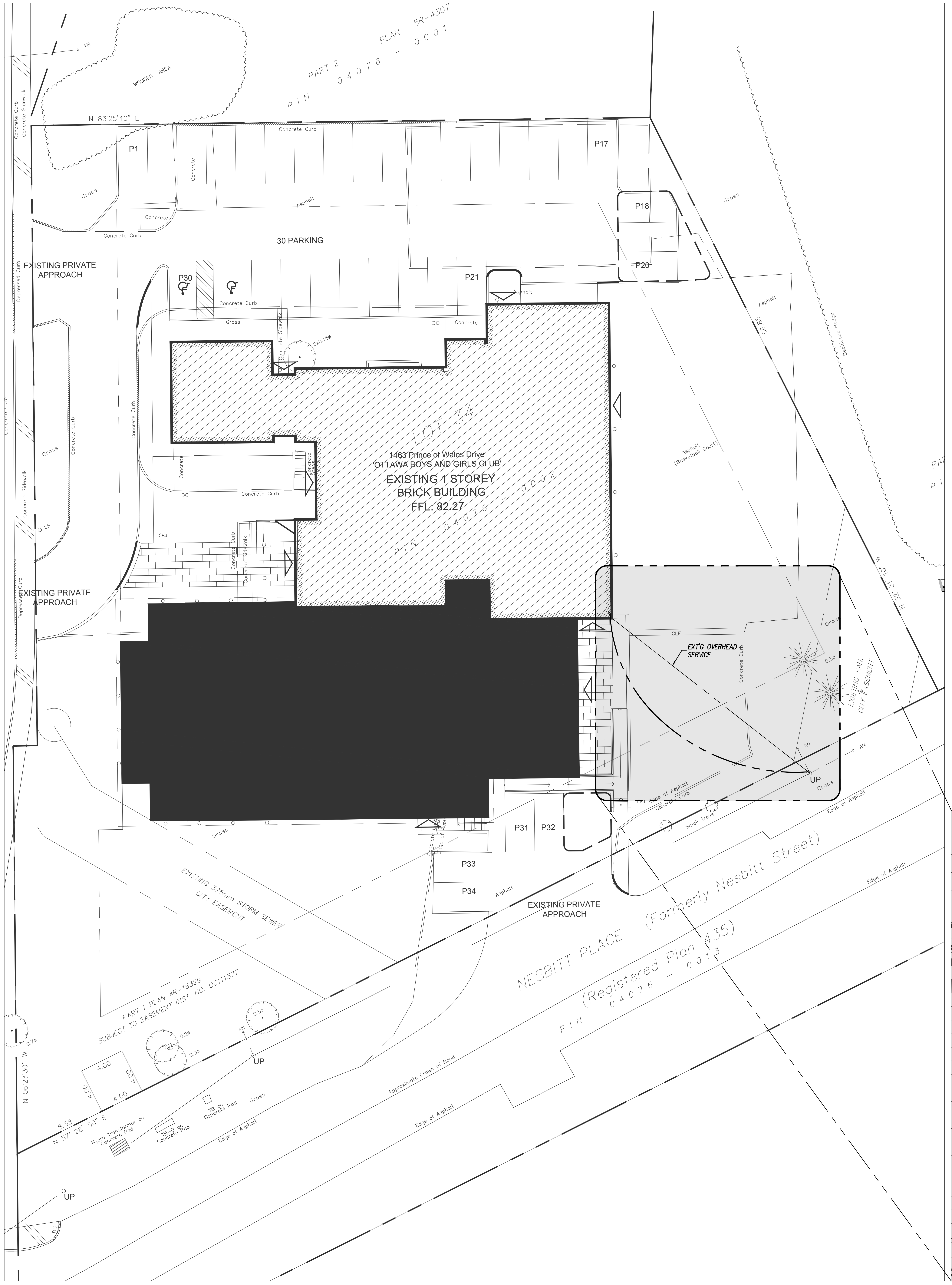
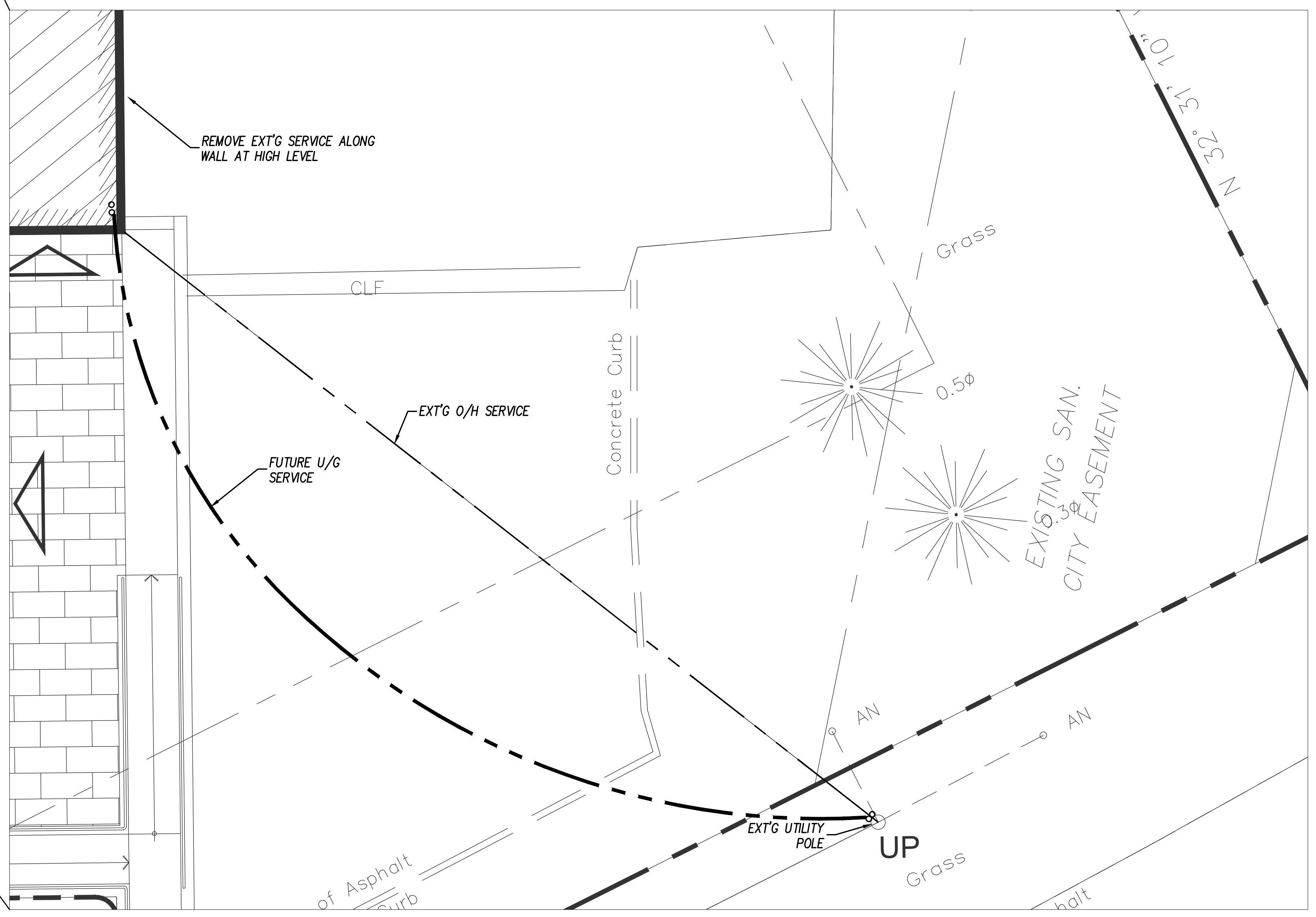


① E-1 ELECTRICAL SITE PLAN 1:200



② E-1 POWER DUCT ROUTE 1:100

Legend

⊠	600x1200 Recessed Fluorescent Troffer	⊗	Exit Light – Ceiling Mount Directional Arrows as Indicated
⊠	600x1200 Recessed Fluorescent Troffer – Night Light	⊗	Exit Light – Wall Mount Directional Arrows as Indicated
▭	300x1200 Surface Mounted Fluorescent Wrap Around	◒ ◒	Emergency Battery Unit (2 Integral Heads Shown)
○	Recessed Downlight	◒ ◒	Remote Emergency Light (Dual Head Shown)
▭	Wall Mounted Fluorescent Strip	▱	Surface Mounted Panelboard
▭	Cove Mounted Fluorescent Strip	▱	Flush Mounted Panelboard
⊠	600x600 Recessed LED Troffer	▨	Fire Alarm Panel
⊠	600x600 Recessed LED Troffer – Night Light	◪	Fire Alarm Signal – Strobe
⊙	Suspended LED Luminaire	◪○	Fire Alarm Signal – Bell
◎	Surface mounted LED Downlight	F	Fire alarm manual pull station
○	Recessed LED Downlight	GFI	Ground Fault Interrupted Receptacle or Circuit
◠	Wall Mounted LED	R	Relocate/Relocated
▭	Recessed LED Strip	E	Existing To Remain
⬚	Under Counter LED Strip	D	To be Removed
▽	Data Outlet	N	New
▼	Combination Telephone/Data Outlet		Lighting Control
⦶	Duplex Receptacle	$	Light Switch
⦶30	Special Receptacle Outlet 120V (30 Amp Shown) L=Locking L5–30R	$	Double–Gang Light Switch
⦶	Duplex Receptacle Mounted Above Counter or at Counter Height	$	Multi–Gang Light Switch
⦶	Switched receptacles at ceiling level	OS	Ceiling Mounted Occupancy Sensing Lighting Control Station
○	Junction Box	OS	Wall Mounted Occupancy Sensing Lighting Control Station
◬	Direct Connection	LC	User Lighting Controller device
○	Motor Connection	RC	Room Controller Relay device
⊡	Multi–Outlet Assembly	PC	Photocell Controller device
□	Automatic Door Opener Push Button	TC	Time Clock Controller device
□	Emergency Call Alarm Local Indicating Dome Light		
▣	Emergency Call Alarm Monitoring Station		
P	Emergency Call Alarm Local Alarm Station		

