Office of the CAO
Purchasing

Date: Sep 16, 2024

(147 pages)

Addendum No. 3

Bid / Request for Proposal Call No. T2024-220
Construction of the Fire station

This Addendum forms part of the Bid/Proposal Document.
(Question 1-95 had already been replied in Addendum 01 and 02)

The additions, deletions, revisions and/or clarifications as hereinafter specified shall form an integral part of the bid document and shall be read in conjunction with the requirements set forth in the bid request document.

MODIFICATIONS

Revision No. 1

The following Appendices have been added:

ADD 02 – Architectural

ADD 03 – Architectural

ADD 02 – Electrical

ADD 03 – Electrical

ADD 01 – Mechanical

ADD 02 – Mechanical

ADD 02 – Structural

32 33 00 - Site Furnishings

QUESTION AND ANSWERS

Question 96:

We understand that project references are to be completed within the last (5) years. One of our past emergency facility projects was completed 7 years ago. Would it be possible to extend the range for the completion date of past projects?

Answer 96:

Refer to Addendum #2

Question 97:

Please advise if Division 7 specifications will be made available in the upcoming addendum?

Answer 97:

Division 7 was issued as part of Addendum 01.

Question 98:

I would request to arrange a site visit.

Answer 98:

Refer to Addendum #1

Question 99:

Please provide Specification Section/Division 7.

Answer 99:

Division 7 was issued as part of Addendum 01.

Question 100:

Please advise that the Brick Fence around the the Generator is a Hit & Miss Brickwork. Also, do you require solid brick and finished all faces?

Answer 100:

Refer to Addendum 01 for brick fence details.

Question 101:

Can you please clarify the lighting type & manufacturer for undercabinet lighting U1?

Answer 101:

U1 light fixture shall be ACOLYTE CHACH5-F-SV-RB-90-LINEA20-5.0-35-VW.

Question 102:

There is no spec for type U1 light fixture. Please provide.

Answer 102:

U1 light fixture shall be ACOLYTE CHACH5-F-SV-RB-90-LINEA20-5.0-35-VW.

Question 103:

On A06.01 exterior glazing elevations there seems to be items double up for some reason.

There are 31 exterior screens listed in the schedule see below. However, there are only 22 drawn on the page.

Some like SC-10 seem to be doubled up and SC 30 is not shown. The double up ones only have 1 on plans and elevations of the building so wondering what is going on here.

SC30 looks like ACM panels and is not shown anywhere with glass.

Answer 103:

Drawing A06.01 and A06.02 have been revised to clarify glazing scope.

Question 104:

Please provide reinforcement schedule for P-RCA-1, P-RCA-2 and P-TA-1

Answer 104:

Refer to issued Addendum 01.

Question 105:

Please provide specification for linear floor drains.

Answer 105:

Refer to specification section 22 42 00 section 2.3.8.2.

Question 106:

On A06.01 exterior glazing elevations there seems to be items double up for some reason.

There are 31 exterior screens listed in the schedule see below. However, there are only 22 drawn on the page.

Some like SC-10 seem to be doubled up and SC 30 is not shown. The double up ones only have 1 on plans and elevations of the building so wondering what is going on here.
SC30 looks like ACM panels and is not shown anywhere with glass.

Answer 106:

Refer to Answer 103.

Question 107:

Can you kindly extend the bid closing by another 2 weeks? Our trades are requesting so we can assemble a very competitive pricing. Thanks so much.

Answer 107:

Refer to Addendum #1 and #2

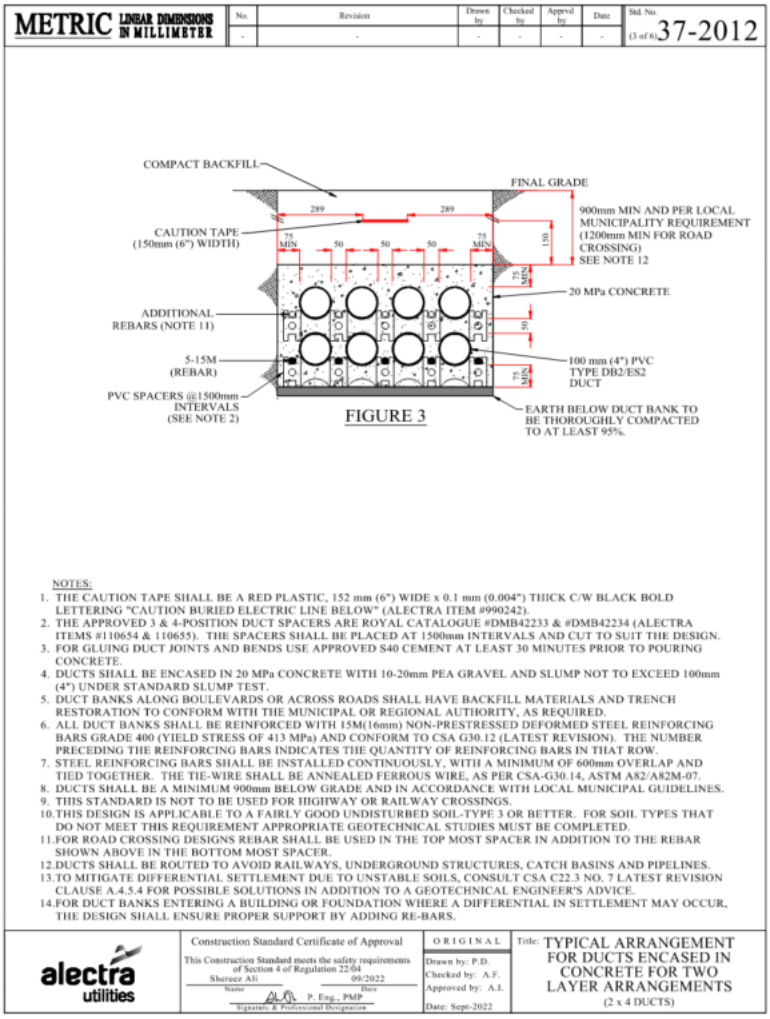
Question 108:

1. Can you please provide the Primary Duct Bank details ? Size and No. of ducts.
2. The scale mentioned in the Electrical site plan appears to be not correct. Please check and confirm.
3. Regarding EV Charging Conduits, please see below issues:
o Size and no. of conduits not clear.

o Are we required to run separate conduits for each EV station ?
o It is mentioned for EV conduits to be concrete encased. There are 10 locations. What size duct back is required?

Answer 108:

1. **Refer to Alectra Utilities Distribution Standards Manual detail 37-2012 as shown in drawings.**



METRIC LINEAR DIMENSIONS IN MILLIMETER

No.	Revision	Drawn by	Checked by	Approvd by	Date	Std. No.
-	-	-	-	-	-	(3 of 6) 37-2012

FIGURE 3

NOTES:
1. THE CAUTION TAPE SHALL BE A RED PLASTIC, 152 mm (6") WIDE x 0.1 mm (0.004") THICK C/W BLACK BOLD LETTERING "CAUTION BURIED ELECTRIC LINE BELOW" (ALECTRA ITEM #990242).
2. THE APPROVED 3 & 4-POSITION DUCT SPACERS ARE ROYAL CATALOGUE #DMB42233 & #DMB42234 (ALECTRA ITEMS #110654 & 110655). THE SPACERS SHALL BE PLACED AT 1500mm INTERVALS AND CUT TO SUIT THE DESIGN.
3. FOR GLUING DUCT JOINTS AND BENDS USE APPROVED S40 CEMENT AT LEAST 30 MINUTES PRIOR TO POURING CONCRETE.
4. DUCTS SHALL BE ENCASED IN 20 MPa CONCRETE WITH 10-20mm PEA GRAVEL AND SLUMP NOT TO EXCEED 100mm (4") UNDER STANDARD SLUMP TEST.
5. DUCT BANKS ALONG BOULEVARDS OR ACROSS ROADS SHALL HAVE BACKFILL MATERIALS AND TRENCH RESTORATION TO CONFORM WITH THE MUNICIPAL OR REGIONAL AUTHORITY, AS REQUIRED.
6. ALL DUCT BANKS SHALL BE REINFORCED WITH 15M(16mm) NON-PRESTRESSED DEFORMED STEEL REINFORCING BARS GRADE 400 (YIELD STRESS OF 413 MPa) AND CONFORM TO CSA G30.12 (LATEST REVISION). THE NUMBER PRECEDING THE REINFORCING BARS INDICATES THE QUANTITY OF REINFORCING BARS IN THAT ROW.
7. STEEL REINFORCING BARS SHALL BE INSTALLED CONTINUOUSLY, WITH A MINIMUM OF 600mm OVERLAP AND TIED TOGETHER. THE TIE-WIRE SHALL BE ANNEALED FERROUS WIRE, AS PER CSA-G30.14, ASTM A82/A82M-07.
8. DUCTS SHALL BE A MINIMUM 900mm BELOW GRADE AND IN ACCORDANCE WITH LOCAL MUNICIPAL GUIDELINES.
9. THIS STANDARD IS NOT TO BE USED FOR HIGHWAY OR RAILWAY CROSSINGS.
10. THIS DESIGN IS APPLICABLE TO A FAIRLY GOOD UNDISTURBED SOIL-TYPE 3 OR BETTER. FOR SOIL TYPES THAT DO NOT MEET THIS REQUIREMENT APPROPRIATE GEOTECHNICAL STUDIES MUST BE COMPLETED.
11. FOR ROAD CROSSING DESIGNS REBAR SHALL BE USED IN THE TOP MOST SPACER IN ADDITION TO THE REBAR SHOWN ABOVE IN THE BOTTOM MOST SPACER.
12. DUCTS SHALL BE ROUTED TO AVOID RAILWAYS, UNDERGROUND STRUCTURES, CATCH BASINS AND PIPELINES.
13. TO MITIGATE DIFFERENTIAL SETTLEMENT DUE TO UNSTABLE SOILS, CONSULT CSA C22.3 NO. 7 LATEST REVISION CLAUSE A.4.5.4 FOR POSSIBLE SOLUTIONS IN ADDITION TO A GEOTECHNICAL ENGINEER'S ADVICE.
14. FOR DUCT BANKS ENTERING A BUILDING OR FOUNDATION WHERE A DIFFERENTIAL IN SETTLEMENT MAY OCCUR, THE DESIGN SHALL ENSURE PROPER SUPPORT BY ADDING RE-BARS.

alectra utilities

Construction Standard Certificate of Approval
This Construction Standard meets the safety requirements of Section 4 of Regulation 22/04
Shereez Ali — 09/2022
Name — Date
P. Eng., PMP
Signature & Professional Designation

ORIGINAL
Drawn by: P.D.
Checked by: A.F.
Approved by: A.I.
Date: Sept-2022

Title: TYPICAL ARRANGEMENT FOR DUCTS ENCASED IN CONCRETE FOR TWO LAYER ARRANGEMENTS (2 x 4 DUCTS)

2. **Scale is as per Architectural drawings, review in conjunction with the Architectural drawing set.**
3. **Use a single 4” Concrete encased conduit to distribute the EV Charging circuits through the paved areas [See detail 3 in sheet E-103 for duct bank depth]. In the landscaped areas just use a 2” direct buried as per detail 4 in sheet E-103.**

Question 109:

Q1-Can architect claify if Pheolic base for lockers are to be by locker company or by Millwork trade, if by millworker can a elevation and cross section be supplied.

Q2- can architect clarify where SSUR2 Tafisia T557 is to be used
Q3 - P/lam 3 and P/lam 4 are listed as compact laminate,Q- are these same colour and finishes to be applied as standard post form laminates on 19mm core material for kitchens etc… Compact material at BED units only?
Q4 - Comment the colour coded hatched schedule on A08.00
EP,SEP,CS,EP,SEP(Ply),CS(Ply) is difficult to follow.
Could it be clarified that carcass substrate to be P.B particle board,or MDF core with p/lam or melamine finish interior . Doors or outside of carcass to have matching finish in p/lam and door substrate plywood core,MDF or Particle core? Also is MDF core no added formaldehyde or standard?
Q5 - could you please give location of wall panels detail 4/08.00 and confirm substrate core and outside finish?

Answer 109:

Q1 – Phenolic base is installed under the lockers in the locker room as shown and noted as LKR4 on drawing A03.13 and A08.03 and are supplied by vendor specified. Refer to addendum 01.
Q2 – SSUR2 Tafisia T557 is removed from project scope.
Q3 - Both laminates shall be compact laminate Type 568 (wilsonart product type code), 1/2" thickness. Plam 3 (Great Bear) to be Finish 05 Timbergrain Finish with AEON. Plam4 to be Finish 31 traceless. Door fronts shall be 19mm MDF core and bodies shall be standard 12.7mm ply. Compact laminate to be in all areas (CABINET FRONT AND DRAWERS/DOORS).
Q4 - Solid grey shaded noted for finish on all sides, white with hatch is for a finish to be applied to visible sides only. If a cabinet panel within a cabinet body is to be visible on both faces, then both sides are to be finished. Ie. A cabinet door when operated will be visible on the front and back face. Please ensure all cabinet doors and drawer faces are with an MDF substrate. Interior plam finish to match exterior plam finish (compact not required on interior faces) as noted in millwork schedule.
Q5 - Refer to finishes plan. Panel to be located on walls where finishes plan indicates "WDPNL". Finish of wood panel included in finishes plan legend. Substrate can be MDF.

Question 110:

Please confirm that the entire security scope of work is under cash allowance by the City's assigned security vendor.

Answer 110:

Refer to Electrical Addendum 2, item 1.2.

Question 111:

On page 1711 of Specs Section 1.3, it mentions Avigilon Cameras. Can you please confirm that this is correct or should the cameras be Axis as per standard.

Answer 111:

Axis as per City of Brampton Security Equipment Design Standards and Equipment Specifications for New Construction and Facility Refreshment Version 11.0 – February, 2023

Question 112:

Signage Questions:

1. What is the material requirement ? (aluminum?)
2. What is the color for the exterior sign?
3. Are they all 10mm thick?
4. What type of graphic for the Logo would the architect prefer? (direct print Vinyl and attached to the base metal? or engraved graphic?)

Answer 112:

Refer to issued A04.02 – Building Signage drawing part of this addendum 3.

Question 113:

No Section 7 specifications are included in tender specifications. please provide section 7 specifications asap.

Answer 113:

Division 7 specifications is included in Addendum 01.

Question 114:

We also need clarification of the length of the type WS light fixture.

Answer 114:

Refer to cutsheet link and use 830VHO option:
chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.pinnacle-ltg.com/sites/default/files/2021-06/MW_LED_SPEC.pdf

Question 115:

Is there a specification for the Solar Panels? Are we to supply & install?

Answer 115:

The contractor to retain a Solar PV Vendor and provide full design and installation of the system, specifying all the Solar PV System equipment [PV panels, DC Combiners, Inverters, etc.]

Question 116:

Please provide the heights for Pole P1 & P2

Answer 116:

Refer to drawing E-003.

Question 117:

What length is required for WS Light?

Answer 117:

Refer to Answer 114.

Question 118:

Please specify number of ducts required for primary duct bank. Drawing doesn't show any detail.

Answer 118:

Refer to Answer 108.

Question 119:

What is the conduit requirement for EV charging stations? Can I assume 2-2" home run to electrical room for each location?

Answer 119:

Refer to Answer 108.

Question 120:

The veneer grille is being requested to be in tegular format but it does not come in that format, please confirm if this is correct, as it will have to be custom made if so?

Answer 120:

Basis of design of WPC-1 is WOODWORKS Grille Tegular, as manufactured by Armstrong World Industries as noted in the specifications and is to be

fitted within the space noted in the RCP. Basis of Design of WPC-2 is WoodWorks Linear Veneered Open, as manufactured by Armstrong World Industries and is to be fitted within the space noted in the RCP.

Question 121:

Please provide the specification for Backsplash Tile WT-3 for Kitchen 104 and false ceiling finish C-T for Shower areas in washrooms.

Answer 121:

CT-1 floor tile finish noted in floor finishes plan A03.11 (CT-1: Floor tile, Anatolia - Nord, Matte Porcelain, Colour palladium Nord, size 609x1219, wallbase CT-1 (U.N.O)). CT-2 located in shower, refer to A03.11 and A08.01 (same tile but size 304x609). Ceiling in shower to match shower wall tile WT-2 (Anatolia Soho Vintage Grey, glossy 100x400). WT-3 in kitchen to match countertop surface material SSUR1 (caesarstone primordia).

Question 122:

is it possible to extend closing date? Thanks.

Answer 122:

Refer to Addendum #1 and #2

Question 123:

can you kindly extend the closing please as our trades would like to review further and submit a competitive price. Thanks.

Answer 123:

Refer to Addendum #1 and #2

Question 124:

1) TENDER CLOSING:
Instructions to bid noted tender closing is August 20, and your portal system noted tender closing August 27, please clarify.

Answer 124:

Refer to Addendum #1 and #2

Question 125:

2) Please extend tender closing for two (2) weeks.

Answer 125:

Refer to Addendum #1 and #2

Question 126:

As per the drawing A03.11 Level 01- Finishes Plan, Accessible Washroom 103 have all walls with wall tile WT-1 after finished floor level. (There is no wall base). But drawing A08.01 - Washroom Plans & Elevations, Elevations 2,3,4 & 5 shows wall base line and there is no wall tiles in elevation 2 (wall along with door side). Please clarify.

Answer 126:

Floors CT-1 (Anatolia Palladium) to have floor base WB-CT-1 (Anatolia Carbon). WB-CT-1 can be continued into washroom showers along flooring CT-2. Specified wall tiles to continue above wall bases.

Question 127:

1. As per the drawing A03.11 Level 01- Finishes Plan, Accessible Washroom103 having all walls with wall tile WT-1 after finished floor level. (There is no wall base). But drawing A08.01 - Washroom Plans & Elevations, Elevations 2,3,4 & 5 shows wall base line and there is no wall tiles in elevation 2 (wall along with door side). Please clarify

Answer 127:

Refer to Answer 126.

Question 128:

Project schedule,
Bid Submission document noted the substantial performance of work to be February 28, 2024, which is wrong, please advise the project schedule.

Answer 128:

Refer to Addendum #1

Question 129:

Specified 10mm Natura and 8mm Linea Fibre Cement Panel (07 46 46), but natura only has 8mm and 12mm thick; Linea only has 10mm thick. Please clarify.

Answer 129:

EQUITONE Natura Fiber Cement Panel nominal thickness shall be 8mm.

EQUITONE Linea Fiber Cement Panel nominal thickness shall be 10mm (including ridges)

Question 130:

10mm Linea comes with 2mm fluted face, panel actually thickness only 8mm.

Answer 130:

Refer to response in Question 129.

Question 131:

Tergo fastening system is good for 12mm material. Can Dynamic bond with bear claw invisible system replace Tergo ?

Answer 131:

Basis of design intent is to have hidden fastening. Per Fisher website, Tergo fasteners are provided for 8mm and 10mm panels.
Dynamic bond with bear claw invisible system is an acceptable alternative.

Question 132:

1. Can you please provide the Primary Duct Bank details ? Size and No. of ducts.

Answer 132:

Refer to answer 108.

Question 133:

2. The scale mentioned in the Electrical site plan appears to be not correct. Can you Please check and confirm ? It should be like 1:600 instead of 1:200

Answer 133:

Confirm scale with Architectural plans.

Question 134:

3. Regarding EV Charging Conduits, please see below issues:
Point1. : Size and no. of conduits not clear.
Point 2. : is it required to run separate Conduits from each EV station ?
Point 3 : It is mentioned as Concrete Encased (after 3rd Pull Box. Then what will be size of concrete Duct bank ? 10 pairs are coming in that section (if 2x2” are considered from each EV charger)

Answer 134:

Refer to answer 108.

Question 135:

Section 25 96 00 Integrated Automation Control Sequences for Electrical Systems is not present in the specifications. Please provide.

Answer 135:

Refer to Mechanical Addendum 2 attached herein.

Question 136:

1. Exterior wall assemblies ACP-1, FBC-1 : panel mounted to thermally broken supporting Sub-framing.
Spec 07 46 16 and 07 46 46 does not specify thermal clip. Please confirm thermal clip is not required for aluminum panel and fiber cement panel.

2. 07 46 19 metal cladding system specified Thermally broken spacer systems (2.2.2.2.4), but from current building section(1/A.05.02) longboard soffit support hatbar fastened to stud framing. Please confirm no thermal spacer required or provide detail.

Answer 136:

1. **Thermal clips are required for ACP-1 and FBC-1. Basis of Design for thermal clips are one of the following:**
    a. **Engineered Assemblies 'T-Clip Thermally Broken Façade Substructure'.**
    b. **Exterior Technologies Group 'TAC System Thermal Spacer'.**
    c. **Cascadia Windows & Doors 'Cascadia Clip'.**
    d. **IsoClip 'Thermal Isolation Clip'.**
    e. **SFS 'NVelope System Brackets'.**
2. **Longboard soffit support system not required to be on a thermally broken clip system.**

Question 137:

Would it be possible to have the closing moved one day as there is another large project closing on September 5th @ 2pm as well.

Answer 137:

Refer to Addendum #1 and #2

Question 138:

We have reviewed the addendum for this project, and I didn't see anything pertaining to fire rated IGU's. Can you confirm if all the windows should be fire rated?

Answer 138:

Fire rated glazing is required at fire rated screens. Refer to A06.01 for locations.

Question 139:

Would Alu Cladded Wooden Window be accepted in place of Aluminum windows?

Answer 139:

No.

Question 140:

The details of Hose Tower is mentioned on page A07.04 with no indication on the painting scope. If you can please clarify what the scope is.
Are we painting the walls, ceilings, handrails, pickets, risers, stringers?

Answer 140:

Refer to A07.04 for painting requirements of stair, hardrails, pickets etc. Refer to A03.11 for wall and floor finishes. Refer to A03.12 for ceiling finishes. Review all documents within the set for complete scope of work.

Question 141:

In regards to what was posted, will this construction of the fire station in the city of Brampton be in need of painting services after it is done.

Answer 141:

No.

Question 142:

Section 25 05 02.2.1.3 list multiple BAS vendors. Please confirm that only pre-qualified BAS vendors for the City of Brampton are approved to quote the BAS scope.

Answer 142:

Refer to Mechanical Addendum 2 for updated pre-approved BAS vendors.

Question 143:

Regarding the Site Grading and Erosion and Sediment Control Plan (Drawing No. C2.1), the drawing mentions concrete with steel reinforcement, but it does not specify the type of steel reinforcement required. Could you please clarify the type of steel reinforcement that should be used?

Answer 143:

For steel reinforcement refer to architectural assembly matrix issued in Addendum 01 drawing A00.04 – Construction Assembly Matrix – Exterior.

Question 144:

The drawing references retaining walls as Type One and Type Two; however, the details provided seem to label a Type One wall as Type Two and vice versa. Could you please confirm the correct designations for each wall type?

Answer 144:

Type 1 walls are appropriate up to 0.76m; Type 2 walls are appropriate from 0.76m to 1.80m.

Question 145:

PV System clarifications required:
- The SLD notes a minimum 64 kW PV array. I don’t see the system size indicated anywhere in the specs document. Is this correct?
- The specs document states that PV modules must be made in Canada. Can this requirement be relaxed?
- The specs document mentioned both rooftop PV and building integrated PV (BIPV). I don’t see any BIPV in the drawings though. In our experience, this product is VERY expensive, and we steer clear of quoting or installing it.

Answer 145:

Refer to response provided in question 44 issued in addendum 02. PV modules can be made elsewhere meeting all local Authorities having Jurisdiction requirements. There are no BIPV on the building.

Question 146:

In regards to ADD#1 Q&A #79(4) and Q&A #80(2), Please consider either providing a detailed description and or schedule of anticipated road work/road closures on goreway or removing the liquidated damages clause. The current

contract could potentially expose the successful bidder to liquidated damages due to access and scheduling issues outside of our control.
For example, If road work or closures limited access to the site and forced us to reschedule a key trade such as the hollow core precast installation, this could have a “snowball effect” and completely destroy the schedule, forcing the GC to be exposed to a multitude of unexpected costs.
The 60 day validity only amplifies the risk to the GC. We understand that it would be very challenging for the owner to provide a detailed schedule of roadwork on Goreway and it is for this reason we ask the owner please consider removing the liquidated damages from the contract.

Answer 146:

Fire Station 215 GC to coordinate with Road Works Contractor for access to site, when required.

Question 147:

In regards to ADD#1 Q&A 79 (5), Please consider that all works associated with the road beacons be carried under cash allowance. We have no way of anticipating what the cost would be to provide trenching and rough in work to the beacons due to the road widening and infrastructure works and there may be concealed or unknown conditions that could cause delays or cost increases.

Answer 147:

Refer to Addendum #1

Question 148:

Please confirm that the self adhered air/vapor barrier on foundation walls is to be blueskin SA or similar and NOT the blueskin wp200 product which is waterproofing product.

Answer 148:

Henry Blueskin WP200 will be acceptable for foundation application.

Question 149:

We have some confusion regarding the locations that require type 2 sheet membrane waterproofing. Please advise.

Answer 149:

Refer to response in Question 148.

Question 150:

• The thickness of the panels needs to be the other way around.
Equitone Linea: 10 mm
Equitone Natura: 8 mm

• Tergo fasteners require a panel thickness of 12mm which can be found only in Natura not Linea, As an alternative, you can go with TUF-S fasteners which can be used for Natura 8mm & Linea 10mm.

Aside from that the Bearclaw Dynamic bond can be another option as well.

Answer 150:

Refer to response in Question 131.

Question 151:

Please clarify if we need to raise the building pad with Granular B or we can just import clean engineerable fill.

Answer 151:

Engineered fill is acceptable as per Geotechnical Report.

Question 152:

1. Missing DIV.27 Communications, section 27 05 13.01
2. Missing DIV. 28 Electronic Safety & Security, section 28 08 46 to 28 46 51.23
3. inquiry re: roofing spec.
3.1 Please clarify the discrepancy of layer, thickness, and attachment method of base roofing insulation between the drawings and specifications.
Drawings (A00.03 rev.6): 2 layers of 100mm (4) Polyiso insulation is to be mechanically fastened to the field.
Specs (S. 07 52 16, Item 3.6): 3 layers of 3inch Polyiso insulation is to be adhered in adhesive to the field.
3.2 Please clarify the discrepancy of thickness of top roof insulation between the drawings and specifications.
Drawings (A00.03 rev.6): 50mm (2) stone wool insulation
Specs (S. 07 52 16, Item 3.8): 3 (76mm) stone wool insulation
3.3 Please provide the specs and attachment method for protection board in RF-1 roofing assembly.
4. inquiry re: roofing spec.
4.1 According to Roof Assembly RF-1, it shows two layers of 100mm base insulation mechanically secured and a 50mm top layer of stone wool insulation, whereas Specification Section 07 52 16-3.6 indicates three layers of 3.0inch bottom insulation and one layer of 3.0 (Section 3.8) stone wool insulation.
4.2 Roof Assembly RF-1 shows a 13mm protection board on top of the stone

wool insulation, but the specification calls for torching the base sheet directly onto the stone wool insulation.
5. General contractor concerns due to recent Add.#1 to revised the multiple sheets; our time spent from previous drawings by reading & estimate take-off were superseded by revised drawings.
Therefore, I would request to give us additional two week extension

Answer 152:

1. Communications, section 27 05 13.01 was issued as part of Tender Specifications.

2. Sections 28 08 46 to 28 46 51.23 were issued part of the Tender Package.

3.1 RF-1 requires 200mm Polyiso insulation. This can be installed in two layers with stagged joints. Top layer to be adhered and bottom layer to be mechanically fastened.

3.2 50mm Stone Wool insulation shall be provided for top roof insulation

3.3 Install Protection boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 300 mm (12") in each direction. Loosely butt cover boards together. Tape joints if required by roofing manufacturer. Apply insulation adhesive to underside and immediately bond cover board to substrate. Apply hot roofing asphalt to underside and immediately bond cover board to substrate.

4.1 refer to response 3.1 & 3.2 above

4.2 Install base sheet to protection board.

5. Extension has been provided.

Question 153:

Addendum 1 came out but did not address this:-

On A06.01 exterior glazing elevations there seems to be items double up for some reason.
There are 31 exterior screens listed in the schedule see below. However, there are only 22 drawn on the page.
Some like SC-10 seem to be doubled up and SC 30 is not shown. The double up ones only have 1 on plans and elevations of the building so wondering what is going on here.
SC30 looks like ACM panels and is not shown anywhere with glass.

Answer 153:

Drawing A06.01 and A06.02 have been revised to clarify glazing scope.

Question 154:

1- Have confirmed about the .7m FILL ; right now, once the surface layer is removed, if organics remains in lower .4m dept, it seems it will be left to the Geotech to decide to either remove & replace all ...or just what he instructs us ?
2- The Brentwood is known to be more expensive than other brands with stronger designs; will an alternative, as suggested in our quote, be allowed?

Answer 154:

1. **Remove all required fill inclusive of organics.**
2. **An approved equivalent will be considered.**

Question 155:

I have found a brick fence on the drawings. I do not see any bricks on the drawings for this section. Is it supposed to be done in a different material but it is just called a brick fence?

Answer 155:

Refer to Addendum 01 for brick fence details.

Question 156:

Regarding Sofiit STG-1,
Longboard doesn't have 125mm width Tongue & Groove soffit, could you please ask architect to provide another width?(Longboard has 2-1/2" ,4" and 6")
Can Luxyclad aluminum soffit / Bellara metal soffit be alternate for Longboard?

Answer 156:

Longboard 6" V-Groove will be acceptable. Luxyclad aluminum soffit may be acceptable.

Question 157:

1. What are the specifications for WT-3 that is specified in the kitchen?

Answer 157:

WT-3 in kitchen to match countertop surface material SSUR1 (caesarstone primordia)

Question 158:

For Drawing no. A04.02, can we know what type of graphic for the crest does the architect look for ? (direct print Vinyl and attached to the base metal or engraved graphic?)

Answer 158:

Refer to response in Question 112.

Question 159:

Q1: as per Dwg A00.03, the wall assembly is to be Alumicor TW2200 with a 2 1/2” x 8” Depth frame, please note TW2200 Series comes only in 2” width and the maximum frame depth available with this series is 5”. , can we propose to use Windspec 5500 HTP Curtain wall System (Catalogue available on request) which has 2 ½” Frames with different mullion depth ranging from 4”- 10” .

Answer 159:

Alumicor TW2200 comes in a 5” to 8” system depth for triple glazed assemblies in a 2” (50.8mm) profile.

Question 160:

Q2: can we use a smaller depth mullion wherever it passes structurally? For example, some curtain wall frames will pass structurally by using 2 ½” x 4” mullion instead of an 8” depth mullion as per the wall assembly on Page A00.03.

Answer 160:

Smaller system depths will not be acceptable as the intent of the depth is to ensure the wall insulation cavity is covered.

Question 161:

Q3: is there any union requirement for the glazing contractor on this project.

Answer 161:

No.

Question 162:

Question #1 Lav-1 and Sink-2 are listed in the spec but there is no specification for them. I am just wondering if they will be supplying them or do we have to supply them. Our suppliers wont quote them because there is not enough information for them to be priced out.

Question #2 On the spec it mentions heat tracing and domestic water temperature maintenance cable (20 05 33), but it is not shown on the drawings. I am wondering if this is still required.

Answer 162:

L-1 Refer to Mechanical Addendum 2. Please take note to verify the overall dimension with the architect. Please re-verify the proposed Faucet & accessories that will fit to the customize sink.
S-2 Refer to Architectural drawing for the sink for further information and mechanical addendum 2 for added specification for Faucet & Accessories. Heat Tracing is not required.

Question 163:

Please clarify below regarding Fiber Cement Panel

- The thickness of the panels needs to be the other way around.
Equitone Linea: 10 mm
Equitone Natura: 8 mm
- Tergo fasteners require a panel thickness of 12mm which can be found only in Natura not Linea,
As an alternative, TUF-S fasteners which can be used for Natura 8mm & Linea 10mm

Answer 163:

Refer to response in Question 131.

Question 164:

Please confirm the required type and depth of Granular beneath concrete slab. As per geotechnical report, it states 150mm - Granular A. As per drawing A03.301, it states 200mm - 19 mm Clear Crushed Stone for SG-Ci-100.

Answer 164:

150mm Granular A will be acceptable for floor slab on grade per geotechnical report and structural notes N05 Foundation 10c.

Question 165:

Can architect clarify if Phenolic base for locker units is to be supplied by locker company or Millworker

Answer 165:

Refer to Answer 109.

Question 166:

Can architect clarify where SSUR2 Tafisia HPL is to be used

Answer 166:

Refer to Answer 109.

Question 167:

P/lam3 and Plam 4 are listed as Compact laminate: Q- Are these colours finishes to be applied as standard post form laminate to 19mm substrate for cabinets(and compact laminate being utilized at bed units only?)

Answer 167:

Refer to Answer 109.

Question 168:

Observation, Comment The colour coded schedule on A08.00
EP,SEP,CS,EP,SEP and CS is difficult to follow
Could it be clarified that carcass substrate be P.B or MDF core with P/lam finish or melamine interior tafisia? With Doors in Plywood core and p/lam finish (Core MDF standard or No Added Formaldeyed Type)

Answer 168:

Refer to Answer 109.

Question 169:

Could you please give location of wall panels confirm substrate as MDF or Ply 4/08.00

Answer 169:

Refer to Answer 109.

Question 170:

The Civil drawing indicates retaining walls as Type One and Type Two; however, the details provided seem to label a Type One wall as Type Two and vice versa (max heights are swapped). Could you please confirm the correct designations for each wall type?

Answer 170:

Refer to response in question 144.

Question 171:

Can you confirm the height of the chain link fence is 2.4m. Detail calls for 1.8m high.

Answer 171:

Chain Link fence shall be 2.4m in height.

Question 172:

For the chain link mesh are you looking for 50mm X 9 gauge black vinyl coated chain link mesh or 38mm x 9 Gauge black vinyl coated chain link mesh

Answer 172:

38mm x 9 Gauge black vinyl coated chain link mesh will be acceptable.

Question 173:

1. What floors receive epoxy finish as per Section 09 67 23?

Answer 173:

Refer to issued drawing A03.11 - Level 01 - Finishes Plans attached herein of this addendum.

Question 174:

1. Is the supply and installation of the Washer Extractor shown as WREX on A03.13 not covered under the cash allowance for residential laundry?

Answer 174:

Correct. Washer Extractor noted as WREX on A03.13 is part of base scope of the contract.

Question 175:

Regarding roofing assembly Please note that roofing type schedule on drawing indicated of 100mm Polyiso mechanically fasten , 50mm wool insulation and 13 mm protection board however specification section 075216 , Addendum #1 specified of 3x3” polyiso and 3” wool insulation. Would you please confirm insulation requirement and which way we should price it.

Answer 175:

Refer to response provided in question 152.

Question 176:

Electrical clarification - Please advise pole type and heights for P1 and P2?

Answer 176:

Refer to Answer 116.

Question 177:

1. I am looking for more curtain wall plan and section details, I wanted to know if SC18 and SC20 have fastening points midway. 2inch frame might not pass wind load if there is none.
2. The curtain wall system was changed from Schuco to Alumicor TW2200, and A00.03 note is calling for an 8 inch back section. TW2200's deepest back section is 5inch, please confirm if we need to change to 2600 series.
3. Specs and some parts of the drawing calls for triple pane units, but window details on A07.03 shows a double glazed system. Please confirm if there is an intention to use double pane units in some areas and please identify which ones.
4. Are we supposed to supply GL4 - Solera -T R18 Glass for SC-18 and SC-20, the wall section looks like spandrel glass with a backpan. Can we use this as an alternative instead?

Answer 177:

1. **All required anchor points are to be designed and engineered for all framing members and be connected to the building to accommodate for movement and to ensure they pass all seismic requirements.**
2. **Refer to response provided in question 159.**
3. **All exterior glazing units shall be triple pane.**
4. **Screen 18 and 20 shall have GL4 - Solera -T R18 as indicated. No alternatives will be accepted.**

Question 178:

Addendum 2 mentions mechanical addendum 2 but it was not attached, please provide.
Please provide the appendices mentioned in addendum #2

Answer 178:

Mechanical addendum 2 will be issued in response to latest questions. Previous mechanical addendum 1 was issued in response to Q/A Addendum 2.

Question 179:

In addenda 2 item 2 it says that appendices have been added, however they do not appear in the PDF. Please advise.

Answer 179:

Refer to Answer 178

Question 180:

I have some questions based on our Fiber Cement Supplier.
Please clarify below,

- The thickness of the panels needs to be the other way around.
Equitone Linea: 10 mm
Equitone Natura: 8 mm
- Tergo fasteners require a panel thickness of 12mm which can be found only in Natura not Linea,
As an alternative, TUF-S fasteners which can be used for Natura 8mm & Linea 10mm

Answer 180:

Refer to response in Question 131.

Question 181:

I do not see ADD-02 Mechanical. In Question 74, it says to refer to Mechanical Addendum 2, but there isn't any document.
Also there is no mention of ADD-01 for Mechanical

Answer 181:

Addendum 01 & 2 Mechanical is included herein.

Question 182:

In Addendum #2, aren't there any additional documents? Based on the second page of the addendum, there is supposed to be an additional electrical addendum as well.

Answer 182:

Appendices intended on being released in Addendum 02 that was posted are attached herein.

Question 183:

Good afternoon,

Corebuild respectfully requests a two-week extension to the closing date. This request is due to having multiple tenders closing at the same date and time. Please do consider this request.

Thank you,

Answer 183:

Refer to Addendum #1 and #2

Question 184:

Please confirm where section 09 67 23 Epoxy Flooring apply

Answer 184:

Refer to issued drawing A03.11 - Level 01 - Finishes Plans attached herein of this addendum.

Question 185:

Please confirm that Granular B is going to be use in all the area (building and paved) in order to Site Grading as section 31 23 13 sub 3.3.2

Answer 185:

As per geotechnical report section 6.3, Engineered fill acceptable shall be Granular A & B Type 1.

Question 186:

There are no specification for forming, rebars, metal deck.

Answer 186:

Refer to structural drawings for specifications as items are listed in the general notes. Refer to NO6 on S1.0 for Concrete and NO7 for steel deck. Deck thicknesses and types have been listed on structural roof plans.

Question 187:

Plam3 is listed as 8237K-05-568 with colour: great bear and 05 timbergrain finish. This combination is not available for compact laminate. Please advise

Answer 187:

Refer to response provided in question 109.

Question 188:

Drawing A08.11 notes that the wood finish for the dining table can be found in the finish schedule. The specific wood finish is not mentioned in the drawings. The specifications state Birch with Natural finish. Please confirm this is the finish for the edge of the table.

Answer 188:

Dinning room table shall be solid wood oak stained.

Question 189:

In regard to Addendum #1, could you please specifically outline the changes made to the drawings instead bubbling certain items. Addendum #2 specifically outlined the deletions; additions and any changes being made to the drawings.

Answer 189:

Revision clouds are provided of changed areas as noted in previous issued addendums.

Question 190:

There is around 180 sq Wall Tile 3 in the floor plan, but we couldn't find spec for it, please confirm

Answer 190:

WT-3 in kitchen to match countertop surface material SSUR1 (caesarstone primordia)

All other terms & conditions remain unchanged.

If you have any questions, please do not hesitate to contact the undersigned.

Bidders are required to acknowledge all Addenda.

Name: Naveed Ahmed Butt
Title: Senior Buyer
Ph: (905) 874-3531
Email: naveed.ahmedbutt@brampton.ca

D P A I
Design Partners in
Architecture and Interiors

25 Main St. West
Suite 1800
Hamilton, ON
L8P 1H1

ARCHITECTURAL ADDEDNUM 002

To: **City of Brampton**
2 Wellington St West

Brampton, ON L6Y 4R2

Addendum No: 002
Date Issued: 03 September 2024
Project Number 12303
Bid Number T2024-220

Project **City of Brampton Fire Station 215**
10539 Goreway Drive, Brampton.

GENERAL INSTRUCTIONS

1. The following information supplements and/or supersedes the bid documents issued on Friday July 26, 2024.
2. This Addendum forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts. The cost of all contained herein is to be included in the contract price.
3. The following revisions supersede the information contained in the original drawings and specifications issued for the named project to the extent referenced and shall become part thereof. Acknowledge receipt of this Addendum by inserting its number and date on the Tender Form. Failure to do so may subject the bidder to disqualification.

1. AFFECTED SECTIONS OF THE PROJECT MANUAL

.1 Revisions
.i *None*

.2 Deletions
.i *None*

.3 Additions
.i *Insert section 32 33 00 - Site Furnishings*

AFFECTED ARCHITECTURAL DRAWINGS

1. A02.08 – CANOPY DETAILS, FOUNDATION, RCP & ROOF PLAN
i. Delete issued for Tender drawing A02.08 in its entirety and substitute drawing A02.08 barring revision 6 appended to this document.

2. A05.05 – WALL SECTIONS
i. Delete issued for Tender drawing A05.05 in its entirety and substitute drawing A05.05 barring revision 6 appended to this document.

3. A05.06 – WALL SECTIONS
i. Delete issued for Tender drawing A05.06 in its entirety and substitute drawing A05.06 barring revision 6 appended to this document.

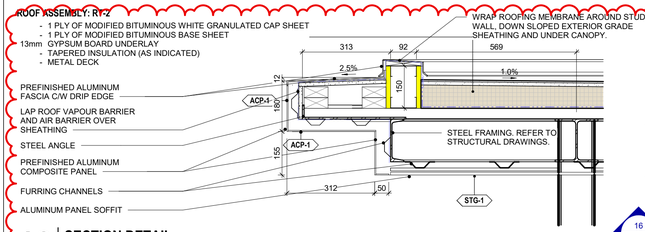
4. A05.07 – WALL SECTIONS
i. Delete issued for Tender drawing A05.06 in its entirety and substitute drawing A05.06 barring revision 6 appended to this document.

5. A05.08 – WALL SECTIONS
i. Delete issued for Tender drawing A05.06 in its entirety and substitute drawing A05.06 barring revision 6 appended to this document.

6. A05.09 – WALL SECTIONS
i. Delete issued for Tender drawing A05.09 in its entirety and substitute drawing A05.09 barring revision 6 appended to this document.

END OF ARCHITECTURAL ADDENDUM No. 02

Per: Sebastian Lubczynski, Senior Architect, OAA



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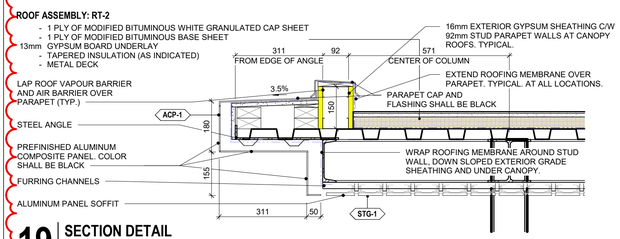

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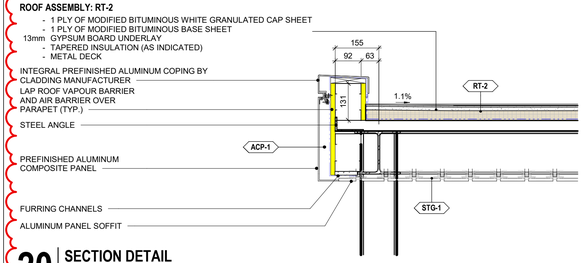

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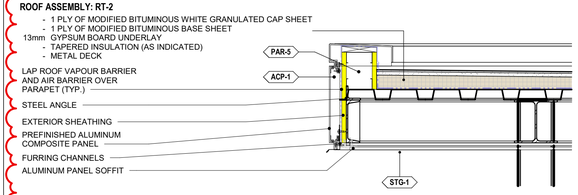

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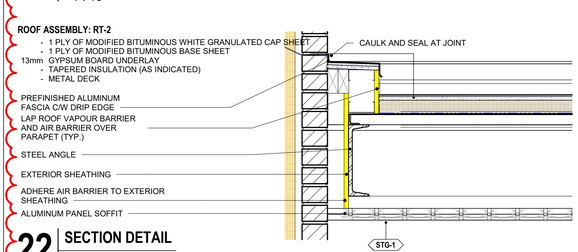

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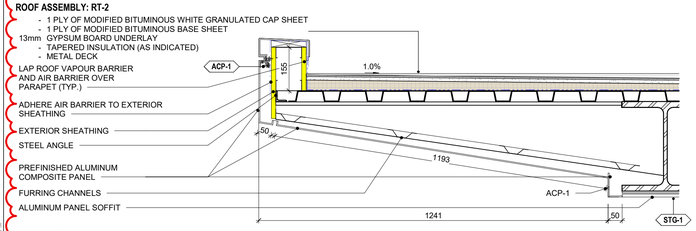

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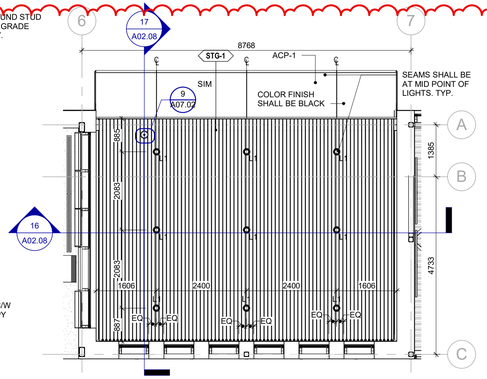

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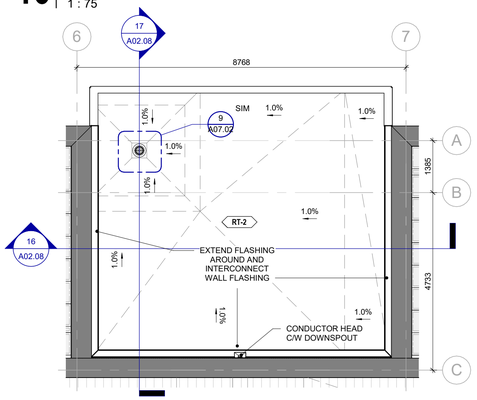

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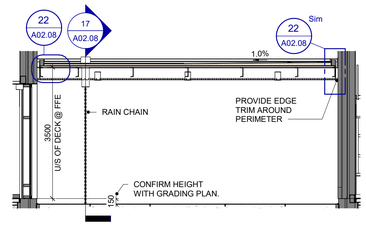

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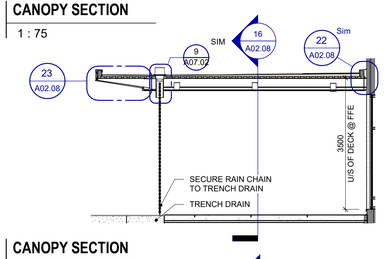

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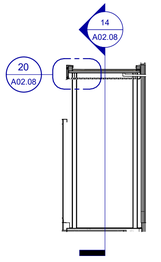

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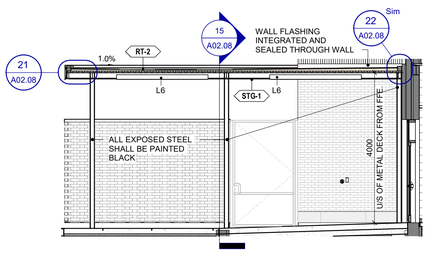

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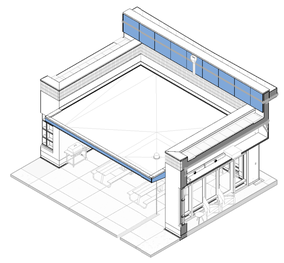

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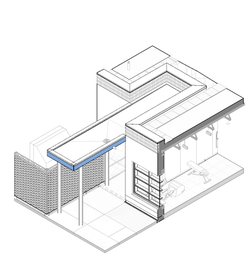

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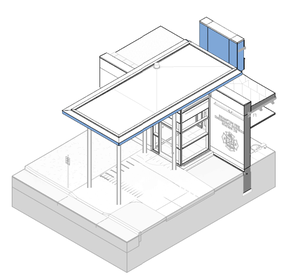

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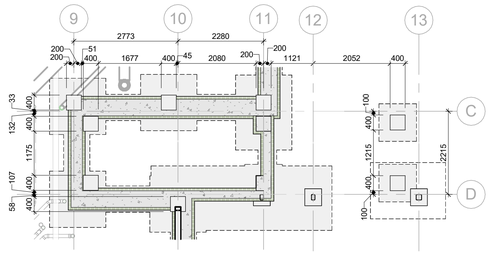

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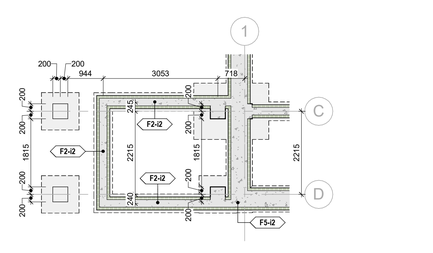

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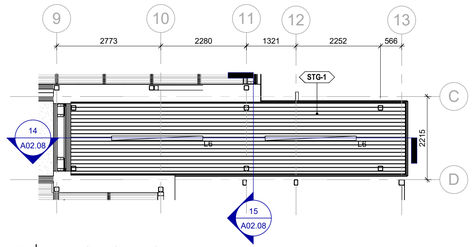

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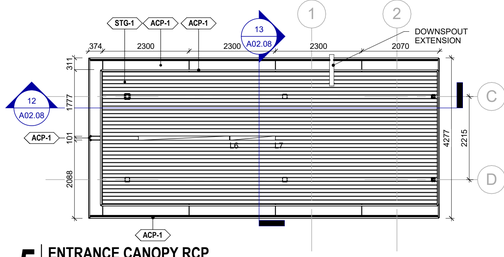

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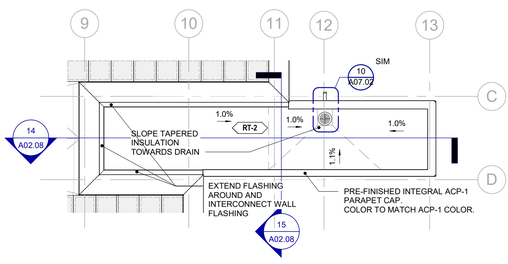

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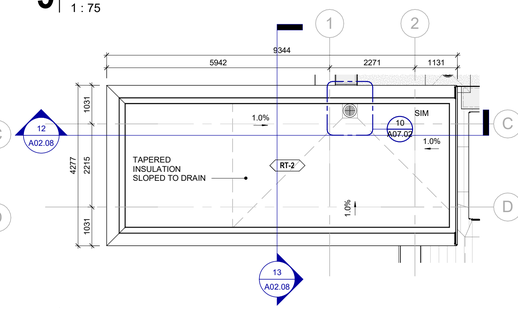

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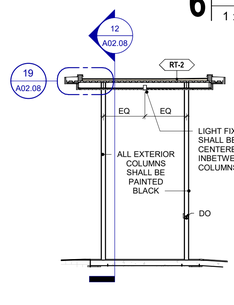

13 CANOPY SECTION
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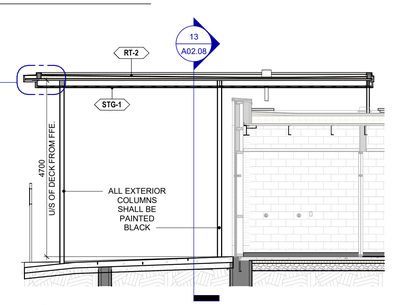

12 SECTION DETAIL
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10

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI
Design Partners in Architecture and Interiors
28 Main Street West Hamilton, Ontario L8P 1H1 Canada
T: 905-522-0220

DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO ARCHITECTS BEFORE PROCEEDING WITH WORK.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMJI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
10	ADDENDUM 02	09/03/2024
9	TENDER	07/16/2024
8	CLASS A ESTIMATE	05/21/2024
7	90% CONTRACT DOCUMENTS	05/21/2024
6	SPA 1 RESUBMISSION	05/15/2024
5	PRE-APPLICATION SUBMISSION 2	04/24/2024
4	60% CONTRACT DOCUMENTS	04/16/2024
3	CLASS B ESTIMATE	08/01/2024
2	DESIGN DEVELOPMENT 100%	08/01/2024
1	SPA 1 RESUBMISSION	20/09/2023
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

CANOPY DETAILS, FOUNDATION, RCP & ROOF PLAN

ISSUE DATE: 09/03/2024

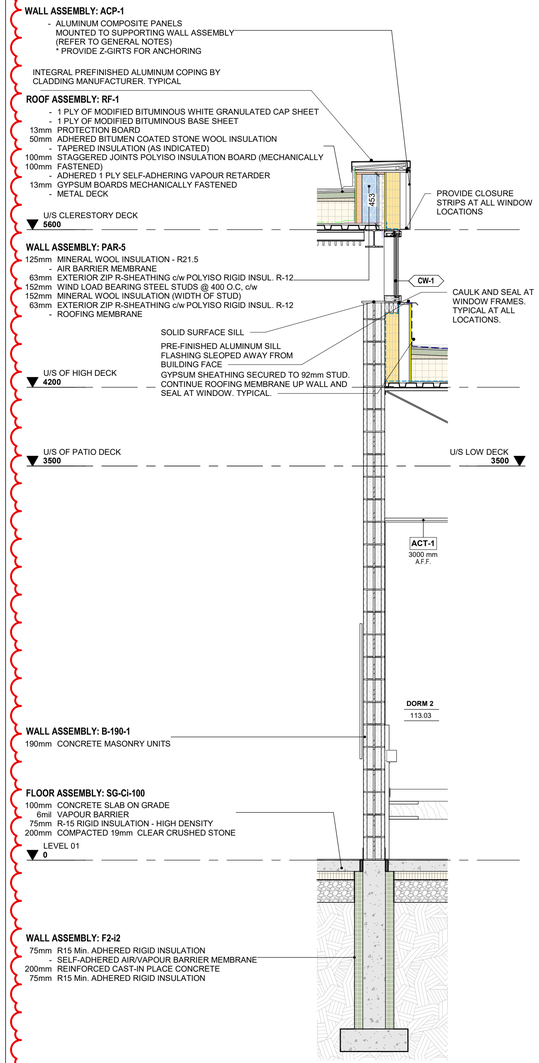
DRAWN BY: SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A02.08** REVISION: **10**

[PLOT DATE: 2024-09-03 3:04:55]

7



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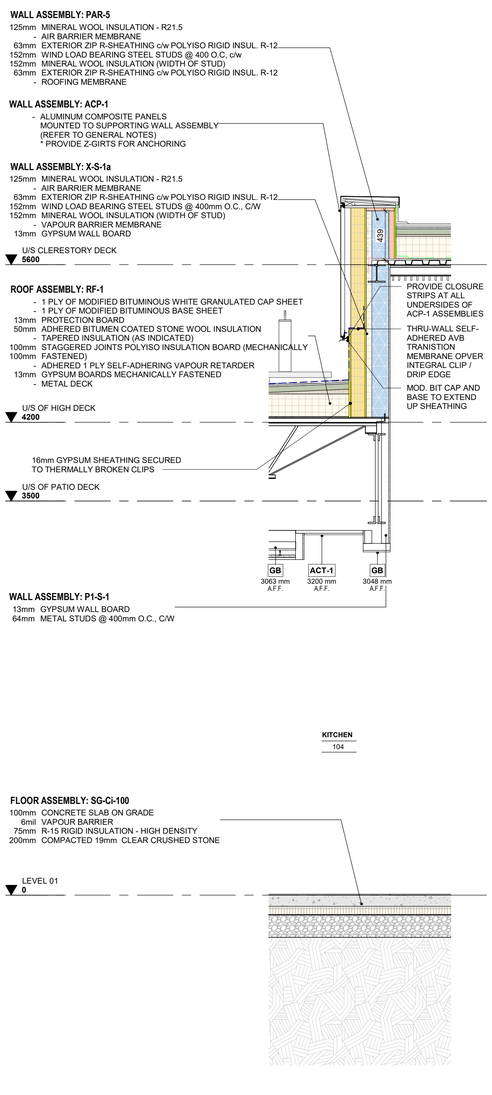

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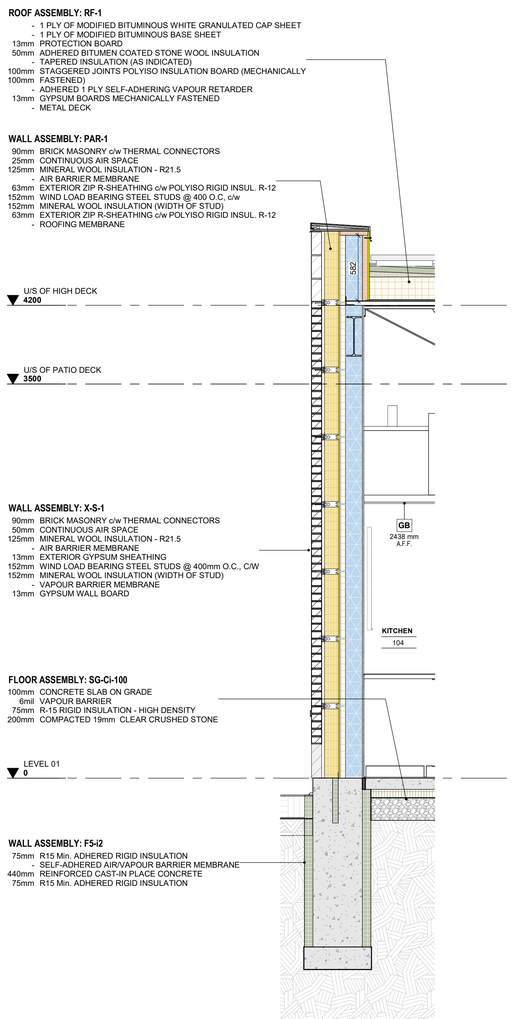

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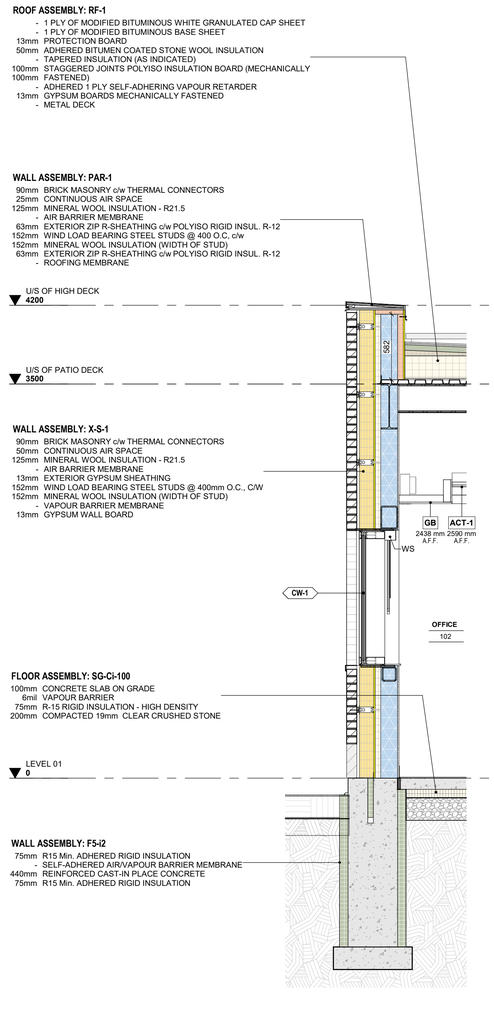

1 | WALL SECTION
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[PLOT DATE: 2024-09-03 3:41:09 PM]

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

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23 Main Street West Hamilton, Ontario L8P 1H1 Canada
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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
7	ADDENDUM 02	09/03/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

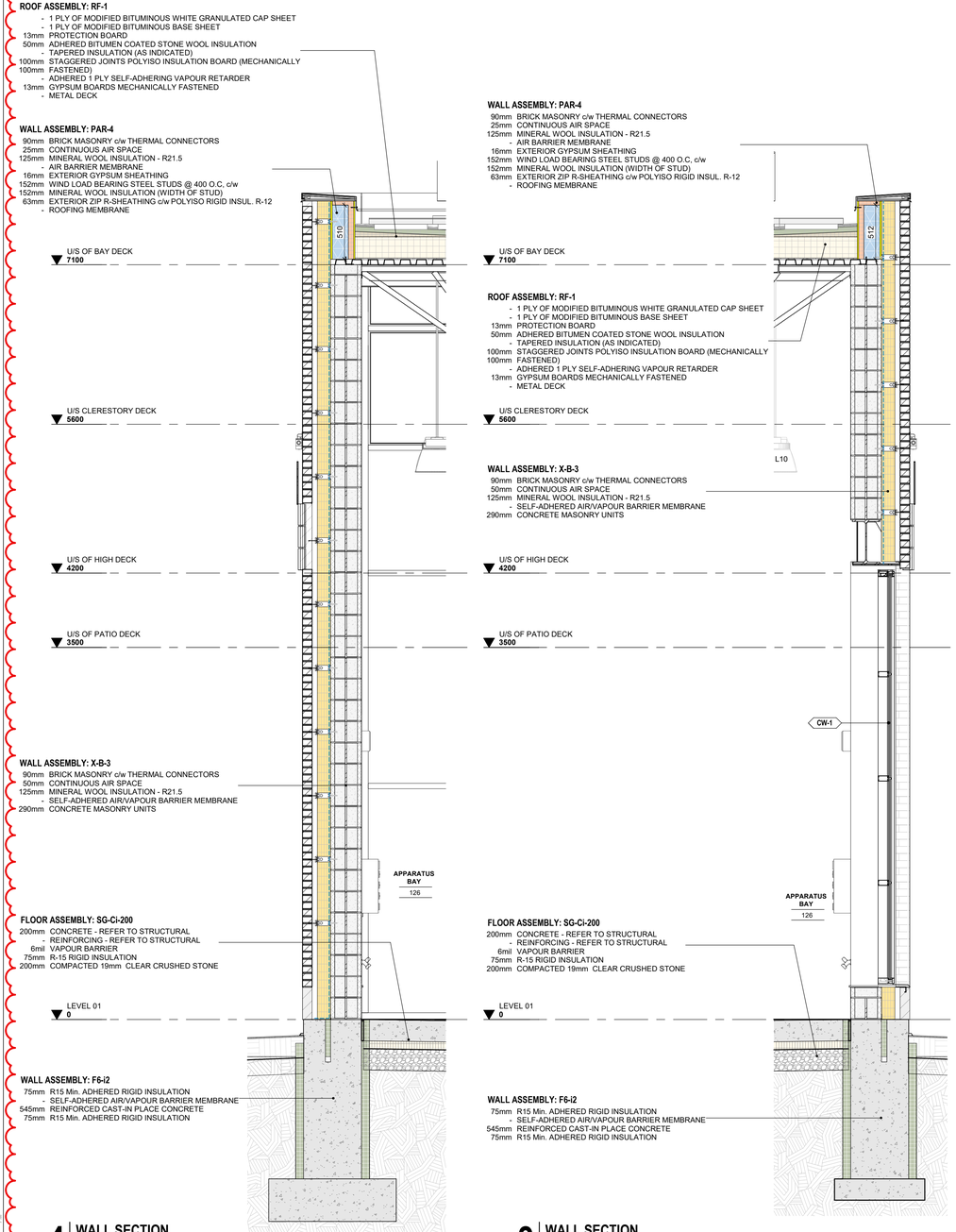
WALL SECTIONS

ISSUE DATE: 09/03/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: 1 : 25

DRAWING NO.: **A05.05** REVISION: **7**



7

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: PAR-4
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
16mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF BAY DECK
7100

U/S CLERESTORY DECK
5600

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

WALL ASSEMBLY: X-B-3
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm CONCRETE MASONRY UNITS

FLOOR ASSEMBLY: SG-Ci-200
200mm CONCRETE - REFER TO STRUCTURAL
- REINFORCING - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

WALL ASSEMBLY: F6-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
545mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

4 WALL SECTION
1 : 25

[PLOT DATE: 2024-09-03 3:51:30 PM]

WALL ASSEMBLY: PAR-4
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
16mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF BAY DECK
7100

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S CLERESTORY DECK
5600

WALL ASSEMBLY: X-B-3
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm CONCRETE MASONRY UNITS

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

FLOOR ASSEMBLY: SG-Ci-200
200mm CONCRETE - REFER TO STRUCTURAL
- REINFORCING - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

WALL ASSEMBLY: F6-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
545mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

3 WALL SECTION
1 : 25

U/S OF HOSE TOWER DECK
12500

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

PROVIDE CLOSURE STRIPS AT ALL UNDERSIDES OF ACP-1 ASSEMBLIES

THRU-WALL SELF-ADHERED AVB TRANISTION MEMBRANE OPVER INTEGRAL CLIP / DRIP EDGE

MOD. BIT CAP AND BASE TO EXTEND UP SHEATHING

16mm GYPSUM SHEATHING SECURED TO THERMALLY BROKEN CLIPS

U/S OF BAY DECK
7100

U/S CLERESTORY DECK
5600

WALL ASSEMBLY: B-290-1
290mm CONCRETE MASONRY UNITS

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

FLOOR ASSEMBLY: SG-Ci-200
200mm CONCRETE - REFER TO STRUCTURAL
- REINFORCING - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION
200mm COMPACTED 19mm CLEAR CRUSHED STONE

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

2 WALL SECTION
1 : 25

U/S OF HOSE TOWER DECK
12500

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: X-B-3a
150mm MINERAL WOOL INSULATION - R25
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm CONCRETE MASONRY UNITS

U/S OF BAY DECK
7100

U/S CLERESTORY DECK
5600

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

1 WALL SECTION
1 : 25

BRAMPTON

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SEALS

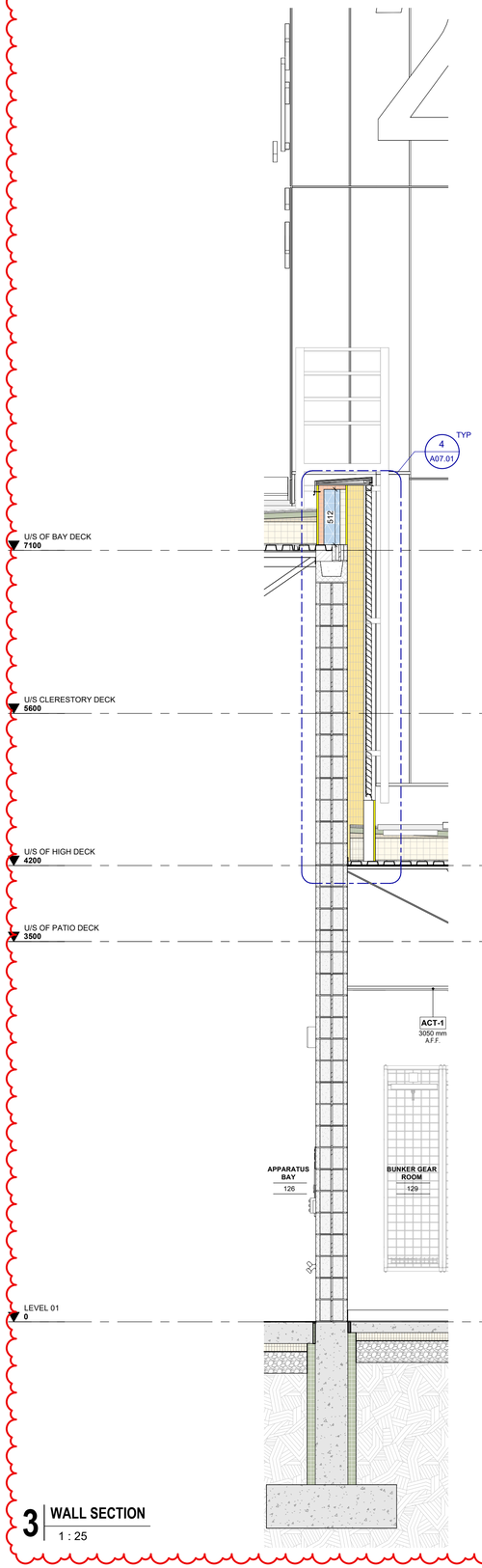
ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
7	ADDENDUM 02	09/03/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

WALL SECTIONS

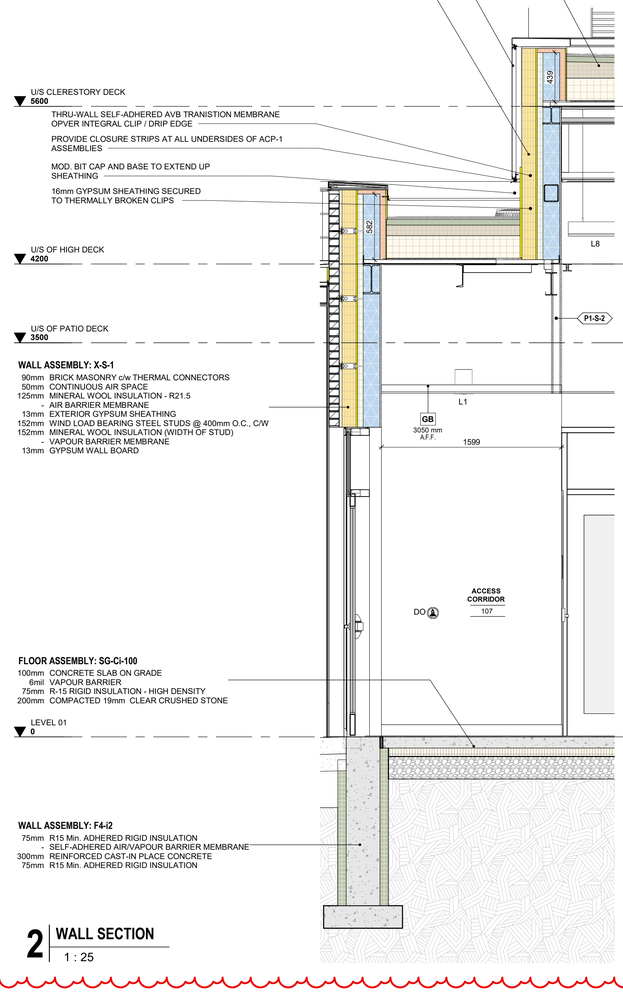
ISSUE DATE: 09/03/2024
DRAWN BY: AR / SL
CHECKED BY:Checker
PROJECT NO.: 12303
SCALE: 1 : 25
DRAWING NO.: **A05.06**
REVISION: **7**



ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: ACP-1
- ALUMINUM COMPOSITE PANELS MOUNTED TO SUPPORTING WALL ASSEMBLY (REFER TO GENERAL NOTES)
* PROVIDE Z-GIRTS FOR ANCHORING

WALL ASSEMBLY: X-S-1a
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD



THRU-WALL SELF-ADHERED AVB TRANISTION MEMBRANE OPVER INTEGRAL CLIP / DRIP EDGE

PROVIDE CLOSURE STRIPS AT ALL UNDERSIDES OF ACP-1 ASSEMBLIES

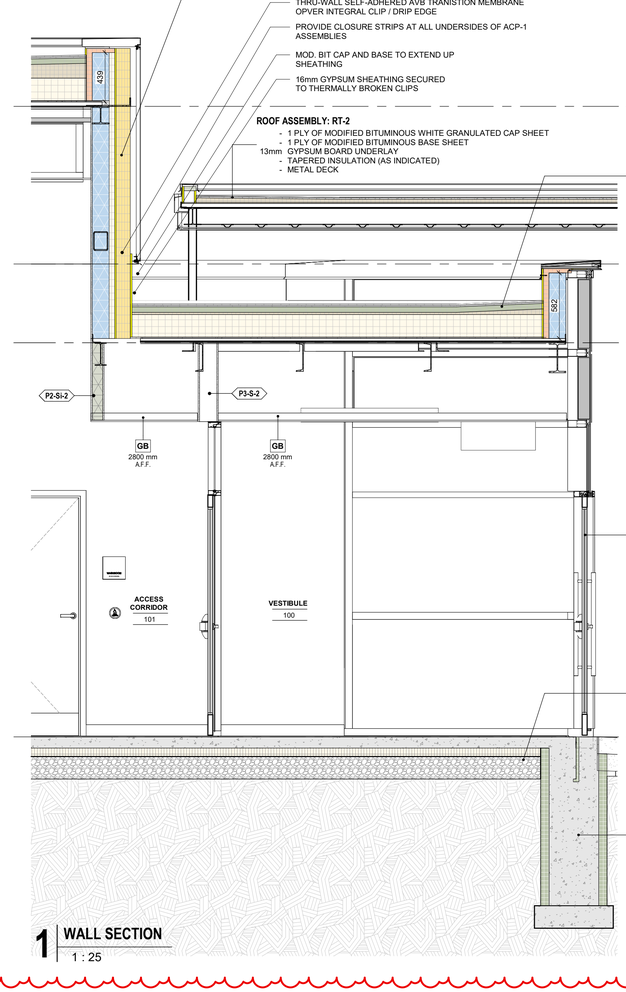
MOD. BIT CAP AND BASE TO EXTEND UP SHEATHING

16mm GYPSUM SHEATHING SECURED TO THERMALLY BROKEN CLIPS

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F4-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
300mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION



WALL ASSEMBLY: X-S-1a
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

THRU-WALL SELF-ADHERED AVB TRANISTION MEMBRANE OPVER INTEGRAL CLIP / DRIP EDGE

PROVIDE CLOSURE STRIPS AT ALL UNDERSIDES OF ACP-1 ASSEMBLIES

MOD. BIT CAP AND BASE TO EXTEND UP SHEATHING

16mm GYPSUM SHEATHING SECURED TO THERMALLY BROKEN CLIPS

ROOF ASSEMBLY: RT-2
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm GYPSUM BOARD UNDERLAY
- TAPERED INSULATION (AS INDICATED)
- METAL DECK

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: CW-1
- ALUMINUM FRAMED GLAZING SYSTEM SCHUCO FWS 50.SI FRAME DEPTH OF 8" (152.4mm) FOR 2-1/2" (63.5mm) C/W TRIPLE GLAZED IGU'S

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

3 WALL SECTION
1 : 25

2 WALL SECTION
1 : 25

1 WALL SECTION
1 : 25

[PLOT DATE: 2024-09-05 4:43:19 PM]

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI

Design Partners in Architecture and Interiors

23 Main Street West Hamilton, Ontario L8P 1H1 Canada
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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
6	ADDENDUM 02	09/03/2024
5	TENDER	07/16/2024
4	CLASS A ESTIMATE	05/21/2024
3	90% CONTRACT DOCUMENTS	05/21/2024
2	60% CONTRACT DOCUMENTS	04/16/2024
1	CLASS B ESTIMATE	08/01/2024
0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

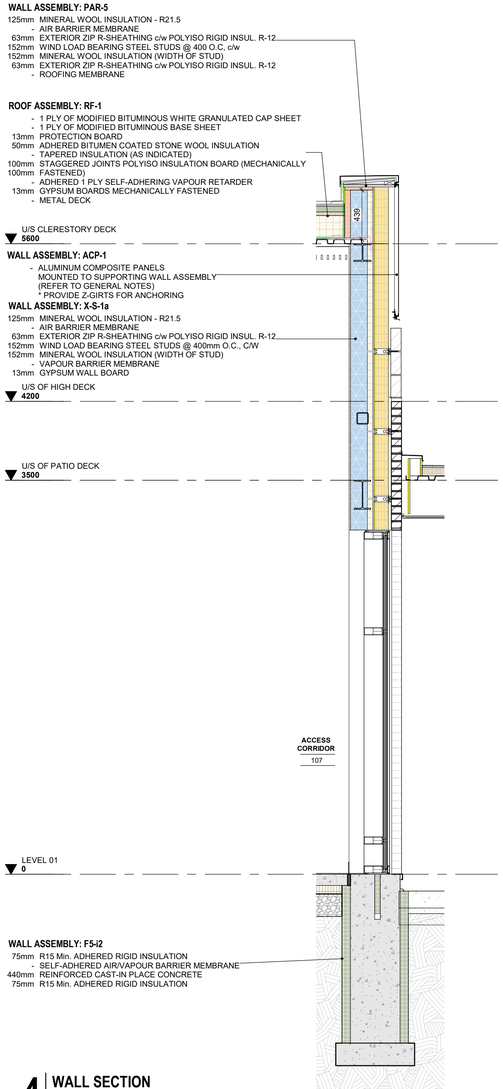
WALL SECTIONS

ISSUE DATE: 09/03/2024

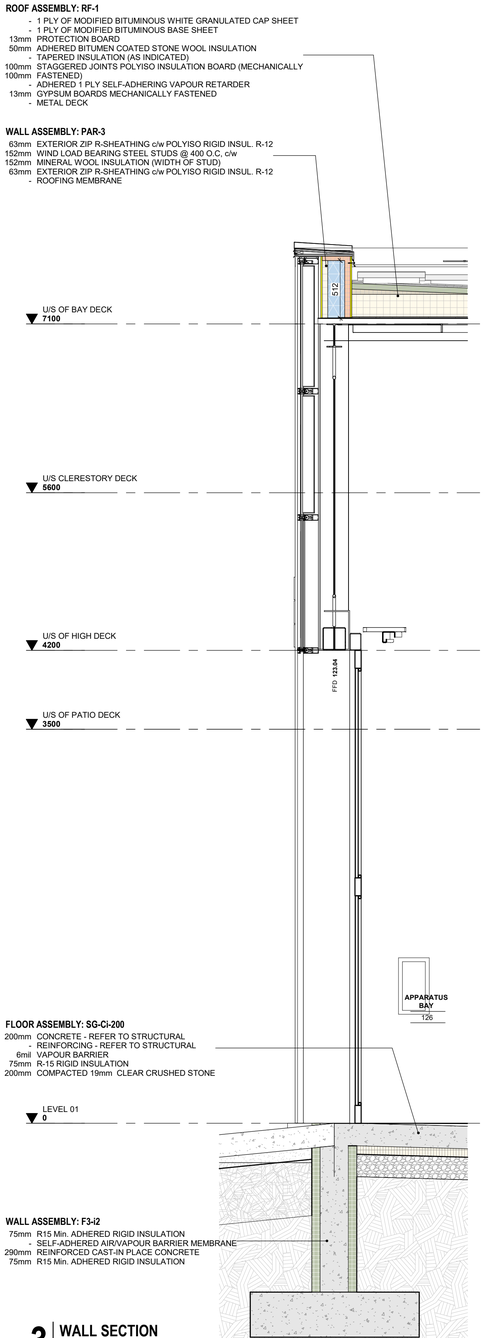
DRAWN BY: MM / SRL / AR CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: 1 : 25

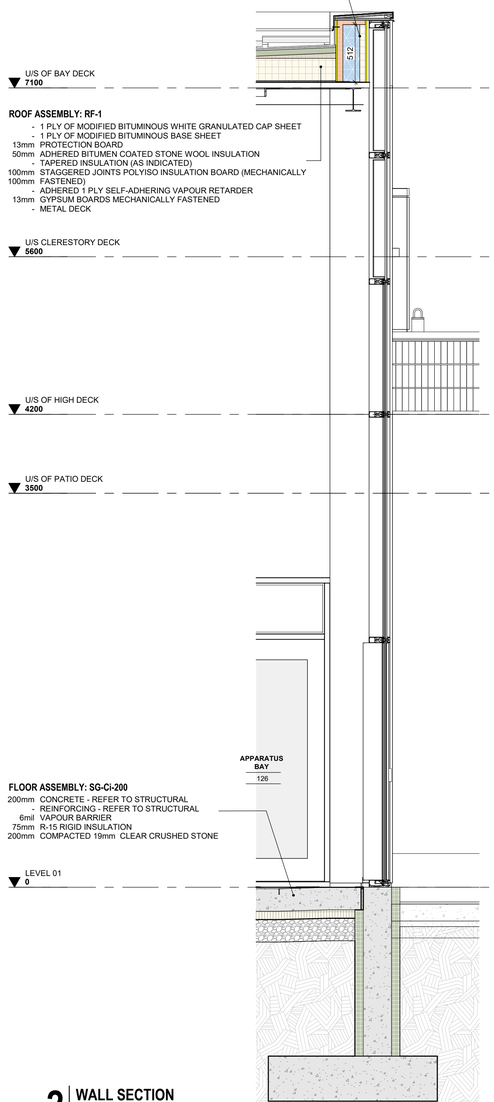
DRAWING NO.: **A05.07** REVISION: **6**



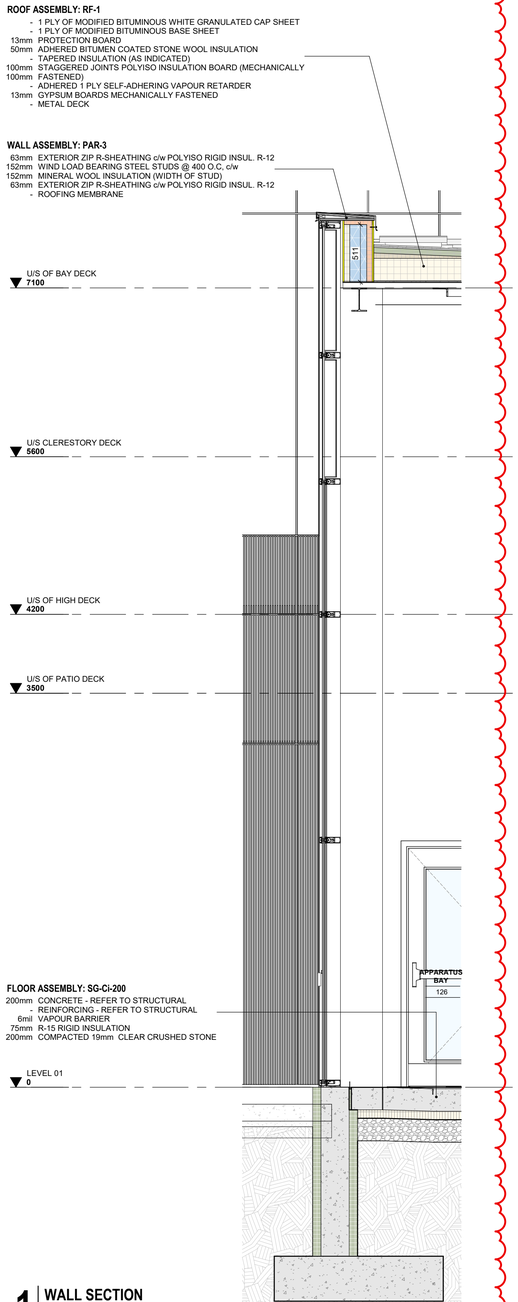
4 | WALL SECTION
1 : 25



3 | WALL SECTION
1 : 25



2 | WALL SECTION
1 : 25



1 | WALL SECTION
1 : 25

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
6	ADDENDUM 02	09/03/2024
5	TENDER	07/16/2024
4	CLASS A ESTIMATE	05/21/2024
3	90% CONTRACT DOCUMENTS	05/21/2024
2	60% CONTRACT DOCUMENTS	04/16/2024
1	CLASS B ESTIMATE	08/01/2024
0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

WALL SECTIONS

ISSUE DATE: 09/03/2024
DRAWN BY: MM / SRL / AR
CHECKED BY: SRL
PROJECT NO.: 12303
SCALE: 1 : 25
DRAWING NO.: **A05.08**
REVISION: **6**

PLOT DATE 2024-09-03 4:08:28 PM

ROOF ASSEMBLY: RH-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

U/S LOW DECK
3500

620
1450
2150
600

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

WS

FITNESS
108

PRE-FINISHED ALUMINUM SILL FLASHING AT WINDOWS. TYPICAL AT ALL LOCATIONS

SOLID SURFACE SILL AT ALL WINDOW LOCATIONS. TYPICAL.

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

7 WALL SECTION
1 : 25

ROOF ASSEMBLY: RH-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

U/S OF PATIO DECK
3500

ROOF ASSEMBLY: RT-2
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm GYPSUM BOARD UNDERLAY
- TAPERED INSULATION (AS INDICATED)
- METAL DECK

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

FITNESS
108

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

5 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

620
1150
3050

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

DAYROOM
105

ROOF ASSEMBLY: RT-2
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm GYPSUM BOARD UNDERLAY
- TAPERED INSULATION (AS INDICATED)
- METAL DECK

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

3 WALL SECTION
1 : 25

ROOF ASSEMBLY: RH-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

U/S LOW DECK
3500

620
1300
1200
1000

GB
2438 mm
A.F.F.

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

WS

OFFICE
102

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

1 WALL SECTION
1 : 25

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF HIGH DECK
4200

THRU WALL MEMBRANE FLASHING TO FACE OF ARCHITECTURAL BLOCK. RETURN ROOF MEMBRANE COUNTER OVER BLOCK FACE. MOP ROOFING FELTS ON FACE OF BLOCK.

PROVIDE 90 MASONRY BLOCK SECRED TO STEEL ANGLE. REFER TO STRUCTURAL.

U/S OF PATIO DECK
3500

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

L1 L1

GB
3014 mm
A.F.F.

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

DORMITORY
113.01

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

6 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

U/S LOW DECK
3500

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: CW-1
- ALUMINUM FRAMED GLAZING SYSTEM
SCHUCO FWS 50.SI
FRAME DEPTH OF 8" (152.4mm) FOR 2-1/2" (63.5mm)
C/W TRIPLE GLAZED IGU'S

CW-1

GB
3014 mm
A.F.F.

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

DORMITORY
113.01

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

4 WALL SECTION
1 : 25

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

ACT-1
3200 mm
A.F.F.

GB
2438 mm
A.F.F.

GB
2438 mm
A.F.F.

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

OFFICE
102

WALL ASSEMBLY: B-190-1
190mm CONCRETE MASONRY UNITS

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

2 WALL SECTION
1 : 25

6

[PLOT DATE: 2024-09-03 4:29:56]

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI

Design Partners in Architecture and Interiors

23 Main Street West Hamilton, Ontario L8P 1H1 Canada
T: 905-522-0220

DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO ARCHITECTS BEFORE PROCEEDING WITH WORK.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
6	ADDENDUM 02	09/03/2024
5	TENDER	07/16/2024
4	CLASS A ESTIMATE	05/21/2024
3	90% CONTRACT DOCUMENTS	05/21/2024
2	60% CONTRACT DOCUMENTS	04/16/2024
1	CLASS B ESTIMATE	08/01/2024
0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

WALL SECTIONS

ISSUE DATE: 09/03/2024

DRAWN BY: MM / SRL / AR CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: 1 : 25

DRAWING NO.: **A05.09** REVISION: **6**

Addendum

Project Name:	Brampton Fire Station 215	**MTE File No.:**	53251-100
Client:	DPAI Architecture Inc	**Date:**	August 16, 2024
Client File No:	12303	**Addendum No.:**	02

This Addendum forms part of the Contract Documents and amends the original Drawings, issued June 26, 2024, as noted below.

This Addendum consists of one (1) page(s).

Item 1	**Garbage Enclosure**
S1.0	1. Remove retaining walls from first row of Concrete Mix Properties Table. 2. Add row for Retaining Walls & Retaining Wall Footings to Concrete Mix Properties Table.
S8.0	1. Add sheet S8.0 Garbage Enclosure. 2. Add reinforced concrete garbage enclosure plan and section details.

End of Addendum 02

S1.0
GENERAL NOTES

C:\Users\MBoeringa\Documents\Revit User Files\53251-100 Brampton Fire 215 v24_mboeringaWLUE9.rvt

MTE Computer Dwg No.

8/15/2024 3:11:32 PM JDG

N01 GENERAL NOTES

1. CONFORM TO THE REQUIREMENTS OF THE LATEST ONTARIO BUILDING CODE (OBC) INCLUDING ALL THE LATEST STANDARDS REFERENCED THEREIN, AND ANY APPLICABLE ACTS OF AUTHORITY HAVING JURISDICTION. THE LATEST VERSION OF ALL STANDARDS AND CODES LISTED BELOW SHALL BE USED.
2. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER SPECIFICATIONS AND CONTRACT DOCUMENTS.
3. WHERE DISCREPANCIES EXIST BETWEEN CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND APPLICABLE CODES AND ACTS, THE MOST STRINGENT SHALL GOVERN. CONTRACTOR SHALL CHECK ALL DIMENSIONS ON WORKING DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
4. THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.
5. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISION COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" BY MTE CONSULTANTS.
6. UNDER NO CIRCUMSTANCES ARE THESE DRAWINGS TO BE SCALED, INCLUDING FOR PREPARATION OF SHOP DRAWINGS, CONSTRUCTION LAYOUT, OR BIDDING PURPOSES. ERRORS MADE BY PERSONS SCALING THESE DRAWINGS SHALL NOT BE THE RESPONSIBILITY OF MTE CONSULTANTS.
7. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND SIZES OF PITS, BASES, HOUSE KEEPING PADS, SUMPS, TRENCHES, DEPRESSIONS, GROOVES, CURBS, CHAMFERS AND SLOPES NOT SHOWN ON STRUCTURAL DRAWINGS.
8. BEFORE PROCEEDING WITH WORK, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIARIZED WITH ALL CHARACTERISTICS AFFECTING NEW AND EXISTING CONSTRUCTION. ANY CHANGES, ALTERATIONS OR REVISIONS MUST BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
9. SUBSTITUTIONS FROM SPECIFIED PRODUCTS AND MATERIALS MUST BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO ORDERING OF MATERIALS. THE CONTRACTOR SHALL REIMBURSE ALL CONSULTANTS FOR ADDITIONAL COSTS INCURRED AS A RESULT OF REVIEWING ANY CHANGES MADE TO THE CONTRACT DOCUMENTS.
10. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS - O.REG. 213/91.
11. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN ALL SHORING AND TEMPORARY BRACING AS PER O.REG 213/91 AND THE CONTRACTOR SHALL RETAIN AN ENGINEER AS REQUIRED.
12. THE CONTRACTOR SHALL RETAIN AN INDEPENDENT INSPECTION AND TESTING COMPANY TO ENSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. REQUIRED TESTING SHALL BE AS PER THE TESTING AND INSPECTION TABLE BELOW.
13. MTE CONSULTANTS WILL PROVIDE GENERAL REVIEW OF CONSTRUCTION IN ACCORDANCE WITH THE PERFORMANCE STANDARDS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO BY MEANS OF A RATIONAL SAMPLING PROCEDURE TO DETERMINE WHETHER THE CONSTRUCTION OF THAT WORK SHOWN ON THE MTE DRAWINGS IS IN GENERAL CONFORMITY WITH THE PLANS, SKETCHES, DRAWINGS, AND SPECIFICATIONS FORMING PART OF THE CONTRACT DOCUMENTS PREPARED BY "MTE". THE CONTRACTOR IS SOLELY RESPONSIBLE FOR QUALITY CONTROL AND THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT. "MTE" SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
14. IT IS THE RESPONSIBILITY OF BOTH THE OWNER AND THE CONTRACTOR TO NOTIFY THE ENGINEER OF CONSTRUCTION PROGRESS SO THE ENGINEER CAN COMPLETE GENERAL REVIEWS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A CONSTRUCTION SCHEDULE PRIOR TO STARTING THE WORK. GENERALLY, REVIEWS BY THE ENGINEER WILL BE REQUIRED FOR REBAR PRIOR TO CONCRETE PLACEMENT, FOOTING AND FOUNDATIONS PRIOR TO BACKFILLING, AND ABOVE GRADE FRAMING PRIOR TO INSTALLATION OF INTERIOR FINISHES.

N02 TESTING AND INSPECTION

THE FOLLOWING ITEMS REQUIRE TESTING OR INSPECTION BY A CERTIFIED INDEPENDENT TESTING OR INSPECTION AGENCY UNLESS NOTED OTHERWISE. THE AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.

