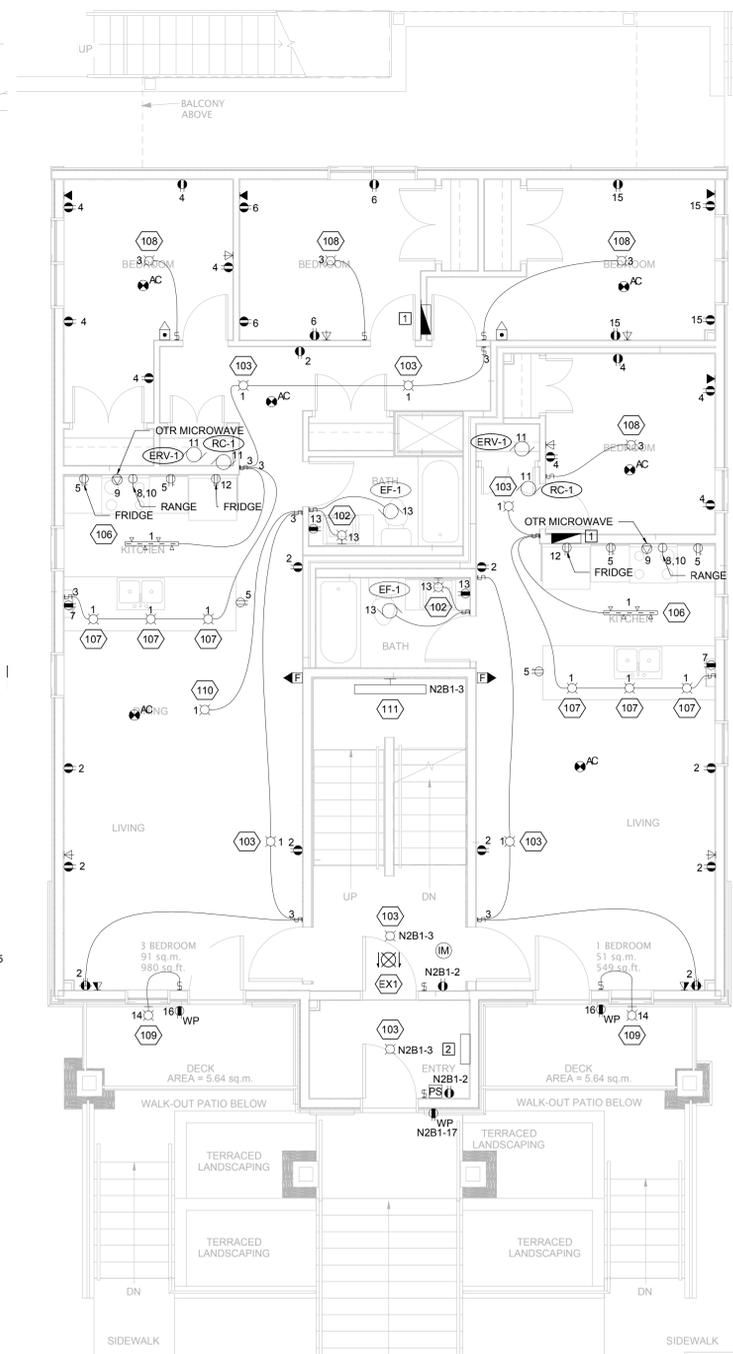
Project Manager C.ODINGA	Drawn F.HAK
Project Leader T.BERTSCH	Checked D.Hider
Client <b>PARKS CANADA</b> P.O. BOX 10 JASPER AB TOE 1E0	
Project <b>JASPER PARK STAFF HOUSING</b> 918 PATRICIA STREET, JASPER, AB	
Drawing Title <b>ELECTRICAL SITE PLAN</b>	
Check Scale (may be photo reduced) 0 1inch 0 10mm	
Project No. NCEM-17-0002	
Drawing No. E01-00-01	