Hobin Architecture Incorporated

63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7

T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com

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2.	ISSUED FOR BUILDING PERMIT	2017–10–10
1.	ISSUED FOR REVIEW/COORDINATION	2017–10–05
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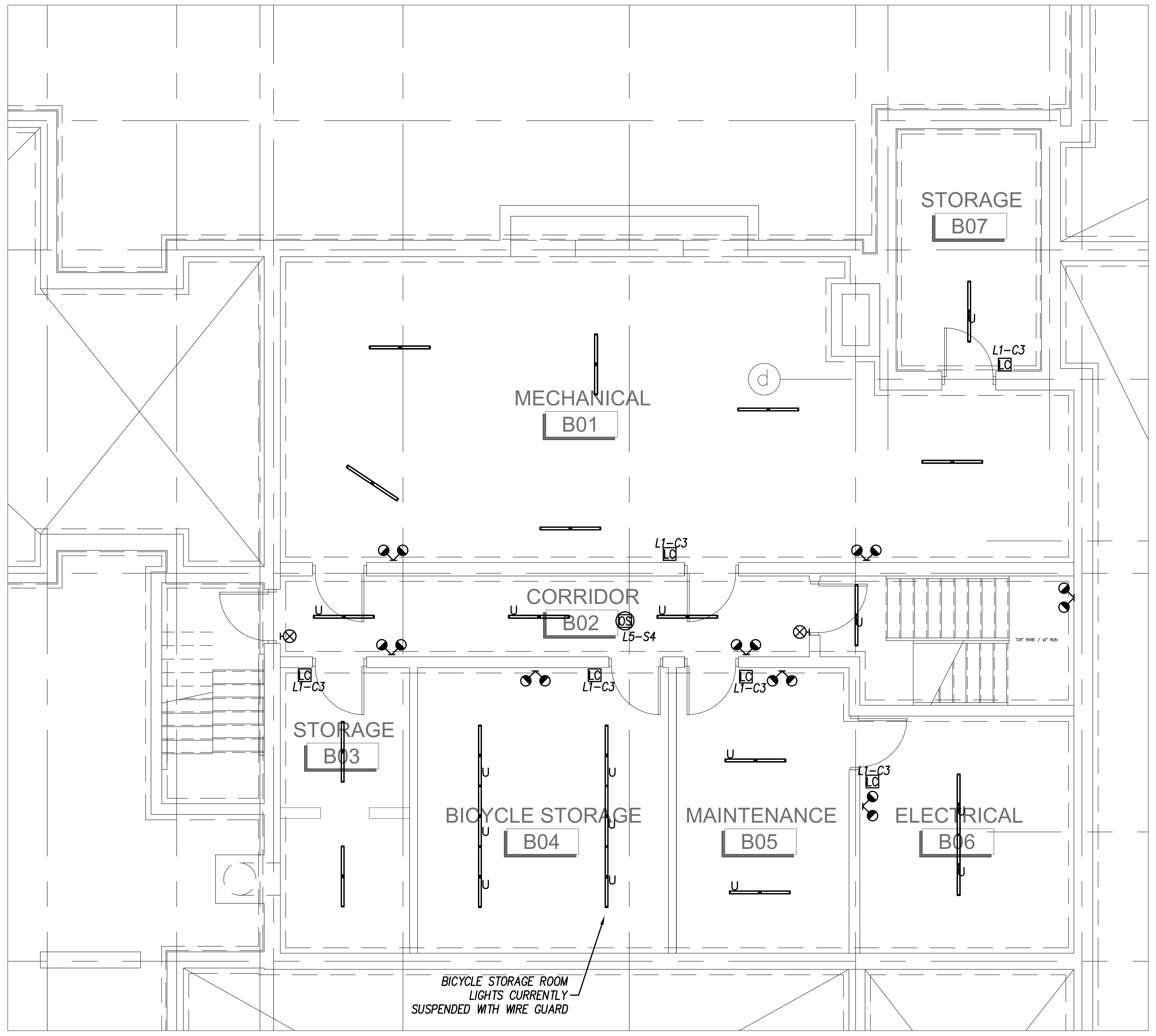
BEKOLAY & ASSOCIATES. Ltd.
Consulting Engineers
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

PROJECT
Prince of Wales Clubhouse
Boys and Girls Club Renovation

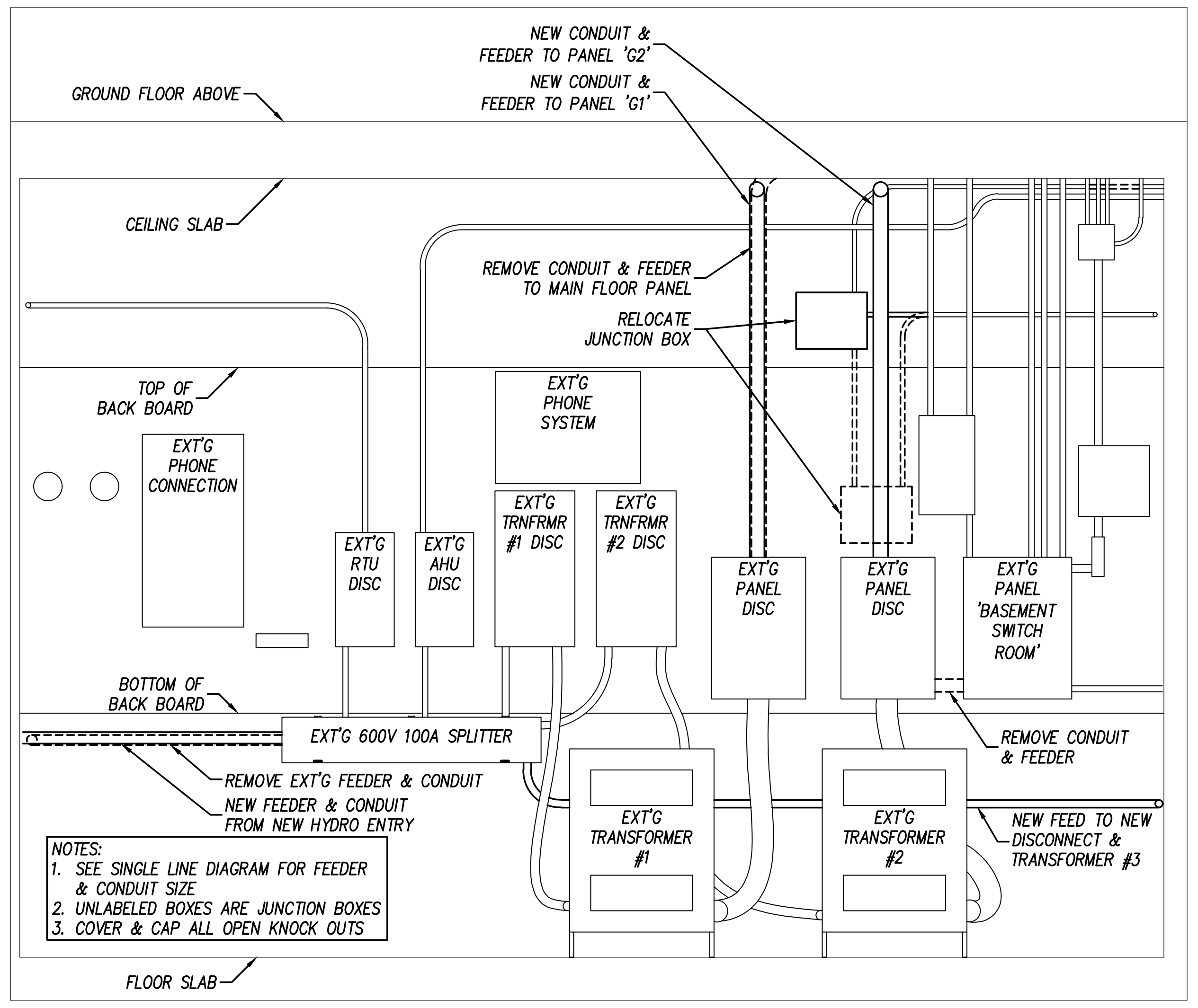
DRAWING
Electrical Site Plan

C. L. WOOD
Oct 10, 2017

DATE 10–Oct–17	SCALE AS NOTED
DRAWN BY MAG	DESIGNED BY CLW
JOB NO. 2017–17	CHECKED BY CLW
DRAWING NO. E–1 of 7	

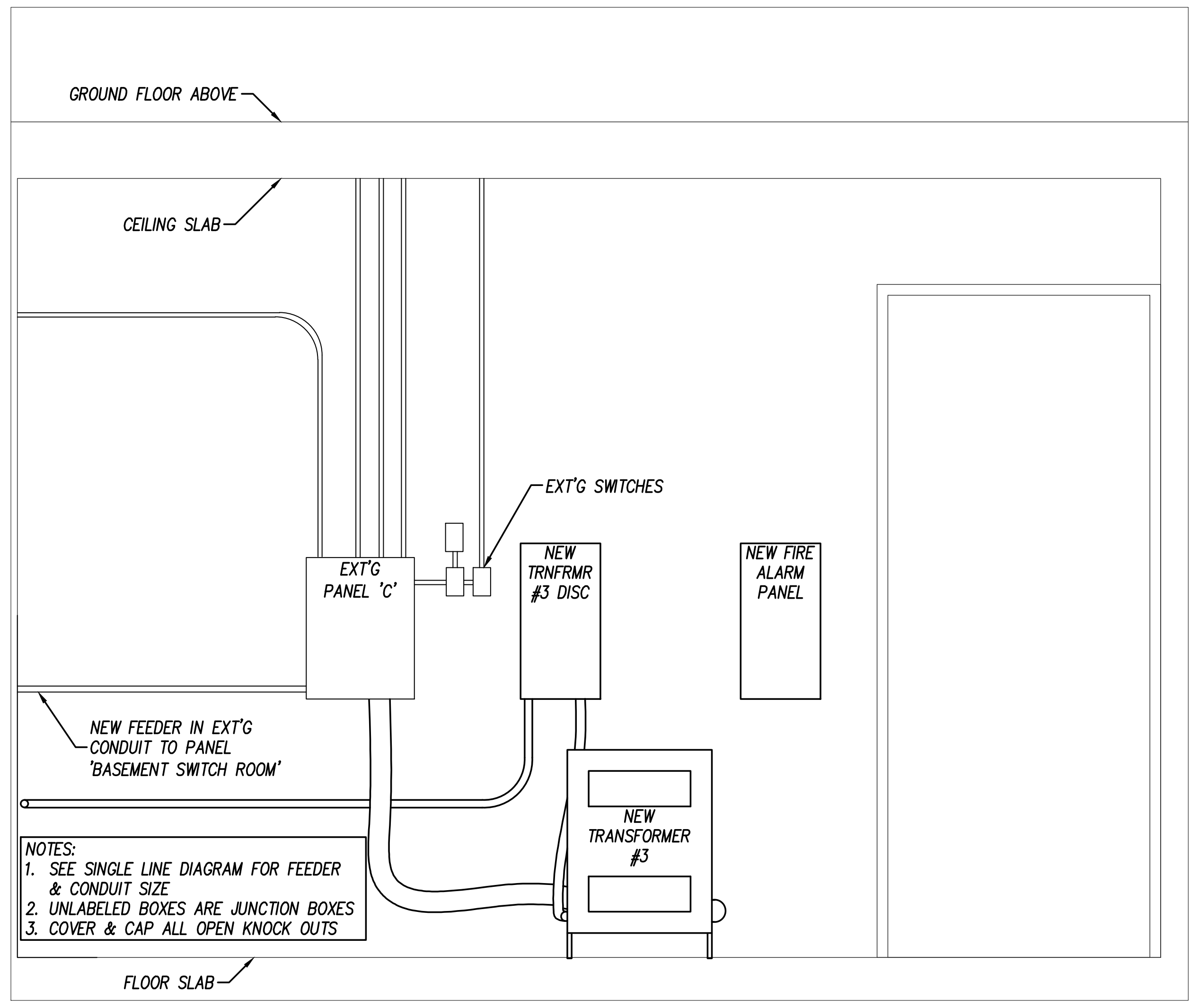


3
E-2
PROPOSED BASEMENT LIGHTING PART PLAN
SCALE: 1:75



NOTES:
1. SEE SINGLE LINE DIAGRAM FOR FEEDER & CONDUIT SIZE
2. UNLABELED BOXES ARE JUNCTION BOXES
3. COVER & CAP ALL OPEN KNOCK OUTS