ITEM	REQ'D	COMMENTS
SOIL BEARING CAPACITY	YES	BY SOILS ENGINEER
SOIL COMPACTION	YES	BY SOILS ENGINEER
REINFORCING STEEL PLACMENT	YES	INSPECT FINAL PLACEMENT
CONC. COMPRESSIVE TESTS	YES	MIN. 2 SETS PER 100 CUBIC METRES
CONCRETE SLUMP	YES	
STRUCTURAL STEEL BOLTING	YES	
STRUCTURAL STEEL WELDING	YES	INSPECT ALL FIELD WELDS
MORTAR CUBES	YES	

N03 REQUIRED SUBMITTALS

THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

ITEM	REQ'D SUBMITTAL?	ENGINEER'S STAMP REQ'D?	NOTES
REBAR SHOP DRAWINGS	YES	NO	INCL CONC BLOCK REINF
CONCRETE MIX DESIGNS	YES	NO	
MASONRY GROUT MIX DESIGN	YES	NO	
BLOCK MILL REPORT	YES	NO	
STRUCTURAL STEEL SHOP DRAWINGS	YES	YES	FOR CONNECTIONS ONLY
MISCELLANEOUS STEEL SHOP DRAWINGS	YES	YES	STAMP FOR STAIRS, LADDERS AND GUARDS
STEEL DECK SHOP DRAWINGS	YES	YES	
COLD FORMED STEEL FRAMING SHOP DWGS.	YES	YES	
FALL ARREST ANCHORS	NO	NO	

N04 PROJECT DESIGN DATA TABLE

BUILDING IMPORTANCE CATEGORY	POST-DISASTER	
FLOOR AND ROOF DESIGN LOADS AS NOTED ON FRAMING PLANS		
SPECIFIED WIND LOADS		
HOURLY WIND PRESSURE (1/50) DESIGN DATA	0.44 kPa	
WIND DESIGN CATAGORY	CATEGORY 3	
TERRAIN	OPEN	
SPECIFIED SNOW LOADS		
BASIC ROOF SNOW LOAD	S	1.80 kPa
SNOW AND RAIN LOADING (1/50) DESIGN DATA	Ss	1.30 kPa
	Sr	0.40 kPa
	24HR RAIN	119mm
FACTORS USED FOR BASIC ROOF SNOW LOAD	Cb	0.80
	Cw	1.00
	Cs	1.00
	Ca	1.00
ADDITIONAL SNOW ACCUMULATION AROUND OBSTRUCTIONS AND ADJACENT TO HIGHER ROOF LEVELS OR WALLS IS INDICATED ON THE DRAWINGS.		
SPECIFIED EARTHQUAKE LOADS		
SEISMIC LOADING DESIGN DATA	Sa (0.2)	0.168
	Sa (0.5)	0.096
	Sa (1.0)	0.052
	Sa (2.0)	0.0260
	Sa (5.0)	0.0064
	Sa (10.0)	0.0025
	PGA	0.097
	PGV	0.068
SITE CLASS TO BE CONFIRMED BY GEOTECHNICAL ENGINEER	SITE CLASS	'C'
SEISMIC FORCE MODIFICATION FACTORS FOR SEISMIC FORCE RESISTING SYSTEM	Rd	2.0
	Ro	1.3
SEISMIC HAZARD INDEX	IeFaSa (0.2)	0.25
NO STRUCTURAL IRREGULARITIES		
SFRS - LIMITED-DUCTILE STEEL BRACED FRAMES / MOMENT FRAMES & MASONRY SHEAR WALLS		
Ie = 1.5 (POST DISASTER)		

NOTES:
1. ALL LOADS AND ANALYSIS CONFORM TO THE 2012 OBC DIV B PART 4 (INCLUDING AMENDMENTS MADE NO MAY 12, 2023) AND THE USER'S GUIDE - NBC 2015 STRUCTURAL COMMENTARIES
2. ALL DESIGN DATA ABOVE IS FROM THE 2012 OBC SUPPLEMENTARY STANDARD SB-1 TABLE 2 AND 3
3. WIND LOADING IS BASED ON THE STATIC PROCEDURE.
4. SEISMIC LOADING IS BASED ON THE EQUIVALENT STATIC FORCE PROCEDURE.
5. THE STRUCTURE HAS NOT BEEN DESIGNED FOR ANY FUTURE EXTENSION UNLESS NOTED.

N05 FOUNDATION

1. ALL BOREHOLE INFORMATION AND GEOTECHNICAL DATA HAS BEEN OBTAINED FROM THE SOIL INVESTIGATION PERFORMED BY WOOD ENVIRONMENTAL & INFRASTRUCTURE SOLUTIONS AS REPORTED IN THEIR SOIL REPORT NO. OESAR2109.4000 DATED APRIL 18, 2022 . CONTRACTOR TO READ THESE REPORTS, AND BE THOROUGHLY FAMILIARIZED WITH ITS FINDINGS.
2. ALL COLUMN AND WALL FOOTINGS SHALL BEAR DIRECTLY ON UNDISTRURBED NATIVE SOIL, WITH A MINIMUM SOIL BEARING CAPACITY OF 200 kPa (SLS) AND 300 kPa (ULS) AT THE DEPTHS INDICATED ON THE DRAWINGS. EXISTING FILL MAY BE ENCOUNTERED. USE OF THIS FILL MUST BE APPROVED BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION OF FOOTINGS.
3. NO FOUNDATION MAY BE POURED BEFORE THE BEARING MATERIAL HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER. NOTIFY THE GEOTECHNICAL ENGINEER A MINIMUM F 24 HOURS BEFORE THE INTENDED CONCRETE POUR.
4. REMOVE ALL TOPSOIL, ORGANIC LOOSE FILL AND OTHER DELETERIOUS MATERIAL FROM BUILDING AREA BEFORE STARTING CONSTRUCTION.
5. WHERE APPROVED, GRANULAR FILL UNDER ALL FOOTINGS ON GRADE SHALL BE COMPACTED IN 150 mm (6") LAYERS TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
6. FOUND NEW FOOTINGS WHICH ARE LOCATED ADJACENT TO EXISTING FOOTINGS, AT THE SAME ELEVATION AS THE EXISTING FOOTINGS, UNLESS NOTED OTHERWISE. ANY NECESSARY PRECAUTIONS SHALL BE TAKEN TO ENSURE THAT EXISTING FOOTINGS ARE NOT DISTURBED OR UNDERMINED IN ANY WAY DURING EXCAVATION.
7. FOUND ALL FOOTINGS BELOW THE LEVEL AT WHICH POTENTIAL DAMAGE RESULTING FROM FROST ACTION CAN OCCUR FOR THE FINISHED STRUCTURE, BUT A MINIMUM 1200 mm (4 FT.) BELOW FINISHED EXTERIOR GRADE, UNLESS NOTED OTHERWISE. UNDER NO CIRCUMSTANCES SHOULD DEPTH BE LESS THAN LOCAL FROST PENETRATION REQUIREMENTS.
8. PROTECT ALL SOIL FROM FREEZING ADJACENT TO AND BELOW ALL FOUNDATIONS DURING CONSTRUCTION.
9. INSULATION IS SHOWN WHERE REQUIRED FOR PROTECTION OF THE FOUNDATIONS FROM DAMAGE DUE TO FROST ACTION ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR FOUNDATION INSULATION NOT SHOWN ON THE STRUCTURAL DRAWINGS.
10. SLABS ON GRADE:
    a. PLACE SLABS ON GRADE ON MATERIAL CAPABLE OF SAFELY SUPPORTING 25 kPa WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOUNDATIONS.
    b. PROOF-ROLL EXISTING FILL MATERIAL. REMOVE ANY LOOSE OR SOFTENED AREAS BENEATH SLAB-ON-GRADE BEFORE PLACING GRANULAR FILL.
    c. APPROVED GRANULAR FILL UNDER ALL FLOOR SLABS ON GRADE SHALL BE COMPACTED IN 150 mm (6") LAYERS TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
    d. BEFORE CASTING THE SLAB PLACE 200 mm (8") OF 19 mm (3/4") CLEAR CRUSHED STONE OVER THE SUB-BASE AND THOROUGHLY ROLL AND CONSOLIDATE TO THE LEVELS REQUIRED.
    e. WHERE THE SLAB-ON-GRADE IS USED TO LATERALLY RESTRAIN THE TOP OF AN EARTH-RETAINING WALL, ADEQUATELY SHORE THE WALL UNTIL THE SLAB HAS BEEN CAST AND ATTAINED 70% OF ITS SPECIFIED STRENGTH.
    f. PROVIDE 25 mm (1") RIGID STYROFOAM INSULATION BENEATH FLOOR SLABS IN UNHEATED AREAS.
11. CARRY OUT BACKFILLING AGAINST FOUNDATION WALLS WHERE THERE IS GRADE ON BOTH SIDES IN SUCH A MANNER THAT THE LEVEL OF BACKFILLING ON ONE SIDE OF THE WALL IS NEVER MORE THAN 500 mm (20") DIFFERENT FROM THE LEVEL ON THE OTHER SIDE OF THE WALL, EXCEPT WHERE TEMPORARY SHORING FOR THE WALL IS PROVIDED.
12. DO NOT PLACE BACKFILL AGAINST WALLS RETAINING EARTH (OTHER THAN CANTILEVERED RETAINING WALLS) UNTIL THE WALLS AND THE FLOOR CONSTRUCTIONS AT THE TOP AND BOTTOM OF THE WALLS HAVE BEEN CAST AND HAVE ATTAINED 100% OF THEIR DESIGN STRENGTH.
13. IN NO CASE SHALL HORIZONTAL CONTROL JOINTS BE ALLOWED IN ANY VERTICALLY SPANNING CONCRETE WALLS WITHOUT THE CONSENT OF THE ENGINEER.

N06 CONCRETE AND REINFORCING

1. ALL CONCRETE WORK TO CONFORM TO THE LATEST REQUIREMENTS OF CSA STANDARDS A23.1, A23.2 & A23.3.
2. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.18 GRADE 400W FOR REINFORCING STEEL AND BE DEFORMED HI-BOND HARD GRADE WITH MINIMUM YIELD STRENGTH OF Fy = 400 MPa.
3. WELDED WIRE MESH AND WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.5 WITH A MINIMUM YIELD STRENGTH OF Fy = 450 MPa. ALL WELDED WIRE PRODUCTS ARE TO BE SUPPLIED AS FLAT SHEETS AND SHALL BE LAPPED A MINIMUM OF 150mm (6") AT JOINTS (U.N.O.).
4. DETAILING AND PLACING OF ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE REINFORCING STEEL INSTITUTE OF CANADA "MANUAL OF STANDARD PRACTICE".
5. ALL REINFORCING STEEL SHALL BE SHOP FABRICATED TO INCLUDE HOOKS AND BENDS AS REQUIRED.
6. ALL REINFORCING LAP SPLICES SHALL CONFORM TO THE LATEST CSA STANDARD A23.3 AND ALL BAR SPLICES SHALL BE CLASS 'B' TENSION SPLICES (U.N.O.).
    a. NO BAR SPLICES SHALL BE LESS THAN IN THE TABLE BELOW.
    b. INCREASE HORIZONTAL SPLICE LENGTHS IN THE TABLE BY 1.3 WHERE MORE THAN 300MM (12") OF FRESH CONCRETE IS CAST BELOW THE SPLICE.

CONCRETE / REBAR SIZE	TENSION SPLICE			COMPRESSION SPLICE
	25 MPa	30 MPa	35 MPa	
10M	400 (16")	400 (16")	400 (16")	450 (18")
15M	600 (24")	600 (24")	600 (24")	450 (18")
20M	800 (32")	800 (32")	800 (32")	600 (24")
25M	1200 (48")	1100 (44")	1000 (40")	750 (30")
30M	1400 (56")	1300 (52")	1200 (48")	900 (36")
35M	1650 (66")	1500 (60")	1400 (56")	1050 (42")

7. ALL DOWEL EMBEDMENT SHALL MATCH THE ABOVE TENSION SPLICE LENGTH, UNLESS NOTED OTHERWISE.
8. ALL REINFORCING STEEL FABRICATION AND PLACEMENT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
9. PLACE REINFORCING BARS SYMMETRICALLY OVER SUPPORTS AND SYMMETRICALLY IN SPANS, UNLESS NOTED OTHERWISE.
10. REINFORCING BARS, DOWELS AND ANCHOR BOLTS SHALL BE SECURELY TIED IN PLACE SO AS TO MAINTAIN THEIR EXACT POSITION BEFORE AND DURING PLACEMENT OF CONCRETE. BAR SUPPORTS SHALL ONLY BE MADE OF PRECAST CONCRETE BLOCKS, PLASTIC OR WIRE.
11. ALL OIL, GREASE, MUD AND DEBRIS SHALL BE ENTIRELY REMOVED FROM THE REINFORCING STEEL AND ANCHOR BOLTS PRIOR TO THE PLACEMENT OF CONCRETE. REBAR SHALL BE STORED ON SITE IN A MANNER TO BE KEPT CLEAN AND FREE FROM DELETERIOUS MATERIALS.
12. WELDING OF REINFORCING STEEL SHALL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
13. CONFORM TO THE CONCRETE COVER REQUIREMENTS OF CSA A23.1 AND THE FOLLOWING, UNLESS NOTED OTHERWISE:
    a. CONCRETE CAST AGAINST EARTH: 75 mm (3")
    b. PIERS AND WALL: 40 mm (1.5")
    c. EXPOSED TO DE-ICING CHEMICALS: 60 mm (2.5")
    d. INTERIOR BEAMS: 30 mm
    e. INTERIOR SLABS: 25 mm (1")
14. CONCRETE PROPERTIES:
    a. ALL CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 35 MPa UNLESS OTHERWISE SPECIFIED.
    b. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO USE AT JOB SITE.
15. WHEN SUPER-PLASTICIZERS ARE USED, THE SLUMP MAY BE INCREASED BEYOND THE VALUES GIVEN, BUT SHALL BE BELOW THE POINT WHERE SEGREGATION WILL OCCUR. THE COST OF SUPER-PLASTICIZERS SHALL BE INCLUDED IN THE COST OF CONCRETE.
16. DO NOT ADD WATER TO CONCRETE UNLESS WRITTEN APPROVAL GIVEN BY THE ENGINEER. IF HIGHER SLUMP CONCRETE IS DESIRED, CONCRETE SUPPLIER SHALL DESIGN AND SUPPLY ACCORDINGLY.
17. HOT AND COLD WEATHER CONCRETING SHALL COMPLY WITH ALL REQUIREMENTS OF CSA STANDARD A23.1. CALCIUM CHLORIDE ADDITIVES WILL NOT BE PERMITTED.
18. ALL CONCRETE FORMWORK TOLERANCES AND SURFACE FINISHES SHALL COMPLY WITH CSA STANDARD A23.1 UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL DRAWINGS.
19. ALL CONCRETE FORMS TO BE WET THOROUGHLY BEFORE POURING CONCRETE.
20. WATER CURING OF CONCRETE IS RECOMMENDED. CURE AND PROTECT ALL CONCRETE IN ACCORDANCE WITH CSA A23.1 SECTION 7.4.
21. ALL CONCRETE EXCEPT SLABS ON GRADE 150mm (6") THICK OR LESS SHALL BE MECHANICALLY VIBRATED SO AS TO COMPLETELY FILL THE FORM WITHOUT CAUSING UNDUE SEGREGATION. ANY DEFECTS IN THE HARDENED CONCRETE SHALL BE SATISFACTORILY REPAIRED OR SHALL BE REPLACED.
22. CONTROL JOINTS IN SLABS ON GRADE SHALL BE ¼ THE THICKNESS OF THE SLAB. SPACING OF CONTROL JOINTS IN CONCRETE SLABS-ON-GRADE SHALL NOT EXCEED THE GREATER OF 25 TIMES THE THICKNESS OF THE SLAB OR 3000 MM (10'-0") UNLESS NOTED ON THE DRAWINGS.
23. WHERE STEEL BEARING PLATES ARE SHOWN ON THE DRAWINGS, THEY SHALL BE ANCHORED WITH A MINIMUM OF TWO 12 mm DIA X 450MM LONG + 50 mm (1/2" DIA x 18" LONG + 2") HOOKED ANCHOR RODS WELDED TO THE PLATES AND EMBEDDED INTO THE CONCRETE.

CONCRETE MIX PROPERTIES TABLE

CONCRETE	MIN.28 DAYS STRENGTH (MPa) U.N.O.	SLUMP mm(in)	AIR CONTENT (%)	MAX. AGGREGATE SIZE (in)	EXPOSURE CLASS
EXTERIOR FOUNDATION WALLS	25	80 (±30")	4-7	3/4"	F-2
INTERIOR PIERS / WALLS/FOOTINGS	25	80 (±30")	0	3/4"	N
INT. S.O.G.	25	80 (±30")	0	3/4"	N
FREEZE THAW EXPOSURE	25	80 (±30")	4-7	3/4"	F-2
EXTERIOR SLAB (UNREINFORCED)	32	80 (±30")	5-8	3/4"	C-2
EXTERIOR SLAB (REINFORCED)	35	80 (±30")	5-8	3/4"	C-1
NON-SHRINKABLE GROUT	30	AS PER MANUF. RECOMEN.	0	-	N
LEAN MIX CONCRETE	8	80 (±30")	0	-	N
EXTERIOR FOOTINGS	25	80 (±30")	4-7	3/4"	F-2
RETAINING WALLS & RETAINING WALL FOOTINGS	30	80 (±30")	4-7	3/4"	F-2

7

24. CHECK ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, LANDSCAPE AND ALL OTHER RELEVANT DRAWINGS FOR LOCATIONS AND SIZES OF BOLTS, SLEEVES AND OPENINGS.

N06 CONCRETE AND REINFORCING (CONT.)

25. SUPPLY AND SET ANCHOR BOLTS, SLEEVES, PIPE HANGERS, JOISTS AND OTHER INSERTS AND OPENINGS AS INDICATED OR SPECIFIED ELSEWHERE.
FOR BEAMS AND COLUMNS: NO SLEEVES, DUCTS, PIPES OR OTHER OPENINGS SHALL PASS VERTICALLY OR HORIZONTALLY EXCEPT WHERE EXPLICITLY DETAILED ON STRUCTURAL DRAWINGS OR WHERE APPROVED IN ADVANCE BY ENGINEER.
FOR SLABS AND WALLS: ALL SLEEVES AND OPENINGS GREATER THAN 100 mm (4") IN ANY DIMENSION OR REQUIRING THE CUTTING OF ANY REINFORCEMENT, AND NOT INDICATED ON STRUCTURAL DRAWINGS, MUST BE APPROVED BY THE ENGINEER.
FOR MULTIPLE OPENINGS OR SLEEVES: IF WITHIN 600 mm (24") OF EACH OTHER CONSULT ENGINEER FOR DIRECTION.
26. CAST IN ANCHOR BOLTS SHALL CONFORM TO THE LATEST CSA STANDARD G40.21 OR ASTM F1554 WITH A MINIMUM YIELD STRENGTH OF 250 MPa AND SHALL BE SET TRUE AS O LOCATION, ELEVATION AND PROJECTION TO THE FOLLOWING TOLERANCES:
ANCHOR BOLT LOCATION = ± 3mm (1/8").
ANCHOR BOLT PROJECTION = ± 6mm (1/4").
27. CONSTRUCTION JOINTS FOR WALLS ARE BASED UPON VERTICAL JOINTS AT A MAXIMUM SPACING OF 10000 mm (30'-0"). UNLESS CONTROL JOINTS ARE PROVIDED AS PER TYPICAL DETAIL. TOTAL LENGTH OF POUR TO BE DISCUSSED WITH ENGINEER PRIOR TO PROCEEDING.
28. CONSTRUCTION JOINTS FOR WALLS, SLABS, AND BEAMS NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT BEFORE CONSTRUCTION. GENERALLY JOINTS IN SLABS SHALL BE AT RIGHT ANGLES TO THE SPANS, AT MID SPAN IF POSSIBLE AND BE CLEAR OF SUPPORTS AND POINT LOADS..
29. INSERTS, FRAME-OUTS, SLEEVES, BRACKETS, CONDUITS AND FASTENING DEVICES, SHALL BE INSTALLED AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS IN A MANNER THAT SHALL NOT IMPAIR THE STRUCTURAL STRENGTH OF THE SYSTEM, BE SO INSTALLED THAT HEY SHALL NO REQUIRE THE CUTTING, BENDING, OR DISPLACEMENT OF THE REINFORCING OTHER THAN AS SHOWN ON THE TYPICAL DETAILS.
30. ELECTRICAL CONDUITS SHALL NOT PASS THROUGH A COLUMN, SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN 1/3 SLAB THICKNESS OR WALL OR BEAM WHICH IT IS EMBEDDED, SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTER UNLESS APPROVED AND HAVE A MINIMUM CONCRETE COVER OF 25 mm (1") AND UNLESS SPECIFICALLY PERMITTED OTHERWISE, SHALL NOT RUN HORIZONTALLY IN A CONCRETE WALL.
31. TYPE 'S' CONCRETE TO BE USED FOR ALL ELEMENTS.
32. **CONCRETE MIX DESIGNS SHALL CONFORM TO REDUCED CARBON MIXES AS DESCRIBED IN LATEST EDITION OF CRMCA MEMBER INDUSTRY-WIDE EPD FOR CANADIAN READ-MIXED CONCRETE, EPD NUMBER EPD10092**

N07 STEEL DECK

1. DESIGN METAL DECK IN CONFORMANCE WITH THE REQUIREMENTS OF CSA S136 FOR THE LOADS INDICATED ON THE DRAWINGS.
2. SUBMIT SHOP DRAWINGS INDICATING WELDS, MATERIALS AND FINISHES, AND BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO FOR REVIEW BY THE ENGINEER. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
3. UNLESS NOTED OTHERWISE,
    a. ROOF DECK SHALL BE 38 mm x 0.76 mm (1.5" x .030") VIC WEST STEEL INC. RD 938 (OR APPROVED EQUAL), MINIMUM 3 SPANS CONTINUOUS.
    b. FLOOR DECK SHALL BE 38 mm x 0.76 mm (1.5" x .030") VIC WEST STEEL INC. HB 938 (OR APPROVED EQUAL), MINIMUM 3 SPANS CONTINUOUS.
4. METAL DECK SHALL BE LIGHT ZINC COATED STRUCTURAL STEEL SHEET FABRICATED AND ERECTED IN ACCORDANCE WITH CSSBI 10M, CAN/CSA-S136, AND CSSBI 101M. THE MINIMUM ZINC COATING DESIGNATION SHALL BE ZF075 (U.N.O.).
5. DECK SHALL OVERLAP A MINIMUM OF 50 mm (2") AT ALL END JOINTS AND HAVE A MINIMUM BEARING LENGTH OF 50 mm (2") ON ALL STRUCTURAL STEEL.
6. DECK HAS BEEN DESIGNED FOR DIAPHRAGM ACTION (SEE ROOF PLAN NOTES)
7. DECK WELDS SHALL BE TOUCHED UP WITH APPROVED PAINT BY THE DECK ERECTOR.
8. PROTECT ROOF AND FLOOR DECK FROM DAMAGE DURING SHIPPING STORAGE AND ERECTION. CONTRACTOR SHALL REPLACE ANY PUNCTURED, DENTED OR WELD PERFORATED DECK.
9. STEEL DECK WORK SHALL INCLUDE THE SUPPLY AND INSTALLATION OF ALL SHEET STEEL ANGLES, COVER PLATES, CLOSURES, STIFFENERS AND ANY OTHER ACCESSORIES REQUIRED.
10. CUT OPENINGS AND REINFORCE EDGES AS REQUIRED FOR PIPES, DUCTS, ETC.
    a. THE MAXIMUM SIZE OF AN UNREINFORCED OPENING IS 150 mm (6").
    b. REINFORCE ALL OPENINGS LARGER THAN 150 mm (6"), BUT NOT EXCEEDING 450 mm (18"), AS INDICATED BY THE METAL DECK SUPPLIER.
    c. FOR OPENINGS GREATER THAN 450mm (18") NOT SHOWN ON THE DRAWINGS, CONTACT ENGINEER FOR DIRECTION.
11. HANGER WIRE FOR SUSPENDED CEILINGS SHOULD PIERCE BOTH SIDES OF THE FLUTE AND BE LOOPED AROUND AND TIED.

N10 SHOP DRAWING REVIEW

1. ERECTION AND FABRICATION SHOP DRAWINGS FOR ALL BUILDING COMPONENTS AS LISTED IN THE REQUIRED SUBMITTALS TABLE AND ANY RELATED WORKS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE COMMENCING WITH FABRICATION.
2. AS PART OF THEIR FIELD SERVICES, MTE CONSULTANTS ("MTE") WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON MTE CONSULTANT'S DRAWINGS BY MEANS OF APPROPRIATE RATIONAL SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS.
3. REVIEW OF THE SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAIL DESIGN INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR COORDINATION OF THE WORK OF ALL SUB-TRADES.
4. THE APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF THE FITTING OF BUILDING COMPONENTS. ANY DISCREPANCIES IN THE SHOP DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL SHOP DRAWINGS MUST BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN ONTARIO UNLESS NOTED OTHERWISE IN THE SUBMITTALS TABLE BELOW. UNSEALED SHOP DRAWINGS WILL NOT BE REVIEWED UNLESS ALTERNATIVE ARRANGEMENTS HAVE BEEN AGREED UPON.

N08 STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL AND CONNECTIONS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST CSA STANDARD S16
2. STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA-G40.20 FOR GENERAL REQUIREMENTS, AND CAN/CSA-G40.21 FOR QUALITY
    a. GRADE 350W CLASS C FOR H.S.S.
    b. GRADE 350W FOR W SHAPES, S SHAPES, AND TEES.
    c. ALL OTHER MISCELLANEOUS METAL SHALL BE MINIMUM GRADE 300W (U.N.O.)
3. BOLTED CONNECTIONS SHALL USE ASTM A325 BOLTS. ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 EXCEPT THAT ANCHOR BOLTS SHALL BE FABRICATED FROM STEEL ROD CONFORMING TO CSA STANDARD G40.21 OR ASTM F1554 WITH A MINIMUM YIELD STRENGTH OF 250 MPa.
4. STEEL COATINGS - UNLESS NOTED OTHERWISE ALL STRUCTURAL STEEL SHALL BE CLEANED AND PREPARED TO A MINIMUM LEVEL OF SSPC SP-3 AND IN ACCORDANCE WITH CSA STANDARD S16:
    a. ALL INTERIOR STEEL THAT IS TO BE PROTECTED BY A SPRAY APPLIED CEMENTIOUS FIRE PROOFING SHALL BE CLEANED AND REMAIN UNCOATED STEEL.
    b. ALL OTHER INTERIOR STRUCTURAL STEEL SHALL BE SHOP PRIME PAINTED AS PER CSA/CAN-S-16. SHOP PRIMER SHALL CONFORM TO CISC/CPMA 1-73A.
    c. ALL STEEL EXPOSED TO WEATHER IS TO BE HOT DIP GALVANIZED IN ACCORDANCE TO CAN/CSA-G164. TOUCH UP OF WELDS, CUTS OR SCRATCHES TO GALVANIZING SHALL BE DONE WITH A MINIMUM OF 3 COATS OF ZINC RICH PAINT.
5. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD W59 AND SHALL BE UNDERTAKEN BY A FABRICATOR AND ERECTOR FULLY APPROVED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA STANDARD W47, DIVISION 1 AND DIVISION 2. FABRICATOR TO SUPPLY CERTIFICATION OF FUSION WELDING, AND WELDING MAY ONLY BE CARRIED OUT IN ACCORDANCE WITH OWNER'S SAFETY REGULATIONS REGARDING WELDING.
6. FABRICATOR SHALL DESIGN CONNECTIONS AND THE LIKE IN ACCORDANCE WITH THE 2012 OBC FOR THE FORCES SHOWN ON THE DRAWINGS. WHERE FORCES ARE NOT NOTED ON THE DRAWINGS, BEAM REACTIONS SHALL BE TAKEN AS ONE-HALF OF THE TOTAL UNIFORMLY DISTRIBUTED FACTORED LOADS NOTED ON THE BEAM LOAD TABLES OF PART FIVE OF CISC'S HANDBOOK OF STEEL CONSTRUCTION, LATEST EDITION, PROVIDED NO POINT LOADS ACT ON THE BEAM. ALL WELDS SHALL BE 5 mm (3/16") MIN. FILLET. ALL BOLTS SHALL BE MIN. M20 (3/4") DIAMETER AND PROVIDE MIN. (2) BOLTS PER CONNECTION.
7. WHERE MOMENT CONNECTIONS ARE CALLED FOR BUT VALUES ARE NOT INDICATED, DESIGN CONNECTIONS FOR FULL MOMENT CAPACITY OF THE SMALLER MEMBER JOINED.
8. SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE MEMBER AT THE POINT OF THE SPLICE. MEMBERS SHALL NOT BE SPLICED AT POINTS OF MAXIMUM STRESS. NO SPLICES SHALL BE MADE UNLESS SHOWN ON THE DRAWINGS OR REVIEWED AND APPROVED BY THE ENGINEER.
9. MOMENT FRAME AND X-BRACE CONNECTIONS SHALL HAVE ASTM A325 FRICTION TYPE M20 (3/4") MINIMUM DIAMETER BOLTS (U.N.O.).
10. SHAPE AND SIZE GUSSET PLATES TO CLEAR ARCHITECTURAL FINISHES AND MECHANICAL DUCTS AND PIPES AND ELEVATOR SHAFTS.
11. SHOP DRAWINGS OF STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
12. ALL BEAMS CANTILEVERED OR CONTINUOUS OVER A COLUMN OR OTHER SUPPORT, AND BEAMS SUPPORTING POINTS OF CONCENTRATED LOAD, SHALL HAVE A MIN. OF 2-10 mm (3/8") STIFFENERS EACH SIDE OF WEB UNLESS OTHERWISE NOTED.
13. TOP OF COLUMNS WHICH ARE NOT BRACED BY JOISTS OR BEAMS SHALL BE BRACED DIAGONALLY TO THE ROOF OR FLOOR BY A MINIMUM OF 4-L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLES FOR INTERIOR COLUMNS; A MINIMUM 2-L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLES FOR EXTERIOR COLUMNS. BRACING SHALL BE BETWEEN TOP OF COLUMN AND TOP CHORD OF JOISTS.
14. COLUMN BASE PLATES AND BEAM BEARING PLATES SHALL BE GROUTED WITH 40 mm (1.5") NON-SHRINK 40 MPa GROUT.
15. ALL COLUMNS BUILT INTO MASONRY WALLS SHALL HAVE ADJUSTABLE ANCHORS AT MINIMUM 400 mm (16") O.C.
16. STEEL BEAMS AND LINTELS SHALL HAVE 200 mm (8") MINIMUM END BEARING ON MASONRY AND 65 mm (2 1/2") MINIMUM BEARING ON STEEL UNLESS INDICATED OTHERWISE.
17. FOR ALL BEAMS AND LINTELS ON STEEL BEARING PLATES.
    a. BEARING PLATES ARE TO BE CENTRED BELOW ALL BEAMS OR LINTELS U.N.O ON THE DRAWINGS.
    b. WELD TO BEARING PLATE WITH A MINIMUM 50 mm x 5 mm (2" x 3/16") FILLET ON BOTH SIDES OF BEAM.
18. WHERE BACK-TO-BACK ANGLES ARE USED AS LINTELS OR SUPPORTS. STITCH WELD TOGETHER AT A MAXIMUM SPACING OF 300mm (12") O.C.
19. ALL ROOF OPENINGS TO BE REINFORCED BY FRAMES COMPRISED OF C130x10 (C5x6.7) CHANNEL MEMBERS UNLESS NOTED OTHERWISE. MAXIMUM SPAN 2250 mm (7'-6").
20. SUPPORT AT COLUMNS AND IRREGULARITIES:
    a. INSTALL L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLE SEATS FOR STEEL DECK AT CONNECTIONS, AT COLUMNS OR OTHER IRREGULARITIES, TO PROVIDE SUPPORT TO THE RIBS OF THE DECK.
    b. INSTALL L102 x 102 x 7.9 mm (L4 x 4 x 5/16") ANGLE SEATS FOR PRECAST SUPPORT AT CONNECTIONS, AT COLUMNS OR OTHER IRREGULARITIES, TO PROVIDE BEARING FOR PRECAST PLANKS.
21. NO STRUCTURAL STEEL SHALL BE CUT IN THE FIELD UNLESS REVIEWED AND APPROVED BY THE ENGINEER.
22. MAINTAIN ERECTION BRACING UNTIL COMPLETION OF ENTIRE STRUCTURE, INCLUDING ROOF DECKS AND OTHER ELEMENTS WHICH ARE PART OF THE LATERAL LOAD RESISTING SYSTEM.
23. **ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL CONFORM TO THE STANDARDS OF THE CISC AESS MATRIX - CATEGORY 1 BASIC ELEMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND DETAILS OF ALL AESS ELEMENTS.**

N17 COLD FORM STEEL FRAMING

1. DESIGN COLD FORMED STEEL FRAMING IN CONFORMANCE WITH THE REQUIREMENTS OF CSA S136.
2. DESIGN ALL COLD FORMED STEEL FRAMING MEMBERS FOR THE GRAVITY AND LATERAL LOADINGS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE 2012 OBC.
3. CONFORM TO THE DEFLECTION REQUIREMENTS OF CSA S304.1 FOR STUDS SUPPORTING MASONRY VENEER.
4. SHOP DRAWINGS FOR ALL COLD FORMED STRUCTURAL STEEL FRAMING INCLUDING CONNECTION, BRACING, AND BRIDGING DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
5. SHOP DRAWINGS FOR ALL COLD FORMED STRUCTURAL STEEL FRAMING SHALL SHOW BOTH DESIGN AND INSTALLATION REQUIREMENTS. RETAIN A LICENSED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO TO PREPARE, SEAL AND SIGN ALL SHOP DRAWINGS; AND TO PERFORM FIELD REVIEW.
6. STEEL SHALL MEET THE REQUIREMENTS OF ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET, ZINC COATED (GALVANIZED) BY THE HOT-DIP PROCESS, STRUCTURAL (PHYSICAL) QUALITY. STEEL STUDS 18 ga. AND LIGHTER SHALL HAVE MINIMUM YIELD STRENGTH OF 230 MPa (33 ksi). HEAVIER STUDS SHALL HAVE MINIMUM YIELD STRENGTH OF 345 MPa (50 ksi).

NOTE TO CONTRACTOR:

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.

THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

ISSUANCE	ID	DATE
ADDENDUM 02	7	AUG. 16, 2024
TENDER	5	JUN. 26, 2024
PERMIT	4	MAY 10, 2024
50% CONTRACT DOCUMENTS	3	APR. 05, 2024
100% DESIGN DEVELOPMENT	2	JAN. 05, 2024
50% DESIGN DEVELOPMENT	1	SEP. 18, 2023

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DPAI ARCHITECTURE INC

PROJECT
BRAMPTON FIRE STATION 215

GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING
GENERAL NOTES

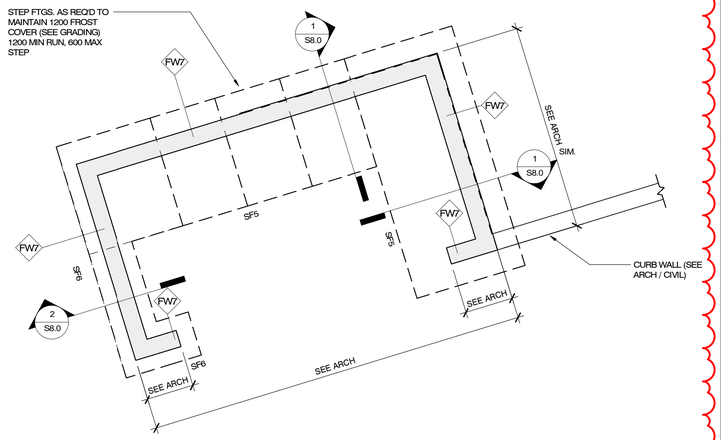
Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S1.0
Scale:	AS NOTED		

S8.0
GARBAGE ENCLOSURE
C:\Users\MBoeringa\Documents\Revit User Files\53251-100 Brampton Fire 215 v24_mboeringaWLUEB.rvt
MTE Computer Dwg No.

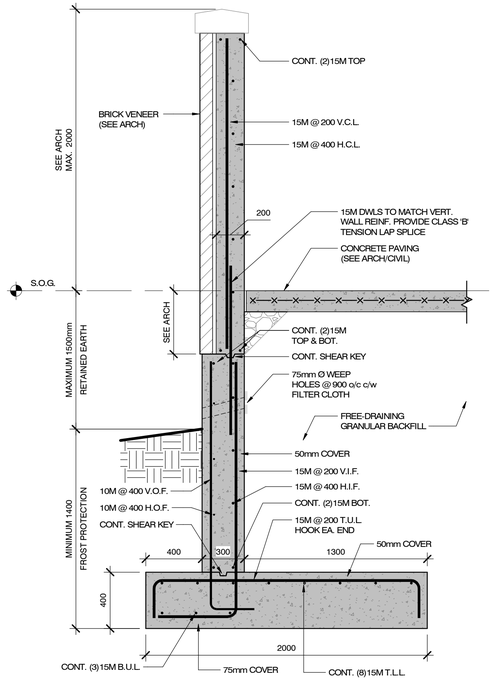
GARBAGE ENCLOSURE FOUNDATION WALL SCHEDULE		
TYPE	WIDTH	REINFORCEMENT
FW7	300	SEE SECTIONS

GARBAGE ENCLOSURE STRIP FOOTING SCHEDULE			
TYPE	WIDTH	THICKNESS	REINFORCEMENT
SF5	2000	400	SEE SECTIONS
SF6	800	300	3-15M CONT. BOTTOM

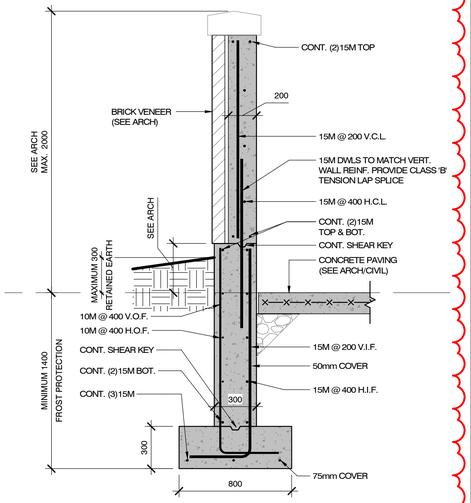
NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWINGS
2. UNDERSIDE OF ALL FOOTINGS TO BE MINIMUM 1400mm BELOW FINISHED GRADE. (SEE GEOTECHNICAL REPORT). COORDINATE STEPPED FOOTING ELEVATIONS WITH GRADING PLAN.
3. REFER TO TYPICAL DETAILS FOR STEPPED FOUNDATIONS.
4. REFER TO GENERAL NOTES FOR RETAINING WALL / FOOTING CONCRETE STRENGTH.



GARBAGE ENCLOSURE PLAN
1 : 50



1 S8.0 **SECTION DETAIL**
1 : 20



2 S8.0 **SECTION DETAIL**
1 : 20

NOTE TO CONTRACTOR:
DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

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THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

ADDENDUM 02	7	AUG. 16, 2024
ISSUANCE	ID	DATE

MTE
Engineers, Scientists, Surveyors
Ph. (905) 639-2552 www.mte85.com

CLIENT
DPAI ARCHITECTURE INC

PROJECT
BRAMPTON FIRE STATION 215
GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING
GARBAGE ENCLOSURE

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S8.0
Scale:	AS NOTED		

8/15/2024 3:11:32 PM JDG

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	August 22, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

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Addendum #:	M02
Revision #:	0

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Specifications [Refer to the attached specifications for details]:

.1 25 06 00.00 - Integrated Automation Points Schedule

i) Updated Integrated Automation Point Schedule.

2.0 Revisions to Drawings [Refer to attached drawings for details]:

.1 Drawing M-301 – LEVEL 01 PLAN - VENTILATION

i) Added tagging for exhaust tail pipe guide rail.

ii) Added symbol for SO2

.2 Drawing M-751– MECHANICAL CONTROL SEQUENCES I

i) Updated apparatus bay fan control sequence

ii) Updated ceiling mounted destratification fan(HVLS) control sequence

.3 Drawing M-753– MECHANICAL CONTROL SEQUENCES III

i) Added domestic hot water tank control sequence

.4 Drawing M-754– MECHANICAL CONTROL SEQUENCES IV

i) Added VRF fan coil unit control sequence

ii) Added energy recovery ventilators control sequence

iii) Added desiccant dehumidifier control sequence

iv) Added kitchen exhaust fan control sequence

.5 Drawing M-755– MECHANICAL CONTROL SEQUENCES V

i) Added Exhaust Fan (EF-2, EF-3, EF-4 & EF-6) control sequence

ii) Added DX fan coil unit control sequence

Quasar Consulting Group

George Mikhael P.Eng

Sector Lead

System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Destratification Fan	Apparatus Bay			Apparatus Bay	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	APHVLS1_CMD	Apparatus Bay Destratification Fan 1 Command	Do	On/Off	
New Points	APHVLS1_STS	Apparatus Bay Destratification Fan 1 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Destratification Fan	Bunker Gear			Bunker Gear	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	BUHVLS2_CMD	Bunker Gear Bay Destratification Fan 2 Command	Do	On/Off	
New Points	BUHVLS2_STS	Bunker Gear Destratification Fan 2 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Destratification Fan	Fitness			Fitness	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	FTHVLS3_CMD	Fitness Destratification Fan 3 Command	Do	On/Off	
New Points	FTHVLS3_STS	Fitness Destratification Fan 3 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Apparatus Bay	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	APEF1_CMD	Apparatus Exhaust Fan 1 Command	Do	On/Off	
New Points	APEF1_STS	Apparatus Exhaust Fan 1 Status	Di	On/Off	
New Point	APEF1_SPT	Apparatus Exhaust Fan 1 Space Setpoint	VP	CO, CO2, NO2 & SO2	Virtual Point
New Point	APEF1_COCO2NO2SO2	Apparatus Exhaust Fan 1 Space CO, CO2, NO2 & SO2 LEVEL	Ai	CO, CO2, NO2 & SO2	Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Bunker Gear Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	BREF2_CMD	Bunker Gear Room Exhaust Fan 2 Command	Do	On/Off	
New Points	BREF2_STS	Bunker Gear Room Exhaust Fan 2 Status	Di	On/Off	
New Point	BREF2_SPT	Bunker Gear Room Exhaust Fan 2 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	BREF2_TH	Bunker Gear Room Exhaust Fan 2 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Buker gear Laundry	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	BLEF3_CMD	Bunker Gear Laundry Exhaust Fan 3 Command	Do	On/Off	
New Points	BLEF3_STS	Bunker Gear Laundry Exhaust Fan 3 Status	Di	On/Off	
New Point	BLEF3_SPT	Bunker Gear Laundry Exhaust Fan 3 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	BLEF3_TH	Bunker Gear Laundry Exhaust Fan 3 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Clean Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	CREF4_CMD	Clean Room Exhaust Fan 4 Command	Do	On/Off	
New Points	CREF4_STS	Clean Room Exhaust Fan 4 Status	Di	On/Off	
New Point	CREF4_SPT	Clean Room Exhaust Fan 4 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	CREF4_TH	Clean Room Exhaust Fan 4 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Vehicle Exhaust Fan	Apparatus Bay			Vehicle Exhaust Tail Pipe	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	APEF5_CMD	Apparatus Bay Vehicle Exhaust Fan 5 Command	Do	On/Off	
New Points	APEF5_STS	Apparatus Bay Vehicle Exhaust Fan 5 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Hose Tower	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	HTEF6_CMD	Hose Tower Exhaust Fan 6 Command	Do	On/Off	

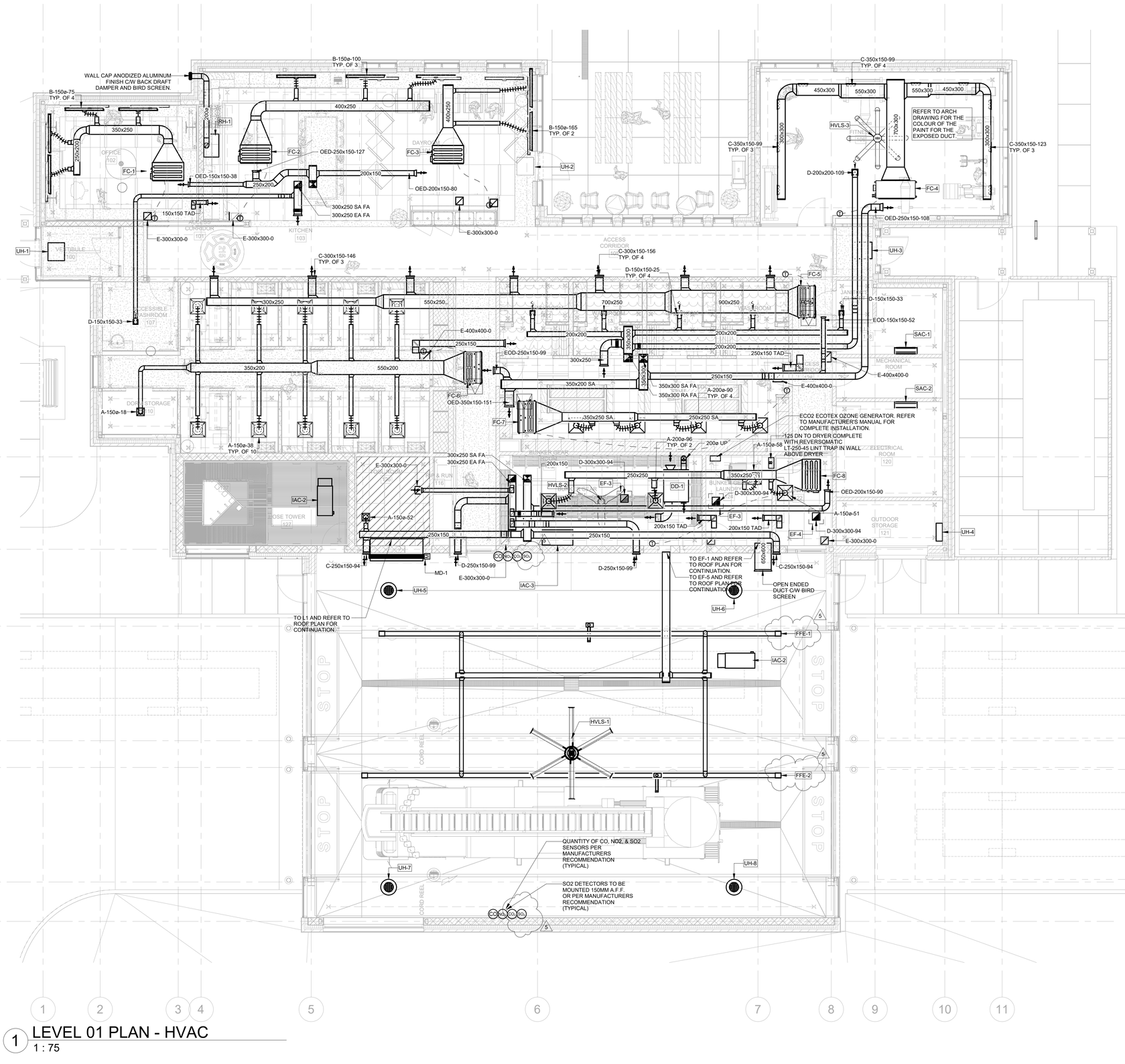
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
New Points	HTEF6_STS	Hose Tower Exhaust Fan 6 Status	Di	On/Off	
New Point	HTEF6_SPT	Hose Tower Exhaust Fan 6 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	HTEF6_TH	Hose Tower Exhaust Fan 6 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Kitchen Range Hood			Kitchen	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	RH1_CMD	Kitchen Range Hood Exhaust Fan 1 Command	Do	On/Off	
New Points	RH1_STS	Kitchen Range Hood Exhaust Fan 1 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Split Air Conditioning	Rooftop & IT Room			IT Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	SCU1BACNET_COM	Split Condenser Unit 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	SAC1BACNET_COM	Split AC 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	SCU1_CMD	Split Condenser Unit 1 Command	Do	On/Off	
New Point	SAC1_CMD	Split AC 1 Command	Do	On/Off	
New Point	SCU1_STS	Split Condenser Unit 1 Status	Di	On/Off	
New Point	SAC1_STS	Split AC 1 Status	Di	On/Off	
New Point	SAC1SAT_T	Split AC 1 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	SAC1RAT_T	Split AC 1 Return Air Temperature	VP	°C	Point read via BACNet
New Point	SAC1SAT_SPT_WINT	Split AC 1Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	SAC1SAT_SPT_SUMM	Split AC 1 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC1SAT_SPT_CLG	Split AC 1 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC1ITRM_SPT	Split AC 1 Space Setpoint	VP	°C	Virtual Point
New Point	SAC1ITRMT123_T	Split AC 1 IT Room Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Split Air Conditioning	Rooftop & Electrical Room			Electrical Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	SCU2BACNET_COM	Split Condenser Unit 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	SAC2BACNET_COM	Split AC 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	CND2_CMD	Split Condenser Unit 2 Command	Do	On/Off	
New Point	SAC2_CMD	Split AC 2 Command	Do	On/Off	
New Point	CND2_STS	Split Condenser Unit 2 Status	Di	On/Off	
New Point	SAC2_STS	Split AC 2 Status	Di	On/Off	
New Point	SAC2SAT_T	Split AC 2 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	SAC2RAT_T	Split AC 2 Return Air Temperature	VP	°C	Point read via BACNet
New Point	SAC2SAT_SPT_WINT	Split AC 2 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	SAC2SAT_SPT_SUMM	Split AC 2 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC2SAT_SPT_CLG	Split AC 2 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC2ERM_SPT	Split AC 2 Space Setpoint	VP	°C	Virtual Point
New Point	SAC2ERMT135_T	Split AC 2 Electrical Room Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
VRF 1	Rooftop & Various Rooms			Various Rooms	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	CU1BACNET_COM	Condensing Unit 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC4BACNET_COM	Fan Coil 4 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC5BACNET_COM	Fan Coil 5 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC6BACNET_COM	Fan Coil 6 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC7BACNET_COM	Fan Coil 7 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC8BACNET_COM	Fan Coil 8 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	CU1_CMD	Condensing Unit 1 Command	Do	On/Off	
New Point	FC4_CMD	Fan Coil 4 Command	Do	On/Off	
New Point	FC5_CMD	Fan Coil 5 Command	Do	On/Off	
New Point	FC6_CMD	Fan Coil 6 Command	Do	On/Off	
New Point	FC7_CMD	Fan Coil 7 Command	Do	On/Off	
New Point	FC8_CMD	Fan Coil 8 Command	Do	On/Off	
New Point	CU1_STS	Condensing Unit 1 Status	Di	On/Off	

System Identifier	Location	Power Panel	Sequence	Serving	
New Point	FC4_STS	Fan Coil 4 Status	Di	On/Off	
New Point	FC5_STS	Fan Coil 5 Status	Di	On/Off	
New Point	FC6_STS	Fan Coil 6 Status	Di	On/Off	
New Point	FC7_STS	Fan Coil 7 Status	Di	On/Off	
New Point	FC8_STS	Fan Coil 8 Status	Di	On/Off	
New Point	FC4MODE_CMD	Fan Coil 4 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC5MODE_CMD	Fan Coil 5 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC6MODE_CMD	Fan Coil 6 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC7MODE_CMD	Fan Coil 7 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC8MODE_CMD	Fan Coil 8 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC4SAT_T	Fan Coil 4 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC5SAT_T	Fan Coil 5 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC6SAT_T	Fan Coil 6 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC7SAT_T	Fan Coil 7 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC8SAT_T	Fan Coil 8 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC4RAT_T	Fan Coil 4 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC5RAT_T	Fan Coil 5 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC6RAT_T	Fan Coil 6 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC7RAT_T	Fan Coil 7 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC8RAT_T	Fan Coil 8 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC4SAT_SPT_WINT	Fan Coil 4 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC5SAT_SPT_WINT	Fan Coil 5 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC6SAT_SPT_WINT	Fan Coil 6 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC7SAT_SPT_WINT	Fan Coil 7 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC8SAT_SPT_WINT	Fan Coil 8 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC4SAT_SPT_SUMM	Fan Coil 4 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC5SAT_SPT_SUMM	Fan Coil 5 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC6SAT_SPT_SUMM	Fan Coil 6 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC7SAT_SPT_SUMM	Fan Coil 7 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC8SAT_SPT_SUMM	Fan Coil 8 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC4SAT_SPT_CLG	Fan Coil 4 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC8SAT_SPT_SUMM	Fan Coil 8 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC4SAT_SPT_CLG	Fan Coil 4 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC5SAT_SPT_CLG	Fan Coil 5 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC6SAT_SPT_CLG	Fan Coil 6 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC7SAT_SPT_CLG	Fan Coil 7 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC8SAT_SPT_CLG	Fan Coil 8 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC4_SPT	Fan Coil 4 Space Setpoint	VP	°C	Virtual Point
New Point	FC5_SPT	Fan Coil 5 Space Setpoint	VP	°C	Virtual Point
New Point	FC6_SPT	Fan Coil 6 Space Setpoint	VP	°C	Virtual Point
New Point	FC7_SPT	Fan Coil 7 Space Setpoint	VP	°C	Virtual Point
New Point	FC8_SPT	Fan Coil 8 Space Setpoint	VP	°C	Virtual Point
New Point	FC4_T	Fan Coil 4 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC5_T	Fan Coil 5 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC6_T	Fan Coil 6 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC7_T	Fan Coil 7 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC8_T	Fan Coil 8 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
VRF 2	Rooftop & Various Rooms			Various Rooms	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	CU2BACNET_COM	Condensing Unit 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC1BACNET_COM	Fan Coil 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC2BACNET_COM	Fan Coil 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC3BACNET_COM	Fan Coil 3 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	CU2_CMD	Condensing Unit 2 Command	Do	On/Off	
New Point	FC1_CMD	Fan Coil 1 Command	Do	On/Off	
New Point	FC2_CMD	Fan Coil 2 Command	Do	On/Off	
New Point	FC3_CMD	Fan Coil 3 Command	Do	On/Off	
New Point	CU2_STS	Condensing Unit 2 Status	Di	On/Off	
New Point	FC1_STS	Fan Coil 1 Status	Di	On/Off	
New Point	FC2_STS	Fan Coil 2 Status	Di	On/Off	

System Identifier	Location	Power Panel	Sequence	Serving	
New Point	FC3_STS	Fan Coil 3 Status	Di	On/Off	
New Point	FC1MODE_CMD	Fan Coil 1 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC2MODE_CMD	Fan Coil 2 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC3MODE_CMD	Fan Coil 3 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC1SAT_T	Fan Coil 1 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC2SAT_T	Fan Coil 2 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC3SAT_T	Fan Coil 3 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC1RAT_T	Fan Coil 1 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC2RAT_T	Fan Coil 2 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC3RAT_T	Fan Coil 3 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC1SAT_SPT_WINT	Fan Coil 1 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC2SAT_SPT_WINT	Fan Coil 2 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC3SAT_SPT_WINT	Fan Coil 3 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC1SAT_SPT_SUMM	Fan Coil 1 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC2SAT_SPT_SUMM	Fan Coil 2 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC3SAT_SPT_SUMM	Fan Coil 3 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC1SAT_SPT_CLG	Fan Coil 1 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC2SAT_SPT_CLG	Fan Coil 2 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC3SAT_SPT_CLG	Fan Coil 3 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC1_SPT	Fan Coil 1 Space Setpoint	VP	°C	Virtual Point
New Point	FC2_SPT	Fan Coil 2 Space Setpoint	VP	°C	Virtual Point
New Point	FC3_SPT	Fan Coil 3 Space Setpoint	VP	°C	Virtual Point
New Point	FC1_T	Fan Coil 1 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC2_T	Fan Coil 2 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC3_T	Fan Coil 3 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
UNIT HEATER	Various Area			Various Area	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	UH1BACNET_COM	Unit Heater 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH2BACNET_COM	Unit Heater 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH3BACNET_COM	Unit Heater 3 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH4BACNET_COM	Unit Heater 4 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH5BACNET_COM	Unit Heater 5 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH6BACNET_COM	Unit Heater 6 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH7BACNET_COM	Unit Heater 7 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH8BACNET_COM	Unit Heater 8 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH1_CMD	Unit Heater 1 Command	Do	On/Off	
New Point	UH2_CMD	Unit Heater 2 Command	Do	On/Off	
New Point	UH3_CMD	Unit Heater 3 Command	Do	On/Off	
New Point	UH4_CMD	Unit Heater 4 Command	Do	On/Off	
New Point	UH5_CMD	Unit Heater 5 Command	Do	On/Off	
New Point	UH6_CMD	Unit Heater 6 Command	Do	On/Off	
New Point	UH7_CMD	Unit Heater 7 Command	Do	On/Off	
New Point	UH8_CMD	Unit Heater 8 Command	Do	On/Off	
New Point	UH1_STS	Unit Heater 1 Status	Di	On/Off	
New Point	UH2_STS	Unit Heater 2 Status	Di	On/Off	
New Point	UH3_STS	Unit Heater 3 Status	Di	On/Off	
New Point	UH4_STS	Unit Heater 4 Status	Di	On/Off	
New Point	UH5_STS	Unit Heater 5 Status	Di	On/Off	
New Point	UH6_STS	Unit Heater 6 Status	Di	On/Off	
New Point	UH7_STS	Unit Heater 7 Status	Di	On/Off	
New Point	UH8_STS	Unit Heater 8 Status	Di	On/Off	
New Point	UH1MODE_CMD	Unit Heater 1 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH2MODE_CMD	Unit Heater 2 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH3MODE_CMD	Unit Heater 3 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH4MODE_CMD	Unit Heater 4 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH5MODE_CMD	Unit Heater 5 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH6MODE_CMD	Unit Heater 6 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH7MODE_CMD	Unit Heater 7 Control Mode	VP	Unoccupied	Control point via BACNet

System Identifier	Location	Power Panel	Sequence	Serving	
New Point	UH8MODE_CMD	Unit Heater 8 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH1SAT_T	Unit Heater 1 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH2SAT_T	Unit Heater 2 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH3SAT_T	Unit Heater 3 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH4SAT_T	Unit Heater 4 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH5SAT_T	Unit Heater 5 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH6SAT_T	Unit Heater 6 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH7SAT_T	Unit Heater 7 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH8SAT_T	Unit Heater 8 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH1VES100_SPT	Unit Heater 1 Space Setpoint	VP	°C	Virtual Point
New Point	UH2SP134_SPT	Unit Heater 2 Space Setpoint	VP	°C	Virtual Point
New Point	UH3VES112_SPT	Unit Heater 3 Space Setpoint	VP	°C	Virtual Point
New Point	UH4DL128_SPT	Unit Heater 4 Space Setpoint	VP	°C	Virtual Point
New Point	UH5OS141_SPT	Unit Heater 5 Space Setpoint	VP	°C	Virtual Point
New Point	UH6APB130_SPT	Unit Heater 6 Space Setpoint	VP	°C	Virtual Point
New Point	UH7APB130_SPT	Unit Heater 7 Space Setpoint	VP	°C	Virtual Point
New Point	UH8APB130_SPT	Unit Heater 8 Space Setpoint	VP	°C	Virtual Point
New Point	UH1_T	Unit Heater 1 Vestibule Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH2_T	Unit Heater 2 Sprinkler Room Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH3_T	Unit Heater 3 Vestibule Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH4_T	Unit Heater 4 Dayroom Lounge Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH5_T	Unit Heater 5 Outdoor Storage Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH6_T	Unit Heater 6 Apparatus Bay Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH7_T	Unit Heater 7 Apparatus Bay Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH8_T	Unit Heater 8 Apparatus Bay Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space

END OF SECTION



1 LEVEL 01 PLAN - HVAC
1 : 75

GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL LOCATIONS OF EQUIPMENT AND CONNECTING SERVICES. DRAWINGS ARE NOT TO BE DIMENSIONED OR SCALED.
2. NOTE THAT ANY REFERENCE TO CONTRACTOR ON MECHANICAL DRAWINGS IS NOT EXCLUSIVE TO MECHANICAL CONTRACTOR OR ON PARTICULAR SUB-TRADE. IT IS UNDERSTOOD THAT THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATE OF ALL TRADES' WORK AND AS SUCH SHALL BE RESPONSIBLE FOR REVIEW OF DOCUMENTS PREPARED BY ALL DISCIPLINES (I.E. MECHANICAL AND ELECTRICAL) AND INCLUDING ALL ASSOCIATED COSTS FOR THE SCOPE OF WORK AS IDENTIFIED IN ALL SUB-DISCIPLINE'S DOCUMENTS.
3. ALL WORK TO BE DONE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND ALL OTHER REGULATORY REQUIREMENTS.
4. SUPPLY ALL LABOUR AND MATERIALS TO PROVIDE A COMPLETE MECHANICAL INSTALLATION. ITEMS NOT EXPLICITLY ILLUSTRATED ON THE DRAWINGS ARE NOT TO BE EXCLUDED FROM THE SCOPE OF WORK IF REQUIRED AS PART OF A PROPER INSTALLATION. PERMITS, TESTING, BALANCING, AND OCCUPANT OPERATIONAL TRAINING WILL BE PART OF THE WORK.
5. EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS AND GRILLES ARE DETAILED ON ARCHITECTURAL REFLECTED CEILING PLANS.
6. THE LOCATION OF ALL ROOF OPENINGS SHALL BE AS INDICATED ON THE MECHANICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS. COORDINATE EXACT SIZES OF OPENINGS AS REQUIRED.
7. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS ETC AS REQUIRED FOR COMPLETE WORKABLE INSTALLATION.
8. DUCTWORK SHALL BE INSULATED OR LINED PER SPECIFICATIONS AND/OR AS NOTED ON DRAWINGS. ALL DUCT JOINTS AND SEAMS SHALL BE SEAL PER SPECIFICATIONS.
9. DUCT AND PLENUM SIZES ARE CLEAR INSIDE DIMENSIONS. WHERE DUCTWORK AND PLENUMS ARE INTERNALLY LINED, THEIR SIZES SHALL BE ADJUSTED TO PROVIDE THE INSIDE CLEAR DIMENSIONS INDICATED ON THE DRAWINGS.
10. MANUAL BALANCING DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES AND IN ALL BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS, WHETHER SHOWN OR NOT.
11. ALL DUCTWORK LOCATED OUTSIDE THE BUILDING SHALL BE WEATHERPROOFED.
12. CONTRACTOR SHALL INSTALL ANY DUCT MOUNTED SMOKE DETECTORS FURNISHED BY THE ELECTRICAL CONTRACTOR.
13. LIMIT LENGTHS OF FLEXIBLE DUCT TO 1200mm
14. COORDINATE LOCATIONS OF WALL MOUNTED SENSORS WITH ARCHITECTURAL DRAWINGS.
15. MINIMUM DUCT SIZE TO DIFFUSERS TO MATCH DIFFUSER NEXT SIZE UNLESS OTHERWISE INDICATED.

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SEALS

NO.	ISSUES/REVISIONS	DATE
5	ISSUED FOR ADD-M01	2024-08-22
4	ISSUED FOR TENDER	2024-06-28
3	ISSUED FOR TENDER REVIEW	2024-06-11
2	ISSUED FOR PERMIT	2024-05-06
1	ISSUED FOR 60% CD	2024-04-18

DRAWING TITLE:

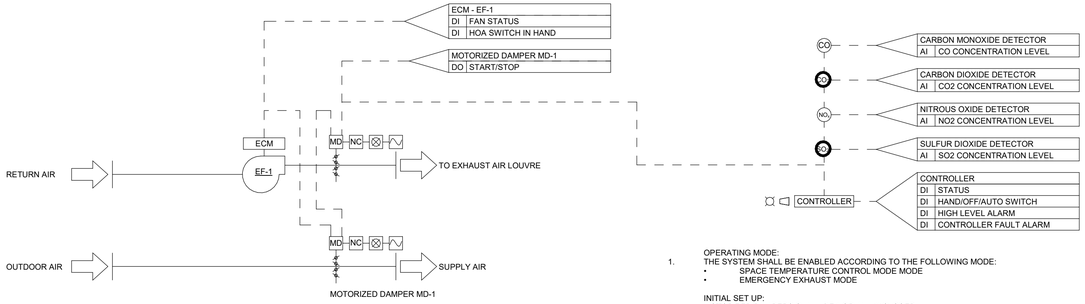
LEVEL 01 PLAN - VENTILATION

ISSUE DATE: 2024-08-22
DRAWN BY: Author
CHECKED BY:Checker
PROJECT NO.: CM-22-269
SCALE: As indicated

DRAWING NO.:

M-301

I PLOT DATE: 8/22/2024 9:35:09 AM



OPERATING MODE:

1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE MODE
   - EMERGENCY EXHAUST MODE

INITIAL SET UP:

1. MOTORIZED DAMPERS SHALL BE NORMALLY CLOSED.
2. FANS SHALL BE BALANCED TO A FIELD DETERMINED AIRFLOW & STATIC PRESSURE AS PER THE VALUES INDICATED ON THE DRAWINGS DURING SYSTEM BALANCING AND COMMISSIONING.
3. SYSTEM SHALL MAINTAIN THE SPACE MAXIMUM TEMPERATURE SET POINT AND SHALL BE ENABLED DURING EMERGENCY EXHAUST OF CO, CO2, NO2 AND SO2.
4. FAN SHALL BE ENABLED/DISABLED LOCALLY AT THE STARTER OR REMOTELY THROUGH THE BAS.

FAN CONTROL:

1. FANS SHALL BOTH BE ENABLED AND SHALL RUN IN PARALLEL.
2. ON COMMAND TO START, MOTORIZED DAMPERS SHALL OPEN. UPON PROOF OF MOTORIZED DAMPER POSITION, RESPECTIVE FAN SHALL BE ENABLED. MD1 SHALL BE INTERLOCKED WITH RESPECTIVE FAN TO ENSURE CONTROLS OPERATION WHEN FAN IS OPERATING IN "HAND" OR "AUTO" MODE. CONTROLS SIGNAL SHALL BE DUPLICATED AT THE BAS.
3. FAN SHALL OPERATE AT CONSTANT SPEED.

TEMPERATURE CONTROL:

1. SPACE TEMPERATURE IS GREATER THAN (28°C DRY BULB) AND OUTDOOR AIR TEMPERATURE IS LESS THAN (SPACE TEMPERATURE MINUS 2°C).
   - T1 SHALL BE SET TO (28°C DRY BULB).
   - MOTORIZED DAMPERS SHALL OPEN AND FANS SHALL BE ENABLED.
2. TEMPERATURE CONTROL SHALL BE DISABLED WHEN OUTDOOR AIR TEMPERATURE IS LESS THAN 16°C.

EMERGENCY EXHAUST:

- CO UPPER CONCENTRATION LIMIT SHALL BE SET TO (100 P.P.M.).
- NO2 UPPER CONCENTRATION LIMIT SHALL BE SET TO (3 P.P.M.).
- SO2 UPPER CONCENTRATION LIMIT SHALL BE SET TO (5 P.P.M.).
- MD1 SHALL BE OPEN.
- F1 SHALL BE ENABLED.

FIRE ALARM MODE:

1. FAN SHALL SHUT DOWN DURING FIRE ALARM.

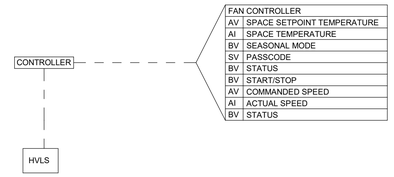
FAN FAILURE:

1. UPON FAN FAILURE, ASSOCIATED DAMPERS SHALL REMAIN OPEN.

SYSTEM ALARMS & PRIORITY AT BAS:

- FAN FAILURE : COMMANDED ON/STATUS OFF
- FAN IN HAND: HOA SWITCH IN HAND
- DAMPER FAILURE: COMMANDED OPEN/CLOSED FEEDBACK
- DAMPER IN HAND: COMMANDED CLOSED/OPEN FEEDBACK

1 APPARATUS BAY FAN CONTROL SEQUENCE
N.T.S.



OPERATING MODE:

1. THE SYSTEM SHALL OPERATE INDEPENDENTLY USING FACTORY SUPPLIED INTELLIGENT CONTROLLER. THE SYSTEM SHALL OPERATE IN WINTER AND SUMMER MODES.
2. SPACE TEMPERATURE SETPOINT RESET TO BE POSSIBLE THROUGH BAS.

FIRE ALARM MODE:

1. FAN SHALL SHUT DOWN DURING FIRE ALARM.

SYSTEM ALARMS & PRIORITY AT BAS:

- FAN FAILURE: ALARM TROUBLE SIGNAL FROM CONTROLLER
- SPACE TEMPERATURE OUT OF RANGE (+/- 2°C)

SYSTEM TRENDS AT BAS:

- FAN UNIT STATUS
- SPACE TEMPERATURE
- EQUIPMENT OPERATING HOURS

2 CEILING MOUNTED DESTRATIFICATION FAN (HVLS) CONTROL SEQUENCE TYPICAL
N.T.S.

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SEALS

NO.	ISSUES/REVISIONS	DATE
7	ISSUED FOR ADD-M01	2024-08-22
6	ISSUED FOR TENDER	2024-06-28
5	ISSUED FOR TENDER REVIEW	2024-06-11
4	ISSUED FOR PERMIT	2024-05-06
3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES I

ISSUE DATE: 2024-08-22

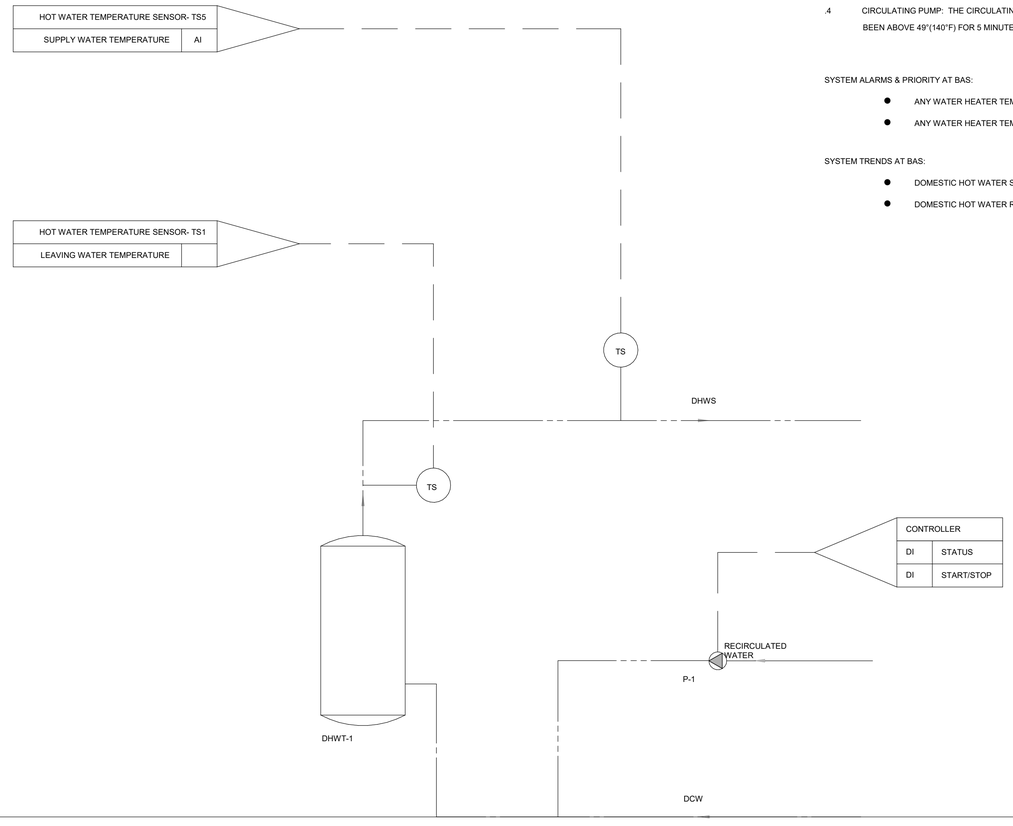
DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: N.T.S.

DRAWING NO.:

M-751

I PLOT DATE: 8/22/2024 9:34:11 AM



"DOMESTIC HOT WATER SYSTEM"

1. THE SYSTEM WILL PROVIDE DOMESTIC HOT WATER TO THE FACILITY.
2. MODES OF OPERATION
   - .1 THE SYSTEM IS ENABLED TO RUN CONTINUOUSLY.
3. ENABLED MODE
   - .1 OVERVIEW: THE DHW HEATERS CONTROL THEMSELVES TO MAINTAIN THE SUPPLY WATER TEMPERATURE AT SET POINT. WATER HEATERS TO MAINTAINED AT A CONSTANT 49°C(140°F).
4. CIRCULATING PUMP: THE CIRCULATING PUMP WILL BE ENABLED WHEN THE DHWR TEMPERATURE DROPS BELOW 40°C(104°F). THE PUMP WILL BE DISABLED ONCE THE TEMPERATURE HAS BEEN ABOVE 49°(140°F) FOR 5 MINUTES.

SYSTEM ALARMS & PRIORITY AT BAS:

- ANY WATER HEATER TEMP IS ABOVE 55°C(131°F) FOR 5 MINUTES
- ANY WATER HEATER TEMP DROPS BELOW 49°C(140°F) FOR 5 MINUTES

SYSTEM TRENDS AT BAS:

- DOMESTIC HOT WATER SUPPLY SUPPLY TEMPERATURE
- DOMESTIC HOT WATER RE-CIRCULATION PUMP SCHEDULE STATUS

1 DOMESTIC HOT WATER TANK CONTROL SEQUENCE
NTS

I PLOT DATE: 8/22/2024 9:34:17 AM

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3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES III

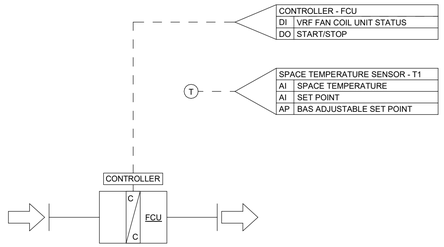
ISSUE DATE: 2024-08-22

DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: NTS

DRAWING NO.:

M-753



OPERATING MODE:
1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE

INITIAL SET UP:
1. VRF FAN COIL UNIT SHALL BE NORMALLY DISABLED.
2. T1 SHALL MAINTAIN THE SPACE TEMPERATURE SET POINT.
3. VRF SYSTEM SHALL BE BACNET NETWORKED TO BAS.
4. VRF FAN COIL THERMOSTAT PROVIDED WITH VRF SYSTEM.

VRF FAN COIL UNIT CONTROL:
1. VRF SHALL PROVIDE DUAL COOLING AND HEATING FUNCTIONS.

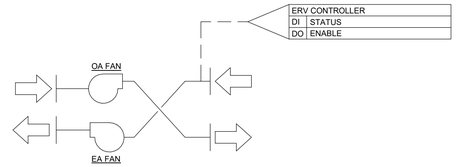
TEMPERATURE CONTROL:
- T1 SHALL BE SET TO (24)°C IN COOLING MODE. (BAS ADJUSTABLE POINT)
- T1 SHALL BE SET TO (22)°C IN HEATING MODE. (BAS ADJUSTABLE POINT)
- MODE SELECTION TO BE BAS ADJUSTABLE. FAN SPEED TO RUN IN AUTOMATIC AND STATUS TO BE VISIBLE AT BAS.

1. WHEN IN COOLING MODE:
   - IF THE SPACE TEMPERATURE RISES ABOVE SET POINT, COOLING MODE WILL BE INITIATED AND VRF FAN COIL UNIT SHALL BE ENABLED TO MAINTAIN THE T1 SET POINT.
2. WHEN IN HEATING MODE:
   - IF THE SPACE TEMPERATURE DROPS BELOW SET POINT, HEATING MODE WILL BE INITIATED AND VRF FAN COIL UNIT SHALL BE ENABLED TO MAINTAIN THE T1 SET POINT.

SYSTEM ALARMS & PRIORITY AT BAS:
- VRF FAN COIL UNIT FAILURE: COMMANDED ON/CLOSED FEEDBACK
- SPACE TEMPERATURE OUT OF RANGE (+/- 2°C)

SYSTEM TRENDS AT BAS:
- VRF FAN COIL UNIT STATUS
- SPACE TEMPERATURE
- EQUIPMENT OPERATING HOURS

1 VRV FAN COIL UNIT CONTROL SEQUENCE
N.T.S.



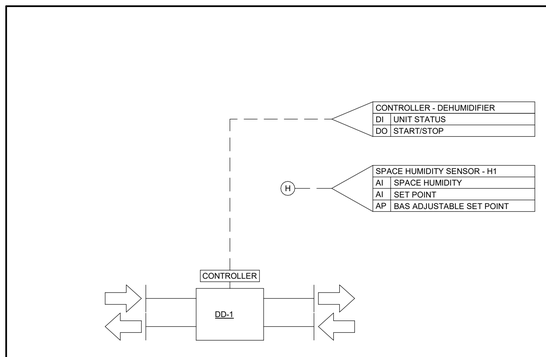
OPERATING MODE:
1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SCHEDULED RUN TIME MODE

INITIAL SET UP:
1. ERV SHALL BE NORMALLY DISABLED.
2. ERV SHALL BE DETERMINED DURING BALANCING.

ERV MODULE:
1. THE ERV OA AND EA FANS WILL RUN CONTINUOUSLY WHEN UNIT IS ENABLED.
2. UNIT TO CONTROL DEFROST.

SYSTEM TRENDS AT BAS:
- ERV STATUS
- EQUIPMENT OPERATING HOURS

2 ENERGY RECOVERY VENTILATORS CONTROL SEQUENCE
N.T.S.



OPERATING MODE:
1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE HUMIDITY CONTROL MODE

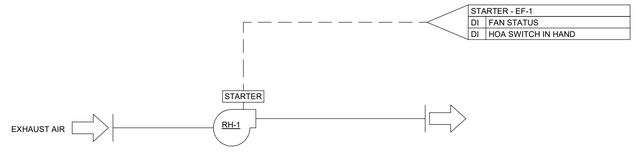
INITIAL SET UP:
1. UNIT SHALL BE NORMALLY DISABLED.
2. H1 SHALL MAINTAIN THE SPACE HUMIDITY SET POINT.
3. DEHUMIDIFIER SYSTEM SHALL BE CONNECTED TO BAS VIA TERMINAL STRIP.
4. HUMIDISTAT PROVIDED WITH BAS SYSTEM.

HUMIDITY CONTROL:
- H1 SHALL BE SET TO 55%. (BAS ADJUSTABLE POINT)
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT, STAGE 1 DEHUMIDIFICATION ENABLED.
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT + 5%, STAGE 2 DEHUMIDIFICATION ENABLED. STAGE 2 TO REMAIN ENABLED UNTIL SPACE HUMIDITY REACHES SETPOINT.

SYSTEM ALARMS & PRIORITY AT BAS:
- UNIT FAILURE: COMMANDED ON/CLOSED FEEDBACK
- SPACE HUMIDITY EXCEEDS SETPOINT (+ 10%)

SYSTEM TRENDS AT BAS:
- UNIT STATUS
- SPACE HUMIDITY
- EQUIPMENT OPERATING HOURS

3 DESICCANT DEHUMIDIFIER CONTROL SEQUENCE
N.T.S.



OPERATING MODE:
1. THE SYSTEM SHALL OPERATE INDEPENDENTLY USING CONTROLLER SUPPLIED WITH HOOD. BAS TO MONITOR STATUS OF EXHAUST FAN.

FIRE ALARM MODE:
1. EXHAUST FAN SHALL FAIL LAST (CONTINUE TO RUN IF RUNNING) DURING FIRE ALARM.

SYSTEM ALARMS & PRIORITY AT BAS:
- FAN FAILURE: ALARM TROUBLE SIGNAL FROM CONTROLLER

SYSTEM TRENDS AT BAS:
- FAN UNIT STATUS
- EQUIPMENT OPERATING HOURS

4 KITCHEN EXHAUST FAN CONTROL SEQUENCE
NTS

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4	ISSUED FOR PERMIT	2024-05-06
3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES IV

ISSUE DATE: 2024-08-22

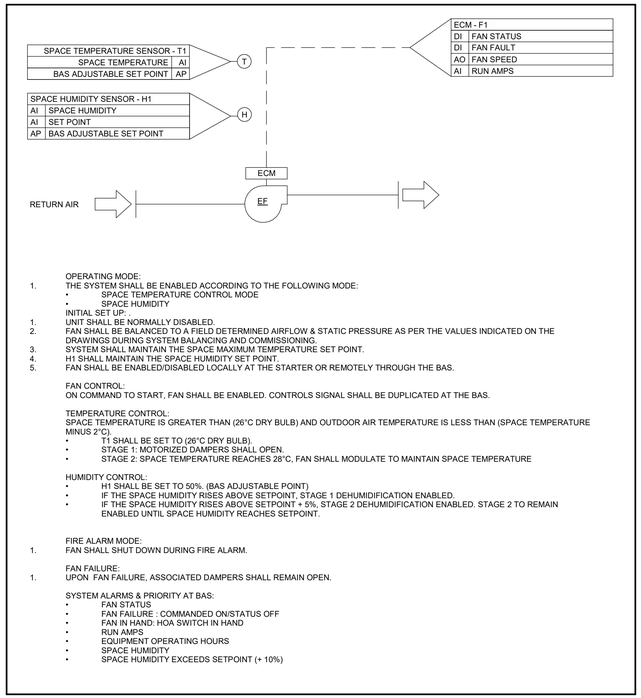
DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: NTS

DRAWING NO.:

M-754

[PLOT DATE: 8/22/2024 9:34:35 AM]



OPERATING MODE:

1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE
   - SPACE HUMIDITY

INITIAL SET UP:

1. UNIT SHALL BE NORMALLY DISABLED.
2. FAN SHALL BE BALANCED TO A FIELD DETERMINED AIRFLOW & STATIC PRESSURE AS PER THE VALUES INDICATED ON THE DRAWINGS DURING SYSTEM BALANCING AND COMMISSIONING.
3. SYSTEM SHALL MAINTAIN THE SPACE MAXIMUM TEMPERATURE SET POINT.
4. H1 SHALL MAINTAIN THE SPACE HUMIDITY SET POINT.
5. FAN SHALL BE ENABLED/DISABLED LOCALLY AT THE STARTER OR REMOTELY THROUGH THE BAS.

FAN CONTROL:
ON COMMAND TO START, FAN SHALL BE ENABLED. CONTROLS SIGNAL SHALL BE DUPLICATED AT THE BAS.

TEMPERATURE CONTROL:
SPACE TEMPERATURE IS GREATER THAN (26°C DRY BULB) AND OUTDOOR AIR TEMPERATURE IS LESS THAN (SPACE TEMPERATURE MINUS 2°C).
- T1 SHALL BE SET TO (26°C DRY BULB).
- STAGE 1: MOTORIZED DAMPERS SHALL OPEN.
- STAGE 2: SPACE TEMPERATURE REACHES 28°C, FAN SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE

HUMIDITY CONTROL:
- H1 SHALL BE SET TO 50%. (BAS ADJUSTABLE POINT)
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT, STAGE 1 DEHUMIDIFICATION ENABLED.
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT + 5%, STAGE 2 DEHUMIDIFICATION ENABLED. STAGE 2 TO REMAIN ENABLED UNTIL SPACE HUMIDITY REACHES SETPOINT.

FIRE ALARM MODE:

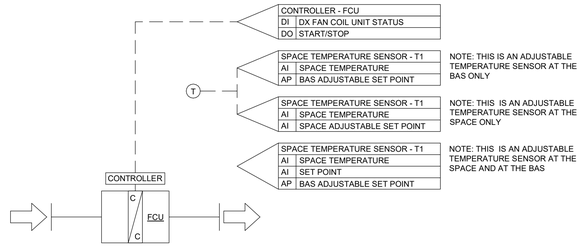
1. FAN SHALL SHUT DOWN DURING FIRE ALARM.

FAN FAILURE:

1. UPON FAN FAILURE, ASSOCIATED DAMPERS SHALL REMAIN OPEN.

SYSTEM ALARMS & PRIORITY AT BAS:
- FAN STATUS
- FAN FAILURE : COMMANDED ON/STATUS OFF
- FAN IN HAND: HOA SWITCH IN HAND
- RUN AMPS
- EQUIPMENT OPERATING HOURS
- SPACE HUMIDITY
- SPACE HUMIDITY EXCEEDS SETPOINT (+ 10%)

1 EXHAUST FAN (EF-2, EF-3, EF-4 & EF-6) CONTROL SEQUENCE
N.T.S.



OPERATING MODE:

1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE

INITIAL SET UP:

1. DX FAN COIL UNIT SHALL BE NORMALLY DISABLED.
2. T1 SHALL MAINTAIN THE SPACE TEMPERATURE SET POINT.

DX FAN COIL UNIT CONTROL:

1. PROVIDE STAND ALONE PACKAGE DX FAN COIL UNIT AND CONTROL PANEL.
2. DX FAN COIL UNIT SHALL PROVIDE COOLING ONLY FUNCTION.

TEMPERATURE CONTROL:
- T1 SHALL BE SET TO (24)°C.

1. WHEN IN COOLING MODE:
   - IF THE SPACE TEMPERATURE RISES ABOVE SET POINT, COOLING MODE WILL BE INITIATED AND DX FAN COIL UNIT SHALL BE ENABLED TO MAINTAIN THE T1 SET POINT.

SYSTEM ALARMS & PRIORITY AT BAS:
- DX FAN COIL UNIT FAILURE: COMMANDED ON/CLOSED FEEDBACK
- SPACE TEMPERATURE OUT OF RANGE (+/- 2°C)

SYSTEM TRENDS AT BAS:
- DX FAN COIL UNIT STATUS
- SPACE TEMPERATURE
- EQUIPMENT OPERATING HOURS

2 DX FAN COIL UNIT CONTROL SEQUENCE
N.T.S.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
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DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO ARCHITECTS BEFORE PROCEEDING WITH WORK.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

SEALS

NO.	ISSUES/REVISIONS	DATE
7	ISSUED FOR ADD-M01	2024-08-22
6	ISSUED FOR TENDER	2024-06-28
5	ISSUED FOR TENDER REVIEW	2024-06-11
4	ISSUED FOR PERMIT	2024-05-06
3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES V

ISSUE DATE: 2024-08-22

DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: N.T.S.

DRAWING NO.:

M-755

[PLOT DATE: 8/22/2024 9:34:25 AM]

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	August 16, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

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Addendum #:	E02
Revision #:	0

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Specifications [Refer to the attached specifications for details]:

.1 Specification – 26 32 13.16 - Gas-Engine-Driven Generator Sets [Skin-Tight Enclosure]

i) Revised generator kW rating to 500kW matching the drawings.

.2 Specification - 27 05 28.63 - Pathways for Video Surveillance

i) Cash Allowance section deleted. This scope of work is part of the base bid.

2.0 Revisions to Drawings [Refer to attached drawings for details]:

.1 Drawing E-001 – ELECTRICAL LEGENDS AND GENERAL NOTES

i) Refer to drawing revisions.

.2 Drawing E-002 – ELECTRICAL SITE PLAN

i) Refer to drawing revisions.

ii) EV Charging station notes were revised.

iii) Primary Duct Bank detail notes revised.

iv) Added note keynote S1.

.3 Drawing E-003 – ELECTRICAL SITE LIGHTING PLAN

i) Refer to drawing revisions.

ii) Pole mounted security camera note revised.

.4 Drawing E-103 – ELECTRICAL SITE PLAN DETAILS

i) Refer to drawing revisions.

ii) Detail 3 Ampacity values added.

.5 Drawing E-201 – LEVEL 01 PLAN - LIGHTING

i) Refer to drawing revisions.

ii) An exit sign circuit was added to the drawings.

.6 Drawing E-202 – LEVEL 01 PLAN – POWER & SYSTEMS

i) Refer to drawing revisions.

ii) Add 100A,3P Disconnect switch for EV Fire truck feed.

iii) 100A Coord reel note revised.

iv) Add transformer TX-UEV2 in electrical room.

.7 Drawing E-302 – ROOF PLAN – POWER & SYSTEMS

i) Refer to drawing revisions.

ii) Add tag to inverter combiner panel DP-PV.

.8 Drawing E-808 – EV FIRE TRUCK CHARGER DETAILS

i) Refer to drawing revisions.

ii) Add general note 1.

.9 Drawing E-901 – SINGLE LINE DIAGRAM

i) Refer to drawing revisions.

ii) Add note for solar pv.

iii) Revised note for generator duct bank.

iv) Revised note for ATS-1 switch.

v) Add transformer TX-UEV2.

vi) Add future transformer TX-UEV3.

vii) Add note for fire truck EV charging station.

viii) Revise EVSE-2.2 to future work.

ix) Revise fault current note to 26.6 kA.

x) Revised transformer secondary duct bank conductor size.

.10 Drawing E-904 – Electrical Panelboard Schedules I

i) Refer to drawing revisions.

ii) Deleted circuits on panel RP-M2

.11 Drawing E-905 – Electrical Panelboard Schedules II

i) Refer to drawing revisions.

ii) Add exit signs to circuit 23 on panel RP-L.

Quasar Consulting Group

Antonio Zuniga, MSc., PMP, LEED AP BD+C

Team Lead

GENERAL NOTES

GENERAL

1. ALL DRAWINGS ARE FOR DIAGRAMMATIC PURPOSES ONLY AND SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS FOR LOCATION OF ALL LUMINAIRES, LIGHTING CONTROL DEVICES, OUTLETS, SYSTEM DEVICES, DIMENSIONS, MOUNTING HEIGHTS, AND CONSTRUCTION DETAILS.
2. ALL OPENINGS THROUGH RATED WALLS OR FLOORS (APPLIES TO ALL INSTANCES) SHALL BE SEALED WITH APPROVED FIRE STOPPING MATERIAL. ANY FIREPROOFING MATERIAL REMOVED WILL BE REPLACED WITH A SUITABLE AND APPROVED FIREPROOFING MATERIAL AND SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS TO APPLICABLE BUILDING AND FIRE CODES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIR OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF WORK OF THIS PROJECT.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND DISTRIBUTION OF TEMPORARY POWER AND LIGHTING WITHIN THE PREMISES DURING THE CONSTRUCTION PERIOD.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL THE WORK WITH ALL OTHER TRADES, CONSULTANTS, AND THE OWNER.
6. ALL NEW DEVICES INSTALLED WHERE NEW FINISHES OCCUR SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE INDICATED.
7. ALL CONDUIT RUNS SHOWN ON PLANS ARE FOR INFORMATION AND DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATION AND ROUTING OF ALL RUNS ON SITE PRIOR TO BEGINNING WORK.
8. PROVIDE SEISMIC RESTRAINTS WHERE REQUIRED BY LOCAL CODE REQUIREMENTS. OBTAIN THE SERVICES OF A SEISMIC RESTRAINT ENGINEER AND COMPLY WITH ALL REQUIREMENTS IN THEIR REPORT. SUBMIT A COPY OF THE REPORT TO MECHANICAL AND ELECTRICAL CONSULTANTS AND INCLUDE IN MAINTENANCE MANUAL.

LIGHTING

9. PROVIDE SUPPORT CHAINS FOR ALL LUMINAIRES. SUPPORT ALL LUMINAIRES DIRECTLY TO CEILING SLAB STRUCTURE, NOT TO CEILING HANGERS, T-BAR, DUCTWORK, PIPING, CABLE TRAYS, ROOF DECK, ETC.

