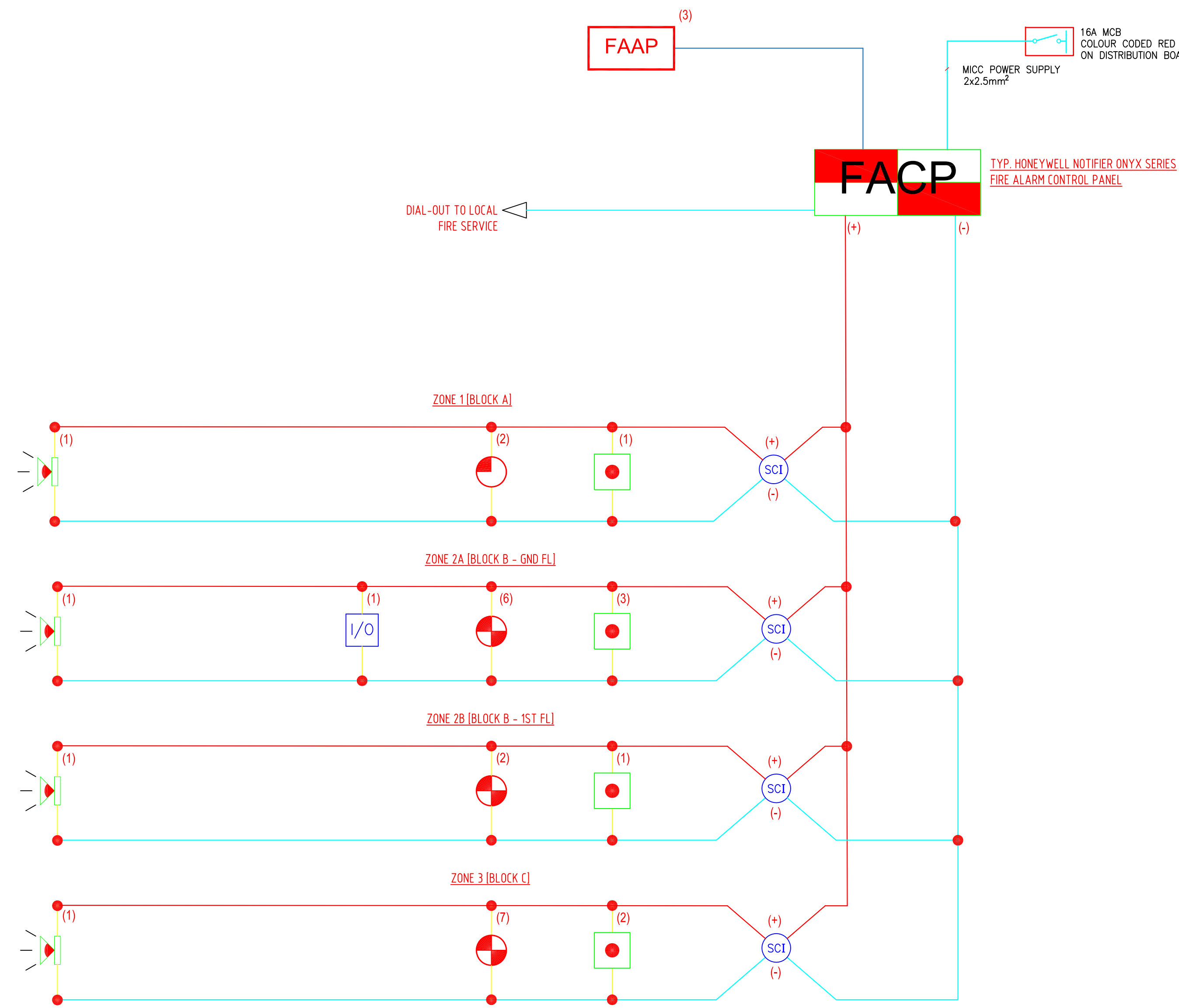


GENERAL NOTES:

1. SMOKE DETECTORS IN ENCLOSED OFFICES ARE TO BE LOCATED AS NEAR AS POSSIBLE TO THE CENTRE OF THE ROOM.
2. UNLESS OTHERWISE STATED USE 3/4" Ø CONDUIT FOR ALL RUNS.
3. FIRE ALARM SYSTEM TO BE WIRED IN SEPARATE CONDUIT SYSTEM OR RACEWAY. SPRAY RED MARKS ON CONDUIT TO IDENTIFY CONDUIT RUNS.
4. PROVIDE FIRE ALARM I/O RELAY TO SHUT DOWN ALL AIR CONDITIONING.
5. A SHORT CIRCUIT ISOLATOR SHOULD BE PROVIDED BETWEEN ZONAL BOUNDARIES.
6. THE DETECTION LOOPS SHOULD BE WIRED IN 2-CORE 1.5SQ.MM TWISTED UNSHIELDED FIRE RETARDANT CABLE.
7. THE SOUNDER CIRCUITS SHOULD BE WIRED IN 2-CORE 2.5 SQ.MM CABLE. IF THE SOUNDER AND DETECTORS ARE RUN IN THE SAME CABLE, THEN THAT CABLE SHOULD BE 4-CORE 1.5 SQ.MM, UNLESS THE SOUNDER IS ADDRESSABLE, THEN A 2-CORE 1.5 SQ.MM CABLE WILL SUFFICE.
8. MANUAL PULL STATIONS TO BE MOUNTED 4'-6" AFF AND ITS METHOD OF OPERATION IDENTIFIED ON TAG ENGRAVED WITH 127mm LETTERING, COLOURED RED ON A WHITE BACK GROUND MARKED "FIRE ALARM".
9. ALL FIRE EXTINGUISHER STATIONS TO BE IDENTIFIED ON TAG ENGRAVED WITH 127mm LETTERING, COLOURED WHITE ON A RED BACK GROUND MARKED "FIRE POINT #"
10. FIRE ALARM SYSTEM SHALL MEET OR EXCEED NFPA 70, 72 AND 101 OR BS5839-1:2013 AND ENS-54.
11. WIRING TO BE AS PER NFPA STYLE 'A' SLC. MEASURE AND CONFIRM LOOP DC RESISTANCE DOES NOT EXCEED 40Ωs.



- LEGEND:**
(SEE SCH. FOR EQUIPMENT MODEL)
- FAADP FIRE ALARM FLOOR DISTRIBUTION PANEL
 - FACP FIRE ALARM CONTROL PANEL
 - FAAP FIRE ALARM ANNUNCIATOR PANEL
 - SCC DIGITAL ALARM SOUNDER CIRCUIT CONTROLLER
 - EOL END OF LINE RESISTOR
 - I/O INTERFACE UNIT (FRM-11A)
 - ZMU ZONE MONITORING UNIT
 - MCP MANUAL CALL POINT (NOT-BG72LX)
 - HDR HEAT DETECTOR - RATE OF RISE (FST-851A)
 - SD OPTICAL SMOKE DETECTOR (NP-100A)
 - ESD OPTICAL SMOKE DETECTOR/ELECTRONIC SOUNDER
 - CHS COMBINE HEAT & SMOKE DETECTOR (NP-100T(A))
 - ISD IONISATION SMOKE DETECTOR (NI-100(A)/DN(A))
 - CEV CEILING VOID - CV, DUCT = D
 - FM FLAME MONITOR (IUV/RI) (GENERAL MONITORS FL-3100 AND POWER SUPPLY)
 - IP66 IP66 OUTDOOR SOUNDER (SPK(R)/MWB(A))
 - LPS LOOP POWERED SOUNDER/SSTROBE (NS SERIES)
 - SCI SHORT CIRCUIT ISOLATOR (N100-150(A))
 - C-TEC C-TEC NC95/SS DISABLED PERSON TOILET ALARM
 - DSL DISABLED STROBE LIGHT
 - RB RESET BUTTON
 - PCS PULL CORD SWITCH
 - CS COMBINED SMOKE DETECTOR, STROBE & SOUNDER



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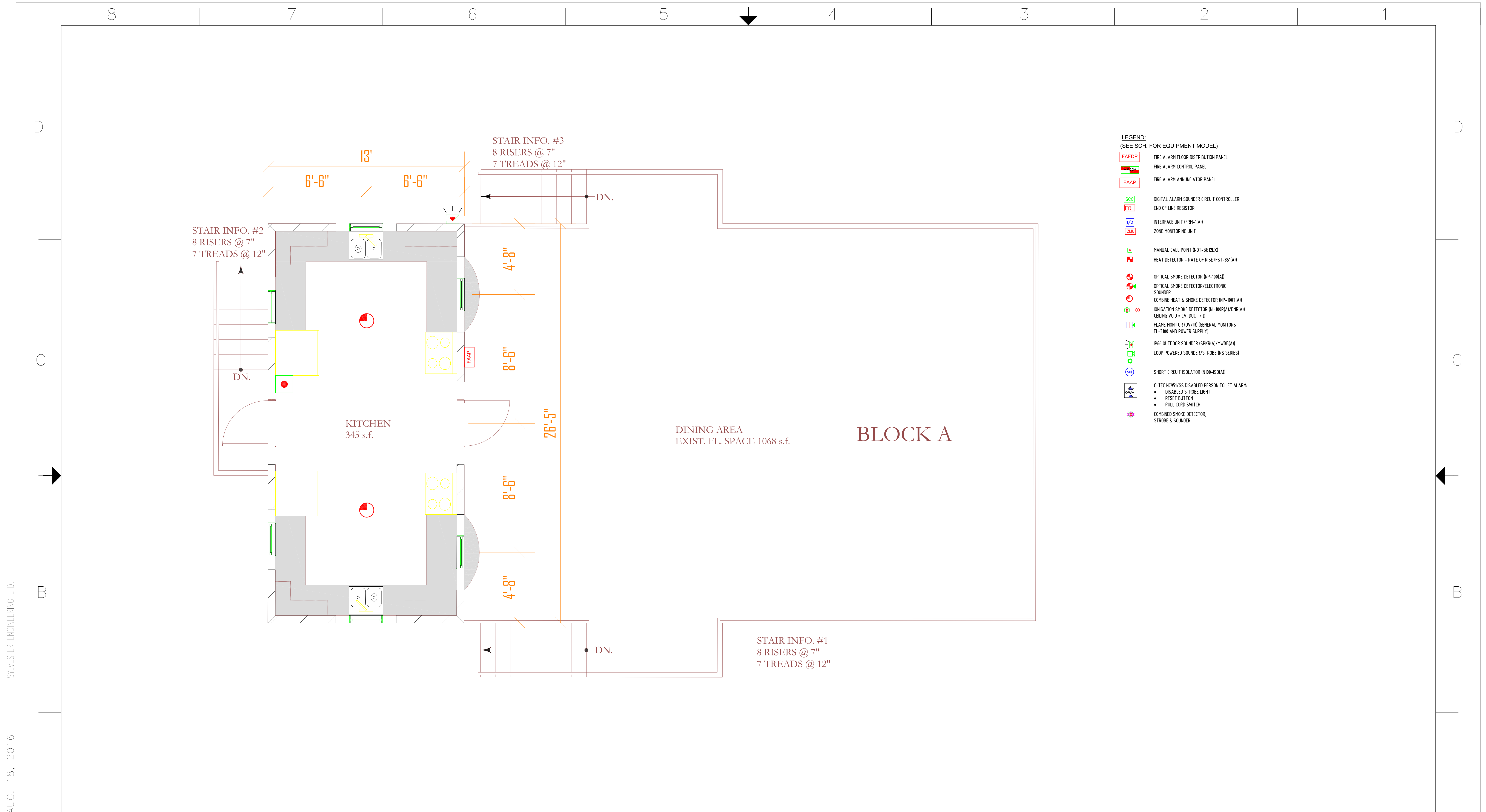
DRG. NO.	REFERENCE DRAWINGS	00D	SH	TOS	SH	TOS	ORIGINAL ISSUE FOR CONSTRUCTION
		REV	28/11/16	28/11/16	28/11/16	28/11/16	ALTERATION
			DRAWN BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	

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CLIENT	GOVT. OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL CDB UPGRADE PROJECT
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	FIRE ALARM SYSTEM RISER DIAGRAM
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-FA-01
SCALE	NONE	DATE	28/11/2016
		SHEET	1 OF 1
		REV	00D

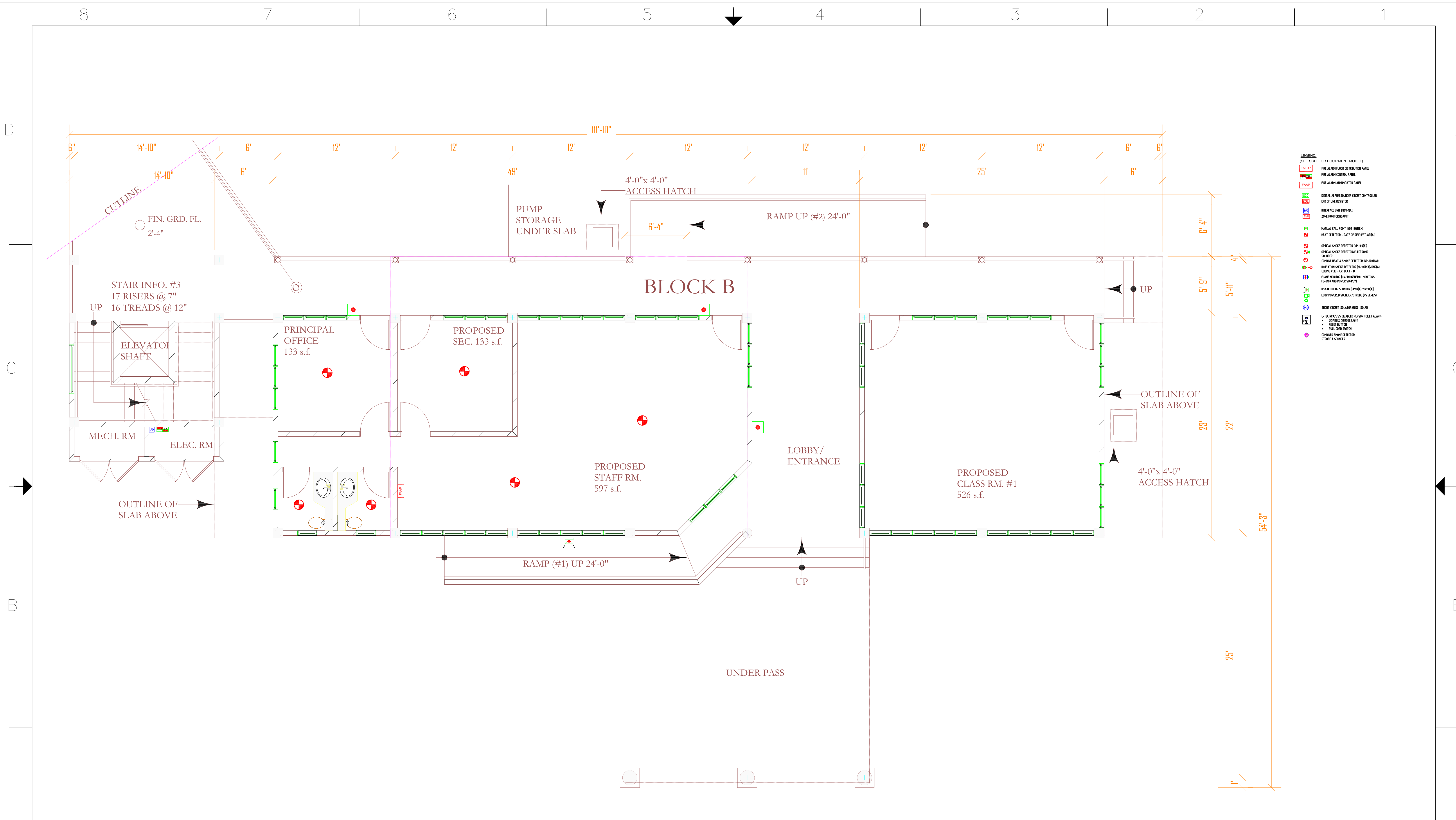


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					BLOCK A - GROUND FLOOR FIRE ALARM LAYOUT						
SIZE	D	FSCM NO.	DWG NO.		1207-3-EL-FA-02		REV	000			
SCALE		NONE		DATE	28/11/2016		SHEET		1 OF 1		
DRG. NO.	REFERENCE DRAWINGS				000	SH	TOS	SH	TOS	ORIGINAL ISSUE FOR CONSTRUCTION	
	REV	BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	ALTERATION					

AUG. 18, 2016

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LEGEND:	
SYMBOLS FOR EQUIPMENT MODEL	
[Symbol]	FIRE ALARM FLOOR DISTRIBUTION PANEL
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	FIRE ALARM ANNUNCIATOR PANEL
[Symbol]	DIGITAL ALARM SOUNDER CIRCUIT CONTROLLER
[Symbol]	END OF LINE RESISTOR
[Symbol]	INTERFACED UNIT (30W-540)
[Symbol]	ZONE MONITORING UNIT
[Symbol]	HANDCALL POINT (NOT BEGLO)
[Symbol]	HEAT DETECTOR - RATE OF RISE (RIS2-400A)
[Symbol]	OPTICAL SMOKE DETECTOR (NF-100A)
[Symbol]	OPTICAL SMOKE DETECTOR (ELECTRONIC SOURCE)
[Symbol]	COMBINE HEAT & SMOKE DETECTOR (NF-100A/HD)
[Symbol]	IONIZATION SMOKE DETECTOR (N-NORAD/IONRAD)
[Symbol]	COLORIMETRIC VISIBLE-EXTINGUISHER (C-VIS-EXT-1.0)
[Symbol]	FLAME MONITOR (BY AIR GENERAL MONITORING)
[Symbol]	FL-300 AND PIPING (SUPPLY)
[Symbol]	PULL OUTBOARD SOUNDER (SP-100/AM-100/AS)
[Symbol]	LOOP POWERED SOUNDER/STROBE (MG SERVO)
[Symbol]	SHORT CIRCUIT ISOLATOR (NIB-100A)
[Symbol]	C-TEC KEYLESS DISABLED PERSON TOILET ALARM
[Symbol]	DISABLED STROBE LIGHT
[Symbol]	RESET BUTTON
[Symbol]	PULL DOWN SWITCH
[Symbol]	COMBINE SMOKE DETECTOR, STROBE & SOUNDER

DRG. NO.	REFERENCE DRAWINGS	REV	SH	TOS	SH	TOS	APP/AUTH	ALTERATION
			BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/ AUTH BY & DATE		
		00D	SH 28/11/16	TOS 28/11/16	SH 28/11/16	TOS 28/11/16		ORIGINAL ISSUE FOR CONSTRUCTION

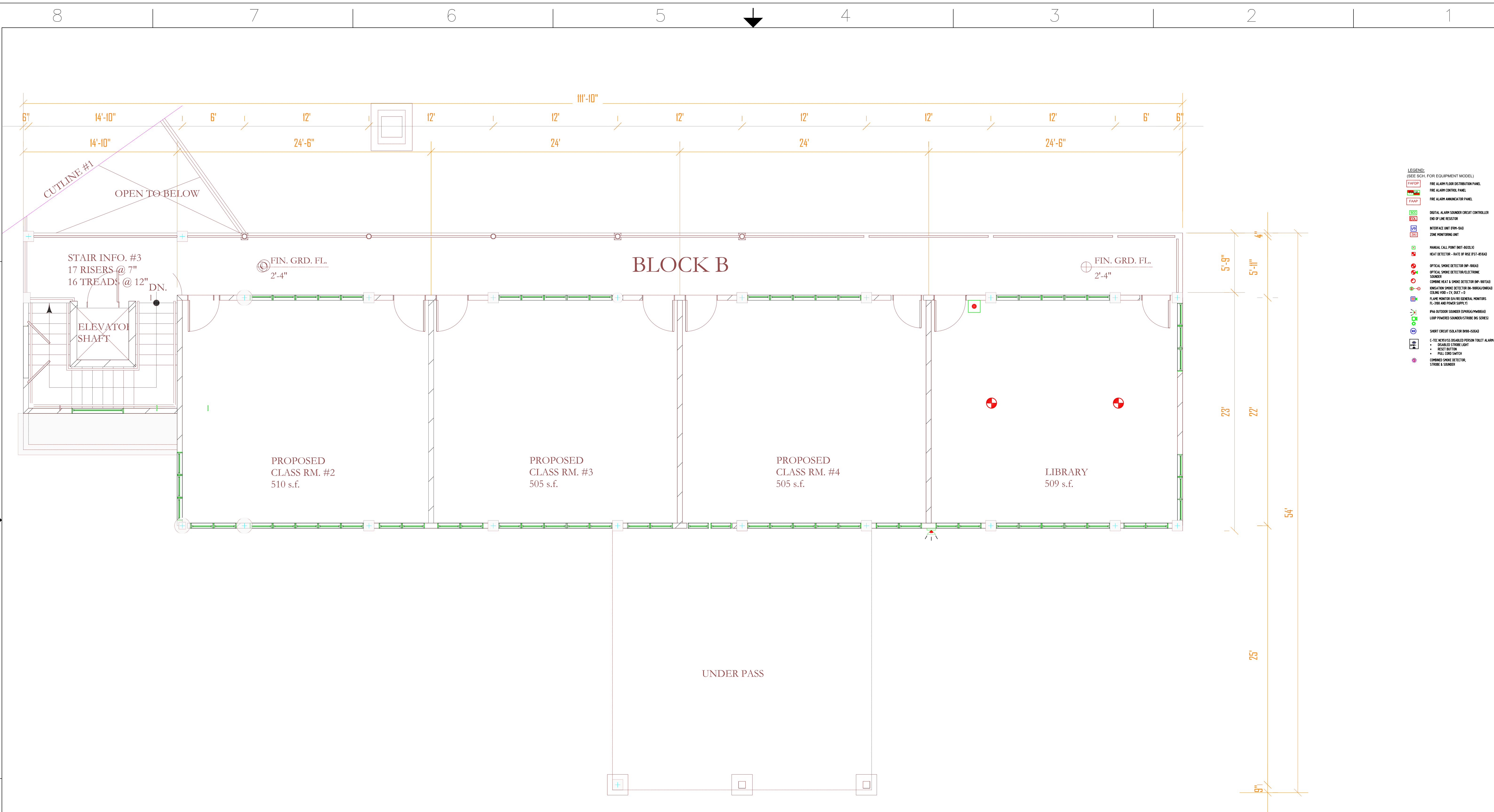
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COMPANY	Syl LEng ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD www.syleng.com	DESCRIPTION / TITLE	BLOCK B - GROUND FLOOR FIRE ALARM LAYOUT
SIZE	D	FSCM NO.	
SCALE	NONE	DATE	28/11/2016
		DWG. NO.	1207-3-EL-FA-03
		SHEET	1 OF 1
		REV	00D

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- LEGEND:**
(SEE SCH. FOR EQUIPMENT MODEL)
- FIRE ALARM FLOOR DISTRIBUTION PANEL
 - FIRE ALARM CONTROL PANEL
 - FIRE ALARM ANNUNCIATOR PANEL
 - DIGITAL ALARM SOUNDER CIRCUIT CONTROLLER
 - END OF LINE RESISTOR
 - INTERFACE UNIT (PWR-ISA)
 - ZONE MONITORING UNIT
 - MANUAL CALL POINT (NOT-480/40)
 - HEAT DETECTOR - RATE OF RISE (RST-RS4)
 - OPTICAL SMOKE DETECTOR (SP-3000)
 - OPTICAL SMOKE DETECTOR (ELECTRONIC SOUNDER)
 - COMBINE HEAT & SMOKE DETECTOR (HP-SHETAR)
 - IONIZATION SMOKE DETECTOR (SP-3000/SP-3000R)
 - CLEARING VIBRO-TO SMOKE DETECTOR
 - FLAME MONITOR (BY-90) (GENERAL MONITORS FL-3000 AND POWER SUPPLY)
 - PPA OUTDOOR SOUNDER (SP-3000/PPA/MS-3000)
 - LOOP POWERED SOUNDER (ST-3000) (NO SCREEN)
 - SHORT CIRCUIT ISOLATOR (SWA-500A)
 - C-TRE NEWBY/SIS DISABLE PERSON TOILET ALARM
 - DISABLED SMOKE LIGHT
 - RESET BUTTON
 - PULL (END) SWITCH
 - COMBINE SMOKE DETECTOR, STORE & SOUNDER

DRG. NO.	REFERENCE DRAWINGS	00D	SH 28/11/16	TOS 28/11/16	SH 28/11/16	TOS 28/11/16	ORIGINAL ISSUE FOR CONSTRUCTION
		REV	DRAWN BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	ALTERATION

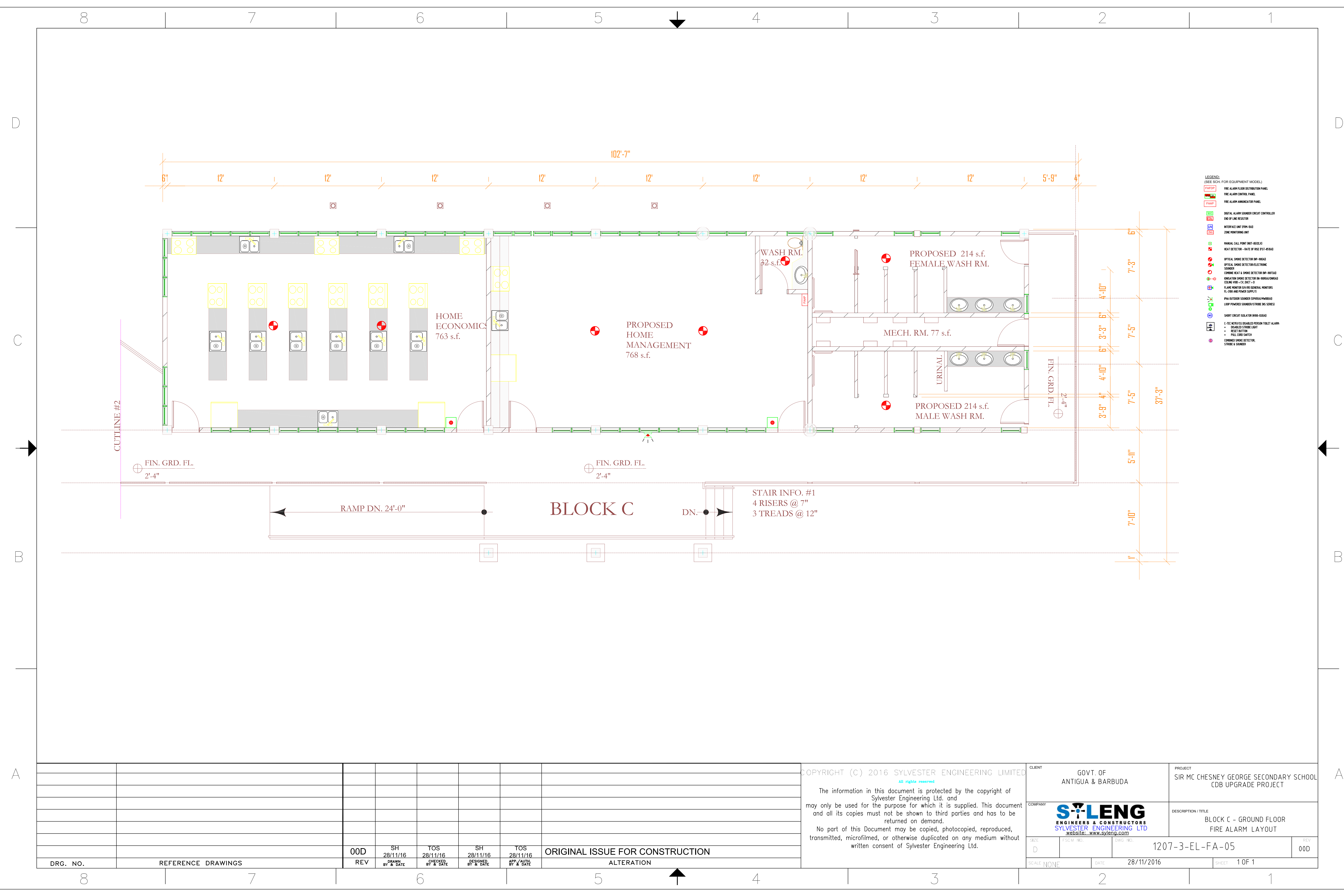
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COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	BLOCK B - FIRST FLOOR FIRE ALARM LAYOUT
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-FA-04
SCALE	NONE	DATE	28/11/2016
		SHEET	1 OF 1
		REV	00D

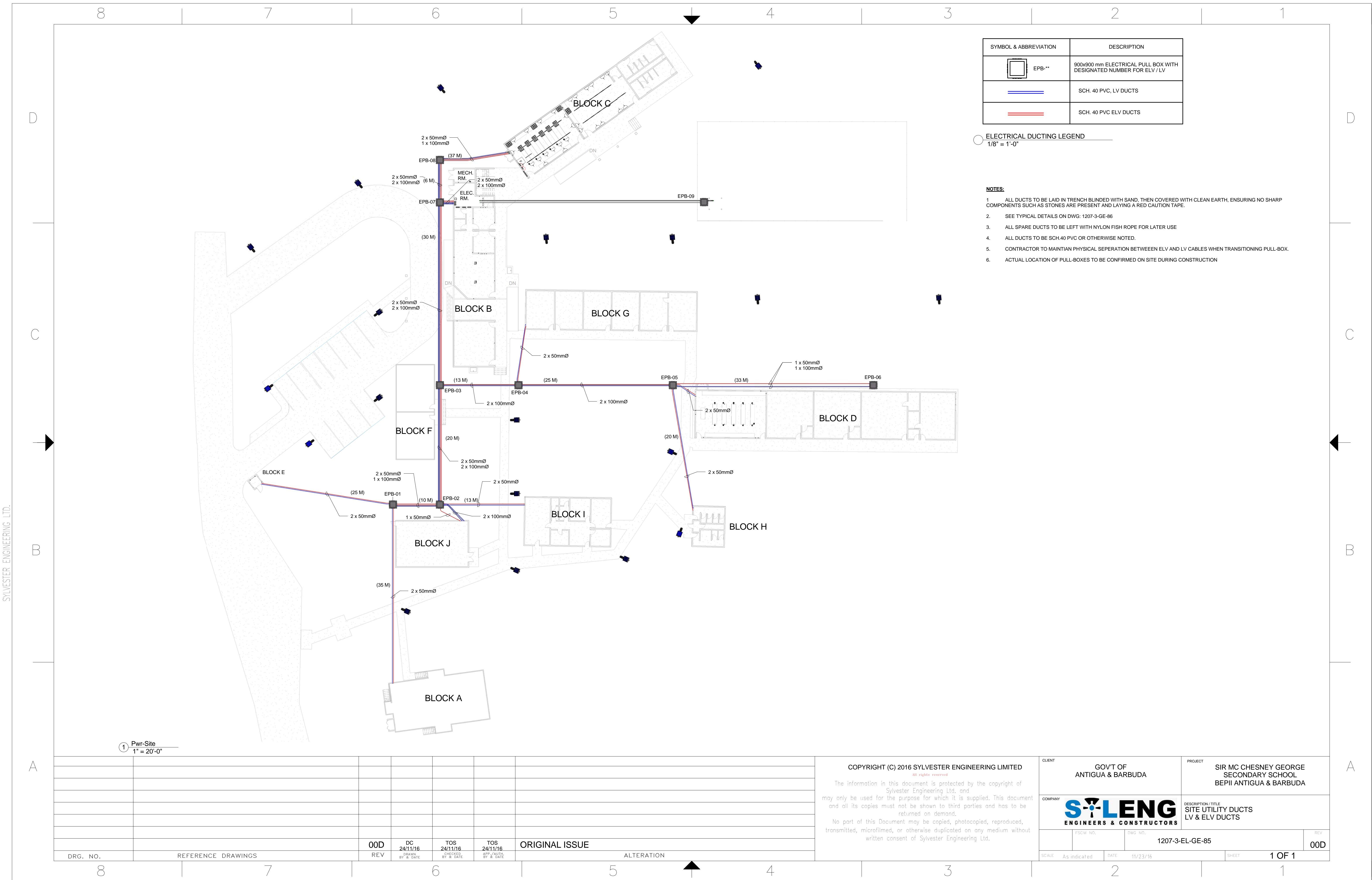
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		REV	28/11/16	28/11/16	28/11/16	28/11/16	ALTERATION
			DRAWN BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	

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COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	BLOCK C - GROUND FLOOR FIRE ALARM LAYOUT
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-FA-05
SCALE	NONE	DATE	28/11/2016
		SHEET	1 OF 1
		REV	00D



SYMBOL & ABBREVIATION	DESCRIPTION
EPB-01	900x900 mm ELECTRICAL PULL BOX WITH DESIGNATED NUMBER FOR ELV / LV
	SCH. 40 PVC, LV DUCTS
	SCH. 40 PVC ELV DUCTS

○ ELECTRICAL DUCTING LEGEND
1/8" = 1'-0"

NOTES:

- ALL DUCTS TO BE LAID IN TRENCH BLINDED WITH SAND, THEN COVERED WITH CLEAN EARTH, ENSURING NO SHARP COMPONENTS SUCH AS STONES ARE PRESENT AND LAYING A RED CAUTION TAPE.
- SEE TYPICAL DETAILS ON DWG: 1207-3-GE-86
- ALL SPARE DUCTS TO BE LEFT WITH NYLON FISH ROPE FOR LATER USE
- ALL DUCTS TO BE SCH.40 PVC OR OTHERWISE NOTED.
- CONTRACTOR TO MAINTAIN PHYSICAL SEPERATION BETWEEN ELV AND LV CABLES WHEN TRANSITIONING PULL-BOX.
- ACTUAL LOCATION OF PULL-BOXES TO BE CONFIRMED ON SITE DURING CONSTRUCTION

① Pwr-Site
1" = 20'-0"

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CLIENT	GOVT OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEPII ANTIGUA & BARBUDA
COMPANY	SYLEN ENGINEERS & CONSTRUCTORS	DESCRIPTION/TITLE	SITE UTILITY DUCTS LV & ELV DUCTS
SCALE	As indicated	DATE	11/23/16
DRG. NO.	REFERENCE DRAWINGS	REV	00D
DRG. NO.	8	DRG. NO.	1207-3-EL-GE-85
REV	00D	DATE	11/23/16
ALTERATION		SHEET	1 OF 1

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REV	24/11/16	CHECKED BY & DATE	APP. /AUTH. BY & DATE	ALTERATION

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GENERAL NOTES:

1. ALL WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE CODES, STANDARDS AND PRACTICES LISTED HEREIN, AND THEIR RESPECTIVE DATES ARE FURNISHED AS THE MINIMUM LATEST REQUIREMENTS.