4
E-2
ELECTRICAL ROOM ELEVATION-1
SCALE: 1:20



NOTES:
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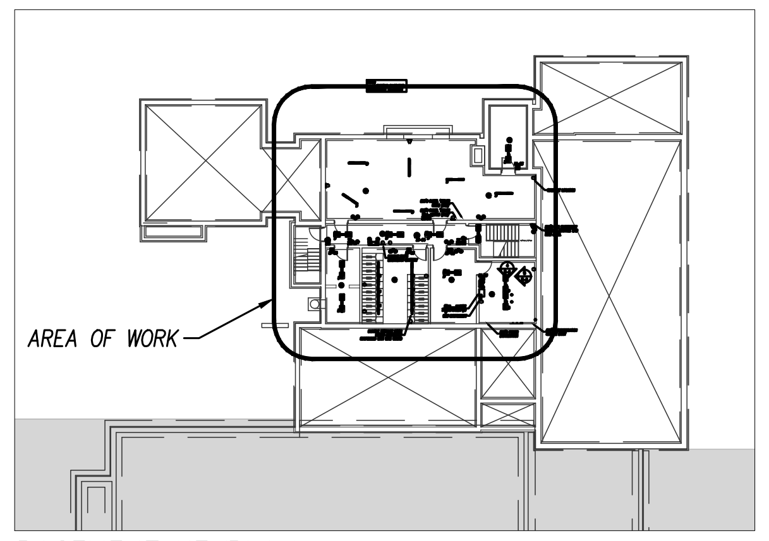
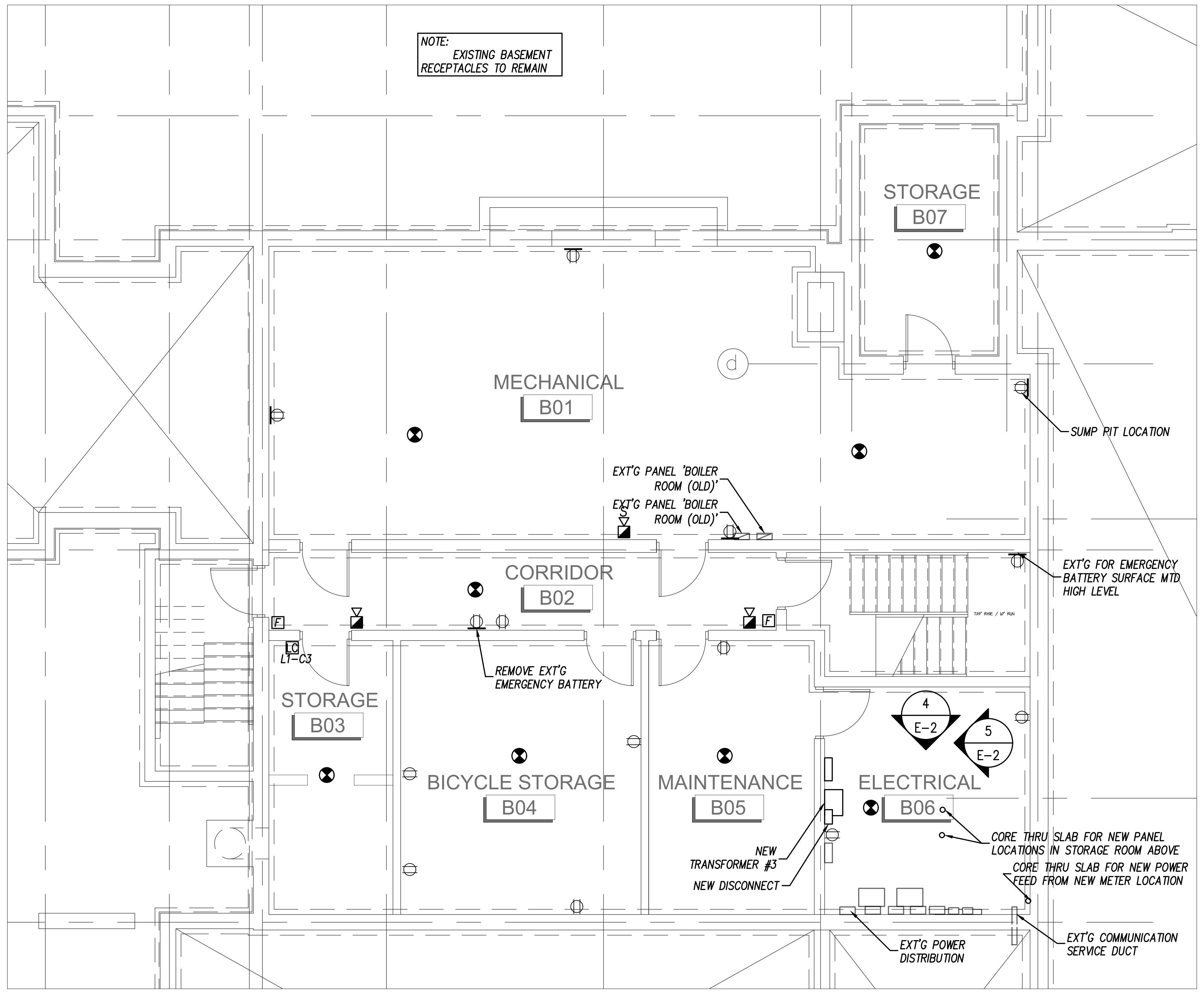
2. UNLABELED BOXES ARE JUNCTION BOXES
3. COVER & CAP ALL OPEN KNOCK OUTS

5
E-2
ELECTRICAL ROOM ELEVATION-2
SCALE: 1:20

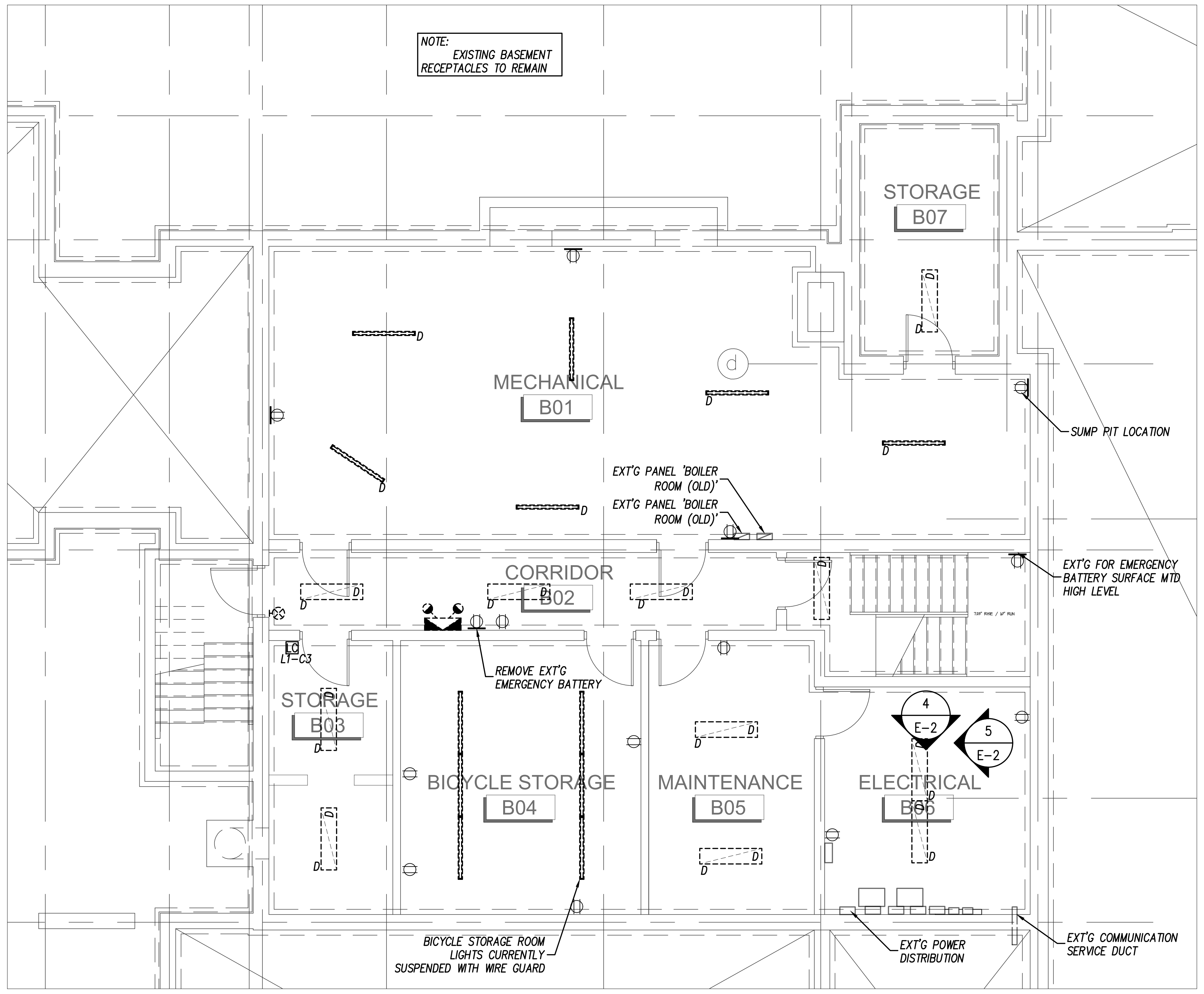


BASEMENT KEYPLAN



NOTE:
EXISTING BASEMENT RECEPTACLES TO REMAIN

2
E-2
PROPOSED BASEMENT POWER & SYSTEMS PART PLAN
SCALE: 1:75



NOTE:
EXISTING BASEMENT RECEPTACLES TO REMAIN

1
E-2
BASEMENT POWER & LIGHTING DEMOLITION PART PLAN
SCALE: 1:75

Hobin Architecture Incorporated

63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7

T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com

hobinarc.com

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BEKOLAY & ASSOCIATES. Ltd.
Consulting Engineers
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

PROJECT Boys & Girls Club Renovation
Price of Wales Clubhouse

DRAWING BASEMENT PART PLANS, DEMOLITION POWER & LIGHTING

C. L. WOOD
Oct 10, 2017

DATE	SCALE
10-Oct-17	AS NOTED
DRAWN BY	**DESIGNED BY**
MAG	CLW
JOB NO.	**CHECKED BY**
2017-017	CLW

DRAWING NO.
E-2 of 7

GROUND FLOOR

1
E-3
GROUND FLOOR POWER & LIGHTING DEMOLITION PLAN
1:75

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7

T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com

hobinarc.com

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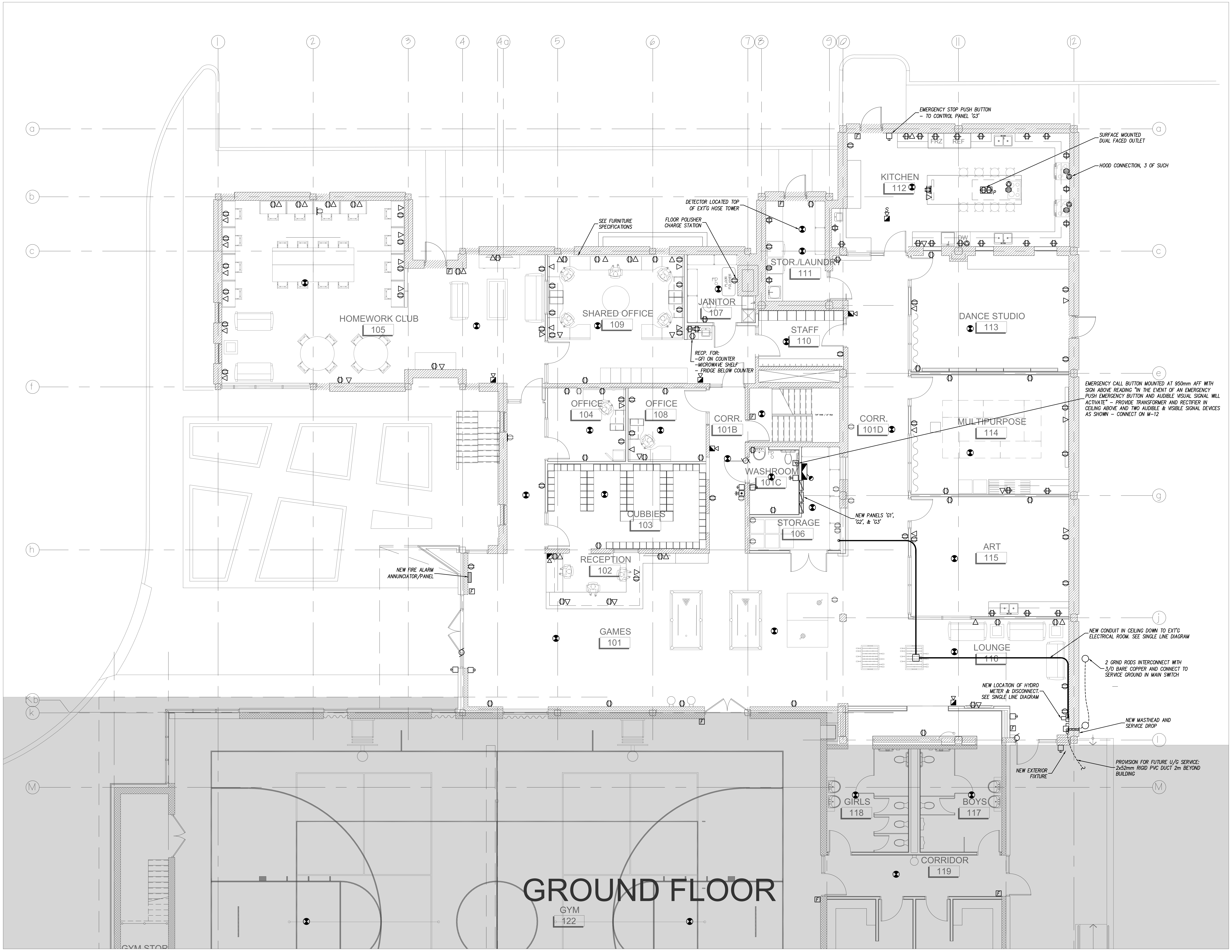
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