POWER

10. NEW ELECTRICAL WIRING AND CABLES EXPOSED WITHIN THE CEILING SPACES SHALL CONFORM TO THE PLENUM REQUIREMENTS OF THE LOCAL BUILDING CODE.
11. PROPERLY LABEL ALL ELECTRICAL PANELS, CLEARLY INDICATING ALL INFORMATION INCLUDING CIRCUIT NUMBERS. CIRCUITING SHOWN ON DRAWING IS DIAGRAMMATIC TO SHOW GENERAL CIRCUIT ARRANGEMENT AND PANEL DESIGNATION.
12. PROVIDE 2#12AWG + G IN 21MMC FOR ALL 15A AND 20A CIRCUITS WITH A NOMINAL VOLTAGE OF 120V UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE OVERSIZED TO SUIT VOLTAGE DROP AS PER SPECIFICATIONS FOR CIRCUIT LENGTH EXCEEDING 90 FEET.
13. PROVIDE A SEPARATE NEUTRAL AND GROUNDING TO ALL CIRCUITS SERVING A RECEPTACLE FOR A COPIER/PRINTER. COORDINATE RECEPTACLES CONFIGURATION WITH THE COPIER SUPPLIER AND TENANT PRIOR TO ROUGH-IN.

COMMUNICATIONS

14. ALL COMMUNICATIONS SCOPE OF WORK TO FOLLOW CITY OF BRAMPTON IT PERFORMANCE SPECIFICATION. REFER TO SPECIFICATION SECTION 27 00 00 FOR MORE INFORMATION INCLUDING MOUNTING HEIGHTS OF DEVICES, CABLING INSTALLATIONS, ETC. PRIOR TO INSTALLATION.
15. VOICE & DATA EMPTY CONDUIT AND BACK BOXES FOR COMMUNICATION CABLE AND DATA OUTLET SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. DATA FACE PLATE AND COMMUNICATION CABLE BY COMMUNICATION CONTRACTOR.
16. CABLES FOR VOICE AND DATA SYSTEMS ARE TO BE SUPPLIED, INSTALLED AND TERMINATED BY COMMUNICATIONS CONTRACTOR.
17. ELECTRICAL CONTRACTOR TO COORDINATE THE INSTALLATION OF ALL DATA WALL AND FLOOR OUTLET BOXES AND ASSOCIATED DATA CONDUIT SIZES WITH ELECTRICAL DRAWINGS AND COMMUNICATIONS CONTRACTORS.
18. COMMUNICATIONS CONTRACTOR MUST BE COMMSCOPE SYSTIMAX CERTIFIED.
19. COMMUNICATIONS CONTRACTOR WILL BE RESPONSIBLE TO INSTALL WIRELESS ACCESS POINTS THAT WILL BE PROVIDED BY THE CITY OF BRAMPTON.
20. COMMUNICATIONS SYSTEM IS TO BE AN END TO END COMMSCOPE SYSTEMAX CERTIFIED SOLUTION. ALL PATCH CABLES MUST BE PROVIDED TO ACCOMMODATE ALL DROPS INSTALLED. CABLES TO BE ORDERED AS PER CITY OF BRAMPTON IT PERFORMANCE SPECIFICATION V1.6 (SECTION 27 00 00).

LIFE SAFETY

21. PROVIDE MEASUREMENT OF LIGHT LEVELS TO OBTAIN LOCAL INSPECTION APPROVALS AND PERMITS. AN AUTHORIZED TECHNICIAN OF THE MANUFACTURER SHALL PREPARE AND PROVIDE A SIGNED TEST REPORT VERIFYING THAT THE SYSTEM IS PROPERLY WORKING AND THAT LIGHT LEVELS MEET LOCAL CODE REQUIREMENTS. INCLUDE REQUIRED TEST MEASUREMENTS IN REPORT AND SUBMIT TO CONSULTANT FOR REVIEW. ALL COST FOR TESTING/VERIFICATION SHALL BE INCLUDED IN THE TENDER BID.
22. SUBMIT FIRE ALARM VERIFICATION REPORT CONFORMING TO CAN/ULC-S537 TO CONSULTANT FOR REVIEW. AUDIBILITY REPORT SHALL HAVE 15 SEPARATE READINGS IN VARIOUS LOCATIONS THROUGHOUT FLOOR AREA INDICATING SOUND PRESSURE PRODUCED BY FIRE ALARM SIGNALING DEVICES.
23. PROVIDE LABOUR AND MATERIAL TO CONDUIT THE INTEGRATED SYSTEMS TESTING OF INTERCONNCECTED LIFE SAFETY SYSTEMS IN ACCORDANCE WITH CAN/ULC-S1001-11.

ELECTRICAL DRAWING LIST

DRAWING #	DRAWING NAME
E-000	COVER PAGE
E-001	ELECTRICAL LEGEND AND GENERAL NOTES
E-002	ELECTRICAL SITE PLAN
E-103	ELECTRICAL SITE PLAN DETAILS
E-104	ELECTRICAL SITE PLAN - ALECTRA DETAILS I
E-105	ELECTRICAL SITE PLAN - ALECTRA DETAILS II
E-201	LEVEL 01 PLAN - LIGHTING
E-202	LEVEL 01 PLAN - POWER & SYSTEMS
E-302	ROOF PLAN - POWER & SYSTEMS
E-401	LEVEL 01 PLAN - TELECOMMUNICATIONS
E-501	FIRE ALARM ZONING PLAN
E-801	ELECTRICAL DETAILS I
E-802	ELECTRICAL DETAILS II
E-803	ELECTRICAL DETAILS III
E-804	ELECTRICAL DETAILS IV
E-805	ELECTRICAL DETAILS V
E-806	ELECTRICAL DETAILS VI
E-807	ELECTRICAL DETAILS VII
E-808	EV FIRE TRUCK CHARGER DETAILS
E-901	SINGLE LINE DIAGRAM
E-902	SCHEDULES FOR LIGHTING
E-903	EQUIPMENT WIRING SCHEDULE
E-904	ELECTRICAL PANELBOARD SCHEDULES I
E-905	ELECTRICAL PANELBOARD SCHEDULES II

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	LINETYPES
	NEW WORK
	WORK TO BE DEMOLISHED, OR REMOVED
	EXISTING MATERIAL/EQUIPMENT/SERVICES TO REMAIN
	FUTURE WORK (NOT IN SCOPE)
	EXTENTS OF FIRE ALARM ZONE, WET LOCATION, OR OTHER AREA AS NOTED ON PLANS
	ABBREVIATIONS
E	EXISTING TO REMAIN
R	EXISTING TO BE DEMOLISHED/REMOVED
ER	EXISTING IN RELOCATED POSITION
RR	REMOVE AND RELOCATE
C	CEILING MOUNTED CONNECTION
W	WALL MOUNTED CONNECTION
F	FLOOR MOUNTED CONNECTION
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
O/C	OVER COUNTER
U/C	UNDER CABINET
CCT	CIRCUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
TL	TWIST LOCK
BDO	BAY DOOR OPERATOR
WG	WIRE GUARD
WP	WEATHER PROOF
R/I	ROUGH-IN ONLY
NIC	NOT IN CONTRACT
SIM.	SIMILAR TO
TYP.	TYPICAL
	ABBREVIATIONS - CODES AND STANDARDS
OBC	ONTARIO BUILDING CODE
OESC	ONTARIO ELECTRICAL SAFETY CODE
OFC	ONTARIO FIRE CODE
	ABBREVIATIONS - CEILING TYPES
ACT	ACOUSTIC CEILING TILE (T-BAR)
EXP	EXPOSED CEILING
GB	GYPSUM BOARD CEILING
OWSJ	OPEN WEB STEEL JOISTS
WD	WOOD CEILING
	ANNOTATIONS
CL	CLOSET
WR	WASHROOM
	PLUMBING
PTP	ELECTRONIC TRAP PRIMER
PSC	PLUMBING SENSOR CONTROL (TOUCHLESS FAUCETS)
	HVAC
	THERMOSTAT OR TEMPERATURE SENSOR
T	TIMER CONTROL
BBH	ELECTRIC BASEBOARD HEATER (BBH)
FFH	FORCED FLOW HEATER
ERV	ENERGY RECOVERY VENTILATOR
HRU	HEAT RECOVERY UNIT
MUA	MAKE-UP AIR UNIT
	CONDUIT AND BOXES
	CONDUIT WITH END BUSHING
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT CONTINUES
JB	JUNCTION BOX
PB	PULL BOX
HH	HAND HOLE
	CONNECTIONS TO EQUIPMENT
DW	DISHWASHER
FR	FRIDGE
MW	MICROWAVE
HD	HAND DRYER. ALLOW UP TO 208V-1PH-20A
	1-PHASE DIRECT CONNECTION OUTLET AS NOTED.
	3-PHASE DIRECT CONNECTION OUTLET AS NOTED.
	CONNECTION TO SINGLE PHASE MOTOR, HP (KW) AS NOTED. PROVIDE LOCAL DISCONNECT.
	THREE PHASE MOTOR, HP (KW) AS NOTED. PROVIDE LOCAL DISCONNECT.
	LIGHTING CONTROLS REFER TO SPECIFICATIONS AND RESPECTIVE SCHEDULES FOR EXACT REQUIREMENTS
	SWITCH OR OTHER USER INTERFACE DEVICE AS DESCRIBED ON LIGHTING CONTROLS SCHEDULE.
3W	3-WAY SWITCH
DIM	ADJACENT TO SWITCH, DENOTES DIMMING SWITCH.
T	ADJACENT TO SWITCH, DENOTES COUNTDOWN TIMER SWITCH
AT	ADJACENT TO SWITCH, DENOTES ASTRONOMICAL TIMER SWITCH
DS	ADJACENT TO SWITCH, DENOTES DOOR SWITCH
DT	DUAL TECHNOLOGY SENSOR
M	ADJACENT TO SWITCH, DENOTES MASTER CONTROL FOR ALL LUMINAIRES IN A ROOM OR SPACE, OR AS NOTED.
	WALL MOUNTED SWITCH/OCCUPANCY SENSOR. PIR DENOTES 'PASSIVE INFRARED', DT DENOTES 'DUAL PASSIVE INFRARED/ULTRASONIC', LINE VOLTAGE TO SUIT CONTROLLED CIRCUIT, OR AS NOTED.
PP	POWER PACK
SC	SCENE CONTROLLER.
P	PHOTOCELL SENSOR.
DT	CEILING MOUNTED OCCUPANCY SENSOR. PIR DENOTES 'PASSIVE INFRARED', UT DENOTES 'ULTRASONIC' (OR MICROPHONIC), DT DENOTES 'DUAL TECHNOLOGY', 'OS' DENOTES UNKNOWN TECHNOLOGY.
DT	WALL MOUNTED OCCUPANCY SENSOR.
	DISTRIBUTION EQUIPMENT
	TRANSFORMER - FLOOR MOUNTED, PLAN VIEW. 'C' DENOTES CEILING MOUNTED

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	SURFACE MOUNTED LIGHTING AND RECEPTACLE PANELBOARD
	RECESSED RECEPTACLE AND LIGHTING PANELBOARD
	DISTRIBUTION PANELBOARD
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
C	CONTACTOR
	LOOSE STARTER, COORDINATE STARTING CHARACTERISTIC WITH EQUIPMENT REQUIREMENTS.
	COMBINATION STARTER.
VFD	ADJACENT TO STARTER, DENOTES VARIABLE FREQUENCY DRIVE
	POWER RECEPTACLES AND BOXES
	120V U-GROUND DUPLEX RECEPTACLE.
	120V U-GROUND DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
	120V U-GROUND 20A DUPLEX RECEPTACLE.
	120V U-GROUND DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
	120V U-GROUND DUPLEX RECEPTACLE - AUTOMATICALLY CONTROLLED (ASHRAE 90.1-2013, 8.4.2).
	120V U-GROUND 20A DUPLEX RECEPTACLE - AUTOMATICALLY CONTROLLED (ASHRAE 90.1-2013, 8.4.2).
	120V U-GROUND DUPLEX RECEPTACLE - HALF OF RECEPTACLE AUTOMATICALLY CONTROLLED (ASHRAE 90.1-2013, 8.4.2).
	SPLIT RECEPTACLE. IF MANUALLY CONTROLLED, SHOWN CONNECTED TO SWITCH.
	SPLIT RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
	120V U-GROUND 20A QUAD RECEPTACLE ABOVE GROUND.
8	120V U-GROUND QUAD RECEPTACLE.
	INDICATES DUPLEX RECEPTACLE COMPLETE WITH ONE TYPE A AND ONE TYPE C USB CHARGING PORTS. TOP RECEPTACLE TO BE CONTROLLED BY SINGLE-POLE SWITCH AS INDICATED ON DRAWINGS
	14-30R RECEPTACLE FOR LAUNDRY DRYER, OR OTHER RECEPTACLE AS NOTED.
	14-50R RECEPTACLE FOR ELECTRIC RANGE, OR OTHER RECEPTACLE AS NOTED. PROVIDE 40A/2P BREAKER TO SUIT.
	SPECIAL RECEPTACLE. VERIFY OUTLET REQUIREMENTS PRIOR TO ROUGH-IN.
	SPECIAL RECEPTACLE. VERIFY OUTLET REQUIREMENTS PRIOR TO ROUGH-IN.
	FLOOR RECEPTACLE OR RECEPTACLE IN FLOOR BOX (POWER ONLY)
	SERVICE POLE. PROVIDE POWER TO JUNCTION BOX IN CEILING SPACE ABOVE. DEVICES ON POLE AS NOTED ON PLANS.
FB1	ADJACENT TO FLOOR RECEPTACLE, DENOTES FLOOR BOX TYPE
FSA	DENOTES FIRE STATION ALERTING DEVICE
	LIGHTING FIXTURES SYMBOLS IN ACCORDANCE WITH IES DG-3-00 AND IES HB-10-11 WHERE NOT DETAILED OTHERWISE HERE. REFER TO LIGHTING FIXTURE SCHEDULE FOR FURTHER DETAILS AND EXACT FIXTURE REQUIREMENTS.
	LINEAR LUMINAIRE, SURFACE MOUNTED TO CEILING
	LINEAR LUMINAIRE, RECESSED IN CEILING
	LINEAR LUMINAIRE, SUSPENDED; PENDANT, CHAIN, STEM, OR AIRCRAFT CABLE HUNG TO SUIT APPLICATION, OR AS NOTED IN SCHEDULE. "X", WHEN USED DENOTES POWER FEED LOCATION.
	LINEAR LUMINAIRE, WALL MOUNTED
	ROUND OR SQUARE DOWNLIGHT, RECESSED
	ROUND SUSPENDED LUMINAIRE
	WALL SCONCE OR OTHER WALL MOUNTED LUMINAIRES.
EM	CONNECTED TO EMERGENCY NIGHT LIGHT CIRCUIT (24 HOUR)
NL	LUMINAIRE CONNECTED TO NON-EMERGENCY NIGHT LIGHT CIRCUIT (24 HOUR)
A, B, Z1, Z2, ETC.	DENOTES ZONING/CIRCUTING ASSIGNMENTS FOR LUMINAIRES AND CONTROLS IN THE SAME SPACE.
	EMERGENCY LIGHTING REFER TO EMERGENCY LIGHTING FIXTURE SCHEDULE FOR EXACT FIXTURE REQUIREMENTS.
	CEILING OR WALL MOUNTED ILLUMINATED EXIT SIGN. SHADED AREA INDICATES ILLUMINATED FACE. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLANS.
	CEILING OR WALL MOUNTED ILLUMINATED EXIT SIGN. SHADED AREA INDICATES ILLUMINATED FACE. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLANS.
	EMERGENCY LIGHTING BATTERY UNIT, WITH AND WITHOUT HEADS.
	ONE, TWO, AND THREE HEAD WALL MOUNTED EMERGENCY LIGHTING REMOTE UNITS.
	ONE, TWO, AND THREE HEAD CEILING MOUNTED EMERGENCY LIGHTING REMOTE UNITS.
	RECESSED EMERGENCY REMOTE HEAD.
EM	DENOTES "EMERGENCY"
CCT	CORRELATED COLOUR TEMPERATURE
CRI	COLOUR RENDERING INDEX
	EXTERIOR LIGHTING
	ARM MOUNTED LUMINAIRE ON POLE. DIRECTIONAL ARROW, WHERE INDICATED DENOTES PRIMARY LUMEN ORIENTATION.
	POST TOP LUMINAIRE ON POLE. DIRECTIONAL ARROW, WHERE INDICATED DENOTES PRIMARY LUMEN ORIENTATION.
	LIGHTING BOLLARD. DIRECTIONAL ARROW, WHERE INDICATED DENOTES PRIMARY LUMEN ORIENTATION.
	GROUND MOUNTED FLOOD LIGHT
	TELECOMMUNICATIONS
	WALL MOUNTED DATA (D) OR VOICE (V) OUTLET. PROVIDE 2D UNLESS NOTED OTHERWISE.
	WALL MOUNTED VOICE (TELEPHONE) OUTLET. PROVIDE 1V UNLESS NOTED OTHERWISE.
	WALL MOUNTED DATA OUTLET. PROVIDE 2D UNLESS NOTED OTHERWISE.
	WALL MOUNTED TELEVISION OUTLET.
	VOICE, DATA, OR TV OUTLET AS DESCRIBED ABOVE, MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
B	ADJACENT TO COMMUNICATIONS OUTLET, INDICATES BLANK-OFF PLATE.
HDMI	HDMI OUTLET.
AV	AUDIO VIDEO GANG, AS NOTED.

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
WAP	WIRELESS ACCESS POINT (WIFI), PROVIDE 2D UNLESS OTHERWISE NOTED.
S	PUBLIC ADDRESS SYSTEM SPEAKER, CEILING MOUNTED.
SP	PUBLIC ADDRESS SYSTEM SPEAKER, WALL MOUNTED.
	PUBLIC ADDRESS HORN SPEAKER WALL MOUNTED.
HS	PUBLIC ADDRESS SYSTEM HANDSET
ACC	PUBLIC ADDRESS SYSTEM ADMIN CONTROL CONSOLE
VOL	PUBLIC ADDRESS SPEAKER VOLUME CONTROL SWITCH.
	INTERCOM
IDS	VIDEO INTERCOM SYSTEM DOOR CALL STATION
IMS	VIDEO INTERCOM SYSTEM MASTER STATION
	CLOCK.
GTX	GPS CLOCK SYSTEM MASTER TRANSMITTER
GRX	GPS CLOCK SYSTEM GPS RECEIVER
RTX	GPS CLOCK SYSTEM SATELLITE TRANSMITTER (REPEATER)
GRX	GPS CLOCK SYSTEM RECEIVER SWITCH
	ACCESS CONTROL AND DOOR HARDWARE
CR	CARD READER
DA	DOOR ALARM SOUNDER
DC	DOOR CONTACT
ES	ELECTRIC STRIKE
KS	KEY SWITCH
ML	ELECTROMAGNETIC LOCK
REX	REQUEST TO EXIT SENSOR
	MUSHROOM HEAD PUSH BUTTON FOR 'REQUEST TO EXIT' MAGLOCK RELEASE, OR OTHER PUSH BUTTON AS INDICATED
DR	DOOR RELEASE ADJACENT TO THE ABOVE, PUSHBUTTON INTEGRATED WITH ELECTRIFIED DOOR HARDWARE DEVICE.
	BARRIER FREE DOOR OPERATOR PUSH BUTTON
WS	TOUCHLESS "WAVE SWITCH" FOR DOOR OPERATOR CONTROL
	DOOR BELL C/W SOUNDER AND STROBE
	DOOR BELL (SOUNDER ONLY)
	INTRUSION DETECTION
	GLASS BREAK (GB)
MD	MOTION DETECTOR (MD)
KP	KEYPAD (KP)
	VIDEO SURVEILLANCE
	CCTV CAMERA
C/P	CCTV CAMERA, CEILING OR POLE MOUNTED
	CCTV CAMERA, WALL MOUNTED
PTZ	PAN-TILT-ZOOM
	DURESS SYSTEM
DB	DURESS BUTTON (MOUNTED ON UNDERSIDE OF TABLETOP)
DB-W	WALL MOUNTED DURESS BUTTON WITH POLYCARBONATE ANTI-TAMPER COVER
DS	DURESS SYSTEM STROBE LIGHT
	FIRE DETECTION AND ALARM - GENERAL
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNICIATOR PANEL
FAPG	FIRE ALARM PASSIVE GRAPHIC
FAMP	FIRE ALARM ULC MONITORING PANEL
FAZ	FIRE ALARM ZONE
FSZ	FIRE ALARM SUPERVISORY ZONE
	FIRE ALARM PANEL (FACP, FAAP, FAMP) AS DENOTED ON PLANS.
	FIRE DETECTION - INITIATION DEVICES
	MANUAL PULL STATION (MPS)
LX	WHERE NOTED ADJACENT TO MANUAL PULL STATIONS, DENOTES PULL STATION C/W POLYCARBONATE (LEXAN) COVER.
WG	WHERE NOTED ADJACENT TO MANUAL PULL STATIONS, DENOTES PULL STATION C/W WIRE GUARD COVER.
A	WHERE NOTED ADJACENT TO MANUAL PULL STATIONS OR DETECTOR, DENOTES DEVICE C/W AUXILIARY CONTACT.
	PHOTOELECTRIC SMOKE DETECTOR
	SAME AS ABOVE, WALL MOUNTED
	DUCT MOUNTED SMOKE DETECTOR
CO	CARBON MONOXIDE DETECTOR
	HEAT DETECTOR - 58 DEGREES C (135 DEGREES F) FIXED TEMPERATURE AND RATE OF RISE, RESTORABLE
	SAME AS ABOVE, WALL MOUNTED
HT	ADJACENT TO HEAT DETECTOR, DENOTES "HIGH TEMPERATURE", 94 DEGREES C (200 DEGREES F) OR AS NOTED ON PLANS.
	HEAT DETECTOR - 58 DEGREES C (135 DEGREES F) FIXED TEMPERATURE, NON-RESTORABLE
	HEAT DETECTOR - 94 DEGREES C (200 DEGREES F) FIXED TEMPERATURE, NON-RESTORABLE
	RESIDENTIAL SMOKE ALARM, 120V, COMPLETE WITH STROBE. FOR AREAS AS INDICATED ON PLANS BY "CO", PROVIDE INTEGRAL CARBON MONOXIDE DETECTION
FS	FLOW SWITCH
	FIRE DETECTION AND ALARM - SUPERVISORY DEVICES
LL	LOW TANK LEVEL
LP	LOSS OF POWER
LT	LOW TEMPERATURE
PS	PRESSURE SWITCH
SV	SUPERVISED VALVE
MON	FIRE ALARM MONITORING POINT, REFER TO FLOOR PLANS FOR DETAILS.
	FIRE DETECTION AND ALARM - SIGNALLING DEVICES
	FIRE ALARM BELL, WALL MOUNTED.
C	ADJACENT TO BELL OR HORN, DENOTES CEILING MOUNTED.
	FIRE ALARM HORN
M	ADJACENT TO FIRE ALARM HORN, DENOTES 'MINI' HORN
	FIRE ALARM HORN/STROBE, WALL MOUNTED.
SS	SILENCE SWITCH
	FIRE ALARM WALL MOUNTED STROBE LIGHT
	FIRE DETECTION AND ALARM - OTHER DEVICES
EOL	END OF LINE DEVICE

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
WG	WIRE GUARD
DNE	"DO NOT ENTER" SIGN
CM	CONTROL MODULE
MM	MONITOR MODULE
HO	MAGNETIC DOOR HOLDER AND RELEASING DEVICE ("HOLD OPEN")
	FIRE SUPPRESSION ABORT STATION
	SINGLE LINE DIAGRAM
	AIR CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER
	DISCONNECT (UNFUSED)
	DISCONNECT (FUSED)
	FUSE
	METERING CABINET
	TRANSFORMER
G	GENERATOR
	AUTOMATIC TRANSFER SWITCH
	AUTOMATIC TRANSFER SWITCH C/W SINGLE SIDED BYPASS ISOLATION
	AUTOMATIC TRANSFER SWITCH C/W DOUBLE SIDED BYPASS ISOLATION
ATS	AUTOMATIC TRANSFER SWITCH
C	CONTACTOR
DP	DISTRIBUTION PANELBOARD
LP	LIGHTING PANELBOARD
RP	RECEPTACLE PANELBOARD
SPD	SURGE PROTECTIVE DEVICE
TX	TRANSFORMER
UPS	UNINTERRUPTIBLE POWER SUPPLY
	DETAIL REFERENCES
1	SHEET KEYNOTE
1 / E101	REFER TO DETAIL. EXAMPLE SHOWN INDICATES REFERENCE TO DETAIL 1 ON DRAWING E101
1	REVISION NUMBER

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

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WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
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5	ISSUED FOR PERMIT	2024-05-06
4	ISSUED FOR ESA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL LEGEND AND GENERAL NOTES

ISSUE DATE: 2024-08-16

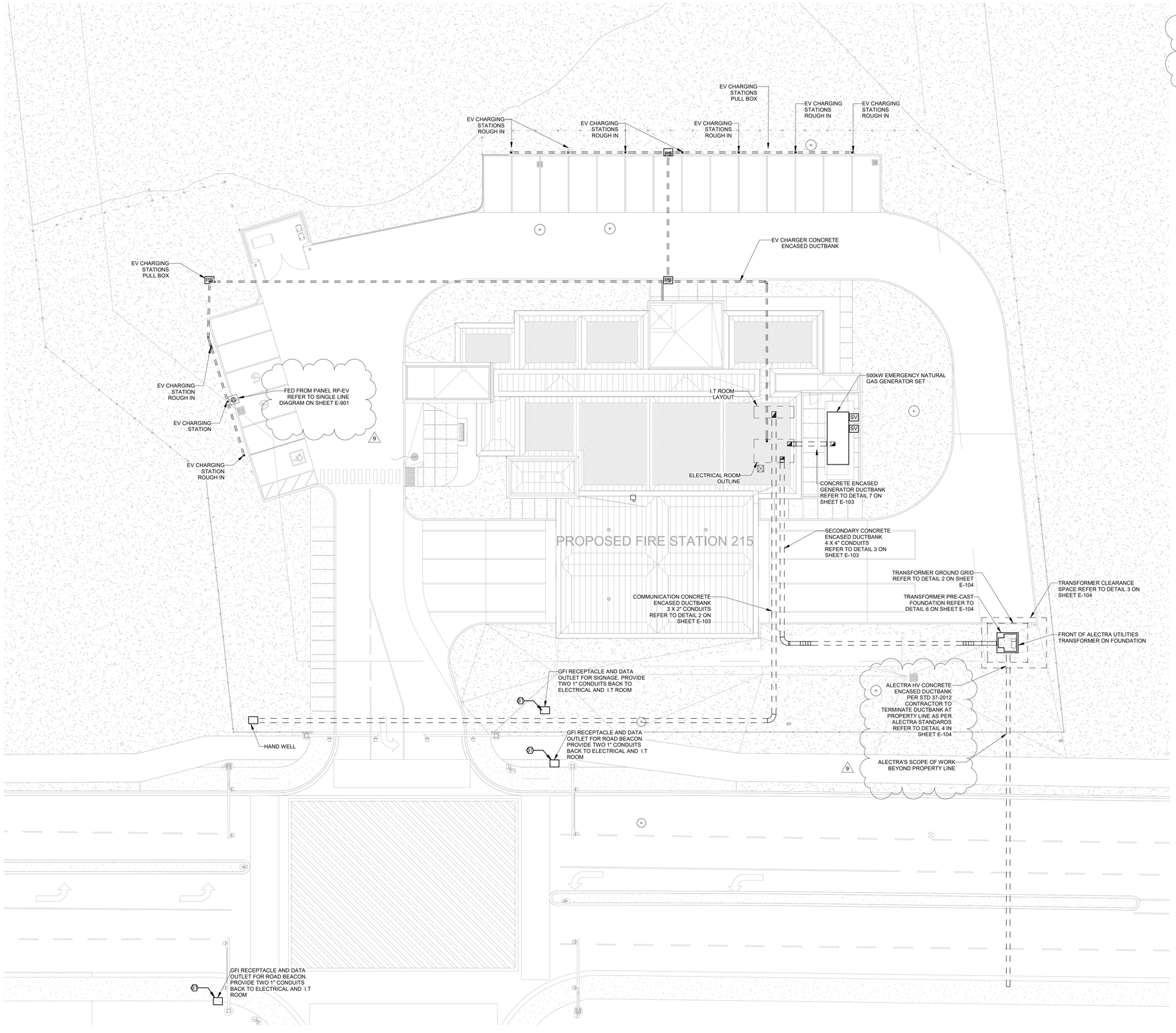
DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE: 12" = 1'-0"

DRAWING NO.:

E-001

[PLOT DATE: 8/15/2024 4:34:43 PM]



1 ELECTRICAL SITE PLAN
1 : 200

KEYNOTE LEGEND1	
Key Value	Keynote Text
S1	PROVIDE AS SEPARATE COST. OWNER TO CONFIRM IF PART OF SCOPE OF WORK.

9

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3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

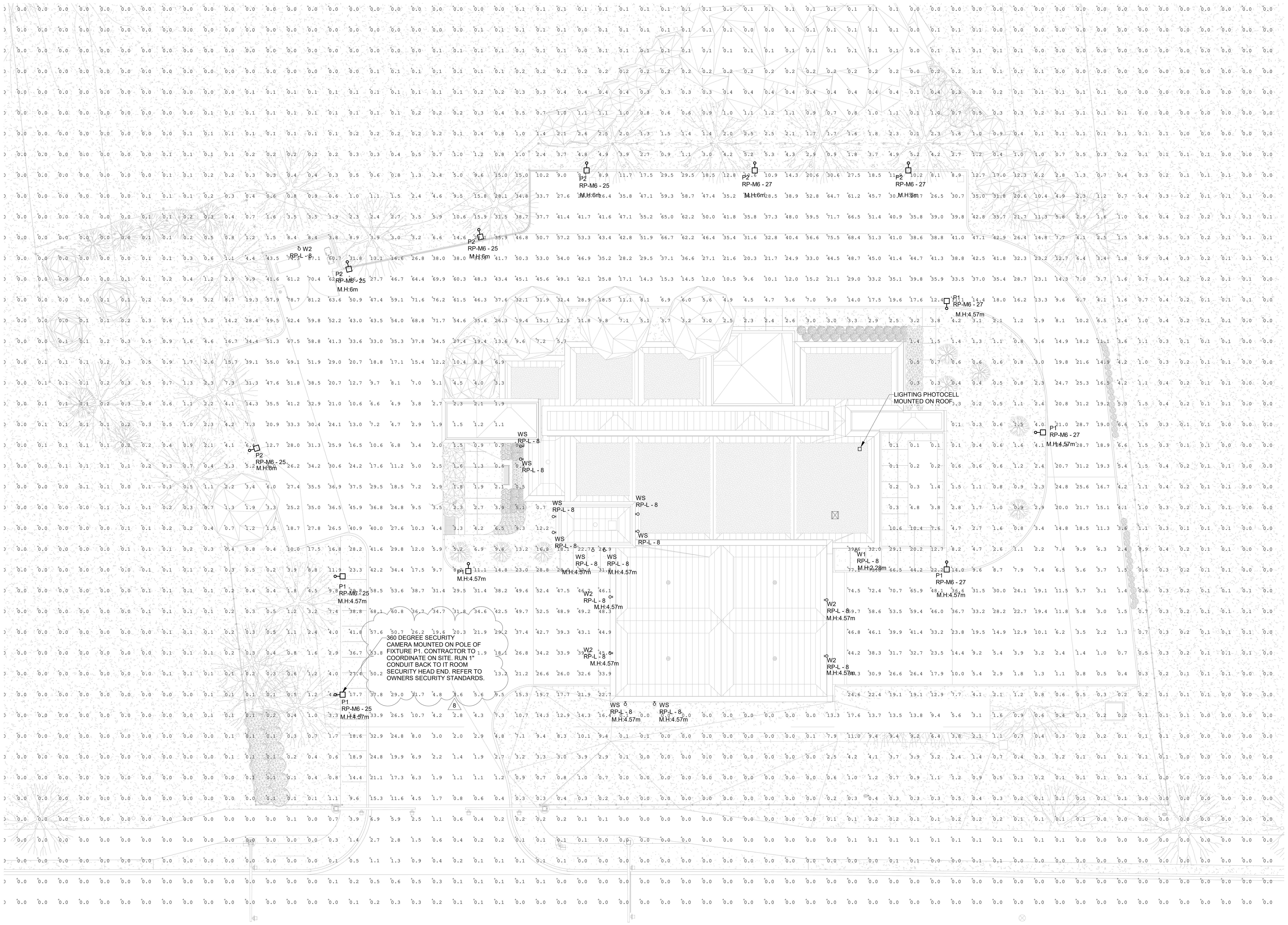
ELECTRICAL SITE PLAN

ISSUE DATE:	2024-08-16		
DRAWN BY:	Author	CHECKED BY:	T.S
PROJECT NO.:	CM-22-269	SCALE:	1 : 200

DRAWING NO.:

E-002

[PLOT DATE: 8/15/2024 4:34:48 PM]



Luminaire Schedule										
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	[MANUFAC]	Mounting Height	BUG Rating
	6	P1	Single	ASL1-80L-39-4K7-3-BC	0.900	3645	37.98	227.88	EXO	4.57	B0-U0-G1
	6	P2	Single	ASL1-160L-100-4K7-4W-BC	0.900	7371	90	540	EXO	6	B0-U0-G2
	5	W2	Single	TRP2-24L-30-4K7-4	0.900	3647	27.9	139.5	EXO	2.4, 4.57	B0-U0-G1
	1	W1	Single	TRP1-24L-15-4K7-3	0.900	1880	14.9	14.9	EXO	2.28	B1-U0-G1

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
APPARATUS DOORS	Illuminance	Lux	44.94	71.4	24.1	1.86	2.96
PARKING	Illuminance	Lux	37.94	74.0	9.4	4.04	7.87
SITE	Illuminance	Lux	21.49	78.9	0.0	N.A.	N.A.
SPILL OF LIGHT	Illuminance	Lux	0.10	4.9	0.0	N.A.	N.A.

1 SITE LIGHTING PLAN
1 : 200

[PLOT DATE: 8/15/2024 4:34:49 PM]

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2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL SITE LIGHTING PLAN

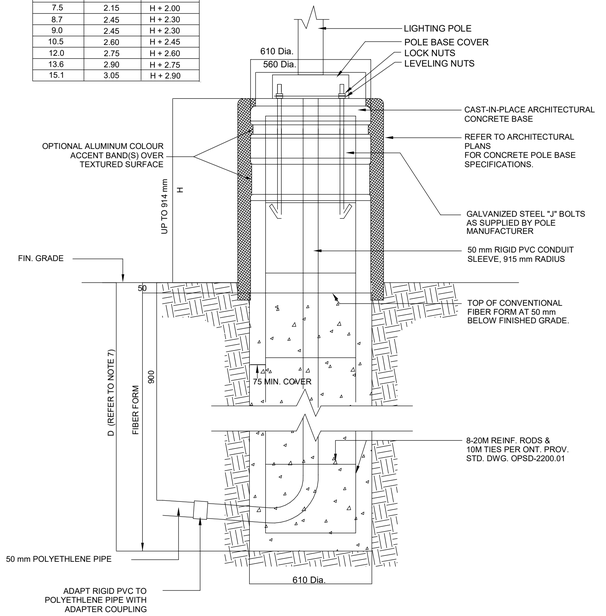
ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 200
DRAWING NO.:

E-003

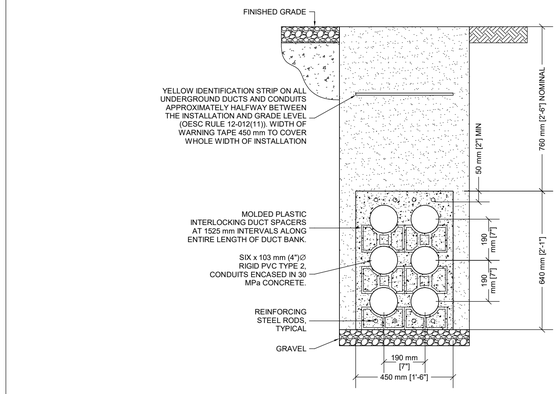
POLE LENGTH (m)	BASE BURIAL DEPTH D (m)	REINF. ROD LENGTH (m)
3.0	1.50	H + 1.35
5.6	2.15	H + 2.00
7.0	2.15	H + 2.00
7.5	2.15	H + 2.00
8.7	2.45	H + 2.30
9.0	2.45	H + 2.30
10.5	2.60	H + 2.45
12.0	2.75	H + 2.60
13.6	2.90	H + 2.75
15.1	3.05	H + 2.90

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES OR METRES
2. TOP OF FOUNDATION SHALL BE TROWELLED SMOOTH & LEVEL.
3. NOT USED.
4. MINIMUM OF TWO SLEEVES REQUIRED FOR EACH CONC. FOUNDATION UNLESS OTHERWISE SHOWN.
5. NOT USED.
6. CONTRACTOR TO VERIFY OPENING SIZE IN POLE BASE PLATE PRIOR TO SETTING CONDUIT SLEEVES.
7. SUBJECT TO SOIL CONDITIONS, REFER TO SOIL REPORT.



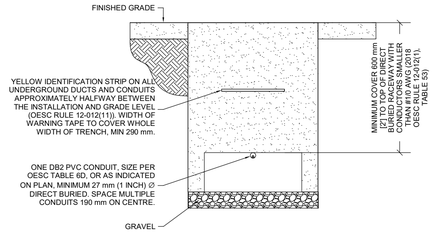
1 LIGHTING STANDARD ARCHITECTURAL BASE
N.T.S.



DETAIL NOTES:

1. DUCT BANK TO BE INSPECTED PRIOR TO POURING OF CONCRETE AND PRIOR TO BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION AND RECEIVE ALL NECESSARY APPROVALS.
2. 3x2 ALTERNATE DUCT BANK CONFIGURATION MAY ALSO BE USED.

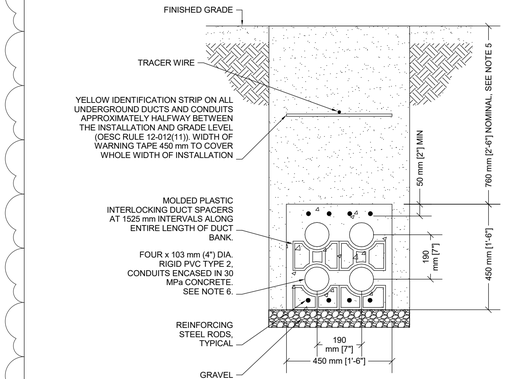
2 6-WAY COMMUNICATIONS DUCT BANK DETAIL
N.T.S.



NOTES:

1. METRIC DIMENSIONS GOVERN.
2. DIRECT BURIED RACEWAY DUCTS TO BE IN COMPLIANCE WITH 2018 ONTARIO ELECTRICAL SAFETY CODE (OESC), TABLE 53. MINIMUM COVER DEPTH MAY BE REDUCED BASED ON CRITERIA DESCRIBED IN TABLE 53.
3. DIRECT BURIED RACEWAY DUCTS TO BE INSPECTED PRIOR BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION (ESA) AND RECEIVE ALL NECESSARY APPROVALS.
4. THIS DETAIL DOES NOT APPLY WHERE CONDUCTOR SIZE IS #1/0 OR GREATER IN A DIRECT BURIED RACEWAY. PROVIDE AN AMPACITY CALCULATION IN ACCORDANCE WITH IEEE 835.

4 SINGLE DIRECT BURIED RACEWAY
N.T.S.



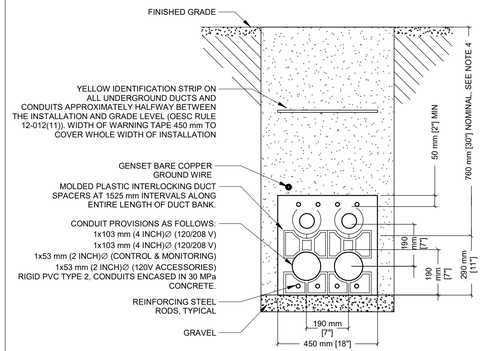
LOW VOLTAGE (BELOW 750 VOLT) DUCT BANK SECTION

NOTES:

1. DUCT BANK TO BE IN COMPLIANCE WITH 2021 ONTARIO ELECTRICAL SAFETY CODE (OESC), DIAGRAM D11, DETAIL 4, OR LATEST EDITION. WHERE ANY CONTRADICTION EXISTS BETWEEN THIS DETAIL AND THE OESC, THE OESC DIMENSIONS GOVERN.
2. DUCT BANK TO BE INSPECTED PRIOR TO POURING OF CONCRETE AND PRIOR TO BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION AND RECEIVE ALL NECESSARY APPROVALS.
3. AMPACITY OF COPPER 3-PHASE + NEUTRAL + GROUND FEEDER BASED ON 2018 OESC TABLES LISTED BELOW, LOWER OF TWO VALUES (LESS APPLICABLE VOLTAGE DROP):
   3.1. TABLE D11A, "4/PHASE DETAIL 4", SIZE 4/0 AWG: 4 x 229 AMPS = 916 AMPS.
   3.2. TABLE 2, SIZE 4/0 AWG: 4 x 230 AMPS = 920 AMPS.
4. ALTERNATE DUCT BANK CONFIGURATION MAY ONLY BE CONSIDERED BY THE CONSULTANT IF THE SAME FEEDER METHODOLOGY ABOVE IS CONSIDERED, OR AN AMPACITY CALCULATION IS PROVIDED IN ACCORDANCE WITH IEEE 835.
5. GREATER DEPTH THAN THE NOTED DIMENSION WILL RESULT IN A DECREASE IN THE DUCT BANK AMPACITY. REDUCTION IN THE DEPTH REQUIRES COORDINATION WITH OESC TABLE 53.
6. CONDUIT FILL IN ACCORDANCE WITH 2021 OESC RULE 12-910.

3 4-WAY LV DUCT BANK SECTION
N.T.S.

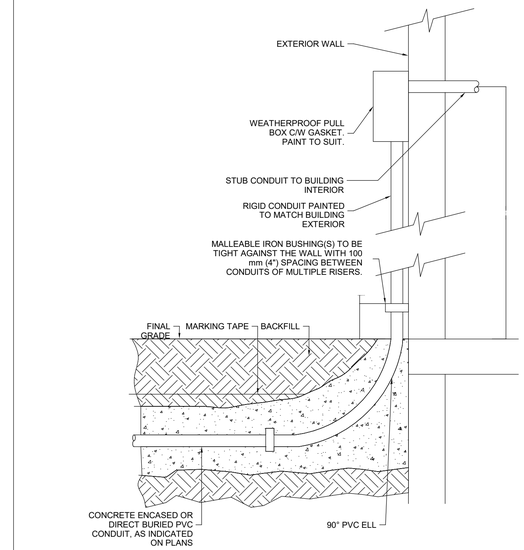
9



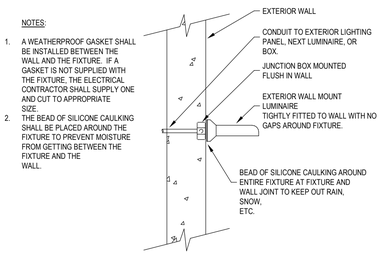
NOTES:

1. DUCT BANK TO BE IN COMPLIANCE WITH 2021 ONTARIO ELECTRICAL SAFETY CODE (OESC), DIAGRAM D11, OR LATEST EDITION. WHERE ANY CONTRADICTION EXISTS BETWEEN THIS DETAIL AND THE OESC, THE OESC DIMENSIONS GOVERN.
2. DUCT BANK TO BE INSPECTED PRIOR TO POURING OF CONCRETE AND PRIOR TO BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION AND RECEIVE ALL NECESSARY APPROVALS.
3. AMPACITY OF COPPER FEEDER BASED ON 2021 OESC TABLES LISTED BELOW, LOWER OF THE TWO VALUES:
   REQUIRED: 600 A CAPACITY (NOT INCLUDING VOLTAGE DROP)
   FEEDER: ONE (1) CONDUCTOR PER PHASE (3 PHASE), PLUS GROUND
   3.1 TABLE D11A - "2/PHASE", SIZE 300 MCM = 658 A
4. UPPER TWO DUCTS (120 VOLT ACCESSORIES, AND MONITORING/CONTROL) INSTALLATION PER OESC RULE 12-012(3)(d).
5. ALTERNATE DUCT BANK CONFIGURATION MAY ONLY BE CONSIDERED BY THE CONSULTANT IF THE SAME FEEDER METHODOLOGY ABOVE IS CONSIDERED, OR AN AMPACITY CALCULATION IS PROVIDED IN ACCORDANCE WITH IEEE 835.
6. GREATER DEPTH THAN THE NOTED DIMENSION WILL RESULT IN A DECREASE IN THE DUCT BANK AMPACITY. REDUCTION IN THE DEPTH REQUIRES COORDINATION WITH OESC TABLE 53.
7. CONDUIT FILL IN ACCORDANCE WITH 2021 OESC RULE 12-910

7 GENERATOR DUCT BANK SECTION
N.T.S.



5 UNDERGROUND CONDUIT TRANSITION VIA BUILDING EXTERIOR
N.T.S.



NOTES:

1. A WEATHERPROOF GASKET SHALL BE INSTALLED BETWEEN THE WALL AND THE FIXTURE. IF A GASKET IS NOT SUPPLIED WITH THE FIXTURE, THE ELECTRICAL CONTRACTOR SHALL SUPPLY ONE AND CUT TO APPROPRIATE SIZE.
2. THE BEAD OF SILICONE CAULKING SHALL BE PLACED AROUND THE FIXTURE TO PREVENT MOISTURE FROM GETTING BETWEEN THE FIXTURE AND THE WALL.

6 SEALING OF WALL MOUNTED EXTERIOR LUMINAIRES
N.T.S.

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2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL SITE PLAN DETAILS

ISSUE DATE: 2024-08-16

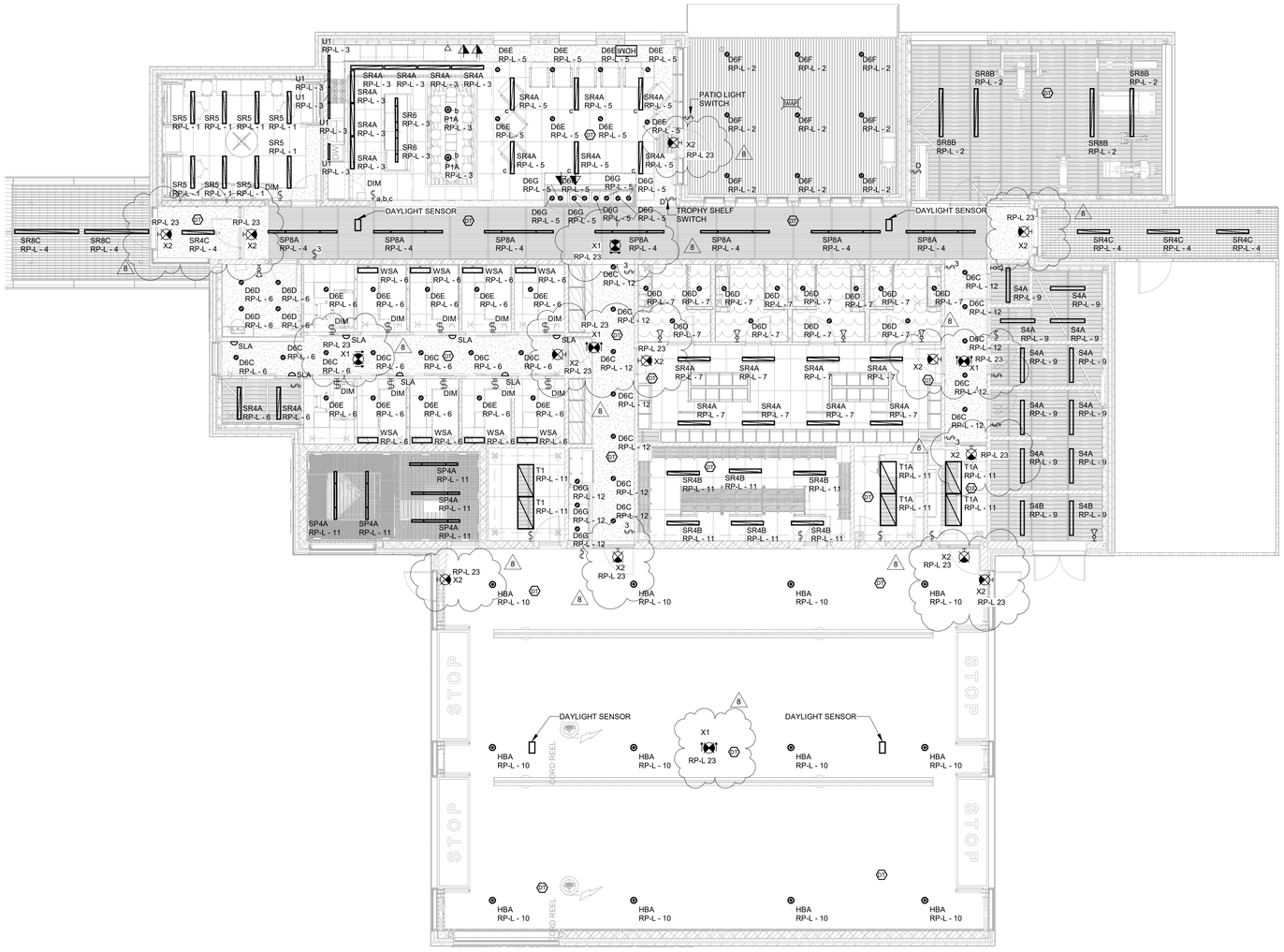
DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE: As indicated

DRAWING NO.:

E-103

[PLOT DATE: 8/15/2024 4:34:30 PM]



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DRAWING TITLE:

LEVEL 01 PLAN - LIGHTING

ISSUE DATE: 2024-08-16

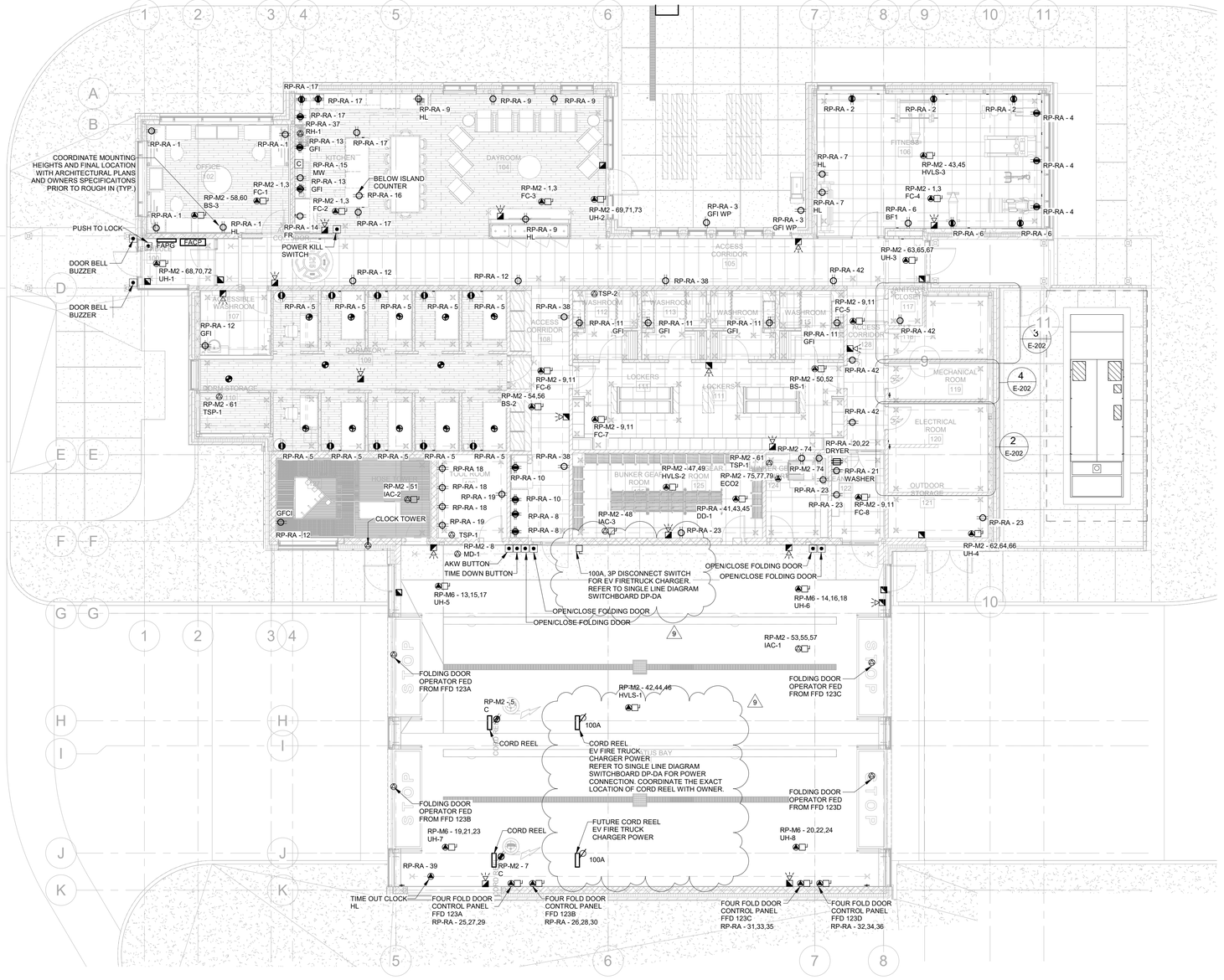
DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE: 1 : 100

DRAWING NO.:

E-201

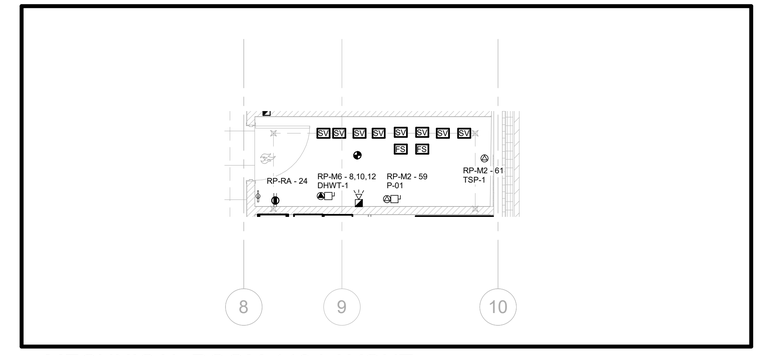
[PLOT DATE: 8/15/2024 4:34:56 PM]



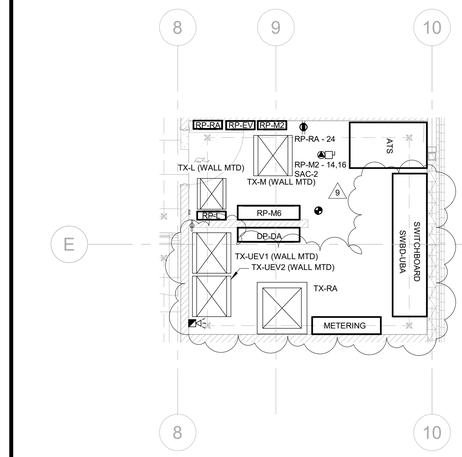
1 LEVEL 01 PLAN - POWER & SYSTEMS
1 : 100

GENERAL NOTES

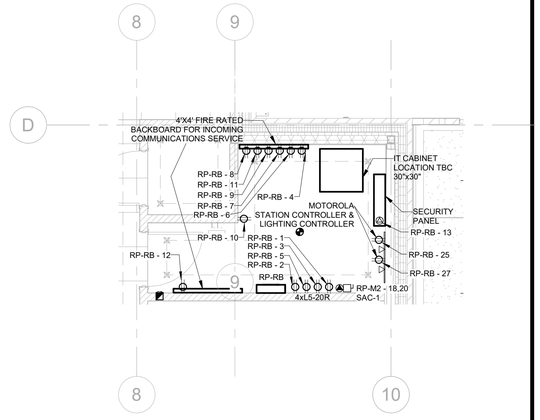
1. APPARATUS BAY IS TO BE CONSIDERED A WET LOACTION, DEFINED AS CATAGORY 1 IN OESC SECTION 22.



4 MECHNICAL ROOM 119 LAYOUT
1 : 50



2 ELECTRICAL ROOM 120 - LAYOUT
1 : 50



3 IT ROOM 118 - LAYOUT
1 : 50

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DRAWING TITLE:

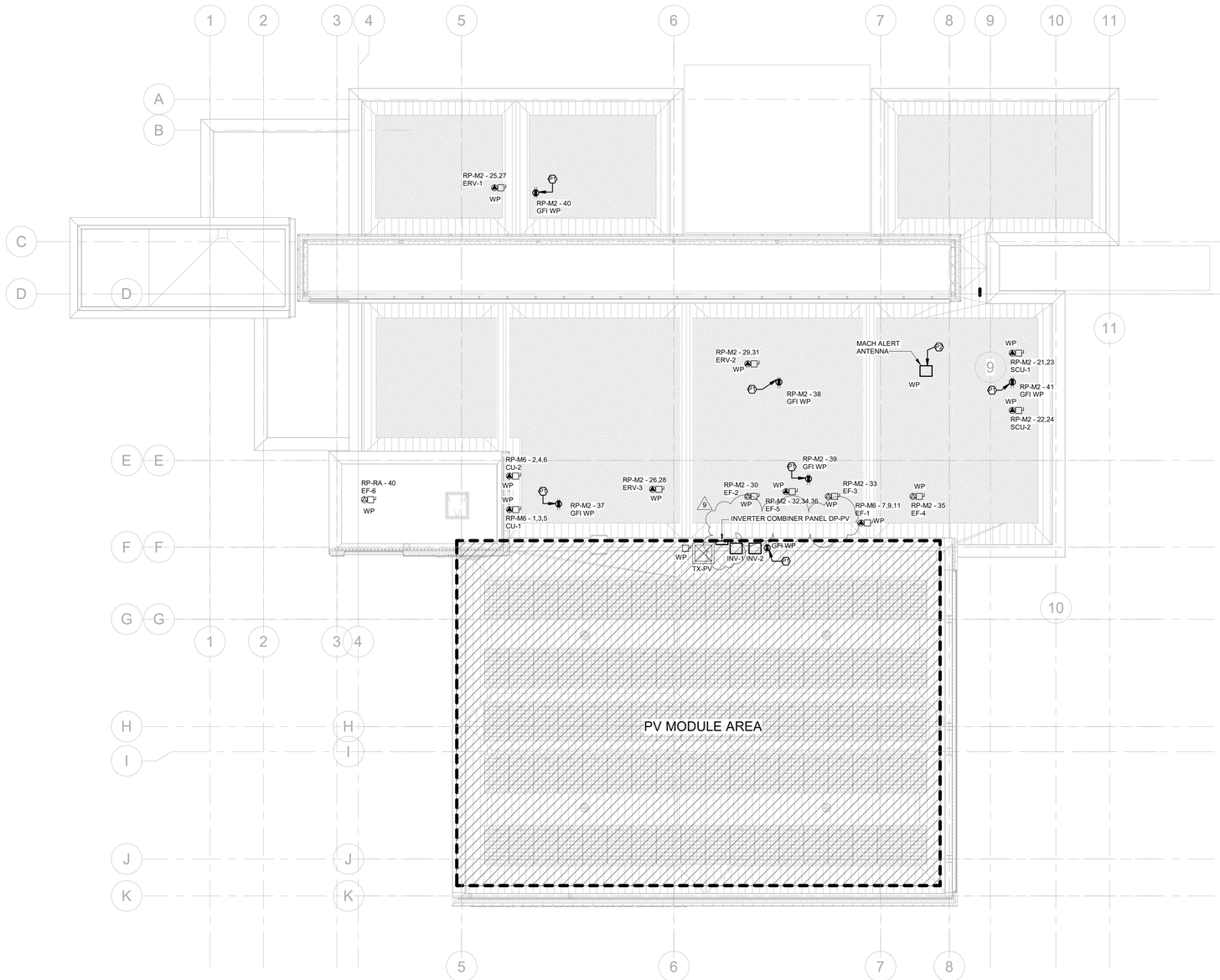
LEVEL 01 PLAN - POWER & SYSTEMS

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: As indicated

DRAWING NO.:

E-202

PLOT DATE: 8/15/2024 4:34:59 PM



1 ROOF PLAN - POWER & SYSTEMS
1 : 100

KEYNOTE LEGEND	
Key Value	Keynote Text
P1	PROVIDE WP GFI 5-20R @ 750mm (30") ABOVE FINISHED ROOF LEVEL C/W WET LOCATION COVER PLATE FOR POWER TO ROOF MOUNTED HVAC EQUIPMENT, TYPICAL. LOCATE WITHIN 7500mm (25 FEET) OF NEW HVAC EQUIPMENT, AND AT LEAST 200mm (6.5 FEET) AWAY FROM ROOF LINE. COVER PLATE TO BE MARKED "EXTRA DUTY". REFER TO 2021 OESC RULES 2-316, 26-708, AND 26-710, AND OESC BULLETIN 26-27-*. OR LATEST EDITION LABEL RECEPTACLE WITH PHENOLIC (LAMACOID) NAMEPLATE WITH PANELBOARD ID, CIRCUIT NUMBER, AND PANELBOARD LOCATION.
P2	ELECTRICAL CONTRACTOR TO PROVIDE A WEATHER PROOF BOX AT MACH ALERT ANTENNA AND 3/4" CONDUIT BACK TO MOTOROLA STATION CONTROLLER LOCATED IN IT ROOM 118. COORDINATE FINAL LOCATION OF ANTENNA WITH SUPPLIER.

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1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ROOF PLAN - POWER & SYSTEMS

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 100

DRAWING NO.:
E-302

I PLOT DATE: 8/15/2024 4:35:02 PM

50kW DC Mobile Charger CCS1 UL
Product Code HE9819025-01

The Heliox 50 kW Mobile charger is a high powered Level 3 DC charger that provides cost effective, flexible mobile charging for fleet owners, transit operators and EV service and maintenance providers. It is powerful enough to provide entry level depot charging solutions for EV owners starting out with electrification of fleets but not yet ready to invest in an expensive fixed depot charging installation.

This charger is typically used by:

- OEM's charging BEV's on their production line and for interoperability testing
- Transit operators charging small fleets or as a backup charger for fixed chargers installation
- Fleet operators purchasing their first BEV's
- In maintenance garages of Transit and Fleet operators to charge BEV's in for service

This charger is made in America is UL listed and can normally be delivered out of stock with a short lead time.

Power requirements
480Vac
3 phase (no neutral)
65 A circuit (minimum) 100A recommended

Mobile Charger
Fast DC 50 mobile

Specifications

The Heliox mobile charger is the ideal solution for bus depots, truck workshops or during driving events. The FAST DC 50 mobile* is lightweight, mobile, easy to handle and designed with service and maintenance personnel in mind.

Using this charger is very straight forward. Thanks to SAE J1772 charging standard it is plug and play, once connected to the vehicle the charging process will automatically start.

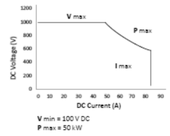
The yellow frame with wheels creates flexibility and protection. Available with SAE J1772 compliant CCS-1 up to 1000Vdc.

The extra long 9.10 ft CCS-cable gives you ultimate flexibility.

Dimensions

H: 35.43 inches
W: 19.69 inches
D: 19.69 inches

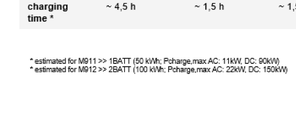
Power Curve



V min = 100 V DC
P max = 50 kW

General	Charger
Environment operating	Indoor/Outdoor
Temperature	-4 to 104 °F
Charging standard	SAE J1772
Compliance and safety	UL 2202* / UL2231*
Output DC voltage range	100 - 1000 V (CCS)
Rated DC output power	50 kW
Rated DC output current	84 A
Input connections	3P + PE
Input power rating; full load / idle	54 kVA / 15 VA
Input AC line-line voltage range	480 V +/-10%
Input AC phase current; maximum	65, inrush current limited
Power factor	> 0,95
Power conversion efficiency	> 93%
Dielectric withstand	2500 V RMS
Network connection	GPRS / 3G modem
Protection	NEMA 3R / IK10
Operational noise level	<55 dB(A) @ 3.28 ft
System weight	273.37 lbs

*** Specifications are subject to change without notice.**
*** Under development**



Vehicle Charging Port: CCS Combo Type 2

- possibility for **AC** and **DC** charging, depending on the available charging infrastructure
- located on **driver's side**
- serves as vehicle's "shoreline" in fire department (enables permanent electric supply and ensures air system with HV-compressor)

	AC	DC
Performance	@ 400V AC up to **11kW** [M911] or up to **22kW** [M912]	@ 650V DC up to **90kW** [M911] or up to **150kW** [M912]
Time* (* estimated for **M911**-vehicle + SOC 0-80% + best conditions)	~ 4,5 hours	~ 30 min
Time* (* estimated for **M912**-vehicle + SOC 0-80% + best conditions)	~ 4,5 hours	~ 45 min
Charging connection		

	DiniTech AC NRG kick	Heliox DC 40 kW	Heliox DC 50 kW	Designwerk DC 88 kW	Kreisel DC Chimero	ABB DC Terra 54	ABB DC HVC depot	Charge Point Express 250
Dimension (LxWxH)	215 x 90 x 84 mm	500 x 500 x 900 mm	508 x 508 x 914 mm	500 x 380 x 900 mm	1.000 x 1.310 x 2.340 mm	780 x 565 x 1.900 mm	1.770 x 770 x 2.300 + 600 x 400 x 1.914 mm	1.177 x 441 x 2.241 mm
Weight	4 kg	120 kg	123 kg	48 kg	1.976 kg	350 kg	1.340 + 181 kg	250 kg
Power input	22 kW CEE32A (11 kW CEE16A)	40 kW CEE63A	54 kVA	88 kW CEE125A, (40 kW CEE63A)	88 kW CEE125A, (40 kW CEE63A)	400V AC 50Hz 480V AC 60Hz	400V AC 50Hz/60Hz	400V AC 96A 50Hz 480V AC 80A 60Hz
Power output	up to **22 kW**	up to **40 kW**	up to **50 kW**	up to **83 kW**	up to **160 kW** (75 kWh battery)	up to **50 kW**	up to **150 kW**	up to **62,5 kW** (2x paired 125 kW)
Certification	CE	CE	UL	CE	CE	CE, UL	CE, UL	CE, UL
Tested with RT by RED	✓				✓			
charging time *	~ 4,5 h	~ 1,5 h	~ 1,5 h	~ 1 h	~ 45 min			

* estimated for M911 >> 1BATT (50 kWh; Pcharge,max AC: 11kW, DC: 90kW)
* estimated for M912 >> 2BATT (100 kWh; Pcharge,max AC: 22kW, DC: 150kW)

GENERAL NOTES

1. EV FIRE TRUCK MOBILE CHARGER IS OWNER SUPPLIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE AC POWER SUPPLY TO THE EV CHARGER. REFER TO SINGLE LINE DIAGRAM ON SHEET E-001.

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BRAMPTON FIRE STATION 215

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TEL: 905-507-0800
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SEALS

NO.	ISSUES/REVISIONS	DATE
6	ISSUED FOR ADD-E02	2024-08-16
5	ISSUED FOR TENDER	2024-06-28
4	ISSUED FOR TENDER REVIEW	2024-06-11
3	ISSUED FOR PERMIT	2024-05-06
2	ISSUED FOR ESA REVIEW	2024-04-23
1	ISSUED FOR 60% CD	2024-04-16

DRAWING TITLE:

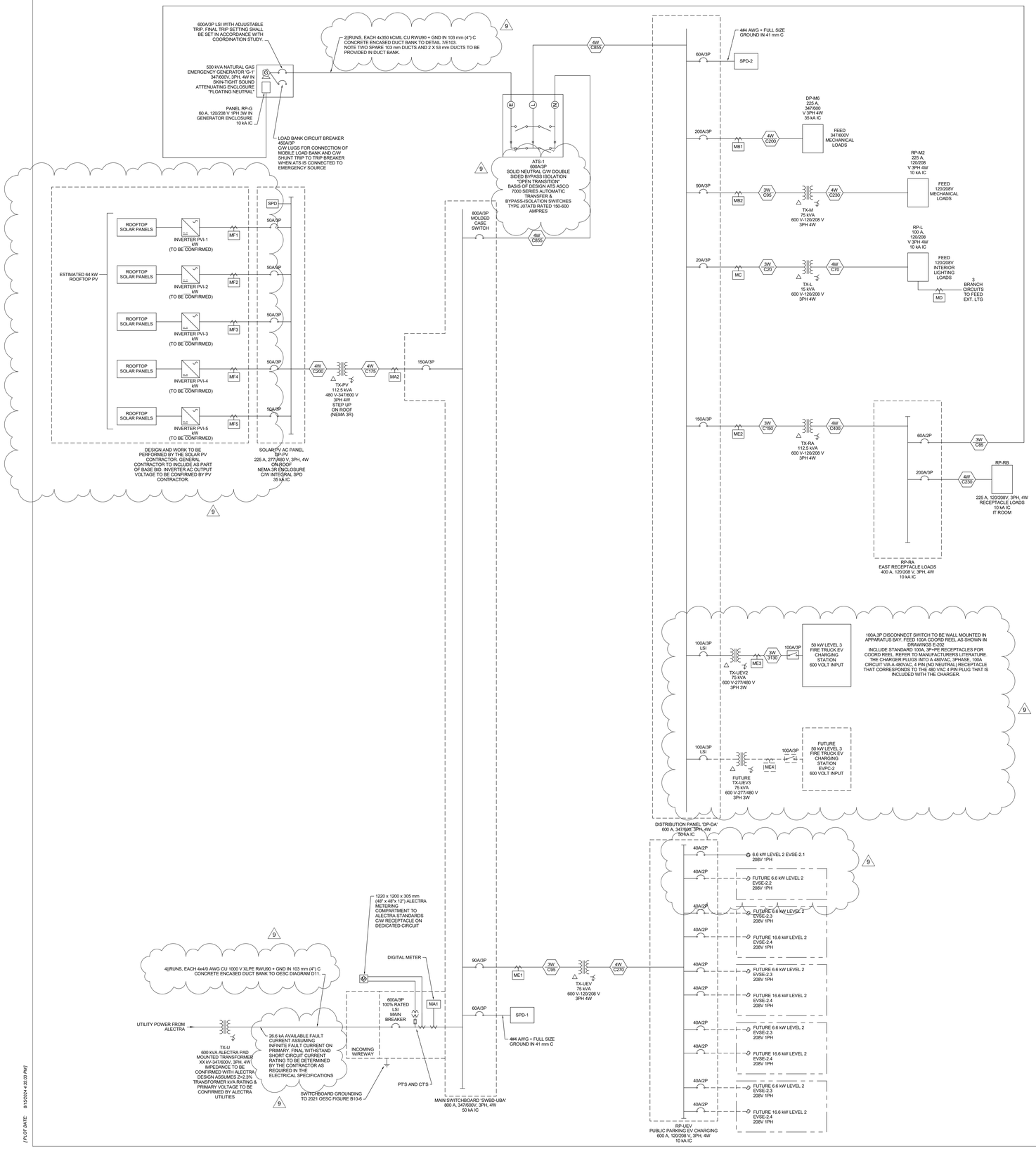
EV FIRE TRUCK CHARGER DETAILS

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 12" = 1'-0"

DRAWING NO.:

E-808

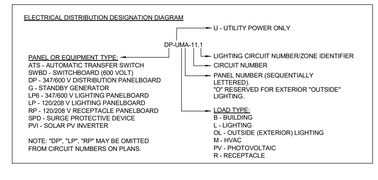
[PLOT DATE: 8/15/2024 4:26:03 PM]



ELECTRICAL DISTRIBUTION DESIGNATION DIAGRAM

PANEL OR EQUIPMENT TYPE:
ATS - AUTOMATIC TRANSFER SWITCH
SWBD - SWITCHBOARD (600 VOLT)
DP - 347/600 V DISTRIBUTION PANELBOARD
G - STANDBY GENERATOR
LP6 - 347/600 V LIGHTING PANELBOARD
LP - 120/208 V LIGHTING PANELBOARD
RP - 120/208 V RECEPTACLE PANELBOARD
SPD - SURGE PROTECTIVE DEVICE
PVI - SOLAR PV INVERTER

NOTE: "DP", "LP", "RP" MAY BE OMITTED FROM CIRCUIT NUMBERS ON PLANS.



ELECTRICAL ENERGY MONITORING/METERING SCHEDULE

WTMTR	TOTAL DOMESTIC WATER UTILIZATION - UTILITY
NGMTR	TOTAL NATURAL GAS UTILIZATION - UTILITY
ELCMTR	TOTAL ELECTRICAL ENERGY - UTILITY
SOLMTR	TOTAL ELECTRICAL ENERGY - SOLAR PV
MB1 MB2	HVAC SYSTEMS
MC	INTERIOR LIGHTING
MD	EXTERIOR LIGHTING
ME1 ME2 ME3	RECEPTACLE CIRCUITS
ME4	FUTURE RECEPTACLE CIRCUIT
MF1 MF2 MF3 MF4 MF5	ROOFTOP SOLAR ENERGY GENERATION
MF6 MF7	BIPV ENERGY GENERATION

REFER TO SECTION 26 27 13 FOR ELECTRICITY METERING REQUIREMENTS.

3-WIRE COPPER FEEDER SCHEDULE

CONDUCTOR TYPE C = COPPER A = ALUMINUM — QUANTITY OF CONDUCTORS PER RUN (3W) — AMPACITY

ROW	FEEDER ID	QTY OF PARALLEL RUNS	CONDUCTORS QTY	CONDUCTORS SIZE	BONDING SIZE	CONDUIT SIZE (mm)	CONDUIT SIZE (IN)	CONDUCTOR MATERIAL	AMPACITY PER RUN	AMPACITY TOTAL ALL RUNS	REFERENCE (75 DEG C UNLESS NOTED OTHERWISE)
1	3WC20	1	3	#12 AWG	#12 AWG	21	3/4	COPPER	20	20	OESC TABLE 2 (60 DEG C)
2	3WC30	1	3	#10 AWG	#12 AWG	21	3/4	COPPER	30	30	OESC TABLE 2 (60 DEG C)
3	3WC40	1	3	#8 AWG	#10 AWG	27	1	COPPER	40	40	OESC TABLE 2 (60 DEG C)
4	3WC55	1	3	#6 AWG	#10 AWG	27	1	COPPER	55	55	OESC TABLE 2 (60 DEG C)
5	3WC70	1	3	#4 AWG	#8 AWG	35	1-1/4	COPPER	70	70	OESC TABLE 2 (60 DEG C)
6	3WC85	1	3	#3 AWG	#8 AWG	35	1-1/4	COPPER	85	85	OESC TABLE 2 (60 DEG C)
7	3WC95	1	3	#2 AWG	#8 AWG	35	1-1/4	COPPER	95	95	OESC TABLE 2 (60 DEG C)
8	3WC130	1	3	#1 AWG	#6 AWG	41	1-1/2	COPPER	130	130	OESC TABLE 2
9	3WC150	1	3	#1/0 AWG	#6 AWG	53	2	COPPER	150	150	OESC TABLE 2
10	3WC175	1	3	#2/0 AWG	#6 AWG	53	2	COPPER	175	175	OESC TABLE 2
11	3WC200	1	3	#3/0 AWG	#6 AWG	53	2	COPPER	200	200	OESC TABLE 2
12	3WC230	1	3	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	230	OESC TABLE 2
13	3WC255	1	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	255	OESC TABLE 2
14	3WC285	1	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	285	OESC TABLE 2
15	3WC300	2	3	#1/0 AWG	#6 AWG	53	2	COPPER	150	300	OESC TABLE 2
16	3WC310	1	3	350 MCM	#3 AWG	78	3	COPPER	310	310	OESC TABLE 2
17	3WC350	2	3	#2/0 AWG	#6 AWG	53	2	COPPER	175	350	OESC TABLE 2
18	3WC380	1	3	500 MCM	#3 AWG	103	4	COPPER	380	380	OESC TABLE 2
19	3WC400	2	3	#3/0 AWG	#6 AWG	53	2	COPPER	200	400	OESC TABLE 2
20	3WC460	2	3	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	460	OESC TABLE 2
21	3WC475	1	3	750 MCM	#2 AWG	103	4	COPPER	380	475	OESC TABLE 2
22	3WC510	2	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	510	OESC TABLE 2
23	3WC570	2	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	570	OESC TABLE 2
24	3WC620	2	3	350 MCM	#3 AWG	78	3	COPPER	310	620	OESC TABLE 2
25	3WC760	2	3	500 MCM	#3 AWG	103	4	COPPER	380	760	OESC TABLE 2
26	3WC765	3	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	765	OESC TABLE 2
27	3WC855	3	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	855	OESC TABLE 2

REMARKS:
1. SCHEDULE ASSUMES NO TEMPERATURE RATING INDICATED ON BREAKER LUGS.

4-WIRE COPPER FEEDER SCHEDULE

CONDUCTOR TYPE C = COPPER A = ALUMINUM — QUANTITY OF CONDUCTORS PER RUN (4W) — AMPACITY

ROW	FEEDER ID	QTY OF PARALLEL RUNS	CONDUCTORS QTY	CONDUCTORS SIZE	BONDING SIZE	CONDUIT SIZE (mm)	CONDUIT SIZE (IN)	CONDUCTOR MATERIAL	AMPACITY PER RUN	AMPACITY TOTAL ALL RUNS	REFERENCE (75 DEG C UNLESS NOTED OTHERWISE)
1	4WC20	1	4	#12 AWG	#12 AWG	21	3/4	COPPER	20	20	OESC TABLE 2 (60 DEG C)
2	4WC30	1	4	#10 AWG	#12 AWG	21	3/4	COPPER	30	30	OESC TABLE 2 (60 DEG C)
3	4WC40	1	4	#8 AWG	#10 AWG	27	1	COPPER	40	40	OESC TABLE 2 (60 DEG C)
4	4WC55	1	4	#6 AWG	#10 AWG	27	1	COPPER	55	55	OESC TABLE 2 (60 DEG C)
5	4WC70	1	4	#4 AWG	#8 AWG	35	1-1/4	COPPER	70	70	OESC TABLE 2 (60 DEG C)
6	4WC85	1	4	#3 AWG	#8 AWG	35	1-1/4	COPPER	85	85	OESC TABLE 2 (60 DEG C)
7	4WC95	1	4	#2 AWG	#8 AWG	35	1-1/4	COPPER	95	95	OESC TABLE 2 (60 DEG C)
8	4WC130	1	4	#1 AWG	#6 AWG	41	1-1/2	COPPER	130	130	OESC TABLE 2
9	4WC150	1	4	#1/0 AWG	#6 AWG	53	2	COPPER	150	150	OESC TABLE 2
10	4WC175	1	4	#2/0 AWG	#6 AWG	53	2	COPPER	175	175	OESC TABLE 2
11	4WC200	1	4	#3/0 AWG	#6 AWG	53	2	COPPER	200	200	OESC TABLE 2
12	4WC230	1	4	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	230	OESC TABLE 2
13	4WC255	1	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	255	OESC TABLE 2
14	4WC285	1	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	285	OESC TABLE 2
15	4WC300	2	4	#1/0 AWG	#6 AWG	53	2	COPPER	150	300	OESC TABLE 2
16	4WC310	1	4	350 MCM	#3 AWG	78	3	COPPER	310	310	OESC TABLE 2
17	4WC350	2	4	#2/0 AWG	#6 AWG	53	2	COPPER	175	350	OESC TABLE 2
18	4WC380	1	4	500 MCM	#3 AWG	103	4	COPPER	380	380	OESC TABLE 2
19	4WC400	2	4	#3/0 AWG	#6 AWG	53	2	COPPER	200	400	OESC TABLE 2
20	4WC460	2	4	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	460	OESC TABLE 2
21	4WC475	1	4	750 MCM	#2 AWG	103	4	COPPER	380	475	OESC TABLE 2
22	4WC510	2	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	510	OESC TABLE 2
23	4WC570	2	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	570	OESC TABLE 2
24	4WC620	2	4	350 MCM	#3 AWG	78	3	COPPER	310	620	OESC TABLE 2
25	4WC760	2	4	500 MCM	#3 AWG	103	4	COPPER	380	760	OESC TABLE 2
26	4WC765	3	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	765	OESC TABLE 2
27	4WC855	3	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	855	OESC TABLE 2
28	4WC1860	6	4	350 MCM	#3 AWG	78	3	COPPER	310	1860	OESC TABLE 2

REMARKS:
1. SCHEDULE ASSUMES NO TEMPERATURE RATING INDICATED ON BREAKER LUGS.

BRAMPTON FIRE STATION 215

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SEALS

NO.	ISSUES/REVISIONS	DATE
9	ISSUED FOR ADD-E02	2024-08-16
8	ISSUED FOR TENDER	2024-06-28
7	ISSUED FOR TENDER REVIEW	2024-06-11
6	ISSUED FOR PERMIT	2024-05-06
5	ISSUED FOR ESA REVIEW	2024-04-23
4	ISSUED FOR ALECTRA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

SINGLE LINE DIAGRAM

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 12" = 1'-0"

DRAWING NO.:

E-901

[PLOT DATE: 8/15/2024 4:35:03 PM]

Branch Panel: RP-RA

Location: ELECTRICAL ROOM 120
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating: 1 A

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	RECEPTACLE	4	15 A	1	720 VA	540 VA		1	20 A	3	POWER	2
3	POWER	2	20 A	1		360 VA	540 VA	1	20 A	3	POWER	4
5	POWER	10	20 A	1			1800 VA 540 VA	1	20 A	3	POWER	6
7	POWER	2	20 A	1	360 VA	360 VA		1	20 A	2	POWER	8
9	POWER	4	20 A	1		720 VA	360 VA	1	20 A	2	POWER	10
11	POWER	4	20 A	1			720 VA 720 VA	1	20 A	4	POWER	12
13	POWER	2	20 A	1	360 VA	180 VA		1	20 A	1	FRIDGE	14
15	MICROWAVE	1	20 A	1		180 VA	180 VA	1	20 A	1	POWER	16
17	POWER	5	20 A	1			900 VA 540 VA	1	20 A	3	POWER	18
19	POWER	2	20 A	1	360 VA	2496 VA		2	20 A	1	POWER	20
21	POWER	1	20 A	1		180 VA	2496 VA					22
23	POWER	4	20 A	1			720 VA 360 VA	1	20 A	2	POWER	24
25					167 VA	167 VA						26
27	POWER	1	20 A	3		167 VA	167 VA	3	20 A	1	POWER	28
29							167 VA 167 VA					30
31					167 VA	167 VA						32
33	POWER	1	20 A	3		167 VA	167 VA	3	20 A	1	POWER	34
35							167 VA 167 VA					36
37	POWER	1	20 A	1	500 VA	540 VA		1	20 A	3	POWER	38
39	POWER	1	20 A	1		500 VA	500 VA	1	20 A	1	POWER	40
41							167 VA 720 VA	1	20 A	4	POWER	42
43	POWER	1	20 A	3	167 VA	500 VA		2	20 A	2	POWER	44
45						167 VA	500 VA					46
47	POWER	2	20 A	2			500 VA 500 VA	2	20 A	2	POWER	48
49					500 VA	500 VA						50
51	POWER	2	20 A	2		500 VA	500 VA	2	20 A	2	POWER	52
53							500 VA 500 VA					54
55	POWER	2	20 A	2	500 VA							56
57						500 VA						58
59												60
				Total Load:	9249 VA	8849 VA	9853 VA					
				Total Amps:	78 A	74 A	83 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	27952 VA	100.00%	27952 VA		
				Total Conn. Load:	27952 VA
				Total Est. Demand:	27952 VA
				Total Conn.:	78 A
				Total Est. Demand:	78 A

Notes:

Branch Panel: RP-RB

Location: I.T. 118
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating:

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	POWER	1	20 A	1	180 VA			180 VA			1	20 A	1	POWER	2
3	POWER	1	20 A	1		180 VA			180 VA		1	20 A	1	POWER	4
5	POWER	1	20 A	1			180 VA			180 VA	1	20 A	1	POWER	6
7	POWER	1	20 A	1	180 VA			180 VA			1	20 A	1	POWER	8
9	POWER	1	20 A	1		180 VA			180 VA		1	20 A	1	POWER	10
11	POWER	1	20 A	1			180 VA			180 VA	1	20 A	1	POWER	12
13	POWER	1	20 A	1	500 VA			0 VA			1	20 A	--	SPARE	14
15	SPARE	--	20 A	1		0 VA			0 VA		1	20 A	--	SPARE	16
17	SPARE	--	20 A	1			0 VA			0 VA	1	20 A	--	SPARE	18
19	SPARE	--	20 A	1	0 VA			0 VA			1	20 A	--	SPARE	20
21	SPARE	--	20 A	1		0 VA			0 VA		1	20 A	--	SPARE	22
23	SPARE	--	20 A	1			0 VA			0 VA	1	20 A	--	SPARE	24
25	POWER	1	15 A	1	180 VA										26
27	POWER	1	15 A	1		180 VA									28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
				Total Load:	1400 VA		900 VA			720 VA					
				Total Amps:	12 A		8 A			6 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	3020 VA	100.00%	3020 VA		
				Total Conn. Load:	3020 VA
				Total Est. Demand:	3020 VA
				Total Conn.:	8 A
				Total Est. Demand:	8 A

Notes:

Branch Panel: RP-M2

Location: ELECTRICAL ROOM 120
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating: 1 A

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	FC-1, FC-2, FC-3, FC-4	4	20 A	2	1000 VA							2
3						1000 VA						4
5	POWER	1	20 A	1			180 VA					6
7	POWER	1	20 A	1	180 VA	500 VA		1	20 A	1	POWER	8
9	FC-5, FC-6, FC-7, FC-8	4	20 A	2		1000 VA						10
11							1000 VA					12
13					250 VA							14
15						250 VA		2	20 A	1	SAC-2	16
17												18
19					250 VA							20
21	SCU-1	1	30 A	2		250 VA	250 VA					22
23							250 VA 250 VA	2	30 A	1	SCU-2	24
25	ERV-1	1	15 A	2	250 VA	250 VA						26
27						250 VA	250 VA	2	15 A	1	ERV-3	28
29	ERV-2	1	15 A	2			250 VA 500 VA	1	20 A	1	EF-2	30
31					250 VA	167 VA						32
33	EF-3	1	20 A	1		500 VA	167 VA	3	20 A	1	EF-5	34
35	EF-4	1	20 A	1			500 VA 167 VA					36
37	RECEPTACLE	1	20 A	1	180 VA	180 VA		1	20 A	1	RECEPTACLE	38
39	RECEPTACLE	1	20 A	1		180 VA	180 VA	1	20 A	1	RECEPTACLE	40
41	RECEPTACLE	1	20 A	1			180 VA 167 VA					42
43	HVLS-3	1	20 A	2	250 VA	167 VA		3	20 A	1	HVLS-1	44
45						250 VA	167 VA					46
47	HVLS-2	1	20 A	2			250 VA 500 VA	1	20 A	1	IAC-3	48
49					250 VA	250 VA		2	20 A	1	BS-1	50
51	IAC-2	1	20 A	1		500 VA	250 VA					52
53	IAC-1	1	20 A	3			167 VA 250 VA	2	20 A	1	BS-2	54
55					167 VA	250 VA						56
57						167 VA	250 VA	2	20 A	1	BS-3	58
59	P-01	1	20 A	1			500 VA 250 VA					60
61	POWER	3	20 A	1	1500 VA	167 VA						62
63	UH-3	1	15 A	3		167 VA	167 VA	3	15 A	1	UH-4	64
65							167 VA 167 VA					66
67					167 VA	167 VA						68
69	UH-2	1	15 A	3		167 VA	167 VA	3	15 A	1	UH-1	70
71							167 VA 167 VA					72
73					167 VA	360 VA		1	20 A	2	POWER	74
75	POWER	1	20 A	3		167 VA						76
77							167 VA					78
79					167 VA							80
81	SPARE	--	20 A	1		0 VA	0 VA	1	20 A	--	SPARE	82
83	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	84
				Total Load:	7483 VA	6693 VA	6443 VA					
				Total Amps:	63 A	56 A	54 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	20620 VA	100.00%	20620 VA		
				Total Conn. Load:	20620 VA
				Total Est. Demand:	20620 VA
				Total Conn.:	57 A
				Total Est. Demand:	57 A

Notes:

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
3	ISSUED FOR ADD-E02	2024-08-16
2	ISSUED FOR ADD-E01	2024-08-09
1	ISSUED FOR TENDER	2024-06-28

DRAWING TITLE:

ELECTRICAL
PANELBOARD
SCHEDULES I

ISSUE DATE: 2024-08-16
DRAWN BY: Author
CHECKED BY: Checker
PROJECT NO.: CM-22-269
SCALE:

DRAWING NO.:

E-904

[PLOT DATE: 8/15/2024 4:35:08 PM]

Branch Panel: RP-M6

Location: ELECTRICAL ROOM 120
Supply From:
Mounting:
Enclosure:

Volts: 347/600V
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating:

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1					167 VA			167 VA							2
3	CU-1	1	50 A	3		167 VA			167 VA		3	20 A	1	CU-2	4
5							167 VA			167 VA					6
7					167 VA			167 VA							8
9	EF-1	1	20 A	3		167 VA			167 VA		3	20 A	1	DHWT-1	10
11							167 VA			167 VA					12
13					167 VA			167 VA							14
15	UH-5	1	20 A	3		167 VA			167 VA		3	20 A	1	UH-6	16
17							167 VA			167 VA					18
19					167 VA			167 VA							20
21	UH-7	1	20 A	3		167 VA			167 VA		3	20 A	1	UH-8	22
23							167 VA			167 VA					24
25	LIGHTING - EXTERIOR	6	20 A	1	436 VA										26
27	LIGHTING - EXTERIOR	5	20 A	1		294 VA									28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
				Total Load:	1753 VA		1615 VA		1333 VA						
				Total Amps:	5 A		5 A		4 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting - Exterior	730 VA	125.00%	912 VA		
POWER	4000 VA	100.00%	4000 VA	**Total Conn. Load:**	4699 VA
				Total Est. Demand:	4875 VA
				Total Conn.:	5 A
				Total Est. Demand:	5 A

Notes:

Branch Panel: RP-L

Location: ELECTRICAL ROOM 120
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating:

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	LIGHTING	8	15 A	1	742 VA			239 VA			1	15 A	13	LIGHTING	2
3	LIGHTING	16	15 A	1		700 VA			557 VA		1	15 A	13	LIGHTING	4
5	LIGHTING	22	15 A	1			524 VA			620 VA	1	15 A	31	LIGHTING	6
7	LIGHTING	20	15 A	1	650 VA			320 VA			1	20 A	16	LIGHTING	8
9	LIGHTING	12	15 A	1		559 VA			1219 VA		1	15 A	12	LIGHTING	10
11	LIGHTING	17	15 A	1			1023 VA			97 VA	1	15 A	15	LIGHTING	12
13	SPARE	--	15 A	1	0 VA			0 VA			1	15 A	--	SPARE	14
15	SPARE	--	15 A	1		0 VA			0 VA		1	15 A	--	SPARE	16
17	SPARE	--	15 A	1			0 VA			0 VA	1	15 A	--	SPARE	18
19	SPARE	--	15 A	1	0 VA			0 VA			1	15 A	--	SPARE	20
21	SPARE	--	15 A	1		0 VA			0 VA		1	15 A	--	SPARE	22
23	EXIT SIGNS	17	20 A	1			620 VA			0 VA	1	15 A	--	SPARE	24
25															26
27															28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
				Total Load:	1950 VA		3007 VA		2879 VA						
				Total Amps:	16 A		26 A		25 A						

7

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LIGHTING	7329 VA	100.00%	7329 VA		
POWER	500 VA	100.00%	500 VA	**Total Conn. Load:**	7827 VA
				Total Est. Demand:	7827 VA
				Total Conn.:	22 A
				Total Est. Demand:	22 A

Notes:

BRAMPTON FIRE STATION 215

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WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
7	ISSUED FOR ADD-E02	2024-08-16
6	ISSUED FOR TENDER	2024-06-28
5	ISSUED FOR TENDER REVIEW	2024-06-11
4	ISSUED FOR PERMIT	2024-05-06
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL PANELBOARD SCHEDULES II

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE:
DRAWING NO.:

E-905

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 03 30 00 – Cast-in-Place Concrete

1.02 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:
- .1 Provide manufacturer's instructions, printed product literature and data sheets for furniture and include product characteristics, performance criteria, physical size, finish, and limitations.