- 1. ANTIGUA AND BARBUDA
2. LIFE SAFETY CODE - NFPA 101
3. UNDERWRITERS LABORATORIES, INC. PUBLICATIONS
4. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
5. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
6. NATIONAL ELECTRICAL CODE - NFPA 70
7. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
8. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA)
9. REQUIREMENTS OF APUA
10. THE AMERICANS WITH DISABILITIES ACT (ADA)

2. REFER TO THE ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, CIVIL, LANDSCAPE, INTERIOR DESIGN, TECHNOLOGY AND STRUCTURAL DRAWINGS FOR RELATED INFORMATION AND ADDITIONAL INSTALLATION REQUIREMENTS TO BE PERFORMED AS PART OF THE WORK.

3. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

4. REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND THERMOSTAT LOCATIONS.

5. COORDINATE OUTLET BOX LOCATIONS WITH MASONRY TO AVOID CUTTING ON MORTAR JOINTS.

6. ALL MOUNTING HEIGHTS SHOWN ARE TO THE CENTERLINE OF THE DEVICE UNLESS NOTED OTHERWISE. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.

7. EACH DATA, TELEPHONE, VIDEO OR OTHER SYSTEMS OUTLET REQUIRES 20mm c. WITH PULL STRING STUBBED TO TB UNLESS OTHERWISE NOTED ON PLANS. PROVIDE INSULATED BUSHINGS ON ALL CONDUITS. LABEL CONDUIT TO IDENTIFY ITS INTENDED USE (IE: TELEPHONE, DATA, ETC.).

8. EACH BRANCH CIRCUIT RACEWAY SHALL HAVE A FULL SIZE EQUIPMENT GROUND CONDUCTOR. WHERE ISOLATED GROUND CIRCUITS ARE SHOWN ON THE PLANS, PROVIDE AN ISOLATED GROUND CONDUCTOR THROUGHOUT THE LENGTH OF THE CIRCUIT IN ADDITION TO THE PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS.

9. PROVIDE 450mm LONG (MIN). CONDUIT SLEEVES THRU ALL WALLS WHERE CABLES ARE INDICATED OR REQUIRED TO PASS THRU WALLS. PROVIDE BUSHINGS ON BOTH ENDS. SIZE CONDUIT FOR CABLES INSTALLED. AT CABLE TRAYS (WHERE USED), PROVIDE ONE 100mm CONDUIT SLEEVE FOR EACH 100mm WIDTH OF CABLE TRAY.

10. ALL BRANCH CIRCUIT HOME-RUNS SHALL BE ROUTED IN 20mm C. MINIMUM. MC CABLE IS NOT ALLOWED.

11. LIGHT SWITCHES SHALL BE MOUNTED 1200mm ABOVE FINISHED FLOOR TO CENTER LINE OF DEVICE, UNLESS NOTED OTHERWISE.

12. RECEPACLES SHALL BE LOCATED 450mm ABOVE FINISHED FLOOR TO CENTER LINE OF DEVICE, UNLESS NOTED OTHERWISE. ABOVE-COUNTER RECEPACLES SHALL BE MOUNTED 150mm ABOVE BACK SPLASH TO CENTERLINE OF DEVICE UNLESS NOTED OTHERWISE.

13. EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED, WITH APPROPRIATE NEMA ENCLOSURE RATING. WORKING CLEARANCES AND DEDICATED SPACE FOR ELECTRICAL EQUIPMENT SHALL BE IN COMPLIANCE WITH NEC 110. SUBMIT COORDINATION DRAWINGS OF ELECTRICAL ROOMS (WHERE USED) SHOWING COMPLIANCE.

14. WHEN ELECTRICAL BOXES ARE LOCATED IN VERTICAL FIRE-RESISTIVE ASSEMBLIES, (CLASSIFIED AS FIRE/SMOKE AND SMOKE PARTITIONS), THEY SHALL BE INSTALLED WITHOUT AFFECTING THE FIRE CLASSIFICATION. ALL OF THE FOLLOWING CONDITIONS SHALL BE MET:

- A. ALL ELECTRICAL BOXES SHALL BE METALLIC.
B. BOX OPENING SHALL OCCUR ONLY ON ONE SIDE OF FRAMING SPACE.
C. BOX OPENING SHALL NOT EXCEED 400 SQUARE MILIMETERS
D. ALL CLEARANCES BETWEEN OUTLET BOX AND GYPSUM BOARD SHALL BE COMPLETELY FILLED WITH JOINT COMPOUND (OR OTHER APPROVED MATERIAL).
E. PROVIDE A WALL AROUND OUTLETS LARGER THAN 400 SQUARE MILIMETERS. THE INTEGRITY OF THE WALL RATING SHALL BE MAINTAINED.
F. THE TOTAL AGGREGATE SURFACE AREA OF THE BOXES SHALL NOT EXCEED 2.5 SQUARE METERS PER 100 SQUARE METERS.
G. OUTLET BOXES LOCATED ON OPPOSITE SIDES OF FIRE-RESISTIVE ASSEMBLIES SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 600mm.
H. OUTLET BOXES SHALL BE SECURELY FASTENED TO WALL FRAMING MEMBERS.
I. THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT NOT TO EXCEED 3.175mm BETWEEN THE EDGES OF THE OUTLET BOX AND THE EDGES OF THE OPENING.

15. ALL CONDUCTORS INSTALLED ABOVE THE ROOF SHALL BE DERATED FOR AMBIENT TEMPERATURE INCLUDING AMBIENT TEMPERATURE ADJUSTMENT IN ACCORDANCE WITH ARTICLE 310.15 (B)(2)(c).

16. PROVIDE GFCI PROTECTION FOR ALL RECEPTACLES FOR, JANITOR CLOSETS, OUTDOORS, KITCHENS AND ALL OTHER LOCATIONS WITHIN 2 METRES OF A SINK OR OTHER WATER SOURCE IN ACCORDANCE WITH THE NEC.

17. PROVIDE SURGE PROTECTION AS REQUIRED FOR NFPA 780 4.18.2 FOR ANY POWER OR LOW VOLTAGE (FIRE ALARM, TELECOMM, ETC.) CIRCUIT EXITING THE BUILDING.

18. ALL CONDUIT IN PUBLIC AREAS SHALL BE CONCEALED UNLESS NOTED OTHERWISE.

19. ALL WIRING DEVICES SHALL BE MOUNTED VERTICALLY, UNLESS NOTED OTHERWISE.

20. ALL RECEPTACLES SHALL BE MOUNTED SUCH THAT THE GROUND PIN IS MOUNTED UP OR HORIZONTALLY TO THE RIGHT.

21. ALL BRANCH CIRCUIT CONDUITS SHALL CONTAIN A MINIMUM OF (2) 2.5MM INSULATED COPPER CONDUCTORS, PLUS A MINIMUM OF (1) 2.5MM GROUND WIRE UNLESS NOTED OTHERWISE. ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE INDIVIDUAL NEUTRAL CONDUCTORS.

22. COORDINATE THE LOCATION OF ALL DEVICES AND BOXES WITH WINDOWS, BUILT-INS, AND CABINETS PRIOR TO INSTALLATION OF CONDUITS OR BOXES. CONTRACTOR SHALL CONSULT ALL CONTRACT DRAWINGS TO ASCERTAIN ANY CONFLICTS PRIOR TO BIDDING. CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ARCHITECT/ENGINEER. CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR WORK REQUIRED TO RELOCATE OUTLET BOXES THAT ARE/OR BECOME NECESSARY FOR COORDINATION WITH OTHER TRADES WORK.

23. COORDINATE HEIGHTS OF WALL MOUNTED LIGHTING FIXTURES TO CLEAR MIRRORS, CABINETS AND BUILT-INS.

24. PROVIDE A PERMANENT SIGN ON THE MAIN ELECTRICAL PANEL DOOR STATING THAT THE MAIN SERVICE DISCONNECTING MEANS ARE LOCATED INSIDE.

25. COORDINATE INSTALLATION OF ANY DEVICE LOCATED IN MILLWORK WITH ARCHITECTURAL DRAWINGS AND DETAILS PRIOR TO ROUGHING IN BOXES AND ROUTING CONDUIT.

26. LOCATIONS OF EQUIPMENT SPECIFIED BY OTHER TRADES OR PROVIDED BY OWNER ARE APPROXIMATE. COORDINATE EXACT LOCATIONS IN FIELD PRIOR TO ROUGHING IN AND ROUTING CONDUIT.

27. SEE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF LIGHT FIXTURES IN CEILINGS, AND ON INTERIOR AND EXTERIOR WALLS.

28. PROVIDE DIMMABLE BALLASTS FOR ALL DIMMABLE FLUORESCENT LIGHT FIXTURES, AND A DIMMER SWITCH RATED NOT LESS THAN 2000 WATTS.

29. CONTRACTOR SHALL UPSIZE BRANCH CIRCUIT WIRE SIZE AS REQUIRED TO COMPENSATE VOLTAGE DROP FROM LENGTHENING OF CIRCUITS DUE TO FIELD ROUTING. FINAL INSTALLATION SHALL MEET T&T BUILDING CODE REQUIREMENT OF: MAXIMUM BRANCH CIRCUIT VOLTAGE DROP OF 3%.

30. REFER TO VOLTAGE DROP CHART BELOW FOR CONDUCTOR SIZES FOR BRANCH CIRCUITS

240 VOLT (BASIS 1500 WATT) MIN. CONDUCTOR CIRCUIT LENGTH UP SIZE FOR VOLTAGE DROP

Table with 2 columns: Length (0-21m, 22m-35m, 36m-55m, 55m AND ABOVE) and Conductor Size (2.5MM, 4MM, 6MM). Note: 55m AND ABOVE TO BE SUBMITTED BY CONTRACTOR AND APPROVED BY ENGINEER.

230 VOLT (BASIS 15 AMPS) MIN. CONDUCTOR CIRCUIT LENGTH UP SIZE FOR VOLTAGE DROP

Table with 2 columns: Length (0-43m, 44m-67m, 68m-107m, 107m AND ABOVE) and Conductor Size (2.5MM, 4MM, 6MM). Note: 107m AND ABOVE TO BE SUBMITTED BY CONTRACTOR AND APPROVED BY ENGINEER.

31. EMERGENCY BALLAST BATTERY PACKS, WHERE USED, SHALL BE CONNECTED TO UNSWITCHED LEG OF CIRCUIT DESIGNATED ON DRAWINGS.

32. PROVIDE DISCONNECTS LOCATED NEXT TO THE CONDENSERS FOR ALL HVAC EQUIPMENT.

33. WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING: SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM, SITE PLANS AND ALL ELECTRICAL FLOOR PLANS.

34. CONTRACTOR SHALL PROVIDE AN OPERATING MANUAL AND MAINTENANCE MANUAL TO OWNER. THE MANUAL SHALL INCLUDE AT A MINIMUM: (1) SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. (2) OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. (3) NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

35. CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR USE BY ALL TRADES. DURING CONSTRUCTION. REMOVE TEMPORARY POWER AT THE COMPLETION OF THE PROJECT. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS TO OBTAIN TEMPORARY ELECTRICAL SERVICE.

36. CONTRACTOR SHALL SUBMIT FOR APPROVAL MAIN AND ALL ADJUSTABLE "AS SET" OVERCURRENT PROTECTIVE DEVICE SETTINGS.

37. ALL CONDUCTORS SHALL BE COPPER. ALUMINUM CONDUCTORS ARE NOT PERMITTED.

38. WHERE REQUIRED, THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONDUITS, FOR THE SECURITY ELECTRONICS SYSTEMS THE SECURITY ELECTRONICS CONTRACTOR (SEC) SHALL PROVIDE AND INSTALL THE WIRE AND CABLE FOR THE SECURITY ELECTRONICS SYSTEMS AND ALL SECURITY ELECTRONICS EQUIPMENT. THE SEC SHALL SUPERVISE THE CONDUIT INSTALLATION AND VERIFY EXACT BACK BOX LOCATIONS AND CONDUIT STUB-UP LOCATIONS IN THE EQUIPMENT ROOMS.

39. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUITS, BACK BOXES, RACEWAYS, SLEEVES, SITE CONDUIT DUCT BANKS AND MANHOLES FOR THE TELECOMMUNICATIONS SYSTEM. THE CTV CABLING CONTRACTOR (CTV/C) SHALL PROVIDE AND INSTALL THE WIRE AND CABLE FOR THE SYSTEMS THEY ARE INSTALLING. THE CTV/C SHALL SUPERVISE THE CONDUIT INSTALLATION AND VERIFY EXACT BACK BOX LOCATIONS AND CONDUIT STUB-UP LOCATIONS IN THE EQUIPMENT CLOSET.

40. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, BACK BOXES, RACEWAYS, SLEEVES, SITE CONDUIT, DUCT BANKS AND MANHOLES FOR THE PUBLIC ADDRESS AND FIRE PROTECTION SYSTEMS. THE PA AND FP CABLING CONTRACTORS (PACC & FPCC) SHALL PROVIDE AND INSTALL THE WIRE AND CABLE FOR THE SYSTEMS THEY ARE INSTALLING. THE PACC AND FPCC SHALL SUPERVISE THE CONDUIT INSTALLATION AND VERIFY EXACT BACK BOX LOCATIONS AND CONDUIT STUB-UP LOCATIONS IN THE EQUIPMENT CLOSET.

41. WHERE REQUIRED, PROVIDE STAND ALONE SMOKE AND HEAT DETECTORS PER NFPA AND LOCAL CODE REQUIREMENTS. COMPLY WITH NFPA 72 AND ADA REQUIREMENTS.

42. COORDINATION DRAWINGS: THIS PROJECT REQUIRES SUBMISSION OF COORDINATION DRAWINGS. THE ELECTRICAL SUB-CONTRACTOR IS RESPONSIBLE FOR THE INITIATION AND PREPARATION OF THE COORDINATION DRAWINGS.

SYLVESTER ENGINEERING LTD.

Table with 6 columns: DRG. NO., REFERENCE DRAWINGS, REV, DATE, CHECKED BY, APP. / AUTH. BY. Row 1: 00D, DC 24/11/16, TOS 24/11/16, TOS 24/11/16, ORIGINAL ISSUE.

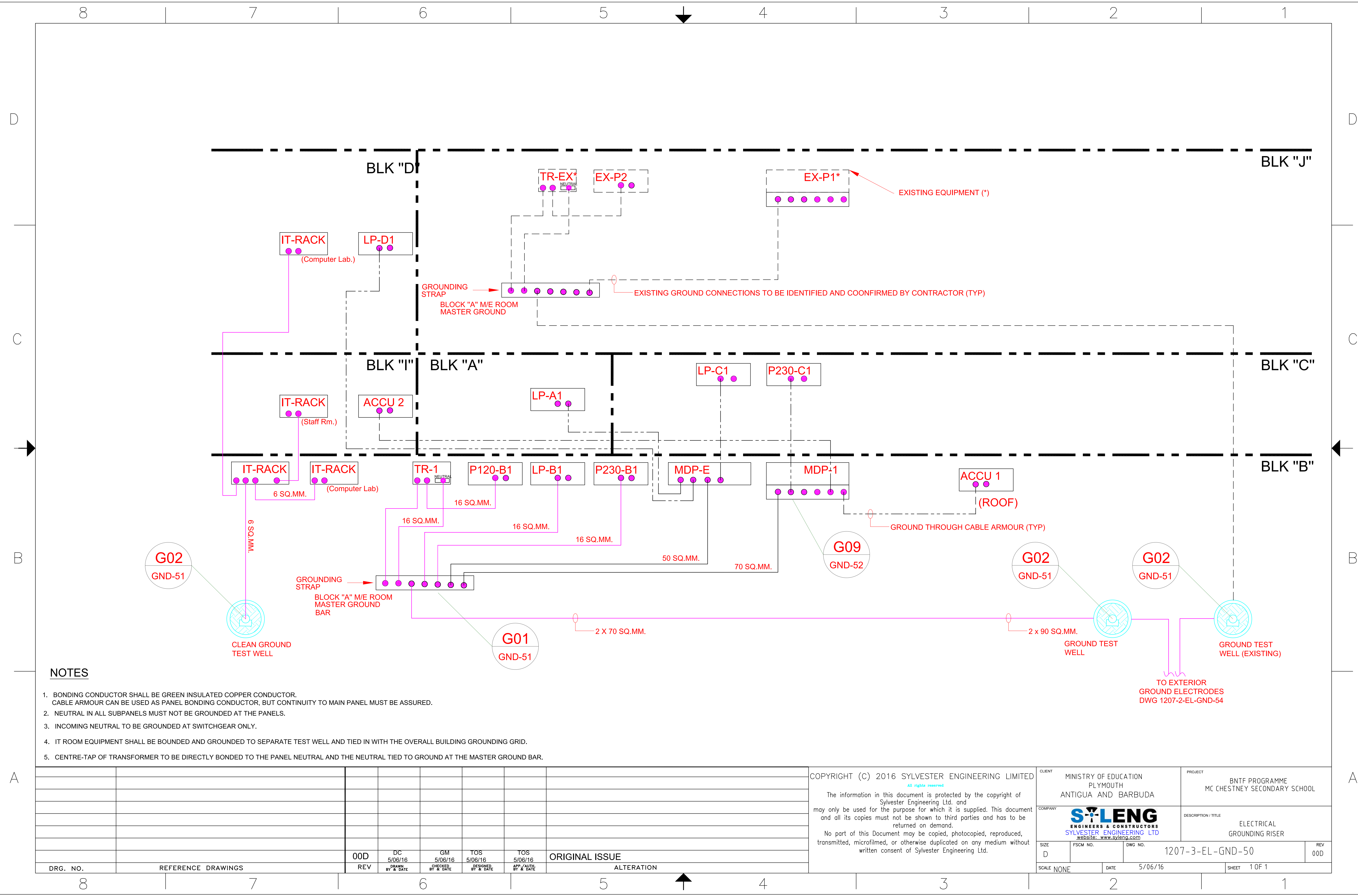
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Client information table. Client: GOVT OF ANTIGUA & BARBUDA. Project: BEPII ANTIGUA & BARBUDA. Description: ELECTRICAL INSTALLATION NOTES. Sheet: 1 OF 1.

MAY. 18, 2014 SYLVESTER ENGINEERING LTD.



NOTES

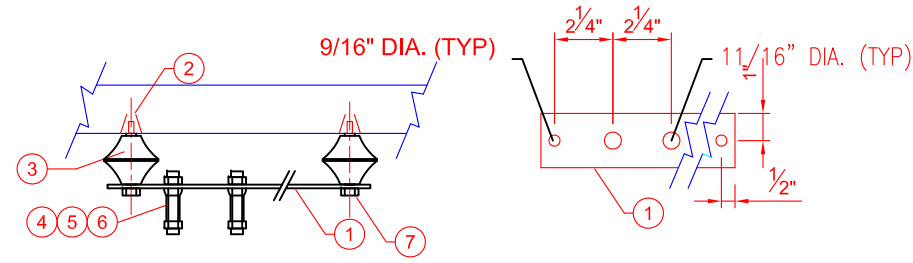
1. BONDING CONDUCTOR SHALL BE GREEN INSULATED COPPER CONDUCTOR. CABLE ARMOUR CAN BE USED AS PANEL BONDING CONDUCTOR, BUT CONTINUITY TO MAIN PANEL MUST BE ASSURED.
2. NEUTRAL IN ALL SUBPANELS MUST NOT BE GROUNDED AT THE PANELS.
3. INCOMING NEUTRAL TO BE GROUNDED AT SWITCHGEAR ONLY.
4. IT ROOM EQUIPMENT SHALL BE BOUNDED AND GROUNDED TO SEPARATE TEST WELL AND TIED IN WITH THE OVERALL BUILDING GROUNDING GRID.
5. CENTRE-TAP OF TRANSFORMER TO BE DIRECTLY BONDED TO THE PANEL NEUTRAL AND THE NEUTRAL TIED TO GROUND AT THE MASTER GROUND BAR.

DRG. NO.	REFERENCE DRAWINGS	REV	BY	DATE	CHECKED BY	DATE	DESIGNED BY	DATE	APP/AUTH BY	DATE	ALTERATION
		00D	DC	5/06/16	GM	5/06/16	TOS	5/06/16	TOS	5/06/16	ORIGINAL ISSUE

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CLIENT MINISTRY OF EDUCATION PLYMOUTH ANTIGUA AND BARBUDA		PROJECT BNTF PROGRAMME MC CHESTNEY SECONDARY SCHOOL	
COMPANY S-LENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com		DESCRIPTION / TITLE ELECTRICAL GROUNDING RISER	
SIZE D	FSCM NO.	DWG NO. 1207-3-EL-GND-50	REV 00D
SCALE NONE	DATE 5/06/16	SHEET 1 OF 1	

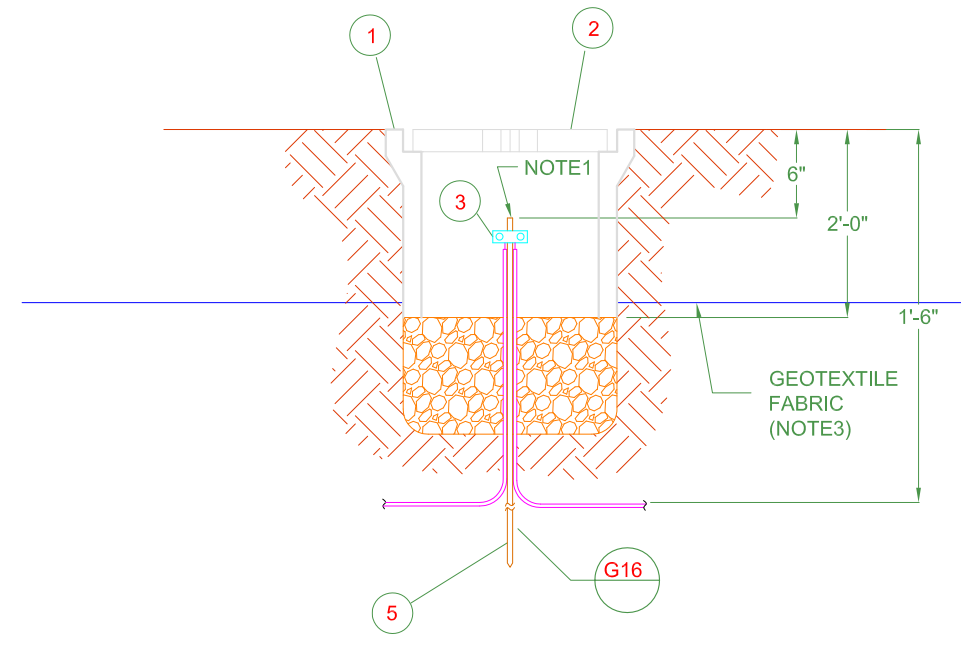
NOTES
1. GROUND BUS MAY BE MOUNTED VERTICALLY WHEN HORIZONTAL SPACE IS NOT AVAILABLE.



ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1.5	LF	COPPER BAR, HARD DRAWN, 1/4"x2"
2		2	EA	EXPANSION ANCHOR, 1/2"-13NC
3		2	EA	INSULATOR
4		4	EA	GROUNDING POST, 1/2"-13NC, STUD, (#2-#2/0) BURNDY #K2C26
5		2	EA	NUT, HEX, SILICON BRONZE, 5/8"-13NC
6		4	EA	LOCKWASHER, INSIDE TOOTH, SS, 5/8"
7		2	EA	BOLT, HEXHEAD, SILICON BRONZE, 1/2"-13NC, 2-1/2" LONG

G01 MASTER GROUND BAR
CONCRETE / MASONRY SURFACE

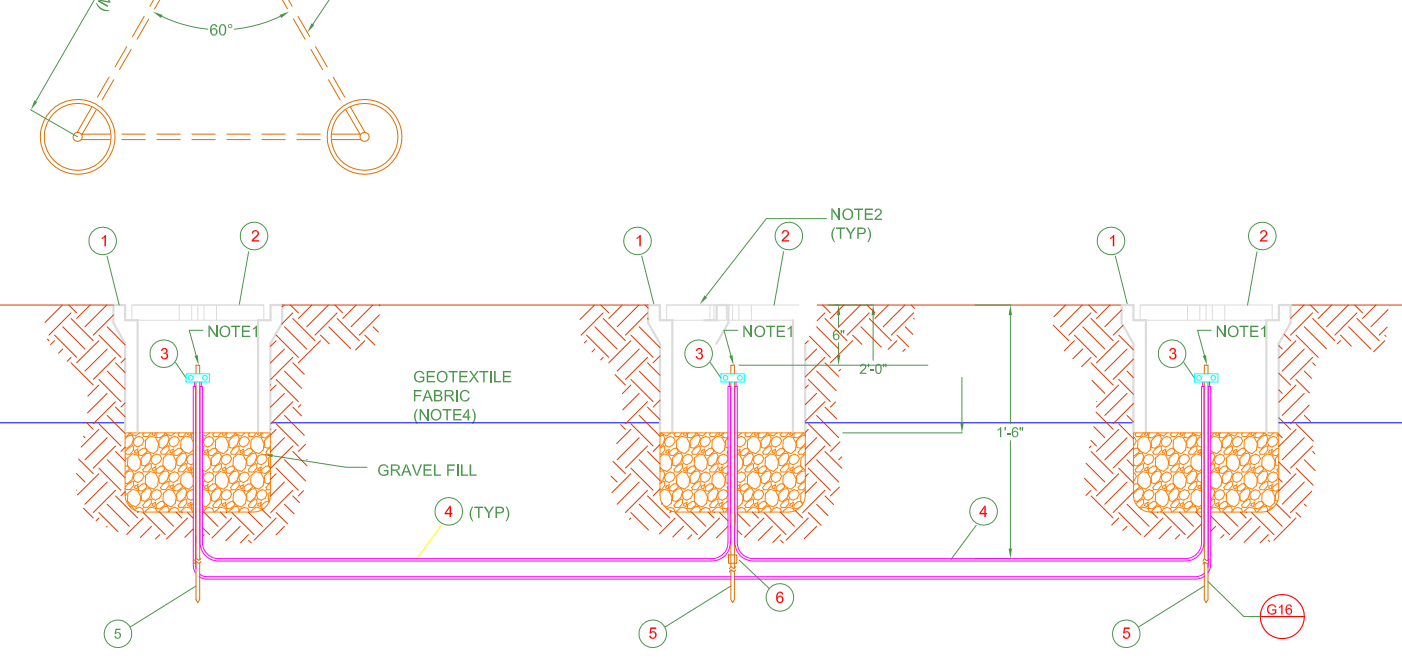
NOTES
1. FIELD TO LOCATE GROUND ROD 2" OFF CENTER TO PROVIDE ADEQUATE WORKING SPACE.
2. TOP OF GROUND TEST WELL TO BE FLUSH WITH FINISHED SURFACE.
3. REPAIR ALL PENETRATIONS MADE WITH GEOTEXTILE FABRIC DURING GROUNDING INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATION.



QTY	CODE	ITEM	UNIT	DESCRIPTION
1		1	EA	VETRICIFIED CLAY PIPE W/ BELL END 10"DIA x 2'LG
1		2	EA	CONCRETE COVER, 10" DIA
1		3	EA	GROUND ROD CONNECTOR, BRNDY #GK6429
8		4	LF	CABLE, 1/C, #4/0, COPPER, GREEN THW
1		5	EA	GROUND ROD, COPPER CLAD, 3/4" DIA x 10' LG

DETAIL G02
GROUND TEST WELL
W/ SINGLE ROD INSTALLATION

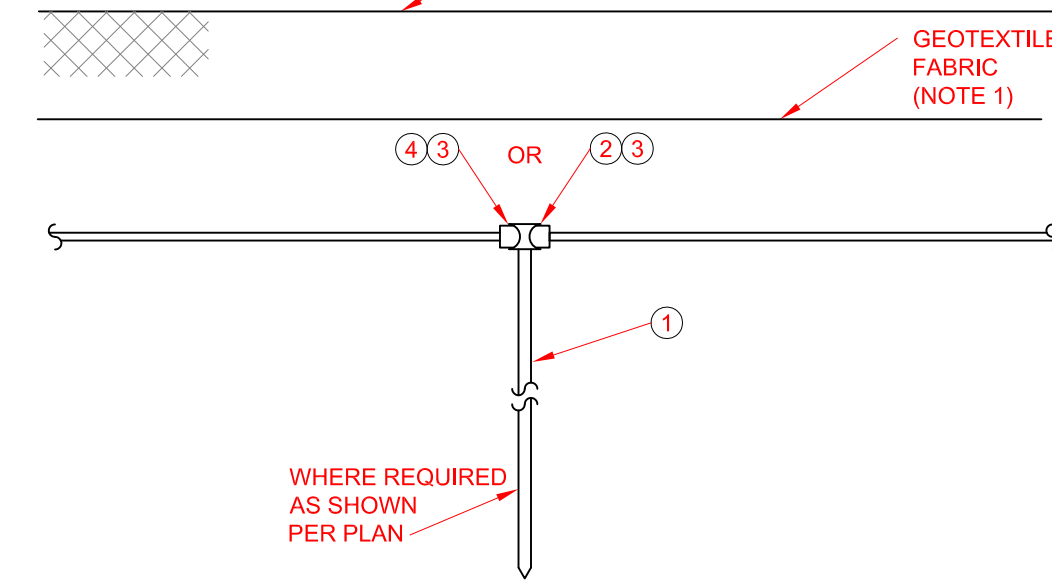
NOTES
1. FIELD TO LOCATE GROUND ROD 2" OFF CENTER TO PROVIDE ADEQUATE WORKING SPACE.
2. TOP OF GROUND TEST WELL TO BE FLUSH WITH FINISHED SURFACE.
3. TOTAL GROUNDING RESISTANCE SYSTEM MEASURED AT ANY POINT IN CLOSED TRIAD SHALL NOT EXCEED 1 OHM. UP TO 2 ADDITIONAL GROUND RODS (3 TOTAL) PER TEST WELL MAY BE GIVEN UNTIL THE VALUE IS ACHIEVED.
4. REPAIR ALL PENETRATIONS MADE WITH GEOTEXTILE FABRIC DURING GROUNDING INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATION.