PROJECT Boys & Girls Club Renovation
Prince of Wales Club House

DRAWING Ground Floor Power & Lighting
Demolition Plan

C. L. WOOD
Oct 10, 2017

DATE 10-Oct-17	SCALE AS NOTED
DRAWN BY MAG	DESIGNED BY CLW
JOB NO. 2017-17	CHECKED BY CLW
DRAWING NO. E-3 of 7	



1
E-4
GROUND FLOOR POWER & SYSTEMS PLAN
1:75

Hobin Architecture Incorporated

63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7

T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com

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Consulting Engineers
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

PROJECT Boys and Girls Club
Prince of Wales Clubhouse

DRAWING Proposed Ground Floor Power & Systems Plan

C. L. WOOD
Oct 10, 2017

DATE	SCALE
10-Oct-17	AS NOTED
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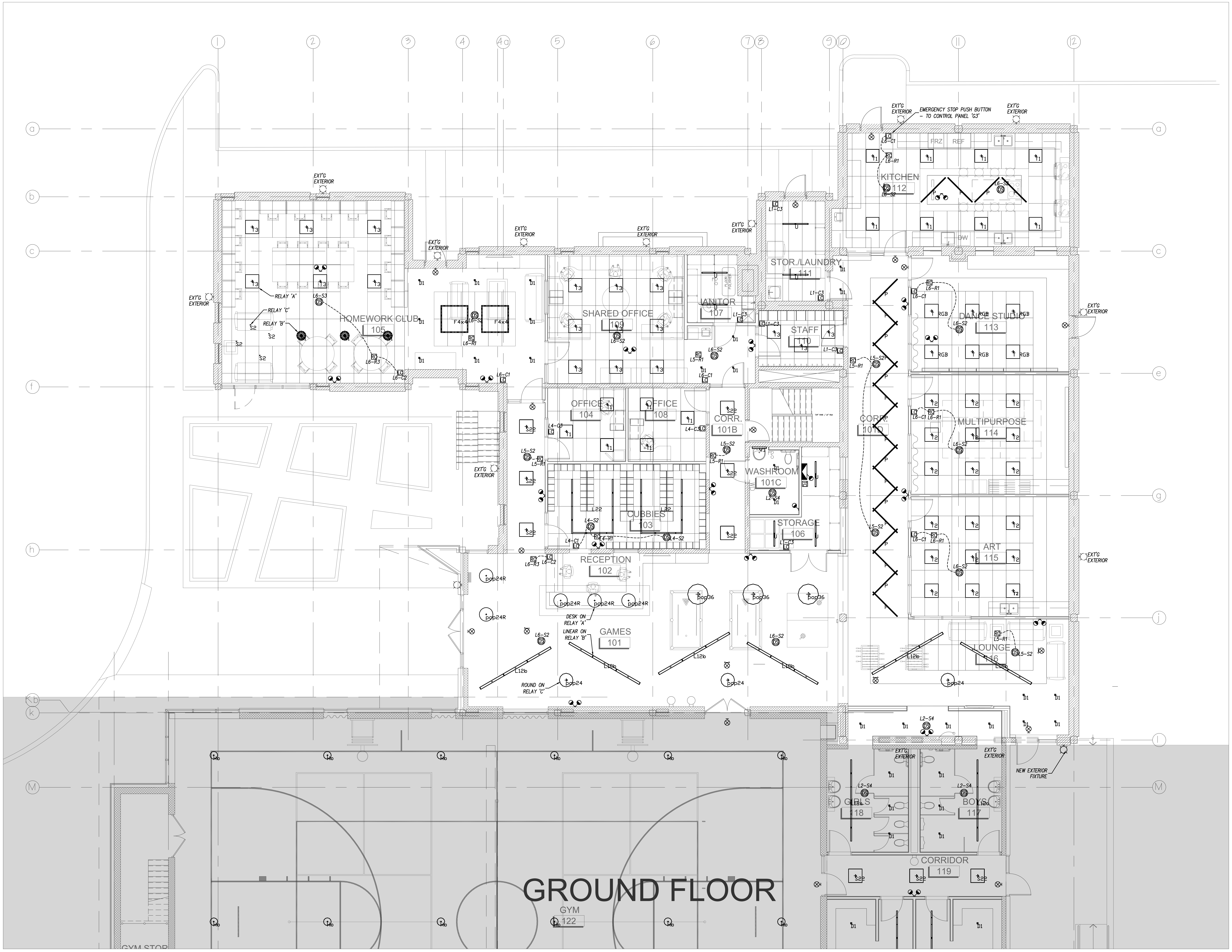
MAG	CLW
JOB NO.	CHECKED BY
2017-017	CLW

DRAWING NO.
E-4 of 7



1 / E-5 GROUND FLOOR LIGHTING PLAN
1:75

Hobin Architecture Incorporated

63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7

T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com

hobinarc.com

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Consulting Engineers
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

PROJECT Boys & Girls Club Renovation
Prince of Wales Clubhouse

DRAWING Propsed Ground Floor
Lighting Plan

C. L. WOOD
Oct 10, 2017

DATE	SCALE
10–Oct–17	AS NOTED
DRAWN BY	DESIGNED BY
MAG	CLW
JOB NO.	CHECKED BY
2017–009	CLW

DRAWING NO.
E–5 of 7

PANEL MAIN FLOOR PANEL

120/240 VOLT, 1 PH, 3 W.
200 AMP. MAINS
SURFACE MOUNTED

LOCATED BY EXT'G WASHROOMS ON GROUND FLOOR. TO REMOVED & DISPOSE PANEL & CABLES BACK TO SOURCE

		S.N.			
OFFICE PLUGS	15	1	2	15	FORCE FLO UNIT
HOMWWORK PLUGS	15	3	4	15	DORMITORY LIGHTS
SCORE CLOCK	15	5	6	15	DORMITORY LIGHTS
HOSE STORAGE LIGHTS	15	7	8	15	DINING ROOM PLUGS
GIRLS WSH RM MAINT OFFICE	15	9	10	15	DINING ROOM PLUGS
CORRIDOR LIGHTS	15	11	12	15	spre
CORREYS OFFICE	15	13	14	15	DANS OFFICE
TOURIST BUREAU LIGHTS	15	15	16	15	FLOOD LIGHTS ON ROOF
TOURIST BUREAU MISC. LIGHTS	15	17	18	15	WATCH ROOM
TOURIST BUREAU EXHAUST FAN	15	19	20	15	TOMS COMPUTER
KITCHEN LIGHTS	15	21	22	15	CORRIDOR LIGHTS
DINING ROOM LIGHTS	15	23	24		UNIT HEATER
SPARE	15	25	26	15	HWK ROOM NORTH WALL PLUGS
SPECIAL PLUG WATHRM	15	27	28	15	GYM PLUGS
SPARE	15	29	30	15	WOMENS WASHROOM FAN
TOURSIT BUREAU PLUGS	15	31	32	15	MENS WASHROOM FAN
TOURSIT BUREAU PLUGS	15	33	34	15	GYM LIGHTS
KITCHEN PLUG	15	35	36	15	GYM LIGHTS
KITCHEN PLUG	15	37	38	15	APPARTUS RM LIGHTS
PEPSI MACHINE	15	39	40		
WATER COOLER	15	41	42	50	STOVE

PANEL BASEMENT SWITCH ROOM

120/240 VOLT, 1 PH, 3 W.
140 AMP. MAINS
SURFACE MOUNTED

		S.N.			
CAR PLGS	15	1	2	15	BASEMENT LIGHTS
BELL TEL PLUG	15	3	4	15	BASEMENT LIGHTS
BASEMENT PLUG	15	5	6	15	office plugs
BASEMENT PLUG	15	7	8		
EMERG LIGHT	15	9	10	50	APARATUS RM PANEL
		11	12	15	DOOR OPERATOR
PANEL C	40	13	14	15	OUTDOOR LIGHTS
OUTDOOR LIGHTS	15	15	16		
OUTDOOR LIGHTS	15	17	18	60	BOILER ROOM PANEL

TO BE REMOVED (APARATUS RM PANEL)

REPLACE BREAKER WITH BLANK FILLERS (PANEL C)

LOCATED AT REAR OF 'GYM' IN OLD TRUCK GARAGE, REMOVE & DISPOSE PANEL & CABLES BACK TO SOURCE

PANEL APARATUS RM

120/240 VOLT, 1 PH, 3 W.
70 AMP. MAINS
RECESSED MOUNTED

		S.N.			
EXIT SIGNS	15	1	2	20	KITCHEN PLUGS
EMG LIGHTS	15	3	4	15	DISHWASHER
BACK ROOM	15	5	6	15	SPARE
ARTS ROOM EXIT SIGN	15	7	8	15	BACK ROOM
SPACE		9	10		SPACE
SPACE		11	12		SPACE

PANEL BOILER ROOM (OLD)

120/240 VOLT, 1 PH, 3 W.
70 AMP. MAINS
SURFACE MOUNTED

EXT'G PANEL TO REMAIN AS CONFIGURED

		S.N.			
CONTROL TRANSFORMER	15	1	2	15	BOILER RM LIGHTS
EXIT BATTERY LIGHTS	15	3	4	15	FRIDGE PLUG
BOILER RM PLUGS	15	5	6	15	SUMP PUMP
PANEL PLUG	15	7	8	20	UNIT HEATER & EXHAUST FAN
		9	10		
SYSTEM CIRC PUMP	15	11	12	60	PANEL 2

PANEL 'C'

120/240 VOLT, 1 PH, 3 W.
225 AMP. MAINS
SURFACE MOUNTED

EXT'G PANEL 'C' TO BE RE-FED FROM NEW 37.5kVA TRANSFORMER

		S.N.			
		1	2		
CONDENSOR	50	3	4	50	CONDENSOR
A/C UNIT 15A 5A ________ 15A 5B	DBL	5	6		
________ 15A 7A ________ 15A 7B	DBL	7	8	30	ROOF TOP UNIT
________ 15A 9A ________ 15A 9B	DBL	9	10		
______	15	11	12	15	AC UNIT
______		13	14		
______	30	15	16	15	COUNTER RECEPT.
DEDICATED 15–20R COMPUTERS	20	17	18		SPACE
DEDICATED 15–20R COMPUTERS	20	19	20		SPACE
SPACE		21	22		SPACE
SPACE		23	24		SPACE

PANEL 2 – BOILER RM

120/240 VOLT, 1 PH, 3 W.
100 AMP. MAINS
SURFACE MOUNTED

EXT'G PANEL TO REMAIN AS CONFIGURED

		S.N.			
BOILER	15	1	2		SPACE
PUMP 1	20	3	4		SPACE
PUMP 2	20	5	6		SPACE
PUMP 3	20	7	8		SPACE
TEKMARS & CONTROLS	15	9	10		SPACE
SPARE	15	11	12		SPACE
SSPARE	15	13	14		SPACE
SPACE		15	16		SPACE
SPACE		17	18		SPACE
SPACE		19	20		SPACE
SPACE		21	22		SPACE
SPACE		23	24		SPACE

PANEL 'C'

120/240 VOLT, 1 PH, 3 W.
225 AMP. MAINS
SURFACE MOUNTED

		S.N.			
		1	2		
CONDENSOR	50	3	4	50	CONDENSOR
A/C UNIT 15A 5A ________ 15A 5B	DBL	5	6		
________ 15A 7A ________ 15A 7B	DBL	7	8	30	ROOF TOP UNIT
________ 15A 9A ________ 15A 9B	DBL	9	10		
______	15	11	12	15	AC UNIT
______		13	14		
______	30	15	16	15	COUNTER RECEPT.
DEDICATED 15–20R COMPUTERS	20	17	18		
DEDICATED 15–20R COMPUTERS	20	19	20	50	PANEL 'BASEMENT SWITCH ROOM'
SPACE		21	22		SPACE
SPACE		23	24		SPACE

