

DEPARTMENT OF FISHERIES AND OCEANS CANADA

ELECTRICAL AND LIFE SAFETY REFURBISHMENTS

VICTORIA COAST GUARD BASE, VICTORIA, BRITISH COLUMBIA

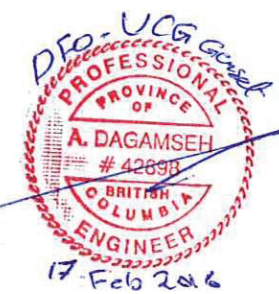


1 VICTORIA COAST GUARD SITE  
E001 NTS

DRAWING LIST	
DWG. NO.	DESCRIPTION
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S100	GENERAL NOTES
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3	RE-ISSUED FOR TENDER	2016/02/05
2	ISSUED FOR TENDER	2016/01/27
1	ISSUED FOR 99% REVIEW	2016/01/26
0	ISSUED FOR 33% REVIEW	2016/01/16
Revision/	Description/Description	Date/Date
Revision.		

Client/client

DEPARTMENT OF FISHERIES AND OCEANS CANADA

9860 WEST SAANICH ROAD  
SIDNEY, B.C.

Project title/Titre du projet

VICTORIA COAST GUARD BASE  
VICTORIA, B.C.

ELECTRICAL SYSTEMS AND LIFE SAFETY  
REFURBISMENT

Consultant Signature Only

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Regional Manager, Architectural and Engineering Services,  
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Drawing title/Titre du dessin

KEY PLAN AND DRAWING LIST

Project No./No. du projet F1700-150949	Sheet/ Feuille E001 1 OF 10	Revision no./ La Révision no. 0
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STRUCTURAL DESIGN NOTES

GENERAL

1. ALL CODES REFERENCED ARE TO BE THE LATEST VERSION AT THE DATE OF ISSUE.
2. DESIGN IS BASED ON THE [BRITISH COLUMBIA BUILDING CODE 2012][NATIONAL BUILDING CODE 2010].
3. READ THESE DESIGN NOTES IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS.
4. OBTAIN ENGINEER'S APPROVAL BEFORE CUTTING, BORING, OR SLEEVEING LOAD-BEARING MEMBERS UNLESS NOTED OTHERWISE.
5. THE STRUCTURAL DRAWINGS ARE FOR THE COMPLETED PROJECT. STABILITY OF THE [EXISTING] [AND/OR] [NEW] STRUCTURE DURING CONSTRUCTION REMAINS THE RESPONSIBILITY OF THE [CONTRACTOR] [TRADE CONTRACTOR].
6. REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SMALL OPENINGS, SLEEVES, RECESSES, DEPRESSIONS, SUMPS, TRENCHES, CURBS, HOUSEKEEPING PADS, EQUIPMENT BASES, AND SLOPES NOT INDICATED ON THE STRUCTURAL DRAWINGS.
7. OPENINGS AND SLEEVES INDICATED ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE ALL OPENING LOCATIONS AND DIMENSIONS WITH THE APPROPRIATE CONSULTANT AND THE [SUB-CONTRACTOR] [TRADE CONTRACTOR] PRIOR TO CONSTRUCTION.
8. REVIEW ALL DRAWINGS AND CHECK DIMENSIONS PRIOR TO IMPLEMENTING THE WORK. REPORT ANY DISCREPANCIES TO THE CONSULTANT FOR CLARIFICATION BEFORE PROCEEDING.
9. COORDINATE PLACEMENT AND LOCATION OF ITEMS BY SUBSEQUENT TRADES. RELEVANT TRADES SHALL REVIEW PRIOR TO ERECTION AND/OR INSTALLATION.
10. NOTIFY THE ENGINEER A MINIMUM OF [24][48] HOURS PRIOR TO ANY REQUIRED SITE REVIEWS.

EXISTING STRUCTURES

1. THE STRUCTURAL DESIGN IS BASED ON INFORMATION GATHERED FROM THE RECORD DRAWINGS AND FROM LIMITED VISUAL OBSERVATIONS ON SITE.
2. VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS ON SITE PRIOR TO IMPLEMENTING AFFECTED WORK.
3. NOTIFY THE CONSULTANT OF ANY SITE CONDITIONS THAT DIFFER FROM THE CONTRACT DOCUMENTS OR THE RECORD DRAWINGS.
4. SHORE AND UNDERPIN EXCAVATIONS AS REQUIRED TO PREVENT DISTURBANCE TO ADJACENT STRUCTURES, STREETS, SIDEWALKS AND UTILITIES.

DESIGN LOADS

1. UNLESS NOTED OTHERWISE, THE LOADS NOTED IN TABLES AND ON DRAWINGS ARE UNFACTORED.
2. CLIMATIC INFORMATION: REFER TO CLIMATIC INFORMATION TABLE
3. SITE INFORMATION: REFER TO SITE INFORMATION TABLE
4. DESIGN LOADS: REFER TO DESIGN LOADS TABLE

FOUNDATION & GEOTECHNICAL NOTES

1. FOUNDATION DESIGN IS BASED ON EXISTING BUILDING FOUNDATION SCHEME PREPARED BY VMA ENGINEER LTD. ON 29/08/01.
2. BEAR ALL FOOTINGS ON UNDISTURBED SOIL NOTWITHSTANDING THE ELEVATIONS INDICATED ON THE DRAWINGS.
3. BRING OVER-EXCAVATION AND CAVITIES IN THE FOOTING BASE UP TO THE REQUIRED LEVELS WITH 10 MPa CONCRETE.
4. REMOVE ALL ORGANIC MATERIAL FROM THE BUILDING AREA AT THE LOCATION OF THE DIESEL GENSET HOUSEKEEPING PAD.
5. REMOVE ALL LOOSE OR SATURATED MATERIAL AND GROUNDWATER FROM THE BASE OF FOOTING EXCAVATIONS BY APPROVED METHODS PRIOR TO PLACING FOUNDATIONS.
6. PROTECT EXCAVATIONS FOR FOOTINGS FROM RAIN, SNOW, FREEZING TEMPERATURES, STANDING WATER, LOSS OF MOISTURE AND DEGRADATION BY APPROVED METHODS.
7. BEARING SURFACES TO BE INSPECTED IN THE FIELD BY A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA PRIOR TO PLACING CONCRETE. [IMPROVE SUBGRADE AS DIRECTED IN WRITING BY A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.
8. BACKFILL MATERIAL TO CONSIST OF GRANULAR FILL AND BE COMPACTED TO 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY IN MAXIMUM LIFTS OF 150 mm.

CAST-IN-PLACE REINFORCED CONCRETE

1. CONCRETE MATERIALS, QUALITY, MIXING, PLACING, FORMWORK AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-A23.1.

2. SUPPLY CONTROLLED CONCRETE IN ACCORDANCE WITH CSA-A23.1 WITH PROPERTIES NOTED IN CONTROLLED CONCRETE TABLE.
3. USE TYPE (GU) CEMENT FOR ALL CONCRETE IN CONTACT WITH NATIVE SOIL.
4. MAXIMUM FLY ASH CONTENT NOT TO EXCEED 25% OF THE TOTAL CEMENTITIOUS MATERIAL EXCEPT AS FOLLOWS:
  - 4.1. CONCRETE FOR FOOTINGS, PILES, COLUMNS, WALLS, GRADE BEAMS: MAXIMUM 40%.
5. NOTIFY CONSULTANT 24 HOURS PRIOR TO CONCRETE POURS TO ALLOW FOR REVIEW OF REINFORCEMENT.
6. DO NOT USE ADMIXTURES CONTAINING CALCIUM CHLORIDE.

CONCRETE REINFORCEMENT

1. REINFORCEMENT STEEL TO CONFORM TO CSA-G30-18 GRADE [300][400].
2. DO NOT WELD REINFORCEMENT UNLESS APPROVED IN WRITING BY THE ENGINEER. REINFORCEMENT TO BE WELDED TO CONFORM TO CSA-G30-18, GRADE [300W][400W]. WELDING ONLY PERMITTED BY AN ORGANIZATION CERTIFIED TO CSA-W186.
3. NOTIFY THE ENGINEER PRIOR TO CONCRETE PLACEMENT TO ALLOW FOR REVIEW OF REINFORCING.
4. SUBMIT SHOP DRAWINGS AND DETAILS FOR ALL REINFORCEMENT FOR REVIEW PRIOR TO FABRICATION.
5. REINFORCEMENT NOTED WITH "C" AS C10M IS TO HAVE A STANDARD HOOK AT ONE END. LENGTH OF BAR INDICATED IS EXCLUSIVE OF HOOK LENGTH.
6. REINFORCEMENT NOTED WITH "E" AS 10M IS TO BE EPOXY-COATED.
7. CLEAR CONCRETE COVER TO REINFORCEMENT - REFER TO CLEAR CONCRETE COVER TO REINFORCEMENT TABLE.
8. STANDARD END HOOK LENGTHS FOR REINFORCING - REFER TO STANDARD END HOOKS TABLE.
9. REINFORCEMENT SPLICES - REFER TO REINFORCEMENT SPLICES TABLE.
  - 9.1. WHERE SPLICES ARE INDICATED ON THE DRAWINGS, SUCH DIMENSIONS SHALL APPLY.
  - 9.2. WHERE THE DRAWINGS INDICATE TENSION OR COMPRESSION SPLICES, IT SHALL BE AS INDICATED IN THE REINFORCEMENT SPLICES TABLE.
  - 9.3. WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
10. EMBEDMENT OF DOWELS - REFER TO REINFORCEMENT SPLICES TABLE.
  - 10.1. WHERE EMBEDMENT IS DIMENSIONED ON THE DRAWINGS, SUCH DIMENSIONS SHALL APPLY.
  - 10.2. WHERE THE DRAWINGS INDICATE TENSION OR COMPRESSION EMBEDMENT, IT SHALL BE AS NOTED IN THE REINFORCEMENT SPLICES TABLE.
  - 10.3. WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS INDICATED ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
11. WELDED WIRE MESH TO CONFORM TO ASTM A497/A497M.
12. REINFORCE ALL INTERIOR AND EXTERIOR SLABS ON GRADE WITH 10M AT 400 mm ON CENTRE UNLESS NOTED OTHERWISE. [SIDEWALKS AND SMALL SLABS TO BE REINFORCED WITH 10M AT 300 mm ON CENTRE UNLESS NOTED OTHERWISE.]
13. OPENINGS IN WALLS AND SLABS - PROVIDE TWO 15M BARS EACH SIDE, ONE EACH FACE, EXTENDING 600mm PAST THE OPENINGS, PLUS TWO 15M DIAGONAL BARS 1.5 TIMES THE LENGTH OF SHORTEST SIDE OF OPENING OR MINIMUM 500 mm AND MAXIMUM 1500 mm IN LENGTH AT EACH CORNER.
14. DO NOT CUT REINFORCEMENT AT OPENINGS WHERE IT CAN BE SPREAD CONTINUOUS AROUND OPENING.
15. TYPICAL BEAM REINFORCEMENT UNLESS OTHERWISE NOTED - TOP REINFORCEMENT TO BE CONTINUOUS OVER SUPPORTS; SPLICE 450 mm AT MIDSPAN. BOTTOM REINFORCEMENT TO BE CONTINUOUS BETWEEN SUPPORTS; SPLICE 450mm AT SUPPORTS.
16. ALL REINFORCEMENT TO BE SUPPORTED AT 900mm MAXIMUM SPACING.

CONDUITS, PIPES & SLEEVES EMBEDDED IN CONCRETE

1. CENTERLINE SPACING TO BE NOT LESS THAN 3 DIAMETERS AND 100mm CLEAR.
2. CENTERLINE SPACING BETWEEN PARALLEL CONDUIT AND REINFORCING BARS TO BE 3 DIAMETERS.
3. ADDED REINFORCING AT POINT OF CONGESTION AS DIRECTED BY THE STRUCTURAL ENGINEER
4. FOR CONDUIT IN THE PLANE OF:
  - 4.1. SLABS AND WALLS:
    - LOCATE BETWEEN TOP AND BOTTOM, OR EACH FACE OF REINFORCING
    - MAXIMUM SIZE OF ONE LAYER TO BE NOT MORE THAN 1/3 CONCRETE THICKNESS
    - MAXIMUM SIZE OF EACH CONDUIT IN TWO LAYERS CROSSING TO BE NOT MORE THAN 1/4 CONCRETE THICKNESS
    - THREE LAYERS CROSSING WILL NOT BE PERMITTED
  - 4.2. FOOTINGS AND MATS:
    - THE MAXIMUM SIZE OF CONDUIT NOT TO EXCEED 150mmØ UNLESS OTHERWISE APPROVED BY

STRUCTURAL ENGINEER. CONDUIT TO BE LOCATED BETWEEN TOP AND BOTTOM LAYERS OF REINFORCING.

5. NO REINFORCING STEEL SHALL BE CUT
6. NO SLEEVES WITHIN DROP PANELS BEYOND THOSE SHOWN ON SXXX
7. SPACING OF SLEEVES (150mm MAX Ø) THROUGH FLAT SLABS TO BE NOT LESS THAN THE FOLLOWING (SEE BELOW DIAGRAM):

CONCRETE FORMWORK

1. DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CAN/CSA-S269.3.
2. PROVIDE VOID FORM BELOW ALL STRUCTURAL SLABS AT GRADE, WALLS, GRADE BEAMS, PILE CAP, AND WHERE SHOWN ON THE DRAWINGS PRIOR TO INSTALLATION OF REINFORCEMENT.
  - 2.1. STRUCTURAL SLABS AT GRADE - [PLYWOOD][6 mm HARDBOARD] OVER BIODEGRADABLE WAX MAT CARDBOARD. COMPLETE WITH MOISTURE RESISTANT TREATED PAPER FACES, WITH SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF WET CONCRETE UNTIL INITIAL SET. PROVIDE 12 mm THICK PRESSURE TREATED PLYWOOD AROUND PERIMETER OF SLAB TO PROTECT VOID SPACE.
  - 2.2. OTHER LOCATIONS - EXPANDED POLYSTYRENE CRUSHABLE FILL MATERIAL.
3. PROVIDE CAMBER OF [SPAN/600] FOR ALL BEAMS AND GIRDERS WITH A SPAN GREATER THAN OR EQUAL TO [8] m. CAMBER BOTH THE TOP AND UNDERSIDE OF CONCRETE TO MAINTAIN SPECIFIED DEPTH UNLESS NOTED OTHERWISE.
4. LEAVE FORMS IN PLACE OR PROVIDE SHORING FOR ALL SLABS, BEAMS, AND GIRDERS UNTIL CONCRETE HAS REACHED SPECIFIED 28-DAY COMPRESSIVE STRENGTH.
5. REFER TO SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR CHAMFERS ON CORNERS FOR BEAMS, COLUMNS, AND WALLS.