.3 Shop Drawings:
- .1 Submit shop drawings indicating dimensions, sizes, assembly, anchorage, and installation details for each furnishing specified.

1.03 CLOSEOUT SUBMITTALS

.1 Provide maintenance data for care and cleaning of site furnishings for incorporation into manual specified in Section 01 77 00 – Contract Closeout Procedures and Submittals.

1.04 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 60 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:
- .1 Store materials in dry location and in accordance with manufacturer's recommendations.
- .2 Store and protect furnishings from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

2 PRODUCTS

2.01 BENCHES

.1 One (1) Glide surface mount backed bench with arms by Landscape Forms or approved equal. Installed as per manufacturer's instructions.

.1 Materials: Extruded aluminum and high-density polyethylene (HDPE).

.2 Dimensions:

.1 Height: 793.75mm.
.2 Length: 1905mm.
.3 Depth: 685.8mm.

.3 Finish:
.1 All metal components are finished with proprietary polyester powdercoat.

.4 Colour: Apple red or approved equal.

2.04 BICYCLE RACK

.1 Two (2) Key bike rack by Landscape Forms or approved equal. Installed as per manufacturer's instructions

.1 Basic Construction Material: steel tube with colored polyurethane plastic mold.
.1 Colour: Red or approved equal.

.2 Dimensions:
.1 Height: 812.8mm.
.2 Circle Width: 584.2mm.
.3 Frame Width: 76.2mm.

.3 Finish: Polyurethane plastic mold.

3 EXECUTION

3.01 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for exterior site furnishing installation in accordance with manufacturer's written instructions.
.1 Visually inspect substrate in presence of Consultant.
.2 Inform Consultant of unacceptable conditions immediately upon discovery.
.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.02 PREPARATION

.1 Locate and protect utility lines.

.2 Notify and acquire written acknowledgement from utility authorities before beginning installation.

3.03 INSTALLATION

.1 Assemble furnishings in accordance with manufacturer's written recommendations.

.2 Install furnishings true, plumb, anchored firmly, and supported as directed by Consultant.

.3 Touch-up damaged finishes to approval of Consultant.

3.04 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 13 – Progressive Cleaning.
.1 Leave Work area clean at end of each day.

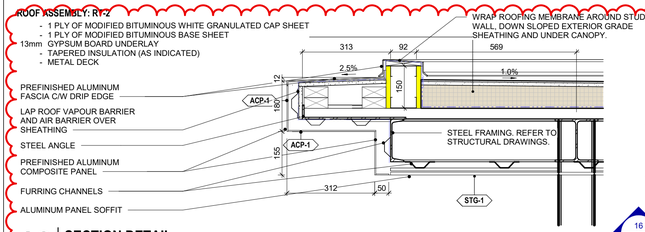
.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 13 - Progressive Cleaning.

3.05 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by site furnishings installation.

END OF SECTION



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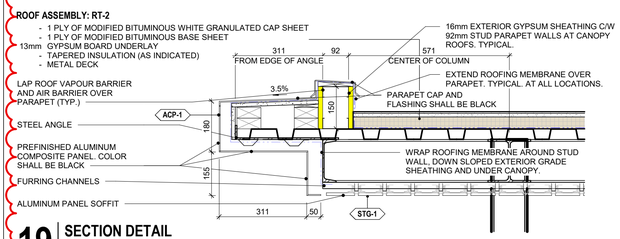

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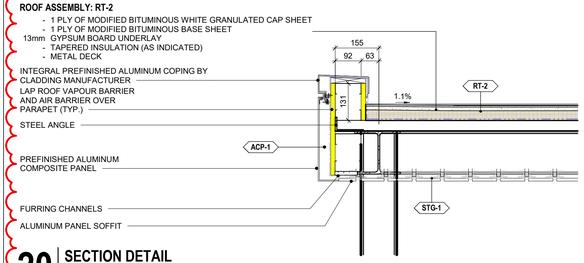

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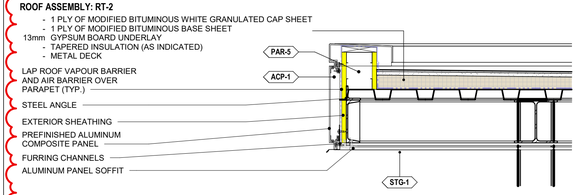

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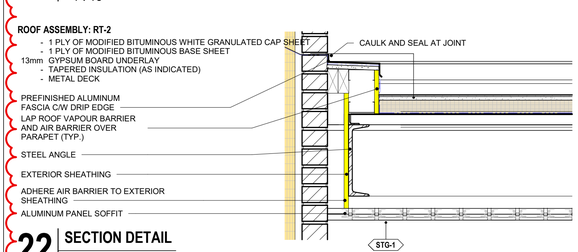

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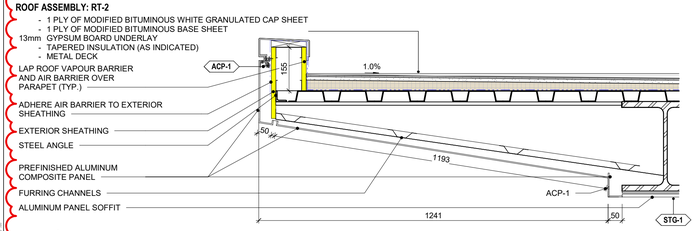

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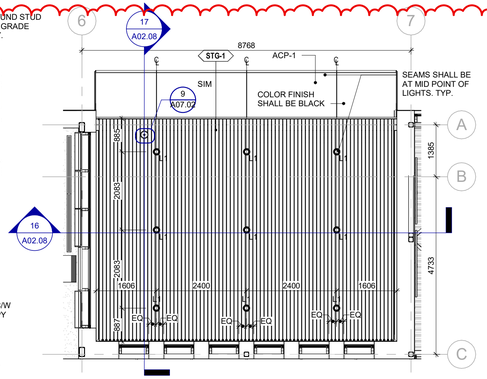

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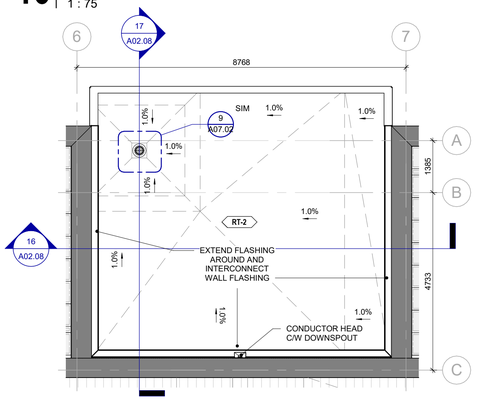

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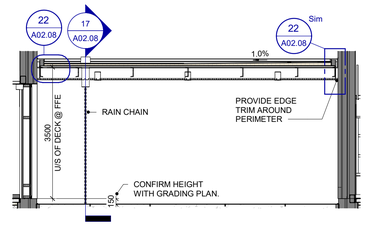

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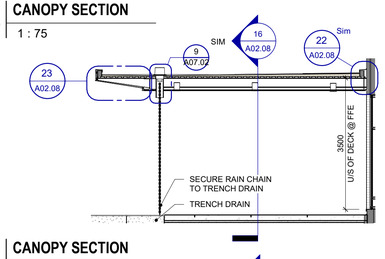

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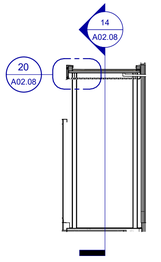

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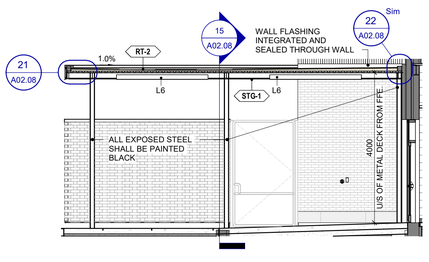

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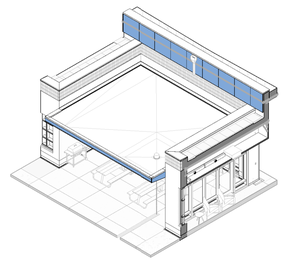

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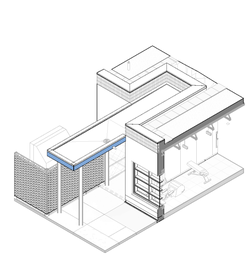

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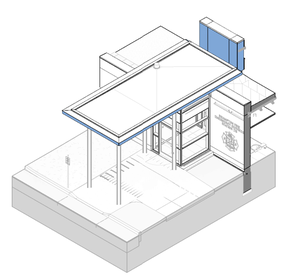

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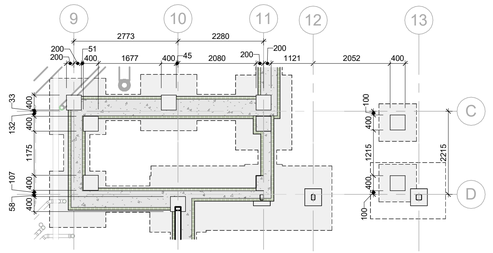

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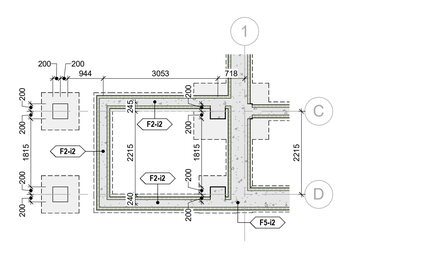

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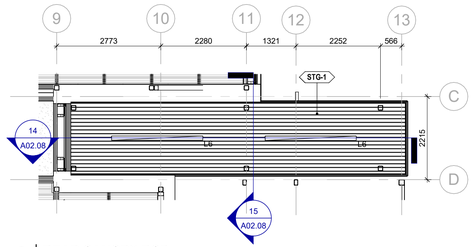

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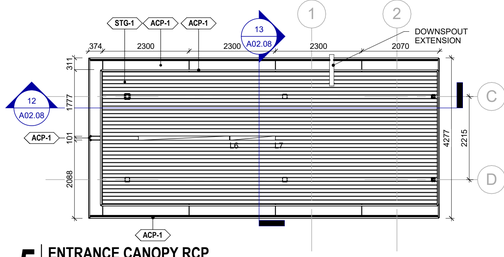

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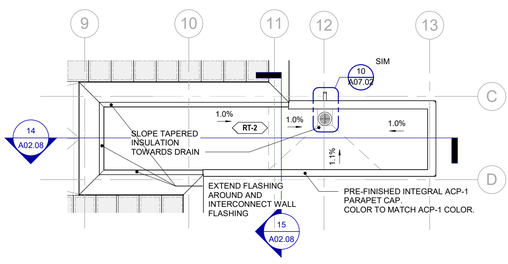

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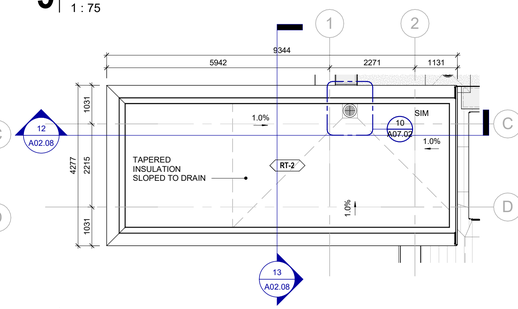

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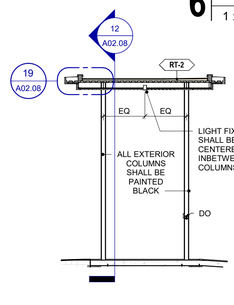

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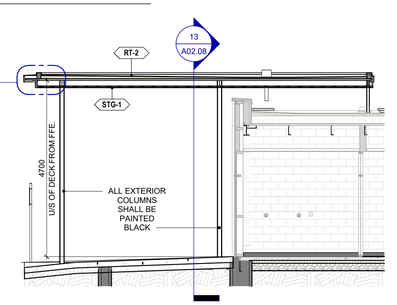

12 SECTION DETAIL
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10

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI
Design Partners in Architecture and Interiors
28 Main Street West Hamilton, Ontario L8P 1H1 Canada
T: 905-522-0220

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMJI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
10	ADDENDUM 02	09/03/2024
9	TENDER	07/16/2024
8	CLASS A ESTIMATE	05/21/2024
7	90% CONTRACT DOCUMENTS	05/21/2024
6	SPA 1 RESUBMISSION	05/15/2024
5	PRE-APPLICATION SUBMISSION 2	04/24/2024
4	60% CONTRACT DOCUMENTS	04/16/2024
3	CLASS B ESTIMATE	08/01/2024
2	DESIGN DEVELOPMENT 100%	08/01/2024
1	SPA 1 RESUBMISSION	20/09/2023
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

CANOPY DETAILS, FOUNDATION, RCP & ROOF PLAN

ISSUE DATE: 09/03/2024

DRAWN BY: SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A02.08** REVISION: **10**

[PLOT DATE: 2024-09-03 3:04:55]

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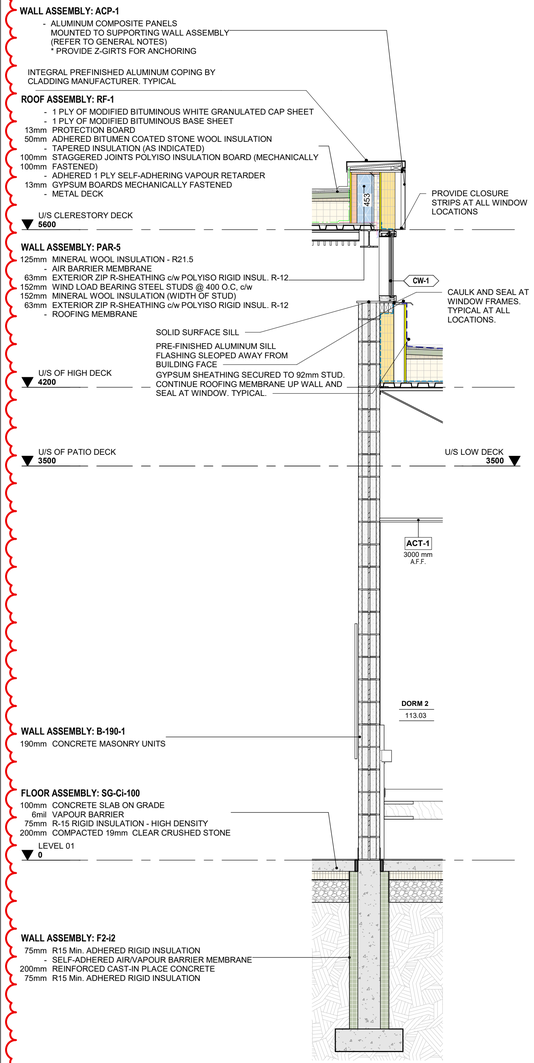

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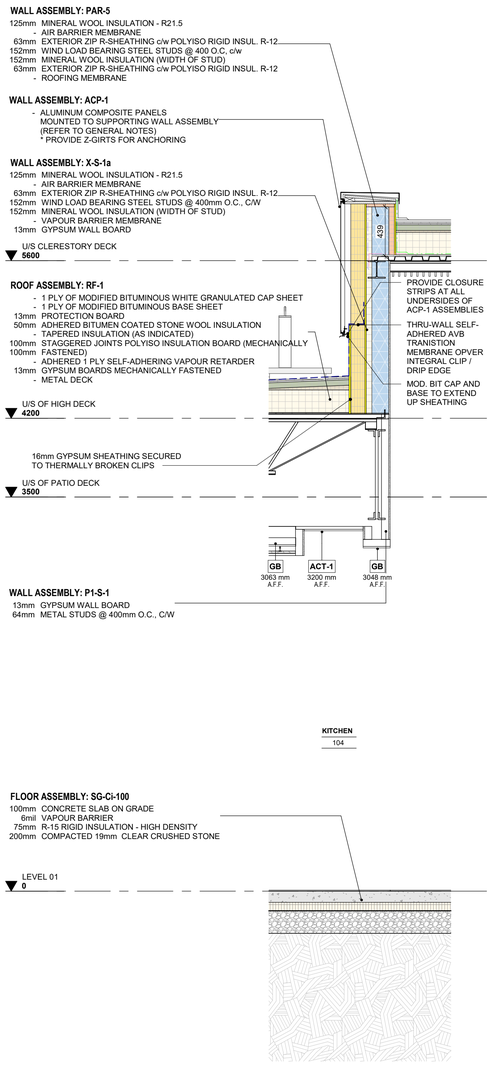

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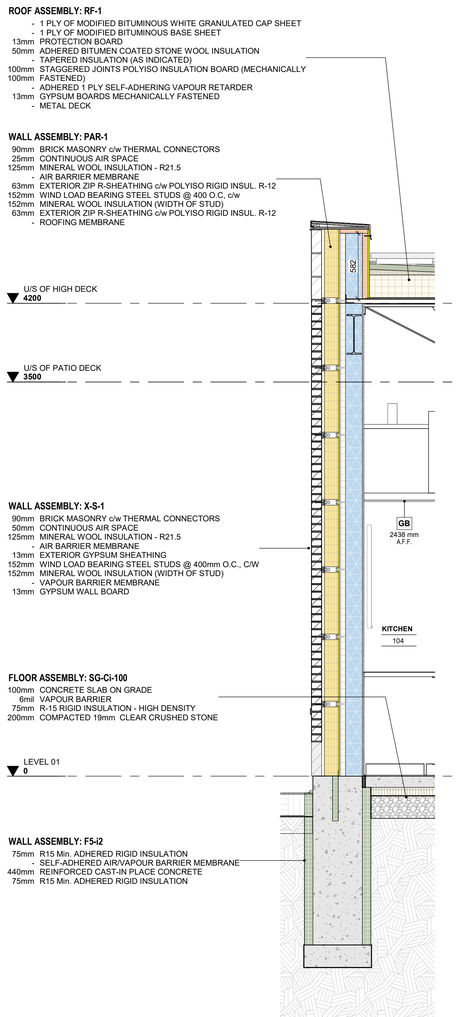

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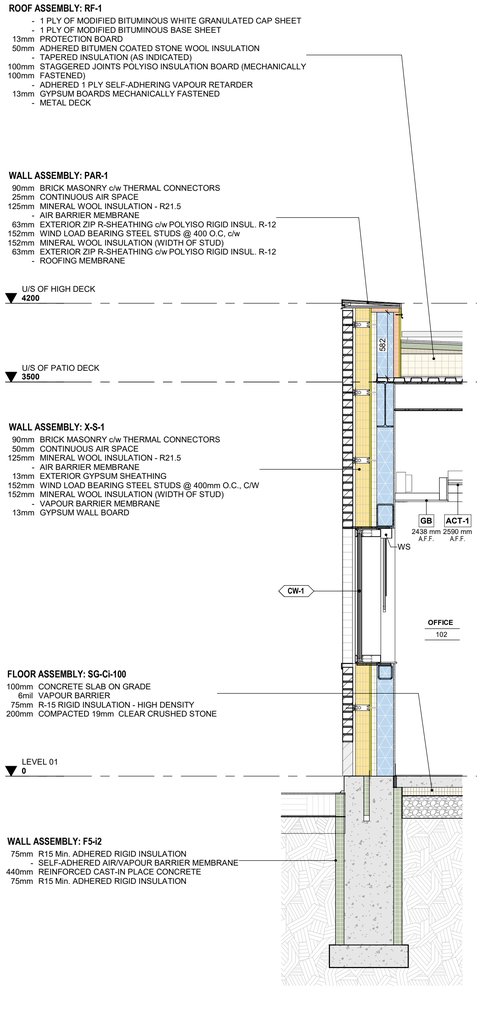

1 WALL SECTION
1 : 25

[PLOT DATE: 2024-09-03 3:41:09 PM]

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

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23 Main Street West Hamilton, Ontario L8P 1H1 Canada
T: 905-522-0220

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SEALS

NO.	ISSUES/REVISIONS	DATE
7	ADDENDUM 02	09/03/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

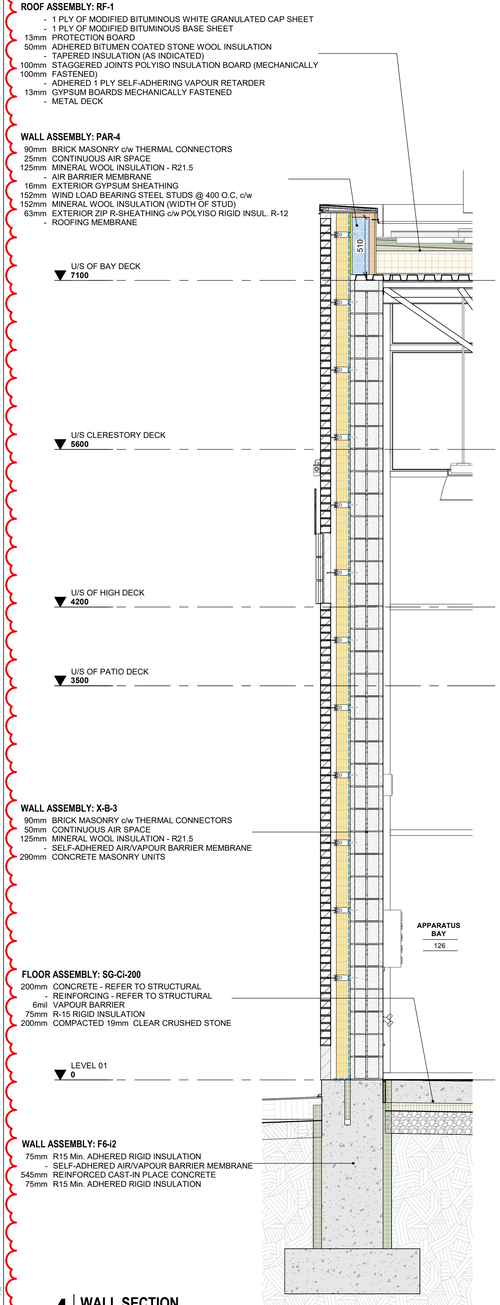
WALL SECTIONS

ISSUE DATE: 09/03/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: 1 : 25

DRAWING NO.: **A05.05** REVISION: **7**



7

ROOF ASSEMBLY: RF-1

-	1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
-	1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm	PROTECTION BOARD
50mm	ADHERED BITUMEN COATED STONE WOOL INSULATION
-	TAPERED INSULATION (AS INDICATED)
100mm	STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm	FASTENED)
-	ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm	GYPSUM BOARDS MECHANICALLY FASTENED
-	METAL DECK

WALL ASSEMBLY: PAR-4

90mm	BRICK MASONRY c/w THERMAL CONNECTORS
25mm	CONTINUOUS AIR SPACE
125mm	MINERAL WOOL INSULATION - R21.5
-	AIR BARRIER MEMBRANE
16mm	EXTERIOR GYPSUM SHEATHING
152mm	WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm	MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm	EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
-	ROOFING MEMBRANE

WALL ASSEMBLY: X-B-3

90mm	BRICK MASONRY c/w THERMAL CONNECTORS
50mm	CONTINUOUS AIR SPACE
125mm	MINERAL WOOL INSULATION - R21.5
-	SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm	CONCRETE MASONRY UNITS

FLOOR ASSEMBLY: SG-Ci-200

200mm	CONCRETE - REFER TO STRUCTURAL
-	REINFORCING - REFER TO STRUCTURAL
6mil	VAPOUR BARRIER
75mm	R-15 RIGID INSULATION
200mm	COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F6-i2

75mm	R15 Min. ADHERED RIGID INSULATION
-	SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
545mm	REINFORCED CAST-IN PLACE CONCRETE
75mm	R15 Min. ADHERED RIGID INSULATION

4 WALL SECTION
1 : 25

WALL ASSEMBLY: PAR-4

90mm	BRICK MASONRY c/w THERMAL CONNECTORS
25mm	CONTINUOUS AIR SPACE
125mm	MINERAL WOOL INSULATION - R21.5
-	AIR BARRIER MEMBRANE
16mm	EXTERIOR GYPSUM SHEATHING
152mm	WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm	MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm	EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
-	ROOFING MEMBRANE

ROOF ASSEMBLY: RF-1

-	1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
-	1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm	PROTECTION BOARD
50mm	ADHERED BITUMEN COATED STONE WOOL INSULATION
-	TAPERED INSULATION (AS INDICATED)
100mm	STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm	FASTENED)
-	ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm	GYPSUM BOARDS MECHANICALLY FASTENED
-	METAL DECK

WALL ASSEMBLY: X-B-3

90mm	BRICK MASONRY c/w THERMAL CONNECTORS
50mm	CONTINUOUS AIR SPACE
125mm	MINERAL WOOL INSULATION - R21.5
-	SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm	CONCRETE MASONRY UNITS

FLOOR ASSEMBLY: SG-Ci-200

200mm	CONCRETE - REFER TO STRUCTURAL
-	REINFORCING - REFER TO STRUCTURAL
6mil	VAPOUR BARRIER
75mm	R-15 RIGID INSULATION
200mm	COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F6-i2

75mm	R15 Min. ADHERED RIGID INSULATION
-	SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
545mm	REINFORCED CAST-IN PLACE CONCRETE
75mm	R15 Min. ADHERED RIGID INSULATION

3 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1

-	1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
-	1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm	PROTECTION BOARD
50mm	ADHERED BITUMEN COATED STONE WOOL INSULATION
-	TAPERED INSULATION (AS INDICATED)
100mm	STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm	FASTENED)
-	ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm	GYPSUM BOARDS MECHANICALLY FASTENED
-	METAL DECK

ROOF ASSEMBLY: RF-1

-	1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
-	1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm	PROTECTION BOARD
50mm	ADHERED BITUMEN COATED STONE WOOL INSULATION
-	TAPERED INSULATION (AS INDICATED)
100mm	STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm	FASTENED)
-	ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm	GYPSUM BOARDS MECHANICALLY FASTENED
-	METAL DECK

PROVIDE CLOSURE STRIPS AT ALL UNDERSIDES OF ACP-1 ASSEMBLIES

THRU-WALL SELF-ADHERED AVB TRANISTION MEMBRANE OPVER INTEGRAL CLIP / DRIP EDGE

MOD. BIT CAP AND BASE TO EXTEND UP SHEATHING

16mm GYPSUM SHEATHING SECURED TO THERMALLY BROKEN CLIPS

WALL ASSEMBLY: B-290-1

290mm	CONCRETE MASONRY UNITS

FLOOR ASSEMBLY: SG-Ci-200

200mm	CONCRETE - REFER TO STRUCTURAL
-	REINFORCING - REFER TO STRUCTURAL
6mil	VAPOUR BARRIER
75mm	R-15 RIGID INSULATION
200mm	COMPACTED 19mm CLEAR CRUSHED STONE

FLOOR ASSEMBLY: SG-Ci-100

100mm	CONCRETE SLAB ON GRADE
6mil	VAPOUR BARRIER
75mm	R-15 RIGID INSULATION - HIGH DENSITY
200mm	COMPACTED 19mm CLEAR CRUSHED STONE

2 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1

-	1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
-	1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm	PROTECTION BOARD
50mm	ADHERED BITUMEN COATED STONE WOOL INSULATION
-	TAPERED INSULATION (AS INDICATED)
100mm	STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm	FASTENED)
-	ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm	GYPSUM BOARDS MECHANICALLY FASTENED
-	METAL DECK

WALL ASSEMBLY: X-B-3a

150mm	MINERAL WOOL INSULATION - R25
-	SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm	CONCRETE MASONRY UNITS

ROOF ASSEMBLY: RF-1

-	1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
-	1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm	PROTECTION BOARD
50mm	ADHERED BITUMEN COATED STONE WOOL INSULATION
-	TAPERED INSULATION (AS INDICATED)
100mm	STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm	FASTENED)
-	ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm	GYPSUM BOARDS MECHANICALLY FASTENED
-	METAL DECK

FLOOR ASSEMBLY: SG-Ci-100

100mm	CONCRETE SLAB ON GRADE
6mil	VAPOUR BARRIER
75mm	R-15 RIGID INSULATION - HIGH DENSITY
200mm	COMPACTED 19mm CLEAR CRUSHED STONE

1 WALL SECTION
1 : 25

[PLOT DATE: 2024-09-03 3:51:30 PM]

BRAMPTON

BRAMPTON FIRE STATION 215

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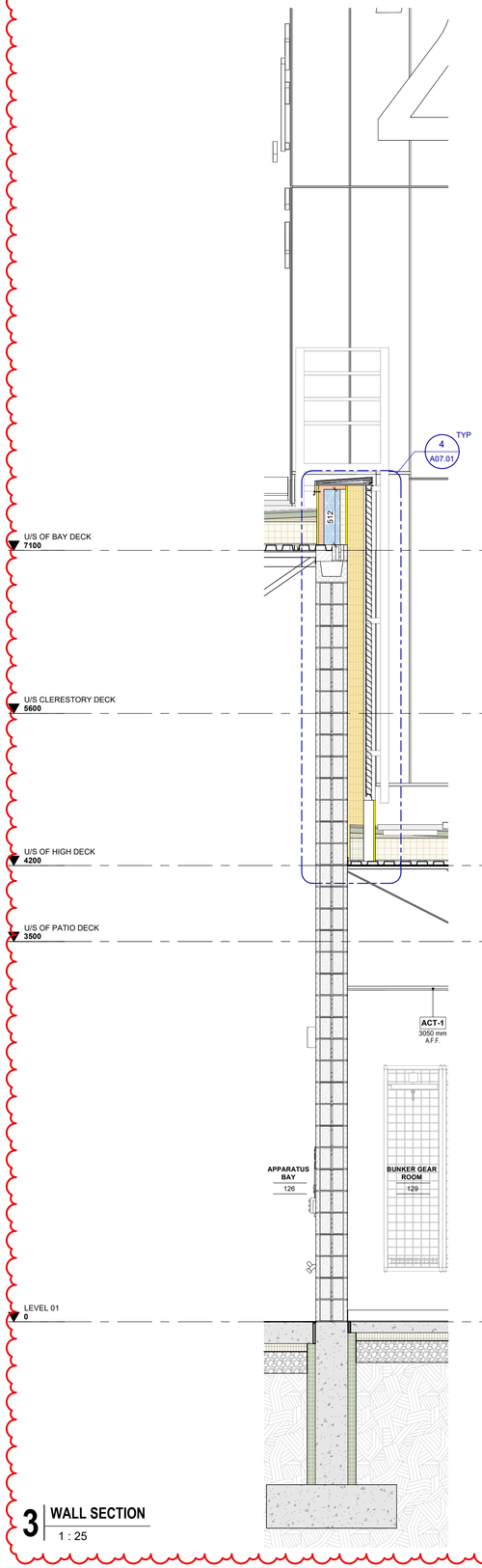
SEALS

NO.	ISSUES/REVISIONS	DATE
7	ADDENDUM 02	09/03/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

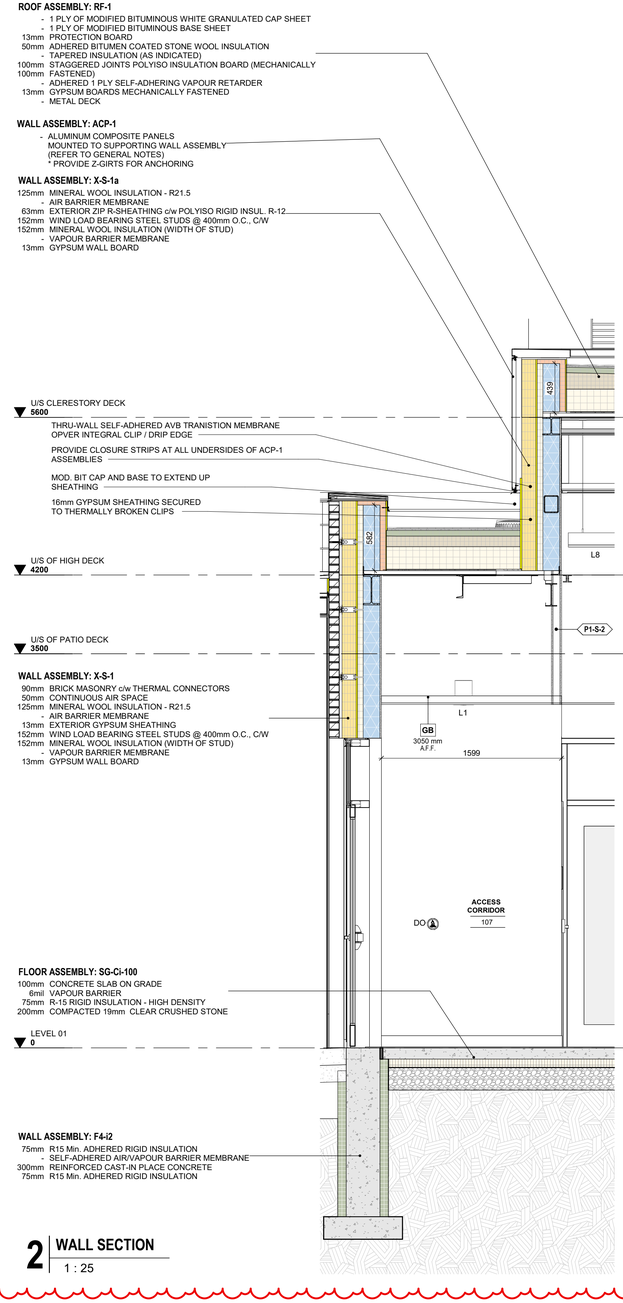
DRAWING TITLE:

WALL SECTIONS

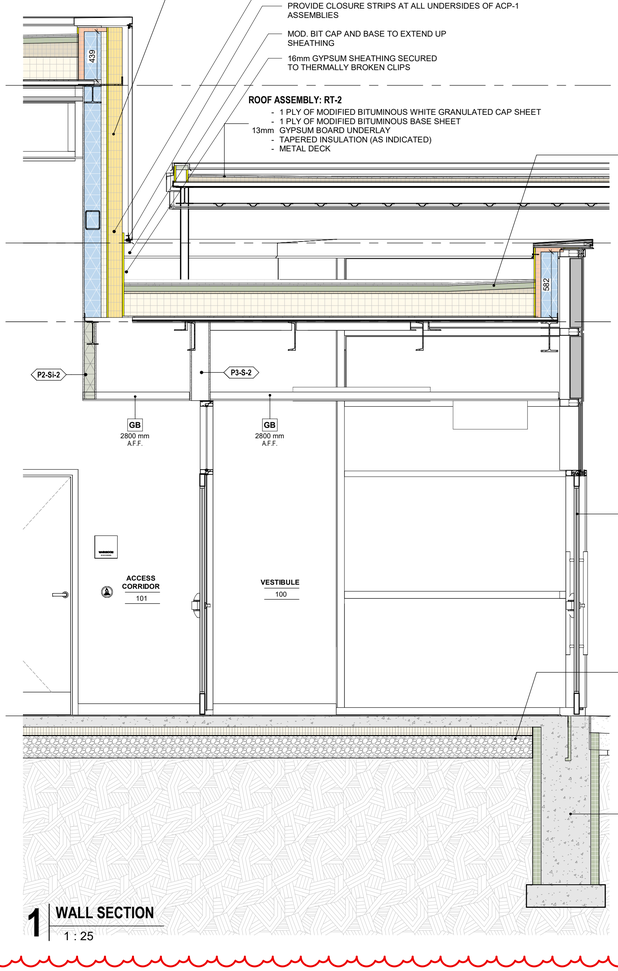
ISSUE DATE: 09/03/2024
DRAWN BY: AR / SL
CHECKED BY:Checker
PROJECT NO.: 12303
SCALE: 1 : 25
DRAWING NO.: **A05.06**
REVISION: **7**



3 | WALL SECTION
1 : 25



2 | WALL SECTION
1 : 25



1 | WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: ACP-1
- ALUMINUM COMPOSITE PANELS MOUNTED TO SUPPORTING WALL ASSEMBLY (REFER TO GENERAL NOTES)
* PROVIDE Z-GIRTS FOR ANCHORING

WALL ASSEMBLY: X-S-1a
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

THRU-WALL SELF-ADHERED AVB TRANISTION MEMBRANE OPVER INTEGRAL CLIP / DRIP EDGE

PROVIDE CLOSURE STRIPS AT ALL UNDERSIDES OF ACP-1 ASSEMBLIES

MOD. BIT CAP AND BASE TO EXTEND UP SHEATHING

16mm GYPSUM SHEATHING SECURED TO THERMALLY BROKEN CLIPS

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F4-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
300mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

ROOF ASSEMBLY: RT-2
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm GYPSUM BOARD UNDERLAY
- TAPERED INSULATION (AS INDICATED)
- METAL DECK

WALL ASSEMBLY: CW-1
- ALUMINUM FRAMED GLAZING SYSTEM SCHUCO FWS 50.SI
FRAME DEPTH OF 8" (152.4mm) FOR 2-1/2" (63.5mm) C/W TRIPLE GLAZED IGU'S

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

BRAMPTON

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5	TENDER	07/16/2024
4	CLASS A ESTIMATE	05/21/2024
3	90% CONTRACT DOCUMENTS	05/21/2024
2	60% CONTRACT DOCUMENTS	04/16/2024
1	CLASS B ESTIMATE	08/01/2024
0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

WALL SECTIONS

ISSUE DATE: 09/03/2024

DRAWN BY: MM / SRL / AR CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: 1 : 25

DRAWING NO.: **A05.07** REVISION: **6**

[PLOT DATE: 2024-09-05 4:43:19 PM]

WALL ASSEMBLY: PAR-5
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S CLERESTORY DECK **5600**

WALL ASSEMBLY: ACP-1
- ALUMINUM COMPOSITE PANELS MOUNTED TO SUPPORTING WALL ASSEMBLY (REFER TO GENERAL NOTES)
* PROVIDE Z-GIRTS FOR ANCHORING

WALL ASSEMBLY: X-S-1a
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

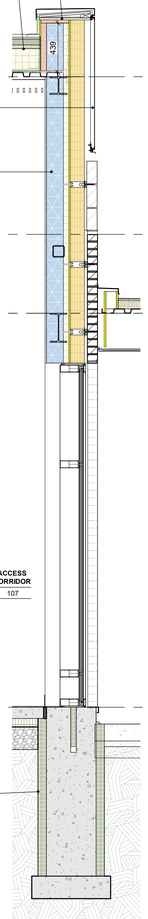
U/S OF HIGH DECK **4200**

U/S OF PATIO DECK **3500**

ACCESS CORRIDOR 107

LEVEL 01 **0**

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION



4 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: PAR-3
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF BAY DECK **7100**

U/S CLERESTORY DECK **5600**

U/S OF HIGH DECK **4200**

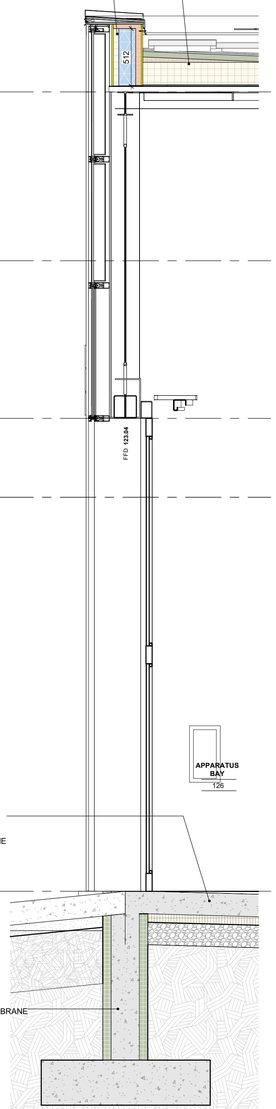
U/S OF PATIO DECK **3500**

APPARATUS BAY 126

LEVEL 01 **0**

FLOOR ASSEMBLY: SG-Ci-200
200mm CONCRETE - REFER TO STRUCTURAL
- REINFORCING - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F3-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION



3 WALL SECTION
1 : 25

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF BAY DECK **7100**

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S CLERESTORY DECK **5600**

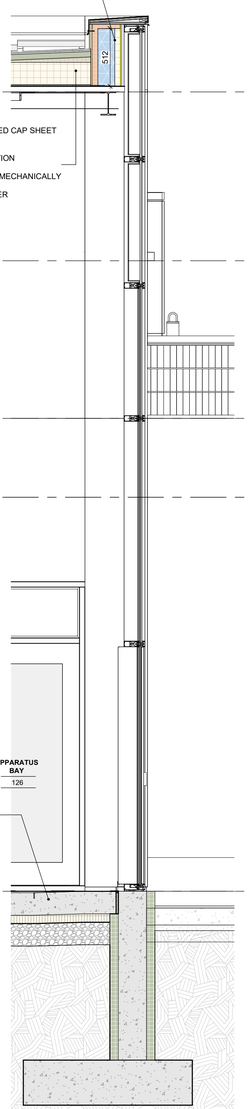
U/S OF HIGH DECK **4200**

U/S OF PATIO DECK **3500**

APPARATUS BAY 126

LEVEL 01 **0**

FLOOR ASSEMBLY: SG-Ci-200
200mm CONCRETE - REFER TO STRUCTURAL
- REINFORCING - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION
200mm COMPACTED 19mm CLEAR CRUSHED STONE



2 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: PAR-3
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF BAY DECK **7100**

U/S CLERESTORY DECK **5600**

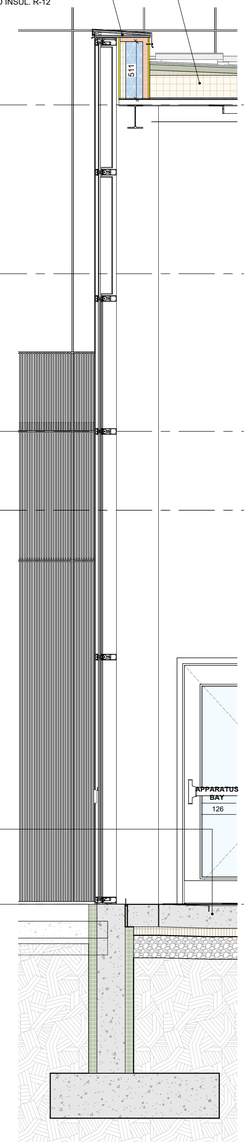
U/S OF HIGH DECK **4200**

U/S OF PATIO DECK **3500**

APPARATUS BAY 126

LEVEL 01 **0**

FLOOR ASSEMBLY: SG-Ci-200
200mm CONCRETE - REFER TO STRUCTURAL
- REINFORCING - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION
200mm COMPACTED 19mm CLEAR CRUSHED STONE



1 WALL SECTION
1 : 25

BRAMPTON

BRAMPTON FIRE STATION 215
10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI
Design Partners in Architecture and Interiors
23 Main Street West Hamilton, Ontario L8P 1H1 Canada
T: 905-522-0220

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SEALS

NO.	ISSUES/REVISIONS	DATE
6	ADDENDUM 02	09/03/2024
5	TENDER	07/16/2024
4	CLASS A ESTIMATE	05/21/2024
3	90% CONTRACT DOCUMENTS	05/21/2024
2	60% CONTRACT DOCUMENTS	04/16/2024
1	CLASS B ESTIMATE	08/01/2024
0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

WALL SECTIONS

ISSUE DATE: 09/03/2024
DRAWN BY: MM / SRL / AR CHECKED BY: SRL
PROJECT NO.: 12303 SCALE: 1 : 25
DRAWING NO.: **A05.08** REVISION: **6**

[PLOT DATE 2024-09-03 4:08:28 PM]

ROOF ASSEMBLY: RH-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

PRE-FINISHED ALUMINUM SILL FLASHING AT WINDOWS. TYPICAL AT ALL LOCATIONS

SOLID SURFACE SILL AT ALL WINDOW LOCATIONS. TYPICAL.

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

LEVEL 01
0

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

620
1450
2150
600
U/S LOW DECK
3500
WS
FITNESS
108

7 WALL SECTION
1 : 25

ROOF ASSEMBLY: RH-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

ROOF ASSEMBLY: RT-2
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm GYPSUM BOARD UNDERLAY
- TAPERED INSULATION (AS INDICATED)
- METAL DECK

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

620
U/S LOW DECK
3500
U/S OF PATIO DECK
3500
FITNESS
108

5 WALL SECTION
1 : 25

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
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152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

ROOF ASSEMBLY: RT-2
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm GYPSUM BOARD UNDERLAY
- TAPERED INSULATION (AS INDICATED)
- METAL DECK

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

620
1150
3050
DAYROOM
105

3 WALL SECTION
1 : 25

ROOF ASSEMBLY: RH-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
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- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
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152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

620
1300
1200
1000
U/S LOW DECK
3500
GB
2438 mm
A.F.F.
WS
OFFICE
102

1 WALL SECTION
1 : 25

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
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152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

THRU WALL MEMBRANE FLASHING TO FACE OF ARCHITECTURAL BLOCK. RETURN ROOF MEMBRANE COUNTER OVER BLOCK FACE. MOP ROOFING FELTS ON FACE OF BLOCK.

PROVIDE 90 MASONRY BLOCK SECRED TO STEEL ANGLE. REFER TO STRUCTURAL.

U/S OF PATIO DECK
3500

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
50mm ADHERED BITUMEN COATED STONE WOOL INSULATION
- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
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13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

L1 L1
GB
3014 mm
A.F.F.

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
13mm PROTECTION BOARD
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100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: CW-1
- ALUMINUM FRAMED GLAZING SYSTEM
SCHUCO FWS 50.SI
FRAME DEPTH OF 8" (152.4mm) FOR 2-1/2" (63.5mm)
C/W TRIPLE GLAZED IGU'S

WALL ASSEMBLY: X-S-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL BOARD

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

WALL ASSEMBLY: F5-i2
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

620
U/S LOW DECK
3500
GB
3014 mm
A.F.F.
CW-1
DORMITORY
113.01

4 WALL SECTION
1 : 25

WALL ASSEMBLY: PAR-1
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

U/S OF HIGH DECK
4200

U/S OF PATIO DECK
3500

ROOF ASSEMBLY: RF-1
- 1 PLY OF MODIFIED BITUMINOUS WHITE GRANULATED CAP SHEET
- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
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- METAL DECK

ROOF ASSEMBLY: RF-1
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- 1 PLY OF MODIFIED BITUMINOUS BASE SHEET
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- TAPERED INSULATION (AS INDICATED)
100mm STAGGERED JOINTS POLYISO INSULATION BOARD (MECHANICALLY
100mm FASTENED)
- ADHERED 1 PLY SELF-ADHERING VAPOUR RETARDER
13mm GYPSUM BOARDS MECHANICALLY FASTENED
- METAL DECK

WALL ASSEMBLY: B-190-1
190mm CONCRETE MASONRY UNITS

LEVEL 01
0

FLOOR ASSEMBLY: SG-Ci-100
100mm CONCRETE SLAB ON GRADE
6mil VAPOUR BARRIER
75mm R-15 RIGID INSULATION - HIGH DENSITY
200mm COMPACTED 19mm CLEAR CRUSHED STONE

GB
2438 mm
A.F.F.
ACT-1
3200 mm
A.F.F.
OFFICE
102

2 WALL SECTION
1 : 25

6

[PLOT DATE: 2024-09-03 4:29:56]

BRAMPTON

BRAMPTON FIRE STATION 215
10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI
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0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

WALL SECTIONS

ISSUE DATE: 09/03/2024
DRAWN BY: MM / SRL / AR CHECKED BY: SRL
PROJECT NO.: 12303 SCALE: 1 : 25
DRAWING NO.: **A05.09** REVISION: **6**

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 03 30 00 – Cast-in-Place Concrete

1.02 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:
- .1 Provide manufacturer's instructions, printed product literature and data sheets for furniture and include product characteristics, performance criteria, physical size, finish, and limitations.

.3 Shop Drawings:
- .1 Submit shop drawings indicating dimensions, sizes, assembly, anchorage, and installation details for each furnishing specified.

1.03 CLOSEOUT SUBMITTALS

.1 Provide maintenance data for care and cleaning of site furnishings for incorporation into manual specified in Section 01 77 00 – Contract Closeout Procedures and Submittals.

1.04 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 60 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:
- .1 Store materials in dry location and in accordance with manufacturer's recommendations.
- .2 Store and protect furnishings from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

2 PRODUCTS

2.01 BENCHES

.1 One (1) Glide surface mount backed bench with arms by Landscape Forms or approved equal. Installed as per manufacturer's instructions.

.1 Materials: Extruded aluminum and high-density polyethylene (HDPE).

.2 Dimensions:

.1 Height: 793.75mm.
.2 Length: 1905mm.
.3 Depth: 685.8mm.

.3 Finish:
.1 All metal components are finished with proprietary polyester powdercoat.

.4 Colour: Apple red or approved equal.

2.04 BICYCLE RACK

.1 Two (2) Key bike rack by Landscape Forms or approved equal. Installed as per manufacturer's instructions

.1 Basic Construction Material: steel tube with colored polyurethane plastic mold.
.1 Colour: Red or approved equal.

.2 Dimensions:
.1 Height: 812.8mm.
.2 Circle Width: 584.2mm.
.3 Frame Width: 76.2mm.

.3 Finish: Polyurethane plastic mold.

3 EXECUTION

3.01 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for exterior site furnishing installation in accordance with manufacturer's written instructions.
.1 Visually inspect substrate in presence of Consultant.
.2 Inform Consultant of unacceptable conditions immediately upon discovery.
.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.02 PREPARATION

.1 Locate and protect utility lines.

.2 Notify and acquire written acknowledgement from utility authorities before beginning installation.

3.03 INSTALLATION

.1 Assemble furnishings in accordance with manufacturer's written recommendations.

.2 Install furnishings true, plumb, anchored firmly, and supported as directed by Consultant.

.3 Touch-up damaged finishes to approval of Consultant.

3.04 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 13 – Progressive Cleaning.
.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 13 - Progressive Cleaning.

3.05 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by site furnishings installation.

END OF SECTION

Addendum

Project Name:	Brampton Fire Station 215	**MTE File No.:**	53251-100
Client:	DPAI Architecture Inc	**Date:**	August 16, 2024
Client File No:	12303	**Addendum No.:**	02

This Addendum forms part of the Contract Documents and amends the original Drawings, issued June 26, 2024, as noted below.

This Addendum consists of one (1) page(s).

Item 1	**Garbage Enclosure**
S1.0	1. Remove retaining walls from first row of Concrete Mix Properties Table. 2. Add row for Retaining Walls & Retaining Wall Footings to Concrete Mix Properties Table.
S8.0	1. Add sheet S8.0 Garbage Enclosure. 2. Add reinforced concrete garbage enclosure plan and section details.

End of Addendum 02

S1.0
GENERAL NOTES
C:\Users\MBoeringa\Documents\Revit User Files\53251-100 Brampton Fire 215 v24_mboeringaWLUE9.rvt

MTE Computer Dwg No.

8/15/2024 3:11:32 PM JDG

N01 GENERAL NOTES

1. CONFORM TO THE REQUIREMENTS OF THE LATEST ONTARIO BUILDING CODE (OBC) INCLUDING ALL THE LATEST STANDARDS REFERENCED THEREIN, AND ANY APPLICABLE ACTS OF AUTHORITY HAVING JURISDICTION. THE LATEST VERSION OF ALL STANDARDS AND CODES LISTED BELOW SHALL BE USED.
2. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER SPECIFICATIONS AND CONTRACT DOCUMENTS.
3. WHERE DISCREPANCIES EXIST BETWEEN CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND APPLICABLE CODES AND ACTS, THE MOST STRINGENT SHALL GOVERN. CONTRACTOR SHALL CHECK ALL DIMENSIONS ON WORKING DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
4. THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.
5. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISION COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" BY MTE CONSULTANTS.
6. UNDER NO CIRCUMSTANCES ARE THESE DRAWINGS TO BE SCALED, INCLUDING FOR PREPARATION OF SHOP DRAWINGS, CONSTRUCTION LAYOUT, OR BIDDING PURPOSES. ERRORS MADE BY PERSONS SCALING THESE DRAWINGS SHALL NOT BE THE RESPONSIBILITY OF MTE CONSULTANTS.
7. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND SIZES OF PITS, BASES, HOUSE KEEPING PADS, SUMPS, TRENCHES, DEPRESSIONS, GROOVES, CURBS, CHAMFERS AND SLOPES NOT SHOWN ON STRUCTURAL DRAWINGS.
8. BEFORE PROCEEDING WITH WORK, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIARIZED WITH ALL CHARACTERISTICS AFFECTING NEW AND EXISTING CONSTRUCTION. ANY CHANGES, ALTERATIONS OR REVISIONS MUST BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
9. SUBSTITUTIONS FROM SPECIFIED PRODUCTS AND MATERIALS MUST BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO ORDERING OF MATERIALS. THE CONTRACTOR SHALL REIMBURSE ALL CONSULTANTS FOR ADDITIONAL COSTS INCURRED AS A RESULT OF REVIEWING ANY CHANGES MADE TO THE CONTRACT DOCUMENTS.
10. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS - O.REG. 213/91.
11. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN ALL SHORING AND TEMPORARY BRACING AS PER O.REG 213/91 AND THE CONTRACTOR SHALL RETAIN AN ENGINEER AS REQUIRED.
12. THE CONTRACTOR SHALL RETAIN AN INDEPENDENT INSPECTION AND TESTING COMPANY TO ENSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. REQUIRED TESTING SHALL BE AS PER THE TESTING AND INSPECTION TABLE BELOW.
13. MTE CONSULTANTS WILL PROVIDE GENERAL REVIEW OF CONSTRUCTION IN ACCORDANCE WITH THE PERFORMANCE STANDARDS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO BY MEANS OF A RATIONAL SAMPLING PROCEDURE TO DETERMINE WHETHER THE CONSTRUCTION OF THAT WORK SHOWN ON THE MTE DRAWINGS IS IN GENERAL CONFORMITY WITH THE PLANS, SKETCHES, DRAWINGS, AND SPECIFICATIONS FORMING PART OF THE CONTRACT DOCUMENTS PREPARED BY "MTE". THE CONTRACTOR IS SOLELY RESPONSIBLE FOR QUALITY CONTROL AND THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT. "MTE" SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
14. IT IS THE RESPONSIBILITY OF BOTH THE OWNER AND THE CONTRACTOR TO NOTIFY THE ENGINEER OF CONSTRUCTION PROGRESS SO THE ENGINEER CAN COMPLETE GENERAL REVIEWS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A CONSTRUCTION SCHEDULE PRIOR TO STARTING THE WORK. GENERALLY, REVIEWS BY THE ENGINEER WILL BE REQUIRED FOR REBAR PRIOR TO CONCRETE PLACEMENT, FOOTING AND FOUNDATIONS PRIOR TO BACKFILLING, AND ABOVE GRADE FRAMING PRIOR TO INSTALLATION OF INTERIOR FINISHES.

N02 TESTING AND INSPECTION

THE FOLLOWING ITEMS REQUIRE TESTING OR INSPECTION BY A CERTIFIED INDEPENDENT TESTING OR INSPECTION AGENCY UNLESS NOTED OTHERWISE. THE AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.

ITEM	REQ'D	COMMENTS
SOIL BEARING CAPACITY	YES	BY SOILS ENGINEER
SOIL COMPACTION	YES	BY SOILS ENGINEER
REINFORCING STEEL PLACMENT	YES	INSPECT FINAL PLACEMENT
CONC. COMPRESSIVE TESTS	YES	MIN. 2 SETS PER 100 CUBIC METRES
CONCRETE SLUMP	YES	
STRUCTURAL STEEL BOLTING	YES	
STRUCTURAL STEEL WELDING	YES	INSPECT ALL FIELD WELDS
MORTAR CUBES	YES	

N03 REQUIRED SUBMITTALS

THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

ITEM	REQ'D SUBMITTAL?	ENGINEER'S STAMP REQ'D?	NOTES
REBAR SHOP DRAWINGS	YES	NO	INCL CONC BLOCK REINF
CONCRETE MIX DESIGNS	YES	NO	
MASONRY GROUT MIX DESIGN	YES	NO	
BLOCK MILL REPORT	YES	NO	
STRUCTURAL STEEL SHOP DRAWINGS	YES	YES	FOR CONNECTIONS ONLY
MISCELLANEOUS STEEL SHOP DRAWINGS	YES	YES	STAMP FOR STAIRS, LADDERS AND GUARDS
STEEL DECK SHOP DRAWINGS	YES	YES	
COLD FORMED STEEL FRAMING SHOP DWGS.	YES	YES	
FALL ARREST ANCHORS	NO	NO	

N04 PROJECT DESIGN DATA TABLE

BUILDING IMPORTANCE CATEGORY	POST-DISASTER	
FLOOR AND ROOF DESIGN LOADS AS NOTED ON FRAMING PLANS		
SPECIFIED WIND LOADS		
HOURLY WIND PRESSURE (1/50) DESIGN DATA	0.44 kPa	
WIND DESIGN CATAGORY	CATEGORY 3	
TERRAIN	OPEN	
SPECIFIED SNOW LOADS		
BASIC ROOF SNOW LOAD	S	1.80 kPa
SNOW AND RAIN LOADING (1/50) DESIGN DATA	Ss	1.30 kPa
	Sr	0.40 kPa
	24HR RAIN	119mm
FACTORS USED FOR BASIC ROOF SNOW LOAD	Cb	0.80
	Cw	1.00
	Cs	1.00
	Ca	1.00
ADDITIONAL SNOW ACCUMULATION AROUND OBSTRUCTIONS AND ADJACENT TO HIGHER ROOF LEVELS OR WALLS IS INDICATED ON THE DRAWINGS.		
SPECIFIED EARTHQUAKE LOADS		
SEISMIC LOADING DESIGN DATA	Sa (0.2)	0.168
	Sa (0.5)	0.096
	Sa (1.0)	0.052
	Sa (2.0)	0.0260
	Sa (5.0)	0.0064
	Sa (10.0)	0.0025
	PGA	0.097
	PGV	0.068
SITE CLASS TO BE CONFIRMED BY GEOTECHNICAL ENGINEER	SITE CLASS	'C'
SEISMIC FORCE MODIFICATION FACTORS FOR SEISMIC FORCE RESISTING SYSTEM	Rd	2.0
	Ro	1.3
SEISMIC HAZARD INDEX	IeFaSa (0.2)	0.25
NO STRUCTURAL IRREGULARITIES		
SFRS - LIMITED-DUCTILE STEEL BRACED FRAMES / MOMENT FRAMES & MASONRY SHEAR WALLS		
Ie = 1.5 (POST DISASTER)		

NOTES:
1. ALL LOADS AND ANALYSIS CONFORM TO THE 2012 OBC DIV B PART 4 (INCLUDING AMENDMENTS MADE NO MAY 12, 2023) AND THE USER'S GUIDE - NBC 2015 STRUCTURAL COMMENTARIES
2. ALL DESIGN DATA ABOVE IS FROM THE 2012 OBC SUPPLEMENTARY STANDARD SB-1 TABLE 2 AND 3
3. WIND LOADING IS BASED ON THE STATIC PROCEDURE.
4. SEISMIC LOADING IS BASED ON THE EQUIVALENT STATIC FORCE PROCEDURE.
5. THE STRUCTURE HAS NOT BEEN DESIGNED FOR ANY FUTURE EXTENSION UNLESS NOTED.

N05 FOUNDATION

1. ALL BOREHOLE INFORMATION AND GEOTECHNICAL DATA HAS BEEN OBTAINED FROM THE SOIL INVESTIGATION PERFORMED BY WOOD ENVIRONMENTAL & INFRASTRUCTURE SOLUTIONS AS REPORTED IN THEIR SOIL REPORT NO. OESAR2109.4000 DATED APRIL 18, 2022 . CONTRACTOR TO READ THESE REPORTS, AND BE THOROUGHLY FAMILIARIZED WITH ITS FINDINGS.
2. ALL COLUMN AND WALL FOOTINGS SHALL BEAR DIRECTLY ON UNDISTRURBED NATIVE SOIL, WITH A MINIMUM SOIL BEARING CAPACITY OF 200 kPa (SLS) AND 300 kPa (ULS) AT THE DEPTHS INDICATED ON THE DRAWINGS. EXISTING FILL MAY BE ENCOUNTERED. USE OF THIS FILL MUST BE APPROVED BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION OF FOOTINGS.
3. NO FOUNDATION MAY BE POURED BEFORE THE BEARING MATERIAL HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER. NOTIFY THE GEOTECHNICAL ENGINEER A MINIMUM F 24 HOURS BEFORE THE INTENDED CONCRETE POUR.
4. REMOVE ALL TOPSOIL, ORGANIC LOOSE FILL AND OTHER DELETERIOUS MATERIAL FROM BUILDING AREA BEFORE STARTING CONSTRUCTION.
5. WHERE APPROVED, GRANULAR FILL UNDER ALL FOOTINGS ON GRADE SHALL BE COMPACTED IN 150 mm (6") LAYERS TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
6. FOUND NEW FOOTINGS WHICH ARE LOCATED ADJACENT TO EXISTING FOOTINGS, AT THE SAME ELEVATION AS THE EXISTING FOOTINGS, UNLESS NOTED OTHERWISE. ANY NECESSARY PRECAUTIONS SHALL BE TAKEN TO ENSURE THAT EXISTING FOOTINGS ARE NOT DISTURBED OR UNDERMINED IN ANY WAY DURING EXCAVATION.
7. FOUND ALL FOOTINGS BELOW THE LEVEL AT WHICH POTENTIAL DAMAGE RESULTING FROM FROST ACTION CAN OCCUR FOR THE FINISHED STRUCTURE, BUT A MINIMUM 1200 mm (4 FT.) BELOW FINISHED EXTERIOR GRADE, UNLESS NOTED OTHERWISE. UNDER NO CIRCUMSTANCES SHOULD DEPTH BE LESS THAN LOCAL FROST PENETRATION REQUIREMENTS.
8. PROTECT ALL SOIL FROM FREEZING ADJACENT TO AND BELOW ALL FOUNDATIONS DURING CONSTRUCTION.
9. INSULATION IS SHOWN WHERE REQUIRED FOR PROTECTION OF THE FOUNDATIONS FROM DAMAGE DUE TO FROST ACTION ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR FOUNDATION INSULATION NOT SHOWN ON THE STRUCTURAL DRAWINGS.
10. SLABS ON GRADE:
    a. PLACE SLABS ON GRADE ON MATERIAL CAPABLE OF SAFELY SUPPORTING 25 kPa WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOUNDATIONS.
    b. PROOF-ROLL EXISTING FILL MATERIAL. REMOVE ANY LOOSE OR SOFTENED AREAS BENEATH SLAB-ON-GRADE BEFORE PLACING GRANULAR FILL.
    c. APPROVED GRANULAR FILL UNDER ALL FLOOR SLABS ON GRADE SHALL BE COMPACTED IN 150 mm (6") LAYERS TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
    d. BEFORE CASTING THE SLAB PLACE 200 mm (8") OF 19 mm (3/4") CLEAR CRUSHED STONE OVER THE SUB-BASE AND THOROUGHLY ROLL AND CONSOLIDATE TO THE LEVELS REQUIRED.
    e. WHERE THE SLAB-ON-GRADE IS USED TO LATERALLY RESTRAIN THE TOP OF AN EARTH-RETAINING WALL, ADEQUATELY SHORE THE WALL UNTIL THE SLAB HAS BEEN CAST AND ATTAINED 70% OF ITS SPECIFIED STRENGTH.
    f. PROVIDE 25 mm (1") RIGID STYROFOAM INSULATION BENEATH FLOOR SLABS IN UNHEATED AREAS.
11. CARRY OUT BACKFILLING AGAINST FOUNDATION WALLS WHERE THERE IS GRADE ON BOTH SIDES IN SUCH A MANNER THAT THE LEVEL OF BACKFILLING ON ONE SIDE OF THE WALL IS NEVER MORE THAN 500 mm (20") DIFFERENT FROM THE LEVEL ON THE OTHER SIDE OF THE WALL, EXCEPT WHERE TEMPORARY SHORING FOR THE WALL IS PROVIDED.
12. DO NOT PLACE BACKFILL AGAINST WALLS RETAINING EARTH (OTHER THAN CANTILEVERED RETAINING WALLS) UNTIL THE WALLS AND THE FLOOR CONSTRUCTIONS AT THE TOP AND BOTTOM OF THE WALLS HAVE BEEN CAST AND HAVE ATTAINED 100% OF THEIR DESIGN STRENGTH.
13. IN NO CASE SHALL HORIZONTAL CONTROL JOINTS BE ALLOWED IN ANY VERTICALLY SPANNING CONCRETE WALLS WITHOUT THE CONSENT OF THE ENGINEER.

N06 CONCRETE AND REINFORCING

1. ALL CONCRETE WORK TO CONFORM TO THE LATEST REQUIREMENTS OF CSA STANDARDS A23.1, A23.2 & A23.3.
2. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.18 GRADE 400W FOR REINFORCING STEEL AND BE DEFORMED HI-BOND HARD GRADE WITH MINIMUM YIELD STRENGTH OF Fy = 400 MPa.
3. WELDED WIRE MESH AND WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.5 WITH A MINIMUM YIELD STRENGTH OF Fy = 450 MPa. ALL WELDED WIRE PRODUCTS ARE TO BE SUPPLIED AS FLAT SHEETS AND SHALL BE LAPPED A MINIMUM OF 150mm (6") AT JOINTS (U.N.O.).
4. DETAILING AND PLACING OF ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE REINFORCING STEEL INSTITUTE OF CANADA "MANUAL OF STANDARD PRACTICE".
5. ALL REINFORCING STEEL SHALL BE SHOP FABRICATED TO INCLUDE HOOKS AND BENDS AS REQUIRED.
6. ALL REINFORCING LAP SPLICES SHALL CONFORM TO THE LATEST CSA STANDARD A23.3 AND ALL BAR SPLICES SHALL BE CLASS 'B' TENSION SPLICES (U.N.O.).
    a. NO BAR SPLICES SHALL BE LESS THAN IN THE TABLE BELOW.
    b. INCREASE HORIZONTAL SPLICE LENGTHS IN THE TABLE BY 1.3 WHERE MORE THAN 300MM (12") OF FRESH CONCRETE IS CAST BELOW THE SPLICE.

REBAR SIZE \ CONCRETE	TENSION SPLICE			COMPRESSION SPLICE
	25 MPa	30 MPa	35 MPa	
10M	400 (16")	400 (16")	400 (16")	450 (18")
15M	600 (24")	600 (24")	600 (24")	450 (18")
20M	800 (32")	800 (32")	800 (32")	600 (24")
25M	1200 (48")	1100 (44")	1000 (40")	750 (30")
30M	1400 (56")	1300 (52")	1200 (48")	900 (36")
35M	1650 (66")	1500 (60")	1400 (56")	1050 (42")

7. ALL DOWEL EMBEDMENT SHALL MATCH THE ABOVE TENSION SPLICE LENGTH, UNLESS NOTED OTHERWISE.
8. ALL REINFORCING STEEL FABRICATION AND PLACEMENT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
9. PLACE REINFORCING BARS SYMMETRICALLY OVER SUPPORTS AND SYMMETRICALLY IN SPANS, UNLESS NOTED OTHERWISE.
10. REINFORCING BARS, DOWELS AND ANCHOR BOLTS SHALL BE SECURELY TIED IN PLACE SO AS TO MAINTAIN THEIR EXACT POSITION BEFORE AND DURING PLACEMENT OF CONCRETE. BAR SUPPORTS SHALL ONLY BE MADE OF PRECAST CONCRETE BLOCKS, PLASTIC OR WIRE.
11. ALL OIL, GREASE, MUD AND DEBRIS SHALL BE ENTIRELY REMOVED FROM THE REINFORCING STEEL AND ANCHOR BOLTS PRIOR TO THE PLACEMENT OF CONCRETE. REBAR SHALL BE STORED ON SITE IN A MANNER TO BE KEPT CLEAN AND FREE FROM DELETERIOUS MATERIALS.
12. WELDING OF REINFORCING STEEL SHALL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
13. CONFORM TO THE CONCRETE COVER REQUIREMENTS OF CSA A23.1 AND THE FOLLOWING, UNLESS NOTED OTHERWISE:
    a. CONCRETE CAST AGAINST EARTH: 75 mm (3")
    b. PIERS AND WALL: 40 mm (1.5")
    c. EXPOSED TO DE-ICING CHEMICALS: 60 mm (2.5")
    d. INTERIOR BEAMS: 30 mm
    e. INTERIOR SLABS: 25 mm (1")
14. CONCRETE PROPERTIES:
    a. ALL CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 35 MPa UNLESS OTHERWISE SPECIFIED.
    b. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO USE AT JOB SITE.
15. WHEN SUPER-PLASTICIZERS ARE USED, THE SLUMP MAY BE INCREASED BEYOND THE VALUES GIVEN, BUT SHALL BE BELOW THE POINT WHERE SEGREGATION WILL OCCUR. THE COST OF SUPER-PLASTICIZERS SHALL BE INCLUDED IN THE COST OF CONCRETE.
16. DO NOT ADD WATER TO CONCRETE UNLESS WRITTEN APPROVAL GIVEN BY THE ENGINEER. IF HIGHER SLUMP CONCRETE IS DESIRED, CONCRETE SUPPLIER SHALL DESIGN AND SUPPLY ACCORDINGLY.
17. HOT AND COLD WEATHER CONCRETING SHALL COMPLY WITH ALL REQUIREMENTS OF CSA STANDARD A23.1. CALCIUM CHLORIDE ADDITIVES WILL NOT BE PERMITTED.
18. ALL CONCRETE FORMWORK TOLERANCES AND SURFACE FINISHES SHALL COMPLY WITH CSA STANDARD A23.1 UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL DRAWINGS.
19. ALL CONCRETE FORMS TO BE WET THOROUGHLY BEFORE POURING CONCRETE.
20. WATER CURING OF CONCRETE IS RECOMMENDED. CURE AND PROTECT ALL CONCRETE IN ACCORDANCE WITH CSA A23.1 SECTION 7.4.
21. ALL CONCRETE EXCEPT SLABS ON GRADE 150mm (6") THICK OR LESS SHALL BE MECHANICALLY VIBRATED SO AS TO COMPLETELY FILL THE FORM WITHOUT CAUSING UNDUE SEGREGATION. ANY DEFECTS IN THE HARDENED CONCRETE SHALL BE SATISFACTORILY REPAIRED OR SHALL BE REPLACED.
22. CONTROL JOINTS IN SLABS ON GRADE SHALL BE ¼ THE THICKNESS OF THE SLAB. SPACING OF CONTROL JOINTS IN CONCRETE SLABS-ON-GRADE SHALL NOT EXCEED THE GREATER OF 25 TIMES THE THICKNESS OF THE SLAB OR 3000 MM (10'-0") UNLESS NOTED ON THE DRAWINGS.
23. WHERE STEEL BEARING PLATES ARE SHOWN ON THE DRAWINGS, THEY SHALL BE ANCHORED WITH A MINIMUM OF TWO 12 mm DIA X 450MM LONG + 50 mm (1/2" DIA x 18" LONG + 2") HOOKED ANCHOR RODS WELDED TO THE PLATES AND EMBEDDED INTO THE CONCRETE.

CONCRETE MIX PROPERTIES TABLE

CONCRETE	MIN.28 DAYS STRENGTH (MPa) U.N.O.	SLUMP mm(in)	AIR CONTENT (%)	MAX. AGGREGATE SIZE (in)	EXPOSURE CLASS
EXTERIOR FOUNDATION WALLS	25	80 (±30")	4-7	3/4"	F-2
INTERIOR PIERS / WALLS/FOOTINGS	25	80 (±30")	0	3/4"	N
INT. S.O.G.	25	80 (±30")	0	3/4"	N
FREEZE THAW EXPOSURE	25	80 (±30")	4-7	3/4"	F-2
EXTERIOR SLAB (UNREINFORCED)	32	80 (±30")	5-8	3/4"	C-2
EXTERIOR SLAB (REINFORCED)	35	80 (±30")	5-8	3/4"	C-1
NON-SHRINKABLE GROUT	30	AS PER MANUF. RECOMEN.	0	-	N
LEAN MIX CONCRETE	8	80 (±30")	0	-	N
EXTERIOR FOOTINGS	25	80 (±30")	4-7	3/4"	F-2
RETAINING WALLS & RETAINING WALL FOOTINGS	30	80 (±30")	4-7	3/4"	F-2

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24. CHECK ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, LANDSCAPE AND ALL OTHER RELEVANT DRAWINGS FOR LOCATIONS AND SIZES OF BOLTS, SLEEVES AND OPENINGS.

N06 CONCRETE AND REINFORCING (CONT.)

25. SUPPLY AND SET ANCHOR BOLTS, SLEEVES, PIPE HANGERS, JOISTS AND OTHER INSERTS AND OPENINGS AS INDICATED OR SPECIFIED ELSEWHERE.
    FOR BEAMS AND COLUMNS: NO SLEEVES, DUCTS, PIPES OR OTHER OPENINGS SHALL PASS VERTICALLY OR HORIZONTALLY EXCEPT WHERE EXPLICITLY DETAILED ON STRUCTURAL DRAWINGS OR WHERE APPROVED IN ADVANCE BY ENGINEER.
    FOR SLABS AND WALLS: ALL SLEEVES AND OPENINGS GREATER THAN 100 mm (4") IN ANY DIMENSION OR REQUIRING THE CUTTING OF ANY REINFORCEMENT, AND NOT INDICATED ON STRUCTURAL DRAWINGS, MUST BE APPROVED BY THE ENGINEER.
    FOR MULTIPLE OPENINGS OR SLEEVES: IF WITHIN 600 mm (24") OF EACH OTHER CONSULT ENGINEER FOR DIRECTION.
26. CAST IN ANCHOR BOLTS SHALL CONFORM TO THE LATEST CSA STANDARD G40.21 OR ASTM F1554 WITH A MINIMUM YIELD STRENGTH OF 250 MPa AND SHALL BE SET TRUE AS O LOCATION, ELEVATION AND PROJECTION TO THE FOLLOWING TOLERANCES:
    ANCHOR BOLT LOCATION = ± 3mm (1/8").
    ANCHOR BOLT PROJECTION = ± 6mm (1/4").
27. CONSTRUCTION JOINTS FOR WALLS ARE BASED UPON VERTICAL JOINTS AT A MAXIMUM SPACING OF 10000 mm (30'-0"). UNLESS CONTROL JOINTS ARE PROVIDED AS PER TYPICAL DETAIL. TOTAL LENGTH OF POUR TO BE DISCUSSED WITH ENGINEER PRIOR TO PROCEEDING.
28. CONSTRUCTION JOINTS FOR WALLS, SLABS, AND BEAMS NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT BEFORE CONSTRUCTION. GENERALLY JOINTS IN SLABS SHALL BE AT RIGHT ANGLES TO THE SPANS, AT MID SPAN IF POSSIBLE AND BE CLEAR OF SUPPORTS AND POINT LOADS..
29. INSERTS, FRAME-OUTS, SLEEVES, BRACKETS, CONDUITS AND FASTENING DEVICES, SHALL BE INSTALLED AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS IN A MANNER THAT SHALL NOT IMPAIR THE STRUCTURAL STRENGTH OF THE SYSTEM, BE SO INSTALLED THAT HEY SHALL NO REQUIRE THE CUTTING, BENDING, OR DISPLACEMENT OF THE REINFORCING OTHER THAN AS SHOWN ON THE TYPICAL DETAILS.
30. ELECTRICAL CONDUITS SHALL NOT PASS THROUGH A COLUMN, SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN 1/3 SLAB THICKNESS OR WALL OR BEAM WHICH IT IS EMBEDDED, SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTER UNLESS APPROVED AND HAVE A MINIMUM CONCRETE COVER OF 25 mm (1") AND UNLESS SPECIFICALLY PERMITTED OTHERWISE, SHALL NOT RUN HORIZONTALLY IN A CONCRETE WALL.
31. TYPE 'S' CONCRETE TO BE USED FOR ALL ELEMENTS.
32. **CONCRETE MIX DESIGNS SHALL CONFORM TO REDUCED CARBON MIXES AS DESCRIBED IN LATEST EDITION OF CRMCA MEMBER INDUSTRY-WIDE EPD FOR CANADIAN READ-MIXED CONCRETE, EPD NUMBER EPD10092**

N07 STEEL DECK

1. DESIGN METAL DECK IN CONFORMANCE WITH THE REQUIREMENTS OF CSA S136 FOR THE LOADS INDICATED ON THE DRAWINGS.
2. SUBMIT SHOP DRAWINGS INDICATING WELDS, MATERIALS AND FINISHES, AND BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO FOR REVIEW BY THE ENGINEER. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
3. UNLESS NOTED OTHERWISE,
    a. ROOF DECK SHALL BE 38 mm x 0.76 mm (1.5" x .030") VIC WEST STEEL INC. RD 938 (OR APPROVED EQUAL), MINIMUM 3 SPANS CONTINUOUS.
    b. FLOOR DECK SHALL BE 38 mm x 0.76 mm (1.5" x .030") VIC WEST STEEL INC. HB 938 (OR APPROVED EQUAL), MINIMUM 3 SPANS CONTINUOUS.
4. METAL DECK SHALL BE LIGHT ZINC COATED STRUCTURAL STEEL SHEET FABRICATED AND ERECTED IN ACCORDANCE WITH CSSBI 10M, CAN/CSA-S136, AND CSSBI 101M. THE MINIMUM ZINC COATING DESIGNATION SHALL BE ZF075 (U.N.O.).
5. DECK SHALL OVERLAP A MINIMUM OF 50 mm (2") AT ALL END JOINTS AND HAVE A MINIMUM BEARING LENGTH OF 50 mm (2") ON ALL STRUCTURAL STEEL.
6. DECK HAS BEEN DESIGNED FOR DIAPHRAGM ACTION (SEE ROOF PLAN NOTES)
7. DECK WELDS SHALL BE TOUCHED UP WITH APPROVED PAINT BY THE DECK ERECTOR.
8. PROTECT ROOF AND FLOOR DECK FROM DAMAGE DURING SHIPPING STORAGE AND ERECTION. CONTRACTOR SHALL REPLACE ANY PUNCTURED, DENTED OR WELD PERFORATED DECK.
9. STEEL DECK WORK SHALL INCLUDE THE SUPPLY AND INSTALLATION OF ALL SHEET STEEL ANGLES, COVER PLATES, CLOSURES, STIFFENERS AND ANY OTHER ACCESSORIES REQUIRED.
10. CUT OPENINGS AND REINFORCE EDGES AS REQUIRED FOR PIPES, DUCTS, ETC.
    a. THE MAXIMUM SIZE OF AN UNREINFORCED OPENING IS 150 mm (6").
    b. REINFORCE ALL OPENINGS LARGER THAN 150 mm (6"), BUT NOT EXCEEDING 450 mm (18"), AS INDICATED BY THE METAL DECK SUPPLIER.
    c. FOR OPENINGS GREATER THAN 450mm (18") NOT SHOWN ON THE DRAWINGS, CONTACT ENGINEER FOR DIRECTION.
11. HANGER WIRE FOR SUSPENDED CEILINGS SHOULD PIERCE BOTH SIDES OF THE FLUTE AND BE LOOPED AROUND AND TIED.

N10 SHOP DRAWING REVIEW

1. ERECTION AND FABRICATION SHOP DRAWINGS FOR ALL BUILDING COMPONENTS AS LISTED IN THE REQUIRED SUBMITTALS TABLE AND ANY RELATED WORKS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE COMMENCING WITH FABRICATION.
2. AS PART OF THEIR FIELD SERVICES, MTE CONSULTANTS ("MTE") WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON MTE CONSULTANT'S DRAWINGS BY MEANS OF APPROPRIATE RATIONAL SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS.
3. REVIEW OF THE SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAIL DESIGN INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR COORDINATION OF THE WORK OF ALL SUB-TRADES.
4. THE APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF THE FITTING OF BUILDING COMPONENTS. ANY DISCREPANCIES IN THE SHOP DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL SHOP DRAWINGS MUST BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN ONTARIO UNLESS NOTED OTHERWISE IN THE SUBMITTALS TABLE BELOW. UNSEALED SHOP DRAWINGS WILL NOT BE REVIEWED UNLESS ALTERNATIVE ARRANGEMENTS HAVE BEEN AGREED UPON.

N08 STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL AND CONNECTIONS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST CSA STANDARD S16
2. STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA-G40.20 FOR GENERAL REQUIREMENTS, AND CAN/CSA-G40.21 FOR QUALITY
    a. GRADE 350W CLASS C FOR H.S.S.
    b. GRADE 350W FOR W SHAPES, S SHAPES, AND TEES.
    c. ALL OTHER MISCELLANEOUS METAL SHALL BE MINIMUM GRADE 300W (U.N.O.)
3. BOLTED CONNECTIONS SHALL USE ASTM A325 BOLTS. ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 EXCEPT THAT ANCHOR BOLTS SHALL BE FABRICATED FROM STEEL ROD CONFORMING TO CSA STANDARD G40.21 OR ASTM F1554 WITH A MINIMUM YIELD STRENGTH OF 250 MPa.
4. STEEL COATINGS - UNLESS NOTED OTHERWISE ALL STRUCTURAL STEEL SHALL BE CLEANED AND PREPARED TO A MINIMUM LEVEL OF SSPC SP-3 AND IN ACCORDANCE WITH CSA STANDARD S16:
    a. ALL INTERIOR STEEL THAT IS TO BE PROTECTED BY A SPRAY APPLIED CEMENTIOUS FIRE PROOFING SHALL BE CLEANED AND REMAIN UNCOATED STEEL.
    b. ALL OTHER INTERIOR STRUCTURAL STEEL SHALL BE SHOP PRIME PAINTED AS PER CSA/CAN-S-16. SHOP PRIMER SHALL CONFORM TO CISC/CPMA 1-73A.
    c. ALL STEEL EXPOSED TO WEATHER IS TO BE HOT DIP GALVANIZED IN ACCORDANCE TO CAN/CSA-G164. TOUCH UP OF WELDS, CUTS OR SCRATCHES TO GALVANIZING SHALL BE DONE WITH A MINIMUM OF 3 COATS OF ZINC RICH PAINT.
5. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD W59 AND SHALL BE UNDERTAKEN BY A FABRICATOR AND ERECTOR FULLY APPROVED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA STANDARD W47, DIVISION 1 AND DIVISION 2. FABRICATOR TO SUPPLY CERTIFICATION OF FUSION WELDING, AND WELDING MAY ONLY BE CARRIED OUT IN ACCORDANCE WITH OWNER'S SAFETY REGULATIONS REGARDING WELDING.
6. FABRICATOR SHALL DESIGN CONNECTIONS AND THE LIKE IN ACCORDANCE WITH THE 2012 OBC FOR THE FORCES SHOWN ON THE DRAWINGS. WHERE FORCES ARE NOT NOTED ON THE DRAWINGS, BEAM REACTIONS SHALL BE TAKEN AS ONE-HALF OF THE TOTAL UNIFORMLY DISTRIBUTED FACTORED LOADS NOTED ON THE BEAM LOAD TABLES OF PART FIVE OF CISC'S HANDBOOK OF STEEL CONSTRUCTION, LATEST EDITION, PROVIDED NO POINT LOADS ACT ON THE BEAM. ALL WELDS SHALL BE 5 mm (3/16") MIN. FILLET. ALL BOLTS SHALL BE MIN. M20 (3/4") DIAMETER AND PROVIDE MIN. (2) BOLTS PER CONNECTION.
7. WHERE MOMENT CONNECTIONS ARE CALLED FOR BUT VALUES ARE NOT INDICATED, DESIGN CONNECTIONS FOR FULL MOMENT CAPACITY OF THE SMALLER MEMBER JOINED.
8. SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE MEMBER AT THE POINT OF THE SPLICE. MEMBERS SHALL NOT BE SPLICED AT POINTS OF MAXIMUM STRESS. NO SPLICES SHALL BE MADE UNLESS SHOWN ON THE DRAWINGS OR REVIEWED AND APPROVED BY THE ENGINEER.
9. MOMENT FRAME AND X-BRACE CONNECTIONS SHALL HAVE ASTM A325 FRICTION TYPE M20 (3/4") MINIMUM DIAMETER BOLTS (U.N.O.).
10. SHAPE AND SIZE GUSSET PLATES TO CLEAR ARCHITECTURAL FINISHES AND MECHANICAL DUCTS AND PIPES AND ELEVATOR SHAFTS.
11. SHOP DRAWINGS OF STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
12. ALL BEAMS CANTILEVERED OR CONTINUOUS OVER A COLUMN OR OTHER SUPPORT, AND BEAMS SUPPORTING POINTS OF CONCENTRATED LOAD, SHALL HAVE A MIN. OF 2-10 mm (3/8") STIFFENERS EACH SIDE OF WEB UNLESS OTHERWISE NOTED.
13. TOP OF COLUMNS WHICH ARE NOT BRACED BY JOISTS OR BEAMS SHALL BE BRACED DIAGONALLY TO THE ROOF OR FLOOR BY A MINIMUM OF 4-L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLES FOR INTERIOR COLUMNS; A MINIMUM 2-L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLES FOR EXTERIOR COLUMNS. BRACING SHALL BE BETWEEN TOP OF COLUMN AND TOP CHORD OF JOISTS.
14. COLUMN BASE PLATES AND BEAM BEARING PLATES SHALL BE GROUTED WITH 40 mm (1.5") NON-SHRINK 40 MPa GROUT.
15. ALL COLUMNS BUILT INTO MASONRY WALLS SHALL HAVE ADJUSTABLE ANCHORS AT MINIMUM 400 mm (16") O.C.
16. STEEL BEAMS AND LINTELS SHALL HAVE 200 mm (8") MINIMUM END BEARING ON MASONRY AND 65 mm (2 1/2") MINIMUM BEARING ON STEEL UNLESS INDICATED OTHERWISE.
17. FOR ALL BEAMS AND LINTELS ON STEEL BEARING PLATES.
    a. BEARING PLATES ARE TO BE CENTRED BELOW ALL BEAMS OR LINTELS U.N.O ON THE DRAWINGS.
    b. WELD TO BEARING PLATE WITH A MINIMUM 50 mm x 5 mm (2" x 3/16") FILLET ON BOTH SIDES OF BEAM.
18. WHERE BACK-TO-BACK ANGLES ARE USED AS LINTELS OR SUPPORTS. STITCH WELD TOGETHER AT A MAXIMUM SPACING OF 300mm (12") O.C.
19. ALL ROOF OPENINGS TO BE REINFORCED BY FRAMES COMPRISED OF C130x10 (C5x6.7) CHANNEL MEMBERS UNLESS NOTED OTHERWISE. MAXIMUM SPAN 2250 mm (7'-6").
20. SUPPORT AT COLUMNS AND IRREGULARITIES:
    a. INSTALL L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLE SEATS FOR STEEL DECK AT CONNECTIONS, AT COLUMNS OR OTHER IRREGULARITIES, TO PROVIDE SUPPORT TO THE RIBS OF THE DECK.
    b. INSTALL L102 x 102 x 7.9 mm (L4 x 4 x 5/16") ANGLE SEATS FOR PRECAST SUPPORT AT CONNECTIONS, AT COLUMNS OR OTHER IRREGULARITIES, TO PROVIDE BEARING FOR PRECAST PLANKS.
21. NO STRUCTURAL STEEL SHALL BE CUT IN THE FIELD UNLESS REVIEWED AND APPROVED BY THE ENGINEER.
22. MAINTAIN ERECTION BRACING UNTIL COMPLETION OF ENTIRE STRUCTURE, INCLUDING ROOF DECKS AND OTHER ELEMENTS WHICH ARE PART OF THE LATERAL LOAD RESISTING SYSTEM.
23. **ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL CONFORM TO THE STANDARDS OF THE CISC AESS MATRIX - CATEGORY 1 BASIC ELEMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND DETAILS OF ALL AESS ELEMENTS.**

N17 COLD FORM STEEL FRAMING

1. DESIGN COLD FORMED STEEL FRAMING IN CONFORMANCE WITH THE REQUIREMENTS OF CSA S136.
2. DESIGN ALL COLD FORMED STEEL FRAMING MEMBERS FOR THE GRAVITY AND LATERAL LOADINGS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE 2012 OBC.
3. CONFORM TO THE DEFLECTION REQUIREMENTS OF CSA S304.1 FOR STUDS SUPPORTING MASONRY VENEER.
4. SHOP DRAWINGS FOR ALL COLD FORMED STRUCTURAL STEEL FRAMING INCLUDING CONNECTION, BRACING, AND BRIDGING DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
5. SHOP DRAWINGS FOR ALL COLD FORMED STRUCTURAL STEEL FRAMING SHALL SHOW BOTH DESIGN AND INSTALLATION REQUIREMENTS. RETAIN A LICENSED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO TO PREPARE, SEAL AND SIGN ALL SHOP DRAWINGS; AND TO PERFORM FIELD REVIEW.
6. STEEL SHALL MEET THE REQUIREMENTS OF ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET, ZINC COATED (GALVANIZED) BY THE HOT-DIP PROCESS, STRUCTURAL (PHYSICAL) QUALITY. STEEL STUDS 18 ga. AND LIGHTER SHALL HAVE MINIMUM YIELD STRENGTH OF 230 MPa (33 ksi). HEAVIER STUDS SHALL HAVE MINIMUM YIELD STRENGTH OF 345 MPa (50 ksi).

NOTE TO CONTRACTOR:

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.

THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

ISSUANCE	ID	DATE
ADDENDUM 02	7	AUG. 16, 2024
TENDER	5	JUN. 26, 2024
PERMIT	4	MAY 10, 2024
50% CONTRACT DOCUMENTS	3	APR. 05, 2024
100% DESIGN DEVELOPMENT	2	JAN. 05, 2024
50% DESIGN DEVELOPMENT	1	SEP. 18, 2023

MTE
Engineers, Scientists, Surveyors
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CLIENT
DPAI ARCHITECTURE INC

PROJECT
BRAMPTON FIRE STATION 215
GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING
GENERAL NOTES

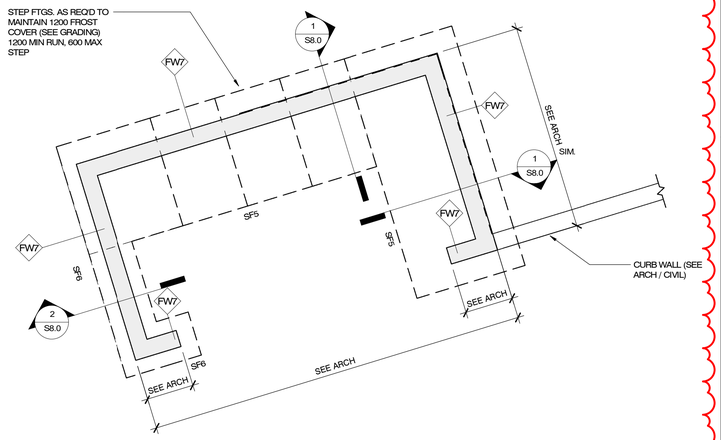
Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S1.0
Scale:	AS NOTED		

S8.0
GARBAGE ENCLOSURE
C:\Users\MBoeringa\Documents\Revit User Files\53251-100 Brampton Fire 215 v24_mboeringaWLUEB.rvt
MTE Computer Dwg No.