NEW BREAKER (PANEL 'BASEMENT SWITCH ROOM')

PANEL 'G1'

120/208 VOLT, 3 PH, 4 W.
200 AMP. MAINS
SURFACE MOUNTED

		S.N.			
HOME WORK CLUB	15	1	2	15	OFFICE RECEPTACLES
HOME WORK CLUB	15	3	4	15	PANEL PLUG
HOME WORK CLUB	15	5	6	15	EMERGENCY LIGHT BATTERY
HOME WORK CLUB	15	7	8	15	LIGHTING WEST SIDE
HOME WORK CLUB	15	9	10	15	LIGHTS FUTURE GYM
HOME WORK CLUB	15	11	12	15	SPARE
HOME WORK CLUB	15	13	14	15	SPARE
	15	15	16	15	SPARE
	15	17	18	15	SPARE
	15	19	20	15	
	15	21	22	15	
	15	23	24	15	
	15	25	26	15	
	15	27	28	15	
	15	29	30	15	
	15	31	32	15	
	15	33	34	15	
	15	35	36	15	
	15	37	38	15	
	15	39	40	15	
	15	41	42	15	
	15	43	44	15	
	15	45	46	15	
	15	47	48	15	
	15	49	50	15	
	15	51	52	15	
	15	53	54	15	
	15	55	56	15	
	15	57	58	15	
	15	59	60	15	
	15	61	62	15	
	15	63	64	15	
	15	65	66	15	

PANEL 'G2'

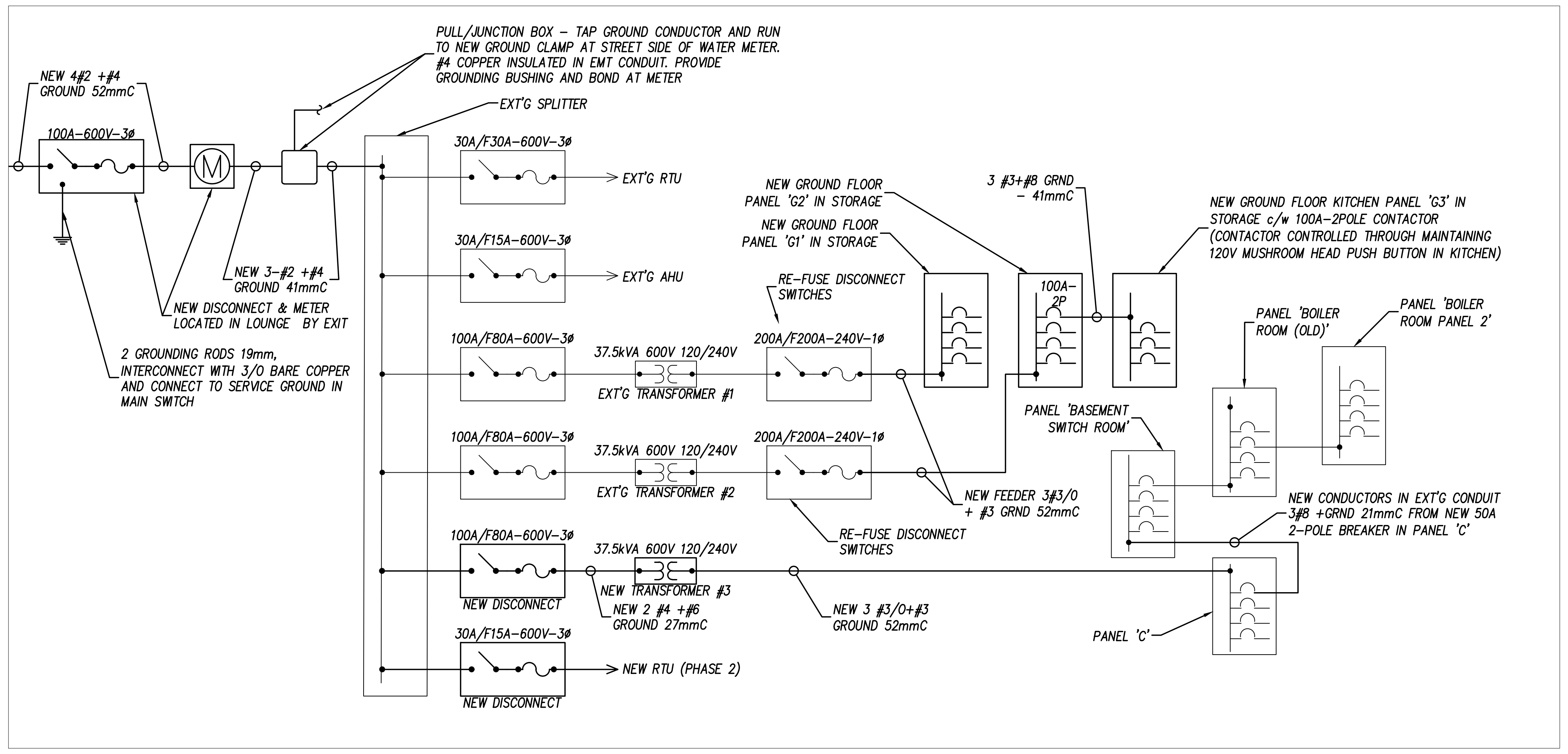
120/240 VOLT, 1 PH, 3 W.
200 AMP. MAINS
SURFACE MOUNTED

		S.N.			
LIGHTING EAST SIDE	15	1	2		
SPARE	15	3	4	100	PANEL 'G3'
SPARE	15	5	6	15	
SPARE	15	7	8	15	
DANCE STUDIO	15	9	10	15	
DANCE STUDIO	15	11	12	15	
MULTI–PURPOSE	15	13	14	15	
MULTI–PURPOSE	15	15	16	15	
ART	15	17	18	15	
ART	15	19	20	15	
LOUNGE	15	21	22	15	
CORRIDOR	15	23	24	15	
	15	25	26	15	
	15	27	28	15	
	15	29	30	15	
	15	31	32	15	
	15	33	34	15	
	15	35	36	15	
	15	37	38	15	
	15	39	40	15	
	15	41	42	15	

PANEL 'G3'

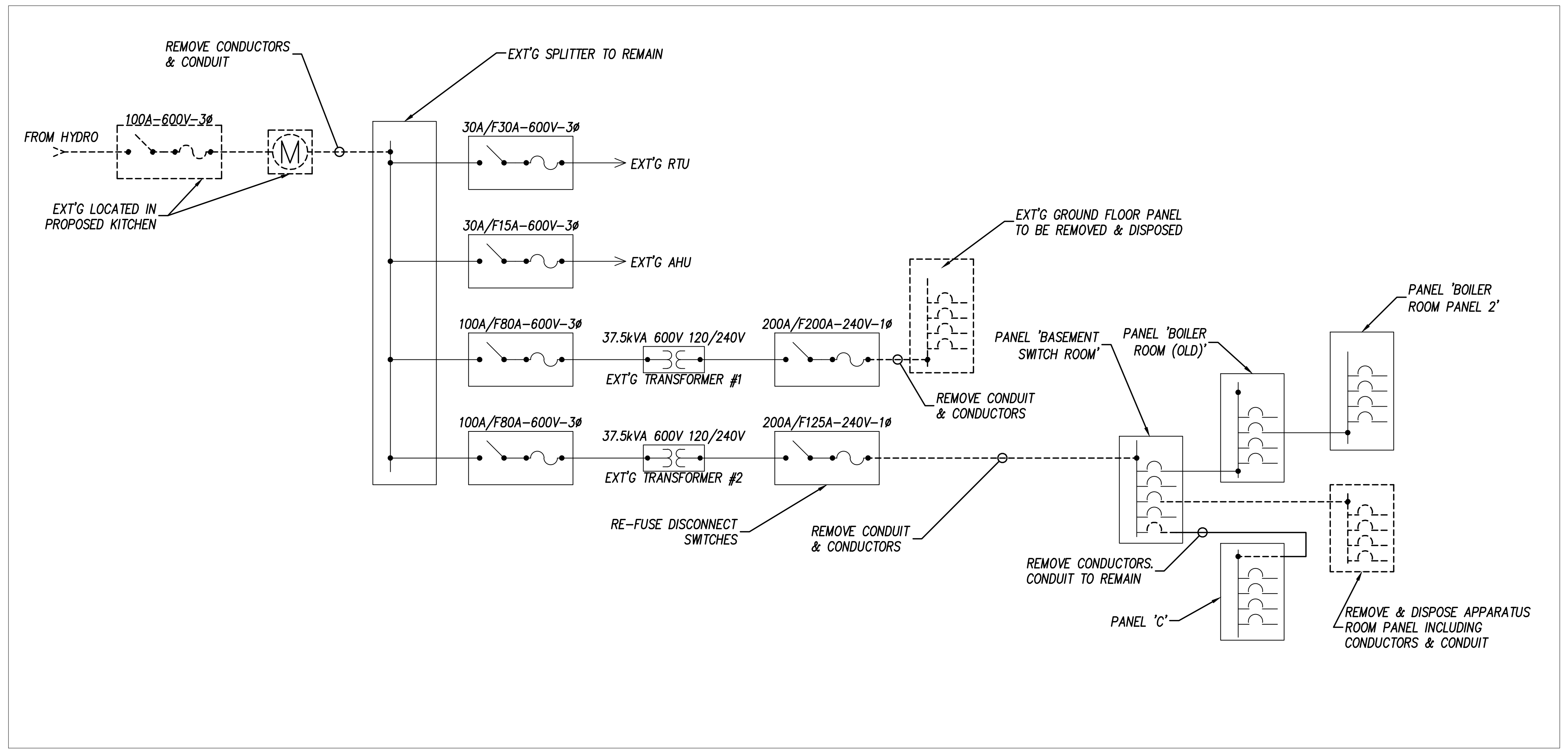
120/208 VOLT, 1 PH, 3 W.
100 AMP. MAINS
SURFACE MOUNTED

		S.N.			
KITCHEN COUNTER	20	1	2		
KITCHEN COUNTER	20	3	4	40	RANGE 1
KITCHEN COUNTER	20	5	6		
KITCHEN COUNTER	20	7	8	40	RANGE 2
KITCHEN COUNTER	20	9	10		
KITCHEN COUNTER	20	11	12	30	ISLAND COOK TOP
KITCHEN COUNTER	20	13	14	15	FRIDGE
KITCHEN COUNTER	20	15	16	15	FREEZER
KITCHEN COUNTER	20	17	18	15	DISH WASHER
KITCHEN COUNTER	20	19	20	15	RECEPTACLE
KITCHEN COUNTER	20	21	22	20	KITCHEN COUNTER
KITCHEN COUNTER	20	23	24	20	KITCHEN ISLAND
KITCHEN COUNTER	20	25	26	20	KITCHEN ISLAND
KITCHEN COUNTER	20	27	28		SPARE
KITCHEN COUNTER	20	29	30		SPARE



2
E–6

SINGLE LINE DIAGRAM – PROPOSED REVISION
SCALE: N.T.S.



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E–6

SINGLE LINE DIAGRAM – EXISTING/DEMO CONDITION
SCALE: N.T.S.

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7
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2.	ISSUED FOR BUILDING PERMIT	2017–10–10
1.	ISSUED FOR REVIEW/COORDINATION	2017–10–05

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BEKOLAY & Associates. Ltd.
Consulting Engineers
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

10–Oct–17

PROJECT Boys & Girls Club Renovation
Prince of Wales Clubhouse

DRAWING Panel Schedules
Single Line Diagram

DATE 10–Oct–17	SCALE AS NOTED
DRAWN BY MAG	DESIGNED BY CLW
JOB NO. 2017–017	CHECKED BY CLW
DRAWING NO. E–6 of 7	

Electrical Specifications Boys & Girls Club
General Instructions:

1. Repair and make good all walls, ceilings, etc. cut under this division.
2. Protect existing work and equipment during construction.
3. Test all system components for proper operation and safety.