TOLERANCES & SURVEY CONTROL

1. TOLERANCE SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND SPECIFICATIONS EXCEPT AS NOTED HERE:
2. COLUMN OFFSET BETWEEN FLOOR LEVELS TO NOT EXCEED +/- 8mm FROM INTENDED ALIGNMENT.
3. COLUMN HEIGHT TO UNDERSIDE OF SLAB OR BEAM +0mm TO -100mm. COLUMN SHOULD NOT EXTEND INTO SLAB OR SLAB BAND.
4. REPAIR COLUMNS THAT ARE CAST TOO HIGH BY CHIPPING DOWN TO LEVEL WITH THE UNDERSIDE OF SLAB. THE CENTRAL PORTION OF THE COLUMN INSIDE THE REBAR CAGE MAY BE LOPED UPWARD AT 45 DEGREES MAXIMUM BUT NO PART OF THE COLUMN SHALL BE HIGHER THAN 50mm ABOVE THE BOTTOM OF THE SLAB.
5. PROVIDE SURVEY CONTROL AND MEASUREMENTS IN ACCORDANCE WITH APPLICABLE CODES, THESE NOTES, AND SPECIFICATIONS.
6. PROVIDE BASE POINT FOR SURVEY AT OUTSIDE CORNER OF STAIR OR ELEVATOR SHAFT AND MEASURE ALL SLAB SURVEY FROM SINGLE LOCATION.
7. SURVEY THE FIRST SUSPENDED SLAB ABOVE GRADE AND THE FIRST TYPICAL TOWER FLOOR AS FOLLOWS:
  - 7.1. FORMWORK BEFORE SLAB IS CAST.
  - 7.2. SLAB SURFACE WITHIN 18 HOURS OF FINISHING AND BEFORE FORMWORK REMOVAL.
  - 7.3. IMMEDIATELY AFTER FORMWORK REMOVAL.
  - 7.4. IMMEDIATELY AFTER RESHORE REMOVAL.
  - 7.5. 3 MONTHS AFTER RESHORE REMOVAL.
8. SURVEY SLABS AT THE FOLLOWING LOCATIONS:
  - 8.1. AT COLUMNS, ENDS OF WALLS AND OTHER SUPPORTS.
  - 8.2. AT SLAB EDGES, CORNERS AND TIPS OF CANTILEVERS.
  - 8.3. MIDSPAN BETWEEN SUPPORTS.
  - 8.4. AT ANY NOTICEABLE HIGH POINTS OR LOW POINTS.
9. EACH SURVEY SHOULD RECORD SLAB ELEVATIONS AT THE SAME LOCATION FOR LATER REFERENCE AND ANALYSIS PURPOSES.
10. WHENEVER SLAB IS OUTSIDE TOLERANCE, SURVEY SLAB THICKNESS AT THE FOLLOWING LOCATIONS:
  - 10.1. AT COLUMNS, ENDS OF WALLS AND OTHER SUPPORTS.
  - 10.2. AT SLAB EDGES, CORNERS AND TIPS OF CANTILEVERS.
  - 10.3. MIDSPAN BETWEEN SUPPORTS.
  - 10.4. AT ANY NOTICEABLE HIGH POINTS OR LOW POINTS.

CLIMATIC INFORMATION	
TO BE READ IN CONJUNCTION WITH DESIGN LOADS DESIGN NOTES	
SNOW LOAD (1/50), S <sub>s</sub>	2.1kPa
SNOW LOAD (1/50), S <sub>r</sub>	0.2kPa
ONE DAY RAIN (1/50)	81mm
HOURLY WIND PRESSURE (1/10)	0.44kPa
HOURLY WIND PRESSURE (1/50)	0.57kPa
SEISMIC RESPONSE, S <sub>a</sub> (0.2)	1.20
SEISMIC RESPONSE, S <sub>a</sub> (0.5)	0.82
SEISMIC RESPONSE, S <sub>a</sub> (1.0)	0.36
SEISMIC RESPONSE, S <sub>a</sub> (2.0)	0.18
SEISMIC RESPONSE, PGA	0.61

SITE INFORMATION	
TO BE READ IN CONJUNCTION WITH DESIGN LOADS DESIGN NOTES	
IMPORTANCE CATEGORY	1.5

GRANULAR AGGREGATE GRADATIONS	
TO BE READ IN CONJUNCTION WITH FOUNDATION AND GEOTECHNICAL DESIGN NOTES	
SIEVE SIZE (mm)	% PASSING BY WEIGHT
25	100
20	95-100
10	60-80
5	40-60
2.5	28-48
0.630	13-29
0.314	9-21
0.160	6-15
0.080	4-10

TYPICAL ABBREVIATIONS	
Key Name	Comments
(E)	"EXISTING"
ALT	"ALTERNATE"
B.B.O.C.	"BEAM BEAR ON COLUMN"
B.L.L.	"BOTTOM LOWER LAYER"
B.U.L.	"BOTTOM UPPER LAYER"
BM	"BEAM"
BOT	"BOTTOM"
BS	"BOTH SIDES"
C/W	"COMPLETE WITH"
CANT	"CANTILEVER"
CLR	"CLEAR"
COL	"COLUMN"
CONC	"CONCRETE"
CONN	"CONNECTION"
CONT	"CONTINUOUS"
CP	"COMPLETE PENETRATION" (WELD)
DIA	"DIAMETER"
DVG	"DRAWING"
DWL	"DOWEL"
E.F.	"EACH FACE"
E.S.	"EACH SIDE"
E.W.	"EACH WAY"
EL	"ELEVATION"
ELEV	"ELEVATION"
FTG	"FOOTING"
H1E	"HOOK ONE END"
H2E	"HOOK TWO ENDS"
HORIZ	"HORIZONTAL"
I.F.	"INSIDE FACE"
L.W.	"LONG WAY"
L.G.	"LONG"
MAX	"MAXIMUM"
MIN	"MINIMUM"
NTS	"NOT TO SCALE"
O.C.	"ON CENTER"
O.F.	"OUTSIDE FACE"
OPNG	"OPENING"
OPP	"OPPOSITE"
PL	"PLATE"
R/W	"REINFORCE WITH"
REINF	"REINFORCING"
S.F.	"STEP FOOTING"
S.W.	"SHORT WAY"
SIM	"SIMILAR"
STAGG	"STAGGERED"
STIRR	"STIRRUPS"
SYMM	"SYMMETRICAL"
T&B	"TOP & BOTTOM"
T.L.L.	"TOP LOWER LAYER"
T.O.	"TOP OF"
T.O.F.	"TOP OF FOOTING"
T.O.S.	"TOP OF STEEL"
T.O.W.	"TOP OF WALL"
T.U.L.	"TOP UPPER LAYER"
THK	"THICK"
TYP	"TYPICAL"
U.N.O.	"UNLESS NOTED OTHERWISE"
U/S	"UNDERSIDE"
VERT	"VERTICAL"
VIF	"VERIFY IN FIELD"
W/	"WITH"



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1		
0	ISSUED FOR REVIEW	01/10/2018

Revision/	Description/Description	Date/Date

Client/client

Project title/Titre du projet

Seaspan  
VICTORIA, B.C.

Consultant Signature Only

Designed by/Concept par

Drawn by/Dessine par

PWGS-C Project Manager/Administrateur de Projets TPSGC

Regional Manager, Architectural and Engineering Services  
Gestionnaire régionale, Services d'architecture et de génie, TPSGC

Drawing title/Titre du dessin

GENERAL NOTES

Project No./No. du projet 115616059	Sheet/Feuille S-100 OF 2	Revision no./ La Révision no. 2
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Revision/	Description/Description	Date/Date

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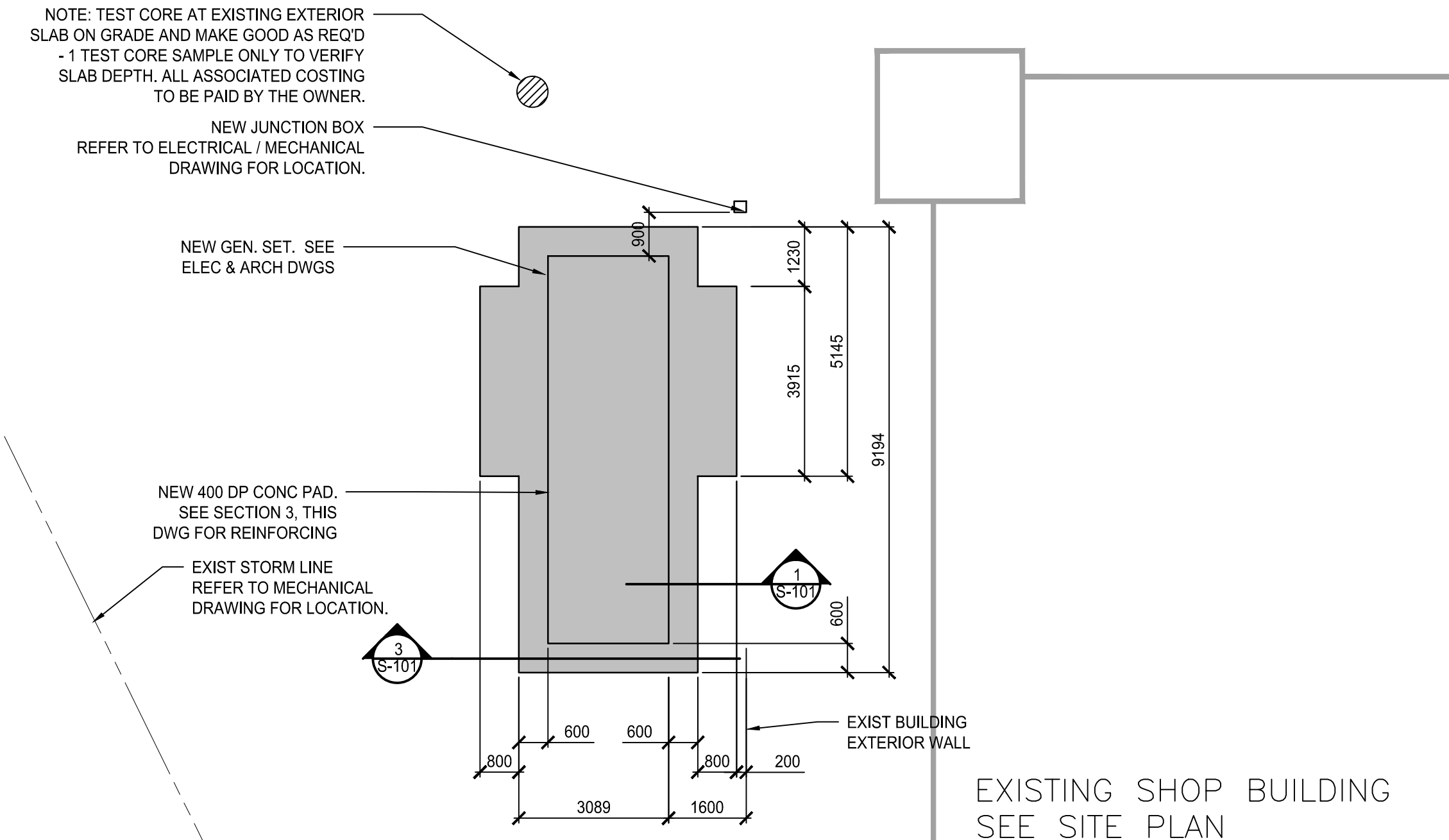
PWGSC Project Manager/Administrateur de Projets TPSGC

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Gestionnaire régionale, Services d'architectural et de génie, TPSGC