ITEM	CODE	QTY	UNIT	DESCRIPTION
1		3	EA	VETRICIFIED CLAY PIPE W/ BELL END 10"DIA x 2'LG
2		3	EA	CONCRETE COVER, 10" DIA
3		3	EA	GROUND ROD CONNECTOR, BRNDY #GK6429
4		30	LF	CABLE, 1/C, #4/0, COPPER, GREEN THW
5		3	EA	GROUND ROD, COPPER CLAD, 3/4" DIA x 10' LG
6		1	EA	GROUND COUPLING - 3/4" THREADED AS REQ'D (SEE NOTE)

DETAIL G03
MAIN BUILDING GROUND
AND CHECKPOINT INSTALLATION

NOTES
1. REPAIR ALL PENETRATIONS MADE IN GEOTEXTILE FABRIC DURING GROUNDING INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATION.



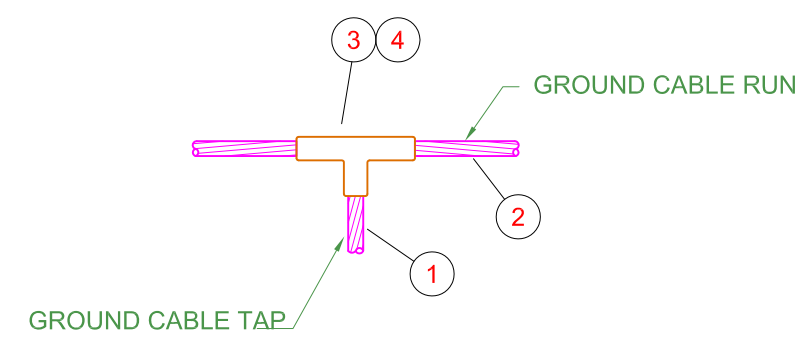
DETAIL GROUND CABLE NO.	SIZE	CODE	MOLD CAT #	CARTRIDGE CODE
1	#4/0			
2	#2/0			
3	#2			

ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	LF	GROUND ROD, COPPER CLAD, 3/4" DIA. x 10'-0" LG
2		1	EA	MOLD, SINGLE CABLE-TO-GROUND, SIZE AS REQ
3		1	EA	WELD METAL CARTRIDGE FOR ITEM 2 OR 4
4		1	EA	MOLD, TEE CONNECTION, CABLE-TO-GROUND, SIZE AS REQ

DETAIL G04
GROUND ROD 'GT' TYPE CONNECTOR

NOTES
1. THE GROUNDING SYSTEM IS SHOWN DIAGRAMATICALLY. ARRANGEMENT OF ELEMENTS SHOWN MAY BE MODIFIED TO MEET ACTUAL FIELD CONDITIONS, WITH THE CONSTRAINTS OF APPROVED METHODS AND GOOD ENGINEERING PRACTICE.
2. GROUND CABLES ROUTED UNDERGROUND SHALL BE BURIED A MINIMUM 1'-6" BELOW GRADE AND KEPT CLEAR FROM BUILDING FOUNDATIONS OR OTHER OBSTRUCTIONS. THE EXACT LOCATION OF GROUND CABLE, CABLE RODS AND TEST WELLS SHALL BE DETERMINED IN THE FIELD UNLESS OTHERWISE DIMENSIONED OR DETAILED ON THE DRAWINGS.

NOTES
1. MOLDS ARE CADWELD HEAVY DUTY
2. CADWELD MOLDS ARE GOOD FOR APPROXIMATELY 50 CONNECTIONS

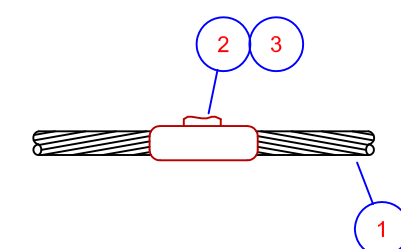


DETAIL NO.	GROUND CABLE		MOLD (3)	CARTRIDGE (4)	
	TAP	RUN		CAT#	CODE
G20A	#4/0	#4/0	TAC-2Q2Q	#150	
G20B	#2/0	#4/0	TAC-2Q2G	#90	
G20C	#2	#4/0	TAC-2Q1V	#90	
G20D	#2/0	#2/0	TAC-2G2G	#90	
G20E	#2	#2/0	TAC-2G1V	#45	
G20F	#2	#2	TAC-1V1V	#45	

ITEM	CODE	QTY	UNIT	DESCRIPTION
1		-	LF	CABLE, "TAP", INSULATED OR BARE STR COPPER, SIZE PER TABLE
2		-	LF	CABLE, "RUN", INSULATED OR BARE STR COPPER, SIZE PER TABLE
3		1	EA	MOLD, TEE CONNECTOR, CADWELD # PER TABLE
4		1	EA	MOLD CATRIDGE, CADWELD # PER TABLE

DETAIL G05
GROUND CABLE T-SPLICE (UNDERGROUND)
"TA" TYPE CONNECTOR

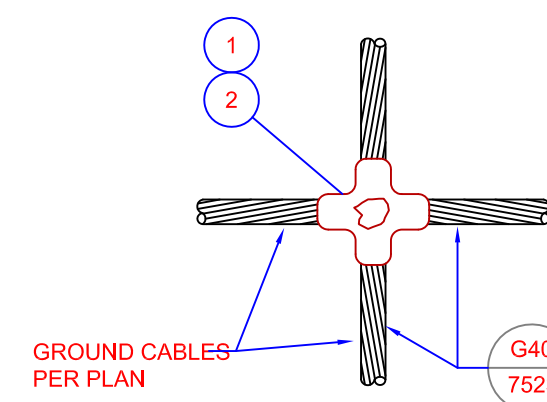
NOTES
1. MOLDS ARE CADWELD HEAVY DUTY.
2. CADWELD MOLDS ARE GOOD FOR APPROXIMATELY 50 CONNECTIONS.



DETAIL NO.	GROUND CABLE (1)	MOLD (2)	CARTRIDGE (3)
NO.	SIZE	CAT #	CODE
G21A	#4/0		
G21B	#2/0		
G21C	#2		

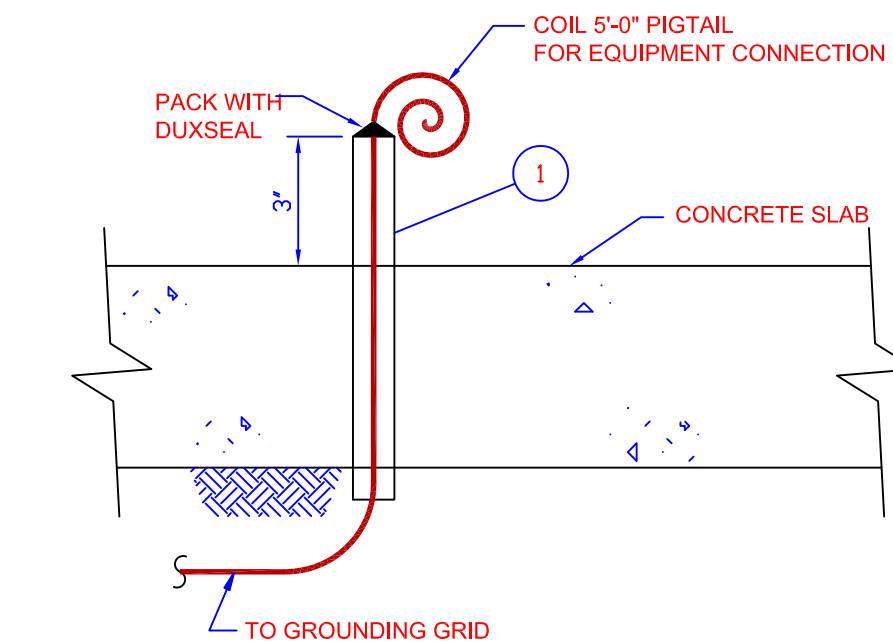
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		5	LF	CABLE, "TAP", INSULATED OR BARE STR COPPER, SIZE PER TABLE
2		1	EA	MOLD, BUTT SPLICE, CADWELD # PER TABLE
3		1	EA	MOLD CARTRIDGE, CADWELD # PER TABLE

G06 GROUND CABLE BUTT-SPLICE (UNDERGROUND)



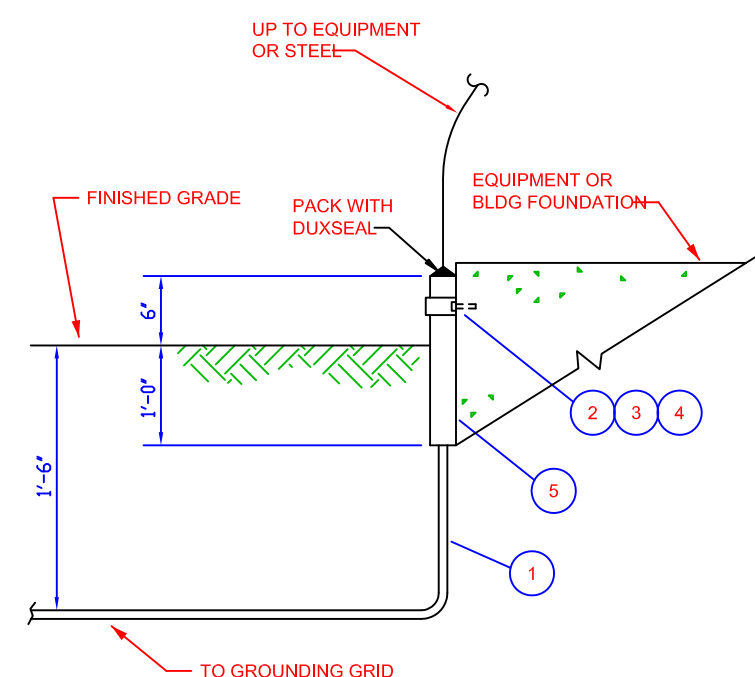
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	MOLD, CADWELD TYPE XA, SIZE AS REQUIRED
2		1	EA	WELD METAL CARTRIDGE, SIZE AS REQUIRED

G07 GROUND CABLE CROSS-SPLICE



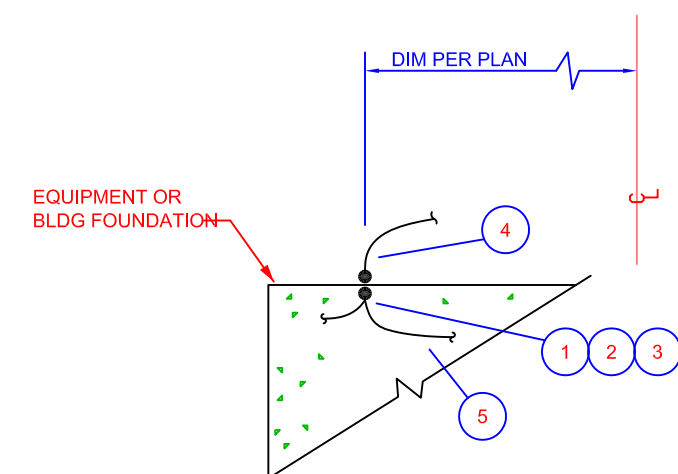
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	3/4" SCHD 40 PVC CONDUIT SLEEVE

G08 GROUND SLEEVE



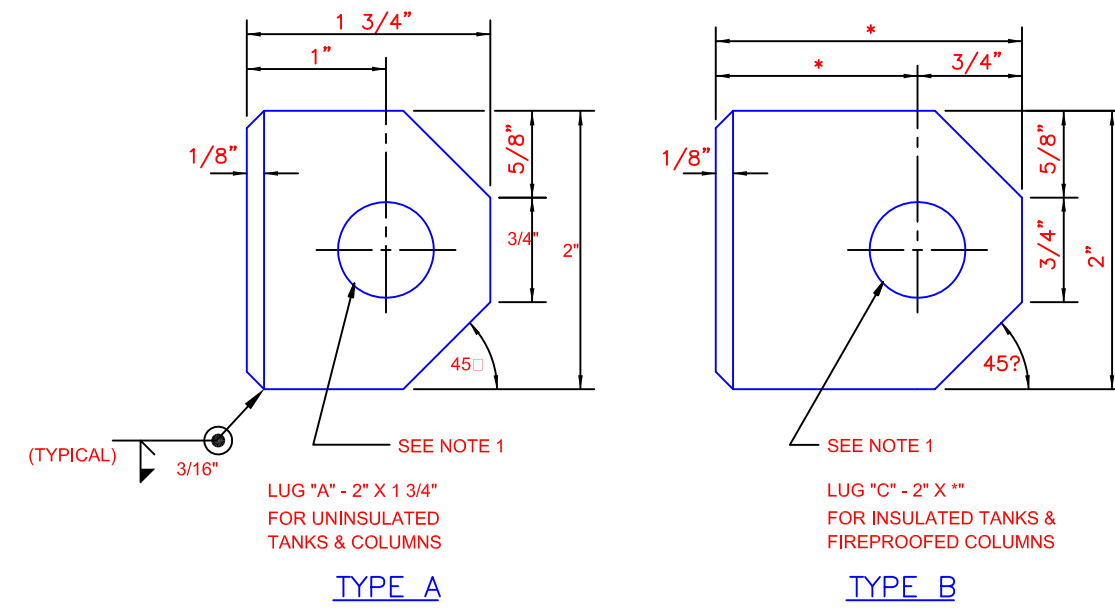
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		-	LF	CABLE, INSULATED OR BARE STR COPPER, SIZE PER PLAN
2		1	EA	CONDUIT CLAMP, 1-HOLE, MILD CARBON IRON, 1" CA#MMR512
3		1	EA	EXPANSION ANCHOR, SELF DRILLING, 1/4"x20, RED HEAD #S-14
4		1	EA	BOLT, CADMIUM PLATED, 1/4"x20NC, 1" LG
5		1.5	LF	CONDUIT, RIGID PVC, SCH 40, 1"
6				
7				

G09 PVC GROUND SLEEVE AT GRADE

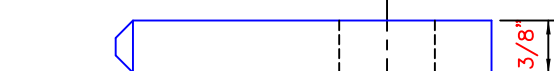


ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	GROUND PLATE, NEMA 2-HOLE, W#40 STUD
2		1	EA	MOLD, TEE CONNECTOR, #4/0-#4/0, CADWELD #
3		1	EA	MOLD CARTRIDGE, CADWELD #
4		1	EA	LUG STUB BOND, NEMA 2-HOLE, #4/0 CABLE
5		-	LF	CABLE, BARE STR COPPER, #4/0, EMBEDDED, SIZE PER PLAN
6				
7				

G10 EMBEDDED GROUND PLATE

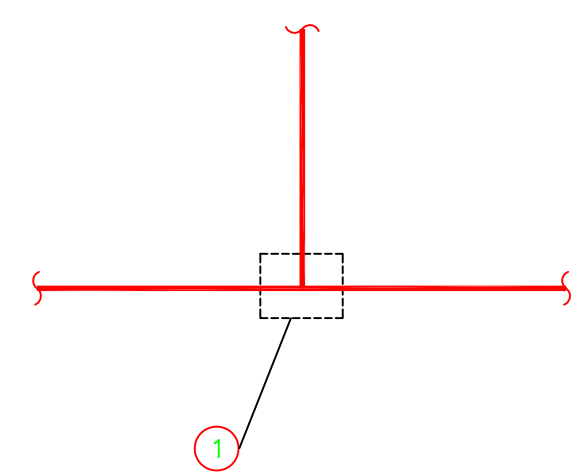


* LENGTH AS REQ'D TO CLEAR INSULATION OR FIREPROOFING



SIDE VIEW - LUGS "A" & "C" INCLUSIVE
ALL LUGS - 3/8" FLAT MILD STEEL - WELDABLE QUALITY
ALL LUGS - BEVEL 1/8" @ 45° AS SHOWN
ALL HOLES - 1/16" DIAMETER
REMOVE BURRS ON ALL EDGES, ROUND ALL CORNERS

G11 GROUND LUG



ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	CABLE TO CABLE CONNECTOR, BURNDY TYPE YST SIZE AS REQ'D

G12 ABOVE GRADE COMPRESSION CONNECTION

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CLIENT	MINISTRY OF EDUCATION PLYMOUTH ANTIGUA AND BARBUDA	PROJECT	BNTF PROGRAMME MC CHESNEY SECONDARY SCHOOL
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	ELECTRICAL GROUNDING DETAILS
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-GND-51
SCALE	NONE	DATE	5/06/16
DRG. NO.	00D	REV	00D
REFERENCE DRAWINGS		SHEET	1 OF 1

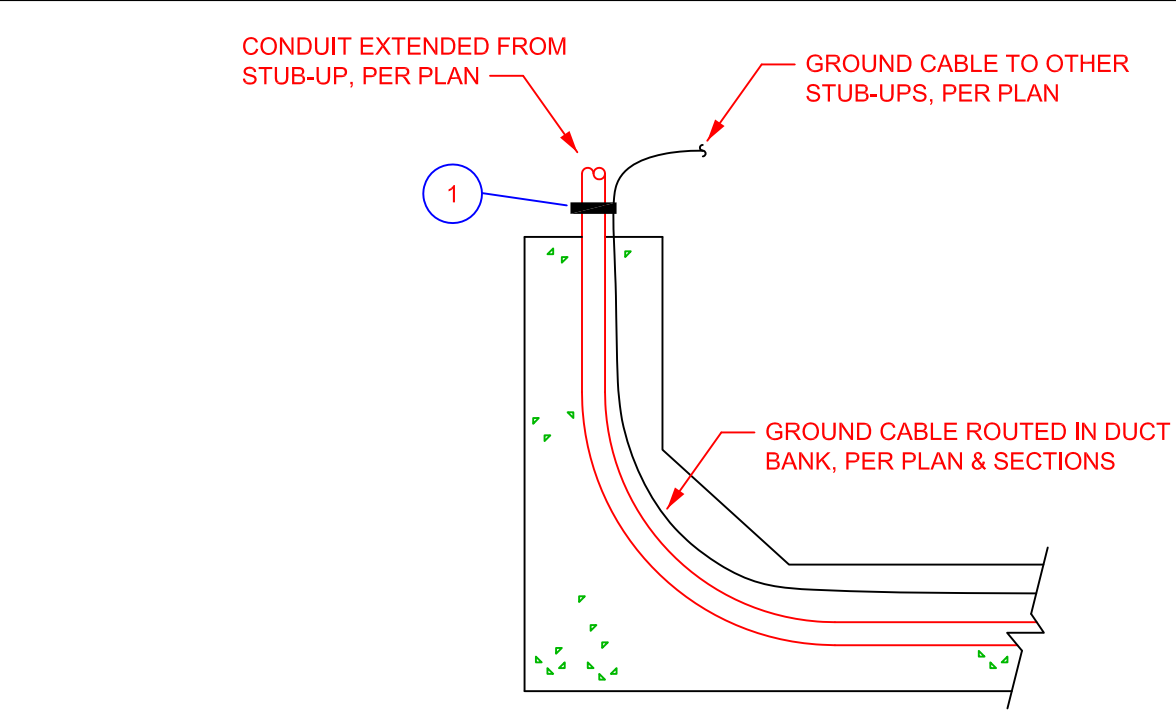
00D	DC	GM	TOS	TOS
5/06/16	5/06/16	5/06/16	5/06/16	5/06/16
DRAWN BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	

ORIGINAL ISSUE

ALTERATION

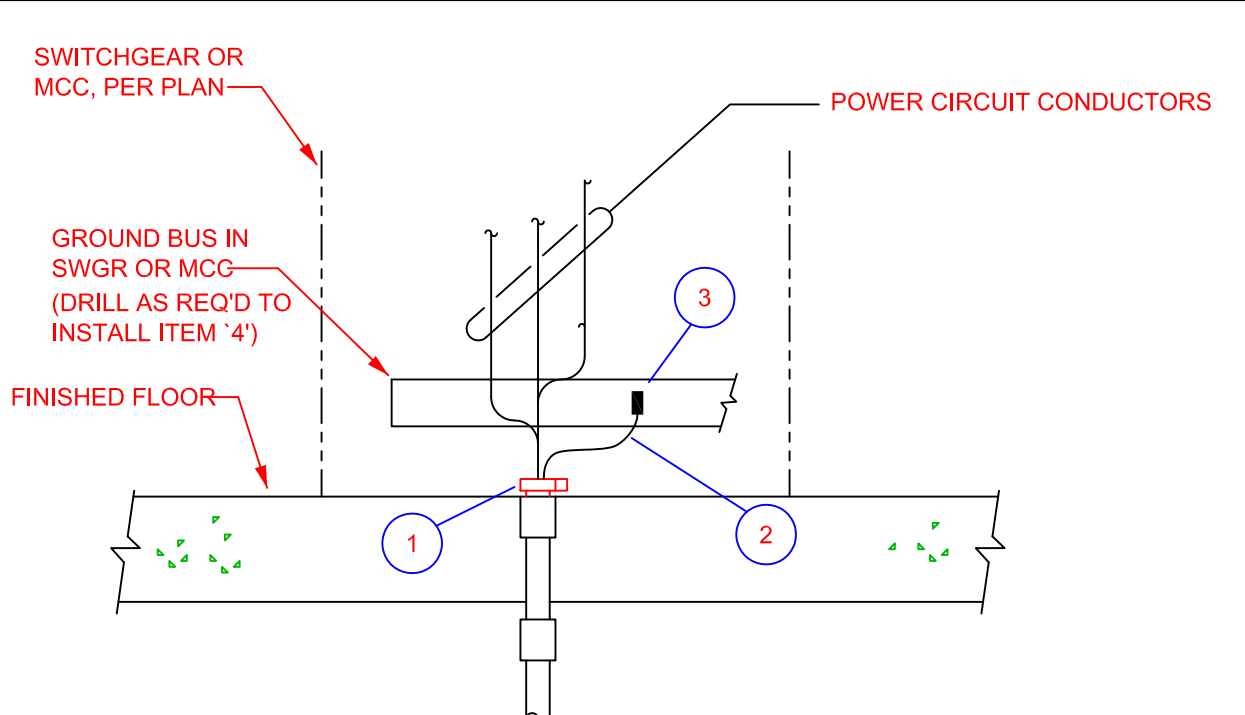
MAY. 18, 2014 SYLVESTER ENGINEERING LTD.

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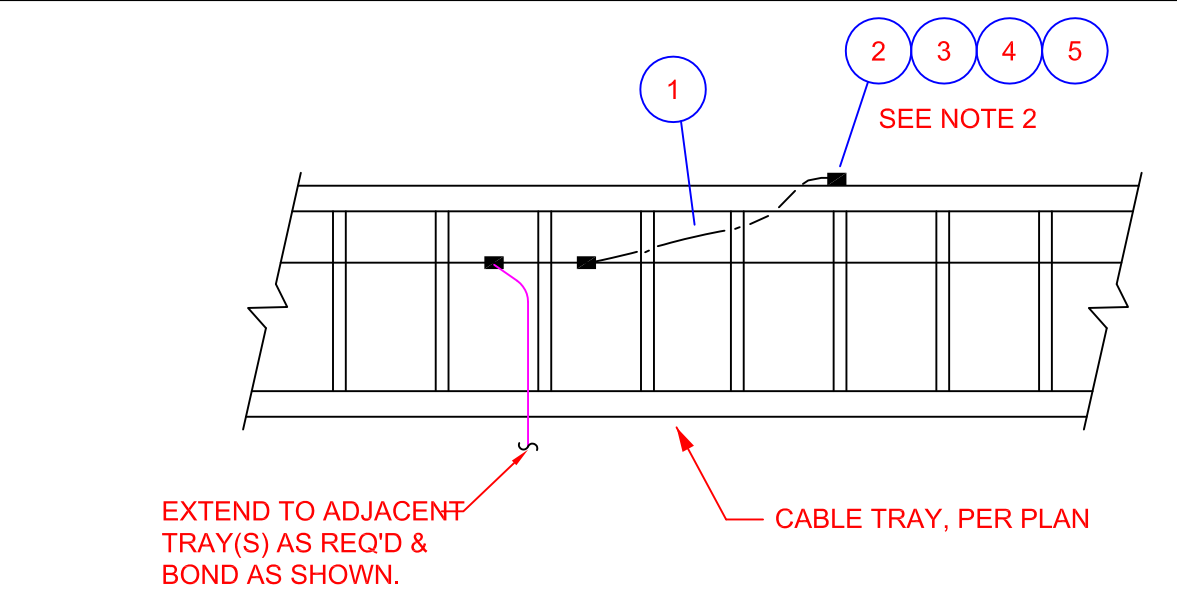
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	CLAMP, CABLE TO PIPE, SIZE AS REQ'D, SEE CONDUIT & CABLE SCHED

G01 CONDUIT STUB-UP GROUNDING OUTSIDE



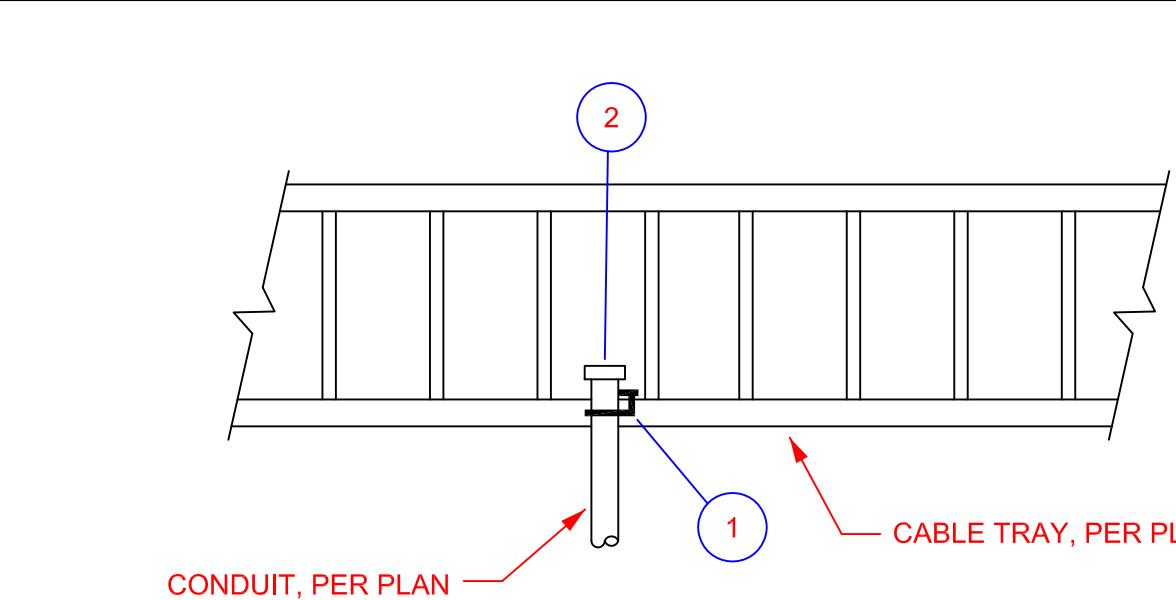
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	CONDUIT GROUNDING BUSHING, SIZE AS REQ'D, SEE COND & CABLE SCHED
2		-	-	EQUIPMENT GROUNDING CONDUCTOR ROUTED WITH OR IN CABLE, SIZE PER CONDUIT & CABLE SCHEDULE
3		2	EA	GROUNDING POST OR LUG

G02 CONDUIT STUB-UP GROUNDING INSIDE



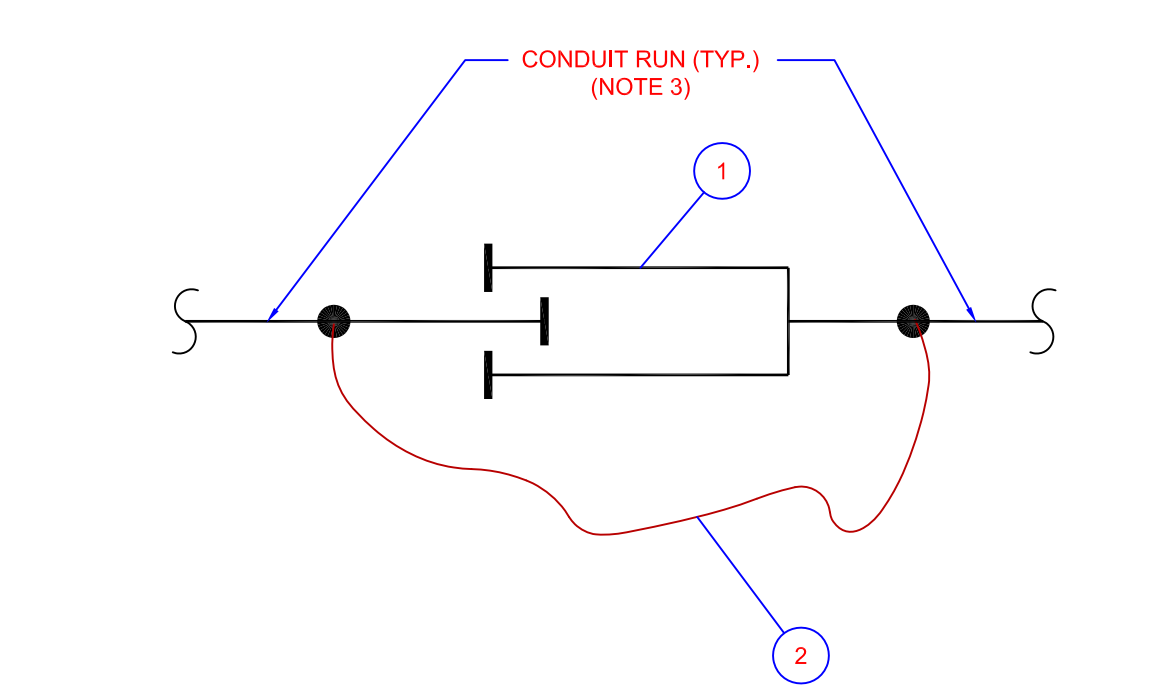
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		10	LF	CABLE, #2/0 INSULATED STR COPPER (NOTE 1) TAP CONDUCTOR
2		1	EA	BOLT, ROUND HD, SPLINED, GAL STL, 3/8"-16NC x 1" (BY TRAY VENDOR)
3		1	EA	COMPRESSION LUG, ONE-HOLE TINNED COPPER, #2/0
4		1	EA	FLATWASHER, SILICON BRONZE, 3/8"-32GA
5		1	EA	NUT, W/CAPTIVE LOCK WASHER, 3/8" (BY TRAY VENDOR)