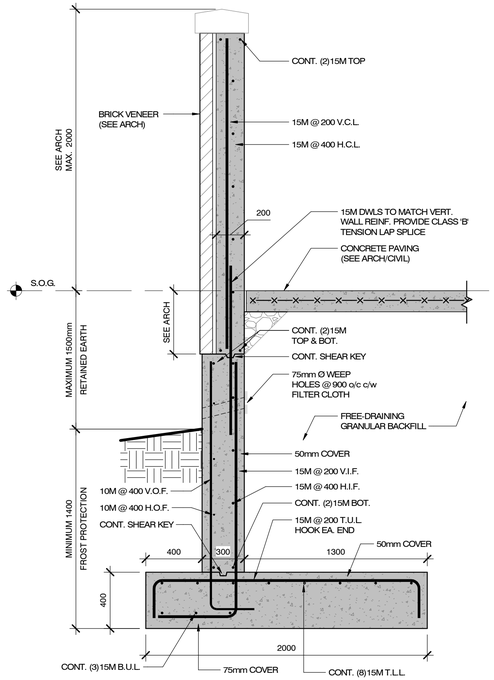
GARBAGE ENCLOSURE FOUNDATION WALL SCHEDULE		
TYPE	WIDTH	REINFORCEMENT
FW7	300	SEE SECTIONS

GARBAGE ENCLOSURE STRIP FOOTING SCHEDULE			
TYPE	WIDTH	THICKNESS	REINFORCEMENT
SF5	2000	400	SEE SECTIONS
SF6	800	300	3-15M CONT. BOTTOM

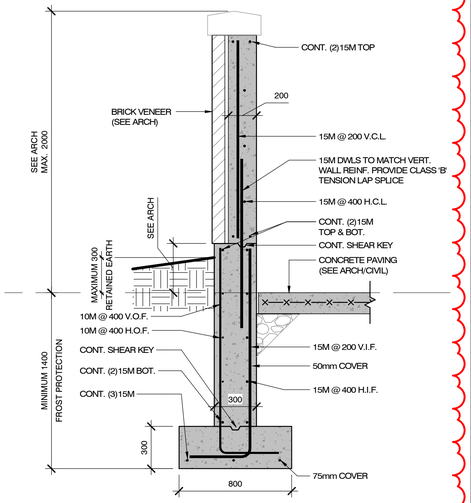
NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWINGS
2. UNDERSIDE OF ALL FOOTINGS TO BE MINIMUM 1400mm BELOW FINISHED GRADE. (SEE GEOTECHNICAL REPORT). COORDINATE STEPPED FOOTING ELEVATIONS WITH GRADING PLAN.
3. REFER TO TYPICAL DETAILS FOR STEPPED FOUNDATIONS.
4. REFER TO GENERAL NOTES FOR RETAINING WALL / FOOTING CONCRETE STRENGTH.



GARBAGE ENCLOSURE PLAN
1 : 50



1 S8.0 **SECTION DETAIL**
1 : 20



2 S8.0 **SECTION DETAIL**
1 : 20

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ADDENDUM 02	7	AUG. 16, 2024
ISSUANCE	ID	DATE

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CLIENT
DPAI ARCHITECTURE INC

PROJECT
BRAMPTON FIRE STATION 215
GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING
GARBAGE ENCLOSURE

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S8.0
Scale:	AS NOTED		

8/15/2024 3:11:32 PM JDG

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	August 16, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

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Addendum #:	E02
Revision #:	0

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Specifications [Refer to the attached specifications for details]:

.1 Specification – 26 32 13.16 - Gas-Engine-Driven Generator Sets [Skin-Tight Enclosure]

i) Revised generator kW rating to 500kW matching the drawings.

.2 Specification - 27 05 28.63 - Pathways for Video Surveillance

i) Cash Allowance section deleted. This scope of work is part of the base bid.

2.0 Revisions to Drawings [Refer to attached drawings for details]:

.1 Drawing E-001 – ELECTRICAL LEGENDS AND GENERAL NOTES

i) Refer to drawing revisions.

.2 Drawing E-002 – ELECTRICAL SITE PLAN

i) Refer to drawing revisions.

ii) EV Charging station notes were revised.

iii) Primary Duct Bank detail notes revised.

iv) Added note keynote S1.

.3 Drawing E-003 – ELECTRICAL SITE LIGHTING PLAN

i) Refer to drawing revisions.

ii) Pole mounted security camera note revised.

.4 Drawing E-103 – ELECTRICAL SITE PLAN DETAILS

i) Refer to drawing revisions.

ii) Detail 3 Ampacity values added.

.5 Drawing E-201 – LEVEL 01 PLAN - LIGHTING

i) Refer to drawing revisions.

ii) An exit sign circuit was added to the drawings.

.6 Drawing E-202 – LEVEL 01 PLAN – POWER & SYSTEMS

i) Refer to drawing revisions.

ii) Add 100A,3P Disconnect switch for EV Fire truck feed.

iii) 100A Coord reel note revised.

iv) Add transformer TX-UEV2 in electrical room.

.7 Drawing E-302 – ROOF PLAN – POWER & SYSTEMS

i) Refer to drawing revisions.

ii) Add tag to inverter combiner panel DP-PV.

.8 Drawing E-808 – EV FIRE TRUCK CHARGER DETAILS

i) Refer to drawing revisions.

ii) Add general note 1.

.9 Drawing E-901 – SINGLE LINE DIAGRAM

i) Refer to drawing revisions.

ii) Add note for solar pv.

iii) Revised note for generator duct bank.

iv) Revised note for ATS-1 switch.

v) Add transformer TX-UEV2.

vi) Add future transformer TX-UEV3.

vii) Add note for fire truck EV charging station.

viii) Revise EVSE-2.2 to future work.

ix) Revise fault current note to 26.6 kA.

x) Revised transformer secondary duct bank conductor size.

.10 Drawing E-904 – Electrical Panelboard Schedules I

i) Refer to drawing revisions.

ii) Deleted circuits on panel RP-M2

.11 Drawing E-905 – Electrical Panelboard Schedules II

i) Refer to drawing revisions.

ii) Add exit signs to circuit 23 on panel RP-L.

Quasar Consulting Group

Antonio Zuniga, MSc., PMP, LEED AP BD+C

Team Lead

GENERAL NOTES

GENERAL

1. ALL DRAWINGS ARE FOR DIAGRAMMATIC PURPOSES ONLY AND SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS FOR LOCATION OF ALL LUMINAIRES, LIGHTING CONTROL DEVICES, OUTLETS, SYSTEM DEVICES, DIMENSIONS, MOUNTING HEIGHTS, AND CONSTRUCTION DETAILS.
2. ALL OPENINGS THROUGH RATED WALLS OR FLOORS (APPLIES TO ALL INSTANCES) SHALL BE SEALED WITH APPROVED FIRE STOPPING MATERIAL. ANY FIREPROOFING MATERIAL REMOVED WILL BE REPLACED WITH A SUITABLE AND APPROVED FIREPROOFING MATERIAL AND SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS TO APPLICABLE BUILDING AND FIRE CODES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIR OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF WORK OF THIS PROJECT.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND DISTRIBUTION OF TEMPORARY POWER AND LIGHTING WITHIN THE PREMISES DURING THE CONSTRUCTION PERIOD.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL THE WORK WITH ALL OTHER TRADES, CONSULTANTS, AND THE OWNER.
6. ALL NEW DEVICES INSTALLED WHERE NEW FINISHES OCCUR SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE INDICATED.
7. ALL CONDUIT RUNS SHOWN ON PLANS ARE FOR INFORMATION AND DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATION AND ROUTING OF ALL RUNS ON SITE PRIOR TO BEGINNING WORK.
8. PROVIDE SEISMIC RESTRAINTS WHERE REQUIRED BY LOCAL CODE REQUIREMENTS. OBTAIN THE SERVICES OF A SEISMIC RESTRAINT ENGINEER AND COMPLY WITH ALL REQUIREMENTS IN THEIR REPORT. SUBMIT A COPY OF THE REPORT TO MECHANICAL AND ELECTRICAL CONSULTANTS AND INCLUDE IN MAINTENANCE MANUAL.

LIGHTING

9. PROVIDE SUPPORT CHAINS FOR ALL LUMINAIRES. SUPPORT ALL LUMINAIRES DIRECTLY TO CEILING SLAB STRUCTURE, NOT TO CEILING HANGERS, T-BAR, DUCTWORK, PIPING, CABLE TRAYS, ROOF DECK, ETC.

POWER

10. NEW ELECTRICAL WIRING AND CABLES EXPOSED WITHIN THE CEILING SPACES SHALL CONFORM TO THE PLENUM REQUIREMENTS OF THE LOCAL BUILDING CODE.
11. PROPERLY LABEL ALL ELECTRICAL PANELS, CLEARLY INDICATING ALL INFORMATION INCLUDING CIRCUIT NUMBERS. CIRCUITING SHOWN ON DRAWING IS DIAGRAMMATIC TO SHOW GENERAL CIRCUIT ARRANGEMENT AND PANEL DESIGNATION.
12. PROVIDE 2#12AWG + G IN 21MMC FOR ALL 15A AND 20A CIRCUITS WITH A NOMINAL VOLTAGE OF 120V UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE OVERSIZED TO SUIT VOLTAGE DROP AS PER SPECIFICATIONS FOR CIRCUIT LENGTH EXCEEDING 90 FEET.
13. PROVIDE A SEPARATE NEUTRAL AND GROUNDING TO ALL CIRCUITS SERVING A RECEPTACLE FOR A COPIER/PRINTER. COORDINATE RECEPTACLES CONFIGURATION WITH THE COPIER SUPPLIER AND TENANT PRIOR TO ROUGH-IN.

COMMUNICATIONS

14. ALL COMMUNICATIONS SCOPE OF WORK TO FOLLOW CITY OF BRAMPTON IT PERFORMANCE SPECIFICATION. REFER TO SPECIFICATION SECTION 27 00 00 FOR MORE INFORMATION INCLUDING MOUNTING HEIGHTS OF DEVICES, CABLING INSTALLATIONS, ETC. PRIOR TO INSTALLATION.
15. VOICE & DATA EMPTY CONDUIT AND BACK BOXES FOR COMMUNICATION CABLE AND DATA OUTLET SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. DATA FACE PLATE AND COMMUNICATION CABLE BY COMMUNICATION CONTRACTOR.
16. CABLES FOR VOICE AND DATA SYSTEMS ARE TO BE SUPPLIED, INSTALLED AND TERMINATED BY COMMUNICATIONS CONTRACTOR.
17. ELECTRICAL CONTRACTOR TO COORDINATE THE INSTALLATION OF ALL DATA WALL AND FLOOR OUTLET BOXES AND ASSOCIATED DATA CONDUIT SIZES WITH ELECTRICAL DRAWINGS AND COMMUNICATIONS CONTRACTORS.
18. COMMUNICATIONS CONTRACTOR MUST BE COMMSCOPE SYSTIMAX CERTIFIED.
19. COMMUNICATIONS CONTRACTOR WILL BE RESPONSIBLE TO INSTALL WIRELESS ACCESS POINTS THAT WILL BE PROVIDED BY THE CITY OF BRAMPTON.
20. COMMUNICATIONS SYSTEM IS TO BE AN END TO END COMMSCOPE SYSTEMAX CERTIFIED SOLUTION. ALL PATCH CABLES MUST BE PROVIDED TO ACCOMMODATE ALL DROPS INSTALLED. CABLES TO BE ORDERED AS PER CITY OF BRAMPTON IT PERFORMANCE SPECIFICATION V1.6 (SECTION 27 00 00).

LIFE SAFETY

21. PROVIDE MEASUREMENT OF LIGHT LEVELS TO OBTAIN LOCAL INSPECTION APPROVALS AND PERMITS. AN AUTHORIZED TECHNICIAN OF THE MANUFACTURER SHALL PREPARE AND PROVIDE A SIGNED TEST REPORT VERIFYING THAT THE SYSTEM IS PROPERLY WORKING AND THAT LIGHT LEVELS MEET LOCAL CODE REQUIREMENTS. INCLUDE REQUIRED TEST MEASUREMENTS IN REPORT AND SUBMIT TO CONSULTANT FOR REVIEW. ALL COST FOR TESTING/VERIFICATION SHALL BE INCLUDED IN THE TENDER BID.
22. SUBMIT FIRE ALARM VERIFICATION REPORT CONFORMING TO CAN/ULC-S537 TO CONSULTANT FOR REVIEW. AUDIBILITY REPORT SHALL HAVE 15 SEPARATE READINGS IN VARIOUS LOCATIONS THROUGHOUT FLOOR AREA INDICATING SOUND PRESSURE PRODUCED BY FIRE ALARM SIGNALING DEVICES.
23. PROVIDE LABOUR AND MATERIAL TO CONDUIT THE INTEGRATED SYSTEMS TESTING OF INTERCONNCECTED LIFE SAFETY SYSTEMS IN ACCORDANCE WITH CAN/ULC-S1001-11.

ELECTRICAL DRAWING LIST

DRAWING #	DRAWING NAME
E-000	COVER PAGE
E-001	ELECTRICAL LEGEND AND GENERAL NOTES
E-002	ELECTRICAL SITE PLAN
E-103	ELECTRICAL SITE PLAN DETAILS
E-104	ELECTRICAL SITE PLAN - ALECTRA DETAILS I
E-105	ELECTRICAL SITE PLAN - ALECTRA DETAILS II
E-201	LEVEL 01 PLAN - LIGHTING
E-202	LEVEL 01 PLAN - POWER & SYSTEMS
E-302	ROOF PLAN - POWER & SYSTEMS
E-401	LEVEL 01 PLAN - TELECOMMUNICATIONS
E-501	FIRE ALARM ZONING PLAN
E-801	ELECTRICAL DETAILS I
E-802	ELECTRICAL DETAILS II
E-803	ELECTRICAL DETAILS III
E-804	ELECTRICAL DETAILS IV
E-805	ELECTRICAL DETAILS V
E-806	ELECTRICAL DETAILS VI
E-807	ELECTRICAL DETAILS VII
E-808	EV FIRE TRUCK CHARGER DETAILS
E-901	SINGLE LINE DIAGRAM
E-902	SCHEDULES FOR LIGHTING
E-903	EQUIPMENT WIRING SCHEDULE
E-904	ELECTRICAL PANELBOARD SCHEDULES I
E-905	ELECTRICAL PANELBOARD SCHEDULES II

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	LINETYPES
	NEW WORK
	WORK TO BE DEMOLISHED, OR REMOVED
	EXISTING MATERIAL/EQUIPMENT/SERVICES TO REMAIN
	FUTURE WORK (NOT IN SCOPE)
	EXTENTS OF FIRE ALARM ZONE, WET LOCATION, OR OTHER AREA AS NOTED ON PLANS
	ABBREVIATIONS
E	EXISTING TO REMAIN
R	EXISTING TO BE DEMOLISHED/REMOVED
ER	EXISTING IN RELOCATED POSITION
RR	REMOVE AND RELOCATE
C	CEILING MOUNTED CONNECTION
W	WALL MOUNTED CONNECTION
F	FLOOR MOUNTED CONNECTION
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
O/C	OVER COUNTER
U/C	UNDER CABINET
CCT	CIRCUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
TL	TWIST LOCK
BDO	BAY DOOR OPERATOR
WG	WIRE GUARD
WP	WEATHER PROOF
R/I	ROUGH-IN ONLY
NIC	NOT IN CONTRACT
SIM.	SIMILAR TO
TYP.	TYPICAL
	ABBREVIATIONS - CODES AND STANDARDS
OBC	ONTARIO BUILDING CODE
OESC	ONTARIO ELECTRICAL SAFETY CODE
OFC	ONTARIO FIRE CODE
	ABBREVIATIONS - CEILING TYPES
ACT	ACOUSTIC CEILING TILE (T-BAR)
EXP	EXPOSED CEILING
GB	GYPSUM BOARD CEILING
OWSJ	OPEN WEB STEEL JOISTS
WD	WOOD CEILING
	ANNOTATIONS
CL	CLOSET
WR	WASHROOM
	PLUMBING
PTP	ELECTRONIC TRAP PRIMER
PSC	PLUMBING SENSOR CONTROL (TOUCHLESS FAUCETS)
	HVAC
	THERMOSTAT OR TEMPERATURE SENSOR
T	TIMER CONTROL
BBH	ELECTRIC BASEBOARD HEATER (BBH)
FFH	FORCED FLOW HEATER
ERV	ENERGY RECOVERY VENTILATOR
HRU	HEAT RECOVERY UNIT
MUA	MAKE-UP AIR UNIT
	CONDUIT AND BOXES
	CONDUIT WITH END BUSHING
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT CONTINUES
JB	JUNCTION BOX
PB	PULL BOX
HH	HAND HOLE
	CONNECTIONS TO EQUIPMENT
DW	DISHWASHER
FR	FRIDGE
MW	MICROWAVE
HD	HAND DRYER. ALLOW UP TO 208V-1PH-20A
	1-PHASE DIRECT CONNECTION OUTLET AS NOTED.
	3-PHASE DIRECT CONNECTION OUTLET AS NOTED.
	CONNECTION TO SINGLE PHASE MOTOR, HP (KW) AS NOTED. PROVIDE LOCAL DISCONNECT.
	THREE PHASE MOTOR, HP (KW) AS NOTED. PROVIDE LOCAL DISCONNECT.
	LIGHTING CONTROLS REFER TO SPECIFICATIONS AND RESPECTIVE SCHEDULES FOR EXACT REQUIREMENTS
	SWITCH OR OTHER USER INTERFACE DEVICE AS DESCRIBED ON LIGHTING CONTROLS SCHEDULE.
3W	3-WAY SWITCH
DIM	ADJACENT TO SWITCH, DENOTES DIMMING SWITCH.
T	ADJACENT TO SWITCH, DENOTES COUNTDOWN TIMER SWITCH
AT	ADJACENT TO SWITCH, DENOTES ASTRONOMICAL TIMER SWITCH
DS	ADJACENT TO SWITCH, DENOTES DOOR SWITCH
DT	DUAL TECHNOLOGY SENSOR
M	ADJACENT TO SWITCH, DENOTES MASTER CONTROL FOR ALL LUMINAIRES IN A ROOM OR SPACE, OR AS NOTED.
	WALL MOUNTED SWITCH/OCCUPANCY SENSOR. PIR DENOTES 'PASSIVE INFRARED', DT DENOTES 'DUAL PASSIVE INFRARED/ULTRASONIC', LINE VOLTAGE TO SUIT CONTROLLED CIRCUIT, OR AS NOTED.
PP	POWER PACK
SC	SCENE CONTROLLER.
P	PHOTOCELL SENSOR.
DT	CEILING MOUNTED OCCUPANCY SENSOR. PIR DENOTES 'PASSIVE INFRARED', UT DENOTES 'ULTRASONIC' (OR MICROPHONIC), DT DENOTES 'DUAL TECHNOLOGY', 'OS' DENOTES UNKNOWN TECHNOLOGY.
DT	WALL MOUNTED OCCUPANCY SENSOR.
	DISTRIBUTION EQUIPMENT
	TRANSFORMER - FLOOR MOUNTED, PLAN VIEW. 'C' DENOTES CEILING MOUNTED

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	SURFACE MOUNTED LIGHTING AND RECEPTACLE PANELBOARD
	RECESSED RECEPTACLE AND LIGHTING PANELBOARD
	DISTRIBUTION PANELBOARD
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
C	CONTACTOR
	LOOSE STARTER, COORDINATE STARTING CHARACTERISTIC WITH EQUIPMENT REQUIREMENTS.
	COMBINATION STARTER.
VFD	ADJACENT TO STARTER, DENOTES VARIABLE FREQUENCY DRIVE
	POWER RECEPTACLES AND BOXES
	120V U-GROUND DUPLEX RECEPTACLE.
	120V U-GROUND DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
	120V U-GROUND 20A DUPLEX RECEPTACLE.
	120V U-GROUND DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
	120V U-GROUND DUPLEX RECEPTACLE - AUTOMATICALLY CONTROLLED (ASHRAE 90.1-2013, 8.4.2).
	120V U-GROUND 20A DUPLEX RECEPTACLE - AUTOMATICALLY CONTROLLED (ASHRAE 90.1-2013, 8.4.2).
	120V U-GROUND DUPLEX RECEPTACLE - HALF OF RECEPTACLE AUTOMATICALLY CONTROLLED (ASHRAE 90.1-2013, 8.4.2).
	SPLIT RECEPTACLE. IF MANUALLY CONTROLLED, SHOWN CONNECTED TO SWITCH.
	SPLIT RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
	120V U-GROUND 20A QUAD RECEPTACLE ABOVE GROUND.
8	120V U-GROUND QUAD RECEPTACLE.
	INDICATES DUPLEX RECEPTACLE COMPLETE WITH ONE TYPE A AND ONE TYPE C USB CHARGING PORTS. TOP RECEPTACLE TO BE CONTROLLED BY SINGLE-POLE SWITCH AS INDICATED ON DRAWINGS
	14-30R RECEPTACLE FOR LAUNDRY DRYER, OR OTHER RECEPTACLE AS NOTED.
	14-50R RECEPTACLE FOR ELECTRIC RANGE, OR OTHER RECEPTACLE AS NOTED. PROVIDE 40A/2P BREAKER TO SUIT.
	SPECIAL RECEPTACLE. VERIFY OUTLET REQUIREMENTS PRIOR TO ROUGH-IN.
	SPECIAL RECEPTACLE. VERIFY OUTLET REQUIREMENTS PRIOR TO ROUGH-IN.
	FLOOR RECEPTACLE OR RECEPTACLE IN FLOOR BOX (POWER ONLY)
	SERVICE POLE. PROVIDE POWER TO JUNCTION BOX IN CEILING SPACE ABOVE. DEVICES ON POLE AS NOTED ON PLANS.
FB1	ADJACENT TO FLOOR RECEPTACLE, DENOTES FLOOR BOX TYPE
FSA	DENOTES FIRE STATION ALERTING DEVICE
	LIGHTING FIXTURES SYMBOLS IN ACCORDANCE WITH IES DG-3-00 AND IES HB-10-11 WHERE NOT DETAILED OTHERWISE HERE. REFER TO LIGHTING FIXTURE SCHEDULE FOR FURTHER DETAILS AND EXACT FIXTURE REQUIREMENTS.
	LINEAR LUMINAIRE, SURFACE MOUNTED TO CEILING
	LINEAR LUMINAIRE, RECESSED IN CEILING
	LINEAR LUMINAIRE, SUSPENDED; PENDANT, CHAIN, STEM, OR AIRCRAFT CABLE HUNG TO SUIT APPLICATION, OR AS NOTED IN SCHEDULE. "X", WHEN USED DENOTES POWER FEED LOCATION.
	LINEAR LUMINAIRE, WALL MOUNTED
	ROUND OR SQUARE DOWNLIGHT, RECESSED
	ROUND SUSPENDED LUMINAIRE
	WALL SCONCE OR OTHER WALL MOUNTED LUMINAIRES.
EM	CONNECTED TO EMERGENCY NIGHT LIGHT CIRCUIT (24 HOUR)
NL	LUMINAIRE CONNECTED TO NON-EMERGENCY NIGHT LIGHT CIRCUIT (24 HOUR)
A, B, Z1, Z2, ETC.	DENOTES ZONING/CIRCUTING ASSIGNMENTS FOR LUMINAIRES AND CONTROLS IN THE SAME SPACE.
	EMERGENCY LIGHTING REFER TO EMERGENCY LIGHTING FIXTURE SCHEDULE FOR EXACT FIXTURE REQUIREMENTS.
	CEILING OR WALL MOUNTED ILLUMINATED EXIT SIGN. SHADED AREA INDICATES ILLUMINATED FACE. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLANS.
	CEILING OR WALL MOUNTED ILLUMINATED EXIT SIGN. SHADED AREA INDICATES ILLUMINATED FACE. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLANS.
	EMERGENCY LIGHTING BATTERY UNIT, WITH AND WITHOUT HEADS.
	ONE, TWO, AND THREE HEAD WALL MOUNTED EMERGENCY LIGHTING REMOTE UNITS.
	ONE, TWO, AND THREE HEAD CEILING MOUNTED EMERGENCY LIGHTING REMOTE UNITS.
	RECESSED EMERGENCY REMOTE HEAD.
EM	DENOTES "EMERGENCY"
CCT	CORRELATED COLOUR TEMPERATURE
CRI	COLOUR RENDERING INDEX
	EXTERIOR LIGHTING
	ARM MOUNTED LUMINAIRE ON POLE. DIRECTIONAL ARROW, WHERE INDICATED DENOTES PRIMARY LUMEN ORIENTATION.
	POST TOP LUMINAIRE ON POLE. DIRECTIONAL ARROW, WHERE INDICATED DENOTES PRIMARY LUMEN ORIENTATION.
	LIGHTING BOLLARD. DIRECTIONAL ARROW, WHERE INDICATED DENOTES PRIMARY LUMEN ORIENTATION.
	GROUND MOUNTED FLOOD LIGHT
	TELECOMMUNICATIONS
	WALL MOUNTED DATA (D) OR VOICE (V) OUTLET. PROVIDE 2D UNLESS NOTED OTHERWISE.
	WALL MOUNTED VOICE (TELEPHONE) OUTLET. PROVIDE 1V UNLESS NOTED OTHERWISE.
	WALL MOUNTED DATA OUTLET. PROVIDE 2D UNLESS NOTED OTHERWISE.
	WALL MOUNTED TELEVISION OUTLET.
	VOICE, DATA, OR TV OUTLET AS DESCRIBED ABOVE, MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
B	ADJACENT TO COMMUNICATIONS OUTLET, INDICATES BLANK-OFF PLATE.
HDMI	HDMI OUTLET.
AV	AUDIO VIDEO GANG, AS NOTED.

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
WAP	WIRELESS ACCESS POINT (WIFI), PROVIDE 2D UNLESS OTHERWISE NOTED.
S	PUBLIC ADDRESS SYSTEM SPEAKER, CEILING MOUNTED.
SP	PUBLIC ADDRESS SYSTEM SPEAKER, WALL MOUNTED.
	PUBLIC ADDRESS HORN SPEAKER WALL MOUNTED.
HS	PUBLIC ADDRESS SYSTEM HANDSET
ACC	PUBLIC ADDRESS SYSTEM ADMIN CONTROL CONSOLE
VOL	PUBLIC ADDRESS SPEAKER VOLUME CONTROL SWITCH.
	INTERCOM
IDS	VIDEO INTERCOM SYSTEM DOOR CALL STATION
IMS	VIDEO INTERCOM SYSTEM MASTER STATION
	CLOCK.
GTX	GPS CLOCK SYSTEM MASTER TRANSMITTER
GRX	GPS CLOCK SYSTEM GPS RECEIVER
RTX	GPS CLOCK SYSTEM SATELLITE TRANSMITTER (REPEATER)
GRX	GPS CLOCK SYSTEM RECEIVER SWITCH
	ACCESS CONTROL AND DOOR HARDWARE
CR	CARD READER
DA	DOOR ALARM SOUNDER
DC	DOOR CONTACT
ES	ELECTRIC STRIKE
KS	KEY SWITCH
ML	ELECTROMAGNETIC LOCK
REX	REQUEST TO EXIT SENSOR
	MUSHROOM HEAD PUSH BUTTON FOR 'REQUEST TO EXIT' MAGLOCK RELEASE, OR OTHER PUSH BUTTON AS INDICATED
DR	DOOR RELEASE ADJACENT TO THE ABOVE, PUSHBUTTON INTEGRATED WITH ELECTRIFIED DOOR HARDWARE DEVICE.
	BARRIER FREE DOOR OPERATOR PUSH BUTTON
WS	TOUCHLESS "WAVE SWITCH" FOR DOOR OPERATOR CONTROL
	DOOR BELL C/W SOUNDER AND STROBE
	DOOR BELL (SOUNDER ONLY)
	INTRUSION DETECTION
	GLASS BREAK (GB)
MD	MOTION DETECTOR (MD)
KP	KEYPAD (KP)
	VIDEO SURVEILLANCE
	CCTV CAMERA
C/P	CCTV CAMERA, CEILING OR POLE MOUNTED
	CCTV CAMERA, WALL MOUNTED
PTZ	PAN-TILT-ZOOM
	DURESS SYSTEM
DB	DURESS BUTTON (MOUNTED ON UNDERSIDE OF TABLETOP)
DB-W	WALL MOUNTED DURESS BUTTON WITH POLYCARBONATE ANTI-TAMPER COVER
DS	DURESS SYSTEM STROBE LIGHT
	FIRE DETECTION AND ALARM - GENERAL
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNICIATOR PANEL
FAPG	FIRE ALARM PASSIVE GRAPHIC
FAMP	FIRE ALARM ULC MONITORING PANEL
FAZ	FIRE ALARM ZONE
FSZ	FIRE ALARM SUPERVISORY ZONE
	FIRE ALARM PANEL (FACP, FAAP, FAMP) AS DENOTED ON PLANS.
	FIRE DETECTION - INITIATION DEVICES
	MANUAL PULL STATION (MPS)
LX	WHERE NOTED ADJACENT TO MANUAL PULL STATIONS, DENOTES PULL STATION C/W POLYCARBONATE (LEXAN) COVER.
WG	WHERE NOTED ADJACENT TO MANUAL PULL STATIONS, DENOTES PULL STATION C/W WIRE GUARD COVER.
A	WHERE NOTED ADJACENT TO MANUAL PULL STATIONS OR DETECTOR, DENOTES DEVICE C/W AUXILIARY CONTACT.
	PHOTOELECTRIC SMOKE DETECTOR
	SAME AS ABOVE, WALL MOUNTED
	DUCT MOUNTED SMOKE DETECTOR
CO	CARBON MONOXIDE DETECTOR
	HEAT DETECTOR - 58 DEGREES C (135 DEGREES F) FIXED TEMPERATURE AND RATE OF RISE, RESTORABLE
	SAME AS ABOVE, WALL MOUNTED
HT	ADJACENT TO HEAT DETECTOR, DENOTES "HIGH TEMPERATURE", 94 DEGREES C (200 DEGREES F) OR AS NOTED ON PLANS.
	HEAT DETECTOR - 58 DEGREES C (135 DEGREES F) FIXED TEMPERATURE, NON-RESTORABLE
	HEAT DETECTOR - 94 DEGREES C (200 DEGREES F) FIXED TEMPERATURE, NON-RESTORABLE
	RESIDENTIAL SMOKE ALARM, 120V, COMPLETE WITH STROBE. FOR AREAS AS INDICATED ON PLANS BY "CO", PROVIDE INTEGRAL CARBON MONOXIDE DETECTION
FS	FLOW SWITCH
	FIRE DETECTION AND ALARM - SUPERVISORY DEVICES
LL	LOW TANK LEVEL
LP	LOSS OF POWER
LT	LOW TEMPERATURE
PS	PRESSURE SWITCH
SV	SUPERVISED VALVE
MON	FIRE ALARM MONITORING POINT, REFER TO FLOOR PLANS FOR DETAILS.
	FIRE DETECTION AND ALARM - SIGNALLING DEVICES
	FIRE ALARM BELL, WALL MOUNTED.
C	ADJACENT TO BELL OR HORN, DENOTES CEILING MOUNTED.
	FIRE ALARM HORN
M	ADJACENT TO FIRE ALARM HORN, DENOTES 'MINI' HORN
	FIRE ALARM HORN/STROBE, WALL MOUNTED.
SS	SILENCE SWITCH
	FIRE ALARM WALL MOUNTED STROBE LIGHT
	FIRE DETECTION AND ALARM - OTHER DEVICES
EOL	END OF LINE DEVICE

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
WG	WIRE GUARD
DNE	"DO NOT ENTER" SIGN
CM	CONTROL MODULE
MM	MONITOR MODULE
HO	MAGNETIC DOOR HOLDER AND RELEASING DEVICE ("HOLD OPEN")
	FIRE SUPPRESSION ABORT STATION
	SINGLE LINE DIAGRAM
	AIR CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER
	DISCONNECT (UNFUSED)
	DISCONNECT (FUSED)
	FUSE
	METERING CABINET
	TRANSFORMER
G	GENERATOR
	AUTOMATIC TRANSFER SWITCH
	AUTOMATIC TRANSFER SWITCH C/W SINGLE SIDED BYPASS ISOLATION
	AUTOMATIC TRANSFER SWITCH C/W DOUBLE SIDED BYPASS ISOLATION
ATS	AUTOMATIC TRANSFER SWITCH
C	CONTACTOR
DP	DISTRIBUTION PANELBOARD
LP	LIGHTING PANELBOARD
RP	RECEPTACLE PANELBOARD
SPD	SURGE PROTECTIVE DEVICE
TX	TRANSFORMER
UPS	UNINTERRUPTIBLE POWER SUPPLY
	DETAIL REFERENCES
1	SHEET KEYNOTE
1 / E101	REFER TO DETAIL. EXAMPLE SHOWN INDICATES REFERENCE TO DETAIL 1 ON DRAWING E101
1	REVISION NUMBER

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP

250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
8	ISSUED FOR ADD-E02	2024-08-16
7	ISSUED FOR TENDER	2024-06-28
6	ISSUED FOR TENDER REVIEW	2024-06-11
5	ISSUED FOR PERMIT	2024-05-06
4	ISSUED FOR ESA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL LEGEND AND GENERAL NOTES

ISSUE DATE: 2024-08-16

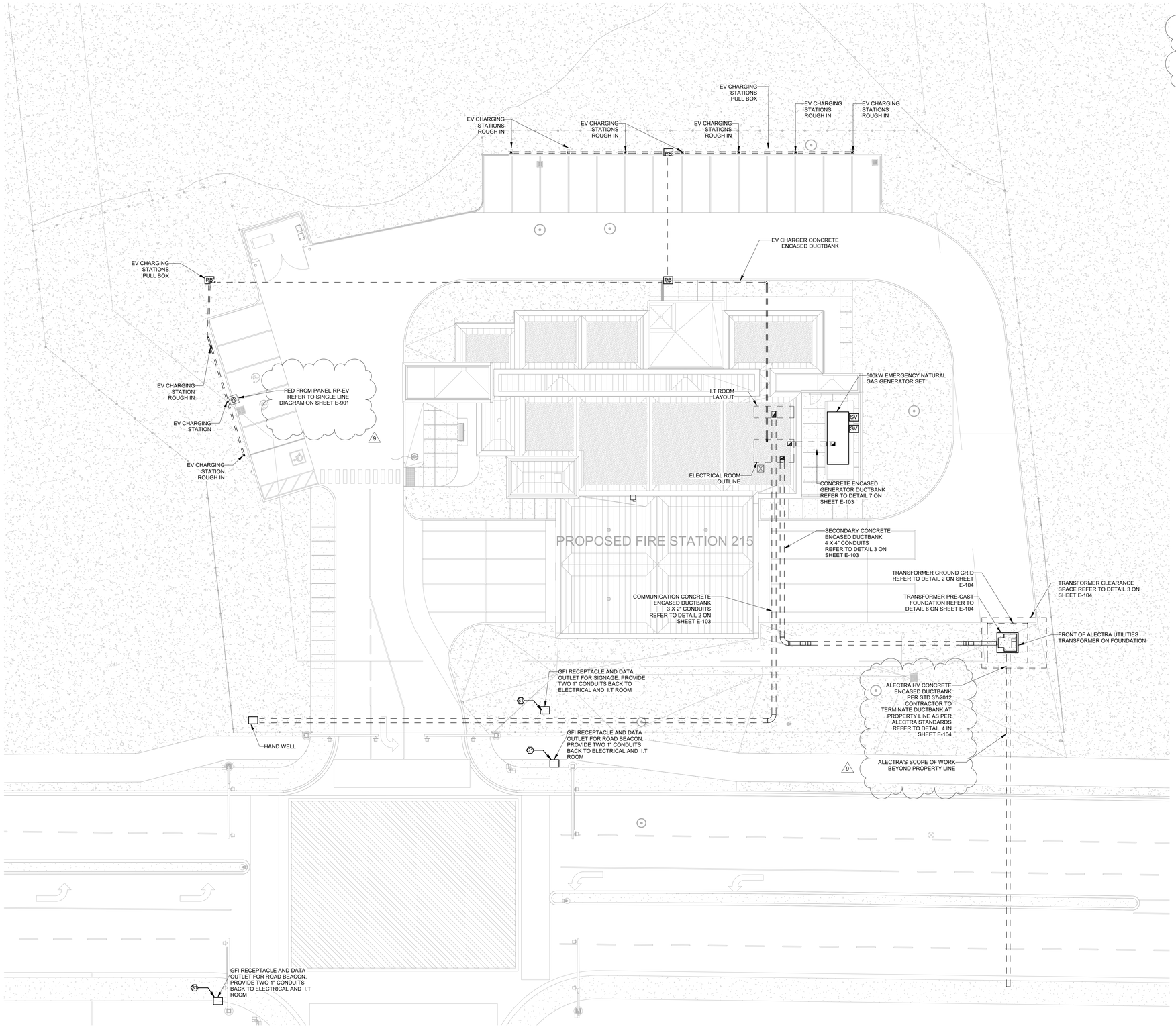
DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE: 12" = 1'-0"

DRAWING NO.:

E-001

[PLOT DATE: 8/15/2024 4:34:43 PM]



1 ELECTRICAL SITE PLAN
1 : 200

KEYNOTE LEGEND1	
Key Value	Keynote Text
S1	PROVIDE AS SEPARATE COST. OWNER TO CONFIRM IF PART OF SCOPE OF WORK.

9

BRAMPTON FIRE STATION 215

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SEALS

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6	ISSUED FOR PERMIT	2024-05-06
5	ISSUED FOR ESA REVIEW	2024-04-23
4	ISSUED FOR ALECTRA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

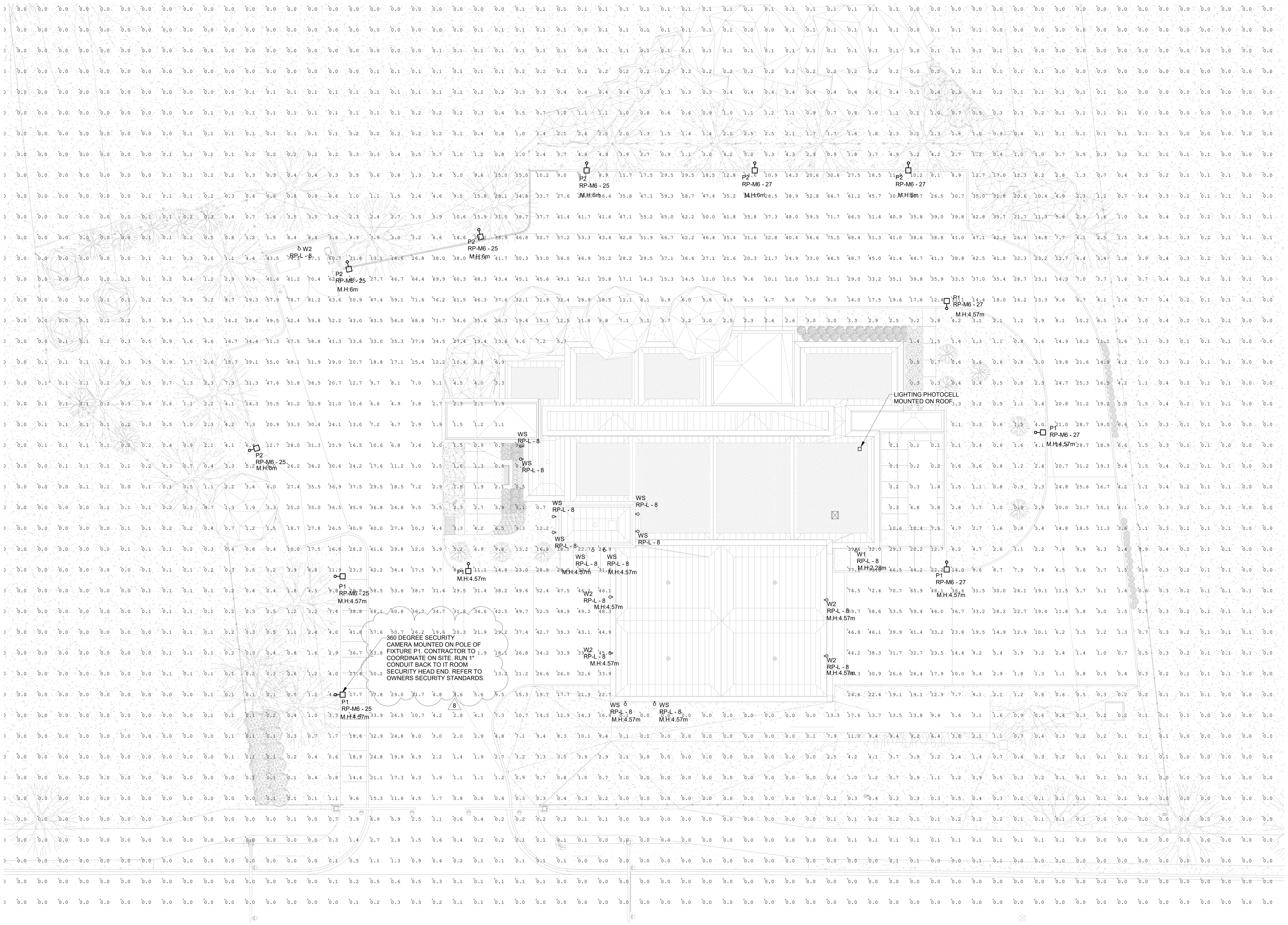
ELECTRICAL SITE PLAN

ISSUE DATE:	2024-08-16		
DRAWN BY:	Author	CHECKED BY:	T.S
PROJECT NO.:	CM-22-269	SCALE:	1 : 200

DRAWING NO.:

E-002

[PLOT DATE: 8/15/2024 4:34:48 PM]



Luminaire Schedule											
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	[MANUFAC]	Mounting Height	BUG Rating
	6	P1	Single	ASL1-80L-39-4K7-3-BC	0.900	3645	37.98	227.88	EXO	4.57	B0-U0-G1
	6	P2	Single	ASL1-160L-100-4K7-4W-BC	0.900	7371	90	540	EXO	6	B0-U0-G2
	5	W2	Single	TRP2-24L-30-4K7-4	0.900	3647	27.9	139.5	EXO	2.4, 4.57	B0-U0-G1
	1	W1	Single	TRP1-24L-15-4K7-3	0.900	1880	14.9	14.9	EXO	2.28	B1-U0-G1

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
APPARATUS DOORS	Illuminance	Lux	44.94	71.4	24.1	1.86	2.96
PARKING	Illuminance	Lux	37.94	74.0	9.4	4.04	7.87
SITE	Illuminance	Lux	21.49	78.9	0.0	N.A.	N.A.
SPILL OF LIGHT	Illuminance	Lux	0.10	4.9	0.0	N.A.	N.A.

1 SITE LIGHTING PLAN
1 : 200

[PLOT DATE: 8/15/2024 4:34:49 PM]

BRAMPTON FIRE STATION 215

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4	ISSUED FOR ESA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

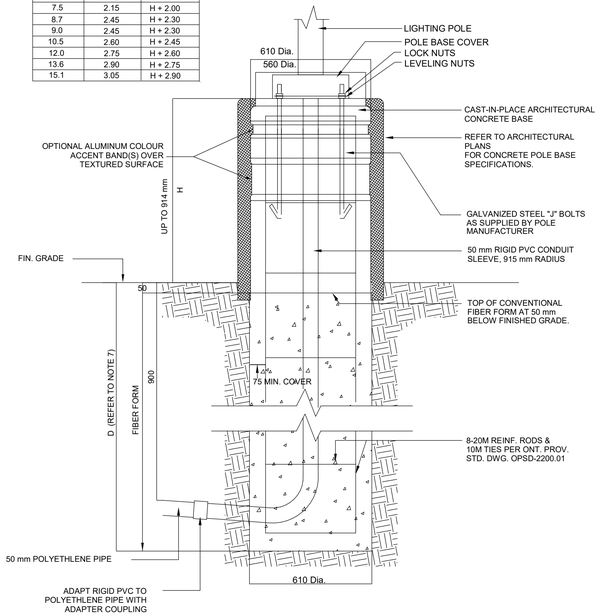
ELECTRICAL SITE LIGHTING PLAN

ISSUE DATE: 2024-08-16
DRAWN BY: E.S
CHECKED BY: T.S
PROJECT NO.: CM-22-269
SCALE: 1 : 200
DRAWING NO.: E-003

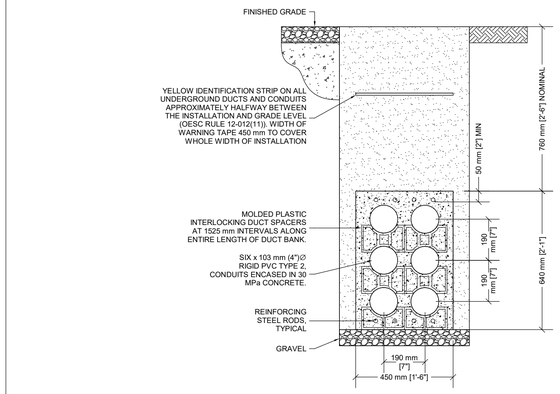
POLE LENGTH (m)	BASE BURIAL DEPTH D (m)	REINF. ROD LENGTH (m)
3.0	1.50	H + 1.35
5.6	2.15	H + 2.00
7.0	2.15	H + 2.00
7.5	2.15	H + 2.00
8.7	2.45	H + 2.30
9.0	2.45	H + 2.30
10.5	2.60	H + 2.45
12.0	2.75	H + 2.60
13.6	2.90	H + 2.75
15.1	3.05	H + 2.90

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES OR METRES
2. TOP OF FOUNDATION SHALL BE TROWELLED SMOOTH & LEVEL.
3. NOT USED.
4. MINIMUM OF TWO SLEEVES REQUIRED FOR EACH CONC. FOUNDATION UNLESS OTHERWISE SHOWN.
5. NOT USED.
6. CONTRACTOR TO VERIFY OPENING SIZE IN POLE BASE PLATE PRIOR TO SETTING CONDUIT SLEEVES.
7. SUBJECT TO SOIL CONDITIONS, REFER TO SOIL REPORT.



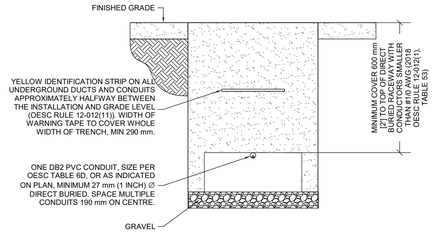
1 LIGHTING STANDARD ARCHITECTURAL BASE
N.T.S.



DETAIL NOTES:

1. DUCT BANK TO BE INSPECTED PRIOR TO POURING OF CONCRETE AND PRIOR TO BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION AND RECEIVE ALL NECESSARY APPROVALS.
2. 3x2 ALTERNATE DUCT BANK CONFIGURATION MAY ALSO BE USED.

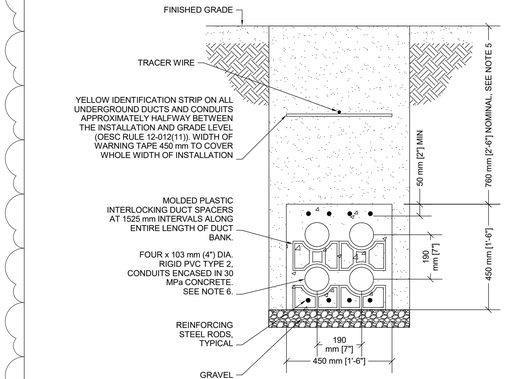
2 6-WAY COMMUNICATIONS DUCT BANK DETAIL
N.T.S.



NOTES:

1. METRIC DIMENSIONS GOVERN.
2. DIRECT BURIED RACEWAY DUCTS TO BE IN COMPLIANCE WITH 2018 ONTARIO ELECTRICAL SAFETY CODE (OESC), TABLE 53. MINIMUM COVER DEPTH MAY BE REDUCED BASED ON CRITERIA DESCRIBED IN TABLE 53.
3. DIRECT BURIED RACEWAY DUCTS TO BE INSPECTED PRIOR BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION (ESA) AND RECEIVE ALL NECESSARY APPROVALS.
4. THIS DETAIL DOES NOT APPLY WHERE CONDUCTOR SIZE IS #1/0 OR GREATER IN A DIRECT BURIED RACEWAY. PROVIDE AN AMPACITY CALCULATION IN ACCORDANCE WITH IEEE 835.

4 SINGLE DIRECT BURIED RACEWAY
N.T.S.



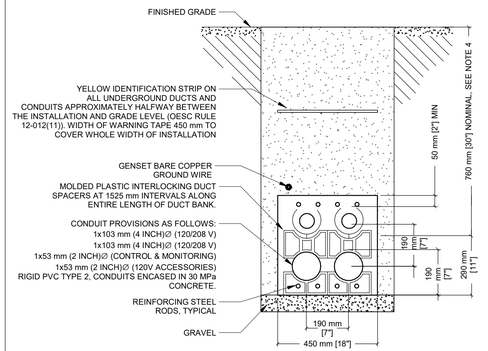
LOW VOLTAGE (BELOW 750 VOLT) DUCT BANK SECTION

NOTES:

1. DUCT BANK TO BE IN COMPLIANCE WITH 2021 ONTARIO ELECTRICAL SAFETY CODE (OESC), DIAGRAM D11, DETAIL 4, OR LATEST EDITION. WHERE ANY CONTRADICTION EXISTS BETWEEN THIS DETAIL AND THE OESC, THE OESC DIMENSIONS GOVERN.
2. DUCT BANK TO BE INSPECTED PRIOR TO POURING OF CONCRETE AND PRIOR TO BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION AND RECEIVE ALL NECESSARY APPROVALS.
3. AMPACITY OF COPPER 3-PHASE + NEUTRAL + GROUND FEEDER BASED ON 2018 OESC TABLES LISTED BELOW, LOWER OF TWO VALUES (LESS APPLICABLE VOLTAGE DROP):
   3.1. TABLE D11A, "4/PHASE DETAIL 4", SIZE 4/0 AWG: 4 x 229 AMPS = 916 AMPS.
   3.2. TABLE 2, SIZE 4/0 AWG: 4 x 230 AMPS = 920 AMPS.
4. ALTERNATE DUCT BANK CONFIGURATION MAY ONLY BE CONSIDERED BY THE CONSULTANT IF THE SAME FEEDER METHODOLOGY ABOVE IS CONSIDERED, OR AN AMPACITY CALCULATION IS PROVIDED IN ACCORDANCE WITH IEEE 835.
5. GREATER DEPTH THAN THE NOTED DIMENSION WILL RESULT IN A DECREASE IN THE DUCT BANK AMPACITY. REDUCTION IN THE DEPTH REQUIRES COORDINATION WITH OESC TABLE 53.
6. CONDUIT FILL IN ACCORDANCE WITH 2021 OESC RULE 12-910.

3 4-WAY LV DUCT BANK SECTION
N.T.S.

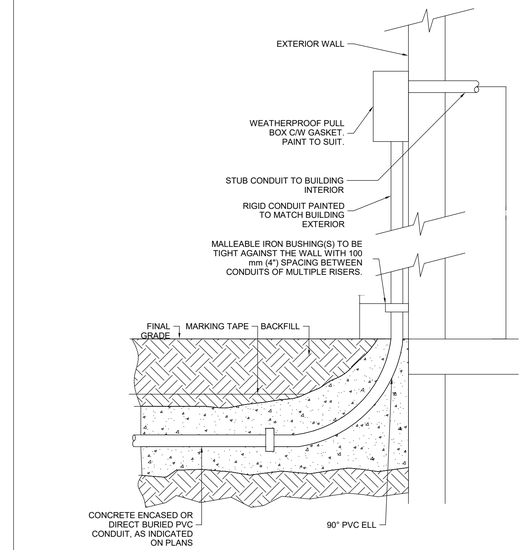
9



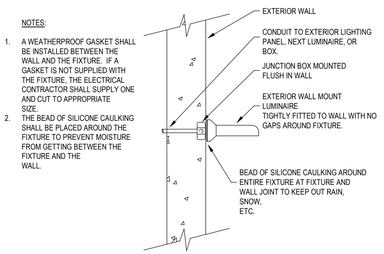
NOTES:

1. DUCT BANK TO BE IN COMPLIANCE WITH 2021 ONTARIO ELECTRICAL SAFETY CODE (OESC), DIAGRAM D11, OR LATEST EDITION. WHERE ANY CONTRADICTION EXISTS BETWEEN THIS DETAIL AND THE OESC, THE OESC DIMENSIONS GOVERN.
2. DUCT BANK TO BE INSPECTED PRIOR TO POURING OF CONCRETE AND PRIOR TO BACKFILL. COORDINATE WITH AUTHORITY HAVING JURISDICTION AND RECEIVE ALL NECESSARY APPROVALS.
3. AMPACITY OF COPPER FEEDER BASED ON 2021 OESC TABLES LISTED BELOW, LOWER OF THE TWO VALUES:
   REQUIRED: 600 A CAPACITY (NOT INCLUDING VOLTAGE DROP)
   FEEDER: ONE (1) CONDUCTOR PER PHASE (3 PHASE), PLUS GROUND
   3.1 TABLE D11A - "2/PHASE", SIZE 300 MCM = 658 A
4. UPPER TWO DUCTS (120 VOLT ACCESSORIES, AND MONITORING/CONTROL) INSTALLATION PER OESC RULE 12-012(3)(d).
5. ALTERNATE DUCT BANK CONFIGURATION MAY ONLY BE CONSIDERED BY THE CONSULTANT IF THE SAME FEEDER METHODOLOGY ABOVE IS CONSIDERED, OR AN AMPACITY CALCULATION IS PROVIDED IN ACCORDANCE WITH IEEE 835.
6. GREATER DEPTH THAN THE NOTED DIMENSION WILL RESULT IN A DECREASE IN THE DUCT BANK AMPACITY. REDUCTION IN THE DEPTH REQUIRES COORDINATION WITH OESC TABLE 53.
7. CONDUIT FILL IN ACCORDANCE WITH 2021 OESC RULE 12-910

7 GENERATOR DUCT BANK SECTION
N.T.S.



5 UNDERGROUND CONDUIT TRANSITION VIA BUILDING EXTERIOR
N.T.S.



NOTES:

1. A WEATHERPROOF GASKET SHALL BE INSTALLED BETWEEN THE WALL AND THE FIXTURE. IF A GASKET IS NOT SUPPLIED WITH THE FIXTURE, THE ELECTRICAL CONTRACTOR SHALL SUPPLY ONE AND CUT TO APPROPRIATE SIZE.
2. THE BEAD OF SILICONE CAULKING SHALL BE PLACED AROUND THE FIXTURE TO PREVENT MOISTURE FROM GETTING BETWEEN THE FIXTURE AND THE WALL.

6 SEALING OF WALL MOUNTED EXTERIOR LUMINAIRES
N.T.S.

BRAMPTON FIRE STATION 215

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250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
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WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
9	ISSUED FOR ADD-E02	2024-08-16
8	ISSUED FOR TENDER	2024-06-28
7	ISSUED FOR TENDER REVIEW	2024-06-11
6	ISSUED FOR PERMIT	2024-05-06
5	ISSUED FOR ESA REVIEW	2024-04-23
4	ISSUED FOR ALECTRA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL SITE PLAN DETAILS

ISSUE DATE: 2024-08-16

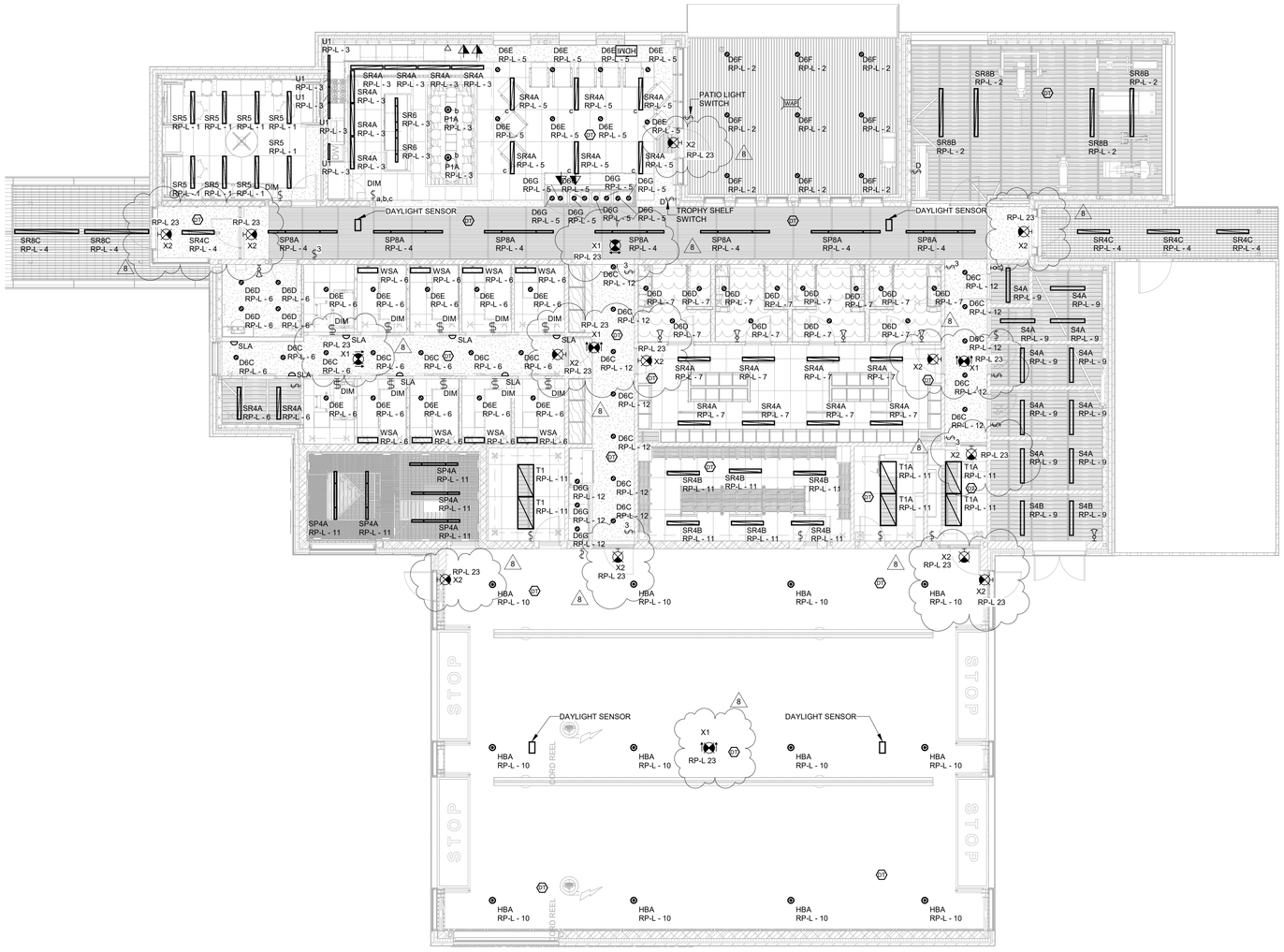
DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE: As indicated

DRAWING NO.:

E-103

[PLOT DATE: 8/15/2024 4:34:30 PM]



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3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

LEVEL 01 PLAN - LIGHTING

ISSUE DATE: 2024-08-16

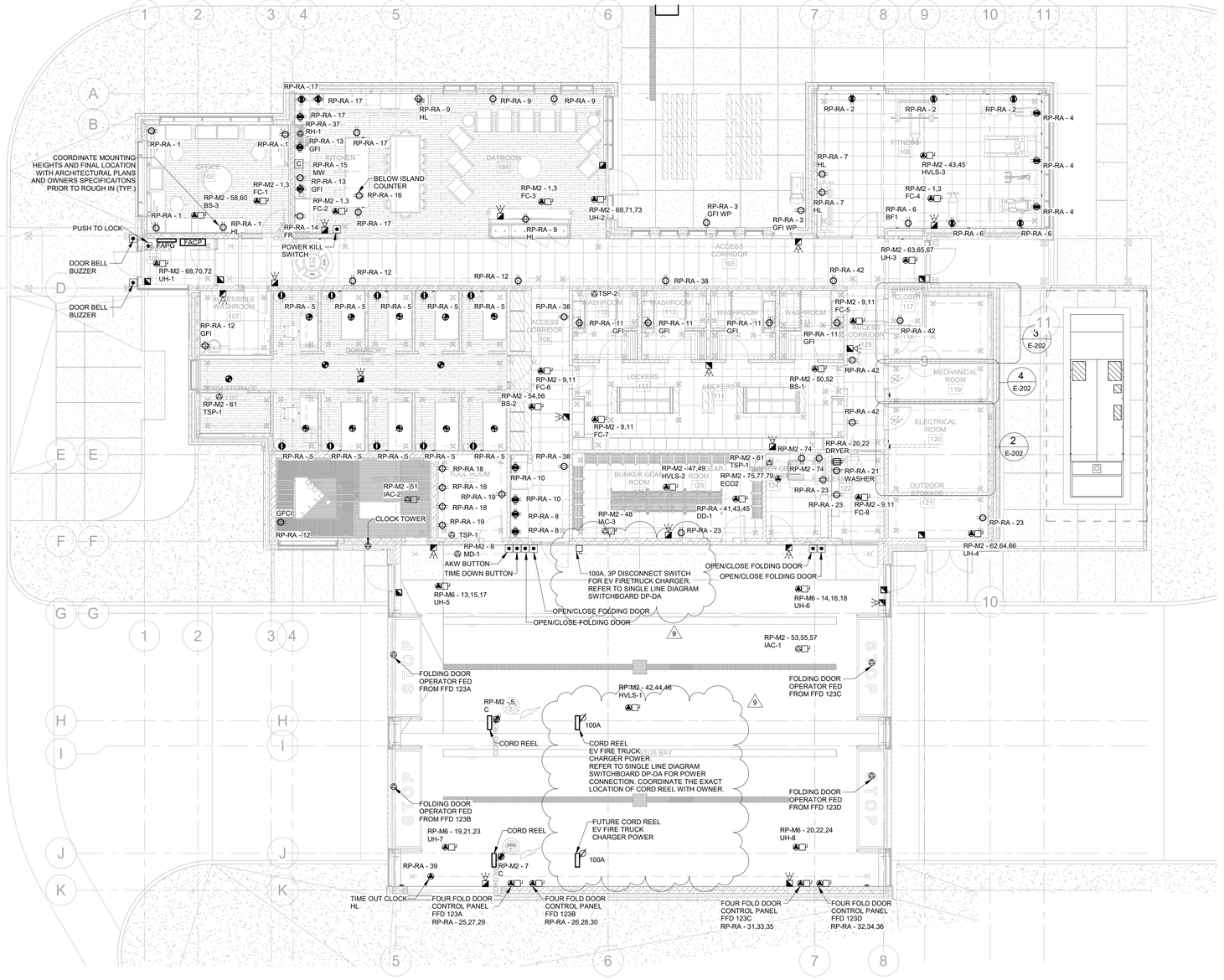
DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE: 1 : 100

DRAWING NO.:

E-201

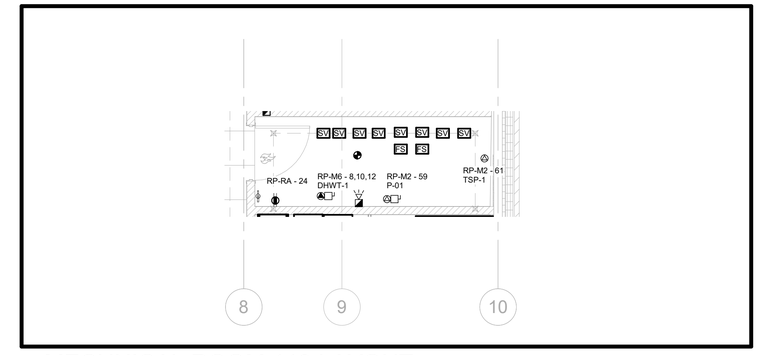
[PLOT DATE: 8/15/2024 4:34:56 PM]



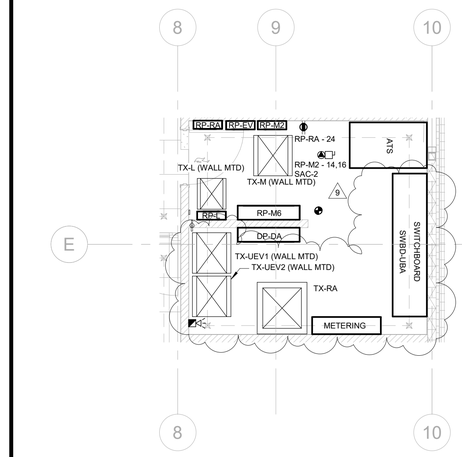
1 LEVEL 01 PLAN - POWER & SYSTEMS
1 : 100

GENERAL NOTES

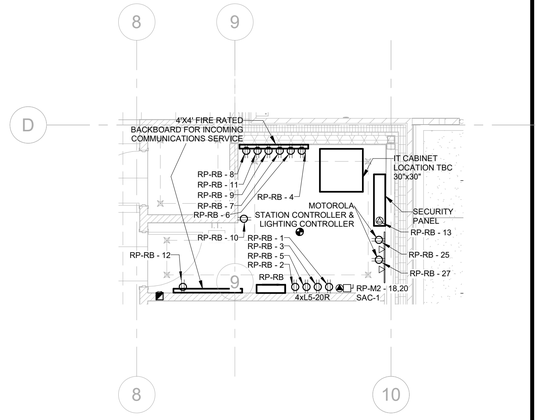
1. APPARATUS BAY IS TO BE CONSIDERED A WET LOACTION, DEFINED AS CATAGORY 1 IN OESC SECTION 22.



4 MECHNICAL ROOM 119 LAYOUT
1 : 50



2 ELECTRICAL ROOM 120 - LAYOUT
1 : 50



3 IT ROOM 118 - LAYOUT
1 : 50

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9	ISSUED FOR ADD-E02	2024-08-16
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3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

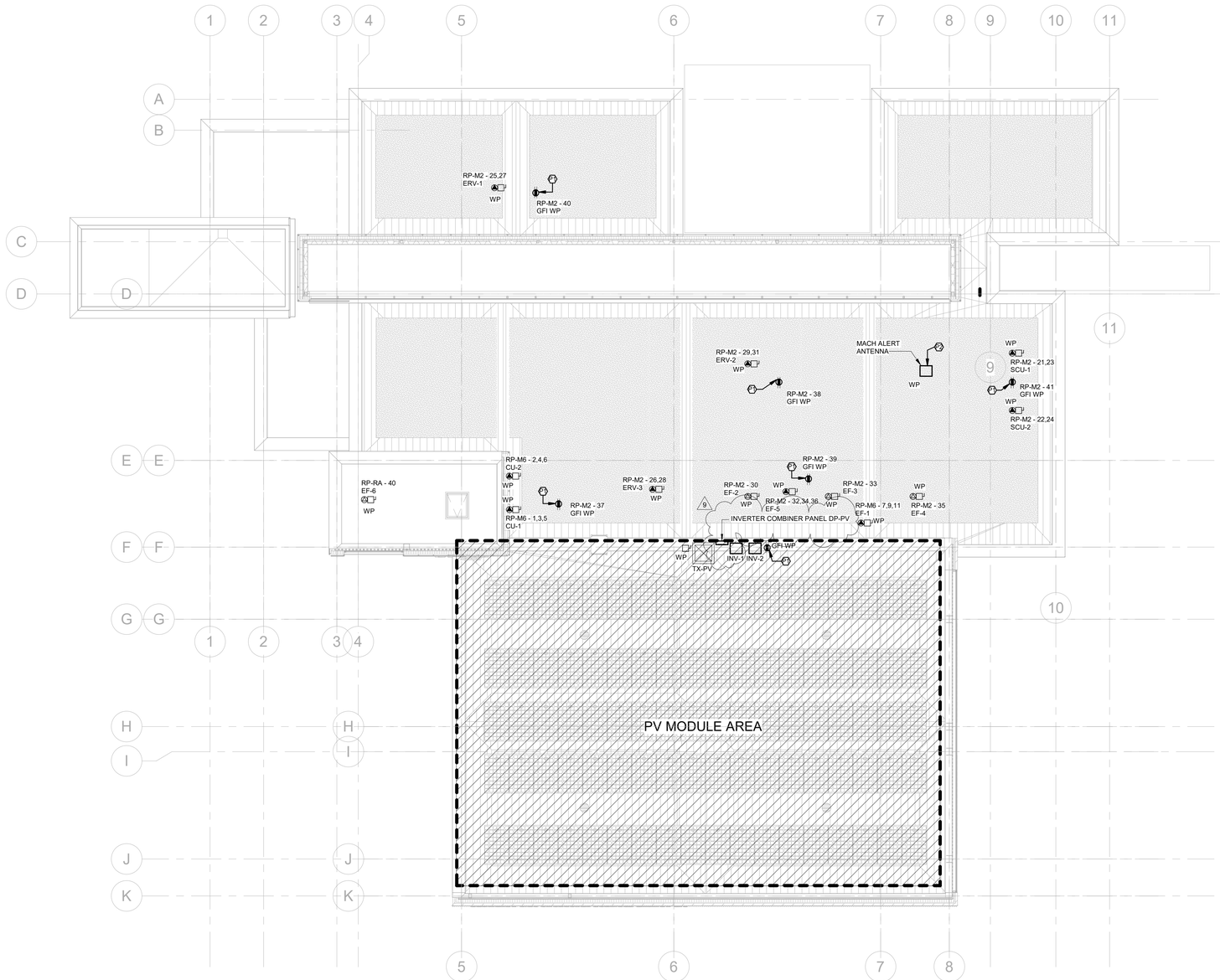
LEVEL 01 PLAN - POWER & SYSTEMS

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: As indicated

DRAWING NO.:

E-202

PLOT DATE: 8/15/2024 4:34:59 PM



1 ROOF PLAN - POWER & SYSTEMS
1 : 100

KEYNOTE LEGEND	
Key Value	Keynote Text
P1	PROVIDE WP GFI 5-20R @ 750mm (30") ABOVE FINISHED ROOF LEVEL C/W WET LOCATION COVER PLATE FOR POWER TO ROOF MOUNTED HVAC EQUIPMENT, TYPICAL. LOCATE WITHIN 7500mm (25 FEET) OF NEW HVAC EQUIPMENT, AND AT LEAST 200mm (6.5 FEET) AWAY FROM ROOF LINE. COVER PLATE TO BE MARKED "EXTRA DUTY". REFER TO 2021 OESC RULES 2-316, 26-708, AND 26-710, AND OESC BULLETIN 26-27-*. OR LATEST EDITION LABEL RECEPTACLE WITH PHENOLIC (LAMACOID) NAMEPLATE WITH PANELBOARD ID, CIRCUIT NUMBER, AND PANELBOARD LOCATION.
P2	ELECTRICAL CONTRACTOR TO PROVIDE A WEATHER PROOF BOX AT MACH ALERT ANTENNA AND 3/4" CONDUIT BACK TO MOTOROLA STATION CONTROLLER LOCATED IN IT ROOM 118. COORDINATE FINAL LOCATION OF ANTENNA WITH SUPPLIER.

BRAMPTON FIRE STATION 215

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5	ISSUED FOR PERMIT	2024-05-06
4	ISSUED FOR ESA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ROOF PLAN - POWER & SYSTEMS

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 100

DRAWING NO.:
E-302

I PLOT DATE: 8/15/2024 4:35:02 PM

50kW DC Mobile Charger CCS1 UL
Product Code HE9819025-01

The Heliox 50 kW Mobile charger is a high powered Level 3 DC charger that provides cost effective, flexible mobile charging for fleet owners, transit operators and EV service and maintenance providers. It is powerful enough to provide entry level depot charging solutions for EV owners starting out with electrification of fleets but not yet ready to invest in an expensive fixed depot charging installation.

This charger is typically used by:

- OEM's charging BEV's on their production line and for interoperability testing
- Transit operators charging small fleets or as a backup charger for fixed chargers installation
- Fleet operators purchasing their first BEV's
- In maintenance garages of Transit and Fleet operators to charge BEV's in for service

This charger is made in America is UL listed and can normally be delivered out of stock with a short lead time.

Power requirements
480Vac
3 phase (no neutral)
65 A circuit (minimum) 100A recommended

Mobile Charger
Fast DC 50 mobile

Specifications

The Heliox mobile charger is the ideal solution for bus depots, truck workshops or during driving events. The FAST DC 50 mobile* is lightweight, mobile, easy to handle and designed with service and maintenance personnel in mind.

Using this charger is very straight forward. Thanks to SAE J1772 charging standard it is plug and play, once connected to the vehicle the charging process will automatically start.

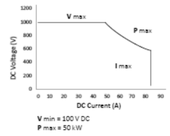
The yellow frame with wheels creates flexibility and protection. Available with SAE J1772 compliant CCS-1 up to 1000Vdc.

The extra long 9.10 ft CCS-cable gives you ultimate flexibility.

Dimensions

H: 35.43 inches
W: 19.69 inches
D: 19.69 inches

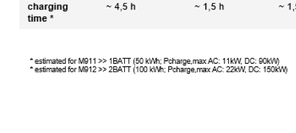
Power Curve



V min = 100 V DC
P max = 50 kW

General	Charger
Environment operating	Indoor/Outdoor
Temperature	-4 to 104 °F
Charging standard	SAE J1772
Compliance and safety	UL 2202* / UL2231*
Output DC voltage range	100 - 1000 V (CCS)
Rated DC output power	50 kW
Rated DC output current	84 A
Input connections	3P + PE
Input power rating; full load / idle	54 kVA / 15 VA
Input AC line-line voltage range	480 V +/-10%
Input AC phase current; maximum	65, inrush current limited
Power factor	> 0,95
Power conversion efficiency	> 93%
Dielectric withstand	2500 V RMS
Network connection	GPRS / 3G modem
Protection	NEMA 3R / IK10
Operational noise level	<55 dB(A) @ 3.28 ft
System weight	273.37 lbs

*** Specifications are subject to change without notice.**
*** Under development**



Vehicle Charging Port: CCS Combo Type 2

- possibility for **AC** and **DC** charging, depending on the available charging infrastructure
- located on **driver's side**
- serves as vehicle's "shoreline" in fire department (enables permanent electric supply and ensures air system with HV-compressor)

	AC	DC
Performance	@ 400V AC up to **11kW** [M911] or up to **22kW** [M912]	@ 650V DC up to **90kW** [M911] or up to **150kW** [M912]
Time* (* estimated for **M911**-vehicle + SOC 0-80% + best conditions)	~ 4,5 hours	~ 30 min
Time* (* estimated for **M912**-vehicle + SOC 0-80% + best conditions)	~ 4,5 hours	~ 45 min
Charging connection		

	DiniTech AC NRG kick	Heliox DC 40 kW	Heliox DC 50 kW	Designwerk DC 88 kW	Kreisel DC Chimero	ABB DC Terra 54	ABB DC HVC depot	Charge Point Express 250
Dimension (LxWxH)	215 x 90 x 84 mm	500 x 500 x 900 mm	508 x 508 x 914 mm	500 x 380 x 900 mm	1.000 x 1.310 x 2.340 mm	780 x 565 x 1.900 mm	1.770 x 770 x 2.300 + 600 x 400 x 1.914 mm	1.177 x 441 x 2.241 mm
Weight	4 kg	120 kg	123 kg	48 kg	1.976 kg	350 kg	1.340 + 181 kg	250 kg
Power input	22 kW CEE32A (11 kW CEE16A)	40 kW CEE63A	54 kVA	88 kW CEE125A, (40 kW CEE63A)	88 kW CEE125A, (40 kW CEE63A)	400V AC 50Hz 480V AC 60Hz	400V AC 50Hz/60Hz	400V AC 96A 50Hz 480V AC 80A 60Hz
Power output	up to **22 kW**	up to **40 kW**	up to **50 kW**	up to **83 kW**	up to **160 kW** (75 kWh battery)	up to **50 kW**	up to **150 kW**	up to **62,5 kW** (2x paired 125 kW)
Certification	CE	CE	UL	CE	CE	CE, UL	CE, UL	CE, UL
Tested with RT by RED	✓				✓			
charging time *	~ 4,5 h	~ 1,5 h	~ 1,5 h	~ 1 h	~ 45 min			

* estimated for M911 >> 1BATT (50 kWh; Pcharge,max AC: 11kW, DC: 90kW)
* estimated for M912 >> 2BATT (100 kWh; Pcharge,max AC: 22kW, DC: 150kW)

GENERAL NOTES

1. EV FIRE TRUCK MOBILE CHARGER IS OWNER SUPPLIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE AC POWER SUPPLY TO THE EV CHARGER. REFER TO SINGLE LINE DIAGRAM ON SHEET E-001.

6

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
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4	ISSUED FOR TENDER REVIEW	2024-06-11
3	ISSUED FOR PERMIT	2024-05-06
2	ISSUED FOR ESA REVIEW	2024-04-23
1	ISSUED FOR 60% CD	2024-04-16

DRAWING TITLE:

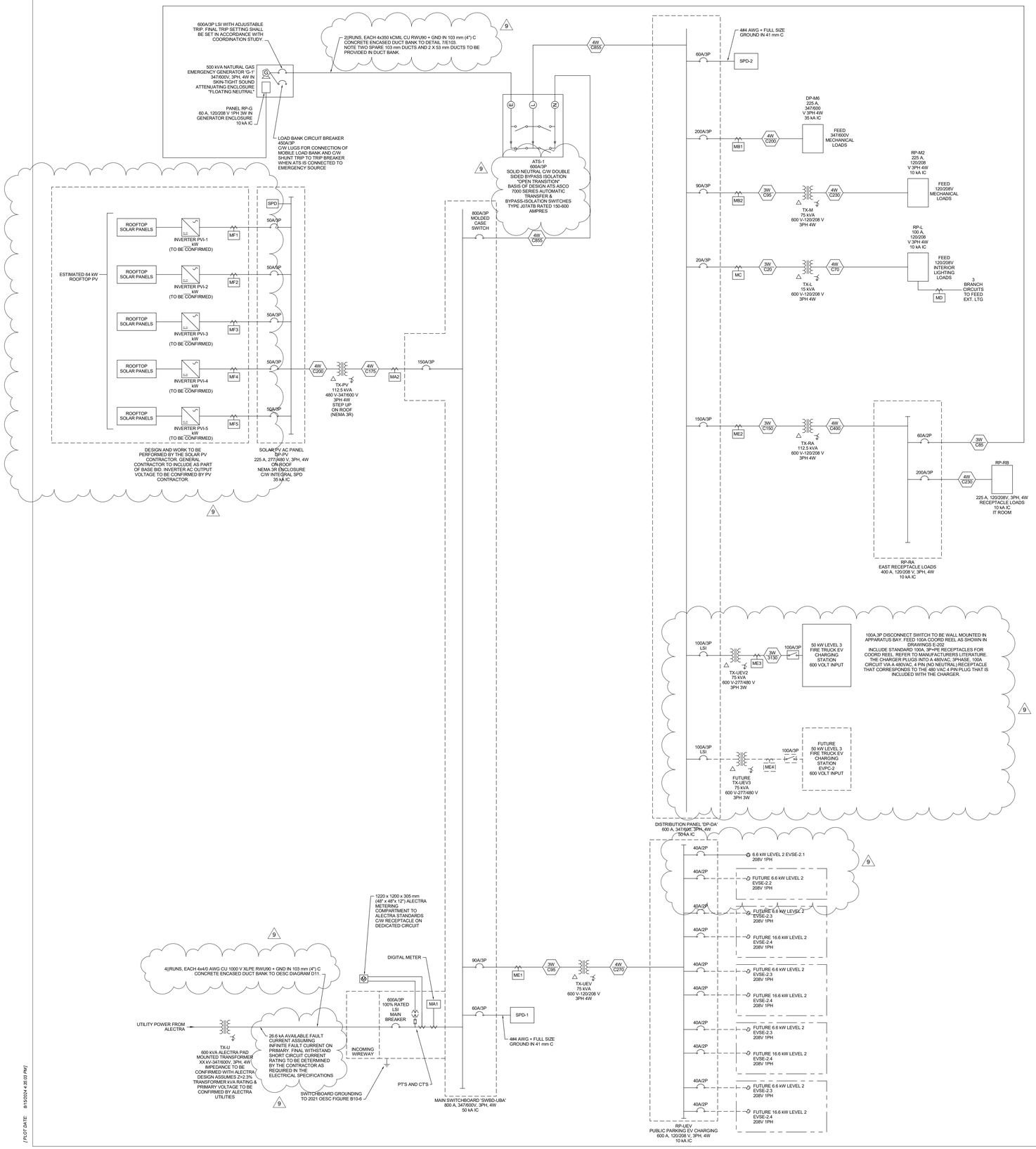
EV FIRE TRUCK CHARGER DETAILS

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 12" = 1'-0"

DRAWING NO.:

E-808

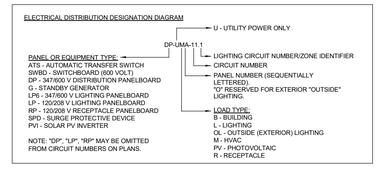
[PLOT DATE: 8/15/2024 4:26:03 PM]



ELECTRICAL DISTRIBUTION DESIGNATION DIAGRAM

PANEL OR EQUIPMENT TYPE:
ATS - AUTOMATIC TRANSFER SWITCH
SWBD - SWITCHBOARD (600 VOLT)
DP - 347/600 V DISTRIBUTION PANELBOARD
G - STANDBY GENERATOR
LP6 - 347/600 V LIGHTING PANELBOARD
LP - 120/208 V LIGHTING PANELBOARD
RP - 120/208 V RECEPTACLE PANELBOARD
SPD - SURGE PROTECTIVE DEVICE
PVI - SOLAR PV INVERTER

NOTE: "DP", "LP", "RP" MAY BE OMITTED FROM CIRCUIT NUMBERS ON PLANS.



ELECTRICAL ENERGY MONITORING/METERING SCHEDULE

WTMTR	TOTAL DOMESTIC WATER UTILIZATION - UTILITY
NGMTR	TOTAL NATURAL GAS UTILIZATION - UTILITY
ELCMTR	TOTAL ELECTRICAL ENERGY - UTILITY
SOLMTR	TOTAL ELECTRICAL ENERGY - SOLAR PV
MB1 MB2	HVAC SYSTEMS
MC	INTERIOR LIGHTING
MD	EXTERIOR LIGHTING
ME1 ME2 ME3	RECEPTACLE CIRCUITS
ME4	FUTURE RECEPTACLE CIRCUIT
MF1 MF2 MF3 MF4 MF5	ROOFTOP SOLAR ENERGY GENERATION
MF6 MF7	BIPV ENERGY GENERATION

REFER TO SECTION 26 27 13 FOR ELECTRICITY METERING REQUIREMENTS.

3-WIRE COPPER FEEDER SCHEDULE

CONDUCTOR TYPE C = COPPER A = ALUMINUM — QUANTITY OF CONDUCTORS PER RUN (3W) — AMPACITY

ROW	FEEDER ID	QTY OF PARALLEL RUNS	CONDUCTORS QTY	CONDUCTORS SIZE	BONDING SIZE	CONDUIT SIZE (mm)	CONDUIT SIZE (IN)	CONDUCTOR MATERIAL	AMPACITY PER RUN	AMPACITY TOTAL ALL RUNS	REFERENCE (75 DEG C UNLESS NOTED OTHERWISE)
1	3WC20	1	3	#12 AWG	#12 AWG	21	3/4	COPPER	20	20	OESC TABLE 2 (60 DEG C)
2	3WC30	1	3	#10 AWG	#12 AWG	21	3/4	COPPER	30	30	OESC TABLE 2 (60 DEG C)
3	3WC40	1	3	#8 AWG	#10 AWG	27	1	COPPER	40	40	OESC TABLE 2 (60 DEG C)
4	3WC55	1	3	#6 AWG	#10 AWG	27	1	COPPER	55	55	OESC TABLE 2 (60 DEG C)
5	3WC70	1	3	#4 AWG	#8 AWG	35	1-1/4	COPPER	70	70	OESC TABLE 2 (60 DEG C)
6	3WC85	1	3	#3 AWG	#8 AWG	35	1-1/4	COPPER	85	85	OESC TABLE 2 (60 DEG C)
7	3WC95	1	3	#2 AWG	#8 AWG	35	1-1/4	COPPER	95	95	OESC TABLE 2 (60 DEG C)
8	3WC130	1	3	#1 AWG	#6 AWG	41	1-1/2	COPPER	130	130	OESC TABLE 2
9	3WC150	1	3	#1/0 AWG	#6 AWG	53	2	COPPER	150	150	OESC TABLE 2
10	3WC175	1	3	#2/0 AWG	#6 AWG	53	2	COPPER	175	175	OESC TABLE 2
11	3WC200	1	3	#3/0 AWG	#6 AWG	53	2	COPPER	200	200	OESC TABLE 2
12	3WC230	1	3	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	230	OESC TABLE 2
13	3WC255	1	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	255	OESC TABLE 2
14	3WC285	1	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	285	OESC TABLE 2
15	3WC300	2	3	#1/0 AWG	#6 AWG	53	2	COPPER	150	300	OESC TABLE 2
16	3WC310	1	3	350 MCM	#3 AWG	78	3	COPPER	310	310	OESC TABLE 2
17	3WC350	2	3	#2/0 AWG	#6 AWG	53	2	COPPER	175	350	OESC TABLE 2
18	3WC380	1	3	500 MCM	#3 AWG	103	4	COPPER	380	380	OESC TABLE 2
19	3WC400	2	3	#3/0 AWG	#6 AWG	53	2	COPPER	200	400	OESC TABLE 2
20	3WC460	2	3	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	460	OESC TABLE 2
21	3WC475	1	3	750 MCM	#2 AWG	103	4	COPPER	380	475	OESC TABLE 2
22	3WC510	2	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	510	OESC TABLE 2
23	3WC570	2	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	570	OESC TABLE 2
24	3WC620	2	3	350 MCM	#3 AWG	78	3	COPPER	310	620	OESC TABLE 2
25	3WC760	2	3	500 MCM	#3 AWG	103	4	COPPER	380	760	OESC TABLE 2
26	3WC765	3	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	765	OESC TABLE 2
27	3WC855	3	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	855	OESC TABLE 2

REMARKS:
1. SCHEDULE ASSUMES NO TEMPERATURE RATING INDICATED ON BREAKER LUGS.