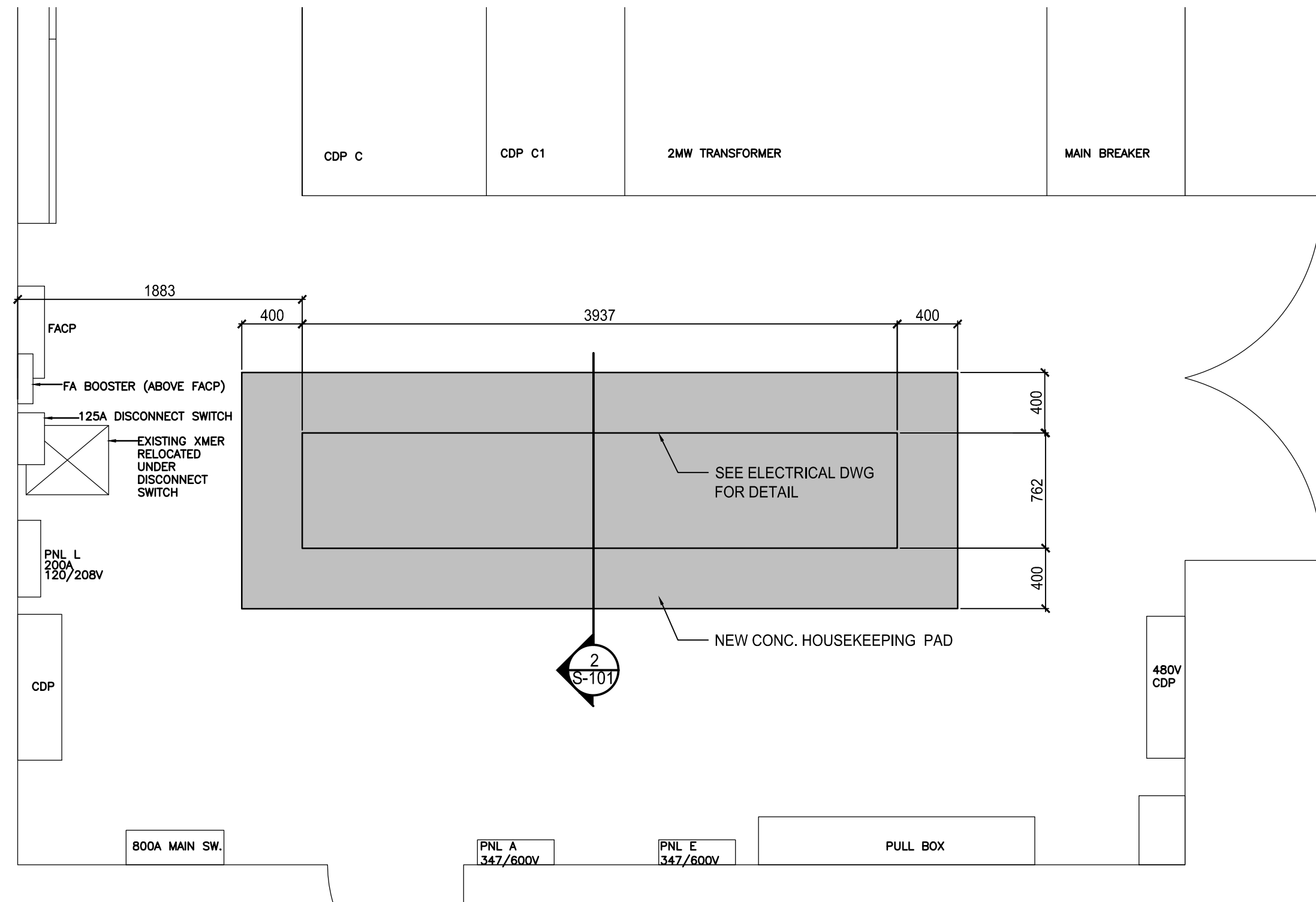
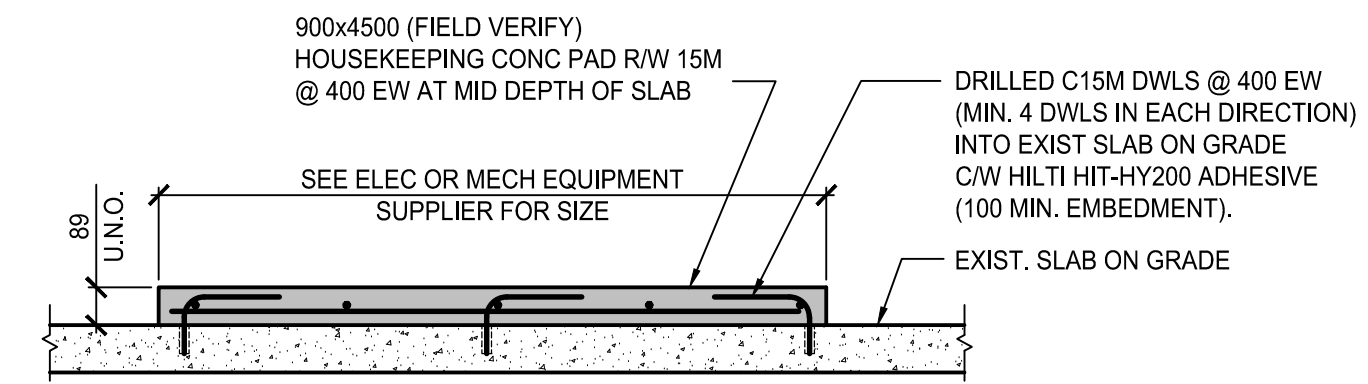
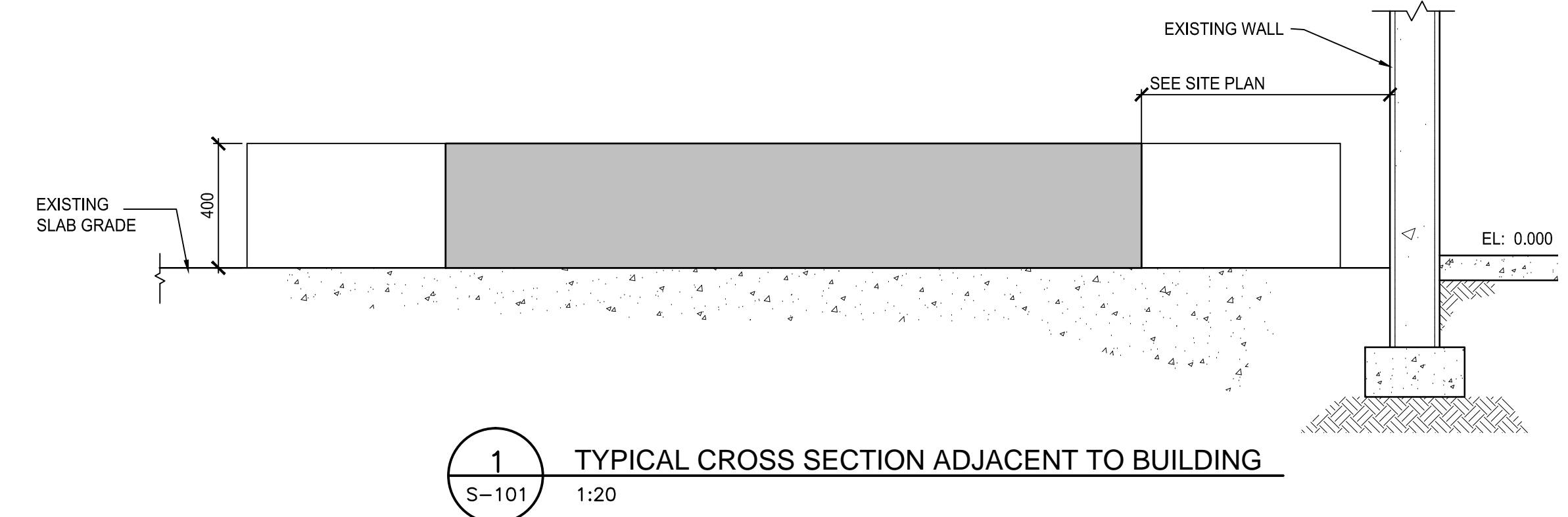
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PLANS AND DETAILS

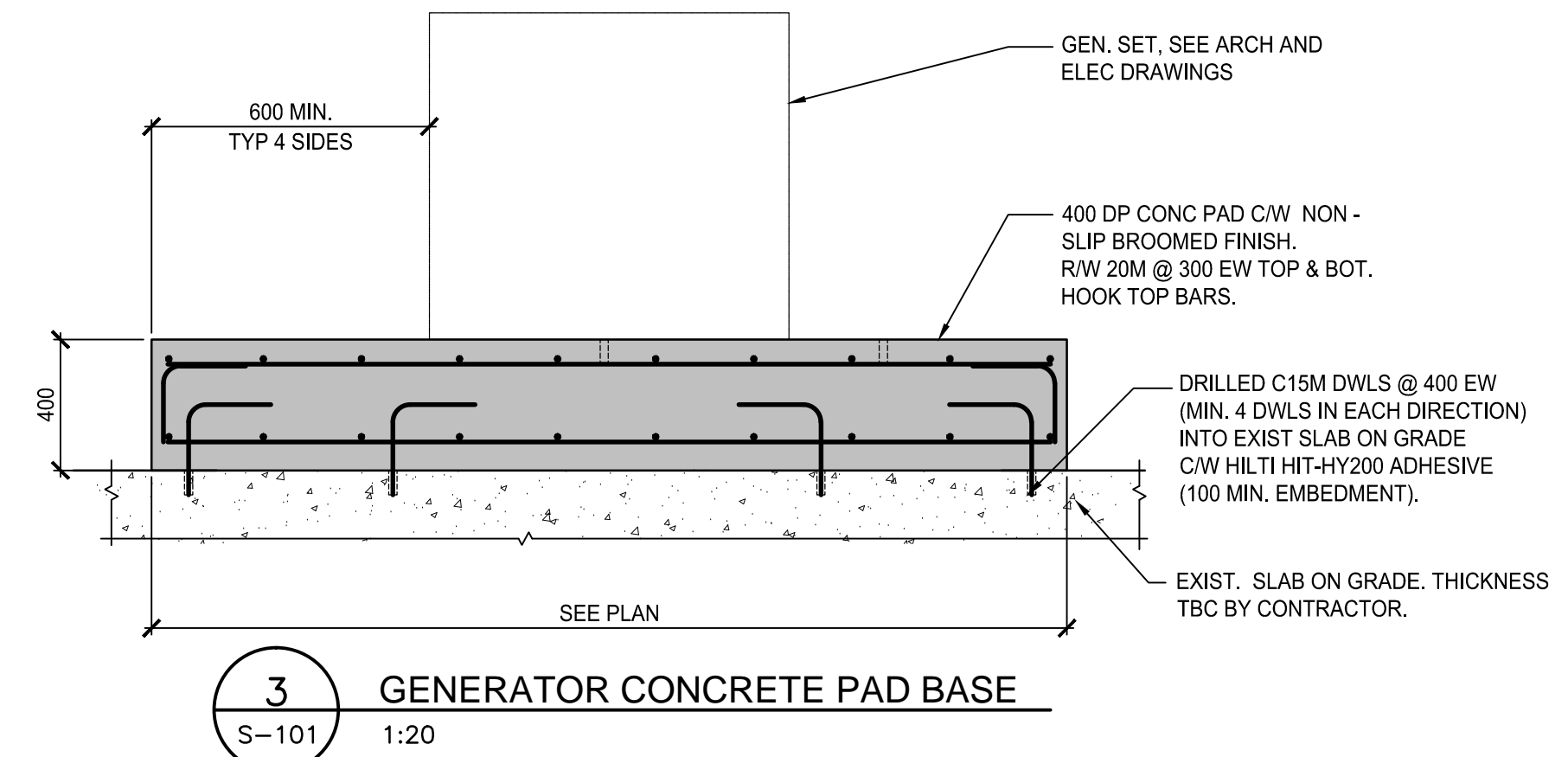
Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
115616059	S-101 OF 2	2



**A** GROUND FLOOR PLAN — GENSET PAD LOCATION  
1:100 SEE DRAWING S-100 FOR GENERAL NOTES.



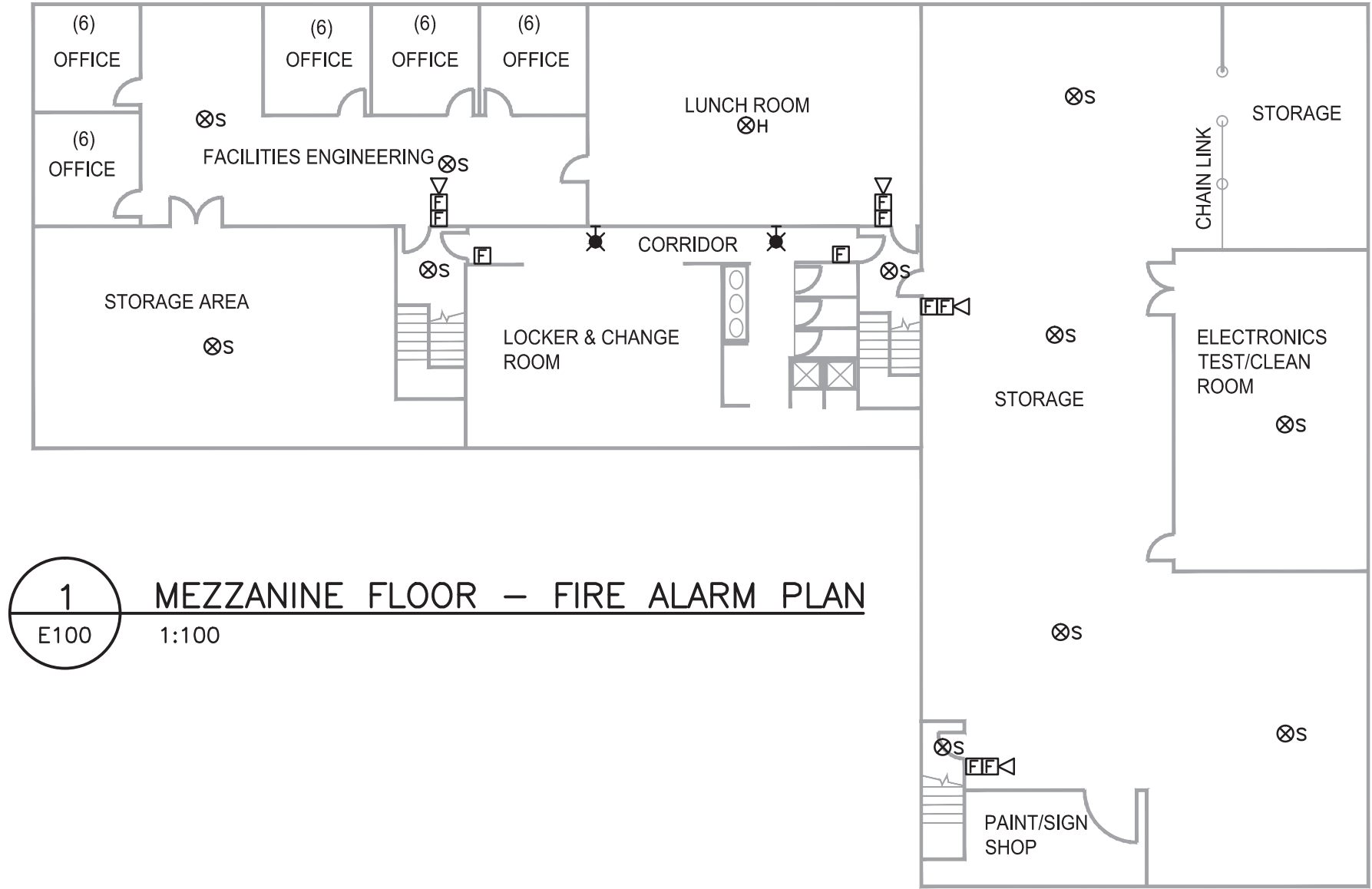
**B** ELECTRICAL ROOM PAD LOCATION  
1:30 SEE ELECTRICAL DRAWINGS FOR BUILDING LOCATION