G03 CABLE TRAY GROUNDING



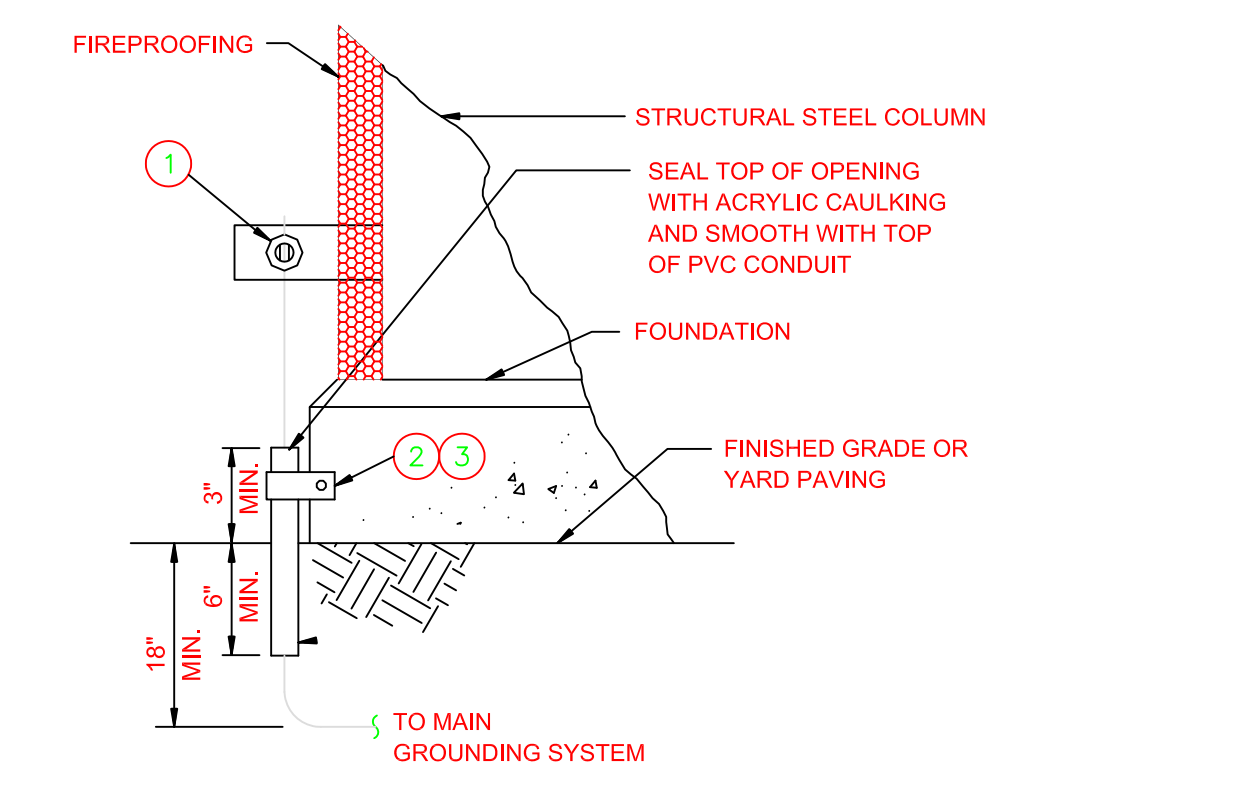
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	CABLE TRAY CONDUIT CLAMP, FOR INSIDE RAIL, C-H TYPE LCCF, SIZE AS REQ'D, SEE CONDUIT & CABLE SCHEDULE
2		1	EA	BUSHING, INSULATED THROAT, SIZE AS REQ'D

G04 CONDUIT TO TRAY BONDING



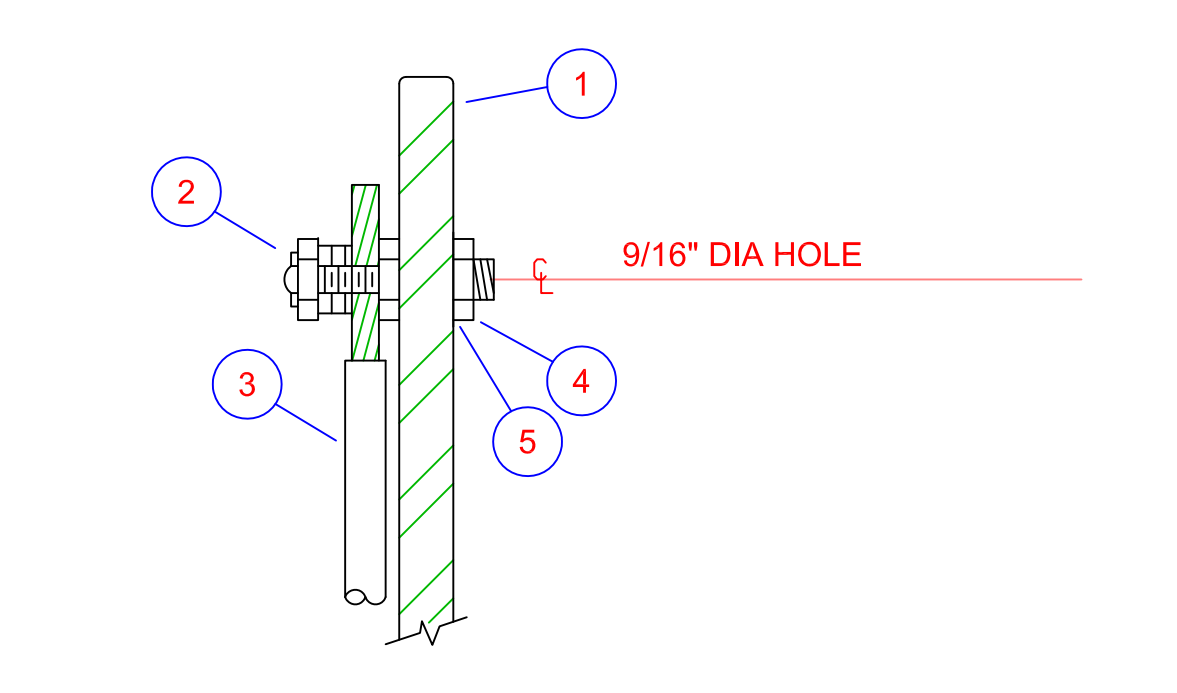
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	CONDUIT EXPANSION FITTING, WEATHERPROOF, 8" MOVEMENT, SIZE AS REQUIRED - O-ZIGEDNEY TYPE EX OR EQUAL
2		1	EA	BONDING JUMPER, SIZE AS REQUIRED - O-ZIGEDNEY TYPE BJ OR EQUAL

G05 CONDUIT EXPANSION FITTING & BONDING JUMPER



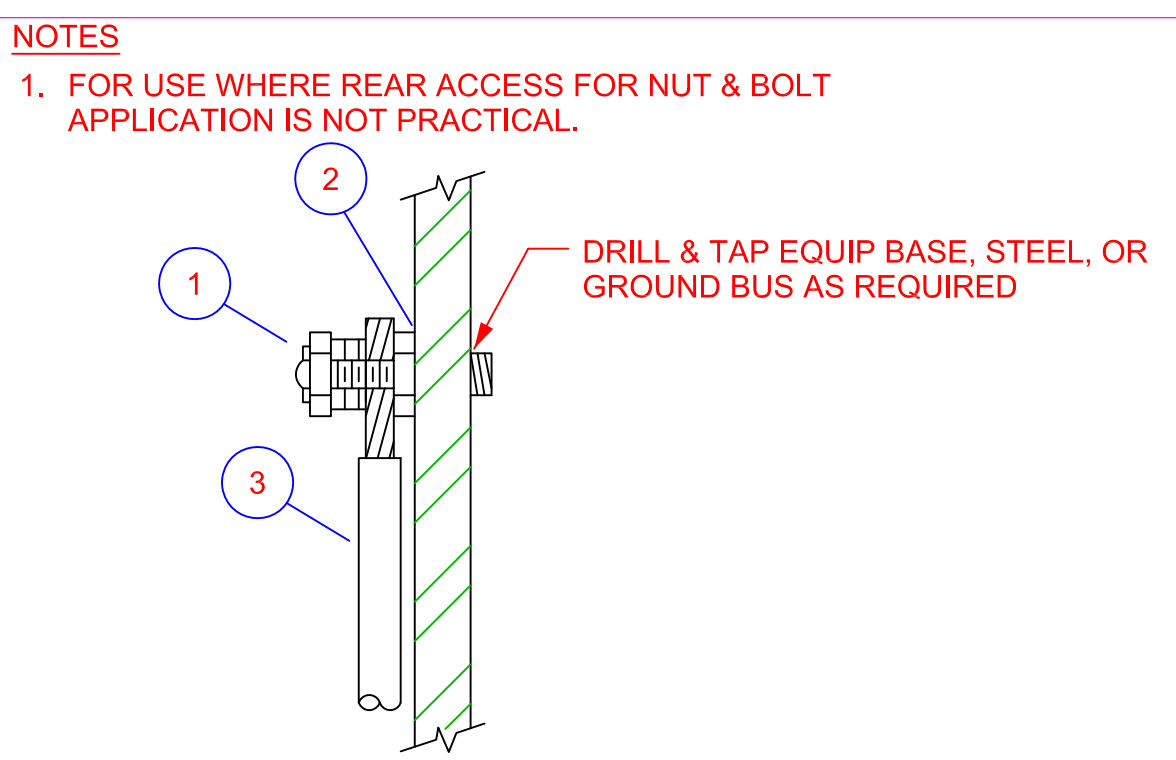
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	SERVIT POST CONNECTOR BURNDY #KC28
2		1	EA	ONE HOLE CONDUIT CLAMP CROUSE-HINDS #202
3		1	EA	REQUIRED MOUNTING HARDWARE

G06 COLUMN GROUND (FIREPROOFED)



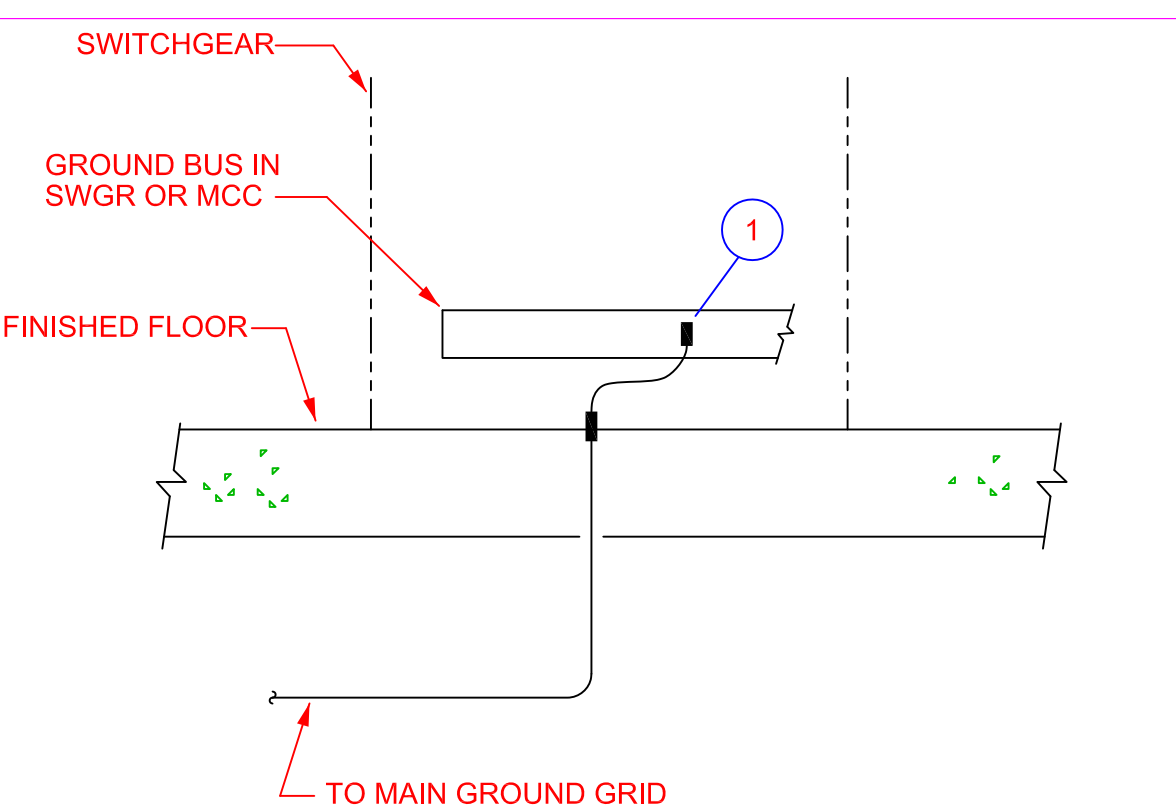
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	VESSEL GROUND CLIP OR COPPER GROUND BUS
2		1	EA	GROUNDING POST, SIZE AS REQUIRED
3		-	LF	CABLE, INSULATED OR BARE STR COPPER, SIZE PER PLAN
4		1	EA	HEX NUT, 1/2", SILICON BRONZE
5		1	EA	LOCKWASHER, 1/2", STAINLESS STEEL, INTERNAL TOOTH

G07 EQUIPMENT GROUND TAP



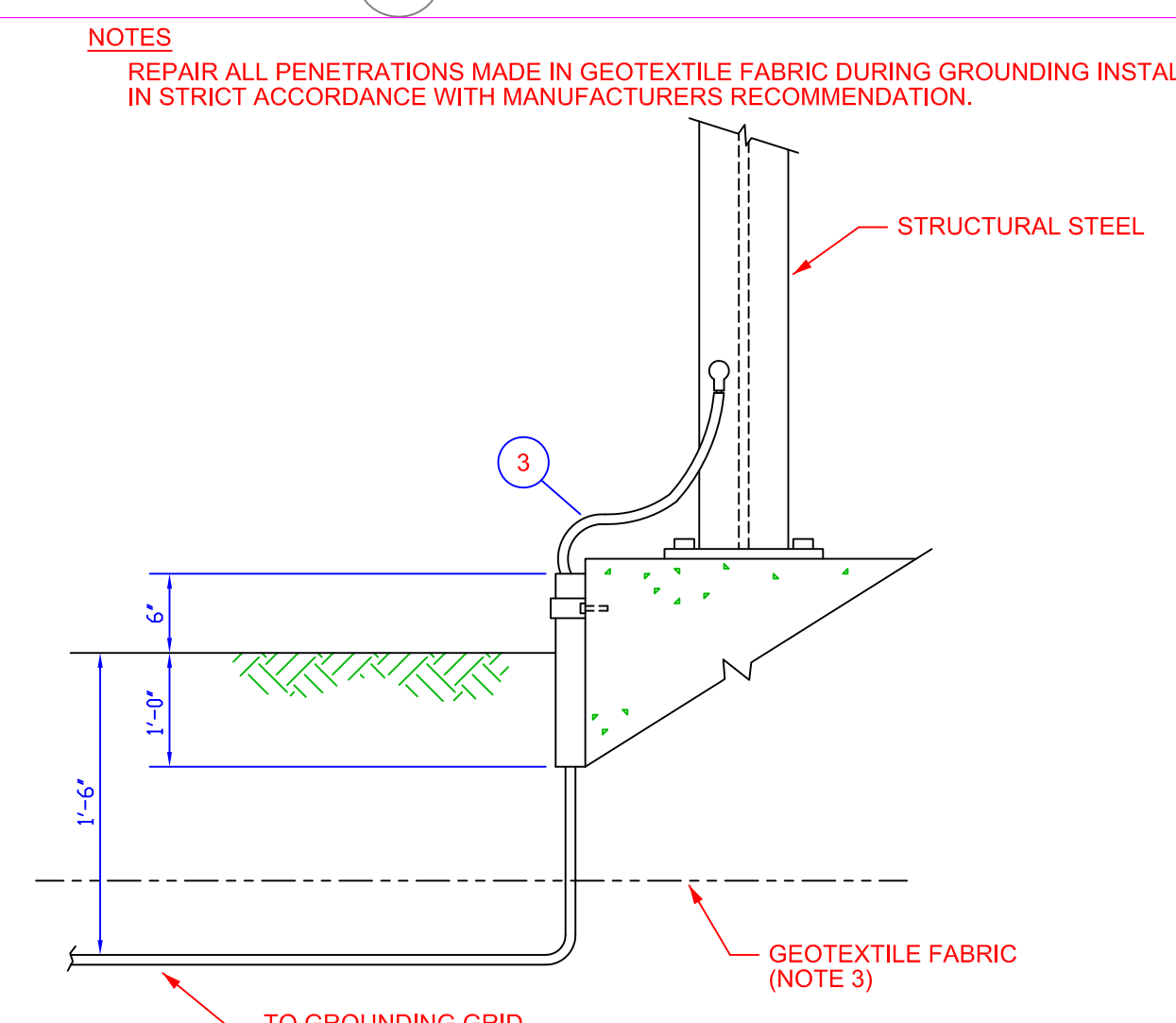
ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	GROUNDING POST, SIZE AS REQUIRED
2		1	EA	LOCKWASHER, SIZE AS REQUIRED
3		-	LF	CABLE, INSULATED OR BARE STR COPPER, SIZE PER PLAN

G08 EQUIPMENT GROUND TAP

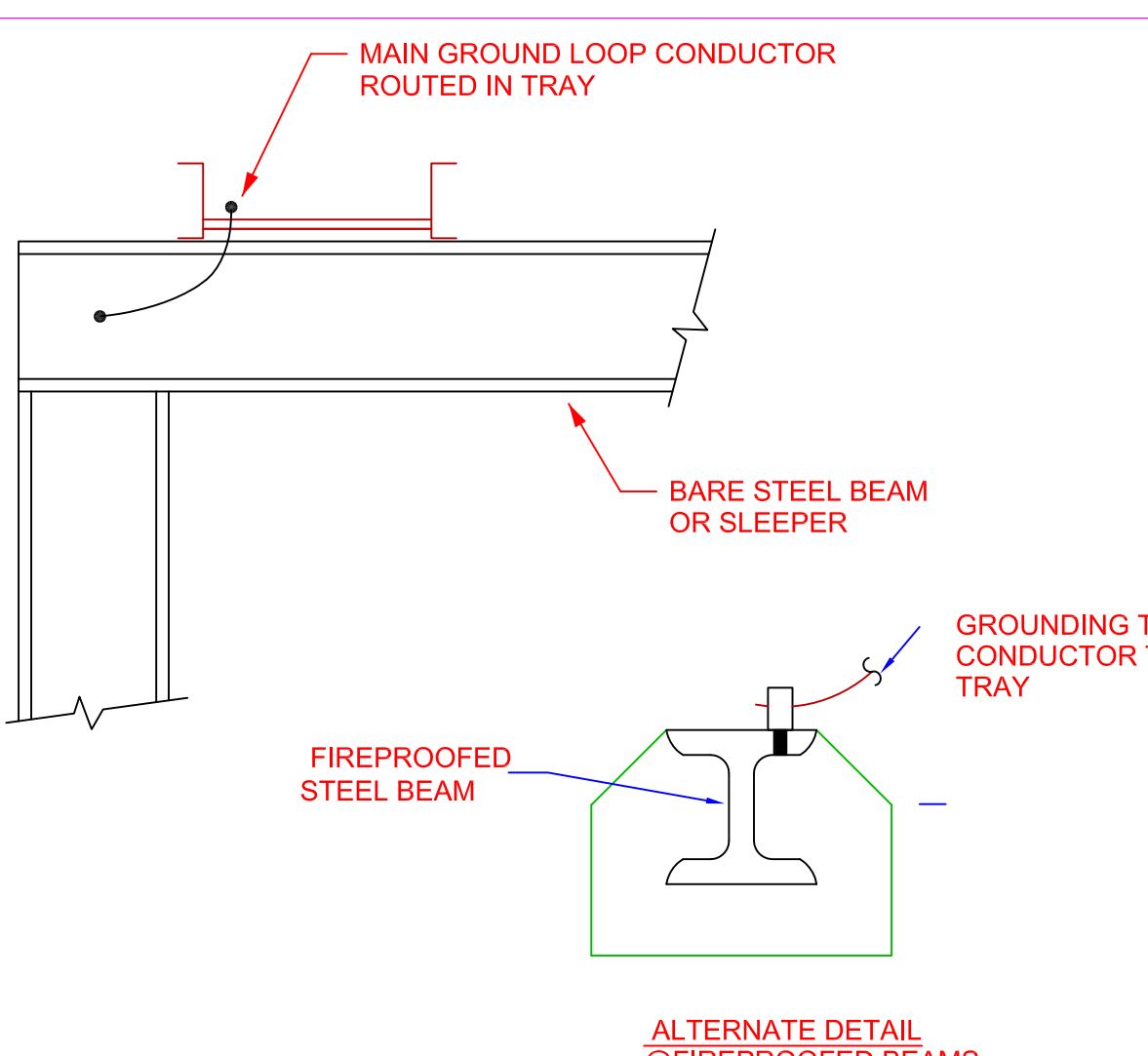


ITEM	CODE	QTY	UNIT	DESCRIPTION
1		2	EA	GROUNDING LUG, #4/0 (BY VENDOR)

G9 SWGR GROUND BUS CONNECTION



G10 STRUCTURAL STEEL GROUNDING



G11 MISCELLANEOUS STEEL GROUNDING

NOTES
1. FOR USE WHERE REAR ACCESS FOR NUT & BOLT APPLICATION IS NOT PRACTICAL.

ITEM	CODE	QTY	UNIT	DESCRIPTION
1		1	EA	GROUNDING POST, SIZE AS REQUIRED
2		1	EA	LOCKWASHER, SIZE AS REQUIRED
3		-	LF	CABLE, INSULATED OR BARE STR COPPER, SIZE PER PLAN

ITEM	CONDUCTOR SIZE			
	#4	#2	#2/0	#4/0
MOTORS				
	30 HP AND BELOW	X		
	40 HP THRU 150 HP		X	
	ABOVE 150 HP			X
MAIN GROUND BUS (NOTE 5)				X
TOWERS VESSELS & LARGE MECHANICAL EQUIPMENT (NOTE 3)				X
SWITCHGEAR & MOTOR CONTROLS CENTERS (NOTE 3)				X
	600 AMP BUS OR LESS			X
	BUS OVER 600 AMP			X
POWER & LIGHTING TRANSFORMERS (SECONDARY)				X
	200 AMP & LESS	X		
	201-400 AMP		X	
	401-600 AMP			X
	OVER 600 AMP			X
LIGHTING & DISTRIBUTION PANELBOARDS (PROTECTIVE SETTING) (NOTE 3)				X
	200 AMP & LESS	X		
	201-400 AMP		X	
	401-600 AMP			X
	OVER 600 AMP			X
PIPEWAY & BUILDING STEEL COLUMNS				X
CABLE TRAY GROUND BUS (NOTE 5)				X
SMALL MECHANICAL EQUIPMENT & MISCELLANEOUS ITEMS				X

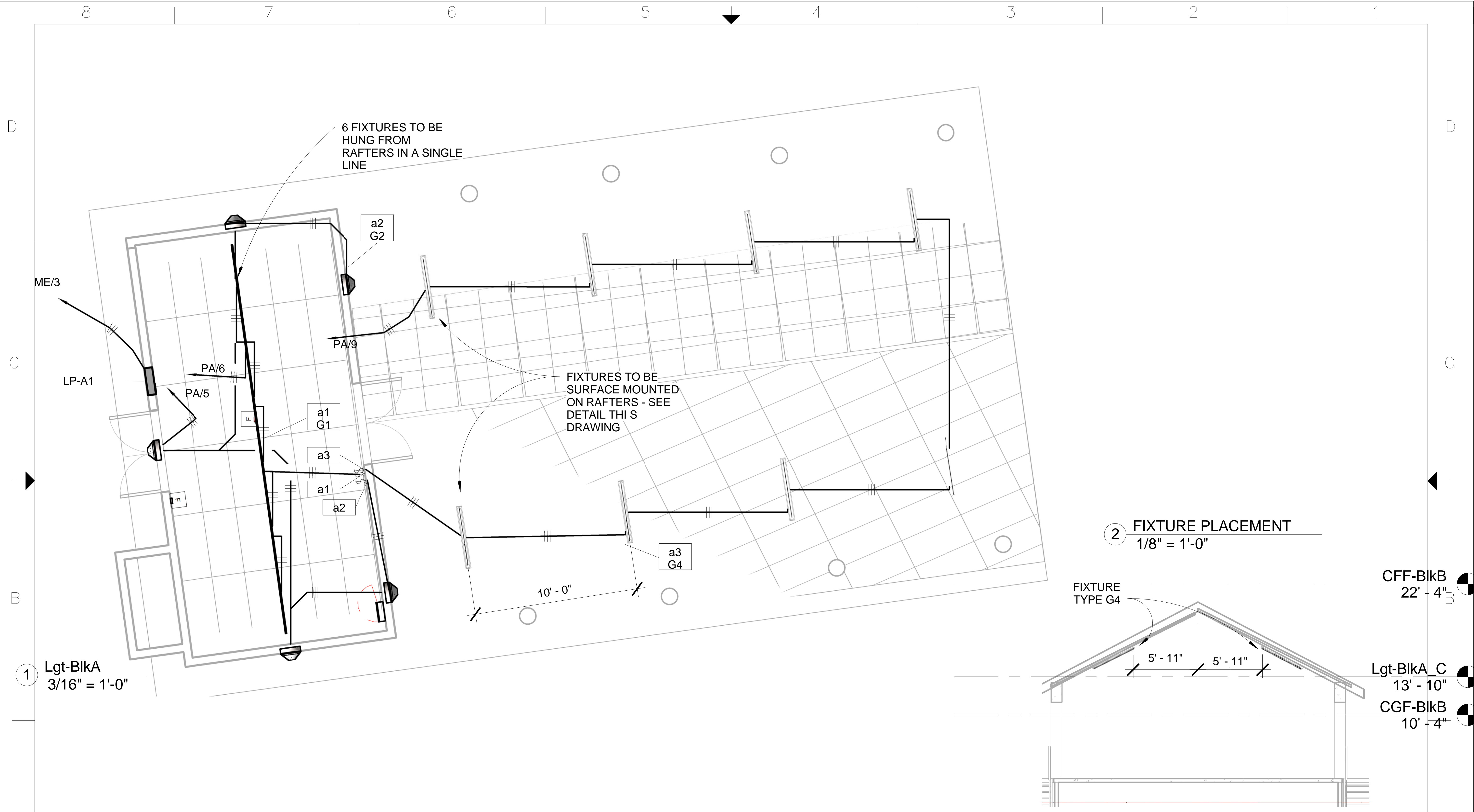
DETAIL G12 GROUND CONDUCTOR SIZES

NOTES:
1. THE MAIN GROUND LOOP CABLE & GROUND CABLES INSTALLED IN CABLE TRAY SHALL BE CLASS B STRANDED SINGLE CONDUCTOR COPPER CABLE, WITH UV SUNLIGHT & OIL RESISTANT PVC INSULATION COLOR CODED GREEN.
2. WHERE SPICE PLATE BOLTS ARE USED FOR GROUNDING CONNECTIONS, THE BOLT MUST FIRST BE INSTALLED TO ASSURE THE BOLT SERRATIONS ARE SEATED PROPERLY. THE TRAYS SHALL BE GROUNDED AT EACH END, AT INTERVALS OF NOT MORE THAN 100 FEET, OR IN THE EVENT OF A CLOSED LOOP, AT TWO DIAGONALLY OPPOSITE POINTS. ALL DRILLING OF TRAYS FOR GROUNDING SHALL BE DONE PRIOR TO CABLE INSTALLATION, TO ELIMINATE POSSIBILITY OF DAMAGE TO INSULATION ON TRAY CABLES.
3. IN STRAIGHT CONDUIT RUNS OF 300 FEET OR MORE, EXPANSION FITTINGS SHALL BE INSTALLED AT A MAXIMUM SPACING OF 200 FEET CENTER-TO-CENTER. EACH EXPANSION FITTING SHALL ALLOW A MINIMUM TOTAL CONDUIT MOVEMENT OF 8". BONDING JUMPERS WITH CLAMPS SHALL BE INSTALLED IN HAZARDOUS AREAS AS SHOWN.
4. EQUIPMENT GROUNDING FOR TRANSFORMER SECONDARY CIRCUIT SIZED PER NEC ART. 250-95
5. NEUTRAL BUS MAY BE FURNISHED BONDED TO CASE WHERE PANEL & TRANSFORMER FURNISHED PRE-PACKAGED IN COMMON ENCLOSURE.

DRG. NO.	REFERENCE DRAWINGS	REV	DC	GM	TOS	TOS	ORIGINAL ISSUE
		00D	5/06/16	5/06/16	5/06/16	5/06/16	
			BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	ALTERATION

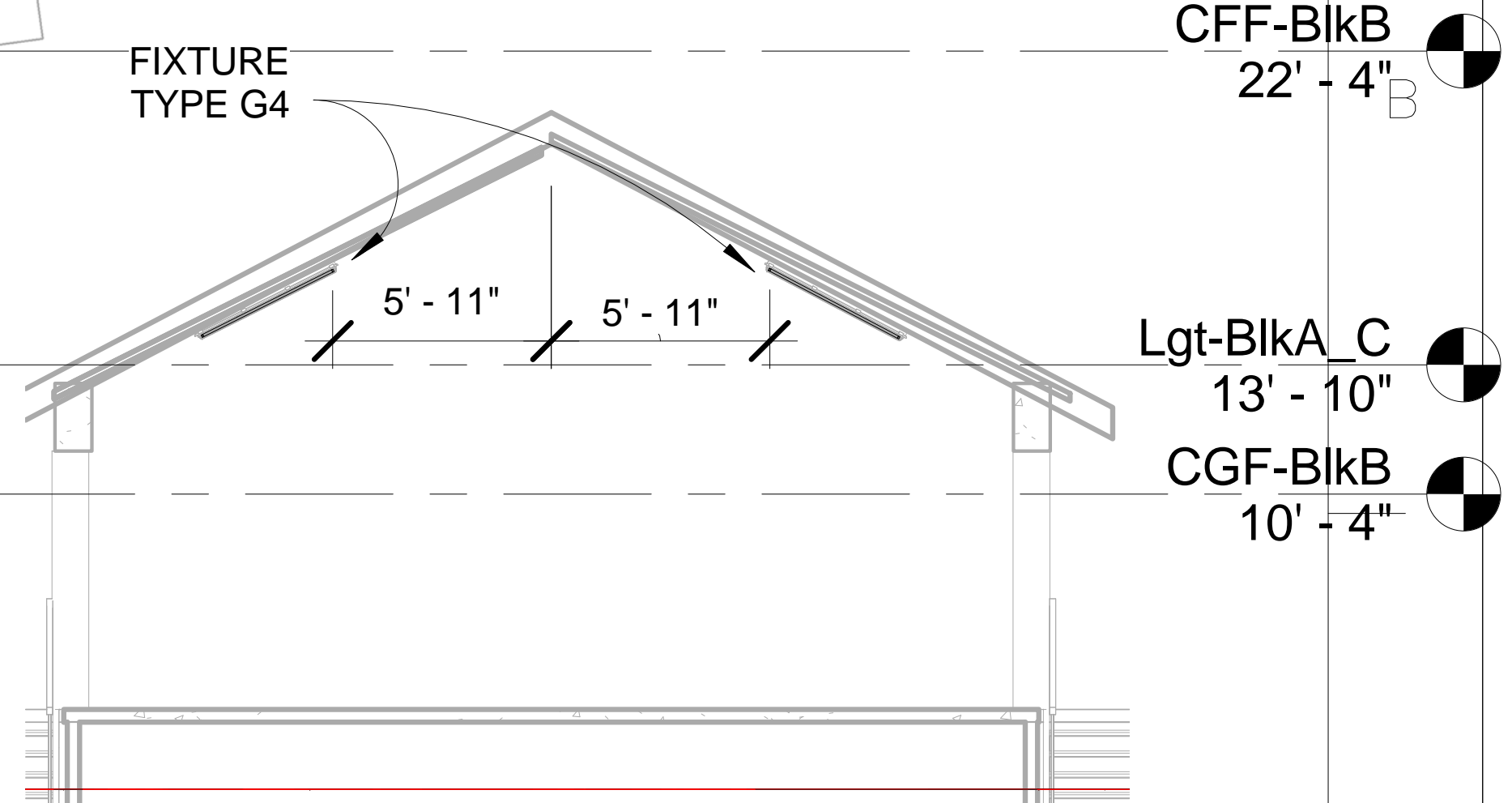
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CLIENT	MINISTRY OF EDUCATION PLYMOUTH ANTIGUA AND BARBUDA	PROJECT	BNTF PROGRAMME MC CHESNEY SECONDARY SCHOOL
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	ELECTRICAL GROUNDING DETAILS
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-GND-52
SCALE	NONE	DATE	5/06/16
			SHEET 1 OF 1
			REV 00D