**1 ELECTRICAL SITE PLAN**  
 E01-00-01 1:50

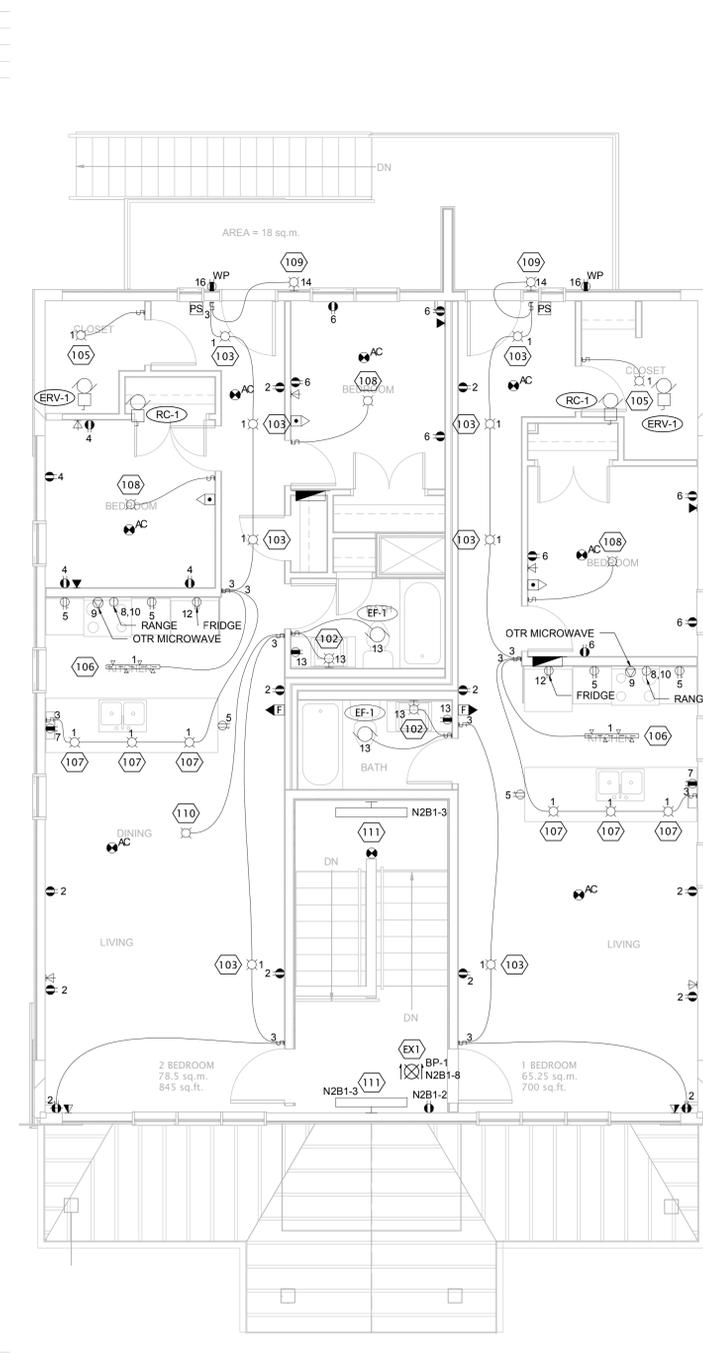
PLOT DATE: August 30, 2017 TIME: 11:55 AM FULL PATH AND FILENAME: \\EDMAPPSS\UP\_DRIVE\NCEM17-002\_JASPER NATIONAL PARK STAFF HOUSING\500\DEL\ELECTRICAL\DWG\_PLOTS\TABLE - Ingerium.ctb