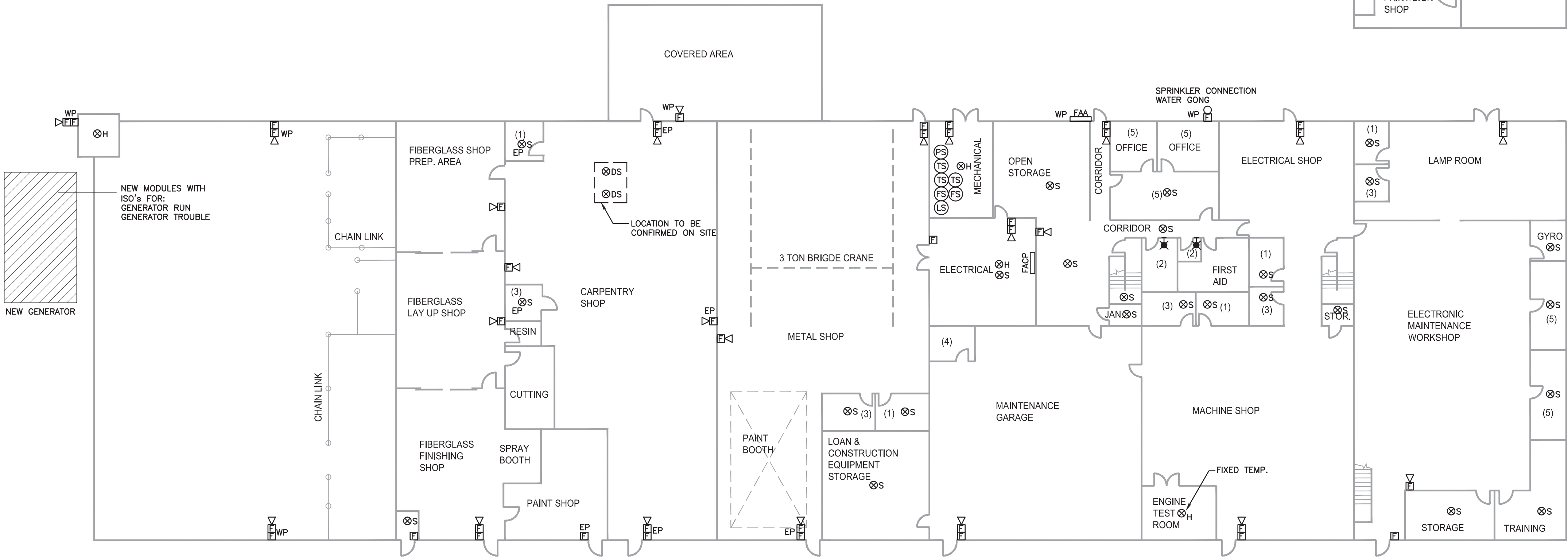
FIRE ALARM SYMBOLS	
	FIRE ALARM MANUAL STATION
	FIRE ALARM BELL
	FIRE ALARM BELL c/w STROBE
	CEILING MOUNTED FIRE ALARM HORN SPEAKER
	WALL MOUNTED FIRE ALARM HORN SPEAKER
	CEILING MOUNTED FIRE ALARM HORN SPEAKER c/w STROBE
	WALL MOUNTED FIRE ALARM HORN SPEAKER c/w STROBE
	CEILING REMOTE EVACUATION STROBE
	WALL MOUNTED REMOTE EVACUATION STROBE
	CEILING MOUNTED FIRE ALARM SPEAKER
	WALL MOUNTED FIRE ALARM SPEAKER
	CEILING MOUNTED FIRE ALARM SPEAKER c/w STROBE
	WALL MOUNTED FIRE ALARM SPEAKER c/w STROBE
	FIRE ALARM PIEZO SOUNDER
	FIRE ALARM PIEZO SOUNDER c/w STROBE
	FIRE ALARM ELECTRONIC HORN/SOUNDER
	FIRE ALARM ELECTRONIC HORN/SOUNDER c/w STROBE
	CARBON MONOXIDE ALARM
	FIRE ALARM HEAT DETECTOR (RATE OF RISE UNLESS OTHERWISE INDICATED)
	FIRE ALARM SMOKE DETECTOR
	FIRE ALARM SMOKE DETECTOR, DUCT MOUNTED
	SMOKE ALARM
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM CONTROL PANEL
	CENTRAL ALARM & CONTROL FACILITY
	EMERGENCY TELEPHONE
	FIRE ALARM MAGNETIC DOOR HOLD OPEN DEVICE
	FIRE ALARM CONNECTION TO PRESSURE SWITCH
	FIRE ALARM CONNECTION TO FLOW SWITCH
	FIRE ALARM CONNECTION TO TAMPER SWITCH
	FIRE ALARM CONNECTION TO LEVEL SWITCH
	END OF LINE RESISTOR
	FIRE ALARM CONTROL MODULE
	FIRE ALARM MONITOR MODULE
	FIRE ALARM FAULT ISOLATION MODULE
	FIRE ALARM RELAY
	WEATHERPROOF
	EXPLOSION PROOF

DRAWING NOTES	
1.	CONTRATOR TO INSTALL THE NEW SYSTEM AS SHOWN ON THE DRAWINGS. BEFORE DE-COMMISSIONING THE EXISTING SYSTEM, WHERE THERE IS AN OVERLAP BETWEEN THE INSTALLATION AND THE DE-COMMISSIONING, PROVIDE FIRE WATCH.
2.	ALL WIRING MUST BE INSTALLED INSIDE EMT CONDUITS, SURFACE MOUNT IS ACCEPTABLE IN THE WORKSHOPS AND SERVICE ROOMS.

LEGEND:  
(1) SHOP FOREMAN  
(2) WASHROOMS  
(3) SHOP TOOLS LOCKUP  
(4) OFFICES  
(5) EQUIPMENT & SYSTEMS MAINTENANCE  
(6) FACILITIES ENGINEERING



1 MEZZANINE FLOOR – FIRE ALARM PLAN  
E100 1:100



2 MAIN FLOOR – FIRE ALARM PLAN  
E100 1:100  
0 1000 3000 5000mm  
1:100



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VICTORIA COAST GUARD BASE  
VICTORIA, B.C.

ELECTRICAL SYSTEMS AND LIFE SAFETY  
REFURBISHMENT

Consultant Signature Only

Designed by/Concept par  
A.D.

Drawn by/Dessine par  
A.G.

PWGSC Project Manager/Administrateur de Projets TPSGC

RANDY BURGIN

Regional Manager, Architectural and Engineering Services  
Gestionnaire régionale, Services d'architectural et de génie, TPSGC

Drawing title/Titre du dessin

FIRE ALARM PLANS

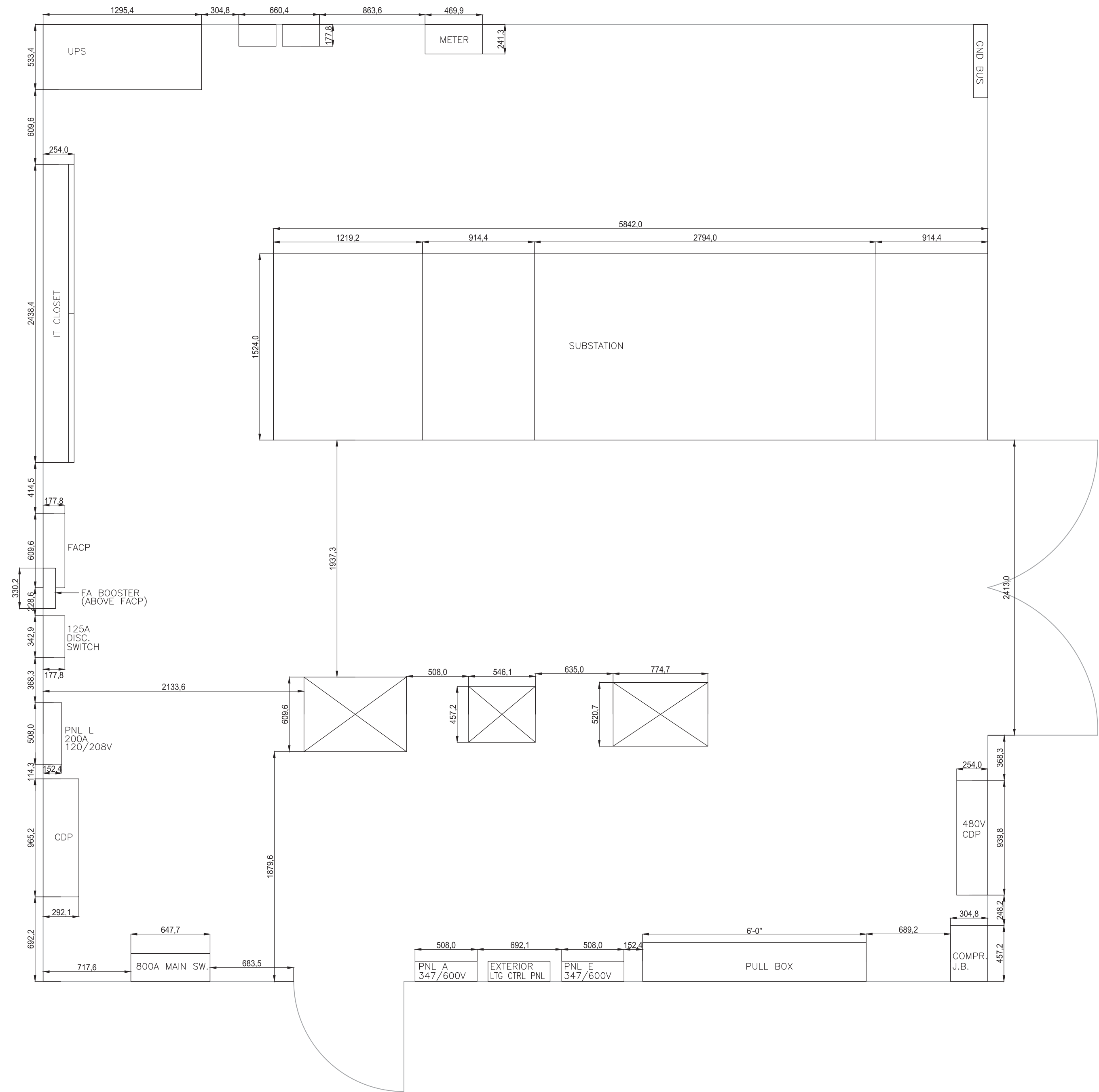
Project No./No. du projet  
F1700-150949

Sheet/Feuille  
E100  
2 OF 10

Revision no./La Révision no.  
0



- DRAWING NOTES:**
- ONLY THE GENERATOR AND AUTOMATIC TRANSFER SWITCH ARE OWNER SUPPLIED. ALL OTHER EQUIPMENT SHOWN ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS ALONG WITH INSTALLATION OF THE OWNER SUPPLIED EQUIPMENT ARE THE RESPONSIBILITY OF DIVISION 26. PROVIDE ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATIONAL SYSTEM.
  - ALLOW FOR OWNER SUPPLIED EQUIPMENT OFF LOADING IN THE BID PRICE.
  - ALLOW FOR ALL NECESSARY EQUIPMENT, PROGRAMMING, LABOR, WIRING AND CONNECTIONS TO PROVIDE A FULLY OPERATIONAL SYSTEM.
  - DIVISION 26 TO CARRY THE COST OF THE MANUFACTURER'S REPRESENTATIVE TO RE-CERTIFY THE EXISTING SWITCHBOARD AFTER MODIFICATION.
  - ALLOW FOR EXISTING 40 FOOT SEA CAN RELOCATION IN THE EXISTING GENERATOR LOCATION IN THE BID PRICE.
  - CARRY THE COST OF SEISMIC ENGINEER TO CERTIFY ALL ELECTRICAL INSTALLATIONS AND GENERATOR BOLT DOWN. CARRY THE COST OF FIRE ALARM VERIFICATION AND WITNESSING AS PER SCENARIO 1 IN ULC S537 IN THE BID PRICE.
  - PROVIDE FIRE WATCH FOR THE BUILDING AFTER DISABLING THE EXISTING FIRE ALARM SYSTEM.
  - DIMENSIONS SHOWN ARE AS INDICATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND ARRANGEMENT ON SITE.
  - COORDINATE ALL SHUT DOWN AND INSTALLATIONS WITH BC HYDRO AND THE OWNER. PROVIDE MINIMUM 2 WEEKS NOTICE PRIOR TO ANY POWER INTERRUPTION.



**1**  
E400  
ELECTRICAL ROOM EXISTING EQUIPMENT  
1:25  
0 250 750 1250mm  
1:25



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4		
3	RE-ISSUED FOR TENDER	2016/02/05
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0	ISSUED FOR 33% REVIEW	2016/01/16
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**DEPARTMENT OF  
FISHERIES AND  
OCEANS CANADA**

**9860 WEST SAANICH ROAD  
SIDNEY, B.C.**

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**ELECTRICAL SYSTEMS AND  
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PWGSC Project Manager/Administrateur de Projets TPSCG

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**ELECTRICAL ROOM  
EXISTING EQUIPMENT PLAN**

Project No./No. du  
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**ELECTRICAL ROOM  
RENOVATION PLAN**

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projet  
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**E401**  
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La Révision  
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EXISTING CONDUITS  
TO BE REMOVED.

EXISTING 480V CDP  
TO BE REMOVED.

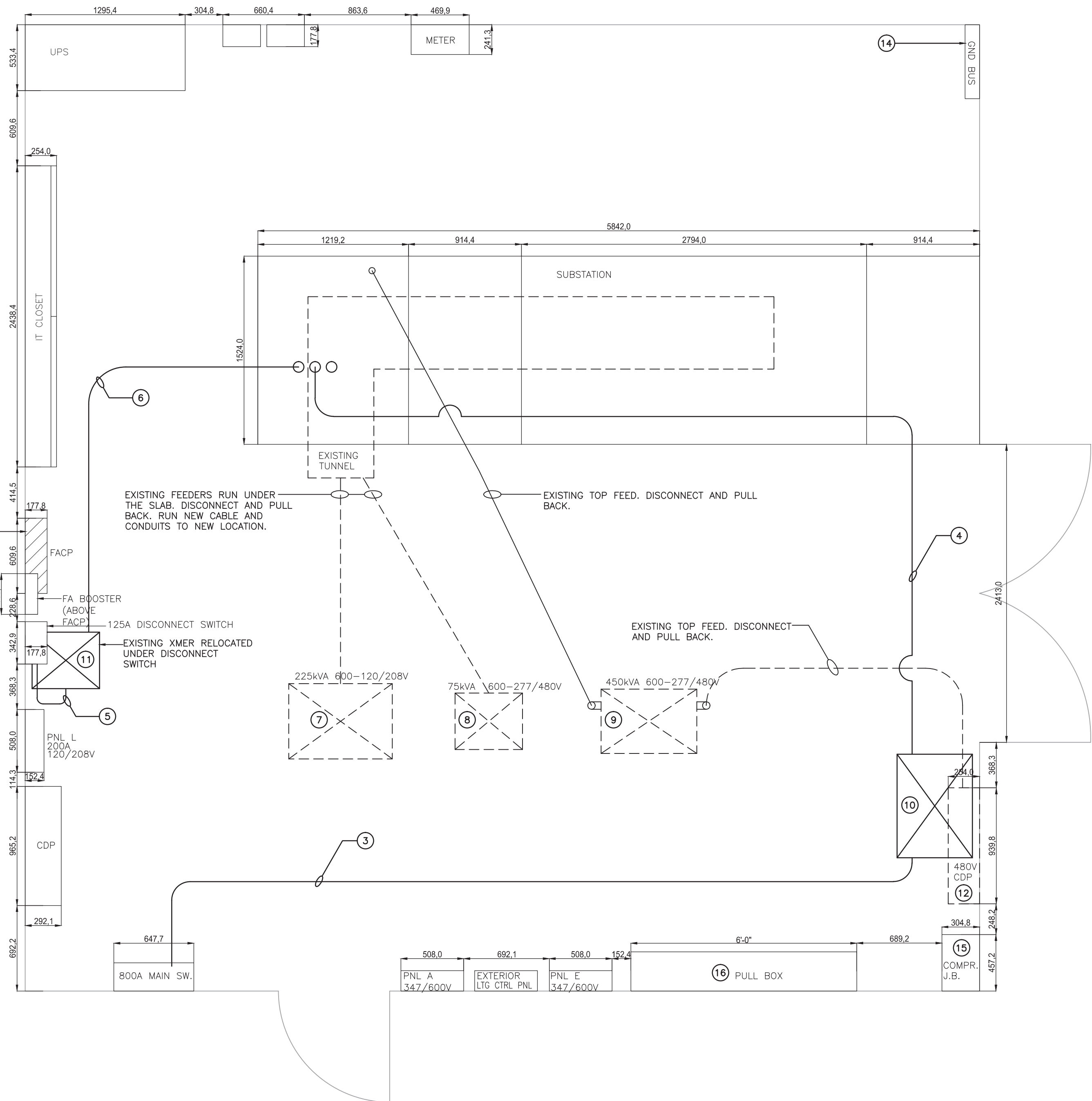
EXISTING COMPRESSOR  
JUNCTION BOX TO REMAIN.