2 FIXTURE PLACEMENT
1/8" = 1'-0"

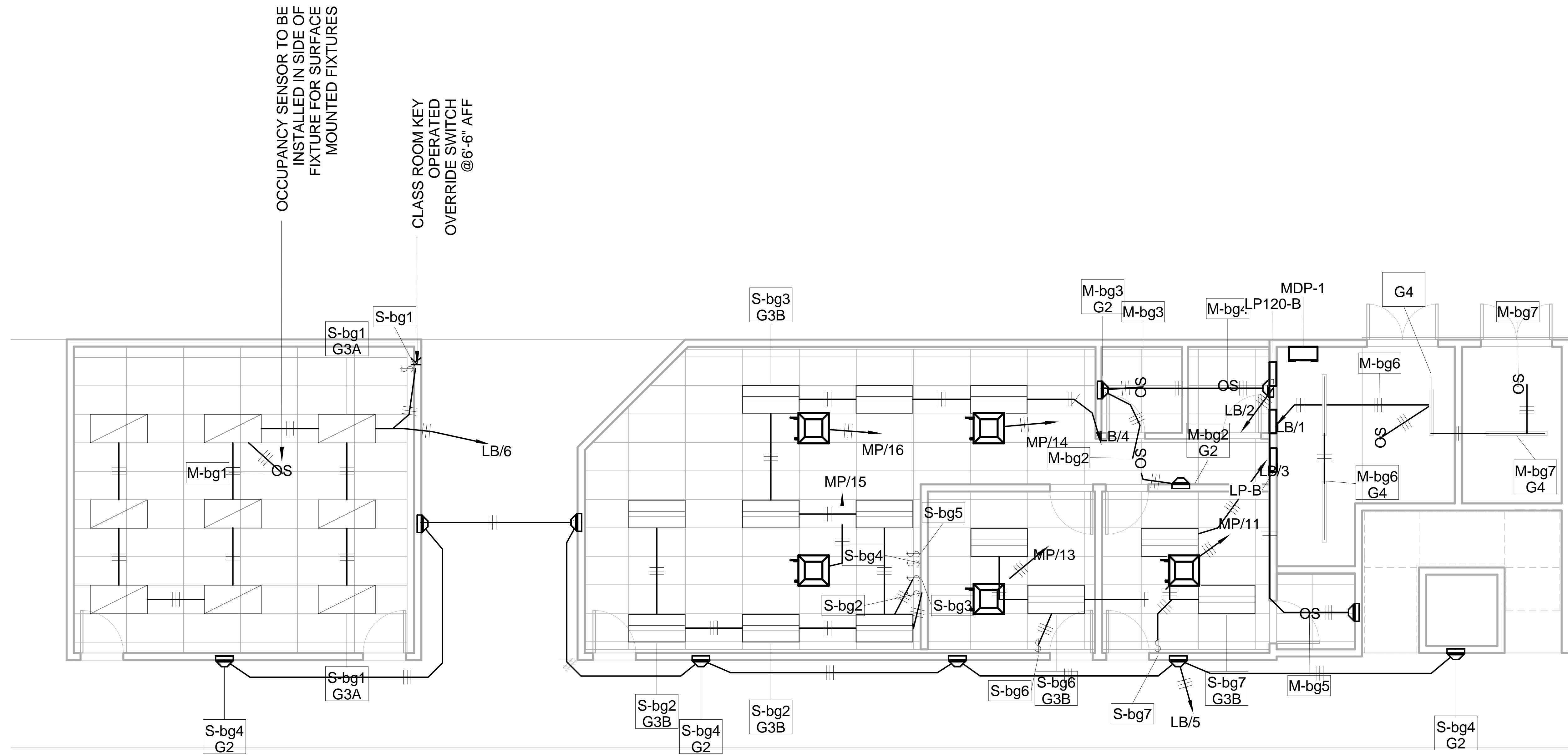
1 Lgt-BlkA
3/16" = 1'-0"



DRG. NO.	REFERENCE DRAWINGS	00D REV	DC 24/11/16 DESIGN BY & DATE	TOS 24/11/16 CHECKED BY & DATE	TOS 24/11/16 APP. /ACTD. BY & DATE	ORIGINAL ISSUE	ALTERATION
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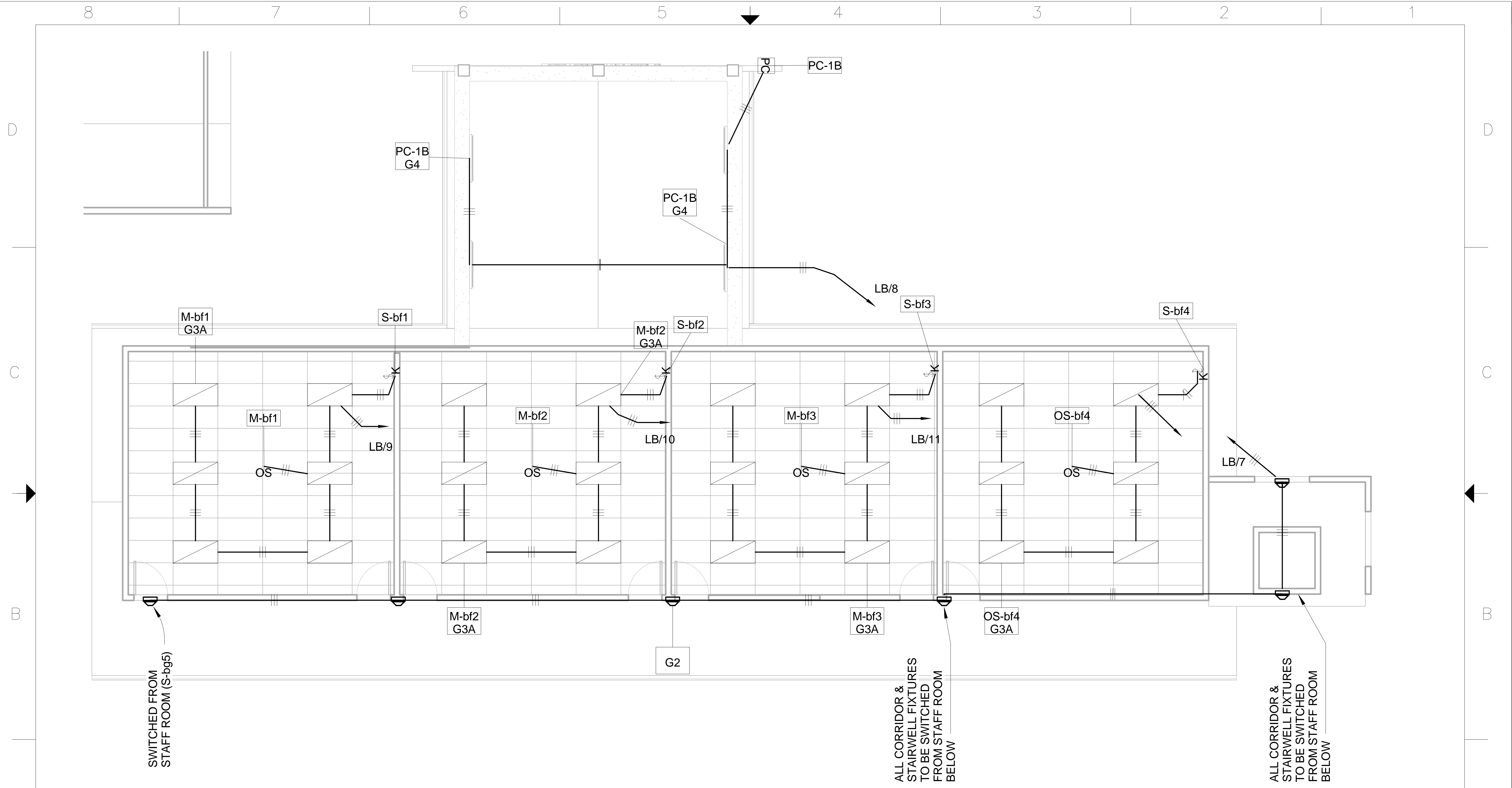
CLIENT	GOV'T OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEPH ANTIGUA & BARBUDA
COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	LIGHTING LAYOUT BLOCK A
SCALE	As indicated	DATE	12/01/16
FSCM NO.		BWG NO.	1207-3-EL-LG-01
REV			00D
SHEET		1 OF 1	



DRG. NO.	REFERENCE DRAWINGS	REV	DRAWN BY & DATE	CHECKED BY & DATE	APP. / AUTH. BY & DATE	ALTERATION
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CLIENT	GOV'T OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEPII ANTIGUA & BARBUDA
COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	LIGHTING LAYOUT GROUND FLOOR BLOCK B
SCALE	1/8" = 1'-0"	DATE	12/01/16
FSCM NO.		BWG NO.	1207-3-EL-LG-02
REV		SHEET	



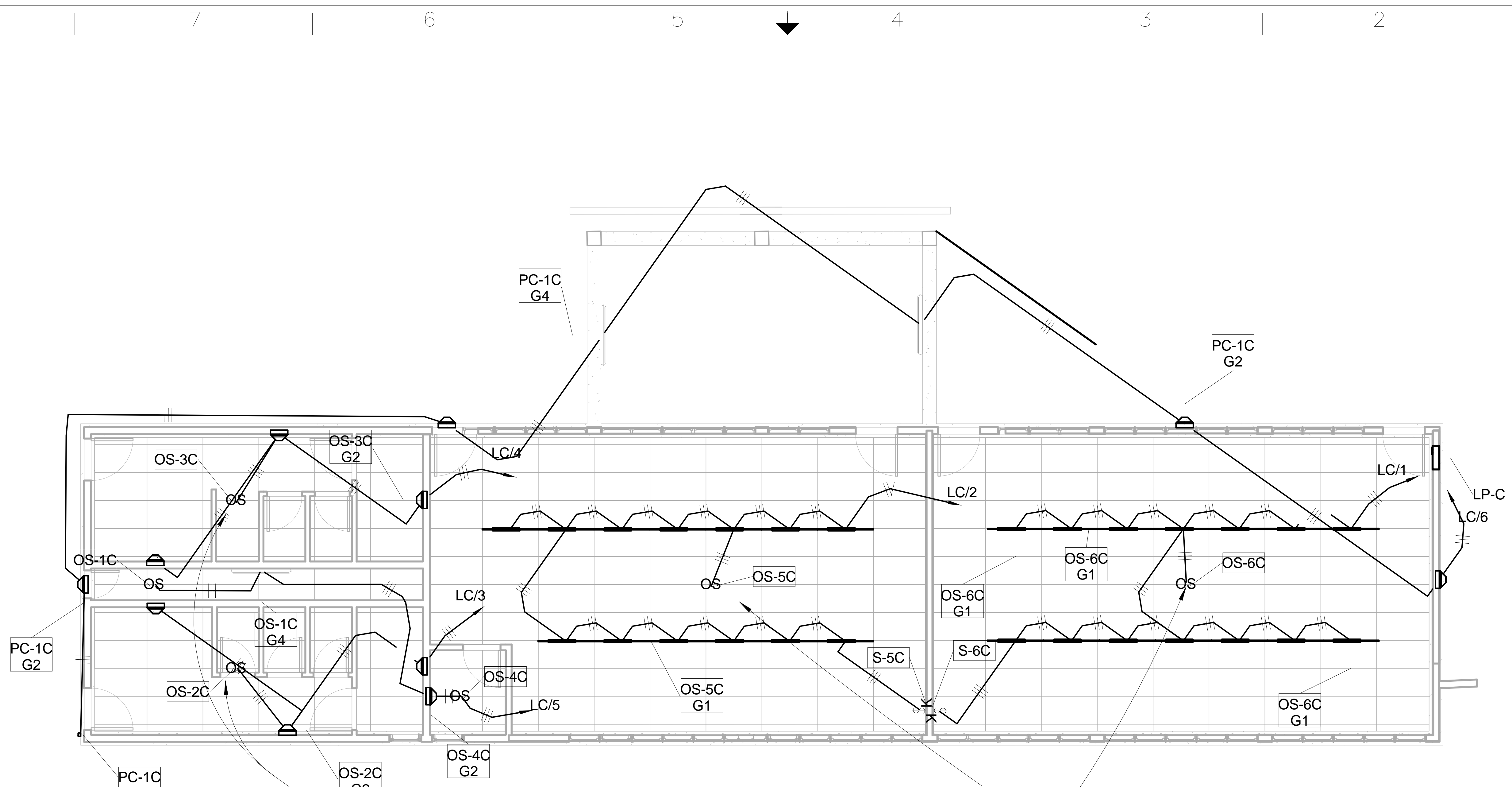
1 Lgt-BlkB FF
1/8" = 1'-0"

DRG. NO.	REFERENCE DRAWINGS	REV	DC 24/11/16 DRAWN BY & DATE	TOS 24/11/16 CHECKED BY & DATE	TOS 24/11/16 APP. DATE BY & DATE	ORIGINAL ISSUE	ALTERATION
		00D					

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CLIENT	GOV'T OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEP11 ANTIGUA & BARBUDA
COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION/TITLE	LIGHTING LAYOUT FIRST FLOOR BLOCK B
SCALE	1/8" = 1'-0"	DATE	12/01/16
FSCM NO.		BWG NO.	1207-3-EL-LG-03
REV			00D
SHEET		1 OF 1	

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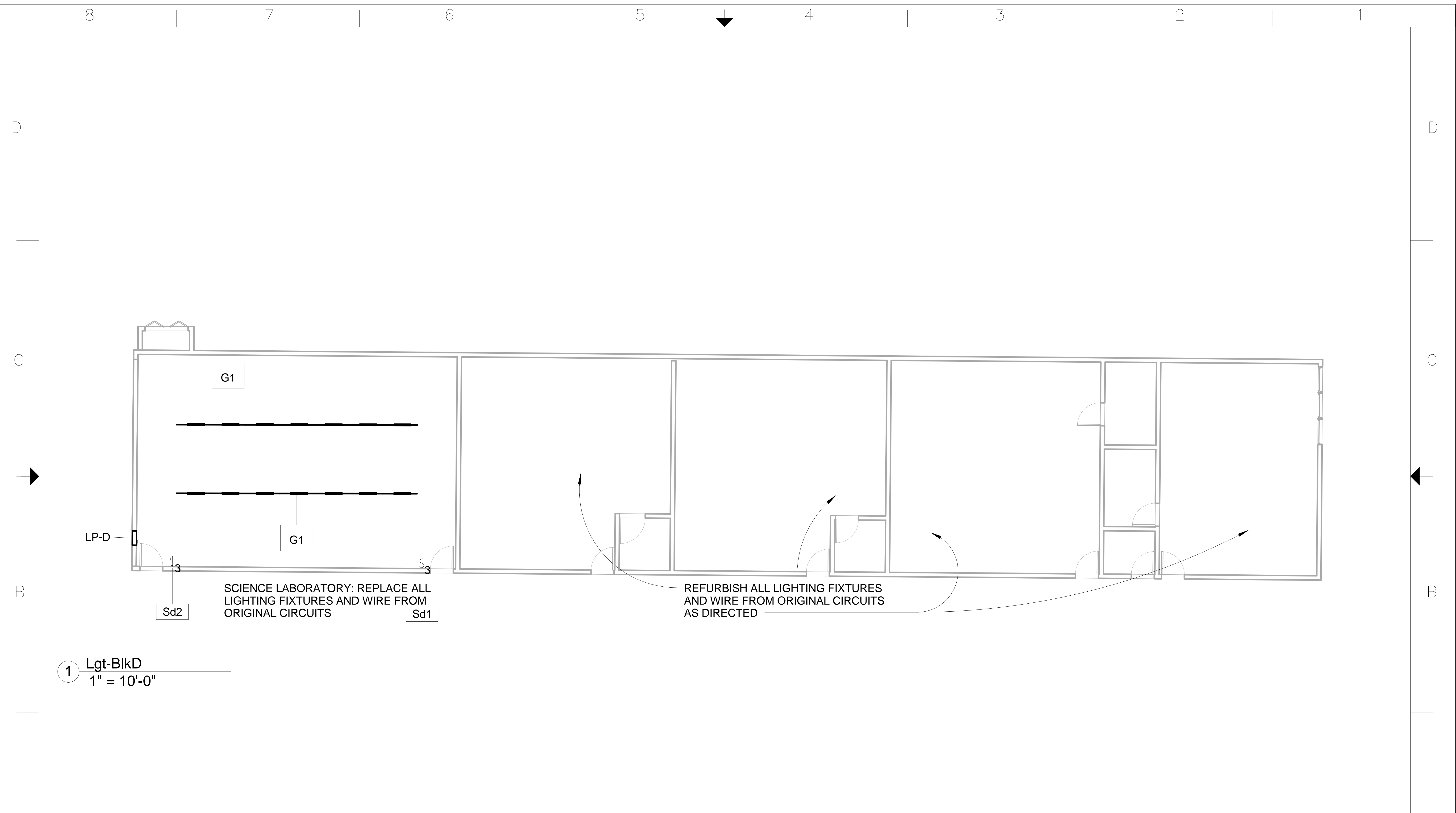


1 Lgt-BlkC
1/8" = 1'-0"

DRG. NO.	REFERENCE DRAWINGS	000	DC 24/11/16 DRAWN BY & DATE	TOS 24/11/16 CHECKED BY & DATE	TOS 24/11/16 APP. / DATE BY & DATE	ORIGINAL ISSUE	ALTERATION
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COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	LIGHTING LAYOUT BLOCK C
SCALE	1/8" = 1'-0"	DATE	12/01/16
FSCM NO.	BWG NO.	REV	
	1207-3-EL-LG-04	000	
SHEET		1 OF 1	



① Lgt-BlkD
1" = 10'-0"

SCIENCE LABORATORY: REPLACE ALL LIGHTING FIXTURES AND WIRE FROM ORIGINAL CIRCUITS

REFURBISH ALL LIGHTING FIXTURES AND WIRE FROM ORIGINAL CIRCUITS AS DIRECTED

DRG. NO.	REFERENCE DRAWINGS	00D	DC	TOS	TOS	ORIGINAL ISSUE	ALTERATION
		REV	24/11/16	24/11/16	24/11/16		
			DRAWN BY & DATE	CHECKED BY & DATE	APP. / DATE BY & DATE		

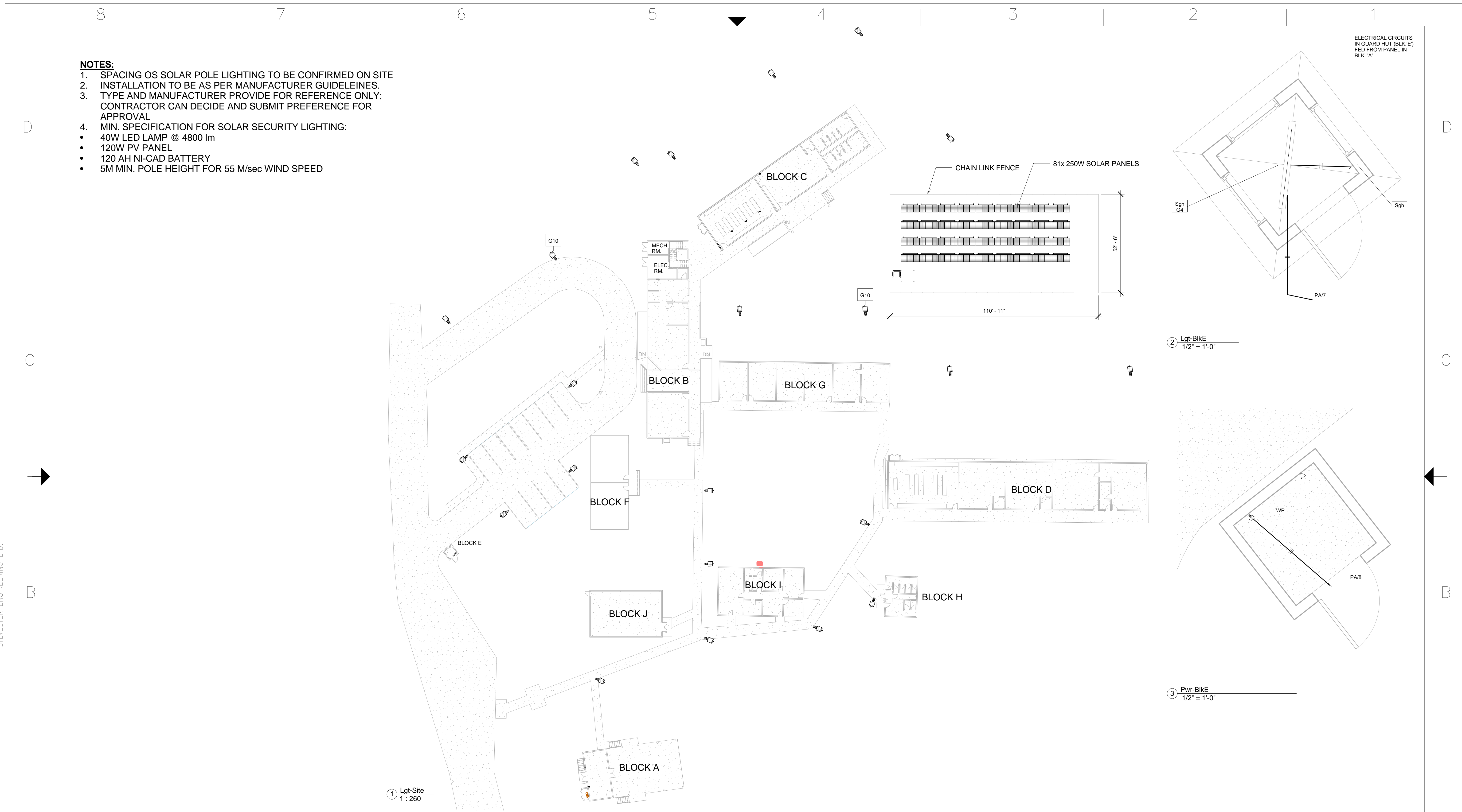
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COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	LIGHTING LAYOUT BLOCK D
SCALE	1" = 10'-0"	DATE	12/01/16
FSCM NO.		FWG NO.	1207-3-EL-LG-05
REV		REV	00D
		SHEET	1 OF 1

NOTES:

1. SPACING OS SOLAR POLE LIGHTING TO BE CONFIRMED ON SITE
2. INSTALLATION TO BE AS PER MANUFACTURER GUIDELEINES.
3. TYPE AND MANUFACTURER PROVIDE FOR REFERENCE ONLY; CONTRACTOR CAN DECIDE AND SUBMIT PREFERENCE FOR APPROVAL
4. MIN. SPECIFICATION FOR SOLAR SECURITY LIGHTING:
 - 40W LED LAMP @ 4800 lm
 - 120W PV PANEL
 - 120 AH NI-CAD BATTERY
 - 5M MIN. POLE HEIGHT FOR 55 M/sec WIND SPEED

ELECTRICAL CIRCUITS IN GUARD HUT (BLK. E) FED FROM PANEL IN BLK. A'



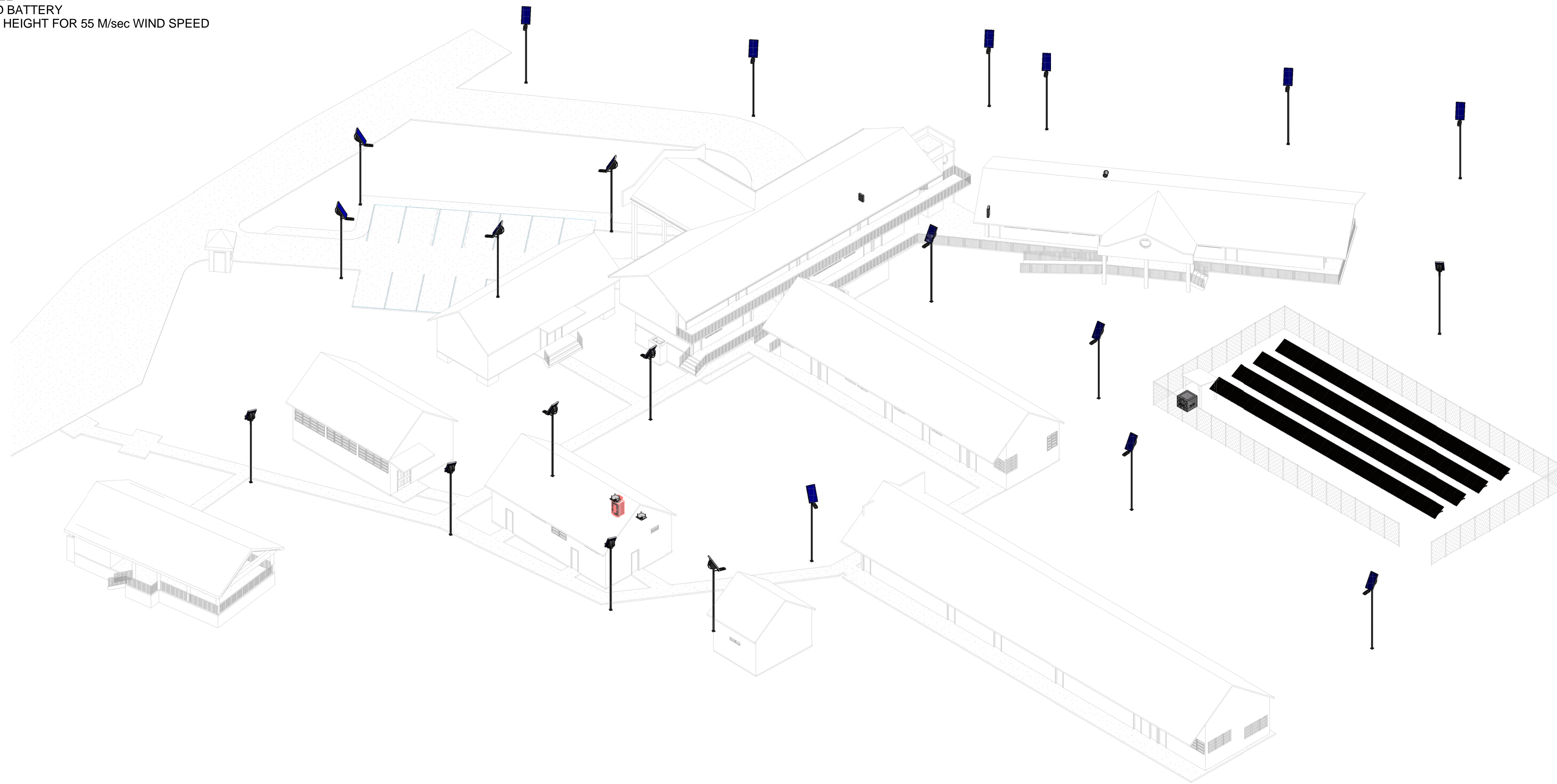
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		REV	DRAWN BY & DATE	CHECKED BY & DATE
			APP. / AUTH. BY & DATE	ALTERATION
				ORIGINAL ISSUE

CLIENT	GOVT OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEPII ANTIGUA & BARBUDA
COMPANY	SYLEN ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	SITE PERIMETER SOLAR LIGHTING & SECURITY BOOTH LIGHTING & POWER LAYOUT
FSCM NO.		DWG NO.	1207-3-EL-LG-14
SCALE	As indicated	DATE	12/07/16
		SHEET	1 OF 1
		REV	00D

NOTES:

1. SPACING TO BE CONFIRMED ON SITE
2. INSTALLATION TO BE AS PER MANUFACTURER GUIDELEINES.
3. TYPE AND MANUFACTURER PROVIDE FOR REFERENCE ONLY; CONTRACTOR CAN DECIDE AND SUBMIT PREFERENCE FOR APPROVAL
4. MIN. SPECIFICATION FOR SOLAR SECURITY LIGHTING:
 - 40W LED LAMP @ 4800 lm
 - 120W PV PANEL
 - 120 AH NI-CAD BATTERY
 - 5M MIN. POLE HEIGHT FOR 55 M/sec WIND SPEED



① SITE SECURITY LIGHTING

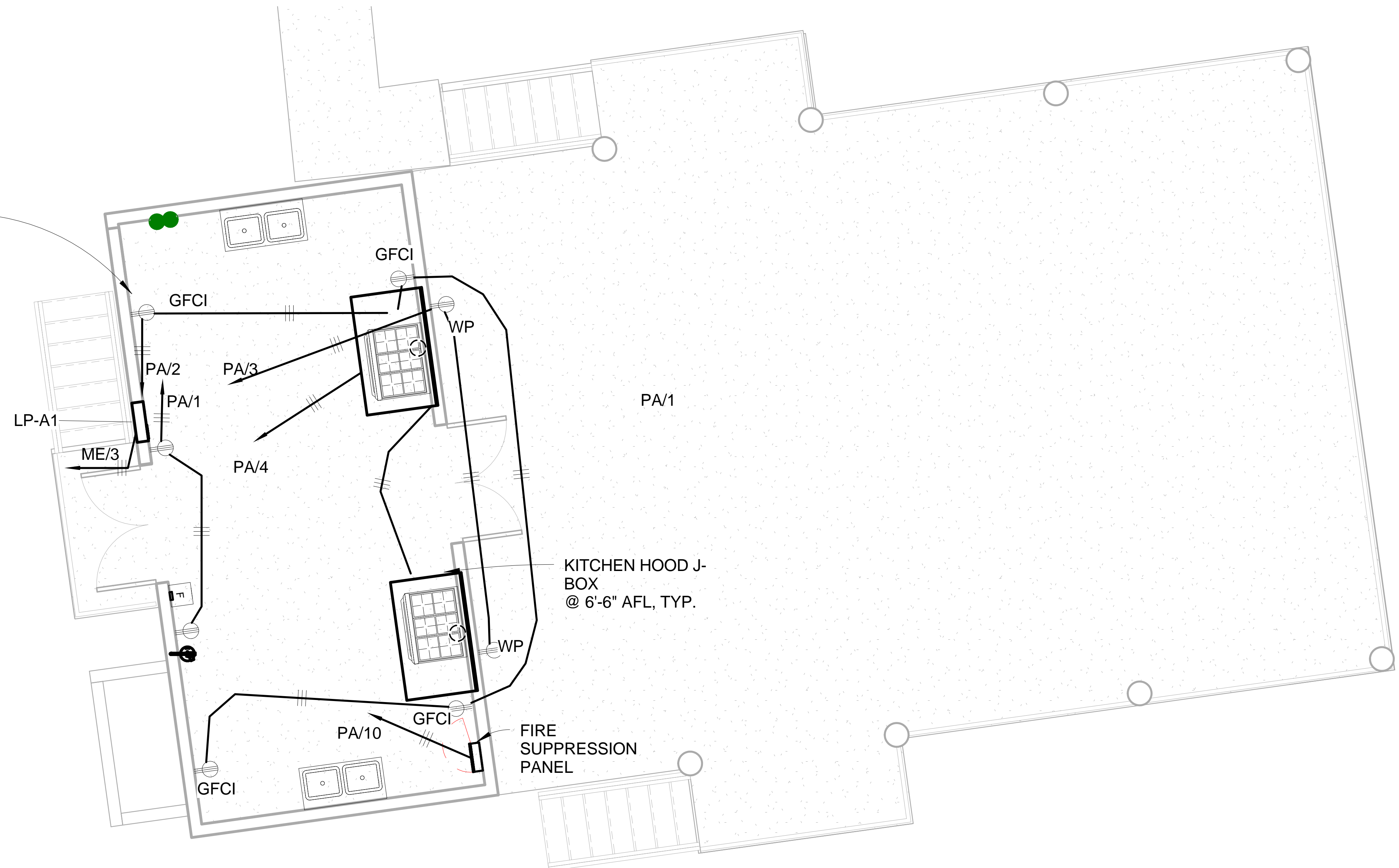
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DRG. NO.	REFERENCE DRAWINGS	00D	DC 24/11/16	TOS 24/11/16	TOS 24/11/16	ORIGINAL ISSUE	ALTERATION
		REV	DRAWN BY & DATE	CHECKED BY & DATE	APP. /AUTH BY & DATE		

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COMPANY	SYLEN ENGINEERS & CONSTRUCTORS	DESCRIPTION/TITLE	SITE PERIMETER LIGHTING ISOMETRIC
SCALE	DATE 12/07/16	DWG. NO.	1207-3-EL-LG-15
		SHEET	1 OF 1
		REV	00D