4-WIRE COPPER FEEDER SCHEDULE

CONDUCTOR TYPE C = COPPER A = ALUMINUM — QUANTITY OF CONDUCTORS PER RUN (4W) — AMPACITY

ROW	FEEDER ID	QTY OF PARALLEL RUNS	CONDUCTORS QTY	CONDUCTORS SIZE	BONDING SIZE	CONDUIT SIZE (mm)	CONDUIT SIZE (IN)	CONDUCTOR MATERIAL	AMPACITY PER RUN	AMPACITY TOTAL ALL RUNS	REFERENCE (75 DEG C UNLESS NOTED OTHERWISE)
1	4WC20	1	4	#12 AWG	#12 AWG	21	3/4	COPPER	20	20	OESC TABLE 2 (60 DEG C)
2	4WC30	1	4	#10 AWG	#12 AWG	21	3/4	COPPER	30	30	OESC TABLE 2 (60 DEG C)
3	4WC40	1	4	#8 AWG	#10 AWG	27	1	COPPER	40	40	OESC TABLE 2 (60 DEG C)
4	4WC55	1	4	#6 AWG	#10 AWG	27	1	COPPER	55	55	OESC TABLE 2 (60 DEG C)
5	4WC70	1	4	#4 AWG	#8 AWG	35	1-1/4	COPPER	70	70	OESC TABLE 2 (60 DEG C)
6	4WC85	1	4	#3 AWG	#8 AWG	35	1-1/4	COPPER	85	85	OESC TABLE 2 (60 DEG C)
7	4WC95	1	4	#2 AWG	#8 AWG	35	1-1/4	COPPER	95	95	OESC TABLE 2 (60 DEG C)
8	4WC130	1	4	#1 AWG	#6 AWG	41	1-1/2	COPPER	130	130	OESC TABLE 2
9	4WC150	1	4	#1/0 AWG	#6 AWG	53	2	COPPER	150	150	OESC TABLE 2
10	4WC175	1	4	#2/0 AWG	#6 AWG	53	2	COPPER	175	175	OESC TABLE 2
11	4WC200	1	4	#3/0 AWG	#6 AWG	53	2	COPPER	200	200	OESC TABLE 2
12	4WC230	1	4	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	230	OESC TABLE 2
13	4WC255	1	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	255	OESC TABLE 2
14	4WC285	1	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	285	OESC TABLE 2
15	4WC300	2	4	#1/0 AWG	#6 AWG	53	2	COPPER	150	300	OESC TABLE 2
16	4WC310	1	4	350 MCM	#3 AWG	78	3	COPPER	310	310	OESC TABLE 2
17	4WC350	2	4	#2/0 AWG	#6 AWG	53	2	COPPER	175	350	OESC TABLE 2
18	4WC380	1	4	500 MCM	#3 AWG	103	4	COPPER	380	380	OESC TABLE 2
19	4WC400	2	4	#3/0 AWG	#6 AWG	53	2	COPPER	200	400	OESC TABLE 2
20	4WC460	2	4	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	460	OESC TABLE 2
21	4WC475	1	4	750 MCM	#2 AWG	103	4	COPPER	380	475	OESC TABLE 2
22	4WC510	2	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	510	OESC TABLE 2
23	4WC570	2	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	570	OESC TABLE 2
24	4WC620	2	4	350 MCM	#3 AWG	78	3	COPPER	310	620	OESC TABLE 2
25	4WC760	2	4	500 MCM	#3 AWG	103	4	COPPER	380	760	OESC TABLE 2
26	4WC765	3	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	765	OESC TABLE 2
27	4WC855	3	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	855	OESC TABLE 2
28	4WC1860	6	4	350 MCM	#3 AWG	78	3	COPPER	310	1860	OESC TABLE 2

REMARKS:
1. SCHEDULE ASSUMES NO TEMPERATURE RATING INDICATED ON BREAKER LUGS.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
9	ISSUED FOR ADD-E02	2024-08-16
8	ISSUED FOR TENDER	2024-06-28
7	ISSUED FOR TENDER REVIEW	2024-06-11
6	ISSUED FOR PERMIT	2024-05-06
5	ISSUED FOR ESA REVIEW	2024-04-23
4	ISSUED FOR ALECTRA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

SINGLE LINE DIAGRAM

ISSUE DATE: 2024-08-16
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 12" = 1'-0"

DRAWING NO.:

E-901

[PLOT DATE: 8/15/2024 4:35:03 PM]

Branch Panel: RP-RA

Location: ELECTRICAL ROOM 120
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating: 1 A

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	RECEPTACLE	4	15 A	1	720 VA	540 VA		1	20 A	3	POWER	2
3	POWER	2	20 A	1		360 VA	540 VA	1	20 A	3	POWER	4
5	POWER	10	20 A	1			1800 VA 540 VA	1	20 A	3	POWER	6
7	POWER	2	20 A	1	360 VA	360 VA		1	20 A	2	POWER	8
9	POWER	4	20 A	1		720 VA	360 VA	1	20 A	2	POWER	10
11	POWER	4	20 A	1			720 VA 720 VA	1	20 A	4	POWER	12
13	POWER	2	20 A	1	360 VA	180 VA		1	20 A	1	FRIDGE	14
15	MICROWAVE	1	20 A	1		180 VA	180 VA	1	20 A	1	POWER	16
17	POWER	5	20 A	1			900 VA 540 VA	1	20 A	3	POWER	18
19	POWER	2	20 A	1	360 VA	2496 VA		2	20 A	1	POWER	20
21	POWER	1	20 A	1		180 VA	2496 VA					22
23	POWER	4	20 A	1			720 VA 360 VA	1	20 A	2	POWER	24
25					167 VA	167 VA						26
27	POWER	1	20 A	3		167 VA	167 VA	3	20 A	1	POWER	28
29							167 VA 167 VA					30
31					167 VA	167 VA						32
33	POWER	1	20 A	3		167 VA	167 VA	3	20 A	1	POWER	34
35							167 VA 167 VA					36
37	POWER	1	20 A	1	500 VA	540 VA		1	20 A	3	POWER	38
39	POWER	1	20 A	1		500 VA	500 VA	1	20 A	1	POWER	40
41							167 VA 720 VA	1	20 A	4	POWER	42
43	POWER	1	20 A	3	167 VA	500 VA		2	20 A	2	POWER	44
45						167 VA	500 VA					46
47	POWER	2	20 A	2			500 VA 500 VA	2	20 A	2	POWER	48
49					500 VA	500 VA						50
51	POWER	2	20 A	2		500 VA	500 VA	2	20 A	2	POWER	52
53							500 VA 500 VA					54
55	POWER	2	20 A	2	500 VA							56
57						500 VA						58
59												60
				Total Load:	9249 VA	8849 VA	9853 VA					
				Total Amps:	78 A	74 A	83 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	27952 VA	100.00%	27952 VA		
				Total Conn. Load:	27952 VA
				Total Est. Demand:	27952 VA
				Total Conn.:	78 A
				Total Est. Demand:	78 A

Notes:

Branch Panel: RP-RB

Location: I.T. 118
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating:

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	POWER	1	20 A	1	180 VA			180 VA			1	20 A	1	POWER	2
3	POWER	1	20 A	1		180 VA			180 VA		1	20 A	1	POWER	4
5	POWER	1	20 A	1			180 VA			180 VA	1	20 A	1	POWER	6
7	POWER	1	20 A	1	180 VA			180 VA			1	20 A	1	POWER	8
9	POWER	1	20 A	1		180 VA			180 VA		1	20 A	1	POWER	10
11	POWER	1	20 A	1			180 VA			180 VA	1	20 A	1	POWER	12
13	POWER	1	20 A	1	500 VA			0 VA			1	20 A	--	SPARE	14
15	SPARE	--	20 A	1		0 VA			0 VA		1	20 A	--	SPARE	16
17	SPARE	--	20 A	1			0 VA			0 VA	1	20 A	--	SPARE	18
19	SPARE	--	20 A	1	0 VA			0 VA			1	20 A	--	SPARE	20
21	SPARE	--	20 A	1		0 VA			0 VA		1	20 A	--	SPARE	22
23	SPARE	--	20 A	1			0 VA			0 VA	1	20 A	--	SPARE	24
25	POWER	1	15 A	1	180 VA										26
27	POWER	1	15 A	1		180 VA									28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
				Total Load:	1400 VA		900 VA			720 VA					
				Total Amps:	12 A		8 A			6 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	3020 VA	100.00%	3020 VA		
				Total Conn. Load:	3020 VA
				Total Est. Demand:	3020 VA
				Total Conn.:	8 A
				Total Est. Demand:	8 A

Notes:

Branch Panel: RP-M2

Location: ELECTRICAL ROOM 120
Supply From:
Mounting:
Enclosure:

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating:
MCB Rating: 1 A

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	FC-1, FC-2, FC-3, FC-4	4	20 A	2	1000 VA							2
3						1000 VA						4
5	POWER	1	20 A	1			180 VA					6
7	POWER	1	20 A	1	180 VA	500 VA		1	20 A	1	POWER	8
9	FC-5, FC-6, FC-7, FC-8	4	20 A	2		1000 VA						10
11							1000 VA					12
13					250 VA							14
15						250 VA		2	20 A	1	SAC-2	16
17												18
19					250 VA							20
21	SCU-1	1	30 A	2		250 VA	250 VA					22
23							250 VA 250 VA	2	30 A	1	SCU-2	24
25	ERV-1	1	15 A	2	250 VA	250 VA						26
27						250 VA	250 VA	2	15 A	1	ERV-3	28
29	ERV-2	1	15 A	2			250 VA 500 VA	1	20 A	1	EF-2	30
31					250 VA	167 VA						32
33	EF-3	1	20 A	1		500 VA	167 VA	3	20 A	1	EF-5	34
35	EF-4	1	20 A	1			500 VA 167 VA					36
37	RECEPTACLE	1	20 A	1	180 VA	180 VA		1	20 A	1	RECEPTACLE	38
39	RECEPTACLE	1	20 A	1		180 VA	180 VA	1	20 A	1	RECEPTACLE	40
41	RECEPTACLE	1	20 A	1			180 VA 167 VA					42
43	HVLS-3	1	20 A	2	250 VA	167 VA		3	20 A	1	HVLS-1	44
45						250 VA	167 VA					46
47	HVLS-2	1	20 A	2			250 VA 500 VA	1	20 A	1	IAC-3	48
49					250 VA	250 VA		2	20 A	1	BS-1	50
51	IAC-2	1	20 A	1		500 VA	250 VA					52
53	IAC-1	1	20 A	3			167 VA 250 VA	2	20 A	1	BS-2	54
55					167 VA	250 VA						56
57						167 VA	250 VA	2	20 A	1	BS-3	58
59	P-01	1	20 A	1			500 VA 250 VA					60
61	POWER	3	20 A	1	1500 VA	167 VA						62
63	UH-3	1	15 A	3		167 VA	167 VA	3	15 A	1	UH-4	64
65							167 VA 167 VA					66
67					167 VA	167 VA						68
69	UH-2	1	15 A	3		167 VA	167 VA	3	15 A	1	UH-1	70
71							167 VA 167 VA					72
73					167 VA	360 VA		1	20 A	2	POWER	74
75	POWER	1	20 A	3		167 VA						76
77							167 VA					78
79					167 VA							80
81	SPARE	--	20 A	1		0 VA	0 VA	1	20 A	--	SPARE	82
83	SPARE	--	20 A	1			0 VA 0 VA	1	20 A	--	SPARE	84
				Total Load:	7483 VA	6693 VA	6443 VA					
				Total Amps:	63 A	56 A	54 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	20620 VA	100.00%	20620 VA		
				Total Conn. Load:	20620 VA
				Total Est. Demand:	20620 VA
				Total Conn.:	57 A
				Total Est. Demand:	57 A

Notes:

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
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WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
3	ISSUED FOR ADD-E02	2024-08-16
2	ISSUED FOR ADD-E01	2024-08-09
1	ISSUED FOR TENDER	2024-06-28

DRAWING TITLE:

ELECTRICAL
PANELBOARD
SCHEDULES I

ISSUE DATE: 2024-08-16
DRAWN BY: Author
CHECKED BY: Checker
PROJECT NO.: CM-22-269
SCALE:

DRAWING NO.:

E-904

[PLOT DATE: 8/15/2024 4:35:08 PM]

Branch Panel: RP-M6

Location: ELECTRICAL ROOM 120	**Volts:** 347/600V	**A.I.C. Rating:**
Supply From:	**Phases:** 3	**Mains Type:**
Mounting:	**Wires:** 4	**Mains Rating:**
Enclosure:		**MCB Rating:**

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1					167 VA			167 VA							2
3	CU-1	1	50 A	3		167 VA			167 VA		3	20 A	1	CU-2	4
5							167 VA			167 VA					6
7					167 VA			167 VA							8
9	EF-1	1	20 A	3		167 VA			167 VA		3	20 A	1	DHWT-1	10
11							167 VA			167 VA					12
13					167 VA			167 VA							14
15	UH-5	1	20 A	3		167 VA			167 VA		3	20 A	1	UH-6	16
17							167 VA			167 VA					18
19					167 VA			167 VA							20
21	UH-7	1	20 A	3		167 VA			167 VA		3	20 A	1	UH-8	22
23							167 VA			167 VA					24
25	LIGHTING - EXTERIOR	6	20 A	1	436 VA										26
27	LIGHTING - EXTERIOR	5	20 A	1		294 VA									28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
				Total Load:	1753 VA		1615 VA		1333 VA						
				Total Amps:	5 A		5 A		4 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting - Exterior	730 VA	125.00%	912 VA		
POWER	4000 VA	100.00%	4000 VA	**Total Conn. Load:**	4699 VA
				Total Est. Demand:	4875 VA
				Total Conn.:	5 A
				Total Est. Demand:	5 A

Notes:

Branch Panel: RP-L

Location: ELECTRICAL ROOM 120	**Volts:** 120/208 Wye	**A.I.C. Rating:**
Supply From:	**Phases:** 3	**Mains Type:**
Mounting:	**Wires:** 4	**Mains Rating:**
Enclosure:		**MCB Rating:**

Notes:

CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
1	LIGHTING	8	15 A	1	742 VA			239 VA			1	15 A	13	LIGHTING	2
3	LIGHTING	16	15 A	1		700 VA			557 VA		1	15 A	13	LIGHTING	4
5	LIGHTING	22	15 A	1			524 VA			620 VA	1	15 A	31	LIGHTING	6
7	LIGHTING	20	15 A	1	650 VA			320 VA			1	20 A	16	LIGHTING	8
9	LIGHTING	12	15 A	1		559 VA			1219 VA		1	15 A	12	LIGHTING	10
11	LIGHTING	17	15 A	1			1023 VA			97 VA	1	15 A	15	LIGHTING	12
13	SPARE	--	15 A	1	0 VA			0 VA			1	15 A	--	SPARE	14
15	SPARE	--	15 A	1		0 VA			0 VA		1	15 A	--	SPARE	16
17	SPARE	--	15 A	1			0 VA			0 VA	1	15 A	--	SPARE	18
19	SPARE	--	15 A	1	0 VA			0 VA			1	15 A	--	SPARE	20
21	SPARE	--	15 A	1		0 VA			0 VA		1	15 A	--	SPARE	22
23	EXIT SIGNS	17	20 A	1			620 VA			0 VA	1	15 A	--	SPARE	24
25															26
27															28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
				Total Load:	1950 VA		3007 VA		2879 VA						
				Total Amps:	16 A		26 A		25 A						

7

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LIGHTING	7329 VA	100.00%	7329 VA		
POWER	500 VA	100.00%	500 VA	**Total Conn. Load:**	7827 VA
				Total Est. Demand:	7827 VA
				Total Conn.:	22 A
				Total Est. Demand:	22 A

Notes:

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP

250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
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WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
7	ISSUED FOR ADD-E02	2024-08-16
6	ISSUED FOR TENDER	2024-06-28
5	ISSUED FOR TENDER REVIEW	2024-06-11
4	ISSUED FOR PERMIT	2024-05-06
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

ELECTRICAL PANELBOARD SCHEDULES II

ISSUE DATE: 2024-08-16

DRAWN BY: E.S CHECKED BY: T.S

PROJECT NO.: CM-22-269 SCALE:

DRAWING NO.:

E-905

[PLOT DATE: 8/15/2024 4:35:06 PM]

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	August 22, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

Distribution

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Addendum #:	M02
Revision #:	0

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Specifications [Refer to the attached specifications for details]:

.1 25 06 00.00 - Integrated Automation Points Schedule

i) Updated Integrated Automation Point Schedule.

2.0 Revisions to Drawings [Refer to attached drawings for details]:

.1 Drawing M-301 – LEVEL 01 PLAN - VENTILATION

i) Added tagging for exhaust tail pipe guide rail.

ii) Added symbol for SO2

.2 Drawing M-751– MECHANICAL CONTROL SEQUENCES I

i) Updated apparatus bay fan control sequence

ii) Updated ceiling mounted destratification fan(HVLS) control sequence

.3 Drawing M-753– MECHANICAL CONTROL SEQUENCES III

i) Added domestic hot water tank control sequence

.4 Drawing M-754– MECHANICAL CONTROL SEQUENCES IV

i) Added VRF fan coil unit control sequence

ii) Added energy recovery ventilators control sequence

iii) Added desiccant dehumidifier control sequence

iv) Added kitchen exhaust fan control sequence

.5 Drawing M-755– MECHANICAL CONTROL SEQUENCES V

i) Added Exhaust Fan (EF-2, EF-3, EF-4 & EF-6) control sequence

ii) Added DX fan coil unit control sequence

Quasar Consulting Group

George Mikhael P.Eng

Sector Lead

System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Destratification Fan	Apparatus Bay			Apparatus Bay	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	APHVLS1_CMD	Apparatus Bay Destratification Fan 1 Command	Do	On/Off	
New Points	APHVLS1_STS	Apparatus Bay Destratification Fan 1 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Destratification Fan	Bunker Gear			Bunker Gear	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	BUHVLS2_CMD	Bunker Gear Bay Destratification Fan 2 Command	Do	On/Off	
New Points	BUHVLS2_STS	Bunker Gear Destratification Fan 2 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Destratification Fan	Fitness			Fitness	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	FTHVLS3_CMD	Fitness Destratification Fan 3 Command	Do	On/Off	
New Points	FTHVLS3_STS	Fitness Destratification Fan 3 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Apparatus Bay	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	APEF1_CMD	Apparatus Exhaust Fan 1 Command	Do	On/Off	
New Points	APEF1_STS	Apparatus Exhaust Fan 1 Status	Di	On/Off	
New Point	APEF1_SPT	Apparatus Exhaust Fan 1 Space Setpoint	VP	CO, CO2, NO2 & SO2	Virtual Point
New Point	APEF1_COCO2NO2SO2	Apparatus Exhaust Fan 1 Space CO, CO2, NO2 & SO2 LEVEL	Ai	CO, CO2, NO2 & SO2	Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Bunker Gear Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	BREF2_CMD	Bunker Gear Room Exhaust Fan 2 Command	Do	On/Off	
New Points	BREF2_STS	Bunker Gear Room Exhaust Fan 2 Status	Di	On/Off	
New Point	BREF2_SPT	Bunker Gear Room Exhaust Fan 2 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	BREF2_TH	Bunker Gear Room Exhaust Fan 2 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Buker gear Laundry	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	BLEF3_CMD	Bunker Gear Laundry Exhaust Fan 3 Command	Do	On/Off	
New Points	BLEF3_STS	Bunker Gear Laundry Exhaust Fan 3 Status	Di	On/Off	
New Point	BLEF3_SPT	Bunker Gear Laundry Exhaust Fan 3 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	BLEF3_TH	Bunker Gear Laundry Exhaust Fan 3 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Clean Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	CREF4_CMD	Clean Room Exhaust Fan 4 Command	Do	On/Off	
New Points	CREF4_STS	Clean Room Exhaust Fan 4 Status	Di	On/Off	
New Point	CREF4_SPT	Clean Room Exhaust Fan 4 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	CREF4_TH	Clean Room Exhaust Fan 4 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Vehicle Exhaust Fan	Apparatus Bay			Vehicle Exhaust Tail Pipe	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	APEF5_CMD	Apparatus Bay Vehicle Exhaust Fan 5 Command	Do	On/Off	
New Points	APEF5_STS	Apparatus Bay Vehicle Exhaust Fan 5 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Roof			Hose Tower	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	HTEF6_CMD	Hose Tower Exhaust Fan 6 Command	Do	On/Off	

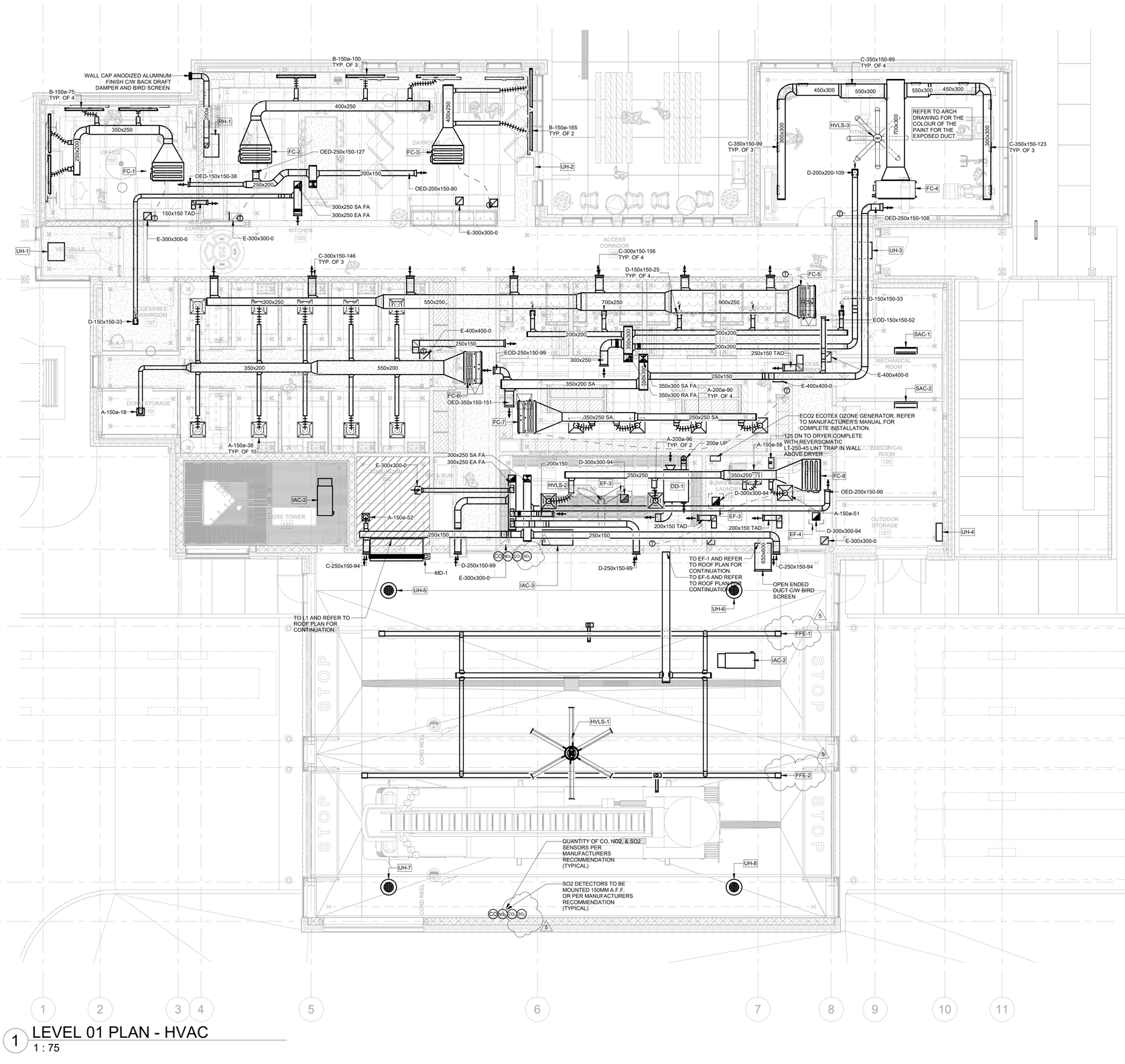
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
New Points	HTEF6_STS	Hose Tower Exhaust Fan 6 Status	Di	On/Off	
New Point	HTEF6_SPT	Hose Tower Exhaust Fan 6 Space Setpoint	VP	°C & %Humidity	Virtual Point
New Point	HTEF6_TH	Hose Tower Exhaust Fan 6 Space Temperature & Humidity	Ai	°C & %Humidity	Sensor Installed in Room
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Exhaust Fan	Kitchen Range Hood			Kitchen	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Points	RH1_CMD	Kitchen Range Hood Exhaust Fan 1 Command	Do	On/Off	
New Points	RH1_STS	Kitchen Range Hood Exhaust Fan 1 Status	Di	On/Off	
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Split Air Conditioning	Rooftop & IT Room			IT Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	SCU1BACNET_COM	Split Condenser Unit 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	SAC1BACNET_COM	Split AC 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	SCU1_CMD	Split Condenser Unit 1 Command	Do	On/Off	
New Point	SAC1_CMD	Split AC 1 Command	Do	On/Off	
New Point	SCU1_STS	Split Condenser Unit 1 Status	Di	On/Off	
New Point	SAC1_STS	Split AC 1 Status	Di	On/Off	
New Point	SAC1SAT_T	Split AC 1 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	SAC1RAT_T	Split AC 1 Return Air Temperature	VP	°C	Point read via BACNet
New Point	SAC1SAT_SPT_WINT	Split AC 1Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	SAC1SAT_SPT_SUMM	Split AC 1 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC1SAT_SPT_CLG	Split AC 1 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC1ITRM_SPT	Split AC 1 Space Setpoint	VP	°C	Virtual Point
New Point	SAC1ITRMT123_T	Split AC 1 IT Room Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
Split Air Conditioning	Rooftop & Electrical Room			Electrical Room	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	SCU2BACNET_COM	Split Condenser Unit 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	SAC2BACNET_COM	Split AC 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	CND2_CMD	Split Condenser Unit 2 Command	Do	On/Off	
New Point	SAC2_CMD	Split AC 2 Command	Do	On/Off	
New Point	CND2_STS	Split Condenser Unit 2 Status	Di	On/Off	
New Point	SAC2_STS	Split AC 2 Status	Di	On/Off	
New Point	SAC2SAT_T	Split AC 2 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	SAC2RAT_T	Split AC 2 Return Air Temperature	VP	°C	Point read via BACNet
New Point	SAC2SAT_SPT_WINT	Split AC 2 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	SAC2SAT_SPT_SUMM	Split AC 2 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC2SAT_SPT_CLG	Split AC 2 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	SAC2ERM_SPT	Split AC 2 Space Setpoint	VP	°C	Virtual Point
New Point	SAC2ERMT135_T	Split AC 2 Electrical Room Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
VRF 1	Rooftop & Various Rooms			Various Rooms	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	CU1BACNET_COM	Condensing Unit 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC4BACNET_COM	Fan Coil 4 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC5BACNET_COM	Fan Coil 5 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC6BACNET_COM	Fan Coil 6 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC7BACNET_COM	Fan Coil 7 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC8BACNET_COM	Fan Coil 8 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	CU1_CMD	Condensing Unit 1 Command	Do	On/Off	
New Point	FC4_CMD	Fan Coil 4 Command	Do	On/Off	
New Point	FC5_CMD	Fan Coil 5 Command	Do	On/Off	
New Point	FC6_CMD	Fan Coil 6 Command	Do	On/Off	
New Point	FC7_CMD	Fan Coil 7 Command	Do	On/Off	
New Point	FC8_CMD	Fan Coil 8 Command	Do	On/Off	
New Point	CU1_STS	Condensing Unit 1 Status	Di	On/Off	

System Identifier	Location	Power Panel	Sequence	Serving	
New Point	FC4_STS	Fan Coil 4 Status	Di	On/Off	
New Point	FC5_STS	Fan Coil 5 Status	Di	On/Off	
New Point	FC6_STS	Fan Coil 6 Status	Di	On/Off	
New Point	FC7_STS	Fan Coil 7 Status	Di	On/Off	
New Point	FC8_STS	Fan Coil 8 Status	Di	On/Off	
New Point	FC4MODE_CMD	Fan Coil 4 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC5MODE_CMD	Fan Coil 5 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC6MODE_CMD	Fan Coil 6 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC7MODE_CMD	Fan Coil 7 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC8MODE_CMD	Fan Coil 8 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC4SAT_T	Fan Coil 4 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC5SAT_T	Fan Coil 5 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC6SAT_T	Fan Coil 6 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC7SAT_T	Fan Coil 7 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC8SAT_T	Fan Coil 8 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC4RAT_T	Fan Coil 4 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC5RAT_T	Fan Coil 5 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC6RAT_T	Fan Coil 6 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC7RAT_T	Fan Coil 7 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC8RAT_T	Fan Coil 8 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC4SAT_SPT_WINT	Fan Coil 4 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC5SAT_SPT_WINT	Fan Coil 5 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC6SAT_SPT_WINT	Fan Coil 6 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC7SAT_SPT_WINT	Fan Coil 7 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC8SAT_SPT_WINT	Fan Coil 8 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC4SAT_SPT_SUMM	Fan Coil 4 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC5SAT_SPT_SUMM	Fan Coil 5 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC6SAT_SPT_SUMM	Fan Coil 6 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC7SAT_SPT_SUMM	Fan Coil 7 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC8SAT_SPT_SUMM	Fan Coil 8 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC4SAT_SPT_CLG	Fan Coil 4 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC8SAT_SPT_SUMM	Fan Coil 8 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC4SAT_SPT_CLG	Fan Coil 4 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC5SAT_SPT_CLG	Fan Coil 5 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC6SAT_SPT_CLG	Fan Coil 6 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC7SAT_SPT_CLG	Fan Coil 7 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC8SAT_SPT_CLG	Fan Coil 8 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC4_SPT	Fan Coil 4 Space Setpoint	VP	°C	Virtual Point
New Point	FC5_SPT	Fan Coil 5 Space Setpoint	VP	°C	Virtual Point
New Point	FC6_SPT	Fan Coil 6 Space Setpoint	VP	°C	Virtual Point
New Point	FC7_SPT	Fan Coil 7 Space Setpoint	VP	°C	Virtual Point
New Point	FC8_SPT	Fan Coil 8 Space Setpoint	VP	°C	Virtual Point
New Point	FC4_T	Fan Coil 4 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC5_T	Fan Coil 5 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC6_T	Fan Coil 6 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC7_T	Fan Coil 7 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC8_T	Fan Coil 8 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
VRF 2	Rooftop & Various Rooms			Various Rooms	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	CU2BACNET_COM	Condensing Unit 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC1BACNET_COM	Fan Coil 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC2BACNET_COM	Fan Coil 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	FC3BACNET_COM	Fan Coil 3 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	CU2_CMD	Condensing Unit 2 Command	Do	On/Off	
New Point	FC1_CMD	Fan Coil 1 Command	Do	On/Off	
New Point	FC2_CMD	Fan Coil 2 Command	Do	On/Off	
New Point	FC3_CMD	Fan Coil 3 Command	Do	On/Off	
New Point	CU2_STS	Condensing Unit 2 Status	Di	On/Off	
New Point	FC1_STS	Fan Coil 1 Status	Di	On/Off	
New Point	FC2_STS	Fan Coil 2 Status	Di	On/Off	

System Identifier	Location	Power Panel	Sequence	Serving	
New Point	FC3_STS	Fan Coil 3 Status	Di	On/Off	
New Point	FC1MODE_CMD	Fan Coil 1 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC2MODE_CMD	Fan Coil 2 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC3MODE_CMD	Fan Coil 3 Control Mode	VP	Unoccupied/Ventilation	Control point via BACNet
New Point	FC1SAT_T	Fan Coil 1 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC2SAT_T	Fan Coil 2 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC3SAT_T	Fan Coil 3 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	FC1RAT_T	Fan Coil 1 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC2RAT_T	Fan Coil 2 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC3RAT_T	Fan Coil 3 Return Air Temperature	VP	°C	Point read via BACNet
New Point	FC1SAT_SPT_WINT	Fan Coil 1 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC2SAT_SPT_WINT	Fan Coil 2 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC3SAT_SPT_WINT	Fan Coil 3 Winter Supply Air Setpoint	VP	°C	Virtual Point
New Point	FC1SAT_SPT_SUMM	Fan Coil 1 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC2SAT_SPT_SUMM	Fan Coil 2 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC3SAT_SPT_SUMM	Fan Coil 3 Summer Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC1SAT_SPT_CLG	Fan Coil 1 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC2SAT_SPT_CLG	Fan Coil 2 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC3SAT_SPT_CLG	Fan Coil 3 Cooling Supply Air Setpoint	VP	°C	Virtual Point - May not be required if Cooling is not enabled
New Point	FC1_SPT	Fan Coil 1 Space Setpoint	VP	°C	Virtual Point
New Point	FC2_SPT	Fan Coil 2 Space Setpoint	VP	°C	Virtual Point
New Point	FC3_SPT	Fan Coil 3 Space Setpoint	VP	°C	Virtual Point
New Point	FC1_T	Fan Coil 1 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC2_T	Fan Coil 2 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	FC3_T	Fan Coil 3 Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
System Identifier	**Location**	**Power Panel**	**Sequence**	**Serving**	
UNIT HEATER	Various Area			Various Area	
Existing Point Name	**Tag**	**Point Description**	**Type**	**Units in Display**	**Comments**
New Point	UH1BACNET_COM	Unit Heater 1 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH2BACNET_COM	Unit Heater 2 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH3BACNET_COM	Unit Heater 3 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH4BACNET_COM	Unit Heater 4 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH5BACNET_COM	Unit Heater 5 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH6BACNET_COM	Unit Heater 6 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH7BACNET_COM	Unit Heater 7 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH8BACNET_COM	Unit Heater 8 BacNet Communication (MS/TP)	COM	Online/Offline	
New Point	UH1_CMD	Unit Heater 1 Command	Do	On/Off	
New Point	UH2_CMD	Unit Heater 2 Command	Do	On/Off	
New Point	UH3_CMD	Unit Heater 3 Command	Do	On/Off	
New Point	UH4_CMD	Unit Heater 4 Command	Do	On/Off	
New Point	UH5_CMD	Unit Heater 5 Command	Do	On/Off	
New Point	UH6_CMD	Unit Heater 6 Command	Do	On/Off	
New Point	UH7_CMD	Unit Heater 7 Command	Do	On/Off	
New Point	UH8_CMD	Unit Heater 8 Command	Do	On/Off	
New Point	UH1_STS	Unit Heater 1 Status	Di	On/Off	
New Point	UH2_STS	Unit Heater 2 Status	Di	On/Off	
New Point	UH3_STS	Unit Heater 3 Status	Di	On/Off	
New Point	UH4_STS	Unit Heater 4 Status	Di	On/Off	
New Point	UH5_STS	Unit Heater 5 Status	Di	On/Off	
New Point	UH6_STS	Unit Heater 6 Status	Di	On/Off	
New Point	UH7_STS	Unit Heater 7 Status	Di	On/Off	
New Point	UH8_STS	Unit Heater 8 Status	Di	On/Off	
New Point	UH1MODE_CMD	Unit Heater 1 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH2MODE_CMD	Unit Heater 2 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH3MODE_CMD	Unit Heater 3 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH4MODE_CMD	Unit Heater 4 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH5MODE_CMD	Unit Heater 5 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH6MODE_CMD	Unit Heater 6 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH7MODE_CMD	Unit Heater 7 Control Mode	VP	Unoccupied	Control point via BACNet

System Identifier	Location	Power Panel	Sequence	Serving	
New Point	UH8MODE_CMD	Unit Heater 8 Control Mode	VP	Unoccupied	Control point via BACNet
New Point	UH1SAT_T	Unit Heater 1 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH2SAT_T	Unit Heater 2 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH3SAT_T	Unit Heater 3 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH4SAT_T	Unit Heater 4 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH5SAT_T	Unit Heater 5 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH6SAT_T	Unit Heater 6 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH7SAT_T	Unit Heater 7 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH8SAT_T	Unit Heater 8 Supply Air Temperature	VP	°C	Point read via BACNet
New Point	UH1VES100_SPT	Unit Heater 1 Space Setpoint	VP	°C	Virtual Point
New Point	UH2SP134_SPT	Unit Heater 2 Space Setpoint	VP	°C	Virtual Point
New Point	UH3VES112_SPT	Unit Heater 3 Space Setpoint	VP	°C	Virtual Point
New Point	UH4DL128_SPT	Unit Heater 4 Space Setpoint	VP	°C	Virtual Point
New Point	UH5OS141_SPT	Unit Heater 5 Space Setpoint	VP	°C	Virtual Point
New Point	UH6APB130_SPT	Unit Heater 6 Space Setpoint	VP	°C	Virtual Point
New Point	UH7APB130_SPT	Unit Heater 7 Space Setpoint	VP	°C	Virtual Point
New Point	UH8APB130_SPT	Unit Heater 8 Space Setpoint	VP	°C	Virtual Point
New Point	UH1_T	Unit Heater 1 Vestibule Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH2_T	Unit Heater 2 Sprinkler Room Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH3_T	Unit Heater 3 Vestibule Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH4_T	Unit Heater 4 Dayroom Lounge Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH5_T	Unit Heater 5 Outdoor Storage Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH6_T	Unit Heater 6 Apparatus Bay Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH7_T	Unit Heater 7 Apparatus Bay Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space
New Point	UH8_T	Unit Heater 8 Apparatus Bay Space Temperature	Ai	°C	New Flat Plate Sensor Installed in Space

END OF SECTION



1 LEVEL 01 PLAN - HVAC
1 : 75

GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL LOCATIONS OF EQUIPMENT AND CONNECTING SERVICES. DRAWINGS ARE NOT TO BE DIMENSIONED OR SCALED.
2. NOTE THAT ANY REFERENCE TO CONTRACTOR ON MECHANICAL DRAWINGS IS NOT EXCLUSIVE TO MECHANICAL CONTRACTOR OR ON PARTICULAR SUB-TRADE. IT IS UNDERSTOOD THAT THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATE OF ALL TRADES' WORK AND AS SUCH SHALL BE RESPONSIBLE FOR REVIEW OF DOCUMENTS PREPARED BY ALL DISCIPLINES (I.E. MECHANICAL AND ELECTRICAL) AND INCLUDING ALL ASSOCIATED COSTS FOR THE SCOPE OF WORK AS IDENTIFIED IN ALL SUB-DISCIPLINE'S DOCUMENTS.
3. ALL WORK TO BE DONE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND ALL OTHER REGULATORY REQUIREMENTS.
4. SUPPLY ALL LABOUR AND MATERIALS TO PROVIDE A COMPLETE MECHANICAL INSTALLATION. ITEMS NOT EXPLICITLY ILLUSTRATED ON THE DRAWINGS ARE NOT TO BE EXCLUDED FROM THE SCOPE OF WORK IF REQUIRED AS PART OF A PROPER INSTALLATION. PERMITS, TESTING, BALANCING, AND OCCUPANT OPERATIONAL TRAINING WILL BE PART OF THE WORK.
5. EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS AND GRILLES ARE DETAILED ON ARCHITECTURAL REFLECTED CEILING PLANS.
6. THE LOCATION OF ALL ROOF OPENINGS SHALL BE AS INDICATED ON THE MECHANICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS. COORDINATE EXACT SIZES OF OPENINGS AS REQUIRED.
7. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS ETC AS REQUIRED FOR COMPLETE WORKABLE INSTALLATION.
8. DUCTWORK SHALL BE INSULATED OR LINED PER SPECIFICATIONS AND/OR AS NOTED ON DRAWINGS. ALL DUCT JOINTS AND SEAMS SHALL BE SEAL PER SPECIFICATIONS.
9. DUCT AND PLENUM SIZES ARE CLEAR INSIDE DIMENSIONS. WHERE DUCTWORK AND PLENUMS ARE INTERNALLY LINED, THEIR SIZES SHALL BE ADJUSTED TO PROVIDE THE INSIDE CLEAR DIMENSIONS INDICATED ON THE DRAWINGS.
10. MANUAL BALANCING DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES AND IN ALL BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS, WHETHER SHOWN OR NOT.
11. ALL DUCTWORK LOCATED OUTSIDE THE BUILDING SHALL BE WEATHERPROOFED.
12. CONTRACTOR SHALL INSTALL ANY DUCT MOUNTED SMOKE DETECTORS FURNISHED BY THE ELECTRICAL CONTRACTOR.
13. LIMIT LENGTHS OF FLEXIBLE DUCT TO 1200mm
14. COORDINATE LOCATIONS OF WALL MOUNTED SENSORS WITH ARCHITECTURAL DRAWINGS.
15. MINIMUM DUCT SIZE TO DIFFUSERS TO MATCH DIFFUSER NEXT SIZE UNLESS OTHERWISE INDICATED.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO ARCHITECTS BEFORE PROCEEDING WITH WORK.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

SEALS

NO.	ISSUES/REVISIONS	DATE
5	ISSUED FOR ADD-M01	2024-08-22
4	ISSUED FOR TENDER	2024-06-28
3	ISSUED FOR TENDER REVIEW	2024-06-11
2	ISSUED FOR PERMIT	2024-05-06
1	ISSUED FOR 60% CD	2024-04-18

DRAWING TITLE:

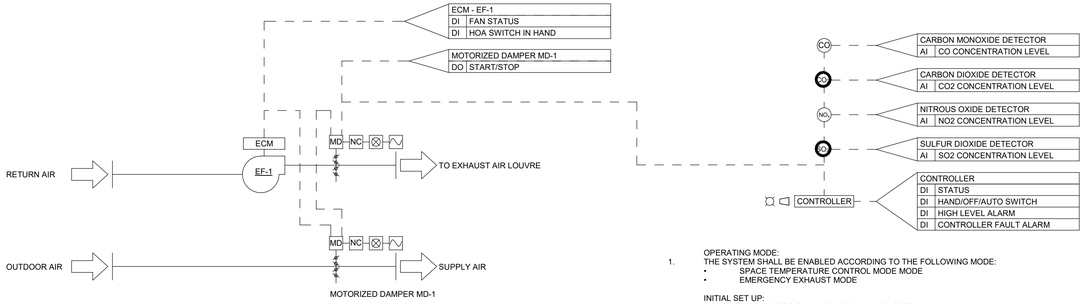
LEVEL 01 PLAN - VENTILATION

ISSUE DATE: 2024-08-22
DRAWN BY: Author
CHECKED BY:Checker
PROJECT NO.: CM-22-269
SCALE: As indicated

DRAWING NO.:

M-301

I PLOT DATE: 8/22/2024 9:35:09 AM



OPERATING MODE:

1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE MODE
   - EMERGENCY EXHAUST MODE

INITIAL SET UP:

1. MOTORIZED DAMPERS SHALL BE NORMALLY CLOSED.
2. FANS SHALL BE BALANCED TO A FIELD DETERMINED AIRFLOW & STATIC PRESSURE AS PER THE VALUES INDICATED ON THE DRAWINGS DURING SYSTEM BALANCING AND COMMISSIONING.
3. SYSTEM SHALL MAINTAIN THE SPACE MAXIMUM TEMPERATURE SET POINT AND SHALL BE ENABLED DURING EMERGENCY EXHAUST OF CO, CO2, NO2 AND SO2.
4. FAN SHALL BE ENABLED/DISABLED LOCALLY AT THE STARTER OR REMOTELY THROUGH THE BAS.

FAN CONTROL:

1. FANS SHALL BOTH BE ENABLED AND SHALL RUN IN PARALLEL.
2. ON COMMAND TO START, MOTORIZED DAMPERS SHALL OPEN. UPON PROOF OF MOTORIZED DAMPER POSITION, RESPECTIVE FAN SHALL BE ENABLED. MD1 SHALL BE INTERLOCKED WITH RESPECTIVE FAN TO ENSURE CONTROLS OPERATION WHEN FAN IS OPERATING IN "HAND" OR "AUTO" MODE. CONTROLS SIGNAL SHALL BE DUPLICATED AT THE BAS.
3. FAN SHALL OPERATE AT CONSTANT SPEED.

TEMPERATURE CONTROL:

1. SPACE TEMPERATURE IS GREATER THAN (28°C DRY BULB) AND OUTDOOR AIR TEMPERATURE IS LESS THAN (SPACE TEMPERATURE MINUS 2°C).
   - T1 SHALL BE SET TO (28°C DRY BULB).
   - MOTORIZED DAMPERS SHALL OPEN AND FANS SHALL BE ENABLED.
2. TEMPERATURE CONTROL SHALL BE DISABLED WHEN OUTDOOR AIR TEMPERATURE IS LESS THAN 16°C.

EMERGENCY EXHAUST:

- CO UPPER CONCENTRATION LIMIT SHALL BE SET TO (100 P.P.M.).
- NO2 UPPER CONCENTRATION LIMIT SHALL BE SET TO (3 P.P.M.).
- SO2 UPPER CONCENTRATION LIMIT SHALL BE SET TO (5 P.P.M.).
- MD1 SHALL BE OPEN.
- F1 SHALL BE ENABLED.

FIRE ALARM MODE:

1. FAN SHALL SHUT DOWN DURING FIRE ALARM.

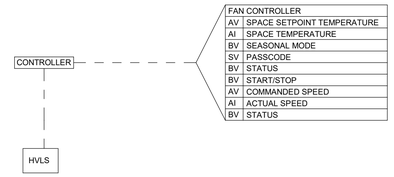
FAN FAILURE:

1. UPON FAN FAILURE, ASSOCIATED DAMPERS SHALL REMAIN OPEN.

SYSTEM ALARMS & PRIORITY AT BAS:

- FAN FAILURE : COMMANDED ON/STATUS OFF
- FAN IN HAND: HOA SWITCH IN HAND
- DAMPER FAILURE: COMMANDED OPEN/CLOSED FEEDBACK
- DAMPER IN HAND: COMMANDED CLOSED/OPEN FEEDBACK

1 APPARATUS BAY FAN CONTROL SEQUENCE
N.T.S.



OPERATING MODE:

1. THE SYSTEM SHALL OPERATE INDEPENDENTLY USING FACTORY SUPPLIED INTELLIGENT CONTROLLER. THE SYSTEM SHALL OPERATE IN WINTER AND SUMMER MODES.
2. SPACE TEMPERATURE SETPOINT RESET TO BE POSSIBLE THROUGH BAS.

FIRE ALARM MODE:

1. FAN SHALL SHUT DOWN DURING FIRE ALARM.

SYSTEM ALARMS & PRIORITY AT BAS:

- FAN FAILURE: ALARM TROUBLE SIGNAL FROM CONTROLLER
- SPACE TEMPERATURE OUT OF RANGE (+/- 2°C)

SYSTEM TRENDS AT BAS:

- FAN UNIT STATUS
- SPACE TEMPERATURE
- EQUIPMENT OPERATING HOURS

2 CEILING MOUNTED DESTRATIFICATION FAN (HVLS) CONTROL SEQUENCE TYPICAL
N.T.S.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

DRAWINGS ARE NOT TO BE SCALED.

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SEALS

NO.	ISSUES/REVISIONS	DATE
7	ISSUED FOR ADD-M01	2024-08-22
6	ISSUED FOR TENDER	2024-06-28
5	ISSUED FOR TENDER REVIEW	2024-06-11
4	ISSUED FOR PERMIT	2024-05-06
3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES I

ISSUE DATE: 2024-08-22

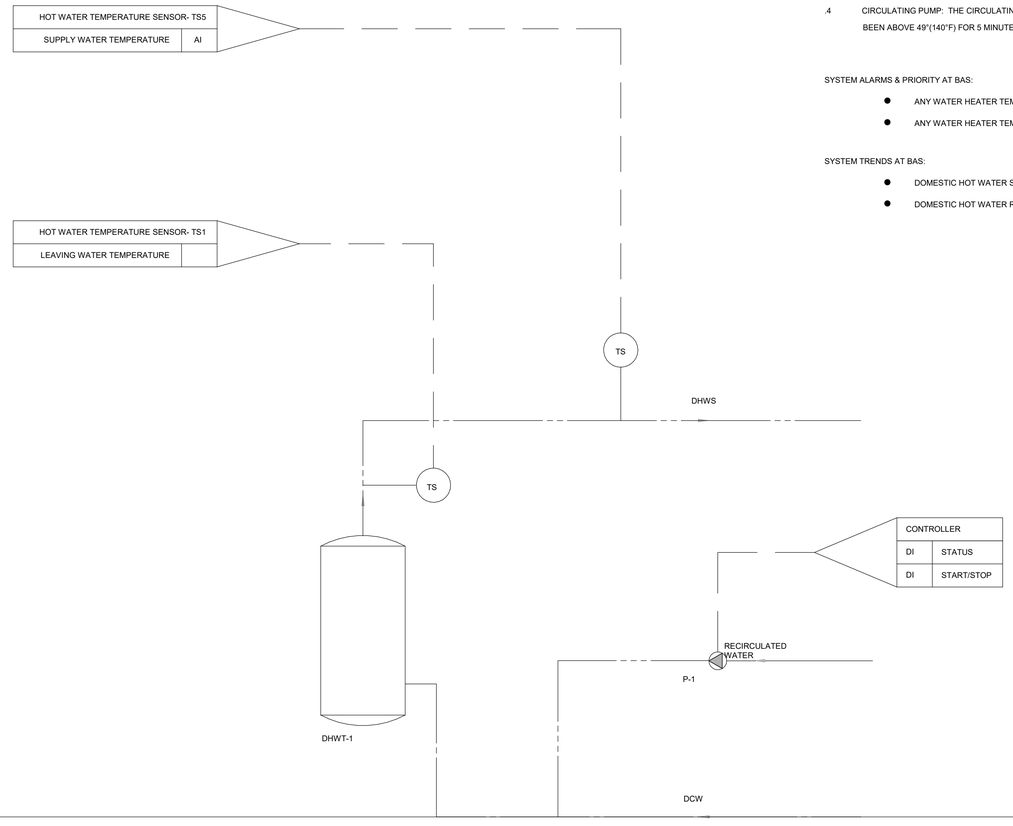
DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: N.T.S.

DRAWING NO.:

M-751

I PLOT DATE: 8/22/2024 9:34:11 AM



"DOMESTIC HOT WATER SYSTEM"

1. THE SYSTEM WILL PROVIDE DOMESTIC HOT WATER TO THE FACILITY.
2. MODES OF OPERATION
   - .1 THE SYSTEM IS ENABLED TO RUN CONTINUOUSLY.
3. ENABLED MODE
   - .1 OVERVIEW: THE DHW HEATERS CONTROL THEMSELVES TO MAINTAIN THE SUPPLY WATER TEMPERATURE AT SET POINT. WATER HEATERS TO MAINTAINED AT A CONSTANT 49°C(140°F).
4. CIRCULATING PUMP: THE CIRCULATING PUMP WILL BE ENABLED WHEN THE DHWR TEMPERATURE DROPS BELOW 40°C(104°F). THE PUMP WILL BE DISABLED ONCE THE TEMPERATURE HAS BEEN ABOVE 49°(140°F) FOR 5 MINUTES.

SYSTEM ALARMS & PRIORITY AT BAS:

- ANY WATER HEATER TEMP IS ABOVE 55°C(131°F) FOR 5 MINUTES
- ANY WATER HEATER TEMP DROPS BELOW 49°C(140°F) FOR 5 MINUTES

SYSTEM TRENDS AT BAS:

- DOMESTIC HOT WATER SUPPLY SUPPLY TEMPERATURE
- DOMESTIC HOT WATER RE-CIRCULATION PUMP SCHEDULE STATUS

1 DOMESTIC HOT WATER TANK CONTROL SEQUENCE
NTS

I PLOT DATE: 8/22/2024 9:34:17 AM

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QUASAR CONSULTING GROUP

250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
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3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES III

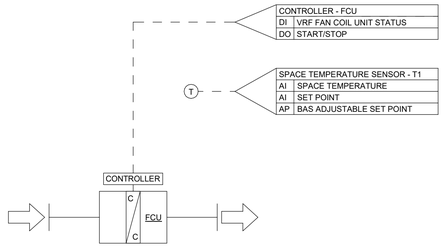
ISSUE DATE: 2024-08-22

DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: NTS

DRAWING NO.:

M-753



OPERATING MODE:
1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE

INITIAL SET UP:
1. VRF FAN COIL UNIT SHALL BE NORMALLY DISABLED.
2. T1 SHALL MAINTAIN THE SPACE TEMPERATURE SET POINT.
3. VRF SYSTEM SHALL BE BACNET NETWORKED TO BAS.
4. VRF FAN COIL THERMOSTAT PROVIDED WITH VRF SYSTEM.

VRF FAN COIL UNIT CONTROL:
1. VRF SHALL PROVIDE DUAL COOLING AND HEATING FUNCTIONS.

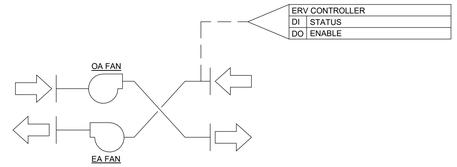
TEMPERATURE CONTROL:
- T1 SHALL BE SET TO (24)°C IN COOLING MODE. (BAS ADJUSTABLE POINT)
- T1 SHALL BE SET TO (22)°C IN HEATING MODE. (BAS ADJUSTABLE POINT)
- MODE SELECTION TO BE BAS ADJUSTABLE. FAN SPEED TO RUN IN AUTOMATIC AND STATUS TO BE VISIBLE AT BAS.

1. WHEN IN COOLING MODE:
   - IF THE SPACE TEMPERATURE RISES ABOVE SET POINT, COOLING MODE WILL BE INITIATED AND VRF FAN COIL UNIT SHALL BE ENABLED TO MAINTAIN THE T1 SET POINT.
2. WHEN IN HEATING MODE:
   - IF THE SPACE TEMPERATURE DROPS BELOW SET POINT, HEATING MODE WILL BE INITIATED AND VRF FAN COIL UNIT SHALL BE ENABLED TO MAINTAIN THE T1 SET POINT.

SYSTEM ALARMS & PRIORITY AT BAS:
- VRF FAN COIL UNIT FAILURE: COMMANDED ON/CLOSED FEEDBACK
- SPACE TEMPERATURE OUT OF RANGE (+/- 2°C)

SYSTEM TRENDS AT BAS:
- VRF FAN COIL UNIT STATUS
- SPACE TEMPERATURE
- EQUIPMENT OPERATING HOURS

1 VRV FAN COIL UNIT CONTROL SEQUENCE
N.T.S.



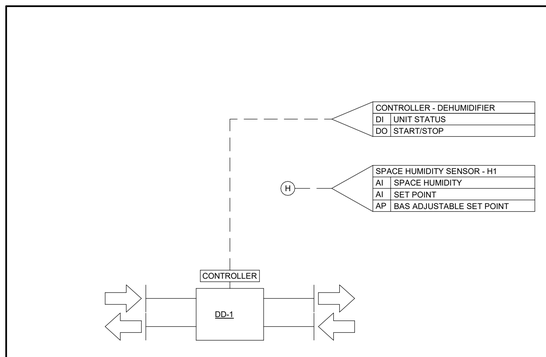
OPERATING MODE:
1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SCHEDULED RUN TIME MODE

INITIAL SET UP:
1. ERV SHALL BE NORMALLY DISABLED.
2. ERV SHALL BE DETERMINED DURING BALANCING.

ERV MODULE:
1. THE ERV OA AND EA FANS WILL RUN CONTINUOUSLY WHEN UNIT IS ENABLED.
2. UNIT TO CONTROL DEFROST.

SYSTEM TRENDS AT BAS:
- ERV STATUS
- EQUIPMENT OPERATING HOURS

2 ENERGY RECOVERY VENTILATORS CONTROL SEQUENCE
N.T.S.



OPERATING MODE:
1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE HUMIDITY CONTROL MODE

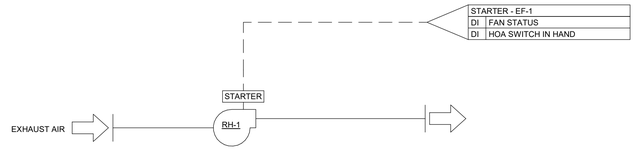
INITIAL SET UP:
1. UNIT SHALL BE NORMALLY DISABLED.
2. H1 SHALL MAINTAIN THE SPACE HUMIDITY SET POINT.
3. DEHUMIDIFIER SYSTEM SHALL BE CONNECTED TO BAS VIA TERMINAL STRIP.
4. HUMIDISTAT PROVIDED WITH BAS SYSTEM.

HUMIDITY CONTROL:
- H1 SHALL BE SET TO 55%. (BAS ADJUSTABLE POINT)
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT, STAGE 1 DEHUMIDIFICATION ENABLED.
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT + 5%, STAGE 2 DEHUMIDIFICATION ENABLED. STAGE 2 TO REMAIN ENABLED UNTIL SPACE HUMIDITY REACHES SETPOINT.

SYSTEM ALARMS & PRIORITY AT BAS:
- UNIT FAILURE: COMMANDED ON/CLOSED FEEDBACK
- SPACE HUMIDITY EXCEEDS SETPOINT (+ 10%)

SYSTEM TRENDS AT BAS:
- UNIT STATUS
- SPACE HUMIDITY
- EQUIPMENT OPERATING HOURS

3 DESICCANT DEHUMIDIFIER CONTROL SEQUENCE
N.T.S.



OPERATING MODE:
1. THE SYSTEM SHALL OPERATE INDEPENDENTLY USING CONTROLLER SUPPLIED WITH HOOD. BAS TO MONITOR STATUS OF EXHAUST FAN.

FIRE ALARM MODE:
1. EXHAUST FAN SHALL FAIL LAST (CONTINUE TO RUN IF RUNNING) DURING FIRE ALARM.

SYSTEM ALARMS & PRIORITY AT BAS:
- FAN FAILURE: ALARM TROUBLE SIGNAL FROM CONTROLLER

SYSTEM TRENDS AT BAS:
- FAN UNIT STATUS
- EQUIPMENT OPERATING HOURS

4 KITCHEN EXHAUST FAN CONTROL SEQUENCE
NTS

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

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3	ISSUED FOR 60% CD	2024-04-18
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES IV

ISSUE DATE: 2024-08-22

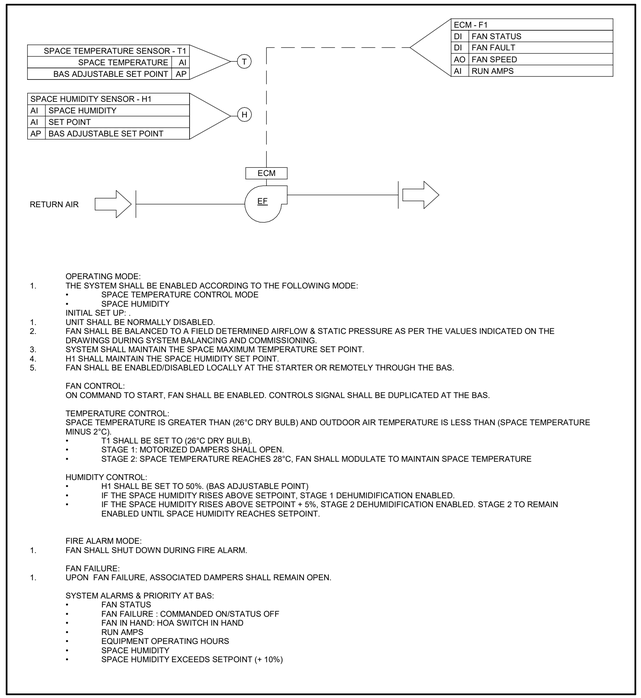
DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: NTS

DRAWING NO.:

M-754

[PLOT DATE: 8/22/2024 9:34:35 AM]



OPERATING MODE:

1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE
   - SPACE HUMIDITY

INITIAL SET UP:

1. UNIT SHALL BE NORMALLY DISABLED.
2. FAN SHALL BE BALANCED TO A FIELD DETERMINED AIRFLOW & STATIC PRESSURE AS PER THE VALUES INDICATED ON THE DRAWINGS DURING SYSTEM BALANCING AND COMMISSIONING.
3. SYSTEM SHALL MAINTAIN THE SPACE MAXIMUM TEMPERATURE SET POINT.
4. H1 SHALL MAINTAIN THE SPACE HUMIDITY SET POINT.
5. FAN SHALL BE ENABLED/DISABLED LOCALLY AT THE STARTER OR REMOTELY THROUGH THE BAS.

FAN CONTROL:
ON COMMAND TO START, FAN SHALL BE ENABLED. CONTROLS SIGNAL SHALL BE DUPLICATED AT THE BAS.

TEMPERATURE CONTROL:
SPACE TEMPERATURE IS GREATER THAN (26°C DRY BULB) AND OUTDOOR AIR TEMPERATURE IS LESS THAN (SPACE TEMPERATURE MINUS 2°C).
- T1 SHALL BE SET TO (26°C DRY BULB).
- STAGE 1: MOTORIZED DAMPERS SHALL OPEN.
- STAGE 2: SPACE TEMPERATURE REACHES 28°C, FAN SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE

HUMIDITY CONTROL:
- H1 SHALL BE SET TO 50%. (BAS ADJUSTABLE POINT)
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT, STAGE 1 DEHUMIDIFICATION ENABLED.
- IF THE SPACE HUMIDITY RISES ABOVE SETPOINT + 5%, STAGE 2 DEHUMIDIFICATION ENABLED. STAGE 2 TO REMAIN ENABLED UNTIL SPACE HUMIDITY REACHES SETPOINT.

FIRE ALARM MODE:

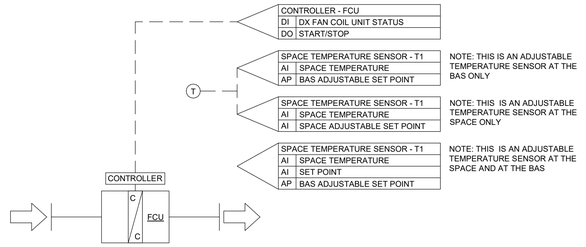
1. FAN SHALL SHUT DOWN DURING FIRE ALARM.

FAN FAILURE:

1. UPON FAN FAILURE, ASSOCIATED DAMPERS SHALL REMAIN OPEN.

SYSTEM ALARMS & PRIORITY AT BAS:
- FAN STATUS
- FAN FAILURE : COMMANDED ON/STATUS OFF
- FAN IN HAND: HOA SWITCH IN HAND
- RUN AMPS
- EQUIPMENT OPERATING HOURS
- SPACE HUMIDITY
- SPACE HUMIDITY EXCEEDS SETPOINT (+ 10%)

1 EXHAUST FAN (EF-2, EF-3, EF-4 & EF-6) CONTROL SEQUENCE
N.T.S.



OPERATING MODE:

1. THE SYSTEM SHALL BE ENABLED ACCORDING TO THE FOLLOWING MODE:
   - SPACE TEMPERATURE CONTROL MODE

INITIAL SET UP:

1. DX FAN COIL UNIT SHALL BE NORMALLY DISABLED.
2. T1 SHALL MAINTAIN THE SPACE TEMPERATURE SET POINT.

DX FAN COIL UNIT CONTROL:

1. PROVIDE STAND ALONE PACKAGE DX FAN COIL UNIT AND CONTROL PANEL.
2. DX FAN COIL UNIT SHALL PROVIDE COOLING ONLY FUNCTION.

TEMPERATURE CONTROL:
- T1 SHALL BE SET TO (24)°C.

1. WHEN IN COOLING MODE:
   - IF THE SPACE TEMPERATURE RISES ABOVE SET POINT, COOLING MODE WILL BE INITIATED AND DX FAN COIL UNIT SHALL BE ENABLED TO MAINTAIN THE T1 SET POINT.

SYSTEM ALARMS & PRIORITY AT BAS:
- DX FAN COIL UNIT FAILURE: COMMANDED ON/CLOSED FEEDBACK
- SPACE TEMPERATURE OUT OF RANGE (+/- 2°C)

SYSTEM TRENDS AT BAS:
- DX FAN COIL UNIT STATUS
- SPACE TEMPERATURE
- EQUIPMENT OPERATING HOURS

2 DX FAN COIL UNIT CONTROL SEQUENCE
N.T.S.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
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2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

MECHANICAL CONTROL SEQUENCES V

ISSUE DATE: 2024-08-22

DRAWN BY: Author CHECKED BY:Checker

PROJECT NO.: CM-22-269 SCALE: N.T.S.

DRAWING NO.:

M-755

[PLOT DATE: 8/22/2024 9:34:25 AM]

D P A I
Design Partners in
Architecture and Interiors

25 Main St. West
Suite 1800
Hamilton, ON
L8P 1H1

ARCHITECTURAL ADDEDNUM 002

To: **City of Brampton**
2 Wellington St West

Brampton, ON L6Y 4R2

Addendum No: 003
Date Issued: 13 September 2024
Project Number 12303
Bid Number T2024-220

Project **City of Brampton Fire Station 215**
10539 Goreway Drive, Brampton.

GENERAL INSTRUCTIONS

1. The following information supplements and/or supersedes the bid documents issued on Friday July 26, 2024.
2. This Addendum forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts. The cost of all contained herein is to be included in the contract price.
3. The following revisions supersede the information contained in the original drawings and specifications issued for the named project to the extent referenced and shall become part thereof. Acknowledge receipt of this Addendum by inserting its number and date on the Tender Form. Failure to do so may subject the bidder to disqualification.

1. AFFECTED SECTIONS OF THE PROJECT MANUAL

.1 Revisions
.i *None*

.2 Deletions
.i *None*

.3 Additions
.i *None*

AFFECTED ARCHITECTURAL DRAWINGS

1. A02.03 – ENLARGED SITE PLAN
i. Delete issued for Tender drawing A02.03 in its entirety and substitute drawing A02.03 barring revision 13 appended to this document.

2. A02.05 – SITE DETAILS
i. Delete issued for Tender drawing A02.05 in its entirety and substitute drawing A02.05 barring revision 11 appended to this document.

3. A03.11 – LEVEL 01 - FINISHES PLANS
i. Delete issued for Tender drawing A03.11 in its entirety and substitute drawing A03.11 barring revision 8 appended to this document.

4. A03.12 – LEVEL 01 - REFLECTED CEILING FINISHES PLANS
i. Delete issued for Tender drawing A03.12 in its entirety and substitute drawing A03.12 barring revision 7 appended to this document.

5. A04.02 – BUILDING SIGNAGE
i. Delete issued for Tender drawing A04.02 in its entirety and substitute drawing A04.02 barring revision 4 appended to this document.

6. A06.01 – GLAZING ELEVATIONS & SCHEDULE
i. Delete issued for Tender drawing A06.01 in its entirety and substitute drawing A06.01 barring revision 9 appended to this document.

7. A06.02 – GLAZING ELEVATIONS & SCHEDULE
i. Delete issued for Tender drawing A06.02 in its entirety and substitute drawing A06.02 barring revision 7 appended to this document.

8. A08.00 – MILLWORK DETAILS - GENERAL NOTES, COUNTER TOPS, GENERAL DETAILS
i. Delete issued for Tender drawing A08.00 in its entirety and substitute drawing A08.00 barring revision 7 appended to this document.

9. A08.01 – WASHROOM PLANS & ELEVATIONS

i. Delete issued for Tender drawing A08.01 in its entirety and substitute drawing A08.01 barring revision 8 appended to this document.

10. A08.09 – MILLWORK SECTION DETAILS

i. Delete issued for Tender drawing A08.09 in its entirety and substitute drawing A08.09 barring revision 7 appended to this document.

11. A08.10 – MILLWORK SECTION DETAILS

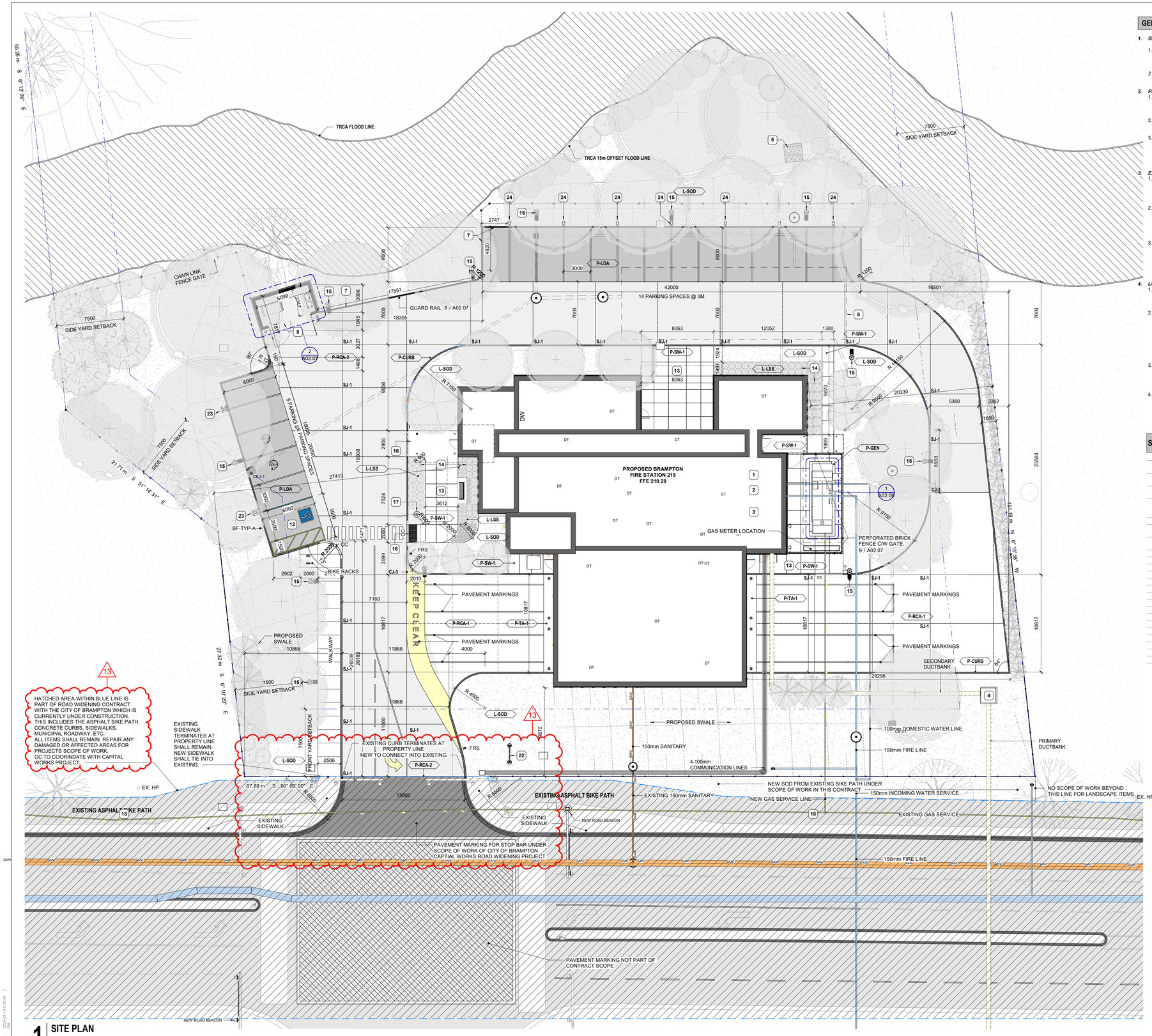
i. Delete issued for Tender drawing A08.10 in its entirety and substitute drawing A08.10 barring revision 3 appended to this document.

12. A10.00 – DOOR KEY PLAN & SCHEDULE

i. Delete issued for Tender drawing A10.00 in its entirety and substitute drawing A10.00 barring revision 8 appended to this document.

END OF ARCHITECTURAL ADDENDUM No. 03

Per: Sebastian Lubczynski, Senior Architect, OAA



1 **SITE PLAN**
1 : 200

GENERAL NOTES - SITE PLAN

1. ***GENERAL REQUIREMENTS***
   1. CONTRACTOR SHALL CO-ORDINATE ALL WORK NOTED HERE WITH THE SPECIFICATION DOCUMENTS - FOR GENERAL REQUIREMENTS, EXISTING CONDITIONS, EXCAVATION & BACKFILLING, LANDSCAPING, ETC AS REQUIRED FOR COMPLETE SITE RELATED WORK.
   2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE RECORDS OF CONSTRUCTION TO FACILITATE AS-BUILT DRAWINGS.
2. ***PROJECT BOUNDARIES***
   1. THE CONTRACT CONSISTS OF ALL WORK WITH-IN THE 'PROPERTY LINE' AND/OR 'SITE EXTENTS' LINE AS INDICATED PLUS ANY WORK SPECIFICALLY NOTED OUTSIDE OF THAT LINE OR AS REQUIRED TO DELIVER A OPERATIONAL, FUNCTIONING PROJECT.
   2. THE TERM 'SITE EXTENTS' REFERS TO THE AREA THAT THE CONTRACTOR IS REQUIRED TO ENCLOSE WITH CONSTRUCTION FENCING FOR THE DURATION OF THE WORK.
   3. ALL WORK DONE OUTSIDE OF THESE LIMITS MUST BE EXECUTED IN STRICT ACCORDANCE WITH THE STANDARDS OF THE MUNICIPALITY AND ALL OTHER AUTHORITIES HAVING JURISDICTION. MAKE GOOD AT NO ADDITIONAL COST TO THE OWNER OR MUNICIPALITY ANY DAMAGE CAUSED BY THIS CONSTRUCTION TO MATERIALS OR FINISHES BEYOND THE "PROPERTY LINE" INDICATED.
3. ***EXECUTION***
   1. CONTRACTOR IS TO RESTRICT ALL WORK, EQUIPMENT AND MATERIALS STORAGE TO AREA(S) WITHIN THE "PROPERTY LINE" EXCEPT WHERE NOTED OTHERWISE. PRIMARY SITE ACCESS POINT & CONSTRUCTION PARKING IS TO BE CONFIRMED WITH OWNER. NO PARKING IS PERMITTED IN THE MUNICIPAL RIGHT-OF-WAY.
   2. LOCATE EXCAVATED MATERIALS & TOPSOIL PILES SO AS NOT TO IMPEDE PROGRESS OF THE WORK OR AS DIRECTED. 'DOUBLE HANDLING' OF MATERIALS AS A RESULT OF CONTRACTOR PLANNING OR EXECUTION OF THE WORK WILL NOT BE CONSIDERED AS A BASIS FOR CLAIM. AT COMPLETION OF THE PROJECT, ANY EXCESS MATERIAL IS TO BE REMOVED AND AREA MADE GOOD TO CONSULTANTS SATISFACTION.
   3. FOR TRENCHING & BACKFILLING OF ALL SERVICE LINES AND DIVISION OF RESPONSIBILITY REFER TO APPROPRIATE SPECIFICATION SECTIONS AND DRAWINGS. TRENCHING & BACKFILLING NOT IDENTIFIED BY A PARTICULAR SUB-TRADE WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE TRENCHING AND BACKFILLING. GRADE FINISHED WORK TO MATCH SURROUNDING SURFACES.
4. ***LOCATION OF SERVICES***
   1. NOTE THAT THE EXACT LOCATIONS OF ALL NEW MECHANICAL & ELECTRICAL ITEMS ARE APPROXIMATE UNLESS DIMENSIONS ARE GIVEN. ADJUST LOCATIONS AS REQUIRED AND AS APPROVED BY CONSULTANT TO SUIT SITE CONDITIONS.
   2. NOTE THAT ALL MECHANICAL AND ELECTRICAL UNDERGROUND AND ABOVEGROUND SERVICE LINES INDICATED ON DRAWINGS ARE APPROXIMATE ONLY AND ARE INDICATED AS ACCURATELY AS POSSIBLE FROM INFORMATION SUPPLIED. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT TYPES, LOCATIONS, DEPTHS AND MARKING ALL UNDERGROUND AND ABOVEGROUND SERVICES WITHIN ALL AREAS OF CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO GAS LINES, WATER LINES, ELECTRICAL LINES, TELEPHONE, CABLE TV ETC. VERIFY EXACT LOCATIONS WITH THE APPROPRIATE AUTHORITIES BEFORE EXCAVATING.
   3. PRIOR TO COMMENCING WORK TO PLACE VERTICAL ELEMENTS SUCH AS FLAGPOLES AND LIGHT STANDARDS ENSURE ADEQUATE CLEARANCE FROM EXISTING ABOVE GROUND ELEMENTS SUCH AS OVERHEAD WIRES CABLES ETC. NOTIFY THE CONSULTANT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
   4. ALL FINISHED PAVING AND GRADING TO BE TO NEW LEVELS SHOWN. ALL DRAINAGE TO BE POSITIVE, LEAVING NO POCKETS IN FINISHED GRADE. FINISHED GRADING TO SLOPE MINIMUM 1:12 AND ASPHALT TO SLOPE MAX 1:10 AWAY FROM BUILDING UNLESS SHOWN OTHERWISE. NEW GRADES TO MEET EXISTING GRADES FALLING AWAY FROM BUILDING AND FEATHERED OUT EVENLY.

SITE PLAN NOTES

No.	NOTE
1	OUTLINE OF I.T ROOM. BELL DEMAC SHALL BE WITHIN THIS ROOM. COORDINATE WITH ELECTRICAL DRAWINGS.
2	MAIN ELECTRICAL ROOM. INCOMING SERVICE SHALL BE COORDINATED WITH ELECTRICAL DRAWINGS.
3	MECHANICAL ROOM. INCOMING WATER AND FIRE SERVICE SHALL BE COORDINATED WITH MECHANICAL DRAWINGS.
4	PAD MOUNTED TRANSFORMER C/W GROUNDING GRID. GC SHALL COORDINATE SCOPE OF WORK AND INSTALLATION WITH UTILITY PROVIDER AND ELECTRICAL DRAWINGS.
5	PROPOSED HEADWALL c/w 150mm RIP RAP
6	PROPOSED UNDERGROUND STORM WATER TANK. COORDINATE WITH CIVIL DRAWINGS.
7	GC TO PROVIDE GUARD RAIL THE LENGTH AS NOTED ON CIVIL DRAWINGS. TERMINATE GUARD RAIL AT EDGE OF GARBAGE ENCLOSURE.
8	GARBAGE ENCLOSURE c/w A LOCKABLE GATE.
9	FIRE DEPARTMENT SIAMESE CONNECTION
10	FIRE HYDRANT
11	FIRE ROUTE SIGNAGE
12	TYPE 'A' ACCESSIBLE PARKING SPOT
13	PAVED WALKWAY
14	PLANTING BED
15	LIGHT POLE
16	AODA RAMP
17	FLAG POLE
18	MUNICIPAL SIDEWALK
19	NO CONSTUCTION PERMITTED WITHIN FLOOD ZONE
20	CHAIN LINK FENCE
21	DECORATIVE FENCE
22	PYLON SIGN
23	EV CHARGER STATION. REFER TO DETAILS.
24	FUTURE EV CHARGER STATION. INSTALL CONCRETE BASE ONLY @ LOCATION.

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
13	ADDENDUM 03	09/11/2024
12	SPA SUBMISSION 2	09/12/2024
11	ADDENDUM 01	08/13/2024
10	SPA RESUBMISSION 1	07/17/2024
9	TENDER	07/16/2024
8	CLASS A ESTIMATE	05/21/2024
7	90% CONTRACT DOCUMENTS	05/21/2024
6	SPA 1 RESUBMISSION	05/15/2024
5	PRE-APPLICATION SUBMISSION 2	04/24/2024
4	60% CONTRACT DOCUMENTS	04/16/2024
3	SANI CLASS B ESTIMATE SANI	08/01/2024
2	DESIGN DEVELOPMENT 100%	08/01/2024
1	SPA 1 RESUBMISSION	20/09/2023
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

ENLARGED SITE PLAN

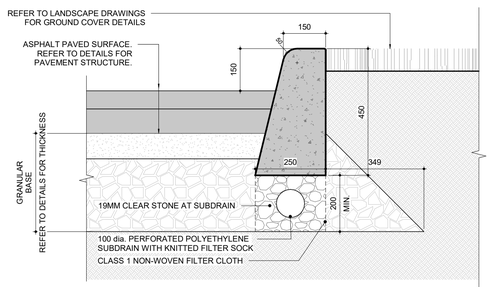
ISSUE DATE: 09/11/2024

DRAWN BY: AR / SL CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: As indicated

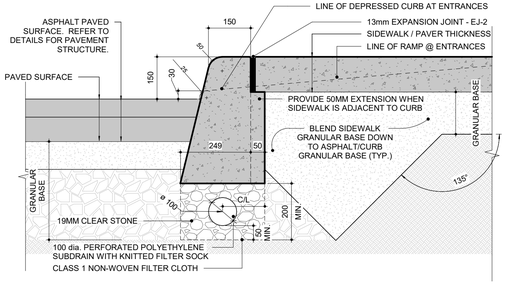
DRAWING NO.: **A02.03** REVISION: **13**

PLOT DATE: 2024-09-13 2:38:45 PM



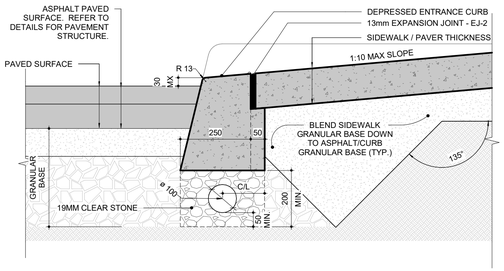
EXECUTION NOTES
1. CONCRETE SHALL BE CLASS C2, 32MPa, 5-8% AIR CONTENT WITH A MAX. SLUMP OF 80MM
2. PROVIDE WEAKEND PLANE JOINT AT EVERY 3m MAX.
3. PROVIDE EXPANSION JOINT AT 12m MAX. O/C AND AT ALL STRUCTURES, DRIVEWAYS AND RETURNS.

8 BARRIER CURB - ADJACENT TO LANDSCAPED AREAS
1 : 10



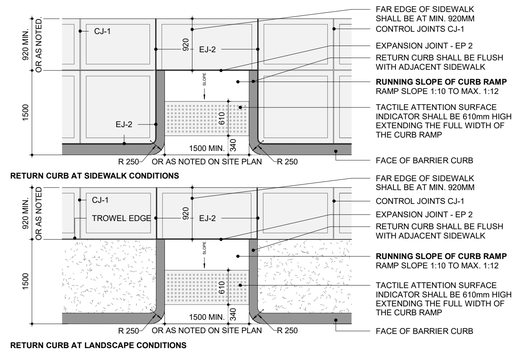
EXECUTION NOTES
1. CONCRETE SHALL BE CLASS C2, 32MPa, 5-8% AIR CONTENT WITH A MAX. SLUMP OF 80MM
2. PROVIDE WEAKEND PLANE JOINT AT EVERY 3m MAX.
3. PROVIDE EXPANSION JOINT AT 12m MAX. O/C AND AT ALL STRUCTURES, DRIVEWAYS AND RETURNS.

9 BARRIER CURB - ADJACENT TO SIDEWALK / HARD SURFACES
1 : 10

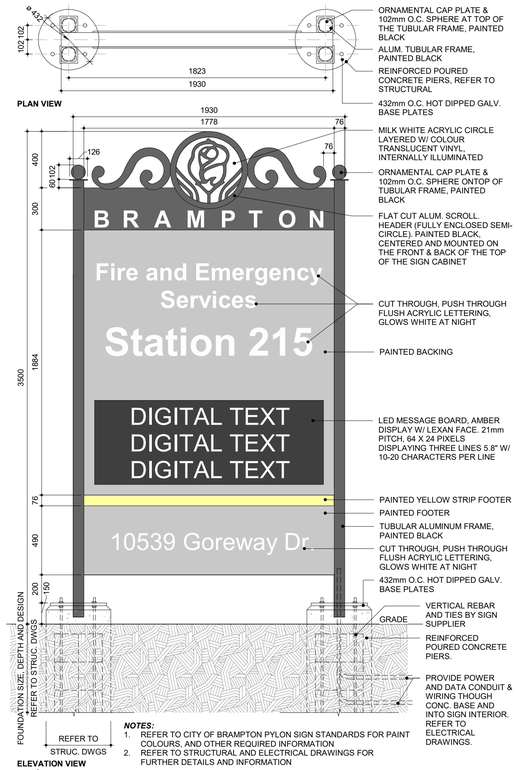


EXECUTION NOTES
1. CONCRETE SHALL BE CLASS C2, 32MPa, 5-8% AIR CONTENT WITH A MAX. SLUMP OF 80MM
2. PROVIDE WEAKEND PLANE JOINT AT EVERY 3m MAX.
3. PROVIDE EXPANSION JOINT AT 12m MAX. O/C AND AT ALL STRUCTURES, DRIVEWAYS AND RETURNS.

10 BARRIER CURB - DEPRESSED ENTRANCE CURB
1 : 10

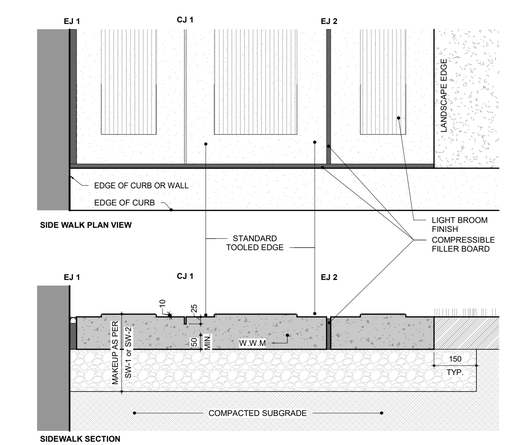


11 AODA RETURN CURB RAMP DETAIL
1 : 50



NOTES:
1. REFER TO CITY OF BRAMPTON PYLON SIGN STANDARDS FOR PAINT COLOURS, AND OTHER REQUIRED INFORMATION
2. REFER TO STRUCTURAL AND ELECTRICAL DRAWINGS FOR FURTHER DETAILS AND INFORMATION

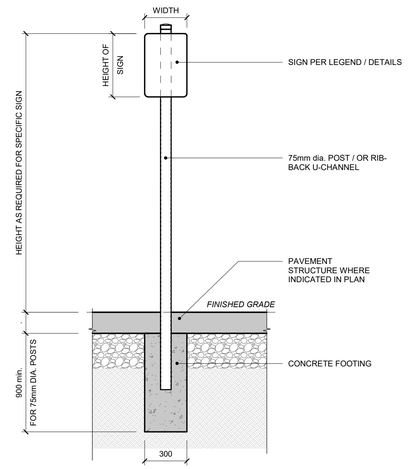
6 PYLON SIGN - DIGITAL
1 : 20



EXECUTION NOTES:

1. THE FOLLOWING IDENTIFIES THE JOINTS NOTED ABOVE:
   1. EJ1 - EXPANSION JOINT COMPOSED OF COMPRESSIBLE FILLER BOARD MECHANICALLY FASTENED TO WALL FACE / RIGID INSULATION, c/w SEALANT . THIS JOINT CONDITION APPLIES TO ALL LOCATIONS ADJACENT TO SIDEWALKS ABUTTING A BUILDING FACE.
   2. CJ 1- HAND TOOLED CONTROL JOINT 25mm DEEP
   3. EJ 2 - EXPANSION JOINT COMPOSED OF COMPRESSIBLE FILLER BOARD
2. SPACING REQUIREMENTS
   1. HAND TOOLED - PROVIDE TRANSVERSE & LONGITUDINAL CONTRACTION JOINTS @ 1500 O/C MAX
   2. FILLER BOARD - PROVIDE COMPRESSIBLE FILLBOARDS AT MAX 7.60Ø
3. PROVIDE 150x150 W.W.M (MINIMUM 50mm COVERAGE)
4. REFER TO STRUCTURAL AND LANDSCAPE DRAWINGS FOR OTHER REQUIREMENTS.
5. COMPRESSIBLE FILLER BOARD
   1. BASIS OF DESIGN:
      1. MANUFACTUER: W.R MEADOWS
      2. PRODUCT: X-FOAM EXPANSION JOINT FILLER
      3. THICKNESS: 13mm WITHIN SIDEWALKS & 25mm AT BUILDING FACE
      4. WIDTHS: AS REQUIRED FOR SIDEWALK OVERALL STRUCTURE
      5. LENGTHS: AS REQUIRED
6. REFER ALSO TO GEOTECHNICAL REPORT(S) TO CONFIRM LAYER THICKNESSES. REPORT ANY DISCREPANCIES TO THE CONSULTANT PRIOR TO PROCEEDING.
7. CONCRETE FOR SIDEWALKS SHALL BE CLASS C2, 32MPa, 5-8% AIR CONTENT WITH A MAX. SLUMP OF 80MM

7 CONCRETE SIDEWALK PAVEMENT
1 : 10



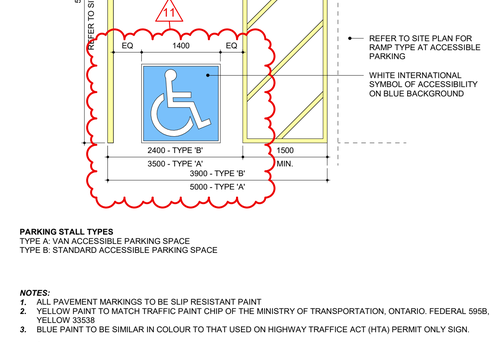
GENERAL REQUIREMENTS
1. ALL SIGNS SHALL BE PER LOCAL AUTHORITIES HAVING JURISDICTION. VERIFY SIZE, SHAPE & WORDING.

ACCESSIBLE PARKING SIGNS
1. POST MOUNTED SIGN - FIXED POST
   1. POST SHALL BE 75mm dia. GALVANIZED STEEL c/w POST CAP IN 300mm dia. CONCRETE FOOTING
2. HEIGHT REQUIREMENTS
   1. CENTER OF ACCESSIBLE PARKING SIGN SHALL BE BETWEEN 1500mm TO 2000mm MEASURED FROM FINISHED GRADE
3. LOCATION
   1. LOCATE ONE POSTED MOUNTED SIGN AT EACH PARKING SPACE PROVIDED

FIRE ROUTE SIGNS
1. POST MOUNTED SIGN - FIXED POST
   1. POST SHALL BE RIB-BAK U-CHANNEL POST
   2. INSTALL 920mm BELOW FINISHED GRADE
2. HEIGHT REQUIREMENTS
   1. BOTTOM OF FIRE ROUTE SIGN SHALL BE INSTALLED BETWEEN 1900mm TO 2500mm AS MEASURED FROM EDGE OF TRAVELED PORTION OF THE DESIGNATED ROUTE, TO THE BOTTOM EDGE OF THE SIGN
3. LOCATION
   1. SIGN SHALL BE INSTALLED AT A DISTANCE BETWEEN 0.3M TO 3M FROM EDGE OF DESIGNATED ROUTE.
   2. FIRE ROUTE SIGNS SHALL BE INSTALLED AT 30M INTERVALS OR AS SHOWN ON THE SITE PLAN ALONG THE DESIGNATED FIRE ROUTE.

STOP SIGNS
1. POST MOUNTED SIGN - FIXED POST
   1. POST SHALL BE 75mm dia. GALVANIZED STEEL c/w POST CAP IN 300mm dia. CONCRETE FOOTING
2. HEIGHT REQUIREMENTS
   1. SHALL BE ERECTED SO THAT THE BOTTOM EDGE IS NOT LESS THAN 1.5m AND NOT MORE THAN 2.5m ABOVE THE LEVEL OF THE ADJACENT ROADWAY.
3. LOCATION: AS NOTED IN PLAN.

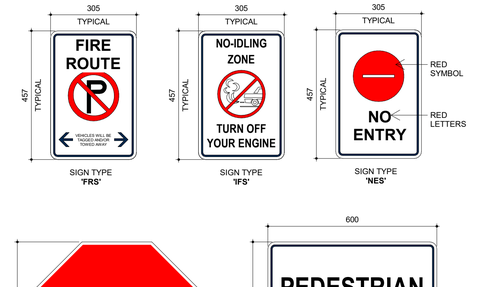
4 SIGNS FIXED POST
1 : 20



PARKING STALL TYPES
TYPE A: VAN ACCESSIBLE PARKING SPACE
TYPE B: STANDARD ACCESSIBLE PARKING SPACE

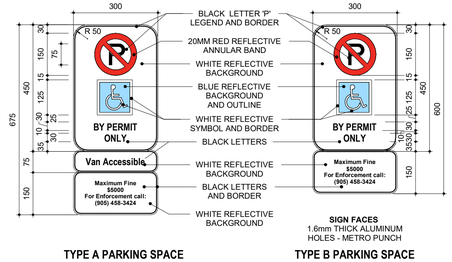
NOTES:
1. ALL PAVEMENT MARKINGS TO BE SLIP RESISTANT PAINT
2. YELLOW PAINT TO MATCH TRAFFIC PAINT CHIP OF THE MINISTRY OF TRANSPORTATION, ONTARIO. FEDERAL 595B, YELLOW 33538
3. BLUE PAINT TO BE SIMILAR IN COLOUR TO THAT USED ON HIGHWAY TRAFFICE ACT (HTA) PERMIT ONLY SIGN.

1 AODA PARKING SPACE
1 : 50



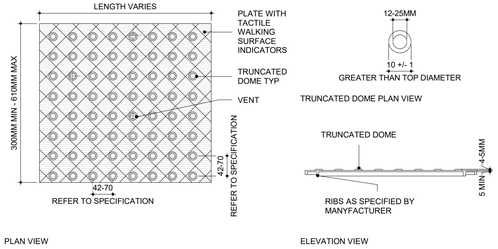
GENERAL REQUIREMENTS
1. FIRE ROUTE SIGNAGE SHALL INDICATE APPROPORATE LOCAL BY-LAW NUMBER
2. ALL LETTERING AND COLORS SHALL MEET M.T.O STANDARDS
3. ALL SIGNAGE TO ONTARIO TRAFFIC MANUAL / MUNICIPAL STANDARDS AND DETAILS.
4. GENERAL CONTRACTOR SHALL VERIFY AND CONFIRM WITH AHJ PRIOR TO INSTALLATION
5. REFER TO SITE PLAN FOR QTY AND LOCATIONS OF SIGNS REQUIRED.

5 MUNICIPAL SIGNAGE
1 : 10



NOTES:
1. BOTTOM EDGE OF SIGN TO BE 1 TO 1.5m ABOVE SURFACE
2. INCLUDES THE WORDING "MAXIMUM FINE $5000" AND "FOR ENFORCEMENT CALL 905-458-3423" ON THE SAME SIGN OR ON ANOTHER SIGN IN CLOSE PROXIMITY TO THE ACCESSIBLE PARKING SIGN
3. MOUNTING HEIGHT REQUIRMENTS: MOUNT SIGN FACE TO POST WITH TWO GALVANIZED 12mm HEX HEAD BOLTS AND NUTS WITH FLAT WASHERS ON BOTH SIDES

2 ACCESSIBLE PARKING SIGNAGE
1 : 10



BASIS OF DESIGN
1. DEPTH OF HAZARDOUS TACTILE TILE TO ADHERE TO APPLICATION REQUIRMENTS. IT SHALL BE NOT LESS THAN 300MM AND NOT MORE THAN 610MM.
2. MUST CONTRAST WITH ADJOINING SURFACES AND BE SLIP-RESISTANT, REFER TO SPECIFICATIONS FOR MATERIAL.
3. VENTS SHALL BE SPECIFIED BY MANUFACTURER.
4. SPACING OF TRUNCATED DOMES VARIES DEPENDING ON TOP DIAMETER OF FLAT-TOPPED DOMES OR CONES. REFER TO BUILDING CODE AND SPECIFIED PRODUCT.