1 POWER & LIGHTING LAYOUT - BASEMENT  
E10-00-01 1:50



2 POWER & LIGHTING LAYOUT - MAIN FLOOR  
E10-00-01 1:50



3 POWER & LIGHTING LAYOUT - SECOND FLOOR  
E10-00-01 1:50

- GENERAL NOTES:**
- REFER TO DRAWING E60-00-01 FOR PANEL SCHEDULES.
  - REFER TO DRAWING E60-00-01 FOR LUMINAIRE SCHEDULES.
  - REFER TO MECHANICAL DRAWINGS FOR MECHANICAL EQUIPMENT SCHEDULE.
  - ALL ELECTRICAL RISER CONDUIT, AND OPENINGS TO BE COORDINATED WITH ARCHITECTURAL AND STRUCTURAL PRIOR TO ROUGH IN.
  - ELECTRICAL CONTRACTOR SHALL SUBMIT SLEEVING DRAWINGS INDICATING THE LAYOUT AND SIZING OF ALL INTENDED PENETRATIONS THROUGH STRUCTURAL ELEMENTS, INCLUDING EMBEDDED ITEMS, FOR REVIEW BY CONSULTANT WELL IN ADVANCE OF COMPLETING THE WORK.
  - MECHANICAL / ELECTRICAL SYSTEMS, THERE SUPPORTS AND THE LIKE, MUST BE DESIGNED AND DETAILED TO ACCOMMODATE THE ANTICIPATED MOVEMENTS NOTED UNDER 'SERVICEABILITY CRITERIA' ON STRUCTURAL DRAWINGS.
  - DESIGN AND DETAIL ALL NECESSARY SEISMIC RESTRAINTS FOR MECHANICAL / ELECTRICAL SYSTEMS SHOWN ON THE CONTACT DOCUMENTS. SUBMIT SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER, LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA, FOR REVIEW BY CONSULTANTS.
  - ELECTRICAL EQUIPMENT SHOWN REPRESENTS GENERAL EQUIPMENT CONFIGURATION AND SIZING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT FINAL EQUIPMENT SELECTED WILL FIT IN LOCATIONS INDICATED.
  - PROVIDE FIRE STOPPING ON ALL CABLE PENETRATIONS THROUGH RATED WALL AND FLOOR ASSEMBLIES.
  - ALL RECEPTACLES TO BE CONNECTED TO ARC FAULT BREAKERS AS PER CEC 2015.
  - ALL RECEPTACLES NOT INSTALLED BEHIND KITCHEN EQUIPMENT SHALL BE TAMPER RESISTANT AS PER CEC 2015.
  - KITCHEN COUNTER RECEPTACLES SHALL BE 20A T-SLOT AS PER CEC 2015.
  - COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES, INCLUDING MICROWAVE, WITH ARCHITECTURAL.
  - DO NOT INSTALL OUTLET BOXES BACK TO BACK IN WALLS. OFFSET OUTLETS HORIZONTALLY A MINIMUM OF 406mm AS PER CODE. OUTLET BOXES TO BE SEALED.
  - INSTALL EXTERIOR RECEPTACLES HORIZONTALLY COMPLETE WITH WEATHER PROOF COVERS AS PER CEC 2015.
  - ALL GFCI AND AFCI BREAKERS TO MATCH THE RECEPTACLES.
  - SUPPLY AND INSTALL GFCI BREAKERS AND RECEPTACLES TO MEET REQUIREMENTS OF CEC 2015.
  - COORDINATE LOCATIONS AND HEIGHT OF LUMIANIRES WITH ALL MECHANICAL DUCTWORK, PIPING AND STRUCTURAL MEMBERS.
  - IN SUITE CIRCUITING REPRESENTS GENERAL COORDINATION AND GROUPING OF CIRCUITS. REFER TO PANEL SCHEDULE THAT CORRESPONDS SPECIFIC TO SUITE TYPE.