ALL GFCI
RECEPTACLES
@ 6" ACH - TYP

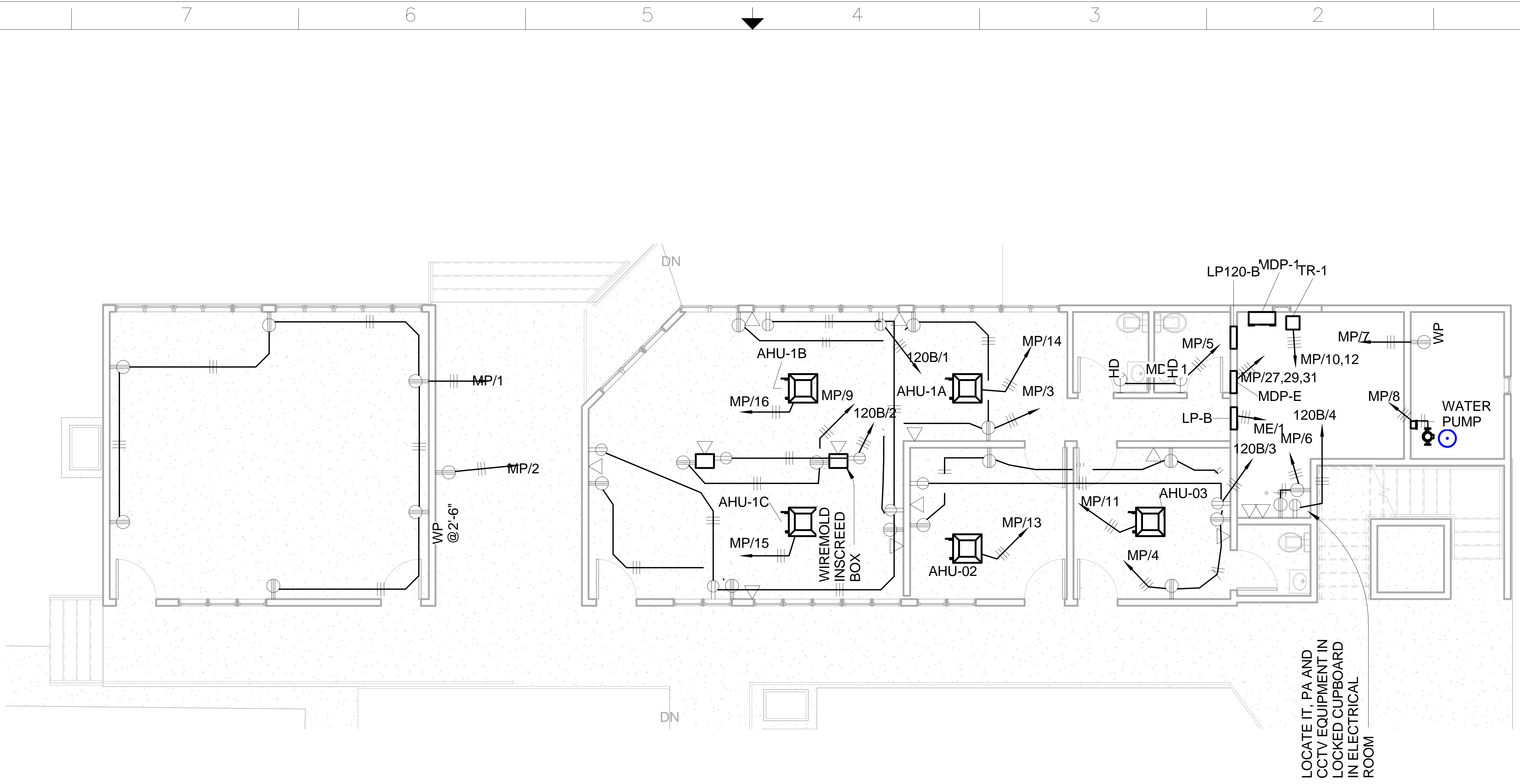


1 Pwr-BlkA
3/16" = 1'-0"

DRG. NO.	REFERENCE DRAWINGS	00D	DC 24/11/16	TOS 24/11/16	TOS 24/11/16	ORIGINAL ISSUE	ALTERATION
		REV	BY & DATE	CHECKED BY & DATE	APP. / DATE BY & DATE		

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COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	POWER & TELECOM LAYOUT BLOCK A
SCALE	3/16" = 1'-0"	DATE	12/01/16
FSCM NO.		FIG. NO.	1207-3-EL-LV-01
REV			00D
		SHEET	1 OF 1



① Pwr-BlkB GF
1/8" = 1'-0"

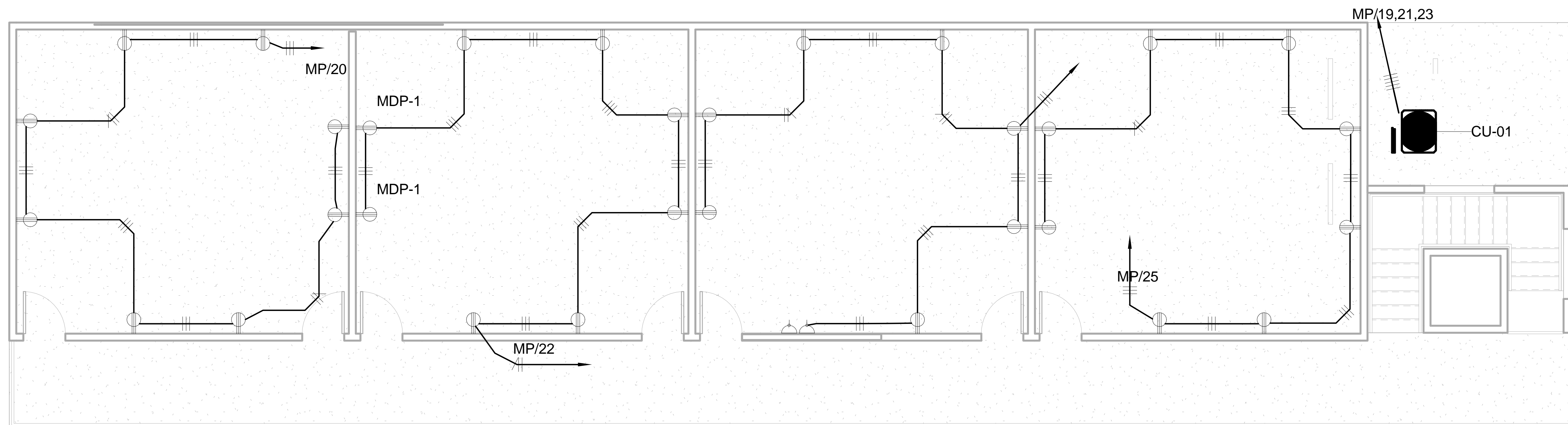
LOCATE IT, PA AND
CCTV EQUIPMENT IN
LOCKED CUPBOARD
IN ELECTRICAL
ROOM

DRG. NO.	REFERENCE DRAWINGS	00D REV	DC 24/11/16 DRAWN BY & DATE	TOS 24/11/16 CHECKED BY & DATE	TOS 24/11/16 APP. /ACTD. BY & DATE	ORIGINAL ISSUE	ALTERATION
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COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	POWER & TELECOM LAYOUT GROUND FLOOR BLOCK B
FSCM NO.		BWG NO.	1207-3-EL-LV-02
SCALE	1/8" = 1'-0"	DATE	12/01/16
		SHEET	1 OF 1
		REV	00D

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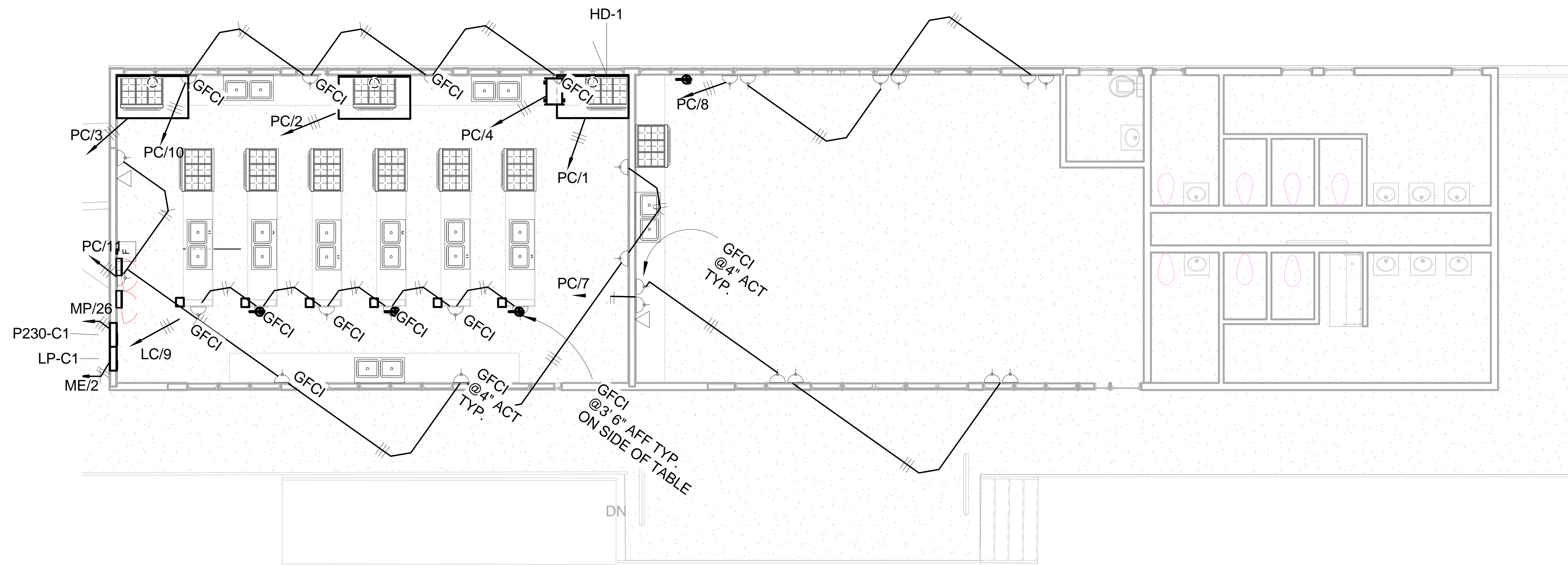
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1/8" = 1'-0"

DRG. NO.	REFERENCE DRAWINGS	00D REV	DC 24/11/16 DESIGN BY & DATE	TOS 24/11/16 CHECKED BY & DATE	TOS 24/11/16 APP. / DATE BY & DATE	ORIGINAL ISSUE	ALTERATION

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COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	POWER & TELECOM LAYOUT FIRST FLOOR BLOCK B
SCALE	1/8" = 1'-0"	DATE	12/01/16
FSCM NO.	1207-3-EL-LV-03	REV	00D
SHEET		1 OF 1	

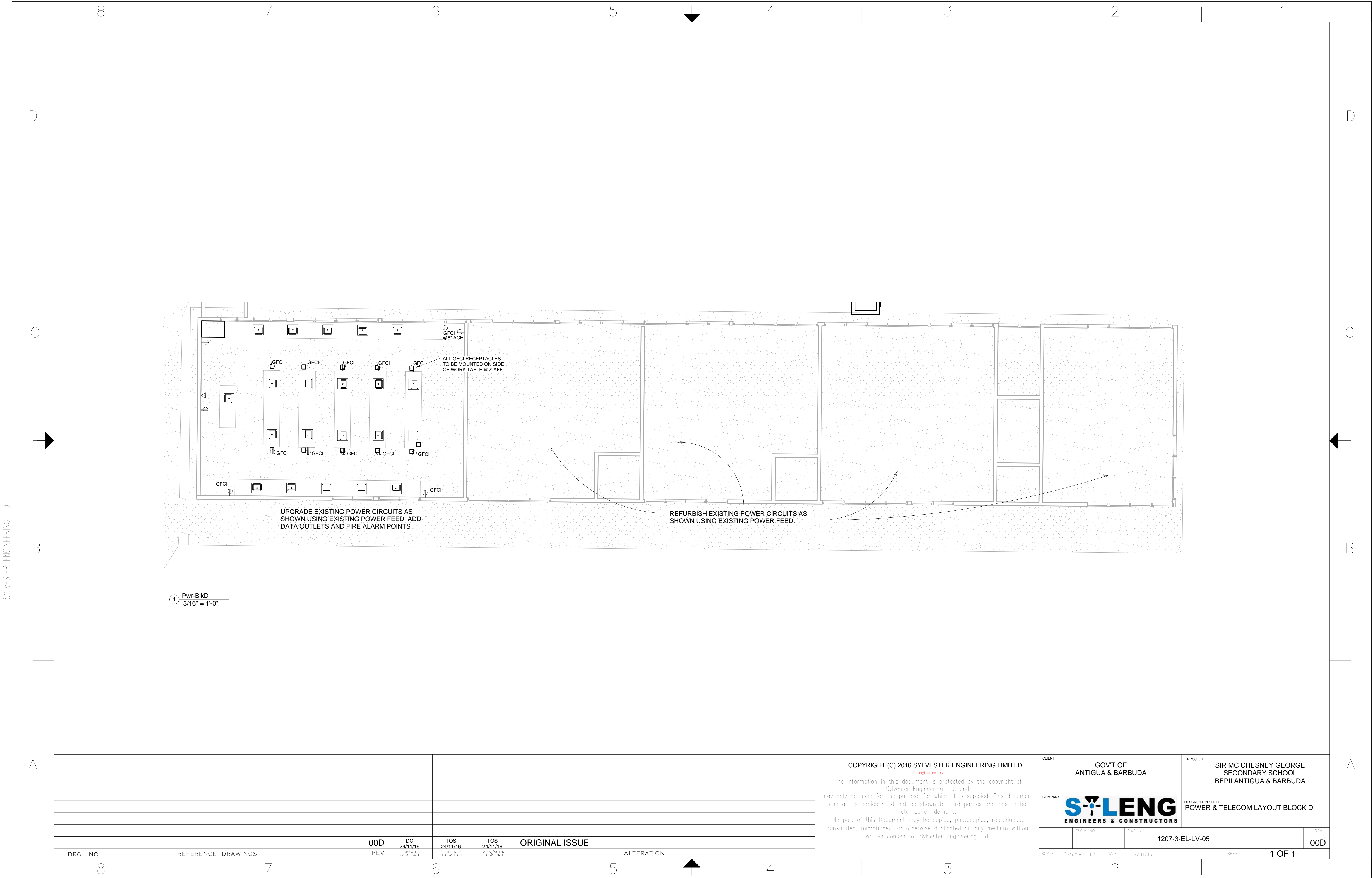
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1/8" = 1'-0"



DRG. NO.	REFERENCE DRAWINGS	00D REV	DC 24/11/16 DRAWN BY & DATE	TOS 24/11/16 CHECKED BY & DATE	TOS 24/11/16 APP. / DATE BY & DATE	ORIGINAL ISSUE	ALTERATION
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CLIENT	GOV'T OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEP11 ANTIGUA & BARBUDA
COMPANY	S-LENG ENGINEERS & CONSTRUCTORS	DESCRIPTION / TITLE	POWER & TELECOM LAYOUT BLOCK C
SCALE	1/8" = 1'-0"	DATE	12/01/16
FSCM NO.	1207-3-EL-LV-04	REV	00D
SHEET		1 OF 1	



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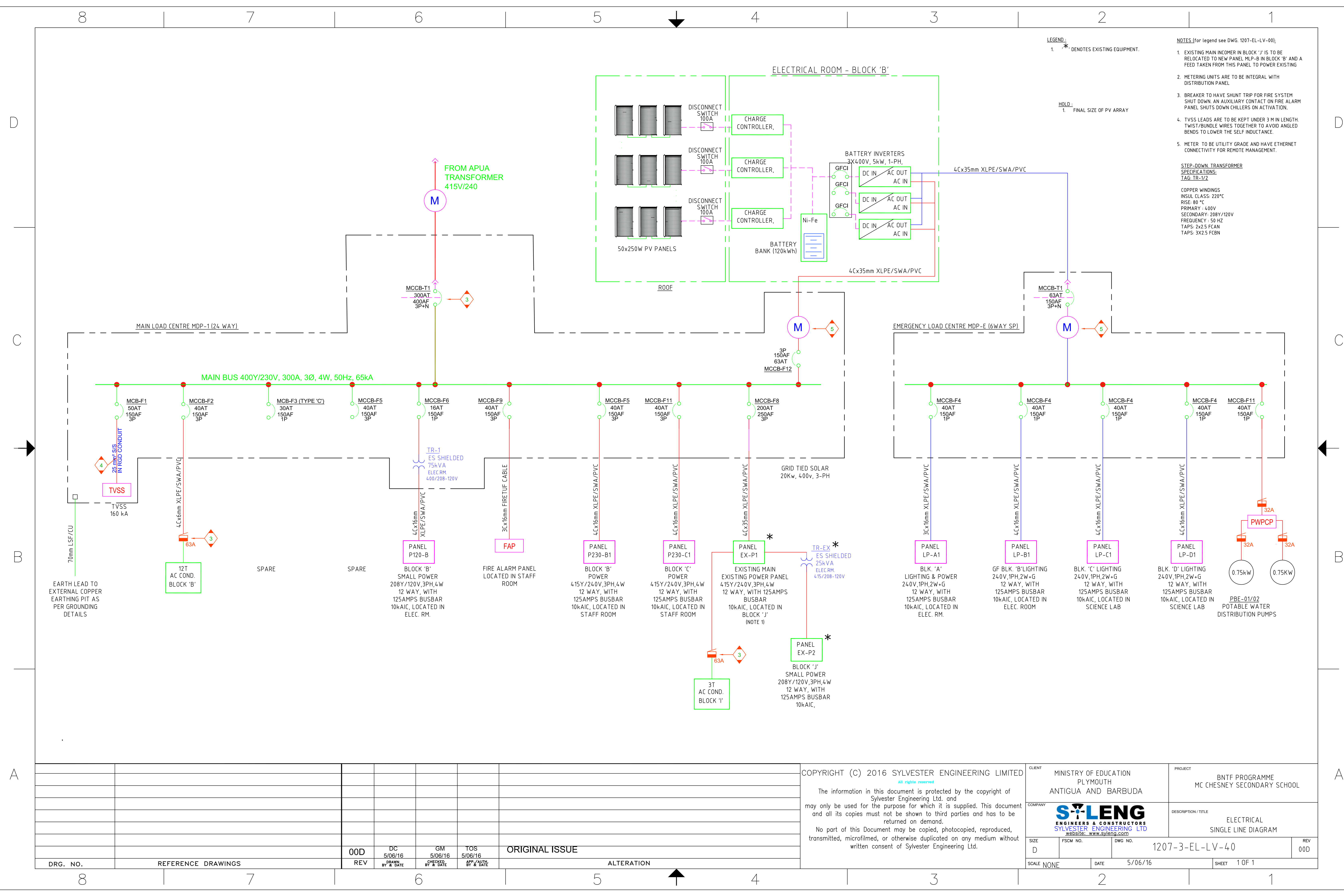
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CLIENT	GOVT OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEPII ANTIGUA & BARBUDA
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS	DESCRIPTION/TITLE	POWER & TELECOM LAYOUT BLOCK D
SCALE	3/16" = 1'-0"	DATE	12/01/16
FSCM NO.	DWG NO.	1207-3-EL-LV-05	REV 00D
SHEET		1 OF 1	

SYLVESTER ENGINEERING LTD.

MAY. 18, 2014



LEGEND:
 1. * DENOTES EXISTING EQUIPMENT.
 HOLD:
 1. FINAL SIZE OF PV ARRAY

NOTES (for legend see DWG. 1207-EL-LV-00):
 1. EXISTING MAIN INCOMER IN BLOCK 'J' IS TO BE RELOCATED TO NEW PANEL MLP-B IN BLOCK 'B' AND A FEED TAKEN FROM THIS PANEL TO POWER EXISTING DISTRIBUTION PANEL.
 2. METERING UNITS ARE TO BE INTEGRAL WITH DISTRIBUTION PANEL.
 3. BREAKER TO HAVE SHUNT TRIP FOR FIRE SYSTEM SHUT DOWN. AN AUXILIARY CONTACT ON FIRE ALARM PANEL SHUTS DOWN CHILLERS ON ACTIVATION.
 4. TVSS LEADS ARE TO BE KEPT UNDER 3 M IN LENGTH. TWIST/BUNDLE WIRES TOGETHER TO AVOID ANGLED BENDS TO LOWER THE SELF INDUCTANCE.
 5. METER TO BE UTILITY GRADE AND HAVE ETHERNET CONNECTIVITY FOR REMOTE MANAGEMENT.

STEP-DOWN TRANSFORMER SPECIFICATIONS:
 TAG TR-1/2
 COPPER WINDINGS
 INSUL CLASS: 220°C
 RISE: 80 °C
 PRIMARY: 400V
 SECONDARY: 208Y/120V
 FREQUENCY: 50 HZ
 TAPS: 2x2.5 FCAN
 TAPS: 3x2.5 FCBN

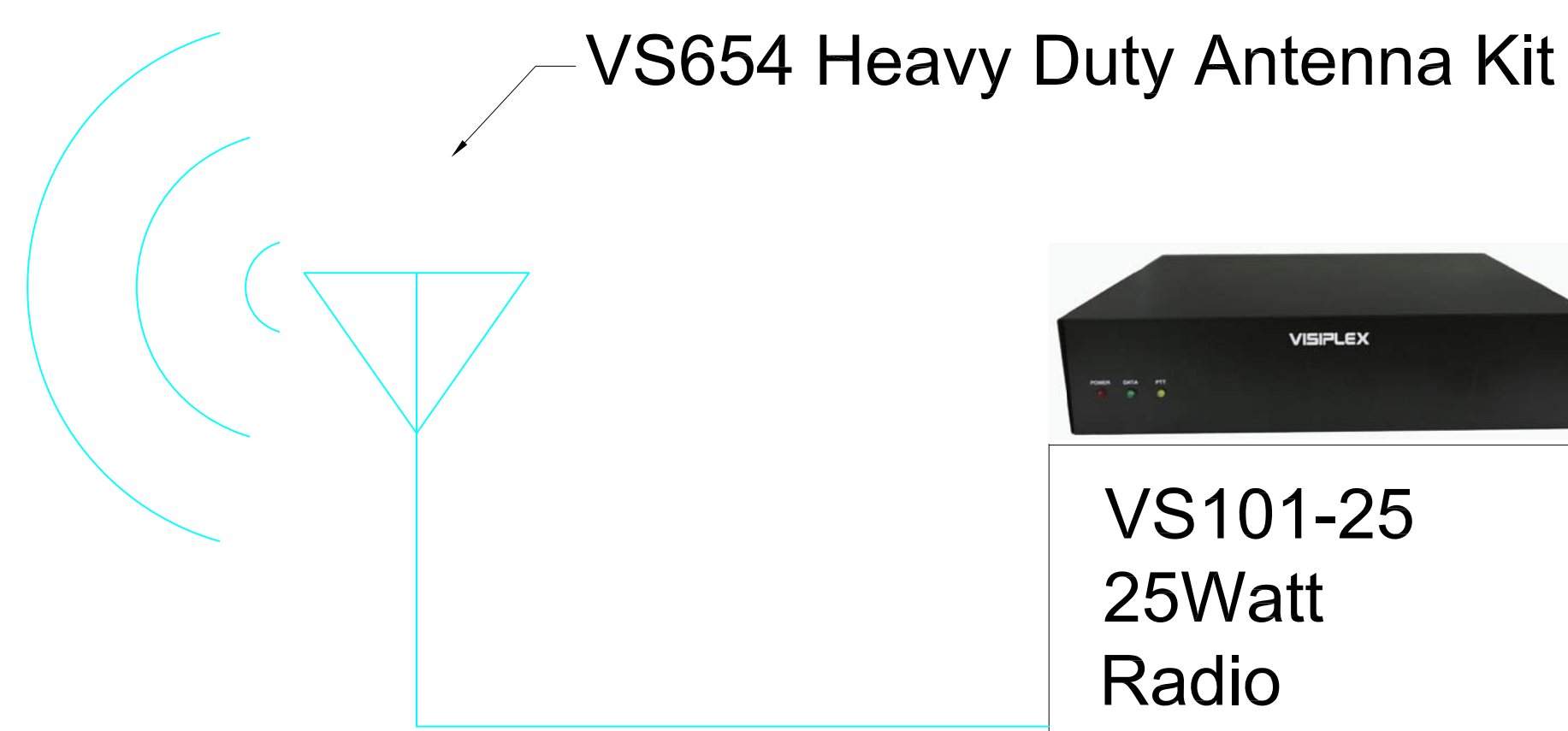
DRG. NO.	REFERENCE DRAWINGS	00D	DC 5/06/16 BY: PRAWN	GM 5/06/16 CHECKED BY: & DATE	TOS 5/06/16 APP/AUTH BY: & DATE	ORIGINAL ISSUE
						ALTERATION

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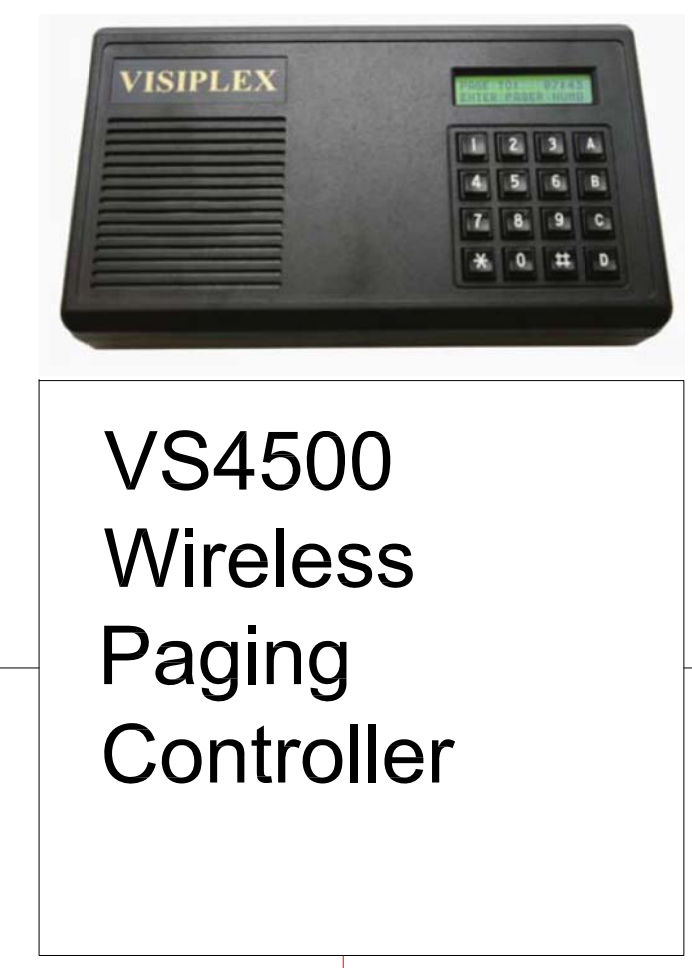
CLIENT	MINISTRY OF EDUCATION PLYMOUTH ANTIGUA AND BARBUDA	PROJECT	BNTF PROGRAMME MC CHESNEY SECONDARY SCHOOL
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	ELECTRICAL SINGLE LINE DIAGRAM
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-LV-40
SCALE	NONE	DATE	5/06/16
			SHEET 1 OF 1
			REV 00D

GENERAL NOTES:

1. PUBLIC ADDRESS SYSTEM PAGING CONTROLLER AND MICROPHONE IN BLOCK "B".
2. THE VS4500 INCLUDES A RS-232 SERIAL PORT THAT ALLOWS FULL INTEGRATION WITH THIRD PARTY WIRED FIRE ALARM SYSTEMS.
3. ANTENNA CABLE LMR400 OUTDOOR RATED.
4. SPEAKER CABLE 16AWG 2-CONDUCTOR CL2 OR CL3 DOUBLE INSULATED OUTDOOR RATED.
5. WRP-5 5WATT WIRELESS REPEATERS CAN BE USED TO EXTENDED RF COVERAGE IF NEEDED.
6. VNS2256 SOLAR POWER KIT CAN BE USED TO POWER THE VNS22xx WIRELESS RECEIVERS IF PREFERRED.



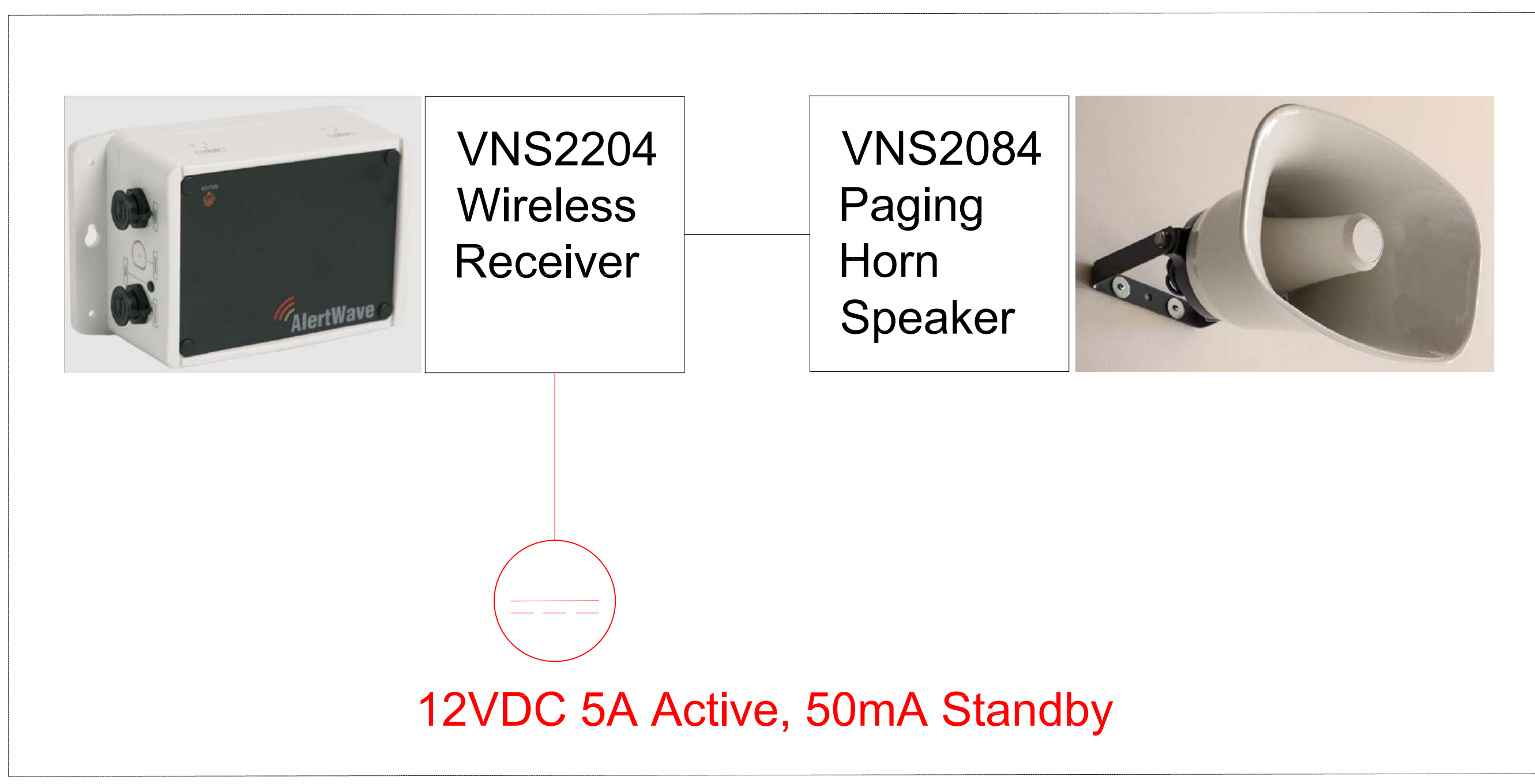
90-240VAC 50/60Hz 100W



12VDC 3A



TYPICAL FOR:
BLOCK A (QTY 1)
BLOCK B (QTY 1)
BLOCK C (QTY 1)
BLOCK D (QTY 2)
BLOCK F (QTY 1)
BLOCK G (QTY 2)
BLOCK I (QTY 2)



AUG. 18, 2016 SYLVESTER ENGINEERING LTD.