EXISTING 450kVA  
600-277/480V XMER TO BE  
REMOVED.

EXISTING CONDUITS TO BE  
REMOVED. COIL  
DISCONNECTED CABLES  
INSIDE EXISTING PULLBOX.

EXISTING PULLBOX. LABEL  
AND COIL ALL DISCONNECTED  
CABLES INSIDE. PROVIDE  
KNOCKOUT FILLERS WHERE  
NECESSARY.

TO BE REPLACED WITH NEW PANEL. INSTALL THE  
NEW LOOP C/W ANNUNCIATOR CIRCUITS. AND  
THEN SWAP THE PANELS TO MINIMIZE THE  
SHUTDOWN TIME. PROVIDE FIRE WATCH FOR THE  
PERIOD WHEN THE BUILDING IS NOT PROTECTED  
WITH A FIRE ALARM SYSTEM.



#### DRAWING NOTES

- N/A
- N/A
- SECONDARY 2X[4C-600MCM Cu + 2/0 GREEN INSULATED GROUND] + BOND
- PRIMARY 4C-350MCM Cu + 1/0 GREEN INSULATED GROUND + BOND
- SECONDARY 4C #2 AWG Cu + #6 BOND
- PRIMARY 4C #3 AWG Cu + #6 GREEN INSULATED GROUND + BOND
- EXISTING LOCATION OF 225kVA 600-120/208V TRANSFORMER. TO BE RELOCATED. REFER TO KEYNOTE 10.
- EXISTING LOCATION OF 75kVA 600-277/480V TRANSFORMER. TO BE RELOCATED. REFER TO KEYNOTE 11.
- EXISTING LOCATION OF 450kVA 600-277/480V TRANSFORMER. TO BE REMOVED.
- NEW LOCATION OF 225kVA 600-120/208V TRANSFORMER.
- NEW LOCATION OF 75kVA 600-277/480V TRANSFORMER.
- EXISTING 480V CDP TO BE REMOVED.
- N/A
- BUILDING GROUND BUS.
- EXISTING COMPRESSOR JUNCTION BOX TO REMAIN.
- EXISTING PULLBOX TO REMAIN.

#### 1 ELECTRICAL ROOM RENOVATION PLAN

E401

1:25







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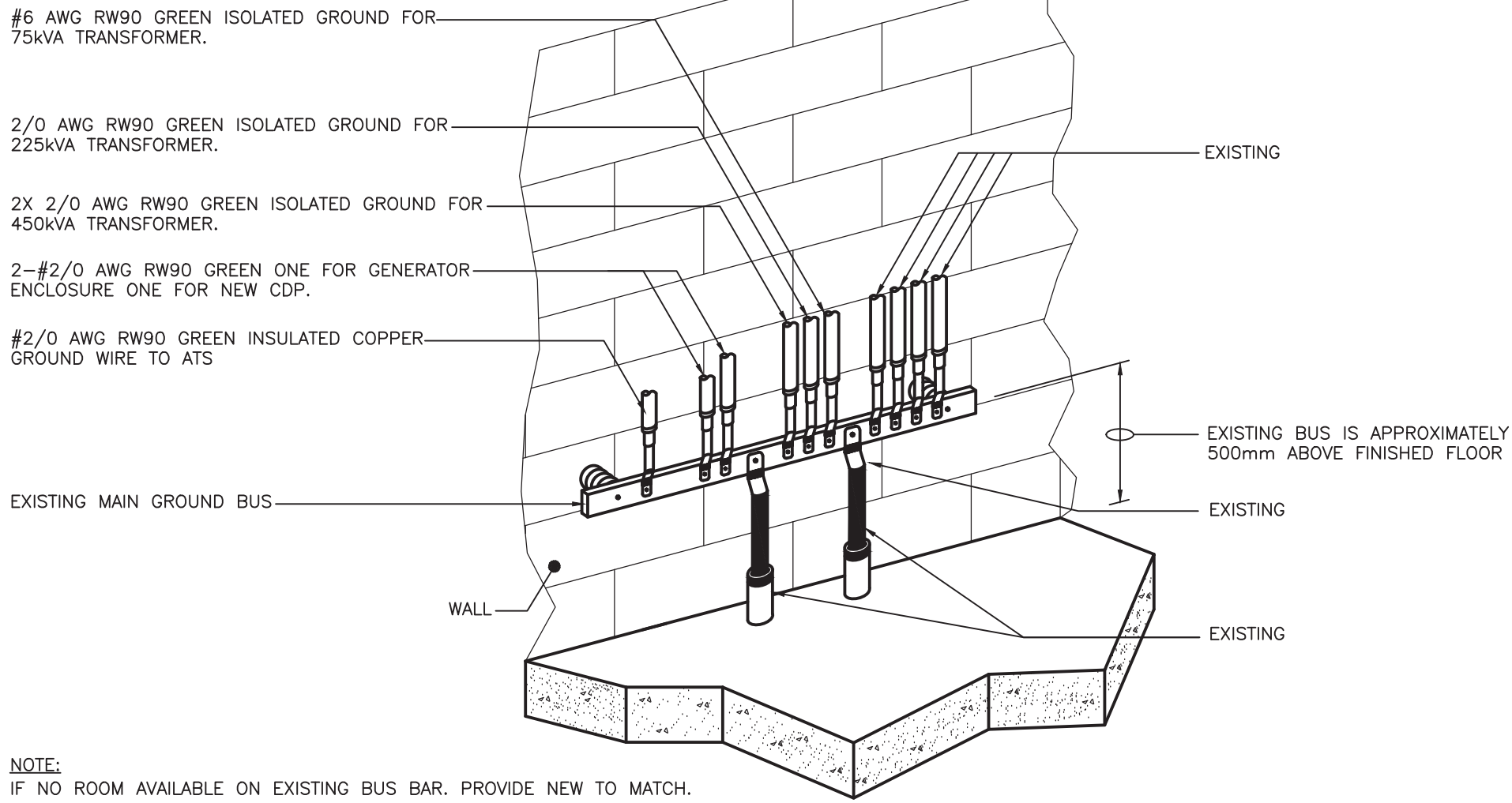
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ELECTRICAL ROOM  
NEW EQUIPMENT PLAN

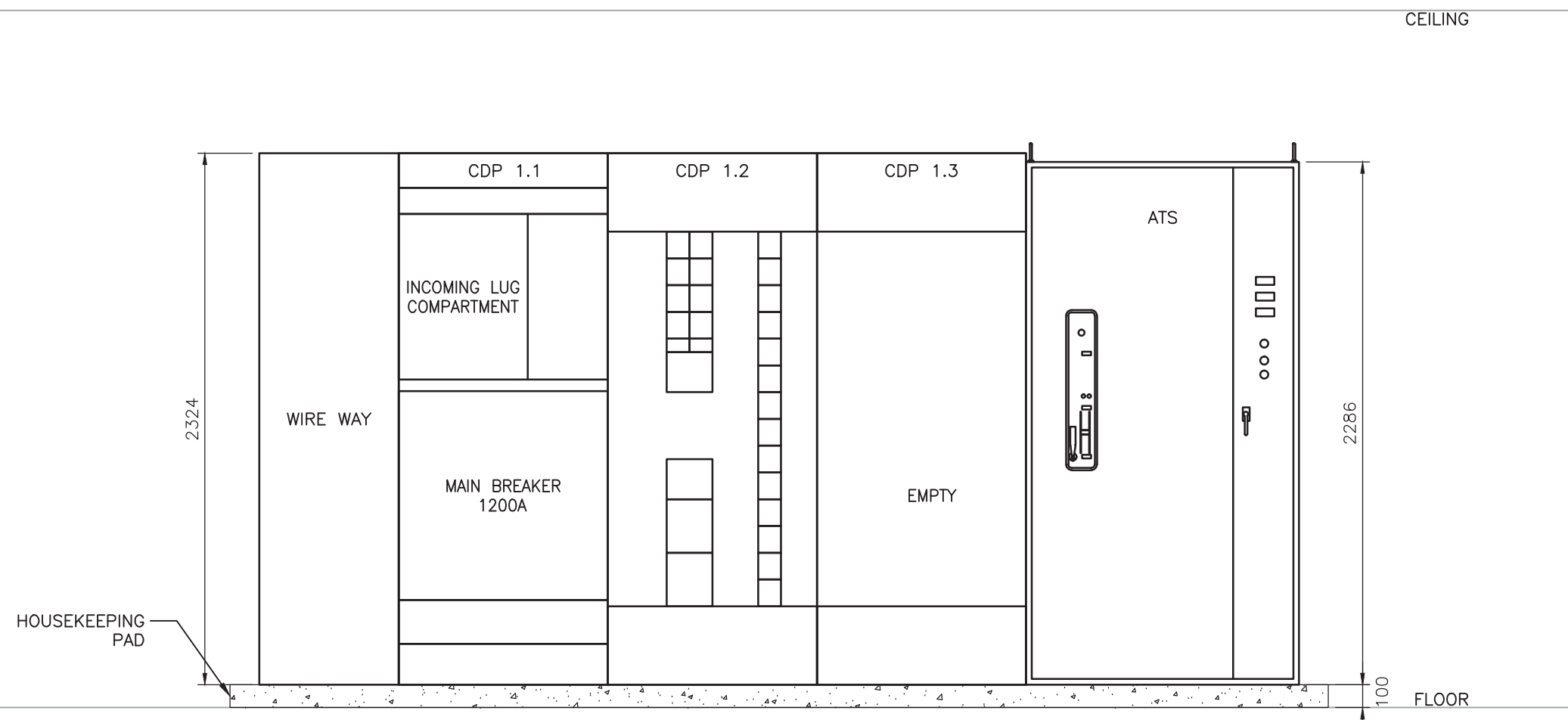
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E402  
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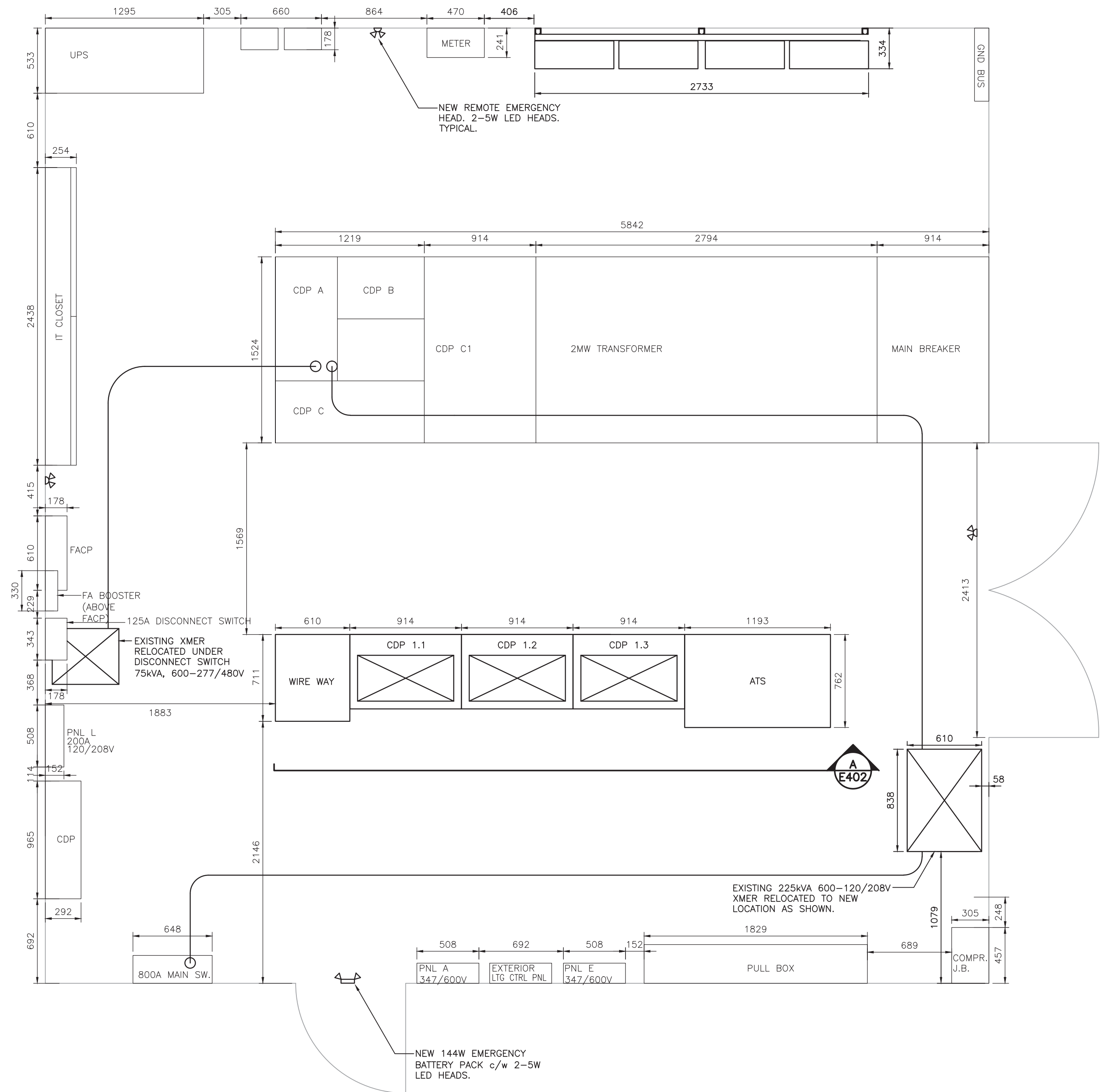
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La Révision  
no.  
0



2 GROUND BUS DETAIL  
E402 NTS



A ELECTRICAL ROOM NEW EQUIPMENT ELEVATION  
E402 1:25  
0 250 750 1250mm  
1:25



1 ELECTRICAL ROOM NEW EQUIPMENT LAYOUT  
E402 1:25  
0 250 750 1250mm  
1:25





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FIRE ALARM DETAILS

Project No./No. du  
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Sheet/ Feuille