- REFERRAL NOTES:**
- APPROXIMATE LOCATION OF POWER AND TELECOM PANEL BOARDS. REFER TO DETAIL 8 ON E40-00-01 FOR ADDITIONAL INFORMATION.
  - FIRE ALARM CONTROL PANEL

DATE	ISSUED FOR	REV
17-07-06	60% REVIEW	A
17-08-15	TENDER	0
17-09-01	BP	1

This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any party with whom NORR Architects Engineers Planners has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component  
**Phase # - Description**  
Keyplan

North Arrow

Detail Symbol

Symbol not to scale

**Consultants**

Civil:	McElhanney Consulting Services Ltd.
Landscaping:	NORR Architects Engineers Planners
Architectural:	NORR Architects Engineers Planners
Structural:	NORR Architects Engineers Planners
Mechanical:	NORR Architects Engineers Planners
Electrical:	NORR Architects Engineers Planners

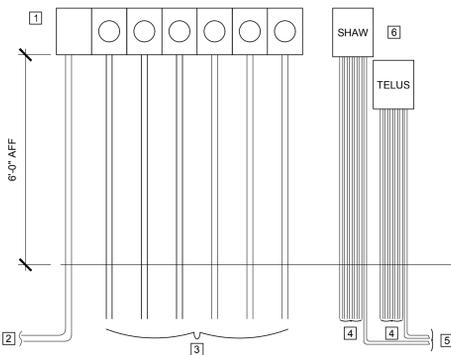
Seal(s)

**NORR**

2300, 411 - 1st Street SE,  
Calgary, AB Canada T2G 4Y5  
T: 403.264.4000 F: 403.269.7215  
www.norr.com

NORR ARCHITECTS ENGINEERS PLANNERS  
A Partnership of Limited Companies  
NORR is a trademark owned by Ingerium Group Inc. and is used under license.  
Douglas Hider, Architect, A.A.A., B.Sc., M.A.S.C.  
Robert M. Brown, Architect, A.A.A., M.A.S.C., M.B.C.  
Ronald G. Macdonald, Architect, A.A.A., M.A.S.C., M.B.C.  
Arlene Toole, P.Eng., A.P.E.C.A.  
Cheryl M. Piny, A.P.E.C.A.

Project Manager C.ODINGA	Drawn F.HAK
Project Leader T.BERTSCH	Checked D.Hider
Client <b>PARKS CANADA</b> P.O. BOX 10 JASPER AB TOE 1E0	
Project <b>JASPER PARK STAFF HOUSING</b> 918 PATRICIA STREET, JASPER, AB	
Drawing Title <b>ELECTRICAL POWER &amp; LIGHTING PLAN</b>	
Check Scale (may be photo reduced) 0 10mm 0 1inch	
Project No. NCEM-17-0002	
Drawing No. E10-00-01	

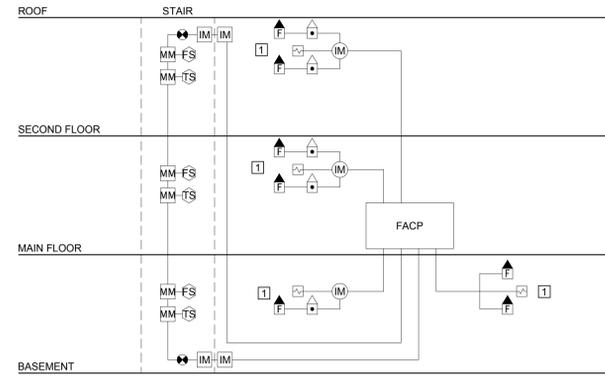


- REFERRAL NOTES:**
- METER BASE NUMBER PER SINGLE LINE
  - CONDUIT AND CABLING BACK TO UTILITY TRANSFORMER SIZED PER SINGLE LINE DIAGRAM
  - SUITE FEEDER CONDUCTORS SIZED PER SINGLE LINE DIAGRAM.
  - SUITE TELECOM CONDUITS. 1-27mm CW CATV CABLE FOR SHAW AND 1-27mm CW CATSE CABLE FOR TELUS TO EACH SUITE. STUB CONDUITS INTO SUITE TELECOM PANELS, REFER TO PLAN DRAWINGS FOR LOCATIONS.
  - SHAW AND TELUS SERVICE CONDUITS. PROVIDE 1-53mm CONDUIT FOR SHAW AND 1-53mm CONDUIT FOR TELUS BACK TO TELECOM UTILITY PEDESTAL REFER TO SITE PLAN DRAWINGS FOR PEDESTAL LOCATIONS.
  - SHAW AND TELUS UTILITY SERVICE BOXES. COORDINATE SPECIFIC INFORMATION WITH RESPECTIVE UTILITY REQUIREMENTS.