DRG. NO.	REFERENCE DRAWINGS	00D	SH 05/12/16 DRAWN BY & DATE	TOS 05/12/16 CHECKED BY & DATE	SH 05/12/16 DESIGNED BY & DATE	TOS 05/12/16 APP/AUTH BY & DATE	ORIGINAL ISSUE
		REV					ALTERATION

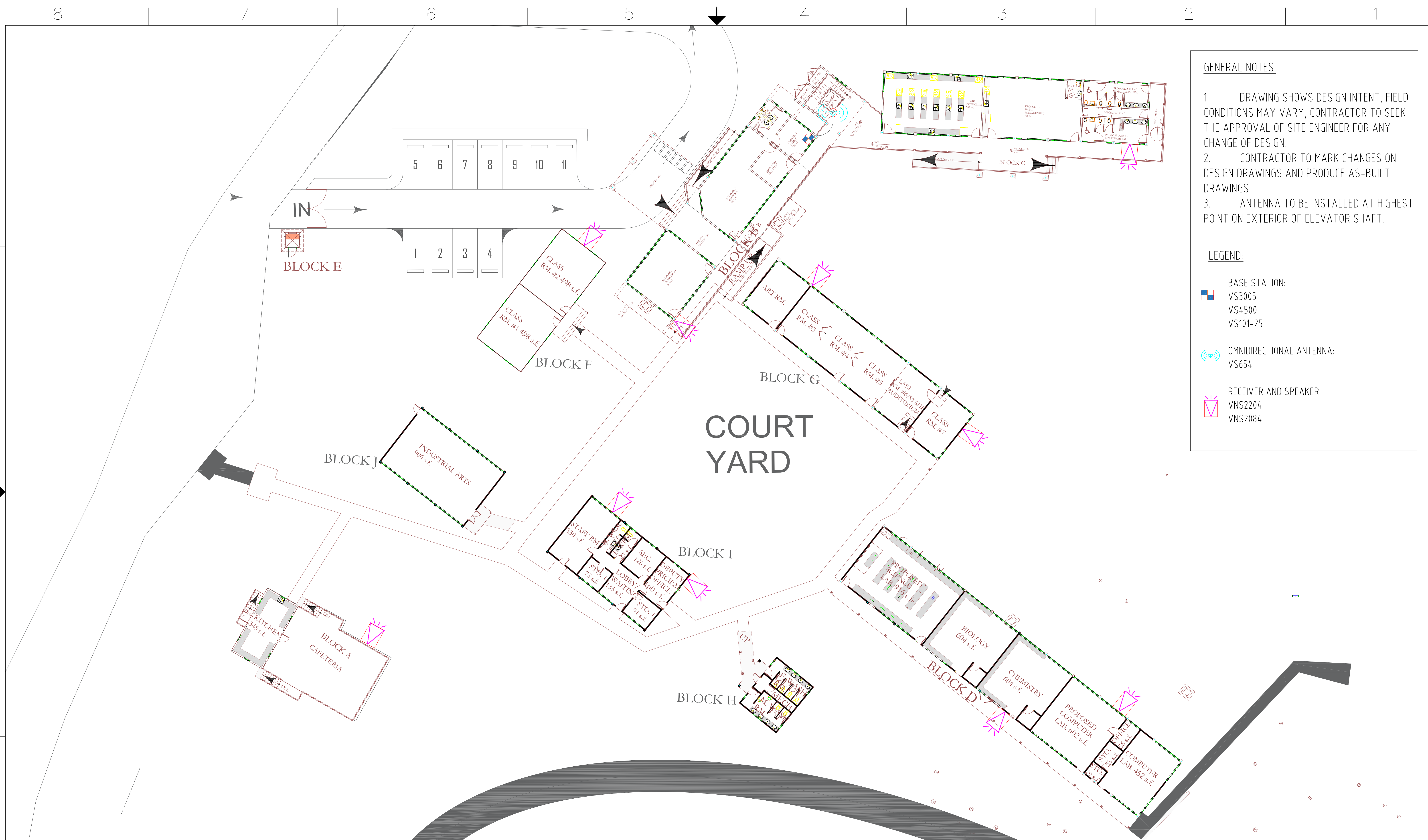
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CLIENT	GOVT. OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL CDB UPGRADE PROJECT
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	PUBLIC ADDRESS SYSTEM RISER DIAGRAM
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-PA-01
SCALE	NONE	DATE	05/12/2016
		SHEET	1 OF 1

AUG. 18, 2016 SYLVESTER ENGINEERING LTD.



GENERAL NOTES:

- DRAWING SHOWS DESIGN INTENT, FIELD CONDITIONS MAY VARY, CONTRACTOR TO SEEK THE APPROVAL OF SITE ENGINEER FOR ANY CHANGE OF DESIGN.
- CONTRACTOR TO MARK CHANGES ON DESIGN DRAWINGS AND PRODUCE AS-BUILT DRAWINGS.
- ANTENNA TO BE INSTALLED AT HIGHEST POINT ON EXTERIOR OF ELEVATOR SHAFT.

LEGEND:

- BASE STATION:
VS3005
VS4500
VS101-25
- OMNIDIRECTIONAL ANTENNA:
VS654
- RECEIVER AND SPEAKER:
VNS2204
VNS2084

DRG. NO.	REFERENCE DRAWINGS	00D	SH 05/12/16 DRAWN BY & DATE	TOS 05/12/16 CHECKED BY & DATE	SH 05/12/16 DESIGNED BY & DATE	TOS 05/12/16 APP/AUTH BY & DATE	ORIGINAL ISSUE
		REV					ALTERATION

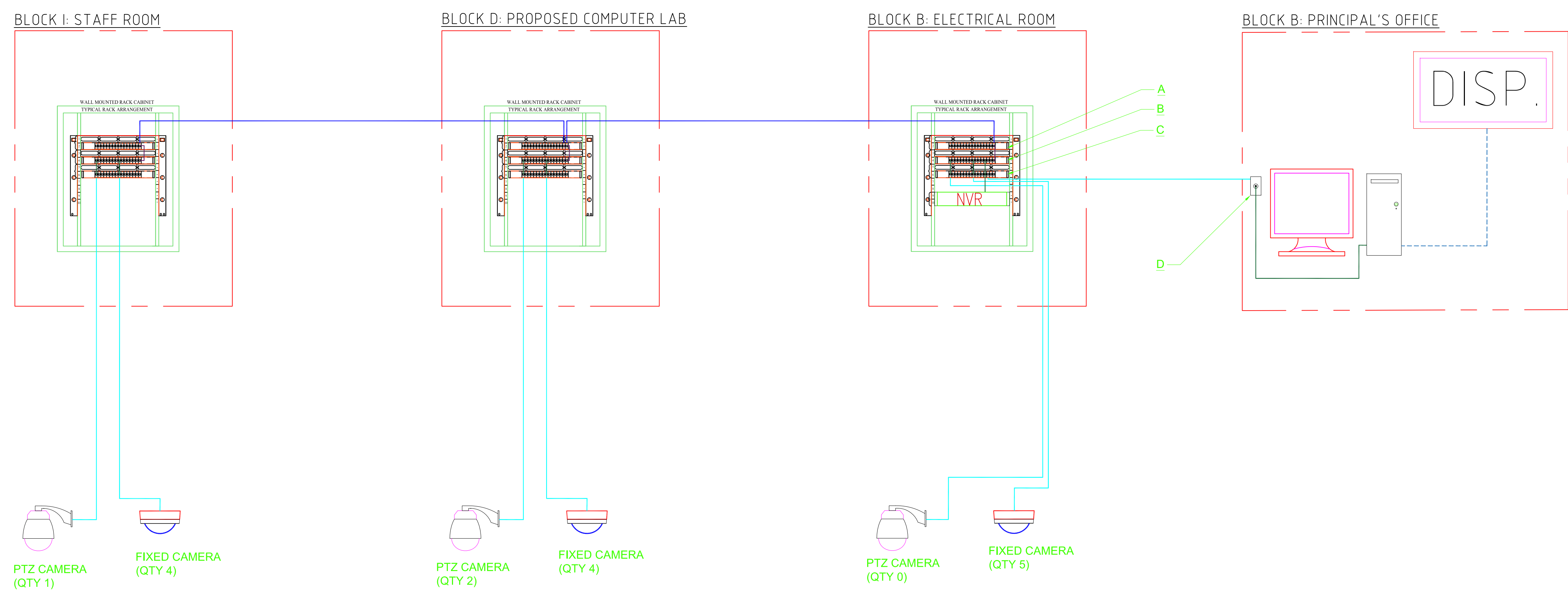
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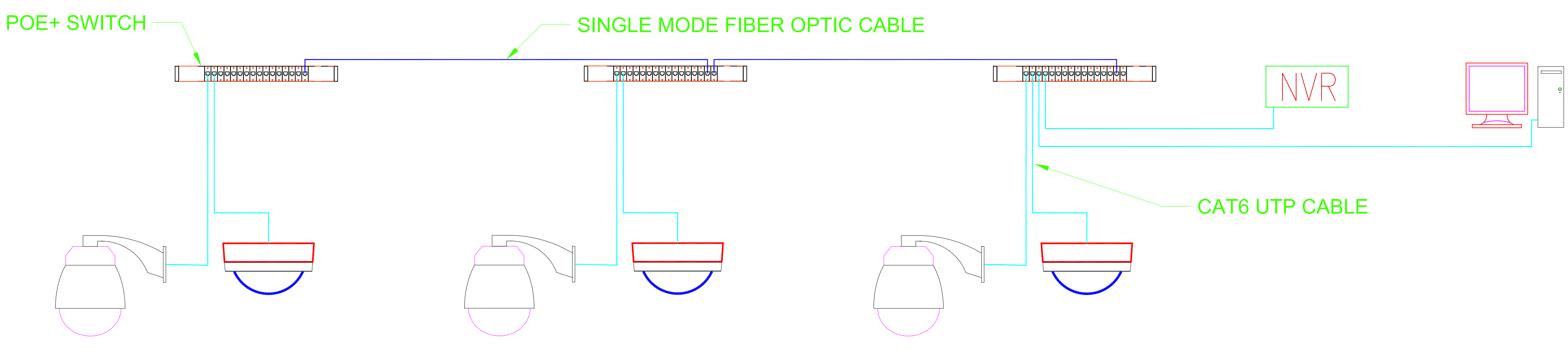
CLIENT	GOVT. OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL CDB UPGRADE PROJECT
COMPANY	SILENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	PUBLIC ADDRESS SYSTEM SITE EQUIPMENT LAYOUT
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-PA-02
SCALE	NONE	DATE	05/12/2016
		SHEET	1 OF 1
		REV	00D

AUG. 18, 2016 SYLVESTER ENGINEERING LTD.



- LEGEND:**
- PTZ CAMERA
 - FIXED CAMERA (DOME)
 - NETWORK VIDEO RECORDER (NVR) SERVER
 - CCTV CLIENT VIEWING WORKSTATION
 - CCTV VIEWING MONITOR
 - 6-CORE SINGLE MODE FIBER OPTIC CABLE
 - SINGLE MODE DUPLEX LC FIBER PATCH CABLE
 - CAT6 UTP SOLID COPPER CABLE
 - CAT6 UTP STRANDED COPPER PATCH CABLE
 - HDMI CABLE
- NOTES:**
- CCTV VIEWING MONITOR 42" WALL MOUNTED 1080P RESOLUTION.
 - CCTV VIEWING WORKSTATION SPECS TO BE SUGGESTED BY CCTV CONTRACTOR/VENDOR.
 - CAT6 UTP INFRASTRUCTURE CABLES TO BE SOLID COPPER, NOT COPPER CLAD ALUMINIUM.
 - CAT6 UTP PATCH CABLES TO BE STRANDED COPPER WITH STRAIN RELIEF BOOTS. FIBER OPTIC DRAWERS TO INCLUDE PATCH PANEL, SPLICE TRAY, PIG TAILS, ETC. FUSION SPLICING ONLY, MECHANICAL SPLICING IS NOT ACCEPTABLE.
 - FIBER BUS INTERCONNECTED FROM SWITCH TO SWITCH VIA GIGABIT SFP TRUNK PORTS. CISCO MGBLH1 1000BASE-LH SFP TRANSCEIVER FOR SM FIBER REQUIRED.
 - VIDEO MANAGEMENT SOFTWARE (VMS) MUST SUPPORT CLIENT-SERVER ARCHITECTURE AND LICENSE MODEL SHOULD BE PER CAMERA.

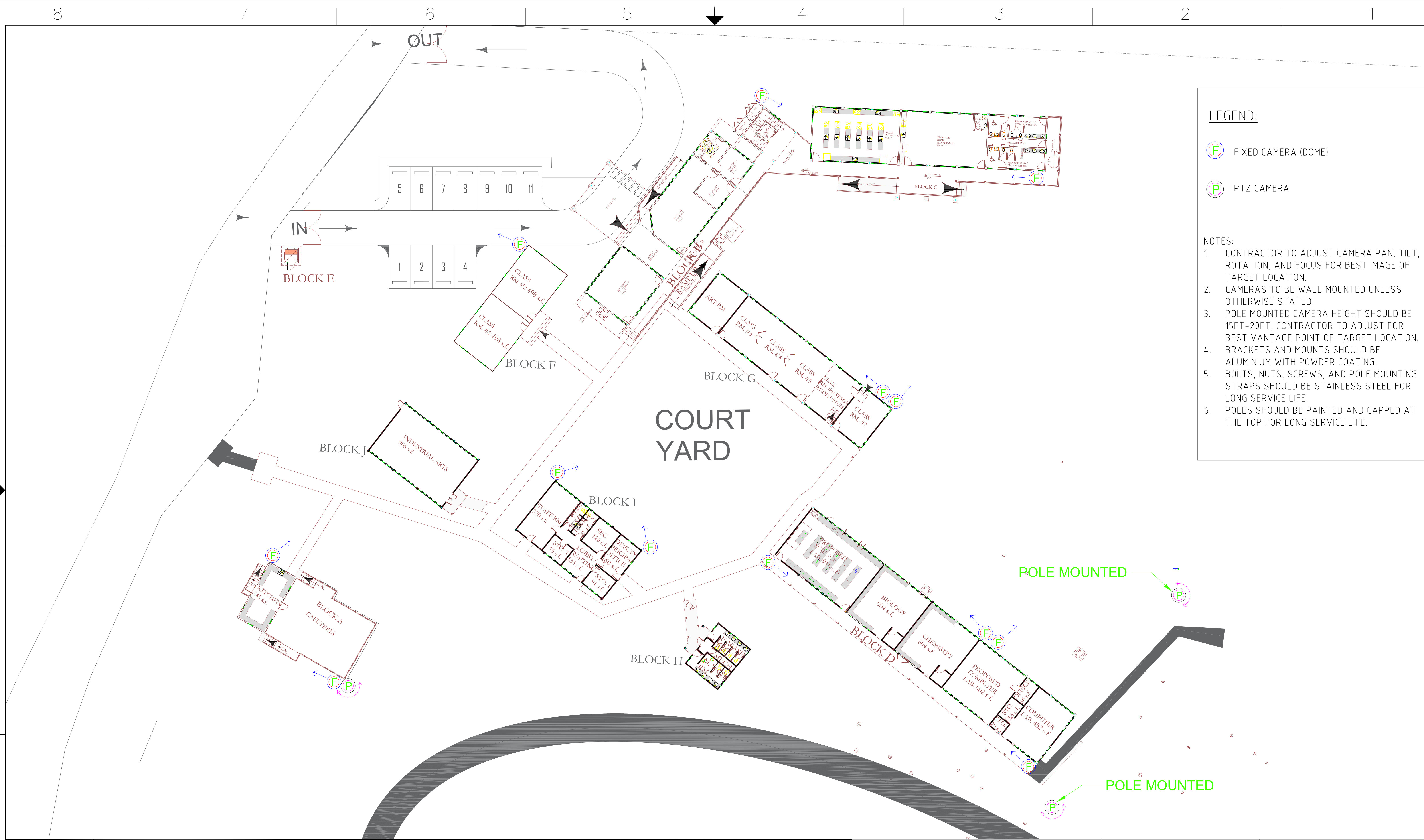
TOPOLOGY: FIBER OPTIC BUS NETWORK WITH CLIENT-SERVER CCTV ARCHITECTURE.



DRG. NO.	REFERENCE DRAWINGS	00D	SH	TOS	SH	TOS	ORIGINAL ISSUE
REV		06/12/16	06/12/16	06/12/16	06/12/16	06/12/16	ALTERATION
		BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE		

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COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	CCTV SYSTEM RISER DIAGRAM
SIZE	D	FSCM NO.	DWG NO.
			1207-3-EL-SE-01
SCALE	NONE	DATE	06/12/2016
		SHEET	1 OF 1



LEGEND:

- F FIXED CAMERA (DOME)
- P PTZ CAMERA

NOTES:

1. CONTRACTOR TO ADJUST CAMERA PAN, TILT, ROTATION, AND FOCUS FOR BEST IMAGE OF TARGET LOCATION.
2. CAMERAS TO BE WALL MOUNTED UNLESS OTHERWISE STATED.
3. POLE MOUNTED CAMERA HEIGHT SHOULD BE 15FT-20FT, CONTRACTOR TO ADJUST FOR BEST VANTAGE POINT OF TARGET LOCATION.
4. BRACKETS AND MOUNTS SHOULD BE ALUMINIUM WITH POWDER COATING.
5. BOLTS, NUTS, SCREWS, AND POLE MOUNTING STRAPS SHOULD BE STAINLESS STEEL FOR LONG SERVICE LIFE.
6. POLES SHOULD BE PAINTED AND CAPPED AT THE TOP FOR LONG SERVICE LIFE.

00D	SH	TOS	SH	TOS	ORIGINAL ISSUE		
REV	DRAWN BY & DATE	CHECKED BY & DATE	DESIGNED BY & DATE	APP/AUTH BY & DATE	ALTERATION		
8	7	6	5	4	3	2	1

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CLIENT GOVT. OF ANTIGUA & BARBUDA	PROJECT SIR MC CHESNEY GEORGE SECONDARY SCHOOL CDB UPGRADE PROJECT		
COMPANY SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE CCTV SYSTEM CAMERA LAYOUT		
SIZE D	FSCM NO.	DWG NO. 1207-3-EL-SE-02	REV 00D
SCALE NONE	DATE 05/12/2016	SHEET 1 OF 1	

Branch Panel: LP-B

Location: MDP-E
 Supply From: MDP-E
 Mounting: Flush
 Enclosure: NEMA 1 Indoor

Volts: 230 Single
 Phases: 1
 Wires: 2

A.I.C. Rating: Use ShortCircuitCurrentRating & Refer to...
 Mains Type:
 Mains Rating: 100 A
 MCB Rating: 63 A

Notes:
 1. PANEL LOCATED IN THE MAIN UTILITY ROOM, BLOCK 'B'.

CKT	Circuit Description	Trip	Poles	A	B	Poles	Trip	Circuit Description	CKT	
LB/1	Lighting: Main Utility Rm.	20 A	1	238 VA	214 VA		1	20 A	LB/2	
LB/3	Principal & Sec.	20 A	1		184 VA	414 VA	1	20 A	LB/4	
LB/5	Lighting: GF External	20 A	1	133 VA	533 VA		1	20 A	LB/6	
LB/7	Lighting: FF Corridor & Stairwell	20 A	1		114 VA	216 VA	1	20 A	LB/8	
LB/9	Lighting: FF Class Rm. 1	20 A	1	358 VA	358 VA		1	20 A	LB/10	
LB/11	Lighting: FF Class Rm. 3	20 A	1		358 VA	358 VA	1	20 A	LB/12	
LB/13									LB/14	
LB/15									LB/16	
LB/17									LB/18	
LB/19									LB/20	
LB/21									LB/22	
LB/23									LB/24	
LB/25									LB/26	
LB/27									LB/28	
LB/29									LB/30	
LB/31									LB/32	
LB/33									LB/34	
LB/35									LB/36	
LB/37									LB/38	
LB/39									LB/40	
LB/41									LB/42	
				Total Load:	1833 VA	1643 VA				
				Total Amps:						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	883 VA	100.00%	883 VA	
Lighting	2977 VA	100.00%	2977 VA	
				Total Conn. Load: 3860 VA
				Total Est. Demand: 3860 VA
				Total Conn.: 17 A
				Total Est. Demand: 17 A

Branch Panel: LP-A1

Location: MDP-E
 Supply From: MDP-E
 Mounting: Flush
 Enclosure: NEMA 1 Indoor

Volts: 230 Single
 Phases: 1
 Wires: 2

A.I.C. Rating: Use ShortCircuitCurrentRating & Refer to...
 Mains Type:
 Mains Rating: 100 A
 MCB Rating: 63 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	Poles	Trip	Circuit Description	CKT	
PA/1	Receptacle: Counter Top	20 A	1	360 VA	720 VA		1	20 A	PA/2	
PA/3	Receptacle: Dining Area	20 A	1		360 VA	1000 VA	1	20 A	PA/4	
PA/5	Lighting: External	20 A	1	95 VA	270 VA		1	20 A	PA/6	
PA/7	Lighting: Guard Hut	20 A	1		54 VA	180 VA	1	20 A	PA/8	
PA/9	Lighting: Dining Area	20 A	1	432 VA	250 VA		1	20 A	PA/10	
PA/11									PA/12	
PA/13									PA/14	
PA/15									PA/16	
PA/17									PA/18	
PA/19									PA/20	
PA/21									PA/22	
PA/23									PA/24	
PA/25									PA/26	
PA/27									PA/28	
PA/29									PA/30	
PA/31									PA/32	
PA/33									PA/34	
PA/35									PA/36	
PA/37									PA/38	
PA/39									PA/40	
PA/41									PA/42	
				Total Load:	2127 VA	1594 VA				
				Total Amps:						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	1345 VA	100.00%	1345 VA	
Receptacle	1620 VA	100.00%	1620 VA	
Lighting	756 VA	100.00%	756 VA	
				Total Conn. Load: 3721 VA
				Total Est. Demand: 3721 VA
				Total Conn.: 16 A
				Total Est. Demand: 16 A

DRG. NO.	REFERENCE DRAWINGS	REV	DATE	BY	CHECKED	DATE	BY
		00D	24/11/16	DC	TOS	24/11/16	TOS

Branch Panel: LP-C1

Location: MDP-E
 Supply From: MDP-E
 Mounting: Flush
 Enclosure: NEMA 1 Indoor

Volts: 230 Single
 Phases: 1
 Wires: 2

A.I.C. Rating: Use ShortCircuitCurrentRating & Refer to...
 Mains Type:
 Mains Rating: 100 A
 MCB Rating: 63 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	Poles	Trip	Circuit Description	CKT	
LC/1	Lighting: Science Laboratory	20 A	1	680 VA	635 VA		1	20 A	LC/2	
LC/3	Lighting: Female Washroom	20 A	1		76 VA	76 VA	1	20 A	LC/4	
LC/5	Lighting: HM Washroom & Utility	20 A	1	124 VA	184 VA		1	20 A	LC/6	
LC/7									LC/8	
LC/9	Receptacles: Work Tables	20 A	1	1080 VA					LC/10	
LC/11									LC/12	
LC/13									LC/14	
LC/15									LC/16	
LC/17									LC/18	
LC/19									LC/20	
LC/21									LC/22	
LC/23									LC/24	
LC/25									LC/26	
LC/27									LC/28	
LC/29									LC/30	
LC/31									LC/32	
LC/33									LC/34	
LC/35									LC/36	
LC/37									LC/38	
LC/39									LC/40	
LC/41									LC/42	
				Total Load:	2703 VA	152 VA				
				Total Amps:						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	1599 VA	100.00%	1599 VA	
Lighting	1377 VA	100.00%	1377 VA	
				Total Conn. Load: 2976 VA
				Total Est. Demand: 2976 VA
				Total Conn.: 13 A
				Total Est. Demand: 13 A

Branch Panel: MDP-1

Location: MDP-E
 Supply From: MDP-E
 Mounting: Surface
 Enclosure: NEMA 1 Indoor

Volts: 400/230 Wye
 Phases: 3
 Wires: 4

A.I.C. Rating: Use Panel Short Circuit & Refer to...
 Mains Type:
 Mains Rating: 400 A
 MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
MP/1	Receptacle: GF Class Rm.	20 A	1	1080...	180 VA		1	20 A	Receptacle: GF Entrance	MP/2	
MP/3	Receptacle: Staff Rm.	20 A	1		1080...	900 VA	1	20 A	Receptacle: Principal & Sec.	MP/4	
MP/5	Hand Dryers (2)	20 A	1		360 VA	360 VA	1	20 A	Receptacle: Elec. Rm.	MP/6	
MP/7	Receptacle: Mech. Rm.	20 A	1	180 VA	3500...		1	20 A	Water Pump - PBE-01	MP/8	
MP/9	Receptacle: Staff Rm. Floor	20 A	1		360 VA	1260...				MP/10	
MP/11	AHU-03	20 A	1			200 VA	540 VA	2	20 A	TR-1	
MP/13	AHU-02	20 A	1	200 VA	200 VA			1	20 A	AHU-1A	
MP/15	AHU-1C	20 A	1		200 VA	200 VA		1	20 A	AHU-1B	
MP/17										MP/18	
MP/19				4667...	1440...			1	20 A	Receptacle: FF Class Rm. 1	
MP/21	AC OUTDOOR UNIT (STONS)	20 A	3		4667...	1440...		1	20 A	Receptacle: FF Class Rm. 2	
MP/23								1	20 A	Receptacle: FF Class Rm. 3	
MP/25	Receptacle	20 A	1	1440...	1720...			1	20 A	P230-C1	
MP/27					3525...					MP/28	
MP/29	MDP-E	20 A	3			2936...				MP/30	
MP/31				1541...						MP/32	
MP/33										MP/34	
MP/35										MP/36	
MP/37										MP/38	
MP/39										MP/40	
MP/41										MP/42	
				Total Load:	16148 VA	17041 VA	10502 VA				
				Total Amps:	74 A	78 A	46 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	13997 VA	100.00%	13997 VA	
Receptacle	13140 VA	88.05%	11570 VA	
Lighting	5110 VA	100.00%	5110 VA	
Other	14000 VA	100.00%	14000 VA	
				Total Conn. Load: 46247 VA
				Total Est. Demand: 44677 VA
				Total Conn.: 67 A
				Total Est. Demand: 64 A

ORIGINAL ISSUE

ALTERATION

Lighting Fixture Schedule

Cou nt	Type Mark	Description	Manufacturer	Model	Lamp
47	G1	Stick Media Seamless LED	Delray Lighting	ST2P/HOW35	HOW35
33	G2	Surface Mount	Cooper Industries, Inc.	TRE-11-LD4-25W-40-OPL-BZ	LED
33	G3A	Surface Mount	Cooper Industries, Inc.	CORELITE R2W-L2-LED-SU	LED
13	G3B	High Efficiency LED for Recessed Installation	LSI Industries	LPASC24-LED-HO-CW	LED
20	G4	Vaporite Industrial	Cooper Industries, Inc.	VT-1-154PC-WL	T8
22	G10	Sonne Solor Powered Lighting System	Selux Corporation; Solar Security Lighting	SDS-1-F26-R3-xx-P1-xx-xx-	LED 2.0

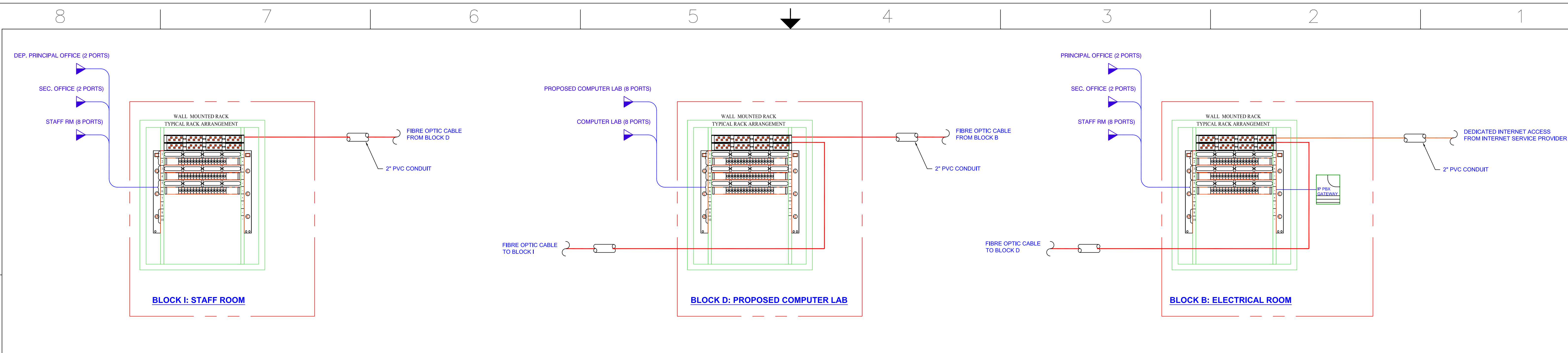
Grand total: 168

NOTES:
 1. MDP-1 IS TO BE MADE THE MAIN INCOMING PANEL AND PROVIDE A FEED TO THE EXISTING IN BLOCK 'J'. CONSEQUENTLY TOTAL LOADS SHOWN DOES NOT REFLECT THE EXISTING DISTRIBUTION.
 2. CONTRACTOR TO IDENTIFY ALL EXISTING LOADS AND SUB DISTRIBUTION PANELS AS PART OF HIS SCOPE.
 3. FIXTURES CALLED OUT IN THE LIGHTING SCHEDULE CAN BE SUBSTITUTED WITH OTHER TYPES HAVING THE SAME TECHNICAL SPECIFICATION.

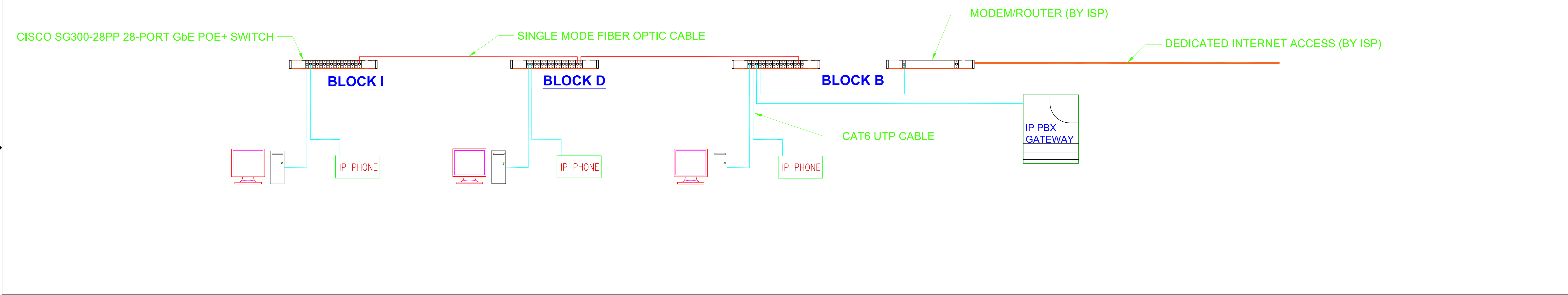
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CLIENT	GOVT OF ANTIGUA & BARBUDA	PROJECT	SIR MC CHESNEY GEORGE SECONDARY SCHOOL BEPII ANTIGUA & BARBUDA
COMPANY	SYLENG ENGINEERS & CONSTRUCTORS	DESCRIPTION/TITLE	LIGHTING FIXTURES & PANEL SCHEDULE
FSDM NO.		DWG NO.	1207-3-EL-SH-60
SCALE		DATE	12/01/16
SHEET			1 OF 1

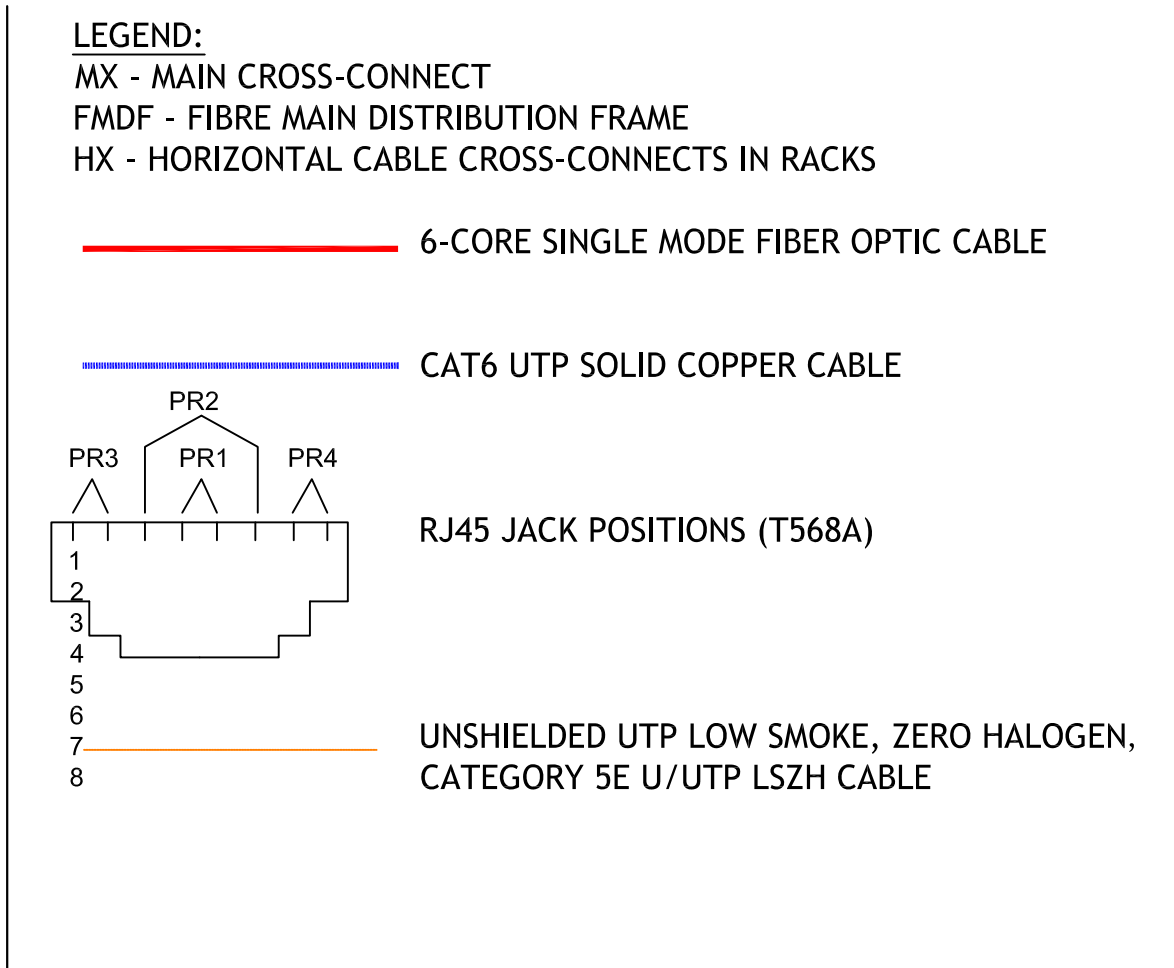


TOPOLOGY: FIBER OPTIC BUS NETWORK.