E500

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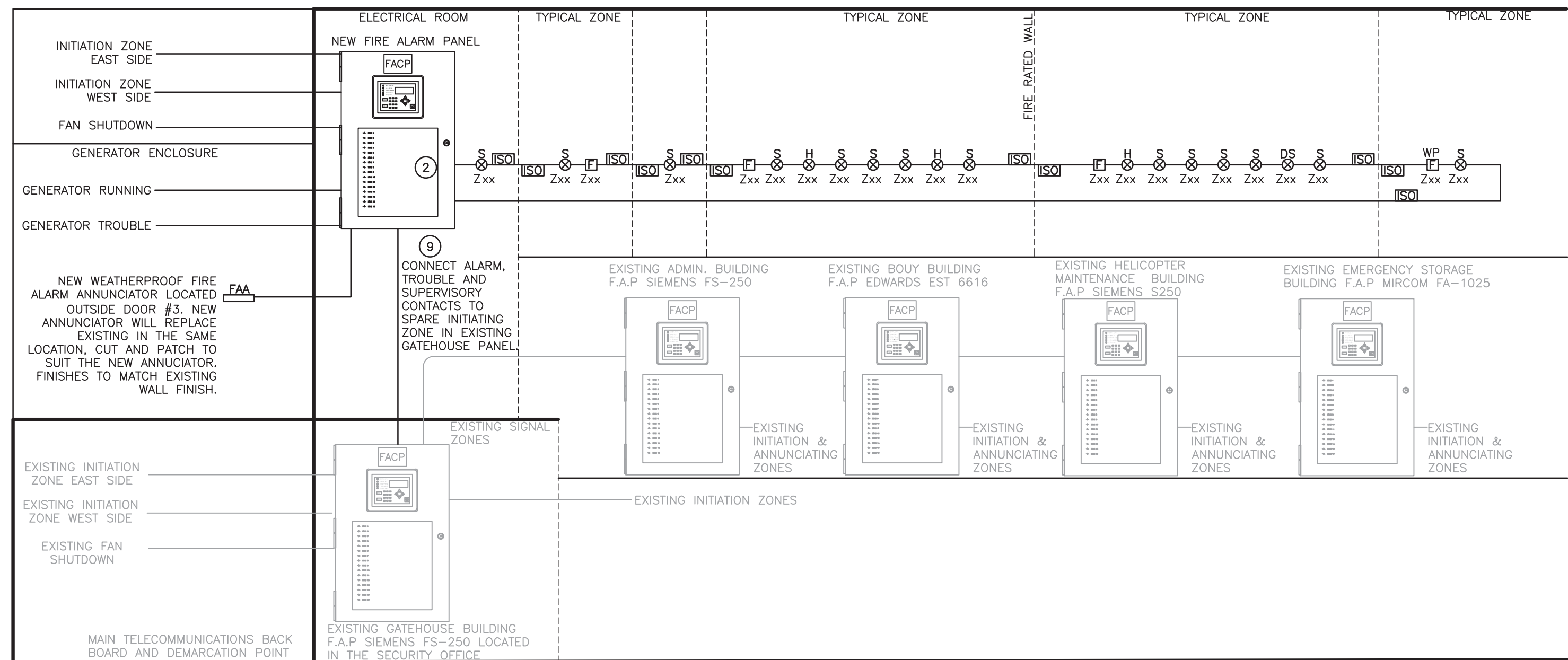
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FIRE ALARM NOTES:

1. EXISTING FIRE ALARM ARRANGEMENT TO BE CONFIRMED, FIRE ALARM RISER SHOWN AS EXAMPLE ONLY. NEW PANEL TO BE COMPATIBLE WITH EXISTING SYSTEM FOR MONITORING BY THE EXISTING SIEMENS FS-250 PANEL LOCATED IN THE GATEHOUSE (NEW PANEL TO REPORT ALARM, SUPERVISORY, TROUBLE).
2. PROVIDE LABELING FOR ALL THE NEW EQUIPMENT, NEW LABELS TO READ MODULE #, ZONE #, DEVICE #. TYPICAL FOR ALL NEW DEVICES.
3. USE WEATHERPROOF ENCLOSURES, HORN/STROBE AND PULL STATION FOR ALL DEVICES LOCATED OUTSIDE THE BUILDING.
4. FIRE ALARM SYSTEM SHALL BE A FULLY ADDRESSABLE CLASS A, SINGLE STAGE SYSTEM. EVERY ZONE INDICATED ON FIRE ALARM SCHEDULE IS TO BE INSTALLED WITH ISOLATION MODULES SUCH THAT NOT MORE THAN ONE ZONE CAN BE DISABLED BY A SINGLE WIRING FAULT.
5. CONTRACTOR TO SUPPLY ALL MONITORING MODULES FOR AUXILIARY TROUBLE CONTACTS AS REQUIRED.
6. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.
7. ALL FIRE ALARM WIRING TO CONFORM TO THE CLASS A STANDARD. PROVIDE DEDICATED SURGE PROTECTION ON CIRCUIT WHERE REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
8. CONNECT ALARM, TROUBLE AND SUPERVISORY CONTACTS TO SPARE INITIATING ZONE IN EXISTING GATEHOUSE PANEL. USE EXISTING CONDUITS/WIRING WHERE POSSIBLE. PROVIDE NEW AUTODIALER WHERE REQUIRED.

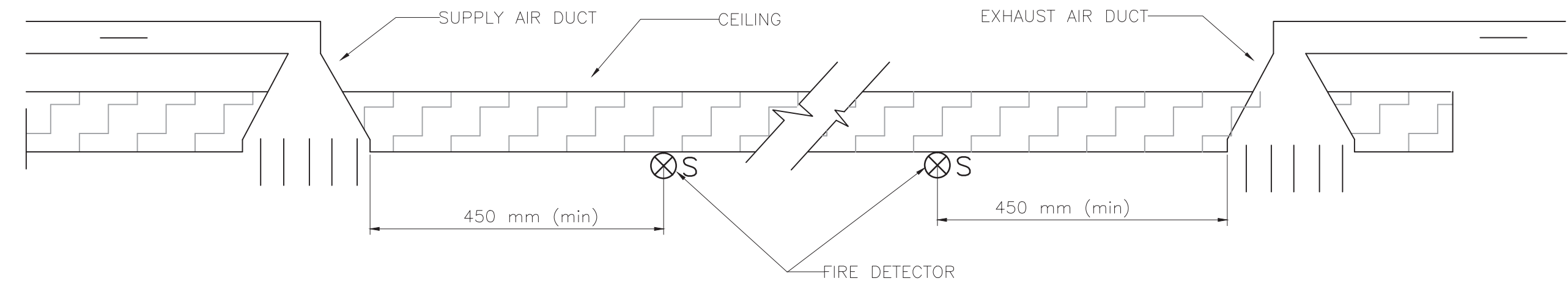
SIGNAL ZONES			FIRE ALARM SCHEDULE		
ZONE	DESCRIPTION	ALARM TYPE	ZONE	DESCRIPTION	ALARM TYPE
SZ1	EAST SIDE ZONE	AUDIO/VISUAL	Z1	ELECTRICAL ROOM – ZONE 1	ALARM
SZ2	WEST SIDE ZONE	AUDIO/VISUAL	Z2	BUILDING AREAS – ZONE 2	ALARM
			Z3	BUILDING AREAS – ZONE 3	ALARM
			Z4	BUILDING AREAS – ZONE 4	ALARM
			Z5	BUILDING AREAS – ZONE 5	ALARM
			Z6	BUILDING AREAS – ZONE 6	ALARM
			Z7	BUILDING AREAS – ZONE 7	ALARM
			Z8	BUILDING AREAS – ZONE 8	ALARM
			Z9	BUILDING AREAS – ZONE 9	ALARM
			Z10	BUILDING AREAS – ZONE 10	ALARM
			Z11	BUILDING AREAS – ZONE 11	ALARM
			Z12	BUILDING AREAS – ZONE 12	ALARM
			Z13	AIR HANDLING UNIT 1 – ZONE 13	ALARM
			Z14	GENERATOR RUNNING – ZONE 14	SUPERVISORY: NON-LATCHING
			Z15	GENERATOR TROUBLE – ZONE 15	SUPERVISORY: NON-LATCHING
			Z16	GENERAL: SUPERVISORY TROUBLE – ZONE 16	SUPERVISORY
			Z17-19	TAMPER SWITCHES	SUPERVISORY
			Z20	PRESSURE SWITCH	SUPERVISORY
			Z21-22	FLOW SWITCHES	ALARM
			Z23	WATER LEVEL LOW	SUPERVISORY
			Z24-Z32	SPARE	

PROVIDE LAMACOID LABEL  
FOR PULL STATIONS AND  
EQUIPMENT OUTSIDE THE  
BUILDING



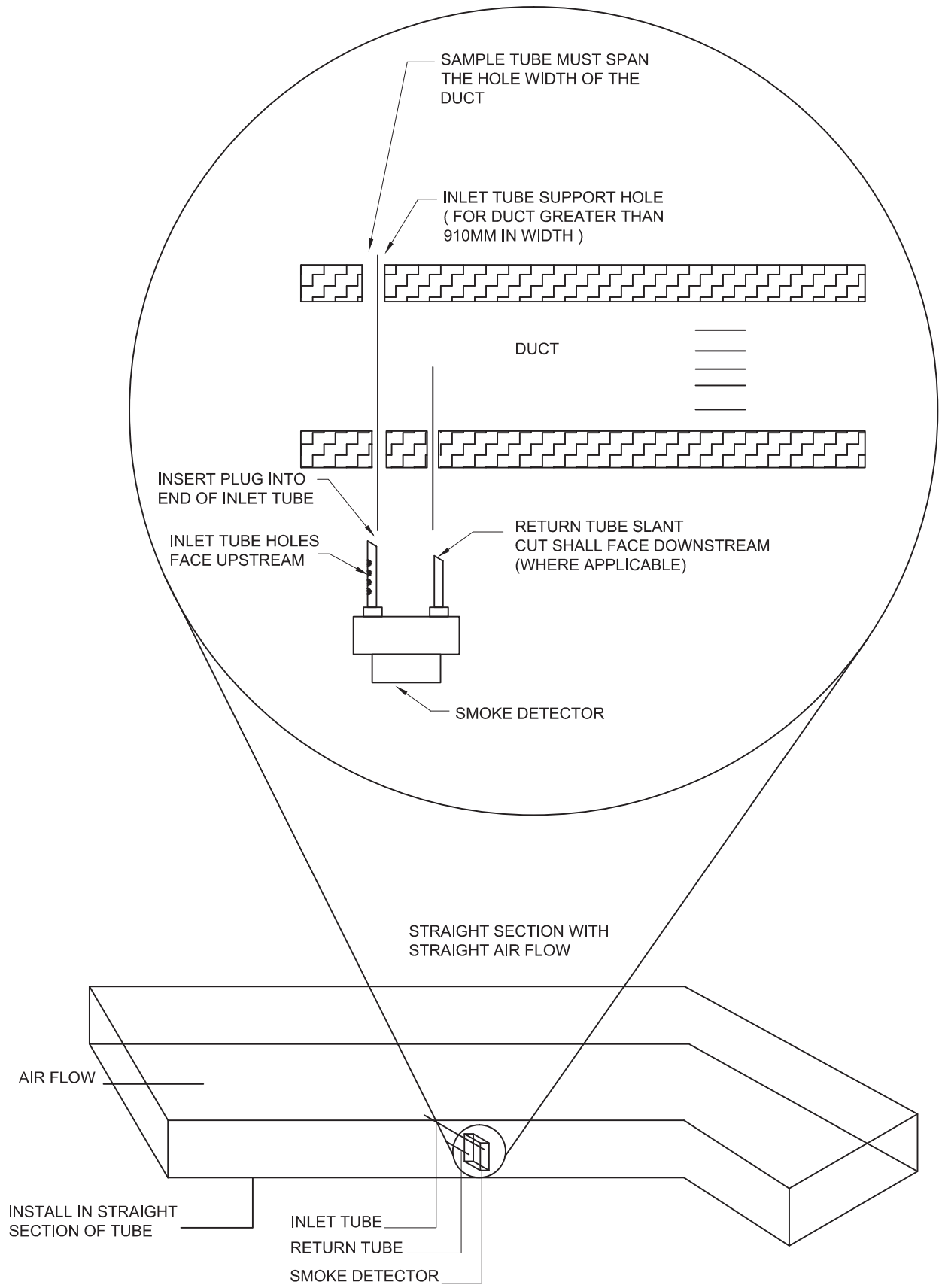
1 FIRE ALARM RISER DIAGRAM

E500 NTS



3 TYPICAL SMOKE DUCT DETECTOR INSTALLATION

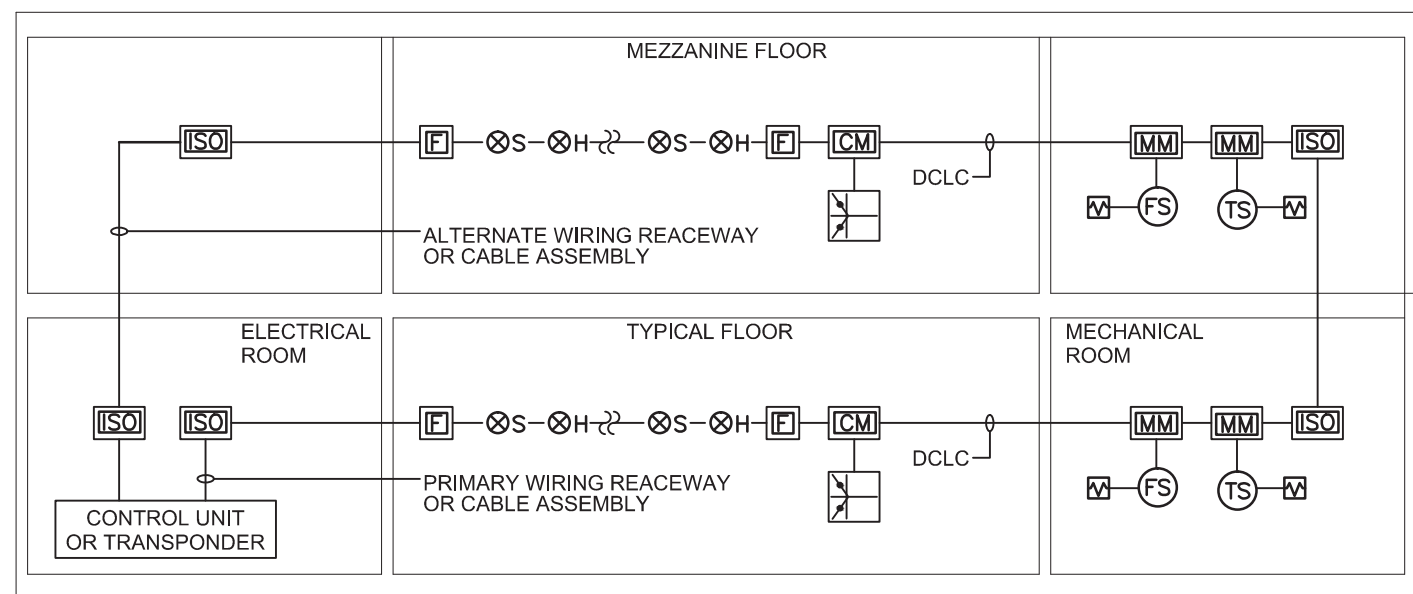
E500 NTS



NOTE:  
DO NOT INSERT PLUG IN THE RETURN/EXHAUST TUBE

2 TYPICAL SMOKE DUCT DETECTOR INSTALLATION

E500 NTS



LEGEND:

CM	ADDRESSABLE CONTROL DEVICE	EX	EXHAUST DAMPER	HS	ADDRESSABLE HEAT DETECTOR	ISO	ISOLATOR	FS	WATER-FLOW SWITCH
MM	ADDRESSABLE MONITOR DEVICE	SD	ADDRESSABLE SMOKE DETECTOR	MS	ADDRESSABLE MANUAL STATION	TS	TAMPER VALVE	CONT	CONTINUATION
								END	END OF LINE DEVICE

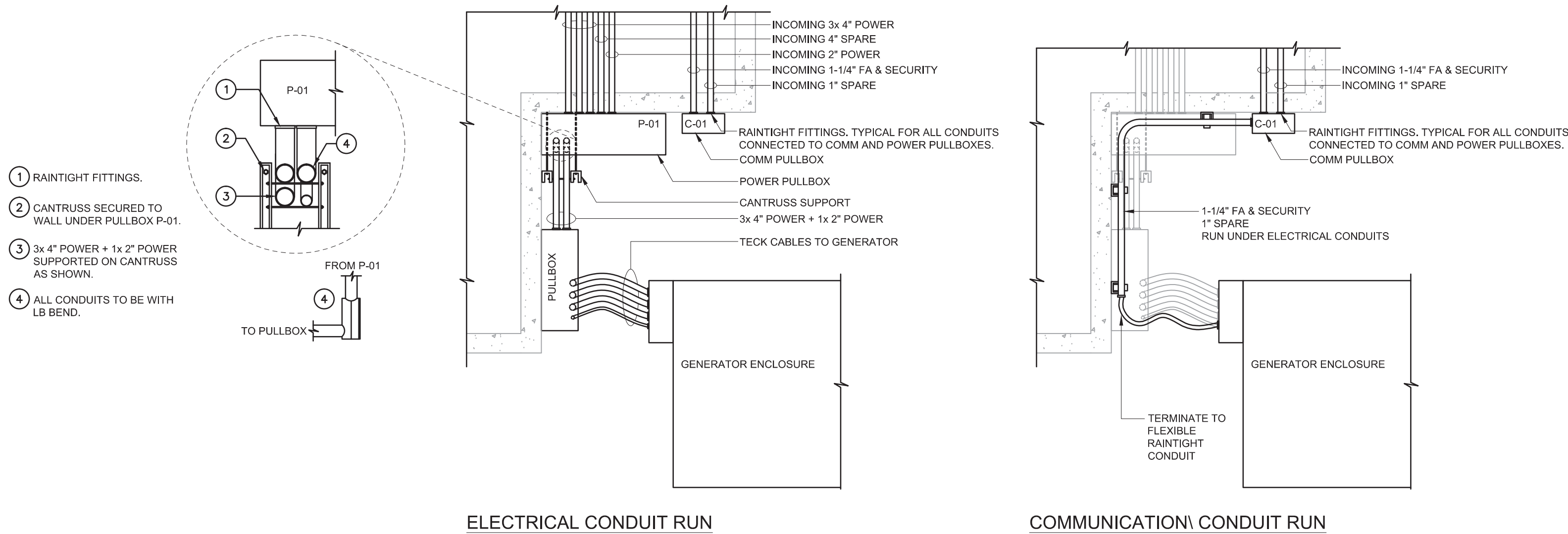
4 ACTIVE FIELD DEVICES AND SUPPORTING FIELD DEVICES  
CONNECTED TO DATA COMMUNICATION LINK STYLE C

E500 NTS

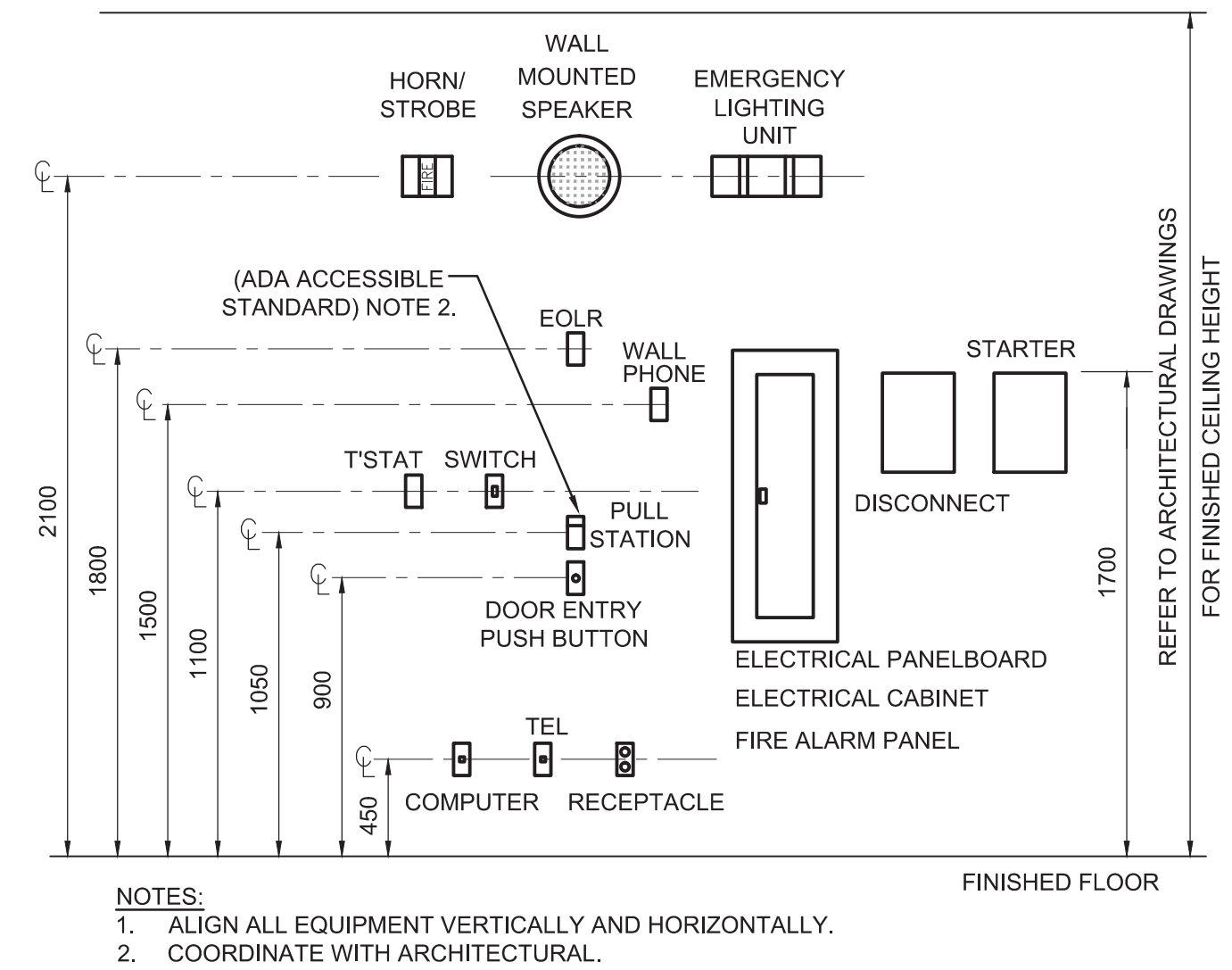




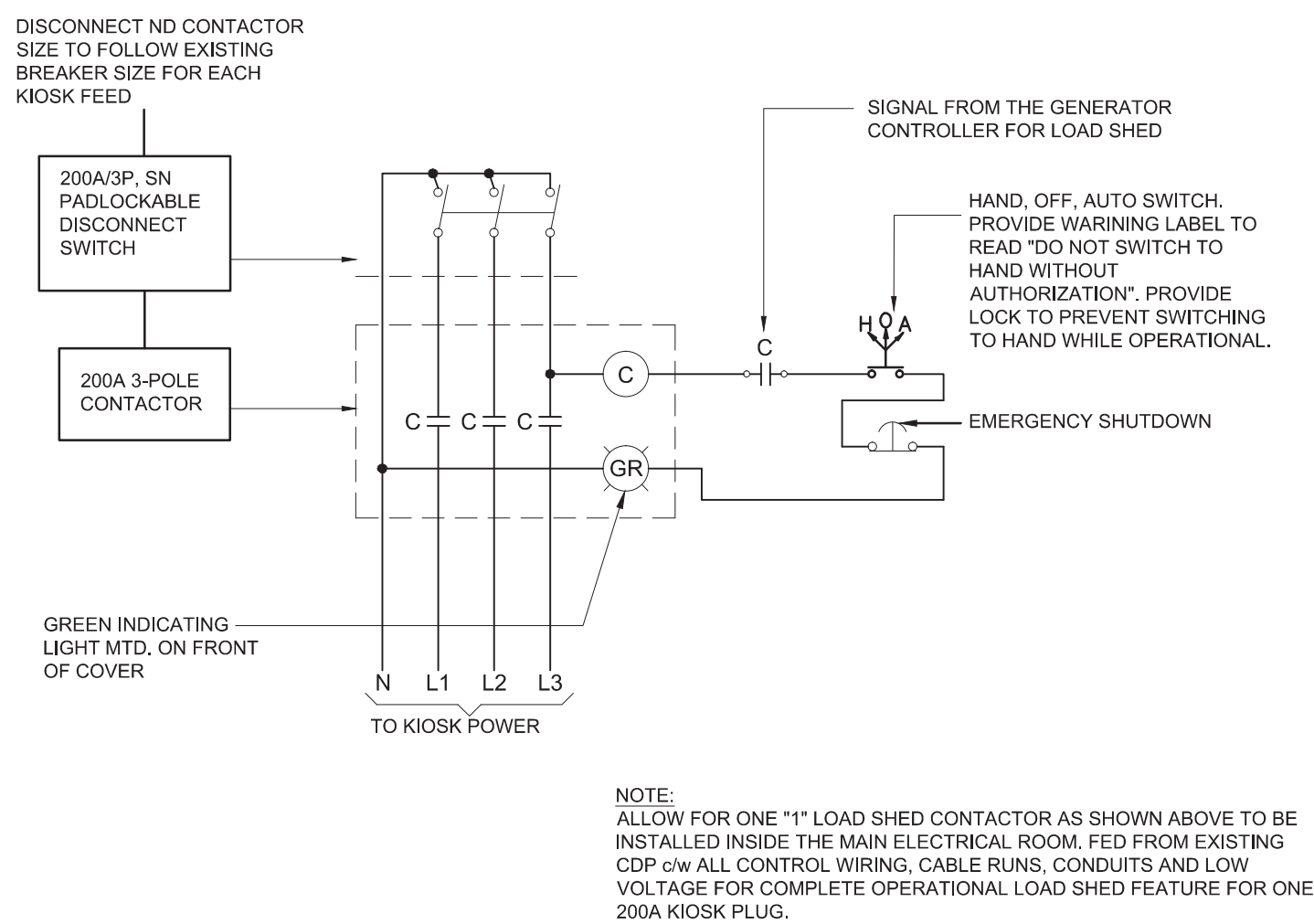
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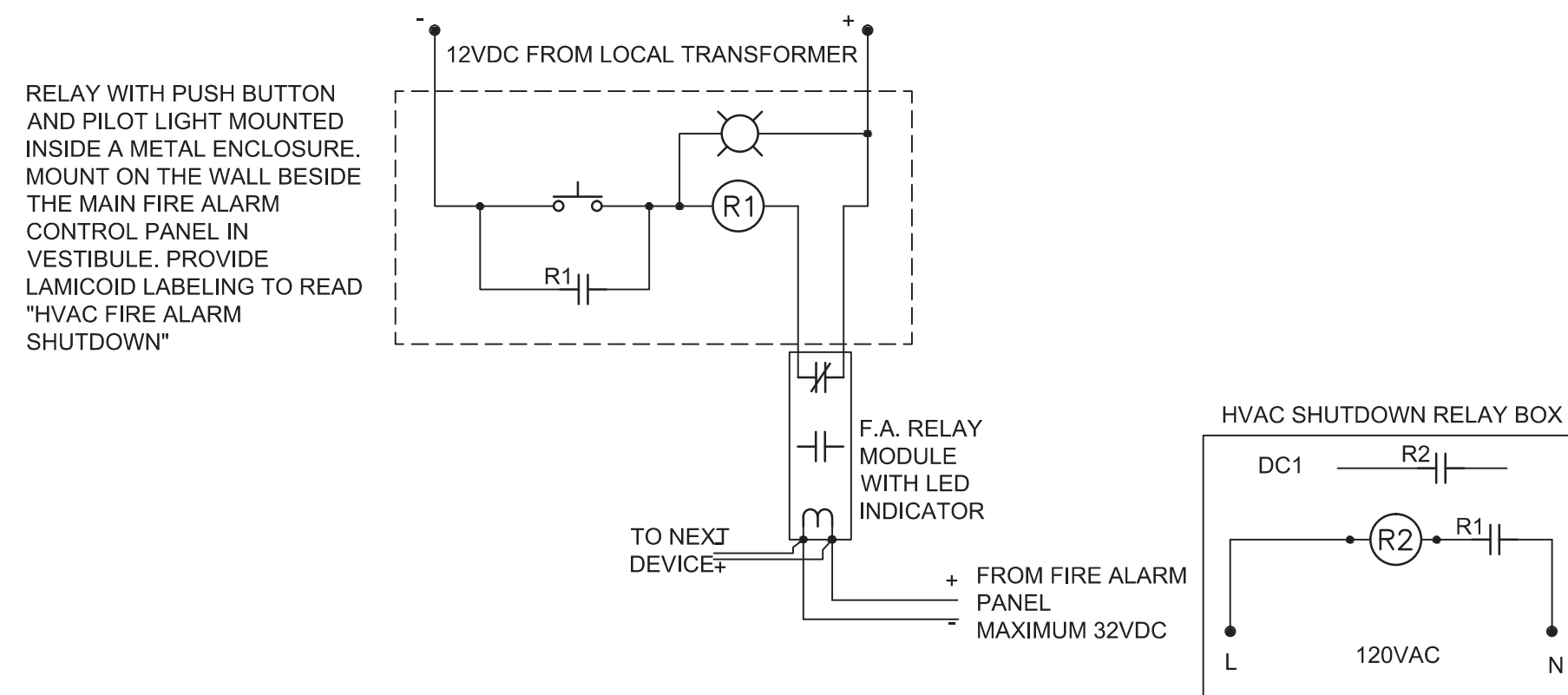
1 POWER & COMMUNICATION CONDUITS CONNECTION TO GENSET  
E501 NTS