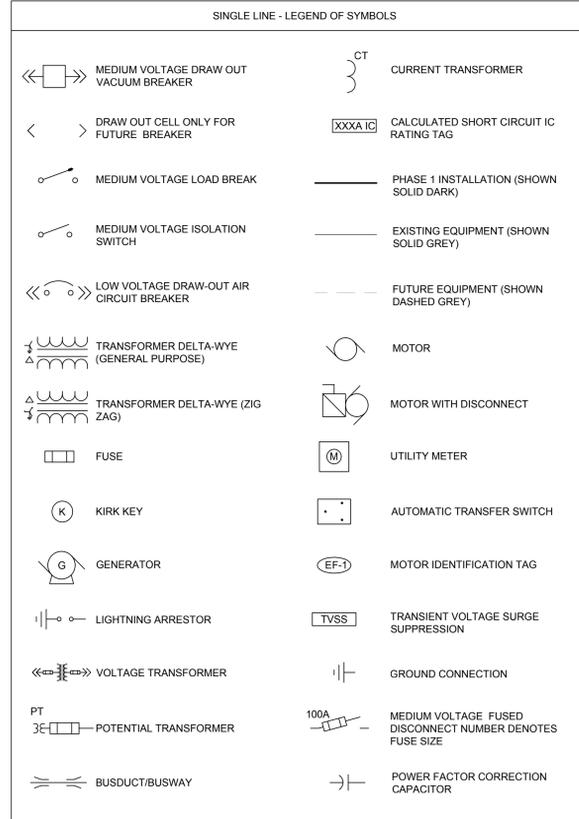
1 METER STACK DETAIL  
E40-00-01 N.T.S.

- GENERAL NOTES:**
- REFER TO DRAWINGS FOR FIRE ALARM DEVICE LOCATIONS.
  - REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF ALL SPRINKLER FLOW AND TAMPER SWITCHES.
  - COORDINATE DUCT SMOKE DETECTOR LOCATIONS WITH MECHANICAL DRAWINGS.
  - THE FIRE ALARM SYSTEM SHALL COMPLY WITH ALL ULC 5524 AND ABC 2014 CODE REQUIREMENTS.
  - THE FIRE ALARM SYSTEMS IS SINGLE STAGE.
  - THE INTENT OF THIS DIAGRAM IS TO SHOW GENERAL CONFIGURATION OF THE FIRE ALARM SYSTEM. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL COMPONENTS TO FURNISH A COMPLETE AND FUNCTION SYSTEM.
  - THIS DIAGRAM INDICATES ONE POSSIBLE WIRING CONFIGURATION OF THE FIRE ALARM SYSTEM. ALTERNATE CONFIGURATIONS ARE ACCEPTABLE PROVIDED THEY:
    - MEET ALL APPLICABLE CODES AND
    - AN UPDATED RISER IS PROVIDED IN SHOP DRAWING REVIEW PACKAGE.

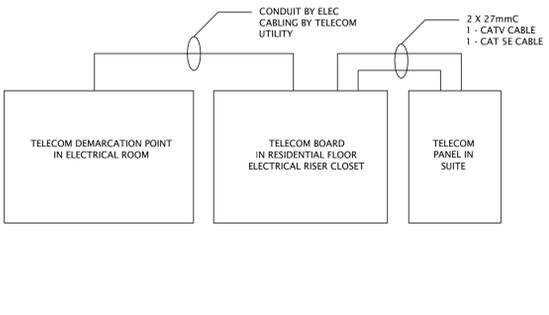
- REFERRAL NOTES:**
- REFER TO E10-00-01 FOR QUANTITIES.