- GENERAL NOTES:**
- THE SCHOOL BUILDINGS SHALL BE WIRED FOR BOTH VOICE AND DATA
 - FLOOR DISTRIBUTION SHALL BE DONE VIA A COMBINATION OF UNDER GROUND AND IN-WALL CONDUITS.
 - WORK AREA JACKS SHOWN SERIES WIRED FOR CLARITY; HOWEVER ALL HORIZONTAL CABLING IS REQUIRED TO USE STAR TOPOLOGY. EACH WORK AREA JACK TO BE WIRED DIRECTLY TO THE HORIZONTAL CROSS CONNECT LOCATED IN THE ICT CLOSETS ON EACH FLOOR.
 - HORIZONTAL CABLING SHALL BE COPPER AUGMENTED CATEGORY 6 AIRES CABLE OR EQUIVALENT.
 - THE FOLLOWING SHALL BE BY THE CLIENT:
 - ALL PREMISES EQUIPMENT EXCLUDING SWITCHES, ROUTERS AND HUBS
 - INSTALLATION OF LANS, INTERCONNECTION TO LIFE SAFETY SYSTEMS SUCH AS SECURITY, FIRE ALARM AND ACCESS CONTROL
 - OTHER BUILDING SIGNALING SYSTEMS SUCH AS CCTV, PAGING, AUDIO AND OTHERS.
 - ALL EQUIPMENT AND CABLING TO MEET TIA/EIA-568-B STANDARDS,
 - 48 PORT PATCH PANELS TO BE MOUNTED IN 7' EIA 19" UEF ZONE 4 RACKS.
 - CABLING AT THE PATCH PANELS TO BE A 'CROSS-CONNECTION' SCHEME USING PATCH CORDS.

- INSTALLATION NOTES:**
- PULL CABLES TO MINIMISE DISTANCE OF THE RUN AND ELIMINATE LARGE LOOPS
 - BUNDLE CABLES IN A NEAT ORDERLY FASHION AND USE HOOK-AND-LOOP TIES.
 - FOLLOW RECOMMENDATIONS FOR CABLE BEND RADIUS. IN SPACES WITH UTP TERMINATIONS, CABLE BEND RADIUS SHOULD NOT BE LESS THAN FOUR-TIMES THE CABLE DIAMETER FOR HORIZONTAL CABLE, AND SHOULD NOT BE LESS THAN TEN TIMES THE CABLE DIAMETER FOR MULTIPAIR CABLE.
 - MAKE SURE THAT PAIR TWISTS ARE MAINTAINED WITHIN 1/2" (12MM) OR LESS OF THE TERMINATION POINT.
 - FIBER OPTIC DRAWER WITH SPLICE TRAY AND 12-PORT PATCH PANEL LOADED WITH 6 DUPLEX LC PORTS.



DRG. NO.	REFERENCE DRAWINGS	00D	SH 06/12/16 DRAWN BY & DATE	TOS 06/12/16 CHECKED BY & DATE	SH 06/12/16 DESIGNED BY & DATE	TOS 06/12/16 APP/AUTH BY & DATE	ORIGINAL ISSUE
		REV					ALTERATION

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COMPANY	SYLENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	TELECOMMUNICATIONS SYSTEM RISER DIAGRAM
SIZE	D	FSCM NO.	DWG NO. 1207-3-EL-TE-01
SCALE	NONE	DATE	06/12/2016
		SHEET	1 OF 1

AUG. 18, 2016 SYLVESTER ENGINEERING LTD.

MECHANICAL AND POWER CONNECTIONS

- MOTOR- DESIGNATION INDICATES MOTOR NAME- REFER TO THE MOTOR CONNECTION SCHEDULE FOR MORE INFORMATION
- 30AMP 480V/3PH/60HZ WP ISOLATOR
- 40AMP 480V/3PH/60HZ WP ISOLATOR
- 50AMP 480V/3PH/60HZ WP ISOLATOR
- 60AMP 480V/3PH/60HZ WP ISOLATOR
- 70AMP 480V/3PH/60HZ WP ISOLATOR
- 100AMP 480V/3PH/60HZ WP ISOLATOR
- 400AMP 480V/3PH/60HZ WP ISOLATOR
- COMBINATION MOTOR STARTER/DISCONNECT RATING AS SHOWN ON DRAWING
- MOTOR STARTER - MAGNETIC STARTER
- VARIABLE FREQUENCY DRIVE - EQUIPMENT SERVED AS NOTED
- AUTOMATIC TRANSFER SWITCH - SIZE/POLES AS NOTED
- TRANSFORMER - NUMBER INDICATES KVA RATING
- JUNCTION BOX - CEILING MOUNTED
- JUNCTION BOX - WALL MOUNTED AT HEIGHT INDICATED - COORDINATE MOUNTING HEIGHT WITH EQUIPMENT CONNECTION REQUIREMENTS
- JUNCTION BOX - FLOOR MOUNTED
- POKE THROUGH JUNCTION BOX - FLOOR MOUNTED
- SPECIAL EQUIPMENT OUTLET - REFER TO SPECIAL OUTLET CONNECTION SCHEDULE FOR MORE INFORMATION
- ELECTRICAL PANEL

OCCUPANCY SENSORS

- ALL OCCUPANCY SENSORS LOCATIONS SHALL BE CORRECTED BY THE CONTRACTOR WITH THE ARCHITECTURAL AND FURNITURE PLANS TO AVOID CONFLICTS. ANY CONFLICTS SHALL BE CORRECTED BY THE CONTRACTOR
- DUAL TECHNOLOGY PASSIVE INFRARED/ ULTRASONIC OCCUPANCY SENSOR- WATT STOPPER DT-200 WITH ISOLATED RELAY- CEILING MOUNTED
 - PASSIVE INFRARED OCCUPANCY SENSOR FOR LARGE AREAS- WATT STOPPER CX100- CEILING MOUNTED
 - PASSIVE INFRARED OCCUPANCY SENSOR FOR SMALL AREAS- WATT STOPPER WP1R- CEILING MOUNTED
 - ULTRASONIC OCCUPANCY SENSOR 600sqft WATT STOPPER WT- 600- CEILING MOUNTED
 - ULTRASONIC OCCUPANCY SENSOR 1000sqft WATT STOPPER WT- 1000- CEILING MOUNTED
 - ULTRASONIC OCCUPANCY SENSOR 2200sqft WATT STOPPER WT- 2200- CEILING MOUNTED
 - ULTRASONIC OCCUPANCY SENSOR 90 LINEA FT WATT STOPPER WT- 2250- CEILING MOUNTED
 - DIGITAL TIME SWITCH WATT STOPPER TS-200 - WALL MOUNTED

SWITCHES

- SINGLE POLE SWITCH- TOGGLE TYPE- WALL MOUNT 48" AFF UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES SWITCH LEG
- TWO WAY SWITCH- TOGGLE TYPE- WALL MOUNT 48" AFF UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES SWITCH LEG
- THREE WAY SWITCH
- DIMMER SWITCH
- SWITCH AND PILOT LIGHT
- DOOR SWITCH
- TIME SWITCH
- FAN CONTROL- WALL MOUNT 48" AFF UNLESS NOTED OTHERWISE
- SHUNT TRIP PUSH BUTTON STATION - WALL MOUNT 84" AFF UNLESS NOTED OTHERWISE

LIGHTING

- 2' X 2' FLUORESCENT LIGHTING FIXTURE ON NORMAL BRANCH POWER - CEILING MOUNTED
- 2' X 2' FLUORESCENT LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - CEILING MOUNTED
- 2' X 4' FLUORESCENT LIGHTING FIXTURE ON NORMAL BRANCH POWER - CEILING MOUNTED
- 2' X 4' FLUORESCENT LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - CEILING MOUNTED
- 1' X 4' FLUORESCENT LIGHTING FIXTURE ON NORMAL BRANCH POWER - CEILING MOUNTED
- 1' X 4' FLUORESCENT LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - CEILING MOUNTED
- FLUORESCENT STRIP LIGHTING FIXTURE ON NORMAL BRANCH POWER - CEILING MOUNTED
- FLUORESCENT STRIP LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - CEILING MOUNTED
- DOWNLIGHT LIGHTING FIXTURE ON NORMAL BRANCH POWER - CEILING MOUNTED
- DOWNLIGHT LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - CEILING MOUNTED
- WALL SCONCE LIGHTING FIXTURE ON NORMAL BRANCH POWER - WALL MOUNTED
- WALL SCONCE LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - WALL MOUNTED
- FLOODLIGHT LIGHTING FIXTURE ON NORMAL BRANCH POWER - WALL MOUNTED
- FLOODLIGHT LIGHTING FIXTURE ON EMERGENCY BRANCH POWER - WALL MOUNTED
- DUAL HEAD EMERGENCY LIGHT WITH INTEGRAL BATTERY PACK- WALL MOUNTED
- RECESSED IN-GRADE FIXTURE
- EXIT SIGN - SINGLE FACE, ARROW INDICATES DIRECTION OF ARROWS ON FACE - CEILING MOUNT
- EXIT SIGN - DOUBLE FACE, ARROW INDICATES DIRECTION OF ARROWS ON FACE - CEILING MOUNT
- EXIT SIGN - SINGLE FACE, ARROW INDICATES DIRECTION OF ARROWS ON FACE - WALL MOUNT
- EXIT SIGN - DOUBLE FACE, ARROW INDICATES DIRECTION OF ARROWS ON FACE - WALL MOUNT
- RECESSED LOW MOUNT LIGHTING FIXTURE

SPECIALTY LIGHTING

- SINGLE HEAD PARKING LOT LUMINAIRE ON NORMAL BRANCH POWER - POLE MOUNTED
- SINGLE HEAD PARKING LOT LUMINAIRE ON EMERGENCY BRANCH POWER - POLE MOUNTED
- DUAL HEAD PARKING LOT LUMINAIRE ON NORMAL BRANCH POWER - POLE MOUNTED
- DUAL HEAD PARKING LOT LUMINAIRE ON EMERGENCY BRANCH POWER - POLE MOUNTED
- 2-HEAD FLOOD LUMINAIRE ON NORMAL BRANCH POWER
- 4-HEAD FLOOD LUMINAIRE ON NORMAL BRANCH POWER
- LANTERN TYPE LUMINAIRE
- BOLLARD LUMINAIRE ON NORMAL BRANCH POWER
- BOLLARD LUMINAIRE ON EMERGENCY BRANCH POWER
- STEP LIGHT ON NORMAL BRANCH POWER
- STEP LIGHT ON EMERGENCY BRANCH POWER
- PADDLE FAN

RECEPTACLES

- ALL RECEPTACLES TO BE MOUNTED HORIZONTAL.
- DUPLEX RECEPTACLE - MOUNT 18" AFF UNLESS NOTED OTHERWISE
- DUPLEX RECEPTACLE - COORDINATE WITH GENERAL CONTRACTOR TAMPER RESISTANT
- DUPLEX RECEPTACLE OUTLET - 120VAC/60HZ/1PH FLOOR MOUNTED
- DUPLEX RECEPTACLE OUTLET - 120VAC
- SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET
- DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET
- 3-PHASE OUTLET, FOR FOR EXAMPLE R-RANGE W-WELDING OUTLET
- SPECIAL-PURPOSE 120v OR 230v CONNECTION OR PROVISION FOR CONNECTION (FOR EXAMPLE, DW=DISHWASHER SPECIAL PURPOSE OUTLET
- SPECIAL PURPOSE CONNECTION OR PROVISION FOR CONNECTION- 3phase.
- UNDER-FLOOR DUCT AND JUNCTION BOX - NUMBER OF LINES INDICATES NUMBER OF DUCT CELLS
- ALL RECEPTACLE 120v UNLESS OTHER WISE STATED.

FIRE ALARM SYSTEM DEVICES

- MANUAL CALL POINT
- HEAT DETECTOR - RATE OF RISE
- CARBON MONOXIDE DETECTOR
- OPTICAL SMOKE DETECTOR
- OPTICAL SMOKE DETECTOR/ELECTRONIC SOUNDER
- COMBINED HEAT AND SMOKE DETECTOR
- IGNITION SMOKE DETECTOR
- LOOP POWERED SOUNDER
- BELL
- BEACON
- LOOP POWERED SOUNDER & BEACON
- FLAME MONITOR (UV/IR)
- EXTINGUISHANT CONTROL PANEL
- FM200 BOTTLES WITH MINIMUM SIZE
- VESDA UNIT PIPING
- SHORT CIRCUIT ISOLATOR
- REMOTE INDICATOR
- SOUNDER CIRCUIT CONTROLLER
- END OF LINE MONITOR
- RELAY
- DOOR HOLDER
- INTERFACE UNIT
- ZONE MONITOR UNIT
- LOOP POWERED BEAM DETECTOR
- FIRE EXTINGUISHER
- AUDIBLE FLOW ALARM
- FLOW ALARM INDICATOR
- TROUBLE ALARM
- TROUBLE INDICATOR LIGHT
- PRESSURE INDICATOR LIGHT
- PRESSURE ALARM
- FIRE ALARM FLOOR DISTRIBUTION PANEL
- FIRE ALARM CONTROL PANEL

COMMUNICATION AND DATA OUTLETS

- VOICE OUTLET - MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE PROVIDE ONE RJ45 UNLESS NOTED OTHERWISE PROVIDE A 4-11/16" SQUARE BACK BOX 2-1/8" DEEP (RACO #265) WITH A SINGLE-GANG ADAPTER PLATE (RACO #837) UNLESS NOTED OTHERWISE PROVIDE (1) 1" CONDUIT STUBBED 3" A.C.A.C.
- COUNTER - MOUNT HORIZONTALLY 4" ABOVE COUNTER BACKSPLASH
- INTERCOM - PROVIDE 16 BUTTON HANDS FREE SPEAKER PHONE
- PAY PHONE - MOUNT 48" A.F.F.
- WALL PHONE - MOUNT 48" A.F.F.
- DATA OUTLET - MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE PROVIDE ONE RJ45 UNLESS NOTED OTHERWISE PROVIDE A 4-11/16" SQUARE BACK BOX 2-1/8" DEEP (RACO #265) WITH A SINGLE-GANG ADAPTER PLATE (RACO #837) UNLESS NOTED OTHERWISE PROVIDE (1) 1" CONDUIT STUBBED 3" A.C.A.C.
- COUNTER - MOUNT HORIZONTALLY 4" ABOVE COUNTER BACKSPLASH
- (2) PROVIDE TWO RJ45
- VOICE/DATA OUTLET - MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE PROVIDE ONE RJ45 FOR VOICE AND ONE RJ45 FOR DATA UNLESS NOTED OTHERWISE PROVIDE A 4-11/16" SQUARE BACK BOX 2-1/8" DEEP (RACO #265) WITH A SINGLE-GANG ADAPTER PLATE (RACO #837) UNLESS NOTED OTHERWISE PROVIDE (1) 1" CONDUIT STUBBED 3" A.C.A.C.
- COUNTER - MOUNT HORIZONTALLY 4" ABOVE COUNTER BACKSPLASH
- (2) PROVIDE TWO RJ45 FOR VOICE AND TWO RJ45 FOR DATA
- (3) PROVIDE TWO RJ45 FOR DIGITAL VOICE AND ONE RJ45 FOR DATA
- (4) PROVIDE ONE RJ45 FOR ANALOG LINE, ONE RJ45 FOR DIGITAL, AND TWO RJ45 FOR DATA
- (AL) PROVIDE ANALOG TELEPHONE LINE
- (C) COUNTER - MOUNT HORIZONTALLY 4" ABOVE COUNTER BACKSPLASH
- VOICE OUTLET - FLOOR MOUNTED - PROVIDE A 2-GANG 2-1/2" DEEP (RACO 691) WITH A SINGLE-GANG ADAPTER PLATE (RACO #837)
- (AL) ANALOG LINE
- DATA OUTLET - FLOOR MOUNTED - PROVIDE A 2-GANG 2-1/2" DEEP (RACO 691) WITH A SINGLE-GANG ADAPTER PLATE (RACO #837)
- (2) PROVIDE TWO RJ45
- WIRELESS TELEPHONE/DATA ACCESS POINT - CEILING MOUNTED. PROVIDE (1) CATEGORY 6 CABLE FROM NEAREST IDF. FIGURE EIGHT 25 FEET OF CABLE AT ACCESS POINT.
- (a) ACCESS POINT WITH 45' EFFECTIVE RADIUS
- (b) ACCESS POINT WITH 80' EFFECTIVE RADIUS
- CABINET SPEAKER
- WEATHERPROOF (IP66) REENTRANT HORN SPEAKER
- CEILING SPEAKER
- PA/VA MICROPHONE DESK STATION
- POWER SUPPLY 120V, 60Hz
- FIRE PANEL INTERFACE
- EOL END OF LINE TERMINATION
- WALL BOX VOLUME CONTROL - WALL MOUNT 48" A.F.F. UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES SPEAKERS CONTROLLED.
- TELEVISION OUTLET - MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE. HOMERUN COAXIAL CABLE TO IDF.

GROUNDING AND LIGHTNING PROTECTION

- AIR TERMINAL - LETTER DESIGNATES BASE TYPE. NUMBER INDICATES TERMINAL LENGTH IF GREATER THAN 18".
- (A) FLAT SURFACE BASE
- (B) FLAT WALL MOUNTED PARAPET BASE
- (C) SWIVEL BASE
- (D) RIDGE SADDLE BASE (EXPOSED)
- (E) RIDGE SADDLE BASE (CONCEALED)
- (F) CONCEALED AIR TERMINAL BASE ASSEMBLY
- BONDING CONNECTION
- GROUND ROD 3/4" - 10'
- TEE CONNECTOR
- DOWN CONDUCTOR
- MAIN CONDUCTOR - CABLE SIZED PER NFPA 780
- COUNTERPOISE CONDUCTOR - CABLE SIZED PER NFPA 780
- BONDING CONDUCTOR - CABLE SIZED PER NFPA 780
- GROUNDING BUS BAR

RISER SYMBOLS

- CIRCUIT BREAKER. ##/ INDICATES TRIP SETTING. /# INDICATES NUMBER OF POLES.
- INTEGRAL DIGITAL METER
- INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
- INTEGRAL SHUNT TRIP COIL
- TRANSIENT VOLTAGE SURGE SUPPRESSER
- POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- VOLTMETER
- VOLTMETER SWITCH
- AMMETER
- AMMETER SWITCH
- GENERATOR KW/KVA INDICATES GENERATOR RATING
- POWER TRANSFORMER
- SINGLE TUB/SECTION PANELBOARD
- AUTOMATIC TRANSFER SWITCH
- TRANSFORMER
- ISOLATION TRANSFORMER
- MIRK KEY INTERLOCK (E) ELECTRICAL INTERLOCK (M) MECHANICAL INTERLOCK
- DRAW OUT CIRCUIT BREAKER, ##/ INDICATES TRIP SETTING. /# INDICATES NUMBER OF POLES.
- FUSE WITH DISCONNECT SWITCH, ##/ INDICATES TRIP SETTING. /# INDICATES NUMBER OF POLES.
- SERVICE METER

GENERAL PROJECT NOTES

- NOT ALL SYMBOLS ON ELECTRICAL SYMBOLS LIST ARE USED.
- ALL MOUNTING HEIGHTS ARE TO THE CENTER LINE OF THE DEVICE BACKBOX, UNLESS NOTED OTHERWISE.

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COMPANY	S-LENG ENGINEERS & CONSTRUCTORS SYLVESTER ENGINEERING LTD website: www.syleng.com	DESCRIPTION / TITLE	ELECTRICAL LEGEND SHEET
SIZE	D	FSCM NO.	DWG NO.
			1207-EL-GEN-00-1
SCALE	NONE	DATE	5/06/16
			SHEET 1 OF 1

DRG. NO.	REFERENCE DRAWINGS	00D	DC	TOS	TOS	TOS	12/12/16	12/12/16	12/12/16	ORIGINAL ISSUE
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D

D

C

C

B

B

A

A

CONDUIT AND WIRE

SOLID LINE INDICATES EQUIPMENT ON COMMON CIRCUIT AND/OR CONTROLLED BY COMMON SWITCH. EACH CIRCUIT SHALL CONSIST OF A PHASE CONDUCTOR, NEUTRAL AND GROUND CONDUCTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY SWITCH LEGS IN CONDUIT TO ACHIEVE SWITCHING INDICATED ON PLANS. ELECTRICAL CONTRACTOR MAY COMBINE CIRCUITS INTO A COMMON HOMERUN CONSISTING OF A COMMON NEUTRAL, GROUND CONDUCTOR AND (3) PHASE CONDUCTORS (A, B, AND C PHASE).

DOTTED LINE INDICATES EQUIPMENT ON A COMMON CIRCUIT BUT NOT CONTROLLED BY THE SAME SWITCH.

UPPER CASE LETTER INDICATES LIGHTING FIXTURE TYPE

NUMBER INDICATES BRANCH CIRCUIT NUMBER
LOWER CASE LETTER INDICATES SWITCH DESIGNATION

SPECIAL RECEPTACLE TYPE OR DESIGNATION

NUMBER INDICATES BRANCH CIRCUIT NUMBER

SECURITY SYSTEM DEVICES

COLOUR CAMERA
1a - OUTSIDE DOME (EHD)
1c - INSIDE DOME

COLOUR CAMERA
1b - OUTSIDE DOME (EPT23600)

24-PORT CAT5e PATCH PANEL

4-PR CAT5e UTP IN CEILING TRAY

MULTIPLE 4-PR CAT5e UTP IN UG DUCTS

25-PR CAT5e UTP

VIDEO MONITOR

ACCESS PANEL

VIDEO RECORDER

SECURITY CENTER

MISCELLANEOUS

DETAIL SYMBOL
INDICATES DETAIL DESIGNATION
INDICATES SHEET NUMBER WHERE DETAIL CAN BE FOUND

UNIT PANEL FEEDER IDENTIFICATION
A - INDICATES PANEL IN WHICH UNIT IS BEING SERVED FROM
B - INDICATES CIRCUIT NUMBER FEEDING PANEL

IRRIGATION PUMP CONTROLLER

RELAY

TIMECLOCK - SUBSCRIPT INDICATES DESIGNATION - WALL MOUNT 60" AFF UNLESS NOTED OTHERWISE - REFER TO TIMECLOCK SCHEDULE FOR MORE INFORMATION

CONTACTOR - SUBSCRIPT INDICATES DESIGNATION - WALL MOUNT 60" AFF UNLESS NOTED OTHERWISE - REFER TO CONTACTOR SCHEDULE FOR MORE INFORMATION

PHOTOCELL

POWER DISTRIBUTION PANEL
'N' INDICATES THE NUMBER OF CIRCUIT

'N' INDICATES THE NOTE NUMBER
'G' INDICATES THE GENERAL NOTE NUMBER

ABBREVIATIONS

A AMPERES
AAC ABOVE ACCESSIBLE CEILING
AAP AREA ALARM PANEL (MEDICAL GAS)
AC ALTERNATING CURRENT
ACC AC CONDENSER
ADA AMERICANS WITH DISABILITIES ACT
AF AMPERE FUSE
AFC AVAILABLE FAULT CURRENT
AFF ABOVE FINISHED FLOOR
AFG ABOVE FINISHED GRADE
AIC AMPERES INTERRUPTING CAPACITY, SYMMETRICAL
AL ALUMINIUM
ANNUN ANNUNCIATOR
ARCH ARCHITECT
AS AMPERE SWITCH
AT AMPERE TRIP
ATS AUTOMATIC TRANSFER SWITCH
AWG AMERICAN WIRE GAUGE

ABBREVIATIONS

BFG BELOW FINISHED GRADE
BLDC BUILDING
C CONDUIT
CAT CATALOG
CKT CIRCUIT
CO CONDUIT ONLY
CU COPPER
C/B CIRCUIT BREAKER
C/T CURRENT TRANSFORMER
Δ DELTA
DWG DRAWING

E EMERGENCY
EACH EACH
EC EMPTY CONDUIT
EMCC EMERGENCY MOTOR CONTROL CENTER
EMSB EMERGENCY MAIN SWITCH BOARD
EMT ELECTRICAL METALLIC TUBING
EQUIP EQUIPMENT
EWC ELECTRIC WATER COOLER
EXP EXPLOSION PROOF
EXT EXTERIOR
EF EXHAUST FAN
FA FRESH AIR UNIT
FDR FEEDER
FKT FIXTURE
FLUOR FLUORESCENT
FT FEET
FU FUSE
G GROUND
GEN GENERATOR
GFP GROUND FAULT PROTECTION
GFI GROUND FAULT INTERRUPTER
GFI GROUND FAULT INTERRUPTER
HP HORSEPOWER
HPS HIGH PRESSURE SODIUM

IC ISOLATED GROUND
INC INCANDESCENT
IEEE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IESNA ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA

JB JUNCTION BOX

KCMIL THOUSAND CIRCULAR MILLIMETERS
KVA KILOVOLT-AMPERES
KVAR KILOVOLT-AMPERES, REACTIVE
KW KILOWATTS
LS LEVEL SWITCH
LI LEVEL INDICATOR
LTO LIGHTING
LPS LOW PRESSURE SODIUM

MCB MAIN CIRCUIT BREAKER
MCC MOTOR CONTROL CENTER
MH METAL HALIDE
MLO MAIN LUGS ONLY
MSB MAIN SWITCHBOARD
MVA MEGAVOLT-AMPERES

N NEUTRAL
NC NORMALLY CLOSED
NEC NATIONAL ELECTRICAL CODE
NF NON FUSED
NFPA NATIONAL FIRE PROTECTION ASSOCIATION
NO NORMALLY OPEN
NTS NOT TO SCALE

OFOI OWNER FURNISHED OWNER INSTALLED
OFCI OWNER FURNISHED CONTRACTOR INSTALLED

PC PHOTOCCELL
PEND PENDANT MOUNTED
PF POWER FACTOR
∅, PH PHASE
POS POINT OF SALE
PR PRESSURIZATION FAN
PWR POWER
P/T POTENTIAL TRANSFORMER
WP WATER PUMP
REC RECESSED
RECPRT RECEPTACLE
RGS RIGID GALVANIZED STEEL

SCA SHORT CIRCUIT AMPERES AVAILABLE
SCR SHORT CIRCUIT AMPERE RATING
ST SHUNT TRIP
SURF SURFACE
SWBD SWITCHBOARD
SWGR SWITCHGEAR

TEL TELEPHONE
TBD TO BE DETERMINED
TSB TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TMGB TELECOMMUNICATIONS GROUNDING BUSBAR
TYP TYPICAL
TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR

UG UNDERGROUND
UNIV UNIVERSAL
UNO UNLESS NOTED OTHERWISE

V VOLTS
VFD VARIABLE FREQUENCY DRIVE

W WATTS
WP WEATHERPROOF

XFMR TRANSFORMER

Y WYE

GENERAL PROJECT NOTES

THE ELECTRICAL CONTRACTOR SHALL:

- VERIFY ALL DIMENSIONS ON THE JOB AND WILL BE HELD RESPONSIBLE FOR FITTING HIS WORK TO THE BUILDING.
- COORDINATE WITH OTHER CONTRACTORS ON THE JOB FOR PROPER PLACEMENT OF LIGHTING FIXTURES, ELECTRICAL PANELS, PULLBOXES AND OTHER ITEMS ASSOCIATED WITH THE ELECTRICAL INSTALLATION.
- INSTALL ALL FITTINGS, CONDUIT, TRUNKING ETC. TO AVOID OTHER BUILDING SERVICES OR OTHER OBSTRUCTIONS AT NO EXTRA COST.
- MARK OUT ALL OPENINGS REQUIRED FOR PROPER INSTALLATION IN WALLS, BEAMS OR FLOOR SLABS TO BE CUT OR LEFT OUT BY THE MAIN CONTRACTOR.
- READ THIS DRAWING IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL AND ENGINEER'S DRAWINGS FOR EXACT DIMENSIONS BETWEEN WALLS, BEAMS, FLOOR-SLAB ETC.
- ENSURE ALL MATERIALS TO BE INSTALLED AND WORK TO BE DONE SHALL COMPLY WITH TRINIDAD AND TOBAGO ELECTRICAL WIRING CODE.
- NOT ALL SYMBOLS ON ELECTRICAL SYMBOLS LIST ARE USED.
- ALL MOUNTING HEIGHTS ARE TO THE CENTRE LINE OF THE DEVICE BOX, UNLESS OTHERWISE STATED.

STANDARD MOUNTING HEIGHTS

EQUIPMENT	APPLICATION	MOUNTING HEIGHTS
CONVENIENCE OUTLETS	GENERAL	1'-6" DR 457MM
CONVENIENCE OUTLETS	MECHANICAL RM	3'-0" DR 914MM
EXIT LIGHTS	GENERAL	ABOVE DOORS (7'-0") MIN AFF
FIRE HORN/STROBE	GENERAL	1'-0" DR 305MM
FIRE PULL STATION	GENERAL	4'-6" DR 1372MM
HAND DRYERS	GENERAL	3'-8" DR 1120MM
HAND DRYERS	HANDICAP	3'-0" DR 915MM
ISOLATORS	GENERAL	1' MIN- 6' MAX DR 914MM-1828MM
MICROPHONE JACKS	GENERAL	1' 6" DR 457MM
MOTOR STARTERS	GENERAL	1' MIN- 6' MAX DR 914MM-1828MM
PANELBOARDS	GENERAL	6'-0" TO TOP C, B MAX DR 1829MM
SWITCHES	GENERAL	4'-6" DR 1372MM
TELEPHONE	DESK TYPE	1'-6" DR 457MM
TELEPHONE	WALL TYPE	4'-0" DR 1220MM
THERMOSTATS	GENERAL	4'-0" DR 1220MM
TV ANTENNA JACKS	GENERAL	1' 6" DR 457MM

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			SHEET 2 OF 2

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