General Demolition Notes:

1. Removals include but are not limited to: devices, raceways, outlet boxes, branch wiring and all associated conduit and wire. All associated removals such as wiring, boxes, etc. to be removed back to source.
2. Unless otherwise indicated, all equipment and material removed becomes the property of the contractor and shall be removed from site.
3. Maintain, retain, and make good as required all existing branch wiring, feeders, etc. which pass through the renovation and demolition areas.
4. For abandoned outlets provide suitably size stainless steel blank cover plates.

Specification Notes:
1. General
  .1 Do complete installation in accordance with the following: Ontario building code, Ontario electrical code, amendments and applicable local regulations c/w inspection certificate.
  .2 Prior to tender, confirm site conditions and location of existing services.
  .3 Review all construction documents and be familiar with general construction methods. Make provisions in the form of rated enclosures to maintain all fire separations.
  .4 Drawings indicate general location, quantity and type of outlets for electrical services only. Do not scale.
  .5 Review mechanical shop drawings; confirm voltage, current, and connection requirements prior to wiring installation.
  .6 Submit all plans required by the inspection authority for approval. Furnish inspection certificate, prior to final payment, to show installed work conforms with specification and regulations. Pay all fees and permit costs.
  .7 Submit shop drawings to the engineer for approval. Provide shop drawings of all equipment and devices. Include details descriptions and instructions fully describing the equipment or system including how it is installed and operates.
  .8 Upon completion of work provide markup prints describing as-built conditions and 3 copies of operating and maintenance instruction manuals.
  .9 Allow for relocation of outlets up to 3000mm prior to installation at no extra cost..10 All wiring devices to be specification grade.
  .11 Install electrical equipment at the following heights unless otherwise indicated or directed otherwise or indicated by design drawings.
    (a) Local switches and dimmer switches: 1220mm
    (b) General receptacles: 400mm
    (c) Receptacles above counter: 175mm above backsplash
    (d) Panelboards: 1980mm from the top of panelboard to floor – or as detailed
    (e) Telecom and cable TV outlets: 400mm
  .12 As required by OBC Division B Article 4.1.18, Elements of Structures, Non-Structural Components and Equipment, include seismic restraints for all electrical equipment and components, installed under this Contract, where not directly and rigidly attached to the structure. Provide suitable pre-engineered systems and where necessary and required by The Authority Having Jurisdiction, retain and pay for the services of a Professional Structural Engineer (registered in Ontario), to design, sign, and seal drawings for Seismic Restraints.
  .13 EQUIVALENTS AND ALTERNATES:
    .1 Manufacturer's names listed in these specifications set the standard for the material and where applicable energy efficiency requirements to comply with SB-10. They are not intended to exclude other manufactures from bidding with equivalent products.
    .2 Products not meeting all design requirements are considered alternates and they will be rejected until the specified item or equivalents meeting the requirements acceptable to the engineer are provided.

2. Wiring Method
  .1 Unless otherwise indicated on the drawings, or in this specification, wiring methods shall be:
    (a) Conductors in electric metallic tubing where exposed and for home runs to panels; for concealed branch local wiring, multi-conductor armored cable is acceptable.
    (b) Final connection to motors or other vibrating equipment with minimum 1000mm liquid tight flexible conduit.
    (c) For surface wiring in finished masonry walls 'run' conduit vertically from ceiling accessible junction or pull box to surface outlet or multi outlet wireway.
    (d) Conceal all new wiring in new construction.

  .2 Provide pull strings in all empty conduit.
  .3 Conductor material:
    (a) Annealed commercial grade, 98% conductivity, copper.
    (b) No.14 to No.10 awg – solid; No.8 and larger – stranded.
    (c) 600V RW90, unless otherwise noted.
    (d) Smallest conductor size allowed no.12 AWG over 50 Volts.
    (e) In finished areas run wiring concealed.
    (f) Branch circuits longer than 22.8m (75') upsize conductors to next AWG rating
  .4 Run insulated grounding conductor in all conduits with current carrying conductors.

3. Outlet Boxes and Conduit Boxes
  .1 For recessed installation Electro-galvanized steel single and multi gang flush device boxes for flush installation minimum 102MM square with extension and plaster rings as required.
  .2 102MM square or octagonal outlet boxes for lighting fixture outlets.
  .3 Flush outlet boxes for data and telecommications to be 102 mm x 102 mm x 78 mm deep with plaster ring to suit.
  .4 For masonry electrogalvanized steel masonry single and multi gang boxes for devices flush mounted in exposed block walls.
  .5 Surface mounted installations – For power, data and telecom on existing walls provide cast metal outlet box finished surface applications.

4. Multi-outlet surface wire ways
  .1 For surface installation above and below work station counters and desks
  .2 System to be dual channel with barrier one channel for installation of telephone and data outlets and one channel for 120 volt power outlets.
  .3 System to be wiremold 4000 or equal
  .4 Install with power and telecomm/data outlets where indicated.

5. Grounding
  .1 Grounding equipment to CSA C22.2 No.41. Copper grounding conductors to CSA C22.1, section 10 (latest edition).
  .2 Non-corroding accessories necessary for grounding system, type, size, material as indicated, including but not necessarily limited to: Grounding and bonding bushings; protective type clamps; bolted type conductor connectors; thermite welded type conductor connectors; bonding jumpers and straps; pressure wire connectors.
  .3 Install complete permanent, continuous, system and circuit grounding systems.

6. Identification
  .1 Identify source, voltage and load on all junction boxes. Use of indelible marker for these where concealed or in unfinished areas is acceptable.
  .2 All conductors to be colour coded in accordance with CSA 22.1 – section 4. 036
  .3 Provide typed, updated schedules in all panelboards.
  .4 Provide lamicoid identification labels on all equipment.

7. Dry Type Transformers
  .1 Low voltage, distribution type ANN Single phase with 600V primary- and 120/240V- 3wire secondary
  .2 Primary and secondary windings – copper
  .3 Standard taps – 2x2- 1/2% above and below normal
  .4 Insulation – 150°C rise
  .5 10kV BIL
  .6 Efficiency – The higher of CSA standard C802.2 and ASHRAE 90.1
  .7 Impedance – Minimum Value 2%
  .8 Sound level – to CSA standard

8. Panelboards
  .1 Breaker type panelboard to CSA C22.2 No. 29 with the following features:
    (a) 250V branch panels: bus and breakers rated for 10,000A RMS symmetrical interrupting capacity.
    (b) Main breaker, mains, number of circuits, and number and size of branch circuit breakers as indicated.
    (c) Tin-plated copper bus with full size neutral.
    (d) Equipment ground bus to match neutral bus. Bolted directly to panelboard enclosure.
    (e) Mains suitable for bolt-on breakers.
    (f) Finish: trim and door – baked grey enamel.
    (g) Installation/mounting: flush or surface trim as indicated.
    (h) Mount panelboards to 1980mm (6'-6") to top – or as detailed.
    (i) Connect loads to circuits as indicated.
    (j) Connect neutral conductors to common neutral bus with respective circuit(s) identified.
  .2 Standard of acceptance: Eaton, GE, Siemens, Schneider

9. Moulded Case Circuit Breakers
  .1 Provide moulded case circuit breakers to CSA 22.2 No. 5.1, with the following features:
    (a) Provide automatic moulded case circuit breakers in panelboards as indicated. Breaker sizes and trips as scheduled, or indicated on the one-line diagram.
    (b) Use bolt-on moulded case circuit breakers, quick-make, quick-break type for manual and automatic operation with temperature compensation for 40°c (104°f) ambient.
    (c) Breakers shall be common trips with single handle for multi-pole application.
    (d) In panelboards, moulded case circuit breakers to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping under overload conditions, and instantaneous magnetic tripping for circuit protection.
    (e) Magnetic instantaneous trip elements to operate only when the value of current reaches 10 to 12 times the breaker trip setting.
    (f) Breaker minimum interrupting capacity (symmetrical RMS values) shall be not less than the following: 240V – 10KA.
    (g) Motor control magnetic starters shall be provided with motor circuit interrupter breakers – 250V, 3 pole, 10KA interrupting capacity, magnetic trip only, adjustable (8 settings), with locking pin.
  .2 Standard of acceptance: CSA approved for panelboard.

10. Wiring Devices
  .1 Manually operated general purpose ac switches to CSA C22.2 No. 111. – Decorator style
  .2 Snap switches to CSA C22.2 No. 55-M1986 (R2003).
  .3 Receptacles, plugs and similar devices to CSA C22.2 No. 42-99 (R2004).
  .4 Coverplates to CSA C22.2 No. 42.1-00 (R2004).
  .5 Switches:
    (a) 15A, 120V single pole, three-way, four-way specification grade switches as indicated.
    (b) Toggle operated, fully rated for tungsten filament and fluorescent lamps, and up to 80% of rated capacity of motor loads.
    (c) Switches of one manufacturer throughout project. Equal to Hubbell 1200 series for 120V
    (d) Install single throw switches with handle in the 'UP' position when switch is closed.
    (e) Install switches in gang type outlet box when more than one switch is required in one location.
  .6 For light switching with automatic control features forming part of a lighting control system refer to the lighting control specification
  .7 Receptacles:
    (a) Duplex receptacles throughout – shall be CSA type 5-15R, 125V, 15A, or 20A with U ground
  .8 Coverplates:
    (a) Provide coverplates for all wiring devices.
    (b) Colour of coverplates to match wiring devices – shall be stainless steel or brushed aluminum – Switchplates to be decorator style to match wall mount occupancy sensors and dimming controls
  .9 Wiring devices to be white

11. Lighting Fixtures
  .1 Fixture types:
    (a) Refer to fixture schedule.
  .2 LED lamps shall be 4100°K or as indicated; efficacy (Lumens/Watt) as indicated for the fixture. Drivers (power supplies) to match LED Type. Rated life (50% failure) for LED and driver systems minimum 50,000 Hours.
  .3 Ceiling mounted fixtures to be supported from the structure by auxiliary chain hangers.

12. Lighting Control System
  .1 Lighting controls for all new lighting to be in accordance with Ontario Building Code SB-10 and the relevant mandatory provisions of ASHRAE 90.1 2013 – Part 9 – Section 9.4
  .2 Refer to lighting control legend for system component types and function.
  .3 Wall mounted lighting control stations low voltage shall be decorator type. Multiple units shall be ganged together, and installed at the local switch height specified.
  .4 In offices and similar spaces requiring 2-level A/B and dimming control, the occupancy sensors shall be low voltage, ceiling mounted, passive infrared, with wall mounted 2-pole with manual control push button and relay for the 2nd (B) level.
  .5 Where indicated as required due to obstructions sensors to be dual technology.
  .6 Line voltage control systems both single and dual channel shall have minimum 800 Watts load capacity per channel at 120 Volt.
  .7 Where indicated provide low voltage DC control systems consisting of a wall mounted station and remote low voltage ceiling or wall mounted occupancy sensor. Each system shall include the necessary junction box mounted power and control devices consisting of a 120V to low voltage DC power supply and auxiliary line and low voltage output relays to achieve the functions and control systems indicated. Provide dimming control capability.
  .8 Low voltage control systems shall be single or 2 channel as indicated. Their line voltage control capacity shall be 1600 Watts per channel at 120V.
  .9 Low voltage DC systems control wiring shall be carried out utilizing Category 5 Enhanced (Cat5e) FT6 rated wiring with terminal connections suited for the devices.
  .10 Install low voltage wiring in EMT conduit drops in walls to ceilings where they are accessible, run open in accessible ceilings, neatly supported and securely fastened. In inaccessible ceilings install control wiring in complete EMT raceway system between all devices. Provide access door to equipment in ceilings where required.
  .11 At least 6 weeks prior to scheduled installation prepare and submit complete and detailed shop drawings for all components. Include drawings showing the method of installation for each device. Include detailed wiring diagrams for each type of system to be installed.
  .12 Prior to rough in for installation, consult with the manufacturer's qualified technical representative and determine the placement, sensitivity and time out requirements for the devices selected for compliance with these specification in the areas where they are shown.
  .13 Arrange and pay for field programming by the manufacturer's technician.
  .14 Following completion of the lighting controls installation, retain and pay for the services of the manufacturer's qualified technical representative who shall test and confirm the correct functional performance for each device. The technical representative shall prepare and submit a report confirming that each device meets the control requirement, include copies in the instruction and maintenance manuals.
  .15 Devices shall be Lutron or DLM System by WattStopper or equivalent.