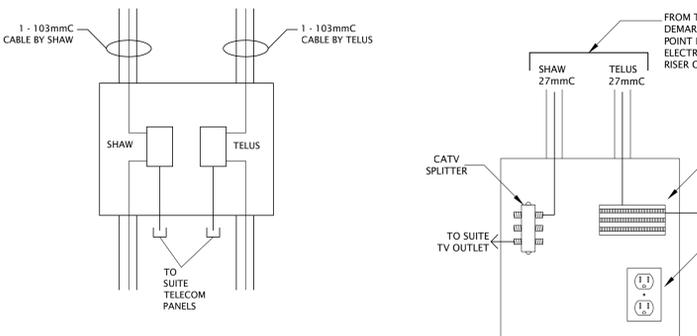
2 FIRE ALARM RISER  
E40-00-01 N.T.S.



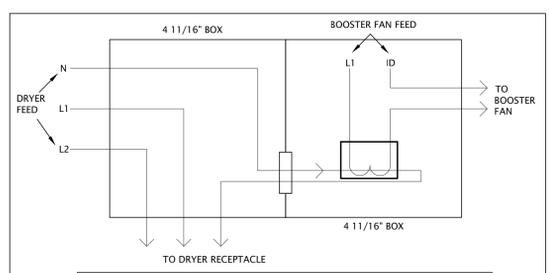
Feeder Schedule		
TAG	CABLE DESIGNATION	CONDUIT
30A	3#8AWG RW75XLPE AL + 1#8AWG RW75XLPE AL GND	21MM
30B	4#8AWG RW75XLPE AL + 1#8AWG RW75XLPE AL GND	27MM
31A	3#6AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	27MM
31B	4#6AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	27MM
32A	3#4AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	27MM
32B	4#4AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	35MM
33A	3#3AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	35MM
33B	4#3AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	35MM
34A	3#2AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	35MM
34B	4#2AWG RW75XLPE AL + 1#6AWG RW75XLPE AL GND	35MM
35A	3#1AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	41MM
35B	4#1AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	41MM
36A	3#10AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	41MM
36B	4#10AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	53MM
37A	3#20AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	53MM
37B	4#20AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	53MM
38A	3#30AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	53MM
38B	4#30AWG RW75XLPE AL + 1#4AWG RW75XLPE AL GND	53MM
39A	3#40AWG RW75XLPE AL + 1#2AWG RW75XLPE AL GND	53MM
39B	4#40AWG RW75XLPE AL + 1#2AWG RW75XLPE AL GND	63MM
40A	3#250kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	63MM
40B	4#250kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	78MM
40C	2 RUNS OF 3#250kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	2X78MM
41A	3#300kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	78MM
41B	4#300kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	78MM
42A	3#350kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	78MM
42B	4#350kcmil RW75XLPE AL + 1#2AWG RW75XLPE AL GND	78MM
43A	3#400kcmil RW75XLPE AL + 1#1AWG RW75XLPE AL GND	78MM
43B	4#400kcmil RW75XLPE AL + 1#1AWG RW75XLPE AL GND	78MM
44A	3#500kcmil RW75XLPE AL + 1#1AWG RW75XLPE AL GND	103MM
44B	4#500kcmil RW75XLPE AL + 1#1AWG RW75XLPE AL GND	103MM
45A	3#600kcmil RW75XLPE AL + 1#1AWG RW75XLPE AL GND	103MM
45B	4#600kcmil RW75XLPE AL + 1#1AWG RW75XLPE AL GND	103MM
46A	3#700kcmil RW75XLPE AL + 1#10AWG RW75XLPE AL GND	103MM
46B	4#700kcmil RW75XLPE AL + 1#10AWG RW75XLPE AL GND	103MM
47A	3#750kcmil RW75XLPE AL + 1#10AWG RW75XLPE AL GND	103MM
47B	4#750kcmil RW75XLPE AL + 1#10AWG RW75XLPE AL GND	103MM