3 TACTILE HAZARD INDICATOR TILE
1 : 10

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2	DESIGN DEVELOPMENT 100%	08/01/2024
1	SPA 1 RESUBMISSION	20/09/2023
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

SITE DETAILS

ISSUE DATE: 09/11/2024

DRAWN BY: SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A02.05** REVISION: **11**

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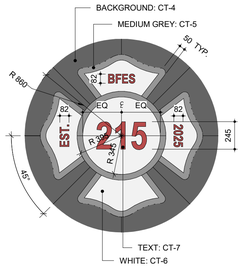


8 TILE INLAY LOGO DETAIL

1 : 25

GENERAL NOTES - TILE INLAY DESIGN

CT-4

FLOOR ASSEMBLY: CT-4
- FLOOR TILE
ANATOLIA - NORD, MATTE PORCELAIN
COLOR: CARBON
SIZE: 609x1219

CT-5

FLOOR ASSEMBLY: CT-5
- FLOOR TILE
ANATOLIA - NORD, MATTE PORCELAIN
COLOR: CHROMIUM
SIZE: 609x1219

CT-6

FLOOR ASSEMBLY: CT-6
- FLOOR TILE
ANATOLIA - NORD, MATTE PORCELAIN
COLOR: LITHIUM
SIZE: 609x1219

CT-7

FLOOR ASSEMBLY: CT-7
- FLOOR TILE
POMMA MAP - MATTE/HONED PORCELAIN
COLOR: CHERRY MATTE
SIZE: 197x197

GENERAL NOTES - FLOOR TRANSITIONS

FT-1 TRANSITION STRIP	FT-1	SLOPED TRANSITIONS

MANUFACTURER	- SCHLUTER
PRODUCT NUMBER	- RENO-U
FINISH	- STAINLESS STEEL

FT-2 TRANSITION STRIP	FT-2	SLOPED TRANSITIONS

MANUFACTURER	- ECORE
PRODUCT NUMBER	- TRANSITION STRAIGHT EDGE
FINISH	- RUBBER

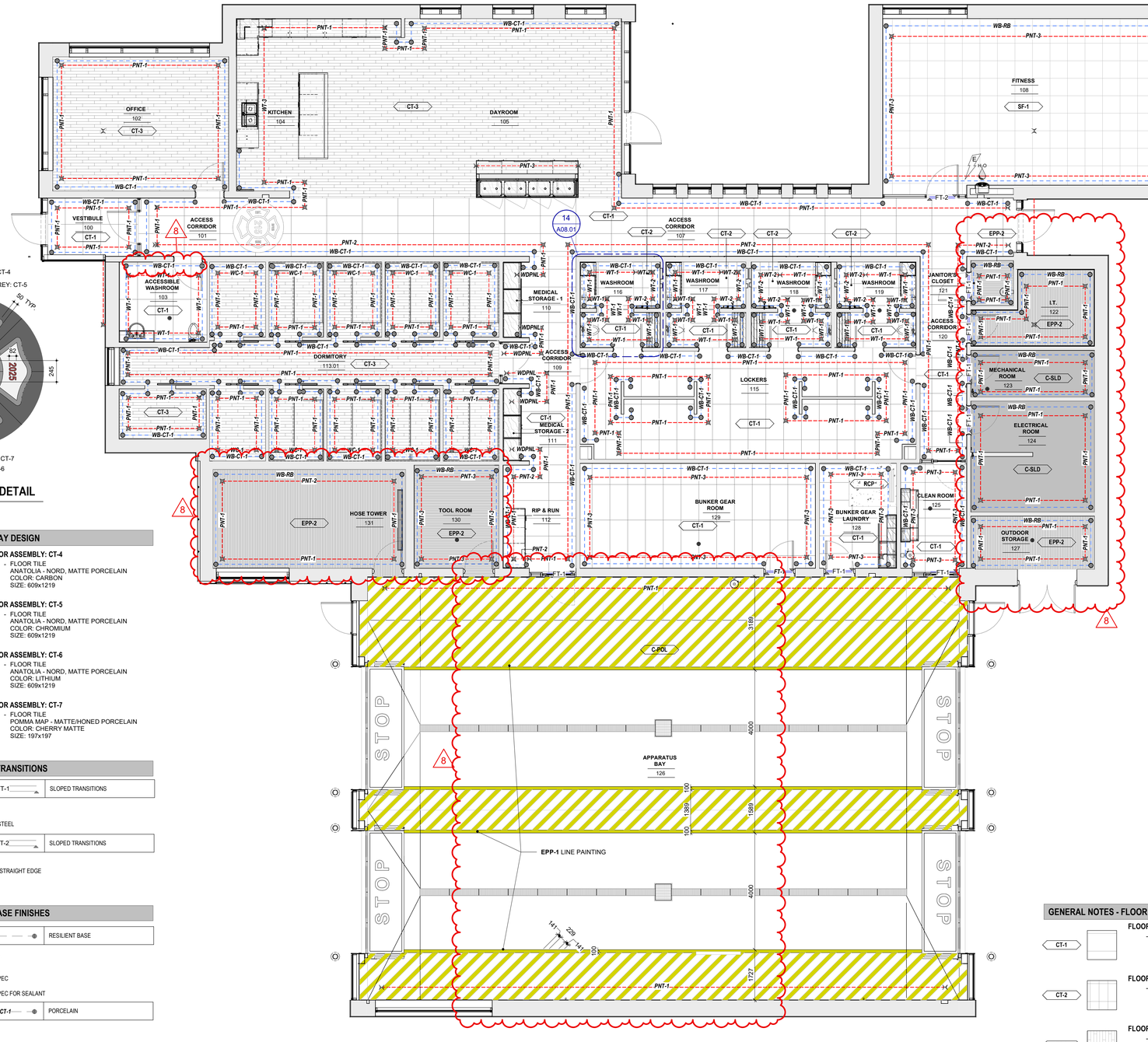
GENERAL NOTES - WALL BASE FINISHES

WB-RB WALL BASE	WB-RB	RESILIENT BASE

MANUFACTURER	- JOHNSONITE
SERIES	- N/A
COLOR NAME	- BLACK
SIZE	- REFER TO SPEC
PRODUCT #	- N/A
GROUT	- REFER TO SPEC FOR SEALANT

WB-CT-1 WALL BASE	WB-CT-1	PORCELAIN

MANUFACTURER	- ANATOLIA
SERIES	- NORD
COLOR NAME	- CARBON
SIZE	- 609x1219 (CUT TO 100MM HEIGHT)
PRODUCT #	- 4500-0929-2
GROUT	- WALLS WHERE NOTED



1 LEVEL 01 - FLOOR FINISHES PLANS

1 : 75

GENERAL NOTES - FLOOR FINISHES

1. *GENERAL REQUIREMENTS*

1. ALL INTERIOR FINISHES SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE (LATEST REVISION) THE TERRAZZO, TILE & MARBLE ASSOCIATION OF CANADA (TTMAC) AND AUTHORITIES HAVING JURISDICTION.
2. REFER TO ROOM FINISH SCHEDULE FOR FLOOR AND BASE FINISHES.
3. ALL FLOOR FINISHES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND PROJECT SPECIFICATION.
4. FLOOR TILES ARE TO BE INSTALLED IN PATTERNS AS INDICATED.
5. WHERE TILES ARE INDICATED TO BE INSTALLED IN A RUNNING BOND PATTERN, INSTALL IN A 1/5 RUNNING BOND PATTERN (20% OVERLAP) TO REDUCE LIPPAGE AS DEFINED BY TTMAC.
6. MOVEMENT JOINTS SHALL BE IN ACCORDANCE WITH TTMAC DOCUMENT 301MJ- (CURRENT REVISION).
7. UNLESS OTHERWISE NOTED, ALL FLOOR FINISHES TO BE INSTALLED PRIOR TO INSTALLATION OF MILLWORK.
8. NO SUBSTITUTIONS OF FLOOR FINISHES PERMITTED WITHOUT CONSULTANT WRITTEN APPROVAL.
9. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL FLOOR FINISHES FOR THE DURATION OF THE WORK.
10. CONTRACTOR TO PROVIDE PROTECTION OF ALL FINISHED CONCRETE FLOORS USING PREMANUFACTURED CARDBOARD TEMPORARY FLOOR PROTECTION (OR APPROVED EQUIVALENT) FOR THE DURATION OF THE WORK.
11. CONTRACTOR TO PROVIDE PROTECTION OF ALL FINISHED TILED FLOORS USING PREMANUFACTURED CARDBOARD TEMPORARY FLOOR PROTECTION (OR APPROVED EQUIVALENT) FOR THE DURATION OF THE WORK.
12. CHANGES IN FLOOR FINISH AT DOOR OPENINGS SHALL OCCUR UNDERNEATH THE DOOR (IN THE CLOSED POSITION) UNLESS OTHERWISE NOTED. WHERE THERE IS AN OPENING WITH NO DOOR, CHANGES IN FLOOR FINISH SHALL OCCUR AT THE MIDPOINT OF THE OPENING.
13. UNLESS NOTED OTHERWISE, TILE BASES SHALL BE 100MM HIGH MEASURED FROM THE ADJACENT FINISHED FLOOR.
14. WHERE A CHANGE OF FLOORING MATERIAL THICKNESS OCCURS, FEATHER FLOOR AS REQUIRED.

GENERAL NOTES - INTERIOR FINISHES

PNT-1 PAINT FINISH	PNT-1	FIELD PAINT

MANUFACTURER	- BENJAMIN MOORE
PRODUCT NUMBER	- SWISS COFFEE
COLOR NAME	- OC-45
PAINT TYPE	- INTERIOR ACRYLIC PAINT
FINISH	- EGGSHELL FINISH
LOCATION	- WALLS, EXPOSED STEEL, UNLESS OTHERWISE NOTED

PNT-2 PAINT FINISH	PNT-2	ACCENT PAINT

MANUFACTURER	- BENJAMIN MOORE
PRODUCT NUMBER	- 2141-30
COLOR NAME	- ARMY GREEN
PAINT TYPE	- INTERIOR ACRYLIC PAINT
FINISH	- EGGSHELL FINISH
LOCATION	- WALLS WHERE NOTED

PNT-3 PAINT FINISH	PNT-3	ACCENT PAINT

MANUFACTURER	- BENJAMIN MOORE
PRODUCT NUMBER	- 2125-20
COLOR NAME	- DEEP SPACE
PAINT TYPE	- EXTERIOR / INTERIOR ACRYLIC PAINT
FINISH	- EGGSHELL FINISH
LOCATION	- WALLS WHERE NOTED, ALL EXPOSED STEEL IN VEHICLE BAY CEILING (I.E. JOISTS AND DECK, CONDUITS, PIPES, ETC. REFER TO SPECIFICATIONS FOR COLOUR FOR GAS AND SPRINKLER PIPES), FOUR FOLD DOOR JAMBS

PNT-4 PAINT FINISH	PNT-4	CEILING FEILD PAINT

MANUFACTURER	- BENJAMIN MOORE
PRODUCT NUMBER	- OC-117
COLOR NAME	- SIMPLY WHITE
PAINT TYPE	- INTERIOR ACRYLIC PAINT
FINISH	- EGGSHELL FINISH
LOCATION	- ALL EXPOSED AND GYPSUM BOARD CEILINGS UNLESS OTHERWISE NOTED

WT-1 WALL TILE	WT-1	WASHROOMS

MANUFACTURER	- ANATOLIA
SERIES	- SOHO
COLOR NAME	- VINTAGE GREY, GLOSSY
SIZE	- 200 x 600
PRODUCT #	- 4000-0242-0
GROUT	- TBD

WT-2 WALL TILE	WT-2	SHOWERS

MANUFACTURER	- ANATOLIA
SERIES	- SOHO
COLOR NAME	- SOFT SAGE, GLOSSY
SIZE	- 100X400
PRODUCT #	- 4000-0230-0
GROUT	- TBD

WT-3 WALL TILE	WT-3	BACKSPLASH

MANUFACTURER	- CAESARSTONE
SERIES	- 4043
COLOR NAME	- PRIMORDIA
SIZE	- 20MM THICK
PRODUCT #	- 4043
GROUT	

WC-1 WALL COVERING	WC-1	DORMITORY

MANUFACTURER	- FILZFELT
SERIES	- 3mm WOOL DESIGN FELT
COLOR NAME	- 533 INDIGO
PRODUCT #	- 100% MERINO WOOL
FINISH	

WDPNL WALL COVERING	WDPNL	LAMINATE PANELS

MANUFACTURER	- WILSONART
SERIES	- PREMIUM LAMINATE
COLOR NAME	- GREAT BEAR
PRODUCT #	- 823TK-05
FINISH	- TIMBERGRAIN FINISH

GENERAL NOTES - FLOOR FINISHES

CT-1

FLOOR ASSEMBLY: CT-1
- FLOOR TILE
ANATOLIA - NORD, MATTE PORCELAIN
COLOR: PALLADIUM NORD
SIZE: 609x1219
WALLBASE: WB-CT-1 (U.N.O)

CT-2

FLOOR ASSEMBLY: CT-2
- SHOWER FLOOR TILE
ANATOLIA - NORD, MATTE PORCELAIN
COLOUR: PALLADIUM
SIZE: 304x609
WALLBASE: WB-CT-1 (U.N.O)

CT-3

FLOOR ASSEMBLY: CT-3
- FLOOR TILE
ANATOLIA - VINTAGEWOOD, GLAZED PORCELAIN
COLOR: SADDLE
SIZE: 150x900
WALLBASE: CT-2 (U.N.O)

SF-1

FLOOR ASSEMBLY: SF-1
- RESILIENT SPORTS FLOOR
ECORE - PERFORMANCE ULTRATILE
COLOUR: EL15A - STEEL APPEAL 2
SIZE: 610x610x25
WALLBASE: RB-1 (U.N.O)

C-SLD

FLOOR ASSEMBLY: C-SLD
- SEALANT APPLIED TO CONCRETE
WALLBASE: RB-1 (U.N.O)

C-POL

FLOOR ASSEMBLY: C-POL
- POLISHED CONCRETE

EPP-1

FLOOR ASSEMBLY: EPP-1
- COROTECH EPOXY
- V400-10 SAFETY YELLOW

EPP-2

FLOOR ASSEMBLY: EPP-2
- COROTECH EPOXY
- V400-75 BATTLESHIP GREY
100mm RUBBER BASE

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID FRIESEN
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4318

NO.	ISSUES/REVISIONS	DATE
8	ADDENDUM 03	09/11/2024
7	ADDENDUM 01	08/13/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

LEVEL 01 - FINISHES PLANS

ISSUE DATE:	09/11/2024
DRAWN BY: MM / SRL	CHECKED BY: SRL
PROJECT NO.: 12303	SCALE: As indicated
DRAWING NO.:	REVISION:

A03.11 | **8**

PLOT DATE: 2024-09-11 3:30:26 PM

GENERAL NOTES - FLOOR FINISHES

1. GENERAL REQUIREMENTS

1. ALL INTERIOR FINISHES SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE (LATEST REVISION) THE TERRAZZO, TILE & MARBLE ASSOCIATION OF CANADA (TTMAC) AND AUTHORITIES HAVING JURISDICTION.
2. REFER TO ROOM FINISH SCHEDULE FOR FLOOR AND BASE FINISHES.
3. ALL FLOOR FINISHES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND PROJECT SPECIFICATION.
4. FLOOR TILES ARE TO BE INSTALLED IN PATTERNS AS INDICATED.
5. WHERE TILES ARE INDICATED TO BE INSTALLED IN A RUNNING BOND PATTERN, INSTALL IN A 1/5 RUNNING BOND PATTERN (20% OVERLAP) TO REDUCE LIPPAGE AS DEFINED BY TTMAC.
6. MOVEMENT JOINTS SHALL BE IN ACCORDANCE WITH TTMAC DOCUMENT 301/MJ- (CURRENT REVISION).
7. UNLESS OTHERWISE NOTED, ALL FLOOR FINISHES TO BE INSTALLED PRIOR TO INSTALLATION OF MILLWORK.
8. NO SUBSTITUTIONS OF FLOOR FINISHES PERMITTED WITHOUT CONSULTANT WRITTEN APPROVAL.
9. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL FLOOR FINISHES FOR THE DURATION OF THE WORK.
10. CONTRACTOR TO PROVIDE PROTECTION OF ALL FINISHED CONCRETE FLOORS USING PREMANUFACTURED CARDBOARD TEMPORARY FLOOR PROTECTION (OR APPROVED EQUIVALENT) FOR THE DURATION OF THE WORK.
11. CONTRACTOR TO PROVIDE PROTECTION OF ALL FINISHED TILED FLOORS USING PREMANUFACTURED CARDBOARD TEMPORARY FLOOR PROTECTION (OR APPROVED EQUIVALENT) FOR THE DURATION OF THE WORK.
12. CHANGES IN FLOOR FINISH AT DOOR OPENINGS SHALL OCCUR UNDERNEATH THE DOOR (IN THE CLOSED POSITION) UNLESS OTHERWISE NOTED. WHERE THERE IS AN OPENING WITH NO DOOR, CHANGES IN FLOOR FINISH SHALL OCCUR AT THE MIDPOINT OF THE OPENING.
13. UNLESS NOTED OTHERWISE, TILE BASES SHALL BE 100MM HIGH MEASURED FROM THE ADJACENT FINISHED FLOOR.
14. WHERE A CHANGE OF FLOORING MATERIAL THICKNESS OCCURS, FEATHER FLOOR AS REQUIRED.

GENERAL NOTES - INTERIOR FINISHES

PNT-1 PAINT FINISH — ***PNT-1*** — FIELD PAINT

MANUFACTURER - BENJAMIN MOORE
PRODUCT NUMBER - SWISS COFFEE
COLOR NAME - OC-45
PAINT TYPE - INTERIOR ACRYLIC PAINT
FINISH - EGGSHELL FINISH
LOCATION - WALLS, EXPOSED STEEL, UNLESS OTHERWISE NOTED

PNT-2 PAINT FINISH — ***PNT-2*** — ACCENT PAINT

MANUFACTURER - BENJAMIN MOORE
PRODUCT NUMBER - 2141-30
COLOR NAME - ARMY GREEN
PAINT TYPE - INTERIOR ACRYLIC PAINT
FINISH - EGGSHELL FINISH
LOCATION - WALLS WHERE NOTED

PNT-3 PAINT FINISH — ***PNT-3*** — ACCENT PAINT

MANUFACTURER - BENJAMIN MOORE
PRODUCT NUMBER - 2125-20
COLOR NAME - DEEP SPACE
PAINT TYPE - EXTERIOR / INTERIOR ACRYLIC PAINT
FINISH - EGGSHELL FINISH
LOCATION - WALLS WHERE NOTED, ALL EXPOSED STEEL IN VEHICLE BAY CEILING (I.E. JOISTS AND DECK, CONDUITS, PIPES, ETC. REFER TO SPECIFICATIONS FOR COLOUR FOR GAS AND SPRINKLER PIPES), FOUR FOLD DOOR JAMBS

PNT-4 PAINT FINISH — ***PNT-4*** — CEILING FEILD PAINT

MANUFACTURER - BENJAMIN MOORE
PRODUCT NUMBER - OC-117
COLOR NAME - SIMPLY WHITE
PAINT TYPE - INTERIOR ACRYLIC PAINT
FINISH - EGGSHELL FINISH
LOCATION - ALL EXPOSED AND GYPSUM BOARD CEILINGS UNLESS OTHERWISE NOTED

WT-1 WALL TILE — ***WT-1*** — WASHROOMS

MANUFACTURER - ANATOLIA
SERIES - SOHO
COLOR NAME - VINTAGE GREY, GLOSSY
SIZE - 200 x 600
PRODUCT # - 4000-0242-0
GROUT - TBD

WT-2 WALL TILE — ***WT-2*** — SHOWERS

MANUFACTURER - ANATOLIA
SERIES - SOHO
COLOR NAME - SOFT SAGE, GLOSSY
SIZE - 100X400
PRODUCT # - 4000-0230-0
GROUT - TBD

WT-3 WALL TILE — ***WT-3*** — BACKSPLASH

MANUFACTURER - CAESARSTONE
SERIES - 4043
COLOR NAME - PRIMORDIA
SIZE - 20MM THICK
PRODUCT # - 4043
GROUT

WC-1 WALL COVERING — ***WC-1*** — DORMITORY

MANUFACTURER - FILZFELT
SERIES - 3mm WOOL DESIGN FELT
COLOR NAME - 533 INDIGO
PRODUCT # - 100% MERINO WOOL
FINISH

WDPNL WALL COVERING — ***WDPNL*** — LAMINATE PANELS

MANUFACTURER - WILSONART
SERIES - PREMIUM LAMINATE
COLOR NAME - GREAT BEAR
PRODUCT # - 823TK-05
FINISH - TIMBERGRAIN FINISH

1 LEVEL 01 - REFLECTED CEILING FINISHES PLAN
1 : 75

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1	DESIGN DEVELOPMENT 100%	08/01/2024
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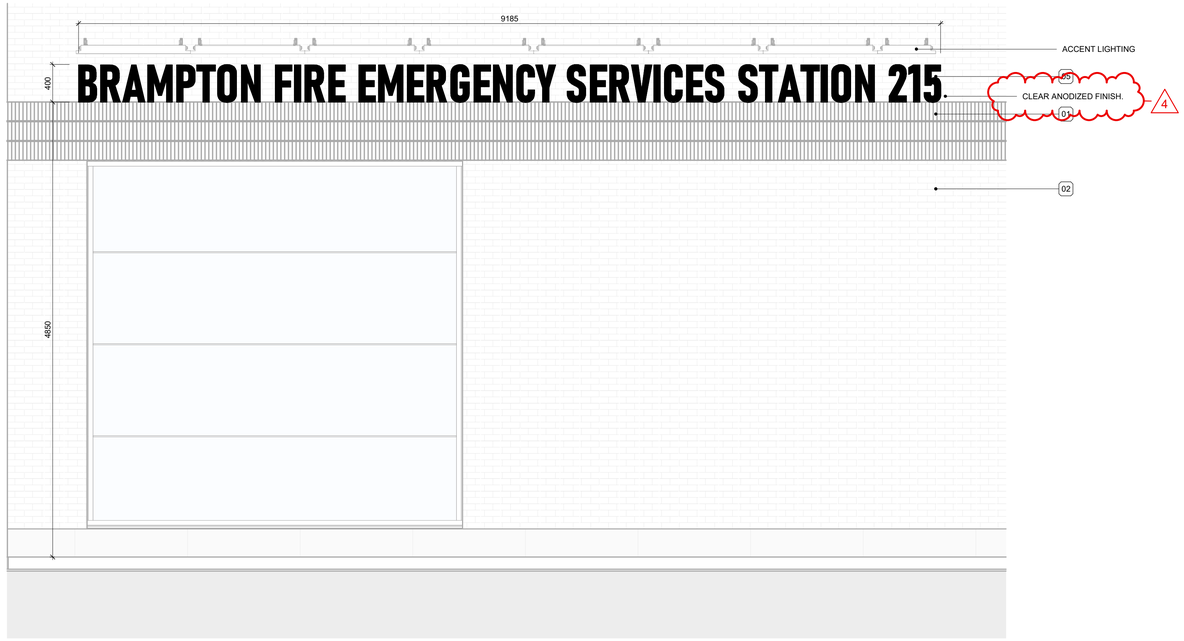
DRAWING TITLE:

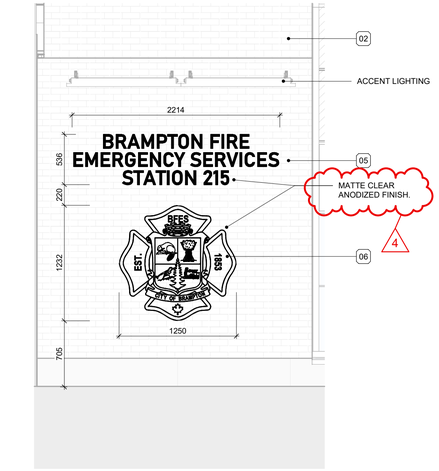
LEVEL 01 - REFLECTED CEILING FINISHES PLANS

ISSUE DATE: 09/11/2024
DRAWN BY: MM / AR / SL
CHECKED BY: SRL
PROJECT NO.: 12303
SCALE: As indicated
DRAWING NO.: **A03.12**
REVISION: **7**

PLOT DATE: 2024-09-13 3:55:39 PM



4 BUILDING SIGNAGE
1 : 30



1 BUILDING SIGNAGE
1 : 30

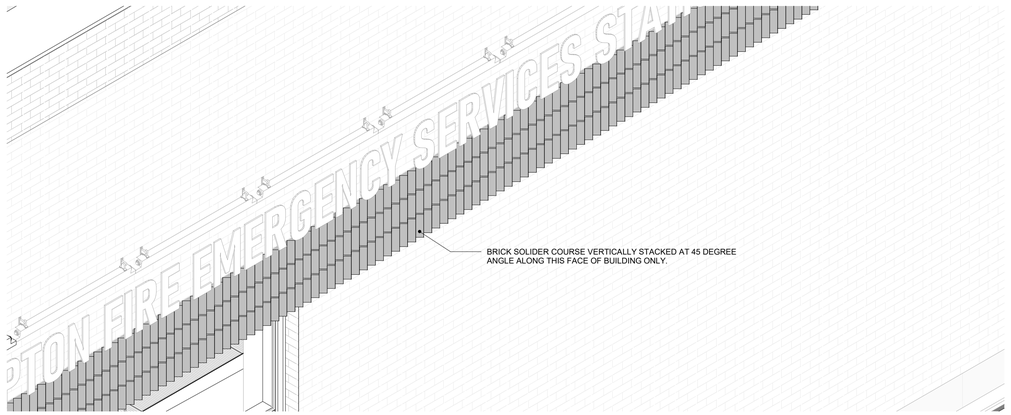
GENERAL NOTES - BUILDING ELEVATIONS

1. GENERAL REQUIREMENTS

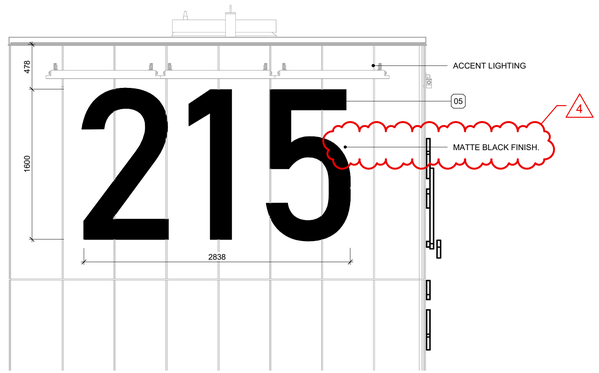
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL DRAWINGS PREPARED BY THE MECHANICAL AND ELECTRICAL ENGINEERS TO DETERMINE LOCATIONS OF ALL MECHANICAL AND ELECTRICAL PENETRATIONS, FIXTURES, DEVICES ETC.
2. ELEVATION DRAWINGS MAY NOT SHOW ALL PENETRATIONS. CONTRACTOR TO REVIEW ALL CONTRACT DRAWINGS AND SPECIFICATIONS TO DETERMINE FULL SCOPE OF WORK. MAKE PROVISIONS FOR PENETRATIONS WHERE INDICATED AND REQUIRED UNDER THE SCOPE OF THIS CONTRACT.
3. ELEVATION DRAWINGS MAY NOT SHOW ALL FIXTURES, DEVICES ETC. CONTRACTOR TO REVIEW ALL CONTRACT DRAWINGS AND SPECIFICATIONS TO DETERMINE FULL SCOPE OF WORK. REPORT ANY DISCREPANCIES WITH MECHANICAL AND ELECTRICAL DRAWINGS TO CONSULTANT IMMEDIATELY. OBTAIN INSTRUCTION FROM CONSULTANT BEFORE COMMENCING INSTALLATION.
4. LOCATION OF FIXTURES, DEVICES ETC. AS SHOWN ON ELEVATION DRAWINGS SHALL BE INSTALLED IN THE LOCATIONS INDICATED. UNLESS SPECIFICALLY DIMENSIONED, FIXTURES SUCH AS WALL MOUNTED LIGHTS SHALL BE CENTERED OVER OPENINGS.
5. ALL DOOR AND WINDOW OPENINGS TO BE SITE MEASURED BY CONTRACTOR PRIOR TO FABRICATION.
6. UNLESS OTHERWISE NOTED, ALL DIMENSIONS SHALL BE TAKEN FROM MASONRY OPENINGS
7. UNLESS OTHERWISE NOTED, ALL GLAZING WITHIN ALUMINUM ASSEMBLIES ARE TO BE DOUBLE-GLAZED, SEALED AND INSULATED UNITS.
8. UNLESS OTHERWISE NOTED, ALL JOINT SEALANTS SEPARATING ALUMINUM ASSEMBLIES AND OTHER SUBSTRATE TO MATCH THE COLOUR OF THE ADJOINING ALUMINUM FINISHED ASSEMBLIES.

ELEVATION NOTES

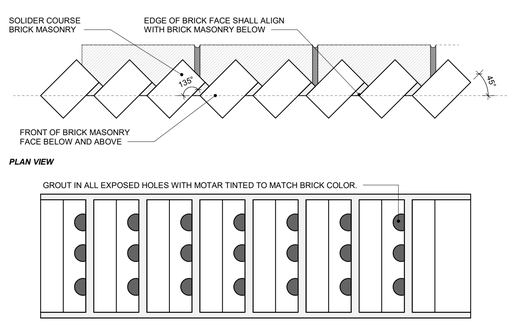
No.	NOTE
01	3 COURSE - SOLDIER MASONRY
02	BRICK CLADDING: THAMES VALLEY BRICK & TILE - MANGANESE IRONSPOT VERTICAL SCORE MODULAR
04	GLAZING
05	BUILDING SIGNAGE - GENERAL CONTRACTOR TO PROVIDE BLOCKING BACKING TO SIGNAGE, ANCHOR BACK TO STRUCTURE
06	METAL CUTOUT LOGO SIGNAGE
07	FIBRE CEMENT BOARD RIBBED PANEL: EQUITONE - FBC 1 - LINEA - LT 85 GRAPHITE
08	FOUR FOLD DOOR
09	LOUVRE
10	CLOCK
11	BRICK FENCE
12	ALUMINUM PANEL
13	FIBRE CEMENT BOARD RIBBED PANEL: EQUITONE - FBC 3 - NATURA - N 593 GREEN MIST
14	SOLERA PANEL
15	LIGHT - REFER TO RCP
16	BACK PAINTED GLASS
17	MASONRY UNITS: ARRISCRAFT - RENAISSANCE - BIRCHBARK



5 AXO - BRICK MASONRY

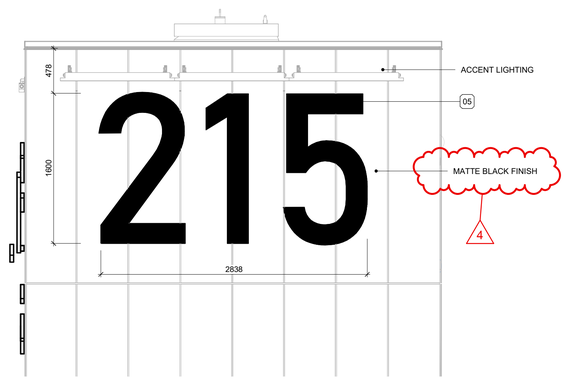


2 BUILDING SIGNAGE
1 : 30



6 SOLIDER COURSE ON ANGLE
1 : 5

7 BUILDING SIGN DETAILS
1 : 20



3 BUILDING SIGNAGE
1 : 30

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1	CLASS A ESTIMATE	05/21/2024
0	90% CONTRACT DOCUMENTS	05/21/2024

DRAWING TITLE:

BUILDING SIGNAGE

ISSUE DATE: 09/11/2024

DRAWN BY: AR CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A04.02** REVISION: **4**

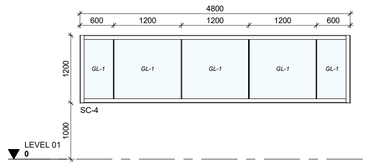
[PLOT DATE: 2024-09-13 6:15 PM]

CURTAIN WALL SCHEDULE1

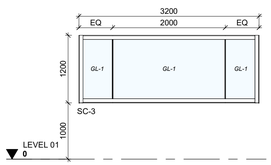
FUNCTION	TYPE	MARK	WIDTH	HEIGHT	BASIS OF DESIGN	FINISH COLOR
EXTERIOR SCREEN	CW-1	SC-1A	2,131 mm	4,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-1B	2,431 mm	4,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-3	3,200 mm	1,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-4	3,200 mm	1,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-4	4,800 mm	1,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-5	1,400 mm	2,450 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-6	1,400 mm	2,450 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-7	1,400 mm	2,450 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-8	5,220 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-9	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-10	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-11	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-12	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-13	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-14	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-15	2,900 mm	2,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-16	5,700 mm	2,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-17	1,800 mm	2,750 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-18	13,685 mm	7,694.45 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-19	4,000 mm	3,924.73 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-20	13,685 mm	7,693.13 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-21	2,500 mm	12,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-22	1,300 mm	3,850 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-28	27,181 mm	671.3 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
INTERIOR SCREEN	IS1	SC-2	2,095 mm	2,800 mm	KAWNEER 451	BLACK ANODIZED
INTERIOR SCREEN	IS1	SC-23	2,879 mm	3,050 mm	KAWNEER 451	BLACK ANODIZED
INTERIOR SCREEN	IS1	SC-27	1,581 mm	2,350 mm	KAWNEER 451	BLACK ANODIZED
INTERIOR SCREEN	IS3	SC-24	1,670 mm	2,750 mm	HOLLOW METAL	PAINTED BLACK
INTERIOR SCREEN	IS3	SC-25	1,600 mm	2,750 mm	HOLLOW METAL	PAINTED BLACK
INTERIOR SCREEN	IS3	SC-26	1,600 mm	2,750 mm	HOLLOW METAL	PAINTED BLACK

GLAZING SCHEDULE

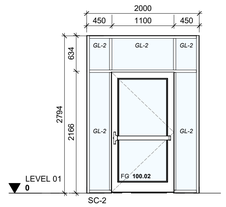
CODE	TYPE	DESCRIPTION
GL-1	INSULATED GLAZING UNIT (TRIPLE GLAZED)	VITRO ARCHITECTURAL GLASS 'SOLARBAN 90'
GL-2	CLEAR TEMPERED GLAZING	10mm TEMPERED
GL-3	FIRE RATED GLAZING	FIRELITE NT
GL-4	TRANSLUCENT GLAZING UNITS	SOLERA-T R18 + AEROGEL



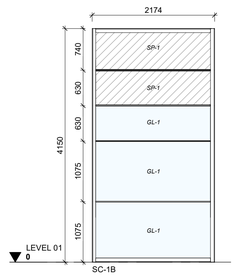
5 SC-4 ELEVATION 1 : 50



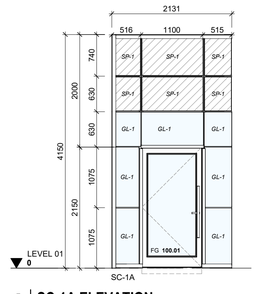
4 SC-3 ELEVATION 1 : 50



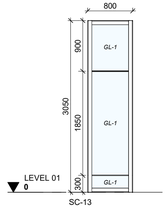
3 SC-2 ELEVATION 1 : 50



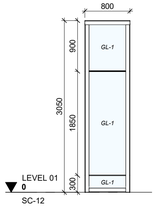
2 SC-1B ELEVATION 1 : 50



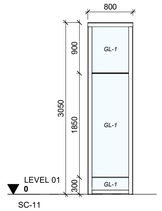
1 SC-1A ELEVATION 1 : 50



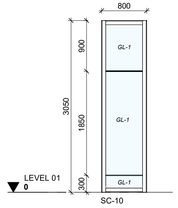
14 SC-13 ELEVATION 1 : 50



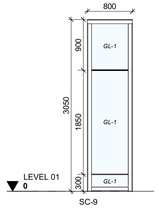
13 SC-12 ELEVATION 1 : 50



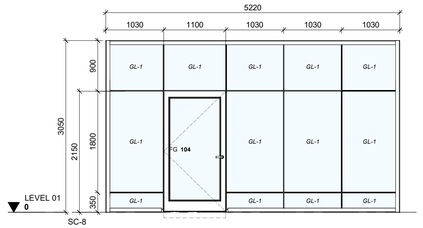
12 SC-11 ELEVATION 1 : 50



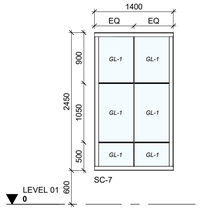
11 SC-10 ELEVATION 1 : 50



10 SC-9 ELEVATION 1 : 50



9 SC-8 ELEVATION 1 : 50



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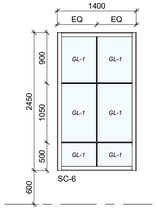
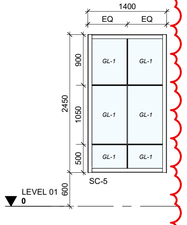


7 SC-6 ELEVATION 1 : 50



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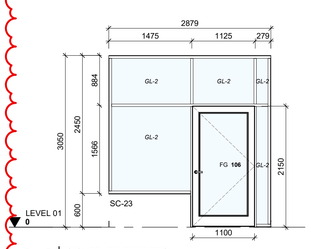
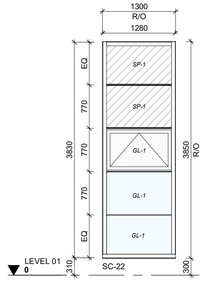
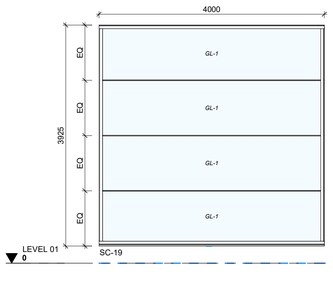


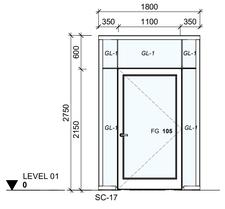
24 SC-23 ELEVATION 1 : 50



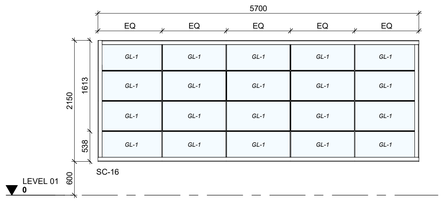
23 SC-22 ELEVATION 1 : 50



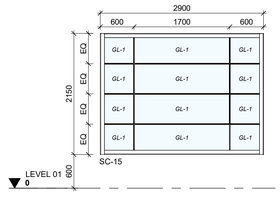
20 SC-19 ELEVATION 1 : 50



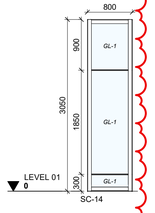
18 SC-17 ELEVATION 1 : 50



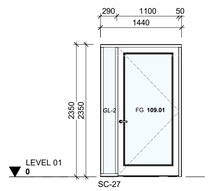
17 SC-16 ELEVATION 1 : 50



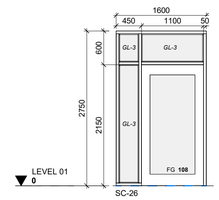
16 SC-15 ELEVATION 1 : 50



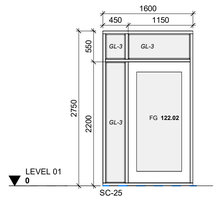
15 SC-14 ELEVATION 1 : 50



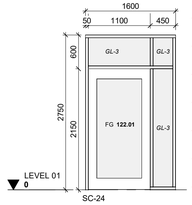
28 SC-27 ELEVATION 1 : 50



27 SC-26 ELEVATION 1 : 50



26 SC-25 ELEVATION 1 : 50



25 SC-24 ELEVATION 1 : 50

BRAMPTON

BRAMPTON FIRE STATION 215

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
9	ADDENDUM 03	09/11/2024
8	ADDENDUM 01	08/13/2024
7	TENDER	07/16/2024
6	CLASS A ESTIMATE	05/21/2024
5	90% CONTRACT DOCUMENTS	05/21/2024
4	60% CONTRACT DOCUMENTS	04/16/2024
3	CLASS B ESTIMATE	08/01/2024
2	DESIGN DEVELOPMENT 100%	08/01/2024
1	SPA 1 RESUBMISSION	20/09/2023
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

GLAZING ELEVATIONS & SCHEDULE

ISSUE DATE: 09/11/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: 1 : 50

DRAWING NO.: **A06.01** REVISION: **9**

PLOT DATE: 2024-09-11 3:02:24

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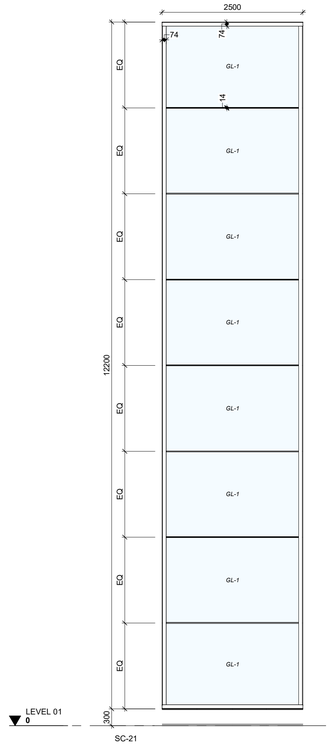


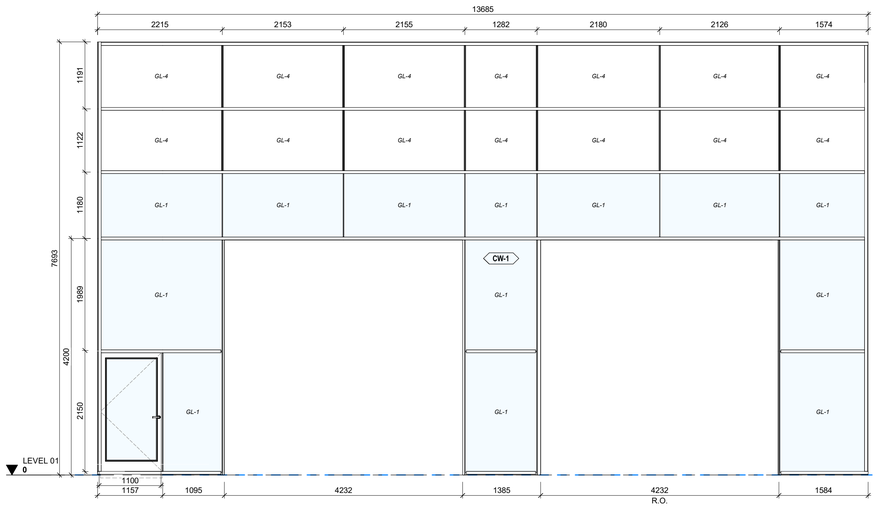
1 SC-21 ELEVATION
1 : 50

CURTAIN WALL SCHEDULE1

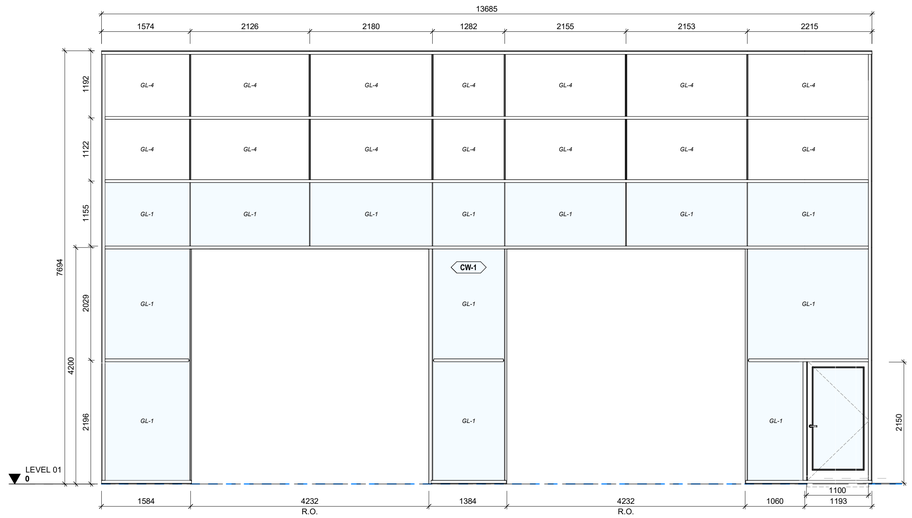
FUNCTION	TYPE	MARK	WIDTH	HEIGHT	BASIS OF DESIGN	FINISH COLOR
EXTERIOR SCREEN	CW-1	SC-1A	2,131 mm	4,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-1B	2,431 mm	4,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-3	3,200 mm	1,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-4	3,200 mm	1,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-4	4,800 mm	1,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-5	1,400 mm	2,450 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-6	1,400 mm	2,450 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-7	1,400 mm	2,450 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-8	5,220 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-9	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-10	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-11	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-12	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-13	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-14	800 mm	3,050 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-15	2,900 mm	2,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-16	5,700 mm	2,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-17	1,800 mm	2,750 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-18	13,685 mm	7,694.45 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-19	4,000 mm	3,924.73 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-20	13,685 mm	7,693.13 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-21	2,500 mm	12,200 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-22	1,300 mm	3,850 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-28	27,181 mm	671.3 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
INTERIOR SCREEN	IS1	SC-2	2,095 mm	2,800 mm	KAWNEER 451	BLACK ANODIZED
INTERIOR SCREEN	IS1	SC-23	2,879 mm	3,050 mm	KAWNEER 451	BLACK ANODIZED
INTERIOR SCREEN	IS1	SC-27	1,581 mm	2,350 mm	KAWNEER 451	BLACK ANODIZED
INTERIOR SCREEN	IS3	SC-24	1,670 mm	2,750 mm	HOLLOW METAL	PAINTED BLACK
INTERIOR SCREEN	IS3	SC-25	1,600 mm	2,750 mm	HOLLOW METAL	PAINTED BLACK
INTERIOR SCREEN	IS3	SC-26	1,600 mm	2,750 mm	HOLLOW METAL	PAINTED BLACK

GLAZING SCHEDULE

CODE	TYPE	DESCRIPTION
GL-1	INSULATED GLAZING UNIT (TRIPLE GLAZED)	VITRO ARCHITECTURAL GLASS 'SOLARBAN 90'
GL-2	CLEAR TEMPERED GLAZING	10mm TEMPERED
GL-3	FIRE RATED GLAZING	FIRELITE NT
GL-4	TRANSLUCENT GLAZING UNITS	SOLERA-T R18 + AEROGEL



3 SC-20 ELEVATION
1 : 50



2 SC-18 ELEVATION
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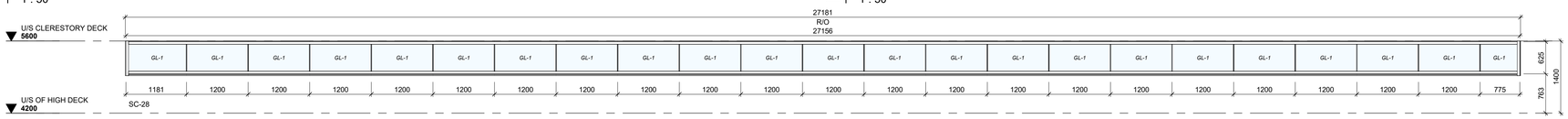

4 SC-28 ELEVATION
1 : 50

BRAMPTON

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DAVID PREWI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
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0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

GLAZING ELEVATIONS & SCHEDULE

ISSUE DATE: 09/11/2024

DRAWN BY: MM / SRL / AR CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: 1 : 50

DRAWING NO.: **A06.02** REVISION: **7**

[PLOT DATE: 2024-09-11 3:03:20 PM]

MILLWORK SCHEDULE

REFER MILLWORK DRAWINGS FOR SIZES, DIMENSIONS AND DETAILS.

ITEM CODE	ITEM TYPE	COUNTERTOP/ WORKSURFACE FINISH	FINISHES: DOOR/DRAWER SURFACES	FINISHES: INTERIOR SURFACES	FINISHES: EXPOSED SURFACES	TOE KICK	COMMENTS
103							
ACCESSIBLE WASHROOM							
MW-107	COUNTERTOP	SSUR3	N/A	N/A	N/A	N/A	
104							
KITCHEN							
MW-103A	UPPER	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
MW-103B	BASE	N/A	PLAM-4	PLAM-4	PLAM-4	SST	
MW-103B	PANEL	N/A	PLAM-4	PLAM-4	PLAM-4	N/A	
MW-103B	UPPER	N/A	PLAM-4	PLAM-4	PLAM-4	N/A	
MW-103C	COUNTERTOP	SSUR1	N/A	N/A	N/A	N/A	
MW-103C	PANEL	N/A	N/A	SSUR1	SSUR1	N/A	
105							
DAYROOM							
MW-104A	BASE	N/A	PLAM-3	PLAM-3	PLAM-3	SST	
MW-104A	COUNTERTOP	PLAM-3	N/A	N/A	N/A	N/A	
MW-104B	FULL HEIGHT	N/A	GLASS	PLAM-3	PLAM-3	SST	GLASS SHELVES
110							
MEDICAL STORAGE - 1							
MW-129	FULL HEIGHT	N/A	PLAM-3	PLAM-3	PLAM-3	SST	
111							
MEDICAL STORAGE - 2							
MW-130	FULL HEIGHT	N/A	PLAM-3	PLAM-3	PLAM-3	SST	
112							
RIP & RUN							
MW-116	BASE	N/A	PLAM-3	PLAM-3	PLAM-3	SST	
MW-116	COUNTERTOP	SSUR3	N/A	N/A	N/A	N/A	
113.02							
DORM 1							
MW-136	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.03							
DORM 2							
MW-135	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.04							
DORM 3							
MW-134	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.05							
DORM 4							
MW-133	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.08							
DORM 7							
MW-140	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.09							
DORM 8							
MW-139	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.10							
DORM 9							
MW-138	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
113.11							
DORM 10							
MW-137	BED	PLAM-3	PLAM-3	PLAM-3	PLAM-3	PLAM-3	
116							
WASHROOM							
MW-112		N/A	PLAM-3	PLAM-3	PLAM-3	SST	
MW-112	BASE	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
MW-112	SEATING	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
117							
WASHROOM							
MW-113		N/A	PLAM-3	PLAM-3	PLAM-3	SST	
MW-113	BASE	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
MW-113	SEATING	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
118							
WASHROOM							
MW-114		N/A	PLAM-3	PLAM-3	PLAM-3	SST	
MW-114	BASE	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
MW-114	SEATING	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
119							
WASHROOM							
MW-115		N/A	PLAM-3	PLAM-3	PLAM-3	SST	
MW-115	BASE	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
MW-115	SEATING	N/A	PLAM-3	PLAM-3	PLAM-3	N/A	
125							
CLEAN ROOM							
MW-122	UPPER	PLAM-3	N/A	PLAM-3	PLAM-3	N/A	
128							
BUNKER GEAR LAUNDRY							
MW-124	UPPER	PLAM-3	N/A	PLAM-3	PLAM-3	N/A	

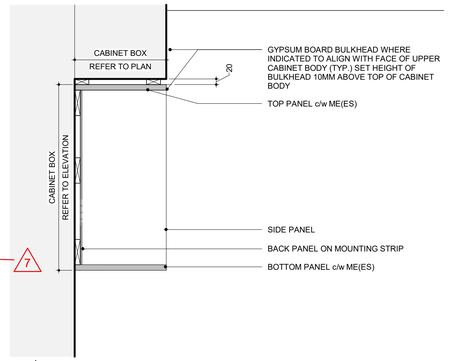
MILLWORK FINISHES SCHEDULE

CODE	MANUFACTURER	PRODUCT NUMBER	COLOUR NAME	DESCRIPTION	SIZE/FINISH	INSTALLATION NOTES	LOCATION	CONTACT	PHONE	EMAIL
MILLWORK FINISH										
PLAM-3	WILSONART	8237K-05-568	GREAT BEAR	PREMIUM LAMINATE - 1/2" COMPACT LAMINATE	TIMBERGRAIN FINISH WITH AEON	-	REFER TO MILLWORK DRAWINGS			
PLAM-4	WILSONART	15508-31-568	MIDNIGHT VELVET	TRACELESS - 1/2" COMPACT LAMINATE	ULTRA MATTE FINISH WITH AEON FINGERPRINT RESISTANT	-	REFER TO MILLWORK DRAWINGS			
SST	STAINLESS STEEL	-	-	-	AS REQUIRED	-	REFER TO MILLWORK DRAWINGS			
SSUR1	CAESARSTONE	4043	PRIMORDIA	QUARTZ	20mm	-	REFER TO MILLWORK DRAWINGS			
SSUR3	CAESARSTONE	2141	BLIZZARD	QUARTZ	-	-	REFER TO MILLWORK DRAWINGS			

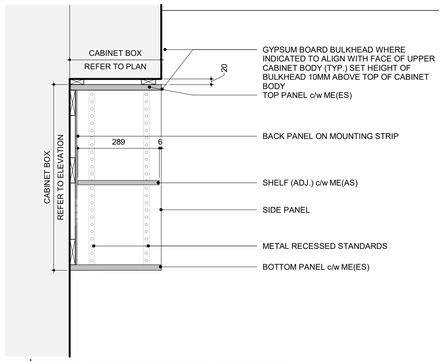
MILLWORK HARDWARE SCHEDULE

TO BE READ IN CONJUNCTION WITH MILLWORK GENERAL NOTES ON MILLWORK DRAWINGS

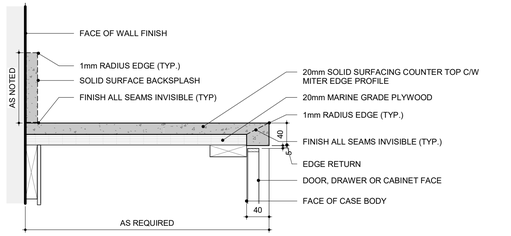
HARDWARE	MANUFACTURER: NAME	MANUFACTURER: MODEL NO.	FINISHES: MATERIAL	FINISHES: FINISH	COMMENTS
METRO CONTEMPORARY PULL	BERENSON HARDWARE	4118-1BPN-P	ZINC	BRUSHED NICKEL	QTY AS REQ'D. INSTALL VERTICALLY AS INDICATED IN DRAWINGS AND HORIZONTALLY, CENTRED IN DOORS;
COAT ROD	RICHELIEU	-	STEEL	CHROME	QTY AS REQ'D TO SUIT.
COAT ROD SUPPORTS - CLOSED	RICHELIEU	-	STEEL	CHROME	QTY AS REQ'D AND SIZED TO SUIT.
CAM LOCK	RICHELIEU	GC CHOICE	DIE-CAST ZINC	BRIGHT NICKEL	QTY AS REQ'D TO SUIT.
ALUMINUM Z-BAR HANGER	RICHELIEU	GC CHOICE	-	MILL FINISH	QTY AS REQ'D TO SUIT.



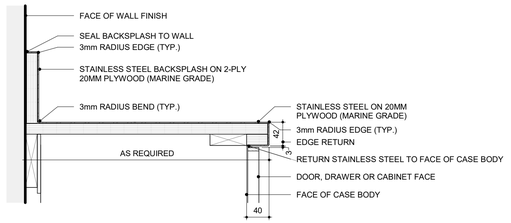
5 UPPER - OPEN 1 SHLF - FULL OVERLAY
1 : 10



6 UPPER - OPEN 2 SHLF - FULL OVERLAY
1 : 10

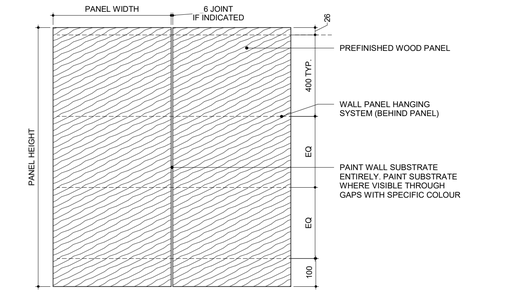


2 SOLID SURFACING COUNTER TOP
1 : 5

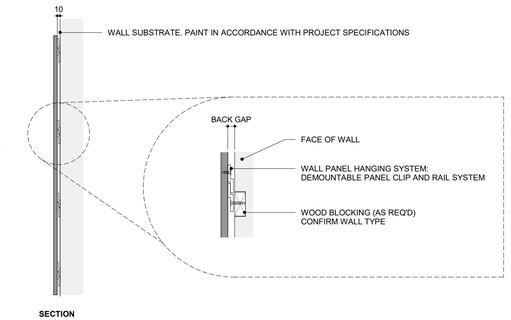


EXECUTION NOTES
1. ALL STAINLESS STEEL TO BE 316 GRADE
2. FABRICATE COUNTERTOPS TO MINIMIZE SEAMS. FINISH ALL SEAMS INVISIBLE
3. COORDINATE DIMENSIONS OF ALL APPLIANCES TO ENSURE MINIMUM CLEARANCES ARE MAINTAINED

3 STAINLESS STEEL COUNTER TOP
1 : 5



ELEVATION



SECTION

1. SHOP DRAWING REQUIRED PRIOR TO FABRICATION
2. ALL WORK TO BE COMPLETED IN ACCORDANCE WITH AWMAC ARCHITECTURAL WOODWORK STANDARDS AS SPECIFIED
3. WALL PANEL HANGING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS
4. REVIEW FLOOR FINISHES PLAN FOR POSSIBLE WOOD PANEL LOCATIONS PLACED ON WALLS. WOOD PANEL WALL FINISH TO BE INDICATED IN FLOOR FINISHES LEGEND IF APPLICABLE.

4 WOOD PANELING DETAIL
1 : 10

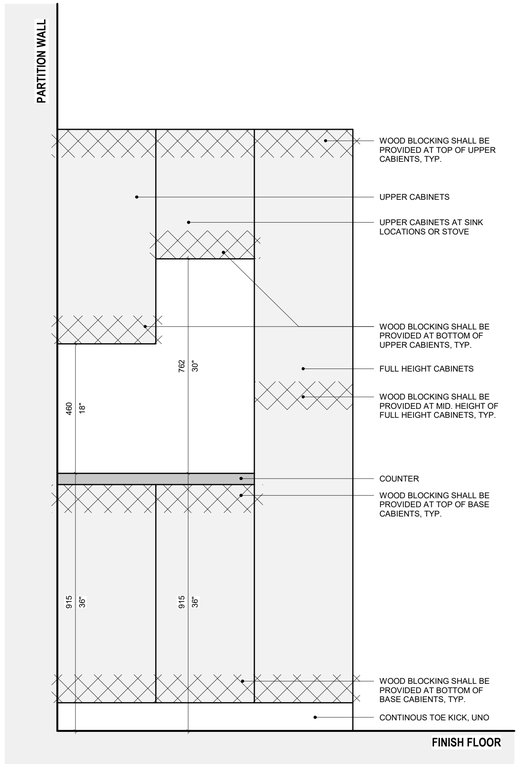
GENERAL NOTES - MILLWORK

1. ***GENERAL REQUIREMENTS***
   1. ALL ARCHITECTURAL WOODWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA (AWMAC) MANUAL - CURRENT EDITION
   2. ALL ARCHITECTURAL WOODWORK SHALL BE CUSTOM GRADE AS DEFINED BY AWMAC.
   3. ALL CABINET STYLES SHALL BE FLUSH OVERLAY UNLESS SPECIFICALLY NOTED OTHERWISE.
   4. UNDERSIDE OF WALL CABINETS SHALL BE FINISHED TYPE 'A' FLUSH UNLESS OTHERWISE NOTED.
   5. SCRIBES AND FILLERS SHALL HAVE A MAXIMUM DIMENSION OF 75MM IN WIDTH.
   6. MATCHING EDGE BAND SHALL BE SOLID WOOD WITH MIN 5MM EDGE DEPTH OR WHEN MANUFACTURED PANELS ARE SPECIFIED, MATCHING EDGE BAND PROVIDED BY MANUFACTURER.
   7. ALL CABINET FRONTS AND DOORS/DRAWERS TO BE COMPACT LAMINATE.
2. ***CABINET CONSTRUCTION***
   1. TOPS, EXPOSED ENDS, BOTTOMS SHALL BE JOINED IN ACCORDANCE WITH CUSTOM GRADE METHODS
   2. EXPOSED END CORNER DETAILS SHALL BE JOINED IN ACCORDANCE WITH CUSTOM GRADE METHODS
   3. FACE FRAME ATTACHMENT SHALL BE JOINED IN ACCORDANCE WITH CUSTOM GRADE METHODS
   4. CABINET BACKS (WALL HUNG) SHALL BE JOINED IN ACCORDANCE WITH CUSTOM GRADE METHODS
   5. CABINET BACKS (FLOOR STANDING) SHALL BE JOINED IN ACCORDANCE WITH CUSTOM GRADE METHODS
3. ***DRAWER CONSTRUCTION***
   1. FRONTS, SIDES BOTTOMS SHALL BE JOINED IN ACCORDANCE WITH CUSTOM GRADE METHODS
4. ***MILLWORK PANEL NOTES***
   1. PANELS THAT HAVE A VISIBLE GRAIN (I.E. WOODS) SHALL BE ORIENTED VERTICALLY UNLESS OTHERWISE NOTED
   2. WHERE MULTIPLE PANELS ARE STACKED VERTICALLY CUT STOCK SO AS TO MAINTAIN CONTINUITY OF GRAIN FROM PANEL TO PANEL.
5. ***SUPPLY AND INSTALL HARDWARE AS FOLLOWS:***
   1. ALL HARDWARE SHALL BE IN ACCORDANCE WITH CUSTOM GRADE AS DEFINED BY AWMAC.
   2. CONCEALED SELF-CLOSING HINGES.
   3. STAINLESS STEEL ROD TYPE DOOR & DRAWER HANDLES AS SCHEDULED.
   4. ALL DRAWERS ON HEAVY DUTY TELESCOPING CUSHIONED ROLLING METAL SLIDES.
   5. RECESSED METAL STANDARDS - ADJUSTABLE C/W REQUIRED NUMBER OF SHELF CLIPS.
   6. PROVIDE KEY LOCKS WHERE INDICATED, EACH LOCK SHALL BE UNIQUE.
   7. ALL HARDWARE SHALL BE RICHELIEU OR EQUIVALENT
   8. ALL MILLWORK HARDWARE SUPPLIED & INSTALLED UNDER MILLWORK CONTRACT.
6. ***FOR DRAWERS DESIGNATED AS FILE DRAWERS:***
   1. CABINETS 450-600mm IN WIDTH - PROVIDE ONE (1) ADJUSTABLE HANGING FILE FRAME PER DRAWER
   2. CABINETS 750-1000mm IN WIDTH - PROVIDE TWO (2) LATERAL HANGING FILEBARS PER DRAWER
   3. NOTE: FILE FRAMES AND FILEBARS SHALL BE SUPPLIED BY LONG LIFE LTD., 407 BIRCHMOUNT ROAD, SCARBOROUGH, ON OR EQUIVALENT
7. ***ABBREVIATIONS:***

CF - CABINET FACES	EP - EXPOSED PARTS
CB - CABINET BODY	SEP - SEMI-EXPOSED PARTS
TK - TOE KICK (LOWER CABINETS ONLY)	CS - CONCEALED SURFACES
VA - VALENCE (UPPER CABINETS ONLY)	CP - CABINET PULLS
ME(AS) - MATCHING EDGE BAND (ALL SIDES)	ME(ES) - MATCHING EDGE BAND (EXPOSED SIDES)

8. ***MILLWORK LEGEND***
   ON DETAIL DRAWINGS, THE FOLLOWING PARTS ARE INDICATED BY PATTERNS:
   EP - EXPOSED PARTS -
   SEP - SEMI-EXPOSED PARTS -
   1. EXPOSED PARTS SHALL BE FINISHED ON BOTH SIDES OF PANEL WITH PAIR MATERIALS AND MATCHING EDGE BAND AS INDICATED
   2. SEMI-EXPOSED PARTS SHALL BE FINISHED ON VISIBLE SIDES WITH MATCHING EDGE BAND AS INDICATED. NOTE: ENDS AND TOEKICKS SHALL BE TREATED AS EXPOSED SURFACES WHEN VISIBLE AFTER INSTALLATION.
   3. NOTE: WHERE PANEL EDGES ABUT EXPOSED PARTS, EDGE BAND SHALL MATCH EXPOSED PART MATERIAL
   4. CONCEALED PARTS CAN BE LEFT IN MILL FINISH.
9. ***PANEL NOMINAL THICKNESSES (UNLESS NOTED OTHERWISE)***

PART	THICKNESS	MATERIAL
1. ENDS (GABLES), DIVISIONS, FIXED SHELVES, BOTTOMS, TOPS	- 19mm	MDF
2. FACE FRAMES, RAILS, TOEKICKS, CABINET BASES, VALENCES	- 19mm	PLYWOOD
3. SHELVES ADJUSTABLE (ADJ.)	- 19mm	MDF
4. BACKS	- 6.4mm	HARD BOARD BACKER
5. MOUNTING OR HANGER STRIPS	- 12.7mm	PLYWOOD
6. DRAWER SIDES, BACKS, SUBFRONTS	- 12.7mm	PLYWOOD
7. DRAWER BOTTOMS	- 6.4mm	PLYWOOD
8. DRAWER FRONTS	- 19mm	MDF
9. DOORS	- 19mm	MDF
10. WOOD PANELS	- 19MM	MDF



1 CASEWORK BLOCKING REQUIREMENTS
1 : 10

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
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LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
7	ADDENDUM 03	09/11/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

MILLWORK DETAILS - GENERAL NOTES, COUNTER TOPS, GENERAL DETAILS

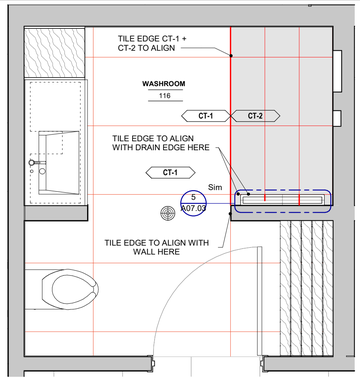
ISSUE DATE: 09/11/2024

DRAWN BY: AR CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A08.00** REVISION: **7**

[PLOT DATE: 2024-09-11 9:49:19 PM]



14 WASHROOM FLOOR FINISH LAYOUT
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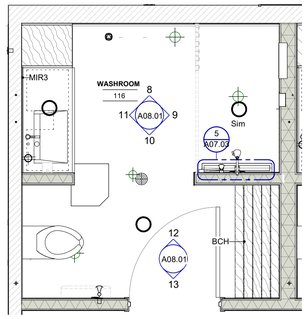
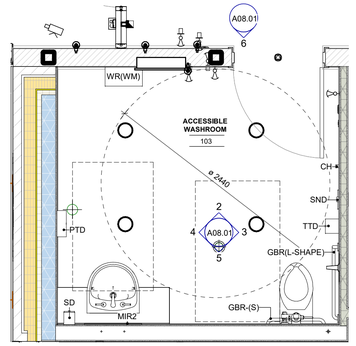


7 TYPICAL WASHROOM & SHOWER
1 : 30



1 UNIVERSAL WASHROOM
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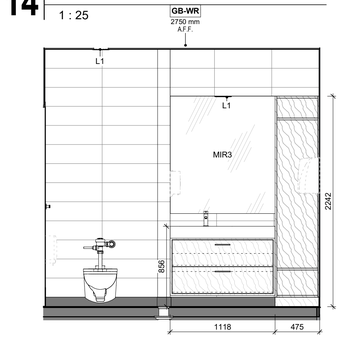

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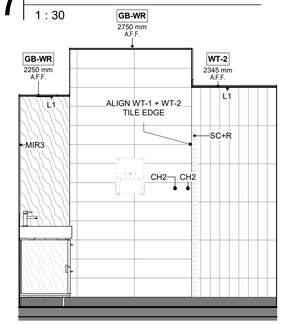

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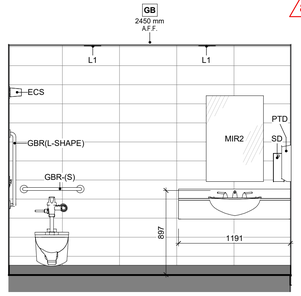

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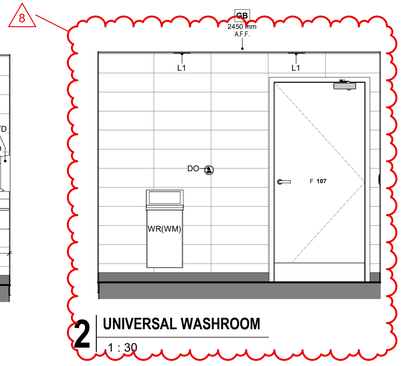

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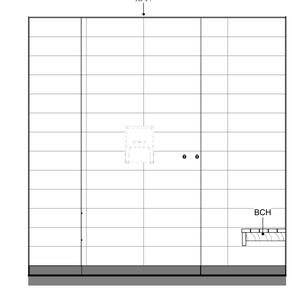

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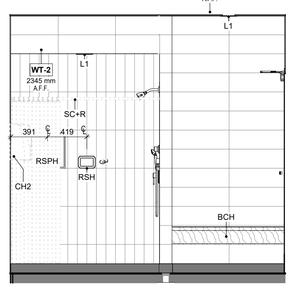

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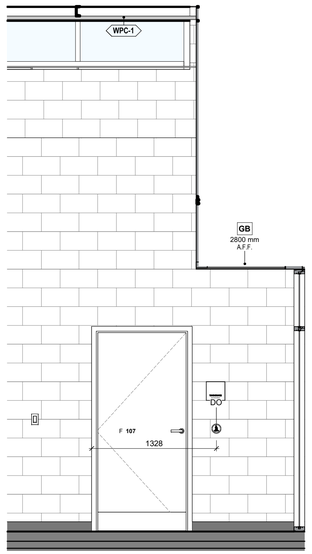

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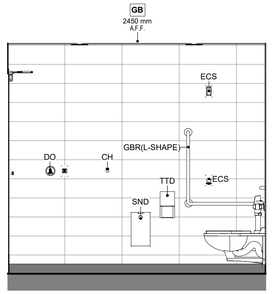

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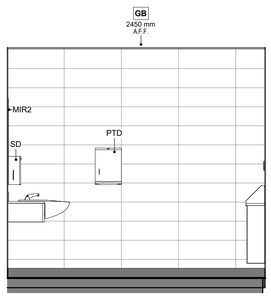

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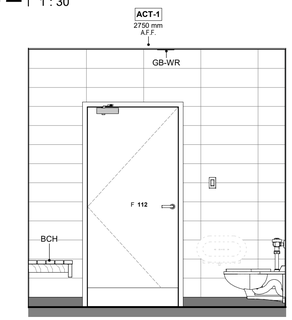

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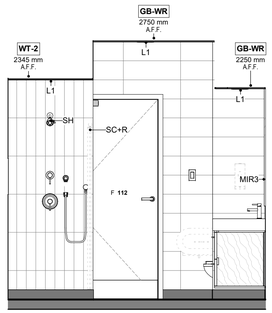
1 : 30



10 TYPICAL WASHROOM & SHOWER
1 : 30

Washroom Accessories Schedule

General Notes:
Refer to & coordinate with consultant drawings and specifications for full specs of equipment....

CODE	DESCRIPTION	SUPPLIER	MODEL NO.	FINISH	QUANTITY
ACCESSIBLE WASHROOM					
GBR(L-SHAPE)	GRAB BAR (762x762) - 38MM DIAMETER STAINLESS STEEL GRAB BARS WITH CONCEALED MOUNTING AND PEENED GRIPPING SURFACE	BOBRICK WASHROOM EQUIPMENT, INC	B-5898.99	SATIN FINISH	1
GBR-(S)	GRAB BAR (600) - 38MM DIAMETER STAINLESS STEEL GRAB BARS WITH CONCEALED MOUNTING AND PEENED GRIPPING SURFACE	BOBRICK WASHROOM EQUIPMENT, INC.	B-5806.99x24	SATIN FINISH	1
MIR2	FRAMLESS WALL MOUNT	CONTRACTOR	N/A	N/A	1
PTD	TOWEL DISPENSER	BRADLEY CORPORATION	250-150000	SATIN STAINLESS STEEL	1
SD	WALL MOUNTED 0.8 LITER LIQUID SOAP DISPENSER	FRANKE Water Systems AG	RODX618	SATIN STAINLESS STEEL	1
SND	TRIMLINESERIES™ RECESSED SANITARY NAPKIN DISPOSAL	BOBRICK WASHROOM EQUIPMENT, INC.	B-3513	SATIN FINISH	1
TTD	TOILET TISSUE DISPENSER	TORK	5555290	SATIN FINISH	1
WR(WM)	WASTE RECEPTACLE	FROST	303-3NL	SATIN FINISH	1
WASHROOM					
CH2	FINO COLLECTION SURFACE MOUNTED COAT HOOK	BOBRICK WASHROOM EQUIPMENT, INC	B-9542	SATIN FINISH	8
MIR3	FRAMELESS WALL MOUNT	CONTRACTOR	N/A	N/A	4
PTD-1	Surface-Mounted Roll Paper Towel Dispenser ROLL PAPER TOWEL DISPENSER	Bobrick	B-72860	OWNER PURCHASE	4
RSH	RECESSED SOAP HOLDER	BOBRICK WASHROOM EQUIPMENT, INC.	B-4380	RECESSED HEAVY-DUTY SOAP DISH	4
RSPH	SHOWER NICHE	VEVOR	BA-303010-BR	SATIN STAINLESS STEEL	4
SC+R	SHOWER CURTAIN	AMERICAN SPECIALTIES INC	1204-1/2 + 1200-V CURTAIN	SATIN STAINLESS STEEL	4
SH	PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH SHOWER HEAD AND HANDSPRAY	CHICAGO FAUCETS	SH-PB1-11-010	SATIN STAINLESS STEEL	4
TTD-1	SURFACE MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	TBC	TBC	OWNER PURCHASE	4

WASHROOM ACCESSORIES SCHEDULE

GENERAL NOTES:
REFER TO & COORDINATE WITH CONSULTANT DRAWINGS AND SPECIFICATIONS FOR FULL SPECS OF EQUIPMENT

CODE	DESCRIPTION	SUPPLIER	MODEL NO.	FINISH	QUANTITY
103					
ACCESSIBLE WASHROOM					
GBR(L-SHAPE)	GRAB BAR (762x762) - 38MM DIAMETER STAINLESS STEEL GRAB BARS WITH CONCEALED MOUNTING AND PEENED GRIPPING SURFACE	BOBRICK WASHROOM EQUIPMENT, INC	B-5898.99	SATIN FINISH	1
GBR-(S)	GRAB BAR (600) - 38MM DIAMETER STAINLESS STEEL GRAB BARS WITH CONCEALED MOUNTING AND PEENED GRIPPING SURFACE	BOBRICK WASHROOM EQUIPMENT, INC.	B-5806.99x24	SATIN FINISH	1
MIR2	FRAMLESS WALL MOUNT	CONTRACTOR	N/A	N/A	1
PTD	TOWEL DISPENSER	BRADLEY CORPORATION	250-150000	SATIN STAINLESS STEEL	1
SD	WALL MOUNTED 0.8 LITER LIQUID SOAP DISPENSER	FRANKE Water Systems AG	RODX618	SATIN STAINLESS STEEL	1
SND	TRIMLINESERIES™ RECESSED SANITARY NAPKIN DISPOSAL	BOBRICK WASHROOM EQUIPMENT, INC.	B-3513	SATIN FINISH	1
TTD	TOILET TISSUE DISPENSER	TORK	5555290	SATIN FINISH	1
WR(WM)	WASTE RECEPTACLE	FROST	303-3NL	SATIN FINISH	1
116					
WASHROOM					
CH2	FINO COLLECTION SURFACE MOUNTED COAT HOOK	BOBRICK WASHROOM EQUIPMENT, INC	B-9542	SATIN FINISH	2
MIR3	FRAMELESS WALL MOUNT	CONTRACTOR	N/A	N/A	1
PTD-1	Surface-Mounted Roll Paper Towel Dispenser ROLL PAPER TOWEL DISPENSER	Bobrick	B-72860	OWNER PURCHASE	1
RSH	RECESSED SOAP HOLDER	BOBRICK WASHROOM EQUIPMENT, INC.	B-4380	RECESSED HEAVY-DUTY SOAP DISH	1
RSPH	SHOWER NICHE	VEVOR	BA-303010-BR	SATIN STAINLESS STEEL	1
SC+R	SHOWER CURTAIN	AMERICAN SPECIALTIES INC	1204-1/2 + 1200-V CURTAIN	SATIN STAINLESS STEEL	1
SH	PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH SHOWER HEAD AND HANDSPRAY	CHICAGO FAUCETS	SH-PB1-11-010	SATIN STAINLESS STEEL	1
TTD-1	SURFACE MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	TBC	TBC	OWNER PURCHASE	1
117					
WASHROOM					
CH2	FINO COLLECTION SURFACE MOUNTED COAT HOOK	BOBRICK WASHROOM EQUIPMENT, INC	B-9542	SATIN FINISH	2
MIR3	FRAMELESS WALL MOUNT	CONTRACTOR	N/A	N/A	1
PTD-1	Surface-Mounted Roll Paper Towel Dispenser ROLL PAPER TOWEL DISPENSER	Bobrick	B-72860	OWNER PURCHASE	1
RSH	RECESSED SOAP HOLDER	BOBRICK WASHROOM EQUIPMENT, INC.	B-4380	RECESSED HEAVY-DUTY SOAP DISH	1
RSPH	SHOWER NICHE	VEVOR	BA-303010-BR	SATIN STAINLESS STEEL	1
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SH	PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH SHOWER HEAD AND HANDSPRAY	CHICAGO FAUCETS	SH-PB1-11-010	SATIN STAINLESS STEEL	1
TTD-1	SURFACE MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	TBC	TBC	OWNER PURCHASE	1
118					
WASHROOM					
CH2	FINO COLLECTION SURFACE MOUNTED COAT HOOK	BOBRICK WASHROOM EQUIPMENT, INC	B-9542	SATIN FINISH	2
MIR3	FRAMELESS WALL MOUNT	CONTRACTOR	N/A	N/A	1
PTD-1	Surface-Mounted Roll Paper Towel Dispenser ROLL PAPER TOWEL DISPENSER	Bobrick	B-72860	OWNER PURCHASE	1
RSH	RECESSED SOAP HOLDER	BOBRICK WASHROOM EQUIPMENT, INC.	B-4380	RECESSED HEAVY-DUTY SOAP DISH	1
RSPH	SHOWER NICHE	VEVOR	BA-303010-BR	SATIN STAINLESS STEEL	1
SC+R	SHOWER CURTAIN	AMERICAN SPECIALTIES INC	1204-1/2 + 1200-V CURTAIN	SATIN STAINLESS STEEL	1
SH	PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH SHOWER HEAD AND HANDSPRAY	CHICAGO FAUCETS	SH-PB1-11-010	SATIN STAINLESS STEEL	1
TTD-1	SURFACE MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	TBC	TBC	OWNER PURCHASE	1
119					
WASHROOM					
CH2	FINO COLLECTION SURFACE MOUNTED COAT HOOK	BOBRICK WASHROOM EQUIPMENT, INC	B-9542	SATIN FINISH	2
MIR3	FRAMELESS WALL MOUNT	CONTRACTOR	N/A	N/A	1
PTD-1	Surface-Mounted Roll Paper Towel Dispenser ROLL PAPER TOWEL DISPENSER	Bobrick	B-72860	OWNER PURCHASE	1
RSH	RECESSED SOAP HOLDER	BOBRICK WASHROOM EQUIPMENT, INC.	B-4380	RECESSED HEAVY-DUTY SOAP DISH	1
RSPH	SHOWER NICHE	VEVOR	BA-303010-BR	SATIN STAINLESS STEEL	1
SC+R	SHOWER CURTAIN	AMERICAN SPECIALTIES INC	1204-1/2 + 1200-V CURTAIN	SATIN STAINLESS STEEL	1
SH	PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH SHOWER HEAD AND HANDSPRAY	CHICAGO FAUCETS	SH-PB1-11-010	SATIN STAINLESS STEEL	1
TTD-1	SURFACE MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	TBC	TBC	OWNER PURCHASE	1

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DAVID PHEMI
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4318

NO.	ISSUES/REVISIONS	DATE
8	ADDENDUM 03	09/11/2024
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2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

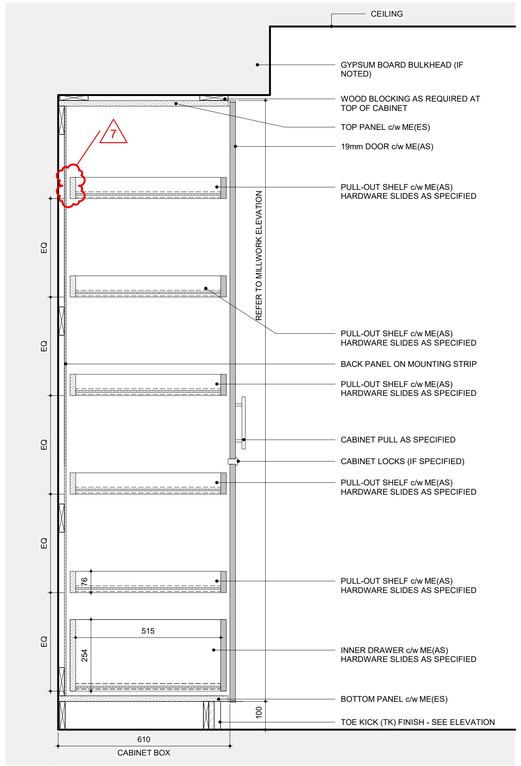
DRAWING TITLE:

WASHROOM PLANS & ELEVATIONS

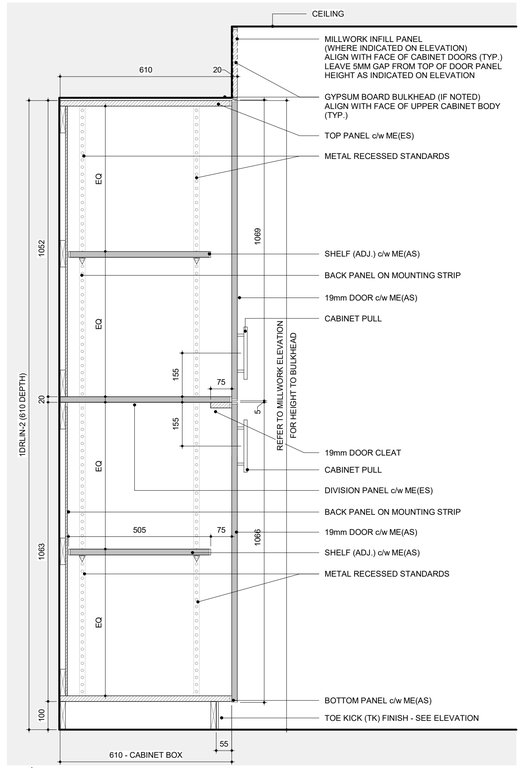
ISSUE DATE:	09/11/2024
DRAWN BY: MM / AR / SL	CHECKED BY: SRL
PROJECT NO.: 12303	SCALE: As indicated
DRAWING NO.:	REVISION:

A08.01 | **8**

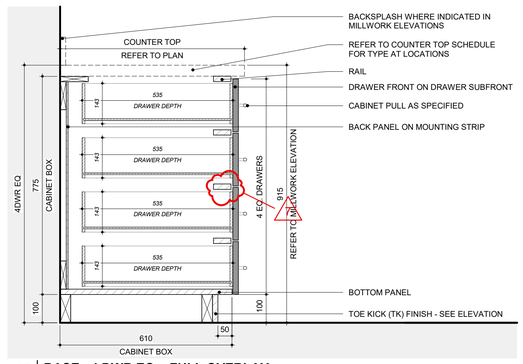
[PLOT DATE: 2024-09-11 9:50:40]



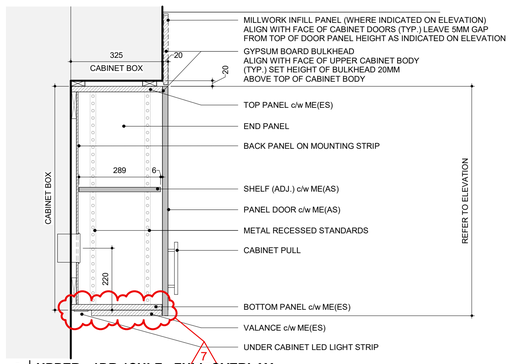
11 FH - 2 DR STOR - SINGLE - PULL OUT - FULL OVERLAY
1 : 10



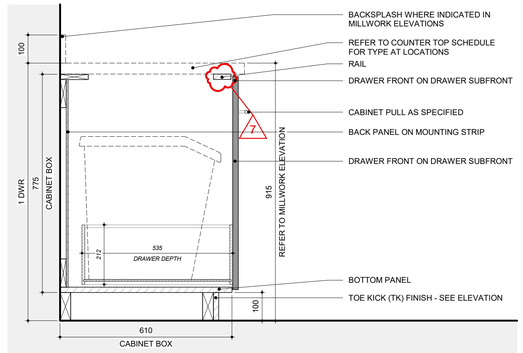
9 FH - 2D
1 : 10



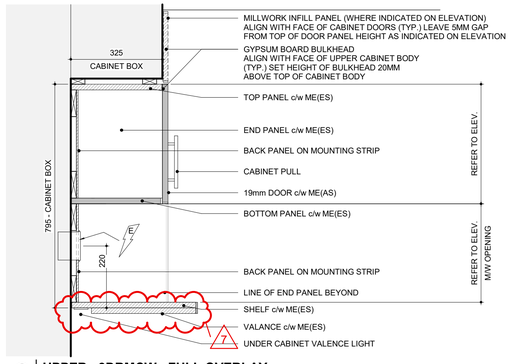
5 BASE - 4 DWR EQ. - FULL OVERLAY
1 : 10



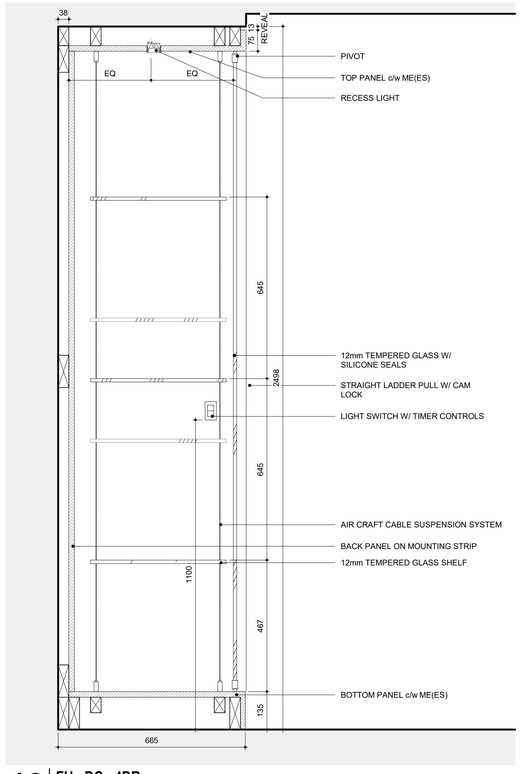
1 UPPER - 1DR 1SHLF - FULL OVERLAY
1 : 10



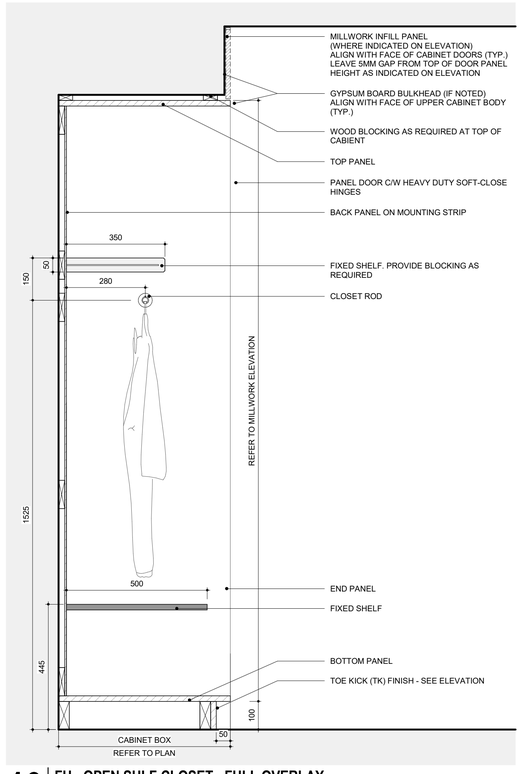
6 BASE - 1 DRAWER FOR WASTE BIN
1 : 10



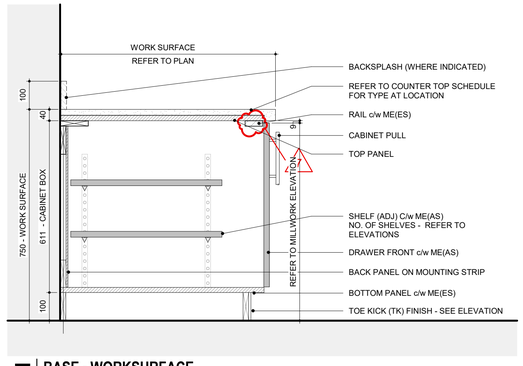
2 UPPER - 2DRMCW - FULL OVERLAY
1 : 10



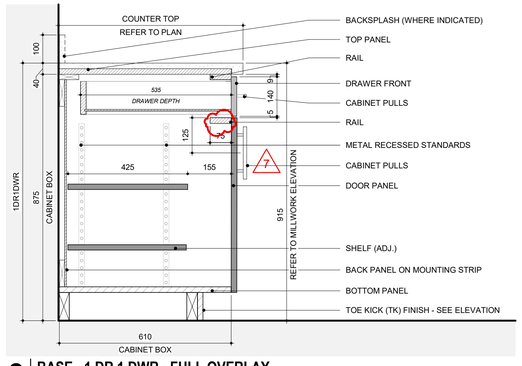
12 FH - DC - 4DR
1 : 10



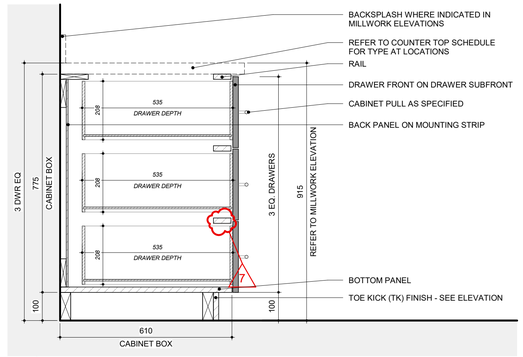
10 FH - OPEN SHLF CLOSET - FULL OVERLAY
1 : 10



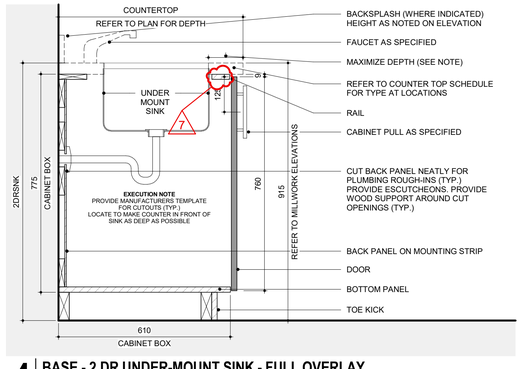
7 BASE - WORKSURFACE
1 : 10



3 BASE - 1 DR 1 DWR - FULL OVERLAY
1 : 10



8 BASE - 3 DWR EQ. - FULL OVERLAY
1 : 10



4 BASE - 2 DR UNDER-MOUNT SINK - FULL OVERLAY
1 : 10

I PLOT DATE: 2024-09-17 4:16:52 PM

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
7	ADDENDUM 03	09/11/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

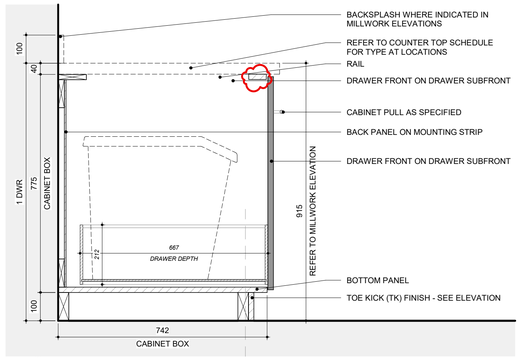
MILLWORK SECTION DETAILS

ISSUE DATE: 09/11/2024

DRAWN BY: AR CHECKED BY: SM

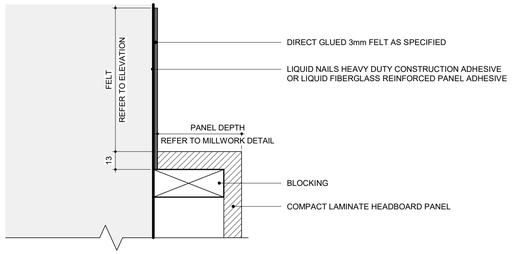
PROJECT NO.: 12303 SCALE: 1 : 10

DRAWING NO.: **A08.09** REVISION: **7**



8 BASE - 1 DWR - STORAGE BIN

1 : 10

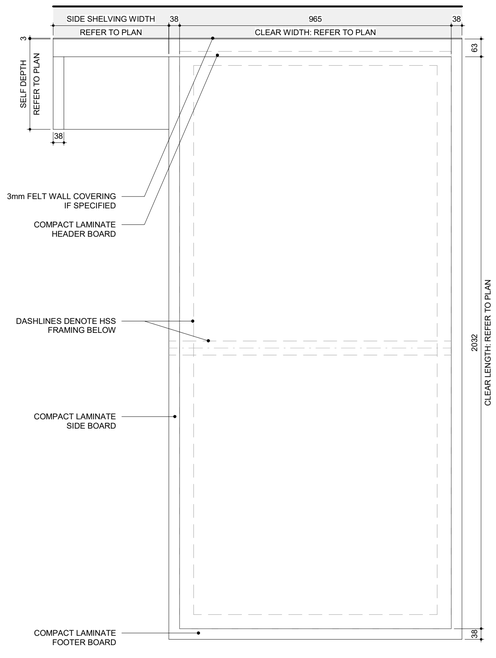


NOTES:

1. FOR BUTT SEAMS TO REMAIN TIGHT, ADEQUATE ADHESION MUST OCCUR AT EDGES
2. SUFFICIENT ADHESIVE AND ADEQUATE ROLLING AT THE SEAMS REQUIRED TO PREVENT OPEN SEAMS
3. IF NEEDED, THE EDGES CAN BE REINFORCED WITH A SPRAY ADHESIVE SUCH AS 3M SUPER 77 MULTIPURPOSE ADHESIVE (BONDS INSTANTLY AND DOES NOT ALLOW ADJUSTMENT)
4. INSPECT FOR IRREFULARITIES TO PLACE "BEST SIDE" AS VISIBLE SIDE
5. PRIOR TO APPLICATION, ALLOW FELT TO ACCLIMATE TO INSTALLATION ENVRIONMENT, AND PREPARE THE SUBSTRATE TO A LEVEL 5 FINISH SURFACE, THAT HAS BEEN PRIMED AND FINISHES.
6. REFER TO INSTALLATION GUIDE FOR THE REMOVAL OF UNWANTED ADHESIVE ON VISIBLE FACE

9 FELT WALLCOVERING & HEADBOARD SEAM

1 : 2

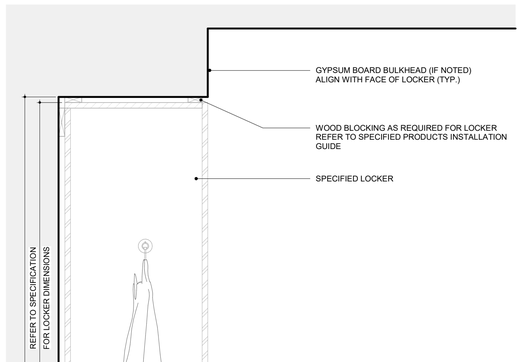


EXECUTION NOTES

1. ALL COMPACT LAMINATE PANELS TO BE 12mm THICK MIN., UNLESS NOTED OTHERWISE.
2. ALL CORNERS SHALL BE MITERED. BOTH PANELS SHALL HAVE A REVEAL ON THE INSIDE CORNER TO ACCOMMODATE STRUCTURAL ADHESIVE AND A 3mm-4mm METAL SPLINE THAT RUNS THE ENTIRE LENGTH OF THE MITERED CORNER.
3. THREADED INSERTS FOR MACHINE SCREWS SHALL BE PROVIDED TO ASSEMBLE PANELS ON SITE.
4. ALL FASTENERS SHALL BE COUNTERSHUNK C/W A PLUG MADE FLUSH WITH PANEL.
5. ALL JOINERY SHALL BE TESTED FOR STRUCTURAL STRENGTH PRIOR TO ACCEPTANCE BY ARCHITECT.