13. Exit lights
  .1 Exit signs to OBC 3.4.5.1(2):
    (a)
    (b) consist of a green pictogram and white graphic symbol meeting the visibility specifications referred to in ISO 3864-1, Graphical Symbols – Safety Colours and Safety Signs – Part 1: Design Principles for Safety Signs in Workplaces and Public Areas, and
    (c) conform to the dimensions indicated in ISO 7010, Graphical Symbols – Safety Colours and Safety Signs – Safety Signs Used in Workplaces and Public Areas for the following symbols:
      (I) E001 emergency exit left,
      (II) E002 emergency exit right,
      (III) E005 90-degree directional arrow, and
      (IV) E006 45-degree directional arrow.
  .2 Design features:
    (a) Wall, end-to-wall or ceiling mounting as indicated. Field adaptable, universal mount.
    (b) Single or double faced as indicated. Faceplate to remain captive for maintenance.
    (c) Connections-120V normal; provision for emergency 12 volt DC connection.
    (d) Housing to be extruded aluminum- white in colour. Optical diffuser for even illumination.
    (e) Solid-state design. Long life, non-protruding, high brightness LED's. Minimum 25 year life. Maximum of 5 watts per unit (double faced). Acrylic barrier to protect LED's.
  .3 Standard of acceptance: Beghelli Micra RM series or equal.

14. Emergency Lighting
  .1 Provide new battery unit – 24V DC:
    (a) Rated 720 watts for 30 minutes; voltage to e consistent with existing remote heads,
    (b) Certified in accordance with CSA-141,
    (c) Mount on new wall bracket.
  .2 Remote lamp heads to be same manufacturer as battery unit, with the following features:
    (a) 24V DC operation, MR16 6W LED each unless otherwise indicated – verify existing voltage before ordering.
    (b) Plastic/composition body and plate, adjustable mounting, swivel type complete with tungsten composite lamp. Suitable for mounting on surface mounted octagon box.
    (c) Equal to: AimLite RMMD

15. Telecom/Data
  .1 Provide 4" (100mm) square recessed outlet boxes with suitable plaster ring to accommodate owners telecom and data connection devices. Provide conduit in partition to ceiling space. For multiple outlet assemblies – provide 3/4" (21mm). Conduit to be EMT set screw connectors at box. Devices, plates and wiring to be by owner's contractor.

16. Surface Mounted Installations
  .1 For installation of power and data outlets on existing walls provide surface mounted EMT conduit to surface mounted outlet box. Leviton Type 42777 series. Provide matching SS coverplate.

17. Underground Systems
  .1 Provide underground ducts for power, telecom and communication system
  .2 Ducts to be type "DB" approved for direct burial
  .3 Install ducts in sand bedding founded on undisturbed soil.
  .4 Provide suitable spacers and fasteners to maintain duct configuration during covering

18. Fire Alarm System Specification:

  .1 The fire alarm system shall be a fully electrically supervised, zoned, non coded, single stage Data Communication Link Type. The complete installation shall comply with ULC S524 Standard for Installation of Fire Alarm Systems, and all related reference standards, The Ontario Building Code, and The Ontario Electrical Code including Section 32.
  .2 Control Panel
    .1 The fire alarm control panel shall be microprocessor based – DCLA with minimum, 4 Class B signal circuits , 4 auxiliary output relays with double throw normally open; normally closed contacts rated to 3 Amp minimum.
    .2 Automatic fire detection smoke type detector zones shall be capable of monitoring self-diagnosing "clean me" type.
    .3 Alarm and signal circuits to be class B. Provide end of line resistors adjacent to the control panel.
    .4 The control panel shall include a central station connection output.
    .5 The control panel shall connect from a 120V single phase power circuit 15 Amp rated. It shall operate at 24V DC. Backup power to support the system shall be with an approved battery system mounted externally or internal to the panel.
    .6 Audible signals (outputs) configurable for steady, temporal code, California code, and march time (selectable by user following installation).
    .7 Synchronization capability for signal circuits.
    .8 Configurable signal silence, one person walk test.
    .9 Subsequent alarm supervisory and trouble operation.
    .10 Audible trouble signal.
    .11 Control Switches:
      (a) Alarm silence
      (b) Trouble silence
      (c) Reset
      (d) Lamp test
      (e) Drill
      (f) Auxiliary relay by-pass
    .12 Indicators – Visual
      (a) Power on
      (b) Power trouble
      (c) Ground trouble
      (d) System trouble
      (e) Remote annunciator trouble
      (f) Signals silenced
    .13 Enclosure: 16 gauge steel, surface mounted, finished in manufacturers
    .14 Conforms to CAN/ULC S527 Standard Control Units for Fire Alarm Systems
  .3 Data Fault Isolators
    .1 Provide fault isolators in the data communication link at each zone to ensure a short fault in one alarm zone will not prevent normal operation of the data communication link in all other zones.
  .4 Remote Annunciator
    .1 The remote annunciator will be surface mounted.
    .2 Enclosure fabricated from 16 gauge steel – finished white
    .3 Include visual indication of all zones
    .4 Include common controls – system reset signal silence, fire drill, buzzer, buzzer silence, and lamp test.
  .5 Passive Graphic Panel
    .1 In glazed frame surface mounted adjacent to the remote annunciator
    .2 include layouts for each floor with all walls and internal details.
    .3 Each devise indicated with the discrete identifier beside each
    .4 Signal devices to indicate circuit number.
  .6 System Operation
    .1 Alarm – Upon actuation of any manual or automatic initiating device the following shall occur:
      (a) Evacuation alarm devices operate continuously
      (b) Transmit alarm signal to central station
      (c) Alarm device and location to be indicated on the control panel and remote annunciator
      (d) Activate programmed auxiliary relays for fan shutdown and door release relays
      (e) Log the event
      (f) The signal devices shall continue to operate until silenced
    .2 Trouble – Upon occurrence of open or fault on wiring or system device the following shall occur:
      (a) Trouble signal will sound at the control panel and remote annunciator
      (b) The trouble light will illuminate on the affected zone at the control panel and remote annunciator
      (c) Trouble signal will be transmitted to the central station
      (d) Log the event
    .3 Alarm silence – After the minimum permitted time period operating the alarm silence switch at the control panel will cause:
      (a) Alarm signal devices to be silenced
      (b) The trouble signals and lights will operate
      (c) A subsequent alarm will override and cause the evacuation signal to operate
      (d) After the alarm condition has been addressed the reset button can be activated, causing the complete system to reset and the trouble signal will sound until the alarm silence switch is returned to normal.
    .4 Trouble silence – Operation of the trouble silence switch will cause:
      (a) The audible trouble alarm signal will be silenced at the control panel and remote annunciator
      (b) The trouble light will continue to indicate
      (c) Upon correction of the trouble the audible signals will again sound until the silencing switch is returned to normal
  .7 Manual Alarm Initiating Stations
    .1 Non coded, single pole normally open addressable device
    .2 Colour: Red
    .3 Visible indication of operation
    .4 Restoration with proprietary tool or key – identical throughout
    .5 Cast aluminum construction
    .6 Conform to CAN/ULC S528 Standard – Manual Stations for Fire Alarm Systems Including Accessories
  .8 Automatic Heat Activated Fire Detection Alarm Devices
    .1 Combination fixed temperature and rate of rise; addressable device
    .2 Rate of rise 8°C/Minute, self-resetting
    .3 Fixed temperature upper limit 57°
    .4 Field testable for rate of rise element by application of heated air appliance
    .5 Visible indicator – pop down disc in alarm state
    .6 Mounting base; plug connect twist lock install
    .7 Conform to CAN/ULC S530 Standard – Heat Activated Fire Detectors for Fire Alarm Systems
  .9 Automatic Smoke Activated Fire Detection Alarm Device
    .1 Photoelectric addressable type
    .2 Visible LED indicator – flashing in operational standby; steady in alarm state
    .3 Compatible with panel status monitoring "Clean Me" feature
    .4 Mounting base; plug in twist lock install
    .5 Conform to CAN/ULC S529 Standard – Smoke Detectors for Fire Alarm Systems
  .10 Duct Mounted Smoke Detector
    .1 Detectors installed in ducts of photoelectric addressable type and listed by ULC for duct installation
    .2 Detectors with approved duct housing, mounted exterior to duct, with perforated sampling tubes extending across width of duct.
    .3 Air velocity rating 0.5 m/s to 20.3 m/s
    .4 Activation of duct detectors to cause shutdown of associated air handling unit, annunciation at control panel, and tripping of transmitter and sounding of building alarm
    .5 Remote visible indicator lamp that flashes when detector is in normal standby mode and glows continuously when detector is activated
    .6 Remote indicator lamp in visible locations on ceiling in room below air handling unit
    .7 Permanently label remote indicator with description of associated air handling unit
    .8 Detectors with rated contact sets, one for wiring directly into fan shutdown circuit of the air handling unit
  .11 Audible Signal Devices
    .1 Audible signal devices shall be compact mini-horns – piezoelectric type
    .2 Sound output 90dBA minimum at 3.0 meters
    .3 Flush mounting on standard outlet box
    .4 White finish
    .5 Wall mounting
  .12 Combination Audible Horn/Strobes
    .1 Audible signal – piezoelectric mini-horn
    .2 Sound output – 90dBA at 3.0 meters
    .3 Visual Signal – flashing light with adjustable settings – set at 110 candelas
    .4 Wall mounting to outlet box or pre-wired back plate
    .5 White finish
    .6 Synchronized at control panel
  .13 Remote Auxiliary Relays
    .1 Provide auxiliary remote relays to interface between auxiliary output control contacts and the fan control circuits in the air handing systems. Relays shall be dual voltage compartment type 120 Volt coil and 250 Volt contacts – 1 normally open; 1 normally closed. EEMAC #1 enclosure.
  .14 Air Handling System Fan Shutdown
    .1 Air handling system fan shutdown shall operate directly from the duct mounted smoke detector auxiliary contacts, and/or from auxiliary relays in the fire alarm control panel.
  .15 Installation
    .1 Install control panel surface mounted in the electrical room where shown. Mounting height – 1650mm (5'6") above finished floor to top. Install wiring in EMT; from top of panel.
    .2 Surface mount the remote annunciator in the vestibule where shown. Install conductors between control panel and annunciator in EMT. For final drop from ceiling provide single vertical raceway to recessed electrical box. Terminate raceway steel raintight connector. Provide pullbox and access door in ceiling as required.
    .3 Mount passive graphic panel on wall adjacent to remote annunciator.
    .4 Mounting height 1650mm (5'-6") above finished floor to top.
    .5 Install manual station on recessed back box or outlet box in wall. Cut and repair gypsum board wall for conduit where required. Mounting height to be 1350mm above finished floor to center.
    .6 In basement on masonry walls install single surface conduit from pull box above to device.
    .7 In finished areas with suspended ceilings install automatic fire detection devices on back box or outlet boxes flush mounted in ceiling. Select outlet box to suit detector base. In areas without ceilings install detector base on the outlet box fastened directly to the structure or exposed concrete ceiling.
    .8 Install wall mounted smoke detectors where shown at 100mm below the ceiling measured to the top of the detector
    .9 Install duct mounted smoke detectors on the duct face in accordance with manufacturer's recommendation and where accessible for maintenance.
    .10 Install combination visual and audible signal devices in the sanctuary at 2559mm (8'-6") above finished floor to top of the device
    .11 Install audible signal devices throughout building at 2400mm above finished floor to top or where necessary where restricted by ceiling height install wall mounted signal devices at 150mm below the ceiling measured to the top edge of the device.
    .12 Install signalling devices on recessed back box or outlet box in wall. Cut and repair wall for cable connection from ceiling space.
    .13 Install duct mounted smoke detectors at air handling unit where shown in accordance with manufacturers recommendations. Prior to placing order co-ordinate with the HVAC contractor to establish and agree upon location for the detector. Confirm air handling unit control circuit has terminals for the shutdown connection. Connect auxiliary output contact into air handling unit fan shutdown circuit.
  .16 Wiring Methods
    .1 All fire alarm initiating circuit DCLA Type, returning to the control panel in separate conduit.
    .2 Alarm and signal circuit wing shall be unshielded cable. Cable assemblies shall consist of FAS Rated 300Volt insulated conductors. Conductors shall be color coded including sized in accordance with manufacturer's recommendations.
    .3 Make terminations and bending radii in accordance with the electrical code
    .4 Connections between the control panel and annunciator shall be the manufacturers recommended cable assembly installed in EMT
    .5 Connection from fire alarm control panel and premises security central station agency panel shall be 5 conductors in EMT exposed in electrical room
    .6 24 Volt wiring to the door hold open units shall be 300 Volt insulated multi-conductor cable in conduit as specified for fire alarm wiring. Where exposed in the electrical rooms install vertically in a straight line. Provide 50 Volt-Amp 120 to 24 Volt transformer and connect from single-pole 15A-120V breaker in panel indicated. Connections between the electrical panel, transformer and fire alarm control panel where exposed shall be 600 Volt insulated conductors in electric metallic tubing. Run 24 Volt wiring through contacts of auxiliary relay in control panel. Contacts normally closed; open on alarm.
    .7 Fan shutdown wiring shall be 600V insulated conductors in EMT or multi-conductor 600 Volt insulated armored cable. Where exposed final connection at unit to be with liquidtight flex from a junction box in ceiling below the roof
  .17 Concealed wiring
    .1 Conceal all wiring in finished areas.
    .2 Exceptions are service rooms and storage rooms.
    .3 Cut slots and opening neatly; repair surfaces to their original condition.
  .18 Verification Testing
    .1 All verification testing to be performed in accordance with the CAN/ULC-S537 standard by individuals with qualifications recognized by the local authority at the time of testing,
    .2 All devices to be tested as per the standard and the results recorded on the verification report forms.
    .3 All panel and annunciator tests to be performed as per the standard and the results recorded.
    .4 During verification, compliance with the approved project plans shall be confirmed.
    .5 Following verification arrange for and demonstrate the proper operation and conformance to the ULC/CAN S524 standard to the municipal building official.
    .6 A verification certificate, along with the report, shall be issued only upon compliance with the CAN/ULC S537 standard and the project plans.
  .19 Training
    .1 After submission of the verification certificate and report, review the system operating and maintenance manual with owner's facility management staff. Demonstrate and instruct the staff in procedures for all operating modes.