3 TELECOM DEMARCATION TO SUITE FROM RISER CLOSET  
E40-00-01 N.T.S.

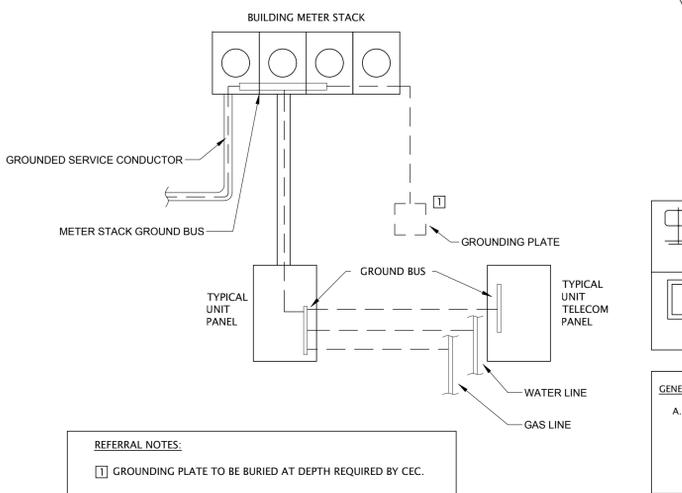


4 TYPICAL SUITE PANEL ELEVATION  
E40-00-01 N.T.S.



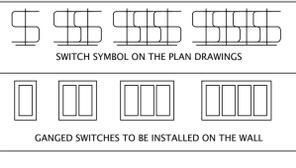
- GENERAL NOTES:**
- NO SPLICING OF NEUTRAL CONDUCTOR.
  - CONNECT BOXES WITH STEEL GROMMET.
  - PROVIDE BACK BOXES AS REQUIRED.
  - GROUND BOTH BOXES PER CEC.
  - PROVIDE THE BOOSTER FAN CONNECTION FOR UNITS TYPE A2, J, TH-04 THE LOCATION OF BOOSTER FANS TO BE VERIFIED WITH MECHANICAL DRAWINGS.

5 BOOSTER FAN TYPICAL CONNECTION  
E40-00-01 N.T.S.



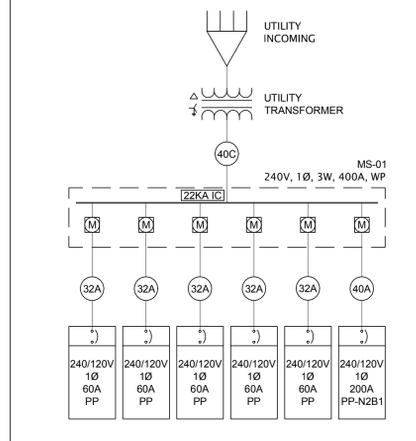
- REFERRAL NOTES:**
- GROUNDING PLATE TO BE BURIED AT DEPTH REQUIRED BY CEC.

6 BUILDING TOWNHOME GROUNDING (TYPICAL)  
E40-00-01 N.T.S.



- GENERAL NOTES:**
- GROUPED OR GANGED SWITCHES TO BE INSTALLED IN ONE FRAME. REFER TO ABOVE SAMPLE DRAWING. INDIVIDUAL SWITCH INSTALLATION IS NOT ALLOWED IN CASE OF TWO OR MORE SWITCHES ARE CLOSE TOGETHER.