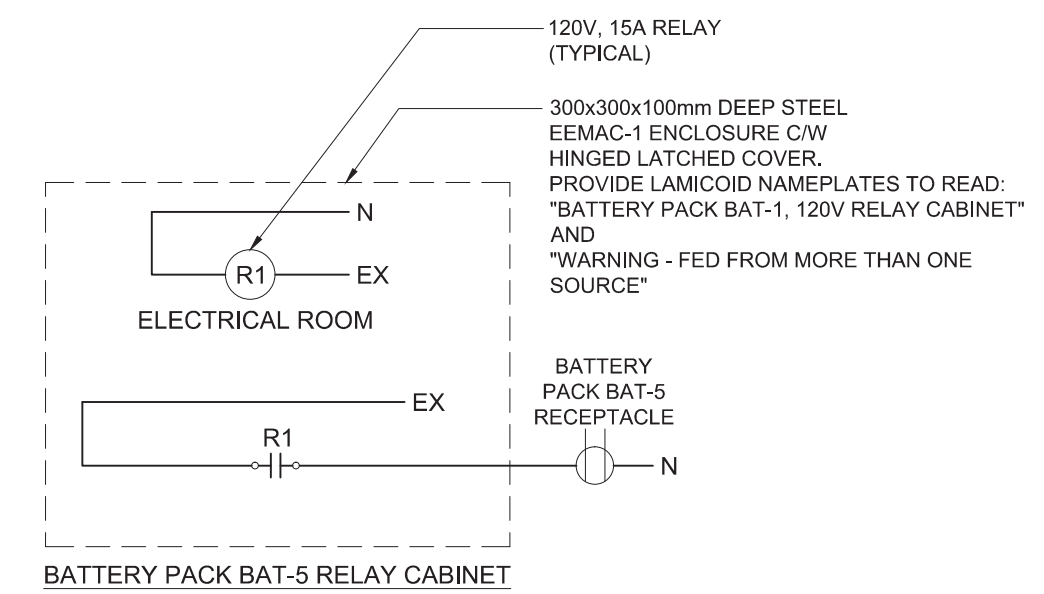
2 DEVICE MOUNTING HEIGHT DETAIL  
E501 NTS



3 KIOSK CONTACTOR CONTROL DIAGRAM  
E501 NTS



4 FIRE ALARM / HVAC SHUTDOWN SCHEMATIC  
E501 NTS



5 D.C. EMERGENCY LIGHTING BATTERY PACK  
RELAY CABINET WIRING DIAGRAMS  
E501 NTS



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**RANDY BURGIN**

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**DETAILS**

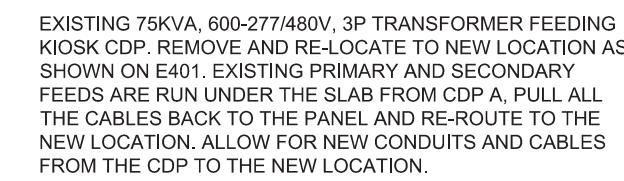
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300KVA SKID TYPE CONFIGURATION SHALL INCLUDE:  
400 AMP 16 SERIES CAMLOCK INPUT/OUTPUT WITH COLOR CODED  
SNAP COVERS TO MATCH THE VOLTAGE USED.  
RE-CONFIGURABLE 400 AMP 16 SERIES (600 VOLT OR 480 VAC)  
200A 400 AMP 16 SERIES 80% MAIN BREAKER ON THE PRIMARY SIDE  
400 AMP 3P 600 VAC 80% MAIN BREAKER ON THE 480/460 VOLT  
SECONDARY SIDE.  
400 A INTERIOR I-LINE PANEL TO DISTRIBUTE PRIMARY OR  
SECONDARY W/ 400A 3 PHASE BREAKER, 1-200A 3 PHASE  
BREAKER & 1-100A 3 PHASE BREAKER.  
ALUMINUM NEMA 3R ENCLOSURE WITH BOTTOM ACCESS TRAP  
DOOR (HARDWARE OFF ACCESS).  
HARDY DRY CO COARSE STEEL FRAME WITH FORKLIFT POCKETS  
AND LIFTING EYELETS.  
CONFIGURABLE GLAND PLATES ON BOTH SIDES OF LOAD CENTER  
ENCLOSURE W/ 400A 3 PHASE RECEPTACLE, 1-200A 3 PHASE  
RECEPTACLE & 1-100A 3 PHASE RECEPTACLE.  
NEVER FALT URETHANE CASTERS WITH LOCKS.

2	EXISTING TRANSFORMERS PHOTO
E502	NTS



PROFESSIONAL  
PROVINCE OF  
A. DAGAMSEH  
# 42698  
BRITISH COLUMBIA  
ENGINEER  
17 Feb 2016

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SINGLE LINE DIAGRAM - EXISTING

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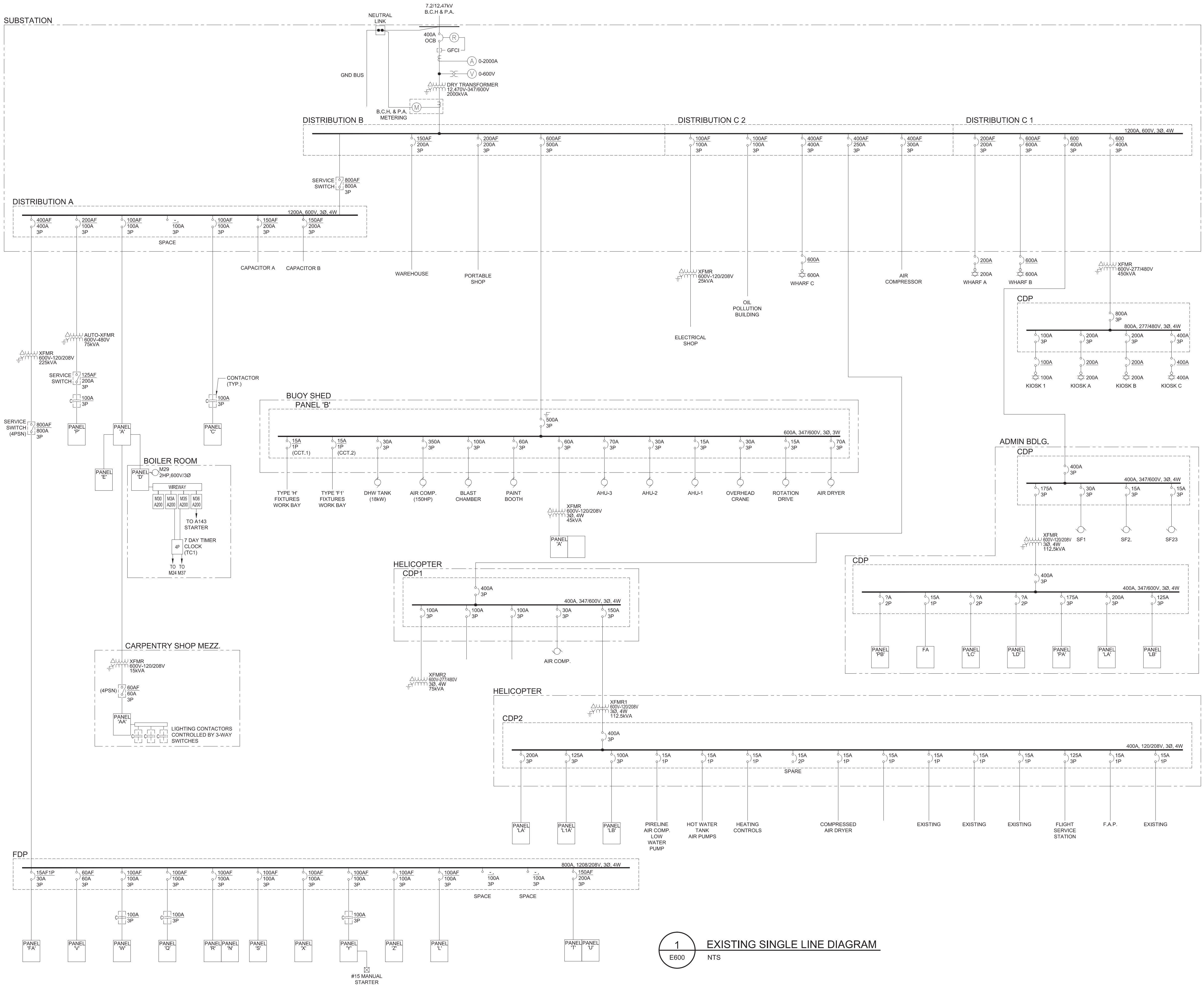
E600

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SUBSTATION



1 EXISTING SINGLE LINE DIAGRAM  
E600 NTS





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**SINGLE LINE DIAGRAM - NEW WORK**

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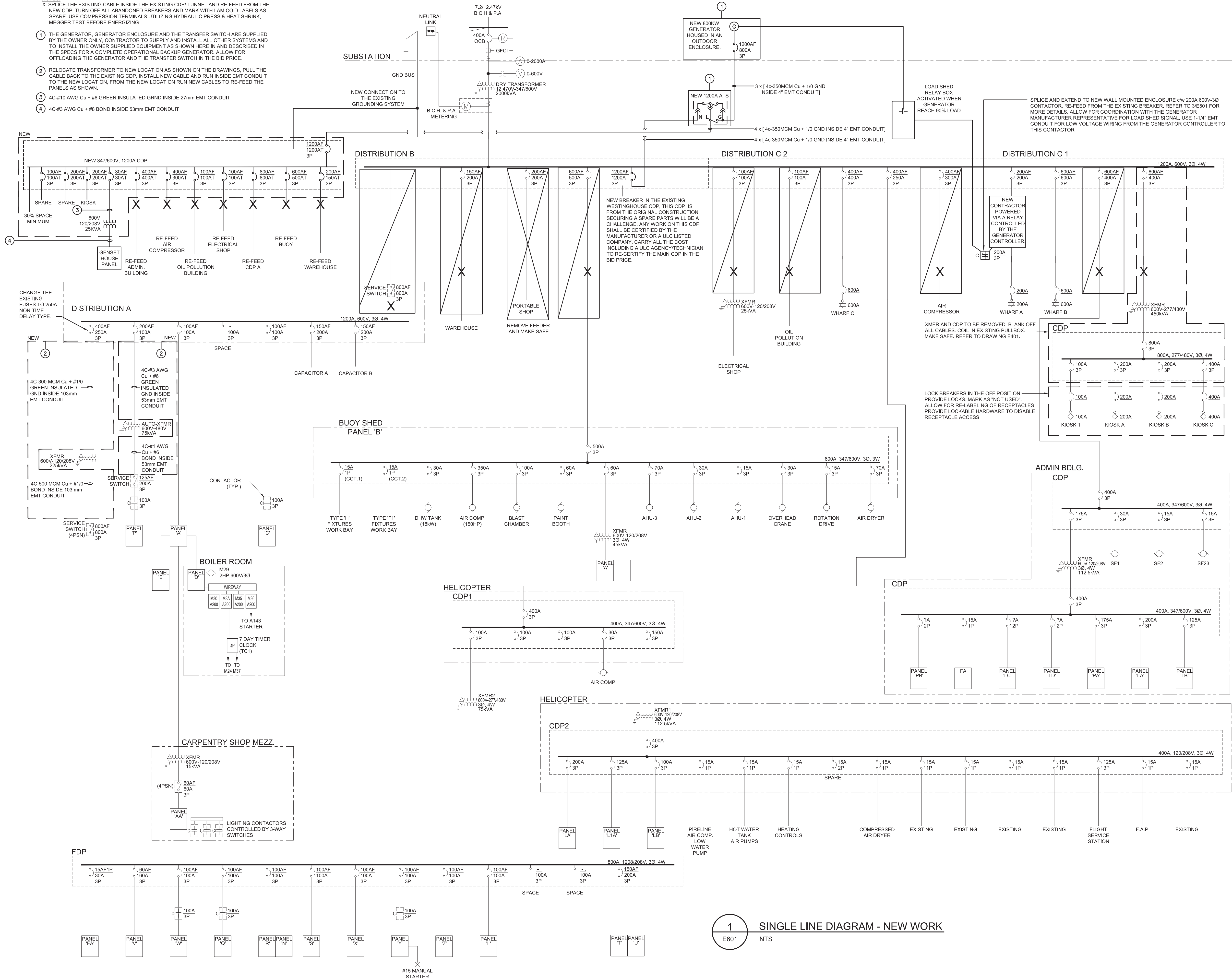
Sheet/Feuille  
**E601**  
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#### NOTES:

X: SPlice THE EXISTING CABLE INSIDE THE EXISTING CDP/TUNNEL AND RE-FEED FROM THE NEW CDP. TURN OFF ALL ABANDONED BREAKERS AND MARK WITH LAMICOID LABELS AS SPARE. USE COMPRESSION TERMINALS UTILIZING HYDRAULIC PRESS & HEAT SHRINK. MEGGER TEST BEFORE ENERGIZING.

- 1 THE GENERATOR, GENERATOR ENCLOSURE AND THE TRANSFER SWITCH ARE SUPPLIED BY THE OWNER ONLY. CONTRACTOR TO SUPPLY AND INSTALL ALL OTHER SYSTEMS AND TO INSTALL THE OWNER SUPPLIED EQUIPMENT AS SHOWN HERE IN AND DESCRIBED IN THE SPECS FOR A COMPLETE OPERATIONAL BACKUP GENERATOR. ALLOW FOR OFFLOADING THE GENERATOR AND THE TRANSFER SWITCH IN THE BID PRICE.
- 2 RELOCATE TRANSFORMER TO NEW LOCATION AS SHOWN ON THE DRAWINGS. PULL THE CABLE BACK TO THE EXISTING CDP. INSTALL NEW CABLE AND RUN INSIDE EMT CONDUIT TO THE NEW LOCATION. FROM THE NEW LOCATION RUN NEW CABLES TO RE-FEED THE PANELS AS SHOWN.
- 3 4C-#10 AWG Cu + #6 GREEN INSULATED GRND INSIDE 27mm EMT CONDUIT
- 4 4C-#3 AWG Cu + #8 BOND INSIDE 53mm EMT CONDUIT



**1**  
E601  
SINGLE LINE DIAGRAM - NEW WORK  
NTS