20. Door hold open Devices
  .1 2 piece armature and plate type 24Volt
  .2 With adjustable hinge and arm length to suit door/wall relationship
  .3 Wire through 50VA transformer from 120V circuit in panel and auxilary contacts in fire alarm control panel

LIGHT CONTROL METHOD SCHEDULE

TYPE	ROOM FUNCTION	MANUAL		AUTOMATIC		ON LEVEL		ON LEVEL CONTROL		DIMMING REQ.		DAYLIGHT HARVEST
		ON	OFF	ON	OFF	Full	50%	DIMMER	A / B	YES	NO	
L1	STORAGE	X	X		X	X					X	
L2	REST ROOMS			X	X	X					X	
L3	PRIMARY ENTRANCE/LOBBY	X	X	X	X	X					X	
L4	SMALL ROOM	X	X	X[1]	X		X	X		X		
L5	CORRIDOR AUTO			X	X	X					X	
L6	ASSEMBLY OCCUPANCY	X	X	X	X		X	X		X		

NOTES:
1. AUTO ON AVAILABLE, CLIENT DECISION

OS OCCUPANT SENSOR SCHEDULE

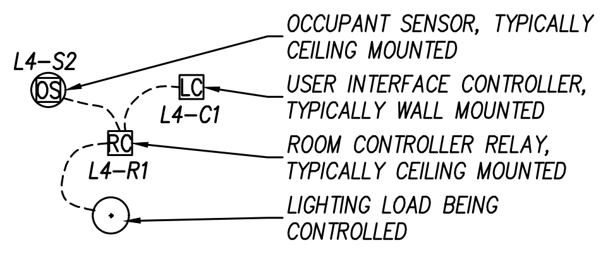
TYPE	DESCRIPTION	COMMENTS
S1	Integrated sensor, Dimmer, & Controller	0-10 Volt Dimming, on/off/Dim control with Occupant Sensor. Programmable: ON level, PIR Sensitivity, power loss mode, dim mode Std of acceptance: Wattstopper DW-311
S2	Ceiling mounted standard range	Low voltage Ceiling mounted Occupancy Sensor. Programmable: sensitivity, time delay Coverage: 360°, 1000 sq ft apx Std of acceptance: Wattstopper LMDC-100
S3	Ceiling mounted Extended range	Low voltage Ceiling mounted Extended Range Occupancy Sensor. Programmable: sensitivity, time delay Coverage: 360°, 3800 sq ft Std of acceptance: Wattstopper LMPC-100
S4	Ceiling mounted standard range 120V	120V Ceiling mounted Occupancy Sensor. Programmable: sensitivity, time delay Coverage: 360°, 1000 sq ft apx Std of acceptance: Wattstopper DT-355

LC USER LIGHT CONTROLLER SCHEDULE

TYPE	DESCRIPTION	COMMENTS
C1	Dimming wall switch	0-10 Volt Dimming, on/off/Dim control with 7-LED level indicator Std of acceptance: Wattstopper LMDM-101
C2	5-Button scene switch	5-Button configurable IR control user interface 0-10 volt controller Std of acceptance: Wattstopper LMDC-LMSW-105
C3	Integrated sensor, Dimmer, & Controller	0-10 Volt Dimming, on/off/Dim control with Occupant Sensor. Programmable: ON level, PIR Sensitivity, power loss mode, dim mode Std of acceptance: Wattstopper DW-311

RC ROOM CONTROLLER DEVICE SCHEDULE

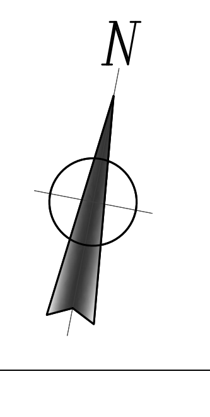
TYPE	DESCRIPTION	COMMENTS
R1	Room controller, 0-10V w/ 1 Relay	Room Controller: On/off/0-10 Volt Dimming controller (interface) with single 120V relay & 0-10 Volt Dimming control out Std of acceptance: Wattstopper LMRC-211
R2	Room controller, 120V w/ 1 Relay	Room Controller: On/off controller (interface) 120V Single relay output Std of acceptance: Wattstopper LMRC-102
R3	Room controller, 0-10V w/ 3 Relay	Room Controller: On/off/0-10 Volt Dimming controller (interface) with three 120V relay & 0-10 Volt Dimming control out Std of acceptance: Wattstopper LMRC-213



Luminaire Schedule

Symbol	Qty	Label	Manufacturer	Description	Dimming	Lum. Watts	Lumens/Lamp	LLF
┐	1	Config Mens	LUMENWERX	VIA2RPAT-HLO-LED-80-350-35-6FT+7FT+12FT-LEV-90+90-120-D1-1-DMF-NA-W	0-10V	N.A.	N.A.	0.900
┌	1	Config Womens	LUMENWERX	VIA2RPAT-HLO-LED-80-350-35-6FT+7FT+12FT-LEV-90+90-120-D1-1-DMF-NA-W	0-10V	N.A.	N.A.	0.900
⊡	35	D1	CONTRAST	UR4JC-04BRAN-3590L + NWUR4-120D1	0-10V	10	N.A.	0.900
□	2	F4x4	LUMENWERX	FOR4PD44-HLO-LED-80-200-35-120-D1-1-5SAC36-W-TBAR	0-10V	N.A.	N.A.	0.900
⊙	18	Hb	CREE	CXB-A-UV-M-40K-8-UL-10V + CXBP16 + CL16	0-10V	157.18	N.A.	0.900
|	2	L12a	LUMENWERX	VIA2R-HLO-LED-80-350-35-12FT-120-D1-1-TBAR-W	0-10V	N.A.	N.A.	0.900
▭	6	L12b	LUMENWERX	VIA4PD-HLO-LED-80-500-35-12FT-120-D1-1-53WAC36-W	0-10V	N.A.	N.A.	0.900
⊔	2	L22	LUMENWERX	VIA2RPAT-HLO-LED-80-350-35-8FTx6FTx8FT-LEV-(90+90)-120-D1-1-TBAR-NA-W	0-10V	N.A.	N.A.	0.900
━	20	P	LED LINEAR	XOOTUBE38-HD25-W35-1550-9004-B-U-F	0-10V	37.5	2926.98	0.900
⊙	3	pop24	LUMENWERX	PCROPD-24-ULO-FH-LED-80-2500-35-120-D1-1-5WAC36-W	0-10V	23.69	N.A.	0.900
⊙	5	pop24R	LUMENWERX	POROR-24-ULO-FH-LED-80-2500-35-120-D1-1-DTR-W	0-10V	23.69	N.A.	0.900
⊙	3	pop36	LUMENWERX	PCROPD-36-ULO-FH-LED-80-5500-35-120-D1-1-5WAC36-W	0-10V	52.13	N.A.	0.900
●	3	S1	CONTRAST	SALT-BG1-30	0-10V	21	2574	0.900
⊙	4	S2	CONTRAST	SPINR-B-30	ELV	9	670	0.900
⊡	9	S22	LUMENWERX	POSQS-22-ULO-2H-LED-80-2500-35-120-D1-1-SUR-W	0-10V	22.65	N.A.	0.900
⊡	6	T RGB	LUMENWERX	CATR-22-RLO-LED-QUADRO-18W-UNV-DMX-1-TBAR-W	0-10V	42.09	N.A.	0.900
⊡	14	T1	FOCAL POINT	FCT-22-FL-2500L-27K-1C-UNV-LD1-WH	0-10V	21.18	N.A.	0.900
⊡	18	T2	LUMENWERX	CATR-22-RLO-LED-80-3500-35	0-10V	31.73	N.A.	0.900
⊡	18	T3	VISIONEERING	LRTG2x2-LED835K037LUNV-P94	0-10V	31.9	N.A.	0.900
▭	7	U	VISIONEERING	LCOMN48-LED835K040LUNV-P95	0-10V	36.4	N.A.	0.900
▭	3	V1	TECH LIGHTING	700BCSAGW25S-LED930	ELV	0	2210	0.900

Hobin Architecture Incorporated
63 Pamilla Street
Ottawa, Ontario
Canada K1S 3K7
T: 613-238-7200
F: 613-235-2005
E: mail@hobinarc.com
hobinarc.com
HOBIN
ARCHITECTURE



NO.	REVISIONS	DATE
10.		
9.		
8.		
7.		
6.		
5.		
4.		
3.		
2.	ISSUED FOR BUILDING PERMIT	2017-10-10
1.	ISSUED FOR REVIEW/COORDINATION	2017-10-05

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BEKOLAY & Associates. Ltd.
Consulting Engineers
200-1827 WOODWARD DR., OTTAWA
PH 613-723-0474, FAX 613-723-0864
email: jbekolay@bga.ca

10-Oct-17

PROJECT Boys and Girls Club Renovation
Price of Wales Clubhouse

DRAWING Legends, lighting Schedules & Specifications

LICENSED PROFESSIONAL ENGINEER
C. L. WOOD
Oct 10, 2017
PROVINCE OF ONTARIO

DATE	SCALE
10-Oct-17	AS NOTED
DRAWN BY	DESIGNED BY
MAG	CLW
JOB NO.	CHECKED BY
2017-017	CLW

DRAWING NO.
E-7 of 7