7 GANGED SWITCHES DETAIL  
E40-00-01 N.T.S.



8 SINGLE LINE DIAGRAM  
E40-00-01 N.T.S.

- UNDERGROUND INSTALLATION NOTES:**
- ALL CABLING INSTALLED UNDERGROUND WILL FOLLOW THE RULES AND BE SUBJECT THE DE-RATING AS DESCRIBED IN CEC 2015.
  - FOR THIS INSTALLATION THE UNDERGROUND CABLE BETWEEN THE UTILITY CONNECTION AND THE SERVICE ENTRANCE METER STACK (MS-01) SHALL BE INSTALLED IN ACCORDANCE WITH DIAGRAM D11 OF CEC 2015.
  - THE SERVICE ENTRANCE CABLE WHEN INSTALLED TO THE CONFIGURATION DIAGRAM D11 OF CEC 2015 MEETS REQUIREMENTS OF THE CODE OUTLINED IN TABLE D11B. AS SUCH NO IEEE 835 CALCULATION IS REQUIRED.
  - IF THE ELECTRICAL CONTRACTOR WISHES TO RECONFIGURE THE INSTALLATION OF THE SERVICE ENTRANCE CABLE OR CHANGE CABLE TYPE OR SIZE THEN THE CONTRACTOR MUST OBTAIN AN IEEE 835 CALCULATION AND SUBMIT IT FOR REVIEW PRIOR TO INSTALLING CABLE.

- GENERAL NOTES:**
- 'X-KAIC SYM.' DENOTES CALCULATED SHORT CIRCUIT CURRENT AVAILABILITY.
  - SHORT CIRCUIT LEVELS BELOW 10KAIC SYM. ARE NOT SHOWN.
  - IC LEVELS SHOWN REPRESENT MINIMUM REQUIRED INTERRUPTING CAPACITY. EQUIPMENT CAN HAVE IC RATINGS HIGHER THAN LEVELS INDICATED.
  - ALL CONNECTIONS TO ROTATING MECHANICAL EQUIPMENT SHALL BE COPPER CONDUCTORS.
  - SERIES RATING OF EQUIPMENT SHALL ONLY BE PERMITTED WHERE CALCULATED FAULT CURRENT EXCEEDS 22kA.
  - METER STACKS FEEDING RESIDENTIAL SUITES DO NOT SHOW ALL PANELS CONNECTED TO THEM. REFER TO SUITE PANEL FEEDER SCHEDULES BELOW FOR CABLE, BREAKER SIZE AND PANELS FED FROM EACH METER STACK.
  - IN SUITE PANELS SHALL BE AS FOLLOWS:  
60A FEEDER BREAKER - 60A PANEL  
90A FEEDER BREAKER - 100A PANEL  
100A FEEDER BREAKER - 100A PANEL

DATE	ISSUED FOR	REV
17-07-06	60% REVIEW	A
17-08-15	TENDER	0
17-09-01	BP	1

This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any party with whom NORR Architects Engineers Planners has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component  
**Phase # - Description**  
Keyplan

North Arrow

Detail Symbol

DETAIL#  
SHEET #

Symbol not to scale

**Consultants**

Civil: McElhanney Consulting Services Ltd.  
Landscape: NORR Architects Engineers Planners  
Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

**NORR**

2300, 411 - 1st Street SE,  
Calgary, AB Canada T2G 4Y5  
T: 403.264.4000 F: 403.269.7215  
www.norr.com

NORR ARCHITECTS ENGINEERS PLANNERS  
A Partnership of Limited Companies  
NORR is a registered member of the International Brotherhood of Professional Engineers, Architects, Surveyors and Allied Professions.  
NORR is a registered member of the International Brotherhood of Professional Engineers, Architects, Surveyors and Allied Professions.  
NORR is a registered member of the International Brotherhood of Professional Engineers, Architects, Surveyors and Allied Professions.

Project Manager: C.ODINGA  
Project Leader: T.BERTSCH  
Client: **PARKS CANADA**  
P.O. BOX 10 JASPER AB TOE 1E0  
Project: **JASPER PARK STAFF HOUSING**  
918 PATRICIA STREET, JASPER, AB  
Drawing Title: **ELECTRICAL DETAILS & RISER DIAGRAMS**  
Check Scale (may be photo reduced) 0 1inch 0 10mm  
Project No. NCEM-17-0002  
Drawing No. **E40-00-01**

PLOT DATE: August 30, 2017 TIME: 11:55 AM FULL PATH AND FILENAME: \\EDMAPP\SHIP\_DRIVE\NCEM17\_0002\_JASPER NATIONAL PARK STAFF HOUSING\B00\DEL\ELECTRICALSHEETS\E40-00-01.DWG PLOTSYCLE TABLE: Ingenium.cbh