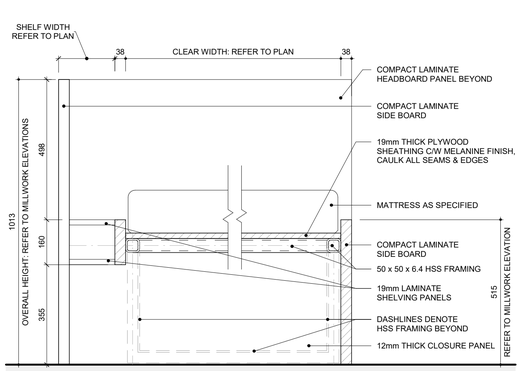
10 BED - PLAN & SECTIONS - W/ FELT LEDGE

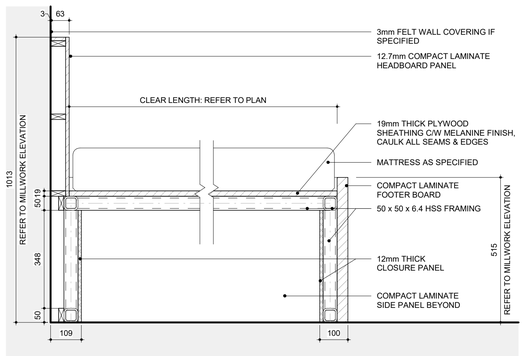
1 : 10

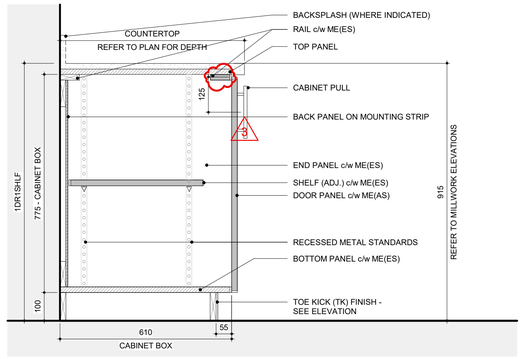


7 FH - CUBBIE BASE W/ LOCKER

1 : 10

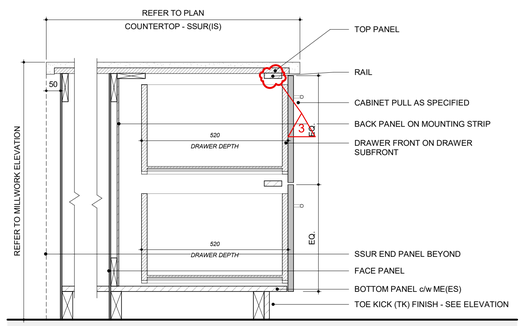






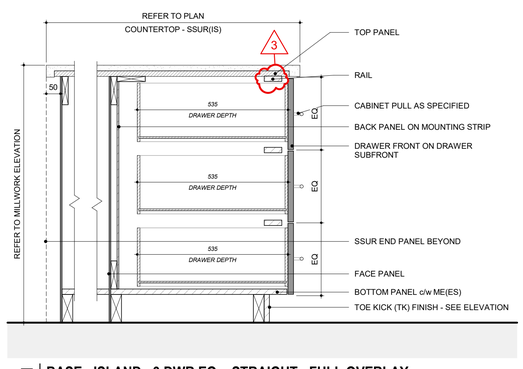
3 BASE - 1 DR 1 SHLF - FULL OVERLAY

1 : 10



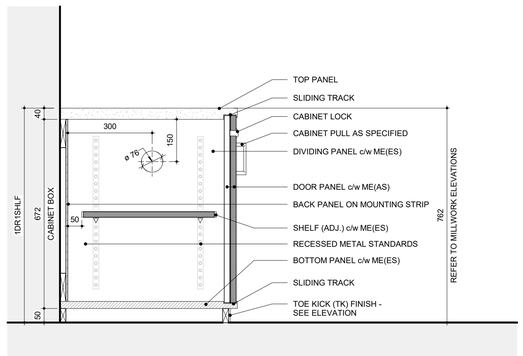
4 BASE - ISLAND - 2 DWR EQ. - STRAIGHT - FULL OVERLAY

1 : 10



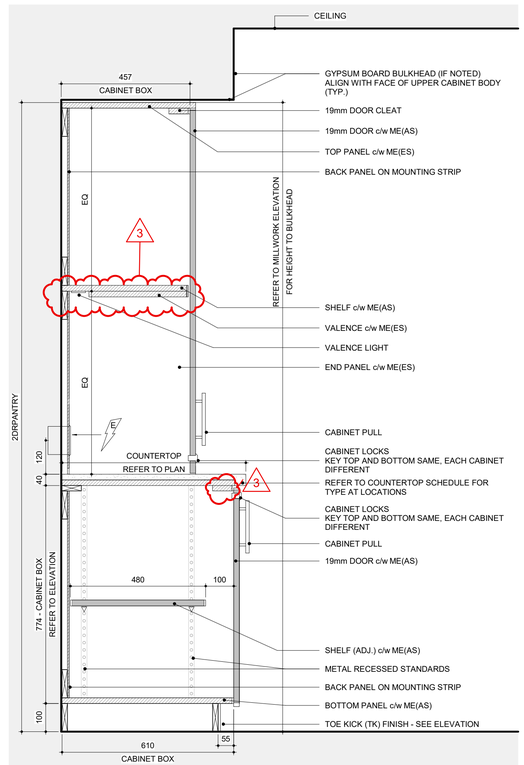
5 BASE - ISLAND - 3 DWR EQ. - STRAIGHT - FULL OVERLAY

1 : 10



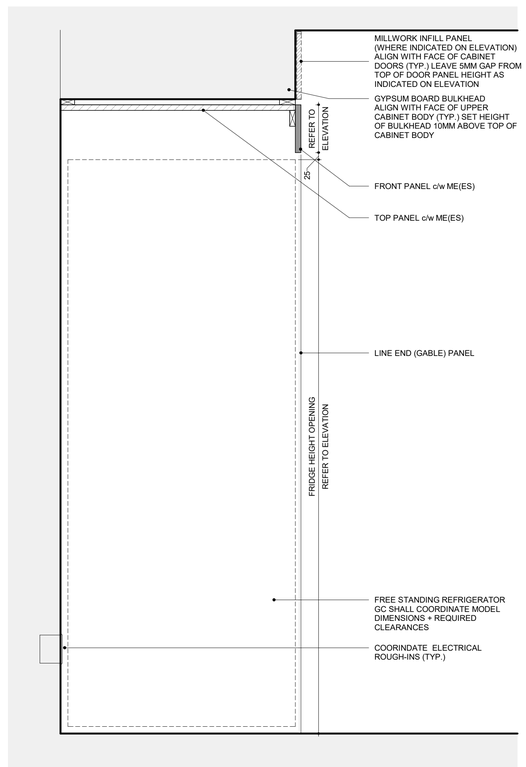
6 BASE - CREDENZA - SLIDING DOOR

1 : 10



1 FH - 2D - W/COUNTER

1 : 10



2 CW - FH - FRIDGE

1 : 10

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NO.	ISSUES/REVISIONS	DATE
3	ADDENDUM 03	09/11/2024
2	TENDER	07/16/2024
1	CLASS A ESTIMATE	05/21/2024
0	90% CONTRACT DOCUMENTS	05/21/2024

DRAWING TITLE:

MILLWORK SECTION DETAILS

ISSUE DATE: 09/11/2024

DRAWN BY: AR CHECKED BY: SL

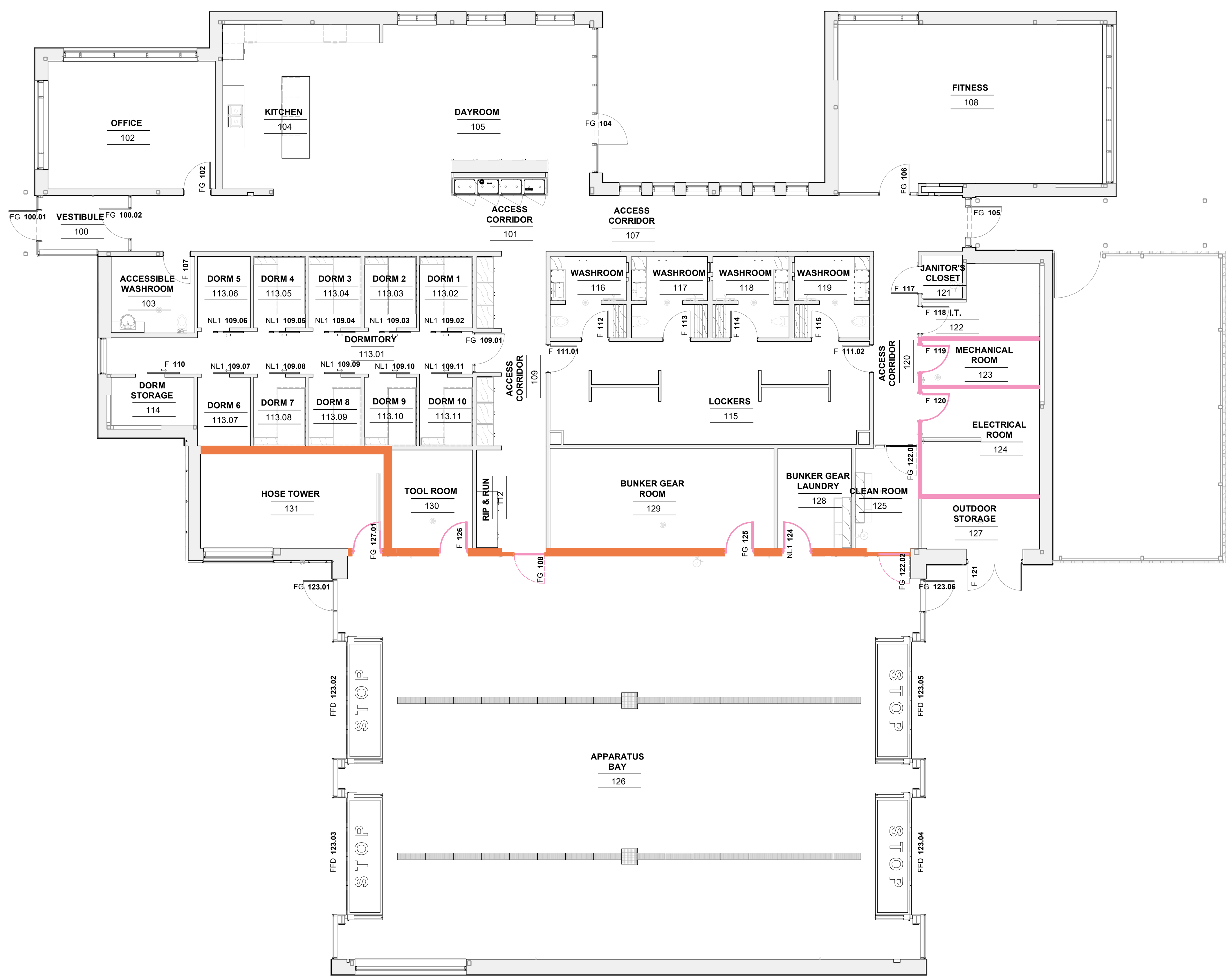
PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A08.10** REVISION: **3**

[PLOT DATE: 2024-09-11 4:31:44 PM]

DOOR & HARDWARE SCHEDULE1

No.	DIRECTION		DESCRIPTION	OPENING						DOOR AND FRAME ASSEMBLY – DOOR TYPE							FRAME TYPE			FIRE + SMOKE REQ.		BF DOOR OPERATION				DOOR OPERATION								SECURITY						ACCESSORIES								LOCKSET			
No.	FROM	TO	DESCRIPTION	WIDTH	LEAF 1	LEAF 2	HEIGHT	RO WIDTH	RO HEIGHT	TYPE	THICKNESS	DOOR MATERIAL	DOOR FINISH	INSULATION	GLAZING	LOUVER	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FIRE RATING	SMOKE SEAL	AUTODOOR OPERATOR	ELECTRIC STRIKE	ACTUATOR BUTTON	PUSH TO LOCK	DOOR CLOSER	DOOR LEVER	VERTICAL PULL	'D' PULL	DOOR PUSH BAR	PANIC HARDWARE	KICK PLATE	PUSH PLATE	CARD READER	DOOR BELL	DOOR CONTACT	ELECTRIC STRIKE	KEY PAD	REX	ASTRAGAL	THRESHOLD	TRANSITION STRIP	WEATHER STRIP	DOOR SWEEP	WALL STOP	FLOOR STOP	SIGNAGE	STOREROOM	OFFICE / PRIVACY	PASSAGE	COMMENTS
Exterior																																																			
100.01	VESTIBULE		EXTERIOR SWING SINGLE	1062	1062		2148.8	1062	2149	FG	44	AL	AN	•	•		BUTT	AL	AN			•	•	•	•	•		•			•				•	•	•		•		•		•	•				•			
104	OUTDOOR PATIO	DAYROOM	EXTERIOR SWING SINGLE	1099	1099		2151.2	1099	2151	FG	44	AL	AN	•	•		BUTT	AL	AN							•	•							•		•	•		•		•		•	•				•			
105	ACCESS CORRIDOR		EXTERIOR SWING SINGLE	1132	1132		2157.97	1132	2158	FG	44	AL	AN	•	•		BUTT	AL	AN							•	•				•			•		•	•		•		•		•	•				•			
121	OUTDOOR STORAGE		EXTERIOR SWING DOUBLE	1930	965	965	2135	2038	2189	F	44	HM	PNT	•			BUTT	HM	PNT								•				•	•		•		•	•		•			•									
123.01			EXTERIOR SWING SINGLE	1100	1100		2142.05	1100	2142	FG	44	AL	AN	•	•		BUTT	AL	AN							•	•				•			•		•	•		•		•		•	•				•			
123.02	APPARATUS BAY		FOUR-FOLD DOOR	4200			4200	3630	3630	FFD	50	MTL	PREFIN	•	•		N/A	MTL	PNT																	•							•	•							
123.03	APPARATUS BAY		FOUR-FOLD DOOR	4200			4200	3630	3630	FFD	50	MTL	PREFIN	•	•		N/A	MTL	PNT																	•							•	•							
123.04	APPARATUS BAY		FOUR-FOLD DOOR	4200			4200	3630	3630	FFD	50	MTL	PREFIN	•	•		N/A	MTL	PNT																	•							•	•							
123.05	APPARATUS BAY		FOUR-FOLD DOOR	4200			4200	3630	3630	FFD	50	MTL	PREFIN	•	•		N/A	MTL	PNT																	•							•	•							
123.06		APPARATUS BAY	EXTERIOR SWING SINGLE	1100	1100		2142.05	1100	2142	FG	44	AL	AN	•	•		BUTT	AL	AN							•	•				•			•		•	•		•		•		•	•				•			
127.02	HOSE TOWER		EXTERIOR SWING SINGLE	965	965		2135	1073	2189	F	35	HM	PNT	•			BUTT	HM	PNT								•				•	•									•		•	•							
Interior																																																			
100.02	VESTIBULE	ACCESS CORRIDOR	INTERIOR SWING SINGLE	1110	1110		2150	1110	2150	FG	44	AL	AN		•		BUTT	AL	AN			•	•	•		•	•				•	•		•	•	•	•		•									•			
102	ACCESS CORRIDOR	OFFICE	INTERIOR SWING SINGLE	965	965		2135	999	2152	FG	44	HM	PNT		•		WRAP	HM	PNT								•					•														•				•	
106	FITNESS	ACCESS CORRIDOR	INTERIOR SWING SINGLE	1100	1100		2150	1100	2150	FG	44	AL	AN		•		BUTT	AL	AN							•	•															•								•	
107	ACCESS CORRIDOR	ACCESSIBLE WASHROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT			•	•	•	•	•	•					•														•		•			
108	ACCESS CORRIDOR	APPARATUS BAY	INTERIOR SWING SINGLE	1100	0	0	2150	0	0	FG	0	HM	PNT		•		BUTT	HM	PNT	1hr	•					•	•				•	•		•		•	•		•			•								•	
109.01	ACCESS CORRIDOR	DORMITORY	INTERIOR SWING SINGLE	1100	1100		2308.72	1100	2309	FG	44	AL	AN		•		BUTT	AL	AN								•				•																			•	
109.02	DORMITORY	DORM 1	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.03	DORMITORY	DORM 2	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.04	DORMITORY	DORM 3	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.05	DORMITORY	DORM 4	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.06	DORMITORY	DORM 5	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.07	DORMITORY	DORM 6	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.08	DORMITORY	DORM 7	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.09	DORMITORY	DORM 8	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.10	DORMITORY	DORM 9	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
109.11	DORMITORY	DORM 10	SURFACE SLIDING SINGLE DOOR	1100	1100		2250	1000	2200	NL1	45	WD	PNT		•		N/A	GYP	PNT																																
110	DORM STORAGE	DORMITORY	SURFACE SLIDING SINGLE DOOR	1155	1155		2250	1055	2200	F	45	WD	PNT		•		N/A	GYP	PNT																																
111.01	ACCESS CORRIDOR	LOCKERS	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT							•	•					•																		•	
111.02	ACCESS CORRIDOR	LOCKERS	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT							•	•					•																		•	
112	LOCKERS	WASHROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT							•	•					•																	•		OCCUPIED WHEN IN USE ...
113	LOCKERS	WASHROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT							•	•					•																	•		
114	LOCKERS	WASHROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT							•	•					•																	•		
115	LOCKERS	WASHROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT							•	•					•																	•		
117	JANITOR'S CLOSET	ACCESS CORRIDOR	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT								•					•		•		•	•		•			•						•			
118	ACCESS CORRIDOR	I.T.	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT								•					•		•		•	•		•			•						•			
119	ACCESS CORRIDOR	MECHANICAL ROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT	45min							•					•		•		•	•		•			•						•			
120	ACCESS CORRIDOR	ELECTRICAL ROOM	INTERIOR SWING SINGLE	965	965		2135	999	2152	F	44	HM	PNT				WRAP	HM	PNT	45min							•					•		•		•	•		•			•						•			
122.01	ACCESS CORRIDOR	CLEAN ROOM	INTERIOR SWING SINGLE	1100	0	0	2150	0	0	FG	0	HM	PNT		•		BUTT	HM	PNT							•	•				•	•										•								•	
122.02	CLEAN ROOM	APPARATUS BAY	INTERIOR SWING SINGLE	1100	0	0	2150	0	0	FG	0	HM	PNT		•		BUTT	HM	PNT	1hr						•	•				•	•		•		•	•		•			•								•	
124	BUNKER GEAR LAUNDRY	APPARATUS BAY	INTERIOR SWING SINGLE	965	965		2135	1073	2189	NL1	44	HM	PNT		•		BUTT	HM	PNT	1hr							•					•		•		•	•		•			•								•	
125	BUNKER GEAR ROOM	APPARATUS BAY	INTERIOR SWING SINGLE	965	965		2135	1073	2189	FG	44	HM	PNT		•		BUTT	HM	PNT	1hr							•					•		•		•	•		•			•								•	
126	APPARATUS BAY	TOOL ROOM	INTERIOR SWING SINGLE	965	965		2135	1073	2189	F	44	HM	PNT				BUTT	HM	PNT	1hr							•				•	•		•		•	•		•											•	
127.01	APPARATUS BAY	HOSE TOWER	INTERIOR SWING SINGLE	965	965		2135	1073	2189	FG	44	HM	PNT		•		BUTT	HM	PNT	1hr							•				•	•		•		•	•		•											•	



1 LEVEL 01 - DOOR KEY PLAN
1 : 125

ABBREVIATIONS

AL	ALUMINUM
AN	ANODIZED
WD	WOOD (SOLID WOOD CORE)
HM	HOLLOW METAL
BUTT	BUTT-FRAME INSTALLATION
WRAP	WRAP-FRAME INSTALLATION
PNT	PAINTED
CSL	CONCEALED FRAME
CW	EXTERIOR ALUMINUM FRAMES
IS	INTERIOR ALUMINUM FRAMES

GENERAL NOTES - DOORS, FRAMES, & HARDWARE

1. GENERAL REQUIREMENTS

1. IT IS THE RESPONSIBILITY OF THE DOOR, FRAME, WINDOW, CURTAIN WALL & HARDWARE MANUFACTURER TRADES TO CO-ORDINATE & EXECUTE THIER WORK TOGETHER.
2. DIMENIONS INDICATED R.O - INDICATE ROUGH OPENING. GENERAL CONTRACTOR SHALL VERIFY ALL OPENINGS ON SITE PRIOR TO FRABRICATION AND ORDERING.

2. SHOP DRAWINGS

1. SHOP DRAWINGS ARE REQUIRED PRIOR TO FABRICATION.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE; DOOR(S), SCREEN(S), WINDOW(S), CURTAIN WALL(S), FRAME(S), AND THIER HARDWARE MANUFACTURERS TRADES COORDINATE & EXECUTE THIER WORK TOGETHER & LABEL IDENTIFYING INFORMATION FOR ALL DOOR(S), SCREEN(S), WINDOW(S), CURTAIN WALL(S), FRAME(S) SCHEDULES TO MATCH THE IDENTIFICATION TAG LABLES HERE, NOT HAVING DIFFERENT LABELS & DIMENSIONAL UNITS ON SHOP DRAWINGS THAN TENDERED DOCUMENTS. (REVISE & RESUBMIT SHOP DRAWINGS WILL BE RETURNED IF THIS FORMAT IS NOT FOLLOWED WITH NO REVIEW UNDERTAKEN BY THE CONSULANT TEAM)
3. SUBMIT SHOP DRAWINGS FOR DOORS, FRAMES AND SCREENS CLEARLY INDICATING PROFILES, ANCHORS, CONSTRUCTION, FIRE RATING, GLAZING STOPS DETAILS, PREPARATION AND REINFORCEMENT OF MANUAL AND ELECTRONIC HARDWARE AND SECURITY DEVICES AND OTHER INFORMATION REQUIRED FOR PROPER COORDINATION AND INSTALLATION OF DOORS, FRAMES AND SCREENS WITH THE WORK.
4. SHOP DRAWINGS SHALL REFERENCE DOOR TYPE PANEL ELEVATIONS AS SHOWN.
5. REFER TO SPECIFICATION FOR DOOR HARDWARE SCHEDULE. THIS SCHEDULE IS PROVIDED TO ASSIST THE CONTRACTOR WITH THE TENDER AND THE WORK. THE INFORMATION PERTAINING TO DOORS AND FRAMES ON DRAWINGS, HARDWARE SCHEDULE AND IN THE SPECIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. IN THE CARE OF DISCREPANCY BETWEEN ANY OF THE CONTRACT DOCUMENTS THE CONTRACTOR SHALL CLARIFY AND RECONCILE THE DISCREPANCY WITH THE CONSULTANT PRIOR TO COMMENCING THE WORK.

3. FIRE RATING AND SMOLE SEALS

1. CONFIGURE FRAME AND DOOR PROTECTION FOR DOORS WITH DOOR SEALS SO AS TO NOT COMPROMISE SEAL.
2. ALL DOORS AND FRAMES IN RATED ASSEMBLIES SHALL BE APPROPRIATELY LABELLED
3. PROVIDE DOOR SEALS AT ALL FIRE RATED DOORS.
4. PROVIDE RATED DOOR FRAMES, DOOR PANELS, GLAZING AND FRAMES AT INTERIOR SCREENS TO SUIT INDICATED FIRE SEPARATIONS. USE FIRELITE GLASS WHERE INDICATED GLASS SIZE EXCEEDS MAXIMUM AREAS FOR TEMPERED GLASS AT RATED DOORS.
5. ALL FIRE RATED DOORS AND SCREENS W/ CLAZING SHALL HAVE "FIRELITE" GLAZING AS REQUIRED.
6. ALL NON RATED GLAZING SHALL BE TEMPERED.
7. ALL EXTERIOR DOOR GLAZING SHALL BE LAMINATED SAFETY GLASS

4. EXECUTION

1. ALL NEW HOLLOW METAL FRAMES AND DOORS PANELS SHALL BE PAINTED.
2. ALL DOORS AND FRAMES SHALL BE PREPARED AND REINFORCED FOR SPECIFIED HARDWARE AND ACCESSORIES.
3. CONTRACTOR TO SITE VERIFY AS-BUILT ROUGH OPENING SIZES AND WALL THICKNESS FOR WRAP AROUND FRAMES PRIOR TO FABRICATION OF FRAMES.
4. COORDINATE PREPARATION AND INSTALLATION OF DOORS AND HARDWARE WITH ELECTRICAL DIVISION AND CONCEALING OF ELECTRONIC JUNCTION BOXES, CONDUITS AND WIRING IN DOOR FRAMING.
5. ALL DOORS DESIGNATED WITH ELECTRICAL AND SECURITY CLOSURE SHALL HAVE FRAMES PRE-DRILLED TO RECEIVE SUCH DEVICES.
6. WHERE DOOR LITES ARE PRESENT, THEY SHALL NOT BE MORE THAN 900mm AFF UNLESS NOTED OTHERWISE
7. PROVIDE PREFABRICATED LITES c/w STAINLESS STEEL FRAME AND INTEGRAL BLINDS WHERE SPECIFIED. SUBSTITUTIONS FOR HOLLOW METAL FRAMED LITES WILL NOT BE ACCEPTED
8. PREPARE DOORS TO RECEIVE HARDWARE AS INDICATED ON FINISH HARDWARE SCHEDULE AND ELECTRICAL DRAWINGS
9. CAULK AND PAINT ALL EXPOSED EDGES OF DOORS AND FRAMES
10. UNDERCUT DOORS WHERE INDICATED ON DRAWINGS
11. REFER TO MECHANCIAL DRAWINGS FOR LOUVER SIZES IN TYPE 'L' DOORS
12. ALL LITES IN EXTERIOR DOORS SHALL BE SEALED AND THERMALLY BROKEN
13. ALL EXTERIOR DOOR FRAMES SHALL BE FILLED WITH CLOSED CELL FOAM INSULATION (JAMBS AND HEAD)
14. ALL EXTERIOR DOORS SHALL BE COMPLETELY WEATHERSTRIPPED AND GASKETED
15. ALL EXTERIOR DOORS SHALL HAVE A PREFABRICATED ALUMINUM THRESHOLD
16. CAULK FRAME TO FLOOR AT EXPOSED CONCRETE FLOOR FINISHES
17. PROVIDE DOOR BUMPERS ON ALL STEEL FRAMES
18. PROVIDE VISION STRIPS AS PER ONTARIO BUILDING CODE DIV. 3.8.3.3 REQUIREMENTS AT FULL HEIGHT GLASS AREAS.

8

DOOR BOD

DOOR NUMBER	MANUFACTUER	PRODUCT
Exterior		
123.02	NORTHERN DOCK SYSTEMS INC.	FF300 SERIES
123.03	NORTHERN DOCK SYSTEMS INC.	FF300 SERIES
123.04	NORTHERN DOCK SYSTEMS INC.	FF300 SERIES
123.05	NORTHERN DOCK SYSTEMS INC.	FF300 SERIES
FF300 SERIES: 4		
100.01	ALUMICOR	THERMAPORTE 7700
104	ALUMICOR	THERMAPORTE 7700
105	ALUMICOR	THERMAPORTE 7700
123.01	ALUMICOR	THERMAPORTE 7700
123.06	ALUMICOR	THERMAPORTE 7700
THERMAPORTE 7700: 5		
121	FLEMING DOOR PRODUCTS	TRIO-E
127.02	FLEMING DOOR PRODUCTS	TRIO-E
TRIO-E: 2		
Interior		
100.02	ALUMICOR	CANADIANA HD
106	ALUMICOR	CANADIANA HD
109.01	ALUMICOR	CANADIANA HD
CANADIANA HD: 3		
102	FLEMING DOOR PRODUCTS	H-SERIES
107	FLEMING DOOR PRODUCTS	H-SERIES
108	FLEMING DOOR PRODUCTS	H-SERIES
111.01	FLEMING DOOR PRODUCTS	H-SERIES
111.02	FLEMING DOOR PRODUCTS	H-SERIES
112	FLEMING DOOR PRODUCTS	H-SERIES
113	FLEMING DOOR PRODUCTS	H-SERIES
114	FLEMING DOOR PRODUCTS	H-SERIES
115	FLEMING DOOR PRODUCTS	H-SERIES
117	FLEMING DOOR PRODUCTS	H-SERIES
118	FLEMING DOOR PRODUCTS	H-SERIES
119	FLEMING DOOR PRODUCTS	H-SERIES
120	FLEMING DOOR PRODUCTS	H-SERIES
122.01	FLEMING DOOR PRODUCTS	H-SERIES
122.02	FLEMING DOOR PRODUCTS	H-SERIES
124	FLEMING DOOR PRODUCTS	H-SERIES
125	FLEMING DOOR PRODUCTS	H-SERIES
126	FLEMING DOOR PRODUCTS	H-SERIES
127.01	FLEMING DOOR PRODUCTS	H-SERIES
H-SERIES: 19		

DOOR TYPE QTY

TYPE	DOOR PANEL	QTY
Exterior		
AL		
Exterior	FG	5
HM		
Exterior	F	2
MTL		
Exterior	FFD	4
Interior		
AL		
Interior	FG	3
HM		
Interior	F	12
Interior	FG	6
Interior	NL1	1
WD		
Interior	F	1
Interior	NL1	10
Grand total: 44		

BRAMPTON

BRAMPTON FIRE STATION 215

10539 Goreway Drive, Brampton ON, L6P 0N2

DPAI

Design Partners in Architecture and Interiors

25 Main Street West Hamilton, Ontario L8P 1H1 Canada
T: 905-522-0220

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
8	ADDENDUM 03	09/11/2024
7	ADDENDUM 01	08/13/2024
6	TENDER	07/16/2024
5	CLASS A ESTIMATE	05/21/2024
4	90% CONTRACT DOCUMENTS	05/21/2024
3	60% CONTRACT DOCUMENTS	04/16/2024
2	CLASS B ESTIMATE	08/01/2024
1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

DOOR KEY PLAN & SCHEDULE

ISSUE DATE: 09/11/2024

DRAWN BY: SL CHECKED BY: SM

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A10.00**

REVISION: **8**

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	September 13, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

Distribution

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Quasar Consulting Group	Dayton Chuck	Dayton.chuck@quasarcg.com

Addendum #:	E04
Revision #:	0

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Specifications [Refer to the attached specifications for details]:

.1 Specification – 27 05 28.63 - Pathways for Video Surveillance

i) Removed Avigilon Cameras from Specification, for Security Camera equipment refer to City of Brampton Standards document. Refer to item 2.1.2.

2.0 Revisions to Drawings [Refer to the attached drawings for details]:

.1 Drawing – E-002 – ELECTRICAL SITE PLAN

i) Refer to the attached drawing for primary duct bank clarification.

ii) Refer to the attached drawing for EV Charger conduits clarifications.

.2 Drawing – E-901-SINGLE LINE DIAGRAM

i) Refer to the attached drawing for EV Charger conductor clarifications.

.3 Drawing- E-902- LIGHTING SCHEDULES

i) Refer to the attached drawing for light fixtures U1 & WS clarifications.

Quasar Consulting Group

Antonio Zuniga, MSc., PMP, LEED AP BD+C

Team Lead

1 GENERAL

1.1 *SUMMARY*

1.1.1 Provide a complete system of empty conduits, terminal cabinets, plywood backboards, pull boxes and outlet boxes for enclosure data of cabling for this system.

1.1.2 Provide data cabling for each drop to each CCTV camera.

1.2 *RELATED REQUIREMENTS*

1.2.1 Section 26 05 33.13 – Conduit for Electrical Systems.

1.2.2 Section 26 05 33.16 – Boxes for Electrical Systems.

2 PRODUCTS

2.1 *VIDEO SURVEILLANCE EQUIPMENT*

2.1.1 Video Surveillance equipment shall be based on IP cameras. Size conduits based on industry practices based on Category 6 communications cabling.

2.1.2 **Video Surveillance Camera Equipment as per City of Brampton Security Standards.**

2.1.3 Project management, cabling, programming, and CAD drawings included.

2.1.4 Work by this contractor that is not part of the security vendor's scope of work:

All network equipment and IP addressing by Owner's IT staff.

All conduit, raceways, cable trough, junction boxes, fire rated plywood and 110 V power.

Category 6 cabling to video surveillance cameras.

2.2 *OUTLETS*

2.2.1 Wall and door outlets shall be single boxes, or 115 mm square boxes with plaster rings to suit single gang devices unless otherwise noted. Coordinate with Owner's video surveillance contractor.

2.3 *CONDUITS*

2.3.1 Provide conduit in all walls, exposed areas, and inaccessible ceilings. All conduit work shall be concealed.

2.3.2 Minimum conduit size shall be 21 mm diameter.

2.3.3 Provide J hooks in accessible ceilings for plenum rated wiring.

2.3.4 Minimum space requirements in pull boxes for 90 degree pulls, shall be as follows:

Maximum conduit size	Size of pull boxes in millimetres			For each additional conduit size increase width by:
	Width	Length	Depth	
21 mm	150 mm	300 mm	100 mm	50 mm
27 mm	200 mm	400 mm	150 mm	75 mm
35 mm	250 mm	450 mm	200 mm	75 mm
41 mm	300 mm	600 mm	250 mm	100 mm
53 mm	350 mm	750 mm	300 mm	125 mm

2.3.5 Plywood backboards shall be minimum 1200 mm by 2400 mm, 19 mm thick, painted with 2 coats of fire retardant light grey enamel.

2.3.6 Provide a minimum of two duplex receptacles on separate circuits at each backboard.

3 EXECUTION

3.1 *INSTALLATION*

3.1.1 Vertically mount outlet boxes, unless noted otherwise, 300 mm to centre above floor, or 150 mm above counter top where shown at counters or benches.

3.1.2 Fish conduit, clear blockages and outlet and clean out pull boxes at completion of installation. Leave conduit free of water or excess moisture. Install No. 12 gauge galvanized soft iron pull wire, or 3.2 mm (1/8”) nylon pull cord continuously from outlet to outlet, through conduit and fasten at each box.

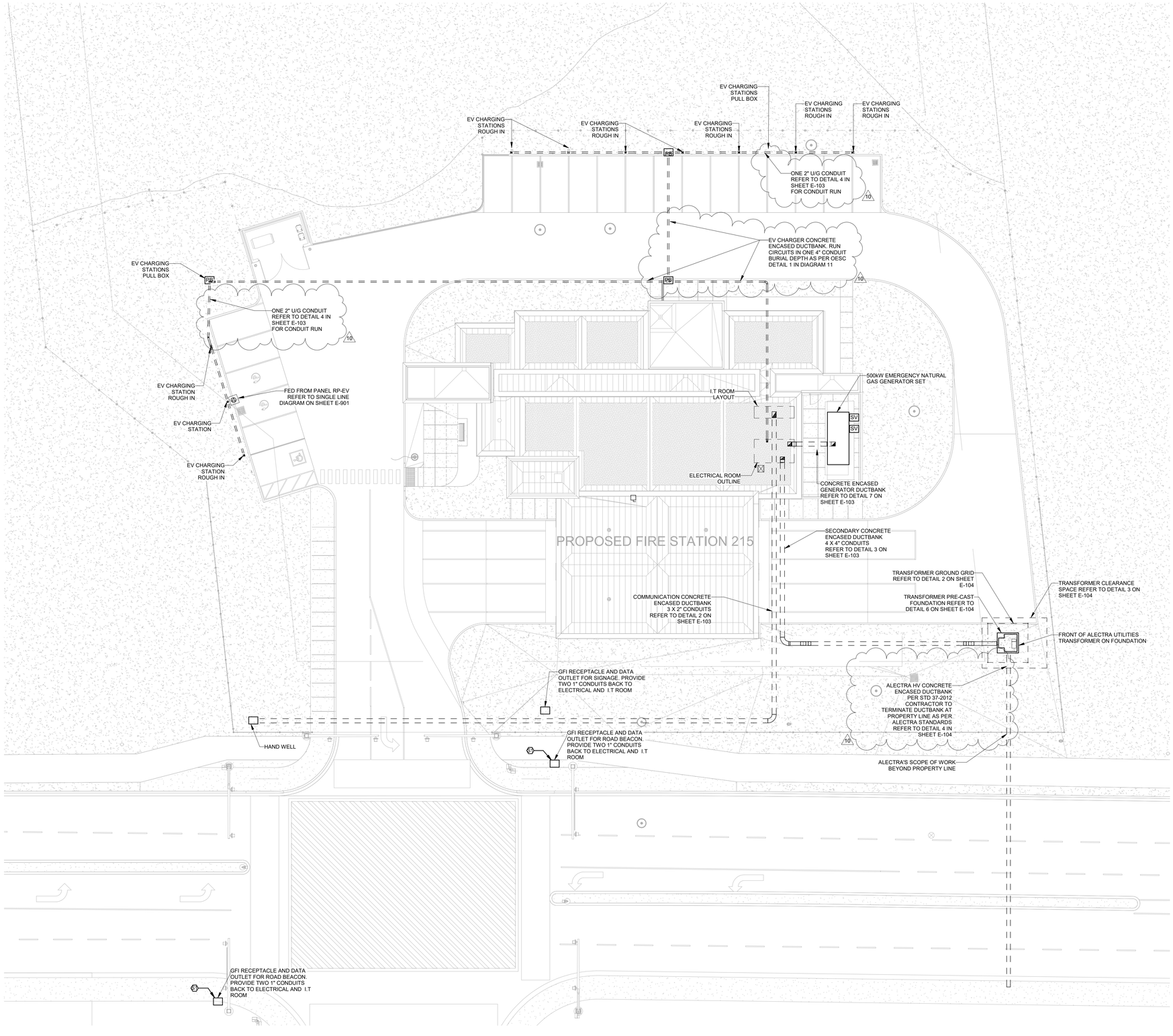
3.1.3 Conduit bonds shall have a bending radius of not less than nine times conduit diameter. Ream out conduit and identify ends with green paint.

3.1.4 Install additional steel pull boxes in such a manner that, throughout entire system, there shall be not more than two 90 degree or equivalent bends or more than 30 000 mm in each run, so that wire or cables may be pulled in or withdrawn with reasonable ease. Minimum space requirements in pull boxes having one conduit each in opposite ends of the box, shall be as follows:

Maximum conduit size	Size of pull boxes in millimetres			For each additional conduit size increase width by:
	Width	Length	Depth	
21 mm	150 mm	300 mm	100 mm	50 mm
27 mm	200 mm	400 mm	150 mm	75 mm
35 mm	250 mm	450 mm	200 mm	75 mm
41 mm	300 mm	600 mm	250 mm	100 mm
53 mm	350 mm	750 mm	300 mm	125 mm

3.1.5 Show as-installed conduit routing and location of all pull boxes on the record drawings, prior to project completion, for use by Security installer to facilitate wiring and equipment installation. Include above noted information on final record drawings at project completion.

END OF SECTION



1 ELECTRICAL SITE PLAN
1 : 200

KEYNOTE LEGEND1	
Key Value	Keynote Text
S1	CONTRACTOR TO CARRY ROAD BEACONS AS CASH ALLOWANCE, REFER TO ARCHITECTUAL SPECIFICATIONS.

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP
250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

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SEALS

NO.	ISSUES/REVISIONS	DATE
10	ISSUED FOR ADD-E04	2024-09-13
9	ISSUED FOR ADD-E02	2024-08-26
8	ISSUED FOR TENDER	2024-06-28
7	ISSUED FOR TENDER REVIEW	2024-06-11
6	ISSUED FOR PERMIT	2024-05-06
5	ISSUED FOR ESA REVIEW	2024-04-23
4	ISSUED FOR ALECTRA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

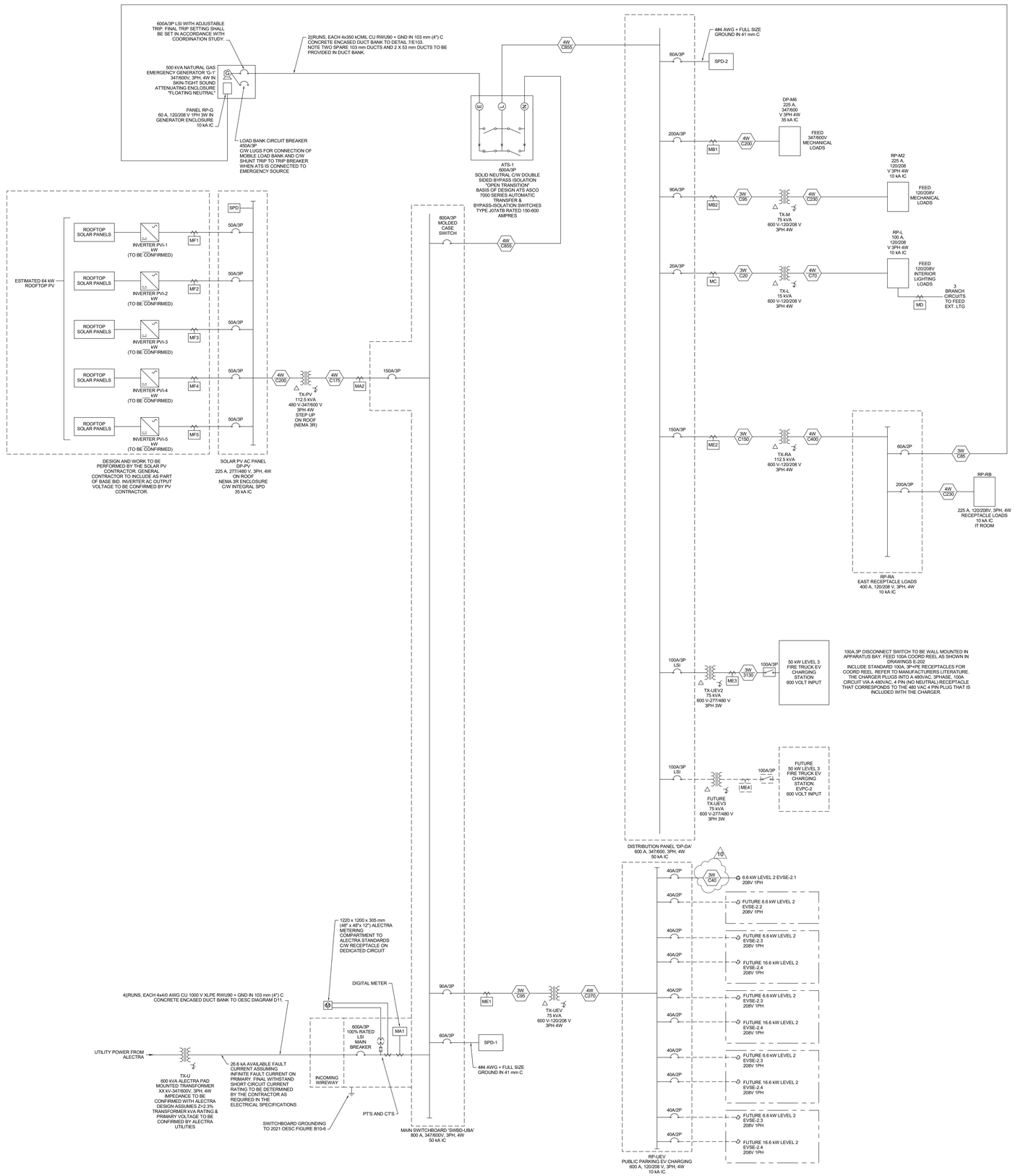
ELECTRICAL SITE PLAN

ISSUE DATE: 2024-09-13
DRAWN BY: Author CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 200

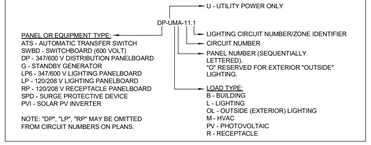
DRAWING NO.:

E-002

[PLOT DATE: 9/13/2024 11:09:34 AM]



ELECTRICAL DISTRIBUTION DESIGNATION DIAGRAM



PANEL OR EQUIPMENT TYPE:
ATS - AUTOMATIC TRANSFER SWITCH
SWBD - SWITCHBOARD (600 VOLT)
DP - 347/600 V DISTRIBUTION PANELBOARD
G - STANDBY GENERATOR
LP6 - 347/600 V LIGHTING PANELBOARD
LP - 120/208 V LIGHTING PANELBOARD
RP - 120/208 V RECEPTACLE PANELBOARD
SPD - SURGE PROTECTIVE DEVICE
PVI - SOLAR PV INVERTER

NOTE: "DP", "LP", "RP" MAY BE OMITTED FROM CIRCUIT NUMBERS ON PLANS.

ELECTRICAL ENERGY MONITORING/METERING SCHEDULE

WTMTR	TOTAL DOMESTIC WATER UTILIZATION - UTILITY
NGMTR	TOTAL NATURAL GAS UTILIZATION - UTILITY
ELCMTR	TOTAL ELECTRICAL ENERGY - UTILITY
SOLMTR	TOTAL ELECTRICAL ENERGY - SOLAR PV
MB1 MB2	HVAC SYSTEMS
MC	INTERIOR LIGHTING
MD	EXTERIOR LIGHTING
ME1 ME2 ME3	RECEPTACLE CIRCUITS
ME4	FUTURE RECEPTACLE CIRCUIT
MF1 MF2 MF3 MF4 MF5	ROOFTOP SOLAR ENERGY GENERATION
MF6 MF7	BIPV ENERGY GENERATION

REFER TO SECTION 26 27 13 FOR ELECTRICITY METERING REQUIREMENTS.

3-WIRE COPPER FEEDER SCHEDULE

CONDUCTOR TYPE C = COPPER A = ALUMINUM; QUANTITY OF CONDUCTORS PER RUN; AMPACITY

ROW	FEEDER ID	QTY OF PARALLEL RUNS	CONDUCTORS QTY	CONDUCTORS SIZE	BONDING SIZE	CONDUIT SIZE (mm)	CONDUIT SIZE (IN)	CONDUCTOR MATERIAL	AMPACITY PER RUN	AMPACITY TOTAL ALL RUNS	REFERENCE (75 DEG C UNLESS NOTED OTHERWISE)
1	3W/C20	1	3	#12 AWG	#12 AWG	21	3/4	COPPER	20	20	OESC TABLE 2 (60 DEG C)
2	3W/C30	1	3	#10 AWG	#12 AWG	21	3/4	COPPER	30	30	OESC TABLE 2 (60 DEG C)
3	3W/C40	1	3	#8 AWG	#10 AWG	27	1	COPPER	40	40	OESC TABLE 2 (60 DEG C)
4	3W/C55	1	3	#6 AWG	#10 AWG	27	1	COPPER	55	55	OESC TABLE 2 (60 DEG C)
5	3W/C70	1	3	#4 AWG	#8 AWG	35	1-1/4	COPPER	70	70	OESC TABLE 2 (60 DEG C)
6	3W/C85	1	3	#3 AWG	#8 AWG	35	1-1/4	COPPER	85	85	OESC TABLE 2 (60 DEG C)
7	3W/C95	1	3	#2 AWG	#8 AWG	35	1-1/4	COPPER	95	95	OESC TABLE 2 (60 DEG C)
8	3W/C130	1	3	#1 AWG	#6 AWG	41	1-1/2	COPPER	130	130	OESC TABLE 2
9	3W/C150	1	3	#1/0 AWG	#6 AWG	53	2	COPPER	150	150	OESC TABLE 2
10	3W/C175	1	3	#2/0 AWG	#6 AWG	53	2	COPPER	175	175	OESC TABLE 2
11	3W/C200	1	3	#3/0 AWG	#6 AWG	53	2	COPPER	200	200	OESC TABLE 2
12	3W/C230	1	3	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	230	OESC TABLE 2
13	3W/C255	1	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	255	OESC TABLE 2
14	3W/C285	1	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	285	OESC TABLE 2
15	3W/C300	2	3	#1/0 AWG	#6 AWG	53	2	COPPER	150	300	OESC TABLE 2
16	3W/C310	1	3	350 MCM	#3 AWG	78	3	COPPER	310	310	OESC TABLE 2
17	3W/C350	2	3	#2/0 AWG	#6 AWG	53	2	COPPER	175	350	OESC TABLE 2
18	3W/C380	1	4	500 MCM	#3 AWG	103	4	COPPER	380	380	OESC TABLE 2
19	3W/C400	2	3	#3/0 AWG	#6 AWG	53	2	COPPER	200	400	OESC TABLE 2
20	3W/C460	2	3	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	460	OESC TABLE 2
21	3W/C475	1	3	750 MCM	#2 AWG	103	4	COPPER	380	475	OESC TABLE 2
22	3W/C510	2	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	510	OESC TABLE 2
23	3W/C570	2	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	570	OESC TABLE 2
24	3W/C620	2	3	350 MCM	#3 AWG	78	3	COPPER	310	620	OESC TABLE 2
25	3W/C760	2	3	500 MCM	#3 AWG	103	4	COPPER	380	760	OESC TABLE 2
26	3W/C765	3	3	250 MCM	#4 AWG	63	2-1/2	COPPER	255	765	OESC TABLE 2
27	3W/C855	3	3	300 MCM	#4 AWG	63	2-1/2	COPPER	285	855	OESC TABLE 2

REMARKS:
1. SCHEDULE ASSUMES NO TEMPERATURE RATING INDICATED ON BREAKER LUGS.

4-WIRE COPPER FEEDER SCHEDULE

CONDUCTOR TYPE C = COPPER A = ALUMINUM; QUANTITY OF CONDUCTORS PER RUN; AMPACITY

ROW	FEEDER ID	QTY OF PARALLEL RUNS	CONDUCTORS QTY	CONDUCTORS SIZE	BONDING SIZE	CONDUIT SIZE (mm)	CONDUIT SIZE (IN)	CONDUCTOR MATERIAL	AMPACITY PER RUN	AMPACITY TOTAL ALL RUNS	REFERENCE (75 DEG C UNLESS NOTED OTHERWISE)
1	4W/C20	1	4	#12 AWG	#12 AWG	21	3/4	COPPER	20	20	OESC TABLE 2 (60 DEG C)
2	4W/C30	1	4	#10 AWG	#12 AWG	21	3/4	COPPER	30	30	OESC TABLE 2 (60 DEG C)
3	4W/C40	1	4	#8 AWG	#10 AWG	27	1	COPPER	40	40	OESC TABLE 2 (60 DEG C)
4	4W/C55	1	4	#6 AWG	#10 AWG	27	1	COPPER	55	55	OESC TABLE 2 (60 DEG C)
5	4W/C70	1	4	#4 AWG	#8 AWG	35	1-1/4	COPPER	70	70	OESC TABLE 2 (60 DEG C)
6	4W/C85	1	4	#3 AWG	#8 AWG	35	1-1/4	COPPER	85	85	OESC TABLE 2 (60 DEG C)
7	4W/C95	1	4	#2 AWG	#8 AWG	35	1-1/4	COPPER	95	95	OESC TABLE 2 (60 DEG C)
8	4W/C130	1	4	#1 AWG	#6 AWG	41	1-1/2	COPPER	130	130	OESC TABLE 2
9	4W/C150	1	4	#1/0 AWG	#6 AWG	53	2	COPPER	150	150	OESC TABLE 2
10	4W/C175	1	4	#2/0 AWG	#6 AWG	53	2	COPPER	175	175	OESC TABLE 2
11	4W/C200	1	4	#3/0 AWG	#6 AWG	53	2	COPPER	200	200	OESC TABLE 2
12	4W/C230	1	4	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	230	OESC TABLE 2
13	4W/C255	1	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	255	OESC TABLE 2
14	4W/C285	1	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	285	OESC TABLE 2
15	4W/C300	2	4	#1/0 AWG	#6 AWG	53	2	COPPER	150	300	OESC TABLE 2
16	4W/C310	1	4	350 MCM	#3 AWG	78	3	COPPER	310	310	OESC TABLE 2
17	4W/C350	2	4	#2/0 AWG	#6 AWG	53	2	COPPER	175	350	OESC TABLE 2
18	4W/C380	1	4	500 MCM	#3 AWG	103	4	COPPER	380	380	OESC TABLE 2
19	4W/C400	2	4	#3/0 AWG	#6 AWG	53	2	COPPER	200	400	OESC TABLE 2
20	4W/C460	2	4	#4/0 AWG	#4 AWG	63	2-1/2	COPPER	230	460	OESC TABLE 2
21	4W/C475	1	4	750 MCM	#2 AWG	103	4	COPPER	380	475	OESC TABLE 2
22	4W/C510	2	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	510	OESC TABLE 2
23	4W/C570	2	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	570	OESC TABLE 2
24	4W/C620	2	4	350 MCM	#3 AWG	78	3	COPPER	310	620	OESC TABLE 2
25	4W/C760	2	4	500 MCM	#3 AWG	103	4	COPPER	380	760	OESC TABLE 2
26	4W/C765	3	4	250 MCM	#4 AWG	63	2-1/2	COPPER	255	765	OESC TABLE 2
27	4W/C855	3	4	300 MCM	#4 AWG	63	2-1/2	COPPER	285	855	OESC TABLE 2
28	4W/C1860	6	4	350 MCM	#3 AWG	78	3	COPPER	310	1860	OESC TABLE 2

REMARKS:
1. SCHEDULE ASSUMES NO TEMPERATURE RATING INDICATED ON BREAKER LUGS.

BRAMPTON FIRE STATION 215

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SEALS

NO.	ISSUES/REVISIONS	DATE
10	ISSUED FOR ADD-E04	2024-09-13
9	ISSUED FOR ADD-E02	2024-08-26
8	ISSUED FOR TENDER	2024-06-28
7	ISSUED FOR TENDER REVIEW	2024-06-11
6	ISSUED FOR PERMIT	2024-05-06
5	ISSUED FOR ESA REVIEW	2024-04-23
4	ISSUED FOR ALECTRA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

SINGLE LINE DIAGRAM

ISSUE DATE: 2024-09-13
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 1

DRAWING NO.:

E-901

I PLOT DATE: 9/13/2024 11:08:34 AM

LUMINAIRE SCHEDULE

Type	Description	BASIS OF DESIGN MANUFACTURER AND CAT No.	VOLTAGE	WATTS	LUMEN PACKAGE	MOUNTING	MOUNTING HEIGHT (mm)	COMMENTS
D6C	6" LED DOWNLIGHT	LFR-6RD-M-10L40K8XW-DM1_LFR-6RD-T-S	120 V	7 W	978	RECESSED	3050	
D6D	6" LED DOWNLIGHT	LFR-6RD-M-15L40K8WD-DM1_LFR-6RD-T-SH	120 V	11 W	1504	RECESSED	2400	
D6E	6" LED DOWNLIGHT	LFR-6RD-M-20L40K8NR-DM1_LFR-6RD-T-S	120 V	15 W	1984	RECESSED	<varies>	
D6F	6" LED DOWNLIGHT	LFR-6RD-M-10L40K8XW-DM1_LFR-6RD-T-S	120 V	7 W	978	SURFACE	3600	
D6G	2" LED DOWNLIGHT	PRIMA LIGHTING 8726	120 V	3 W	150	RECESSED		
HBA	ROUND HIGHBAY LED FIXTURE	CRB-40LX-EDU	120 V	102 W	14107	SUSPENDED	<varies>	
P1	POLE MOUNTED FIXTURE	ASL1-80L-39-4K7-3-BC	347 V	38 W	3645	POLE-MOUNTED	4570	
P1A	PENDANT DISC	SP1414GV-15L-35K-EX-TF2-WMI	120 V	20 W	904	SUSPEND	3050	
P2	POLE MOUNTED FIXTURE	ASL1-160L-100-4K7-4W-BC	347 V	90 W	7371	POLE-MOUNTED	6000	
S4A	4FT PENDANT LINEAR LED	MPS4-40HL-FW-EDU	120 V	49 W	5814	SUSPEND	3010	
S4B	4FT PENDANT LINEAR LED	MPS4-40LW-FW-EDU	120 V	33 W	4123	SUSPEND	3010	
SLA	STEP LIGHT	ULB-40435-2W-W27-01-120/277V	120 V		33		300	
SP4A	4FT PENDANT LINEAR LED	AP2W-4-80-40K-A2	120 V	65 W	8042	RECESSED	12000	
SP8A	8FT PENDANT LINEAR LED	4L-P-ID-LPA-4-SOF-X-CX-40K-I030-D040	120 V	23 W	2800	RECESSED	3000	
SR4A	4FT RECESSED LINEAR LED	4L-R-D-4-BAT-X-CX-40K-D065	120 V	65 W	3004	RECESSED	<varies>	
SR4B	4FT RECESSED LINEAR LED	MPS4-40XW-FW-EDU	120 V	20 W	3004	RECESSED	3010	
SR4C	4FT RECESSED LINEAR LED	MPS4-40XW-FW-EDU	120 V	65 W	3004	RECESSED	2800	
SR5	4FT RECESSED LINEAR LED	4L-R-D-4-SOF-Cx-40K-D035	120 V	93 W	1400	RECESSED	2400	
SR6	8FT PENDANT LINEAR LED	3L-P-ID-LPA-4-SOF-Cx-35K-I030-D035	120 V	43 W	2594	RECESSED	3200	
SR8B	8FT RECESSED LINEAR LED	4L-S-D-4-BAT-X-CX-40K-D125	120 V	44 W	7990	RECESSED	3488	
SR8C	8FT RECESSED LINEAR LED	RM4DOD-1L35K-4-MB-L2	120 V	71 W	1728	RECESSED	4525	
T1	2X4 LIGHTING FIXTURE	CBT24-LS40	120 V	79 W	4963	RECESSED	2750	
T1A	2X4 LIGHTING FIXTURE	CBT24-LSCS	120 V	108 W	3775	RECESSED	3048	
U1	UNDER CABINET LED FIXTURE	CHANNEL ACOLYTE CHACH5-F-SV-RB-90-LINEA20-5.0-35-VW	120 V	25 W	387	SURFACE	200	
W1	WALL MOUNTED LED FIXTURE	TRP1-24L-15-4K7-3	120 V	15 W	1880	WALL	2280	
W2	WALL MOUNTED LED FIXTURE	TRP2-24L-30-4K7-4	120 V	28 W	3647	WALL	<varies>	
WS	WALL MOUNTED LED FIXTURE	MW-WHE-30-WH-1-PL2-1-0-GR-V 830VHO OPTION	120 V	11 W	1250	WALL	<varies>	SEE NOTE 5
WSA	WALL MOUNTED LED FIXTURE	3L-W-D-4-SOF-Cx-35K-D035	0 V	122 W	1400	WALL	1012	

LIGHTING FIXTURE SCHEDULE NOTES:
1. UNLESS NOTED OTHERWISE, ACCEPTABLE SUBSTITUTE MANUFACTURES AND SUPPLIERS: ACUITY BRANDS LIGHTING, COOPER LIGHTING SOLUTIONS, CREE CANADA, CURRENT LIGHTING (FORMERLY HUBBELL), PEERLESS ELECTRIC, SIGNIFY (FORMERLY PHILIPS LIGHTING), VISCOR/VISIONEERING.
2. WHERE AN INCOMPLETE MODEL/CAT NO. IS LISTED, MANUFACTURERS/SUPPLIERS MUST CONFIRM THE PROPOSED FIXTURE WITH THE CONSULTANT A MINIMUM OF ONE WEEK PRIOR TO TENDER CLOSE.
3. SUBMIT SHOP DRAWINGS FOR CONSULTANT'S REVIEW PRIOR TO PLACING ANY ORDER.
4. ELECTRICAL CONTRACTOR TO CONFIRM PRIOR TO LIGHTING FIXTURE ORDER THAT LIGHTING FIXTURE SUBMITTED AREN'T END OF THE LINE FOR MANUFACTURING CLOSEOUTS. THESE WILL NOT BE ACCEPTED.
5. COORDINATE WITH ARCHITECTURAL DRAWINGS. LIGHT FIXTURES TO BE MOUNTED ABOVE THE SIGNAGE.

8

EMERGENCY LIGHTING SCHEDULE

FIXTURE TAG	DESCRIPTION	BASIS OF DESIGN MANUFACTURER AND CAT. NO.	VOLTAGE (V)	LAMP	WATTS (W)	COLOUR TEMPERATURE	LUMENS	CRI	DRIVER	MOUNTING
X1	GREEN RUNNING-MAN EXIT SIGN	REFER TO SPECIFICATIONS SECTION 26 52 13.16	120	LED	3	N/A	N/A	N/A	N/A	RECESSED - CEILING
X2	GREEN RUNNING-MAN EXIT SIGN	REFER TO SPECIFICATIONS SECTION 26 52 13.16	120	LED	3	N/A	N/A	N/A	N/A	SURFACE - WALL
X3	DOUBLE-HEAD EMERGENCY REMOTE LUMINAIRE	REFER TO SPECIFICATIONS SECTION 26 52 13.13	120	LED	12	N/A	N/A	N/A	N/A	SURFACE - WALL
X4	SINGLE-HEAD EMERGENCY REMOTE LUMINAIRE	REFER TO SPECIFICATIONS SECTION 26 52 13.13	120	LED	6	N/A	N/A	N/A	N/A	SURFACE - WALL
XB	DOUBLE-HEAD EMERGENCY REMOTE LUMINAIRE COMPLETE WITH BATTERY PACK	REFER TO SPECIFICATIONS SECTION 26 52 13.13	120	LED	12	N/A	N/A	N/A	N/A	SURFACE - WALL

LIGHTING CONTROL DEVICE SCHEDULE

SYMBOL	DESCRIPTION	BASIS OF DESIGN MANUFACTURERS AND PRODUCT SERIES	CONTROL WIRING	VOLTAGE OUTPUT	MOUNTING	FITNESS	KITCHEN/ MEETING	OUTDOOR STORAGE	CORRIDOR/ VEST./ STAFF ENTRANCE	DECON	MD STOR.	APPRATUS BAY	LUANDRY	WAHSROOM	LOCKER ROOM	SERVICE ROOMS	IT ROOM	JANITUR	TOOL/ COMPR./ HOSE TOWER	OFFICES	DORMS	BUNKER GEAR
	WALL SWITCH OCCUPANCY SENSOR, SINGLE ZONE CONTROL (ON/OFF), 120 VOLT, DUAL TECHNOLOGY SENSOR	ACUITY BRANDS CONTROLS/SENSOR SWITCH WSX-SERIES LEGRAND/WATTSTOPPER PW-301 SERIES LUTRON MAESTRO SERIES MS-OPS2 LEVITON EQUAL		120 V	WALL		X	X		X				X			X	X				
8B	EIGHT BUTTON WALL STATION.	ACUITY BRANDS CONTROLS/nLIGHT, nPODM SERIES LEGRAND/WATTSTOPPER LMSW-108 SERIES LEVITON LUTRON EQUAL	DIGITAL	120 V	WALL							X										
DIM	DIMMING OCCUPANCY WALL SWITCH, 0-10 VOLT DIMMING CONTROL, 120 VOLT, PASSIVE INFRARED SENSOR	ACUITY BRANDS CONTROLS/SENSOR SWITCH WSX-D-SA SERIES LEGRAND/WATTSTOPPER PW-311 SERIES LEVITON OSD10-I0 SERIES LUTRON MAESTRO SERIES MS-Z101	0-10 V DIMMING	120 V	WALL								X							X		
	ONE BUTTON WALL STATION, ONE BUTTON ON-OFF TOGGLE.	ACUITY BRANDS CONTROLS/SENSOR SWITCH WSX-PDT SERIES LEGRAND/WATTSTOPPER DSW-301 SERIES LUTRON MAESTRO SERIES MS-A102 LEVITON EQUAL		120 V	WALL						X					X			X			
DIM	DIMMING WALL STATION FOR ONE ZONE CONTROL, MULTI-BUTTON WALL INTERFACE CONTROL C/W ENGRAVED BUTTONS.	ACUITY BRANDS CONTROLS PODM-1SB SERIES LEGRAND/WATTSTOPPER LMSW-101 LUTRON EQUAL LEVITON EQUAL	DIGITAL	120 V	WALL	X	X															X
DT	CEILING MOUNTED OCCUPANCY SENSOR, NETWORKED, DUAL TECHNOLOGY SENSOR, 12 FOOT, 360 DEGREE COVERAGE PATTERN	ACUITY BRANDS CONTROLS NPODM SERIES LEGRAND/WATTSTOPPER EQUAL LUTRON EQUAL LEVITON EQUAL	DIGITAL	120 V	WALL	X			X						X						X	X
DT	WALL MOUNT DUAL TECHNOLOGY SENSOR, NETWORKED	ACUITY BRANDS CONTROLS/nLIGHT, nPODM SERIES LEGRAND/WATTSTOPPER LMSW-108 SERIES LEVITON LUTRON EQUAL	DIGITAL	120 V	WALL							X										
DT LR	WALL MOUNT DUAL TECHNOLOGY SENSOR, NETWORKED, COMPLETE WITH LONG RANGE LENS	ACUITY BRANDS CONTROLS CM-PDT-9-RJB SERIES LEGRAND/WATTSTOPPER EQUAL LUTRON EQUAL LEVITON EQUAL	DIGITAL	120 V	CEILING							X										
3	WALL SWITCH OCCUPANCY SENSOR, SINGLE ZONE CONTROL (ON/OFF), SWITCH 3-WAY, 120 VOLT, PASSIVE INFRARED SENSOR	LEGRAND/WATTSTOPPER LMDX-100 SERIES ACUITY EQUAL LUTRON EQUAL LEVITON EQUAL	DIGITAL	120 V	WALL								X		X						X	

LIGHTING CONTROLS SCHEDULE NOTES:
1. LIGHTING CONTROLS OF ONE MANUFACTURER THROUGH PROJECT TO ENSURE PRODUCT COMPATIBILITY.
2. DUAL TECHNOLOGY SENSORS: PASSIVE INFRARED/ULTRASONIC, OR PASSIVE INFRARED/MICROPHONIC, DEPENDING ON MANUFACTURER. MICROPHONIC SENSORS ACCEPTABLE IN LIEU OF ULTRASONIC.
3. POSITION CEILING MOUNTED OCCUPANCY SENSORS A MINIMUM 1200 mm (4'-0") FROM NEAREST AIR DIFFUSER, HVAC OUTLETS, HEATING BLOWERS, ETC.
4. CONFIRM INSTALLATION REQUIREMENTS, WIRING DIAGRAMS, ETC. WITH MANUFACTURER'S DETAILS.
5. SUBMIT SHOP DRAWINGS FOR CONSULTANT'S REVIEW PRIOR TO PLACING ANY ORDER.
6. CONFIRM FINISH COLOUR WITH CONSULTANT DURING SUBMITTAL REVIEW.

[PLOT DATE: 9/13/2024 11:08:36 AM]

BRAMPTON FIRE STATION 215

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NO.	ISSUES/REVISIONS	DATE
8	ISSUED FOR ADD-E04	2024-09-13
7	ISSUED FOR TENDER	2024-06-28
6	ISSUED FOR TENDER REVIEW	2024-06-11
5	ISSUED FOR PERMIT	2024-05-06
4	ISSUED FOR ESA REVIEW	2024-04-23
3	ISSUED FOR 60% CD	2024-04-16
2	ISSUED FOR 100% DD	2024-01-05
1	ISSUED FOR 60% DD	2023-09-14

DRAWING TITLE:

SCHEDULES FOR LIGHTING

ISSUE DATE: 2024-09-13
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 1
DRAWING NO.:

E-902

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	September 12, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

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Addendum #:	M02
Revision #:	0

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Specifications [Refer to the attached specifications for details]:

.1 22 42 00.00 – Commercial Plumbing Fixture

i) Updated and additional information for L1 & S2

.2 25 05 02.00 - Building Automation System

i) Updated approved BAS Manufacturer

.3 25 96 00.00 - Integrated Automation Control Sequences for Electrical Systems

i) Additional specification

Quasar Consulting Group

George Mikhael P.Eng

Sector Lead

1 GENERAL

1.1 *SECTION INCLUDES*

1.1.1 Plumbing fixtures and related components.

1.2 *SUBMITTALS*

1.2.1 Submit product data sheets (fixture cuts) for all plumbing fixtures and fittings, including accessories.

1.2.2 Product Data: Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports and indicate materials and finishes, dimensions, construction details, and flow-control rates for each type of fixture indicated.

1.2.3 Wiring Diagrams: Power, signal, and control wiring.

1.2.4 Submit fixture manufacturer's standard colour charts for all fixtures where colours are available, but a particular colour is not specified.

1.3 *CLOSEOUT SUBMITTALS*

1.3.1 Operation and maintenance data.

2 PRODUCTS

2.1 *MANUFACTURERS*

2.1.1 Subject to compliance with requirements, manufacturers that may be incorporated into the Work include, but are not limited to, following:

2.1.1.1 Flush Valves:

(1) Sloan;

(2) Delta Commercial;

(3) Zurn Industries;

(4) Moen Commercial.

2.1.1.2 Plumbing Brass:

(1) Sloan;

(2) Acorn Engineering;

(3) American Standard;

(4) Delta Commercial;

(5) Chicago Faucet;

(6) Moen Commercial.

2.1.1.3 Stainless Steel Sinks:

(1) Franke Commercial;

(2) Novanni Commercial;

(3) Aristaline;

(4) Arch Metal Ind.

2.1.1.4 Mop Sinks:

(1) Stern Williams;

(2) Acorn Engineering;

(3) Zurn Industries.

2.1.1.5 Drain Fittings, Angle Supplies, and Traps:
(1) McGuire;
(2) American Standard;
(3) Delta Commercial;
(4) Zurn Industries.

2.1.1.6 Fixture Carriers:
(1) Watts Industries;
(2) Jay R. Smith;
(3) Zurn Industries.

2.1.1.7 Water Closets, Lavatories, and Urinal:
(1) American Standard;
(2) Zurn Industries;
(3) Kohler.

2.1.1.8 Thermostatic Mixing Valves:
(1) Lawler;
(2) Delta Commercial;
(3) Leonard.

2.1.1.9 Shower and Associated Trim:
(1) American Standard;
(2) Delta Commercial;
(3) Zurn Industries;
(4) Moen Commercial.

2.1.1.10 Toilet Seats:
(1) Olsonite;
(2) Centoco;
(3) Bemis Commercial.

2.1.1.11 Electronic “No Touch” Flush Valves:
(1) Sloan;
(2) Delta Commercial;
(3) Zurn Industries;
(4) Moen Commercial.

2.1.1.12 Electronic “No Touch” Faucets:
(1) Sloan;
(2) Delta Commercial;
(3) Zurn Industries;
(4) Moen Commercial.

2.2 *GENERAL RE: PLUMBING FIXTURES AND FITTINGS*

2.2.1 Fixtures and fittings, where applicable, are to be in accordance with requirements of CAN/CSA B45 Series, General Requirements for Plumbing Fixtures, including supplements, ASME A112.1.18.1/CSA B125.1, Plumbing Supply Fittings, and CSA B125.3, Plumbing Fittings.

2.2.2 Barrier-free fixtures and fittings are to be in accordance with governing Code requirements.

2.2.3 Unless otherwise specified, vitreous china, porcelain enamelled, and acrylic finished fixtures are to be white.

2.2.4 Unless otherwise specified, fittings and piping exposed to view are to be chrome plated and polished.

2.2.5 Fittings located in areas other than private washrooms are to be vandal-proof.

2.2.6 Fixture carriers are to be suitable in all respects for the fixture they support and construction in which they are located.

2.2.7 Floor flanges for floor mounted water closets are to be cast iron or brass, secured to floor to prevent movement and complete with a wax seal and brass or stainless steel bolts, nuts, and washers. Plastic floor flanges will not be acceptable.

2.2.8 Proper seal to mate with fixture carrier flange and produce a water-tight installation.

2.2.9 Exposed traps for fixtures not equipped with integral traps, such as lavatories, are to be adjustable chrome plated cast brass "P" traps with cleanouts, minimum 17 gauge chrome plated tubular extensions, and chrome plated escutcheons, all to suit fixture type and drain connection.

2.2.10 Concealed traps for fixtures not equipped with integral traps, such as counter sinks, are to be adjustable cast brass with cleanout plugs, all to suit fixture type and drain connection.

2.2.11 Exposed supplies for fixtures which do not have supply trim/fittings with integral stops, i.e. lavatories, are to be solid chrome plated brass angle vales with screwdriver stops for public areas, wheel handle stops for private areas, flexible stainless steel risers, and stainless steel or chrome plated steel escutcheons, all arranged and sized to suit fixture.

2.2.12 Water piping as specified, complete with ball type shut-off valves as specified with water piping, or Dahl Bros. Canada Ltd. ¼ turn Mini Ball Valves.

2.3 *PLUMBING FIXTURES AND FITTINGS*

2.3.1 WC-1 - TOILET - FLOOR MOUNTED WITH FLOOR OUTLET

2.3.1.1 American Standard 288CA114.020 Toilet - GLENWALL, Tank type Toilet, Floor mounted with floor outlet, Ultra High Efficiency UHET 4.2 LPF (1.1 GPF), White finish Vitreous china, EverClean antimicrobial surface, Elongated bowl, Minimum 305 mm (12") rough-in from wall to the centre of waste outlet, Siphon action bowl with direct-fed jet, Manual, Polished chrome left-hand trip lever, Tank not lined, Without tank cover locking device, Gravity-assisted flush, Tank coupling components, Fully-glazed 51 mm (2") trapway, PowerWash rim scrubs bowl with pressurized water every flush, Sanitary bar on bowl, Toilet seat not included, Two (2) colour-matched bolt caps, 381 mm (15") wide, 756 mm (29-3/4") from finished wall, 762 mm (30") high Compliances: CALGreen compliant, ASME A112.19.2 compliant, Califonia Energy Commission (CEC) compliant, CSA B45.1 compliant, EPA WaterSense compliant.

2.3.1.2 Centoco 500STSCCFE-001 Seat - FAST-N-LOCK, for elongated bowl, open front, heavy-duty, for commercial applications, Polypropylene, Toilet seat, Less seat cover, Plastic commercial check hinges, and Stainless steel hinge pin, Specified in White finish, FAST-N-LOCK mounting system takes the guess

work out when tightening the hardware. The specially designed fasteners in click" when the appropriate torque is reached. The bolt and nut material shall be stainless steel, Dimensions:25 mm (1") high, 473 mm (18-5/8") long, 371 mm (14-5/8") wide.

2.3.1.3 McGuire LFBV172 Supply - Lead Free, with Chrome-plated finish, Convertible quarter-turn supply , Toilet, two 13 mm (1/2") copper sweat x 10 mm (3/8") outer Ø brass ball valve connection, 2 deep bell flange, Convertible loose key handle, extension is 127 mm (5") length, 304 mm (12") copper flexible risers.

2.3.2 WC-2 - TOILET - FLOOR MOUNTED WITH FLOOR OUTLET

2.3.2.1 American Standard 288AA114.020 Toilet - H2OPTIMUM, Tank type Toilet, Floor mounted with floor outlet, Ultra High Efficiency UHET 4.2 LPF (1.1 GPF), White finish Vitreous china, EverClean antimicrobial surface, Elongated bowl, Right Height rim at 419 mm (16-1/2"), Minimum 305 mm (12") rough-in from wall to the centre of waste outlet, Siphon jet flush action, Manual, Polished chrome left-hand trip lever (7381192-0020A), Tank not lined, Without tank cover locking device, Gravity-assisted flush, Tank coupling components, 229 x 203 mm (9" x 8") water surface area, Fully-glazed 51 mm (2") trapway, PowerWash rim scrubs bowl with pressurized water every flush, Sanitary bar on bowl, Toilet seat not included, Two (2) colour-matched bolt caps, 381 mm (15") wide, 756 mm (29-3/4") from finished wall, 800 mm (31-1/2") high Compliances: CALGreen compliant, ASME A112.19.2 compliant, Califonia Energy Commission (CEC) compliant, CSA B45.1 compliant, EPA WaterSense compliant.

2.3.2.2 Centoco 820STSFE-001 Seat - FAST-N-LOCK, For elongated bowl, Open front, Heavy-duty, For commercial applications, Polypropylene, Toilet seat, With seat cover, Plastic commercial check hinges, and Stainless steel hinge pin, Specified in White finish, FAST-N-LOCK mounting system takes the guess work out when tightening the hardware. The specially designed fasteners in click" when the appropriate torque is reached. The bolt and nut material shall be stainless steel, Dimensions:25 mm (1") high, 470 mm (18-1/2") long, 362 mm (14-1/4") wide

2.3.2.3 McGuire LFBV172 Supply - Lead Free, with Chrome-plated finish, Convertible quarter-turn supply , Toilet, Two 13 mm (1/2") copper sweat x 10 mm (3/8") outer Ø brass ball valve connection, 2 deep bell flange, Convertible loose key handle, extension is 127 mm (5") length, 304 mm (12") copper flexible risers.

2.3.3 L-1 - LAVATORY

2.3.3.1 Sloan Designer Series Sink DSG-81000 Corian or Quartz. Overall Dimensions to verify with Architect.

2.3.3.2 KOHLER e=ELATE K-99492-4 Single Handle Bathroom Sink Faucet. 0.5 gpm (1.9 lpm) maximum flow rate at 60 psi (4.14 bar) with Leak-free ceramic disc valve.

2.3.3.3 Lawler 570-86820 Mixing Valve - Point of Use and Master controlled fixtures, Thermostatic master water mixing control valve, lead free brass body construction, Nickel plated finish, 1.9-30LPM (0.5-8 GPM) range for flowrate, To adjust the mixed outlet temperature of the valve, remove the cap to gain access to the adjusting spindle. The spindle should be rotated-clockwiseto reduce the temperature, counter-clockwise to increase the temperature until the desired set point is reached, 11 LPM (3 GPM) tempered flowrate @ 5 PSI pressure drop, The temperature is adjusted with the help of Spindle, 4-7/8" (124 mm) Height, ASSE 1070 approved Certified to CSA B125.3 for ASSE 1070 applications, 3/8" MNPT (9.5 mm) inlet, 95°F-115°F outlet water temperature range, 3/8" MNPT (9.5 mm) outlet, internal checks, Offers choice of temperature settings from 95°F through 115°F, 125 psi max hydrostatic

pressure, ±20% pressure variation, 40-80°F, 10°F, 180°F max, ±5°F, Protects against scalding and chilling, 7 GPM flowrate @ 45 PSI.

2.3.3.4 McGuire LFCK165LK Supply - ICV DEFENDER, Lead Free, with Chrome-plated finish, Integral check supply kit, Faucet, Pipe to compression connection, 3/8" I.P.S x 3/8" O.D connection, Shallow wall flange, Loose key handle, Full turn brass stem, 305 mm (12") chrome-plated risers, Purple EPDM peroxide cured washers. Codes and compliances: NSF/ANSI 61 & 372, UPC.

2.3.3.5 McGuire 155A Fixture Drain - Straight drain, Cast brass, Chrome-plated finish, Open grid PO plug, 7/32" (5.5 mm) Ø holes size, 17 gauge 32 mm (1-1/4") Ø tailpiece diameter, 17 gauge 152 mm (6") long, Brass locknut, Heavy rubber basin washer Fiber friction washer, ASME A112.18.2 CSA B125.2, CSA compliant.

2.3.3.6 McGuire 8872CB P-Trap - Heavy cast brass, 292 mm (11-1/2") distance, With cleanout plug, Steel box flange, Neoprene gasket, slipnuts, 17 gauge seamless tubular wall bend, ASME A112.18.2 CSA B125.2, CSA compliant.

2.3.4

2.3.5 L-2 – Lavatory

2.3.5.1 American Standard 9960001.020 Basin - MEZZO, Semi-countertop Lavatory, Fine fire clay, White finish, Single hole centreset, Rear overflow, with faucet ledge, mounting kit supplied, Overall Dimensions: 559 mm (22") long, 546 mm (21-1/2") wide, 172 mm (6-25/32") high, Bowl Dimensions: 483 mm (19") long, 381 mm (15") wide, 175 mm (6-7/8") deep.

2.3.5.2 Sloan EAF-275-SOL-ISM-CP-0.5GPMGPM-AER-IR-IQ-FCT Faucet - OPTIMA, counter mounted, automatic no-touch, solar powered, lavatory faucet, polished chrome finish, single hole centreset, metal, water supply connection with flexible high pressure hose and strainer, 1.9 LPM (0.5 GPM) maximum flowrate, aerated spray outlet, fixed spout, 110 mm (4-5/16") spout reach, 136 mm (5-11/32") high, double infrared sensors with automatic setting feature, above deck control access, 6 VDC lithium battery back-up power source, Integrated side mixer, IQ Click.

2.3.6 MS-1 - MOP SINKS

2.3.6.1 Stern-Williams #HL-1810 HiLow, 24” x 24" x 12" (610 mm x 610 mm x 305 mm) floor mounted pre-cast terrazzo mop sink with cast brass drain assembly, stainless steel strainer, one-piece integral stainless-steel cap on all four (4) sides, Hose and wall hook, Mop hanger, Splash Catcher panel, 20 gauge, type 304 stainless steel.

2.3.6.2 American Standard 8344.212.004 Faucet - Manual, Wall Mounted, 8", Cast Brass Construction, Mop Sink, Rough Chrome, 15 GPM at 60 PSI, 6" cast brass spout with vacuum breaker, 10-1/4" (259 mm), Less Supply, Ceramic Disc Valve Cartridge, Less Drain, Metal lever handles, Two Handles, ASME A112.18.1, CSA B125.

2.3.6.3 Trap - 3" (75 mm) diameter cast iron or rough copper "P" trap.

2.3.7 S-1 – UNDERMOUNT OFFSET DOUBLE BOWL KITCHEN SINK

2.3.7.1 American Standard 18CR.9351800.075 Sink – Fabricated offset stainless steel kitchen sink, with overall dimension 457 mm (18") long, 889 mm (35") wide, 229 mm (9") high, constructed from 18 gauge Stainless steel, Left bowl is 406 mm (16") long and right bowl is 406 mm (16") long, Left bowl is 533 mm (21") wide and right bowl is 279 mm (11") wide, Left bowl is 229 mm (9") deep and right bowl is 229 mm (9") deep.

2.3.7.2 Kraus KFF-1691 Faucet - Counter mounted commercial filter faucet, Single handle, Sink faucet, Metal construction, Lead free brass waterway, Ceramic disk cartridge, 6.8 LPM (1.8 GPM) maximum flowrate, 406 mm (16") hose length.

2.3.8 S-2 – PRE-FABRICATED SINK

2.3.8.1 Pre-fabricated sink. Refer to architectural drawing.

2.3.8.2 Chicago Faucets 510-GWSLXKCAB Faucet - Wall-hung, Manual, Two handles, Pre-rinse fitting, Chrome plated finish, 184 mm–222 mm (7-1/4" - 8-3/4") adjustable centreset, Lead Free ANSI/NSF 61 and ANSI/NSF 372 compliant, ECAST brass construction, 1/4 turn ceramic cartridge with integrated check valve, 3.8 LPM (1.0 GPM) flow rate @60 psi pre-rinse spray valve, Spray outlet, Pre-rinse spout, Pull down, 292 mm (11-1/2") spout reach, 1006 mm (39-5/8") high, Pre-rinse spout and valve consisting of 584 mm (23") riser with spring guide, 1118 mm (44") flexible stainless steel hose with insulated handle, pipe strap and hook assembly, Vandal-resistant 60 mm (2-3/8") lever handle with indexed buttons, 13 mm (1/2") NPT female thread inlet.

2.3.8.3 McGuire LFCK170LK Supply - ICV DEFENDER, Lead Free, with Chrome-plated finish, Integral check supply kit w/5" sweat extension, Faucet, Sweat to compression connection, 1/2" Sweat w/5" Sweat extension x 3/8" O.D connection, Deep bell wall flange, Loose key handle, Full turn brass stem, 305 mm (12") chrome-plated risers, Purple EPDM peroxide cured washers, Codes and compliances: NSF/ANSI 61 & 372, UPC.

2.3.8.4 McGuire 8912CB P-Trap - Heavy cast brass, Adjustable p-trap, 292 mm (11-1/2") length, With cleanout plug, Steel box flange, Neoprene gasket, Seamless tubular brass bend, slipnuts.

2.3.9 SH-1 - PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH SHOWER HEAD AND HAND SPRAY.

2.3.9.1 Chicago Faucets SH-PB1-11-020, Tub and Shower System with pressure balancing valve and shower head, wall-mounted, Chrome plated. Shower head, 2.5 GPM max. flow rate @ 80 PSI. Includes pressure balancing cartridge. 1/2" nominal copper and 1/2" NPT hot and cold supply inlets and outlets. Shower head includes arm and wall flange. Shower valve cycles from cold to hot. Wall plate includes embossed and color-coded temperature index. Integral service stops with checks to prevent cross-flow. Diverter valve with indexed wall flange, diverts water flow between shower head and hand spray. Includes wall elbow and in-line vacuum breaker. 2.5 GPM hand spray with 69" stainless steel hose, wall hook, and pause control. This product meets ADA ANSI/ICC A117.1 requirements and is tested and certified to industry standards: ASME A112.18.1/CSA B125.1, and ASSE 1016.

2.3.9.2 Schluter – Kerdi Line KL1DRE-60 floor Linear Drain, 600 mm Frameless Tileable grate assembly. Refer to manufacturer instructions for installation.

2.3.9.3 Trap – provide P-Trap, same material as the connecting pipe drain.

2.4 *CAULKING*

2.4.1 General Electric Series SCS-1200 Silicone Construction Sealant or Dow Corning 780 silicone rubber sealant with primers as recommended by sealant manufacturer. Caulking colour(s) for coloured fixtures other than white, if any, will be selected by the Consultant from sealant manufacturer’s standard colour range.

3 EXECUTION

3.1 *INSTALLATION OF PLUMBING FIXTURES AND FITTINGS*

3.1.1 Provide required plumbing fixtures and fittings.

3.1.2 Connect plumbing fixtures and fittings with piping sized in accordance with drawing schedule. Refer to manufacturer's published connection (rough-in) requirements. Where

manufacturer requires piping connection larger than shown on drawing schedule, provide piping accordingly:

3.1.3 Confirm exact location of plumbing fixtures and trim prior to roughing-in. Refer to architectural plan and elevation drawings.

3.1.4 When installation is complete, check, and test operation of each fixture and fitting. Adjust or repair as required.

3.1.5 For barrier-free fixtures, comply with mounting height and other requirements of governing Code(s).

3.1.6 For barrier-free water closets utilizing manual flush controls, controls to be installed so that it is operable from the transfer side of the fixture.

3.1.7 Supply templates for counter mounted fixtures and trim and hand to trades who will cut the counter. Ensure openings in counter are properly located.

3.1.8 Locate control panels for electronic faucets under lavatories and recessed into wall. Coordinate panel installations with electrical trade who will provide 115 V power wiring to panels. Install flexible conduit (supplied with box) and extend cord from faucet through the flexible conduit to control box. Connect hot and cold water piping to mixing valve in each box, and tempered water piping from each mixing valve to faucet. Set mixing valve maximum temperature limit stops to 43°C (110°F) after domestic water systems (hot and cold) are complete. Ensure each programmable controller is properly programmed and water off after deactivation is set for 3 seconds.

3.1.9 For electronic flush valves, locate transformer in ceiling space above electronic units to be served. Coordinate locations with electrical trade who will provide 120 V line supply to transformers. Provide low voltage wiring from transformers to each electronic flush valve terminal point. Electrical line supply and low voltage wiring is to be concealed and access to transformer must be provided for servicing.

3.1.10 Protect baths from damage during construction and finishing work. Unless otherwise specified, pack concealed voids under baths with batt type glass fibre insulation as baths are installed.

3.1.11 Protect shower bases from damage during construction and finishing work.

3.1.12 Confirm exact mixing valve and shower head locations prior to roughing-in.

3.1.13 Install refrigerated drinking fountains in accordance with manufacturer’s instructions. Plug into a wall receptacle provided as part of electrical work. Coordinate receptacle installation with electrical trade on site.

3.1.14 For emergency showers, install so bottom of shower head is approximately 2 m (82 in) above floor, and approximately 400 mm (16 in) out from the wall. Wall mount mixing valve approximately 1.5 m (5 ft) above floor and adjacent shower head. Set valve temperature limit stop to 35°C (95°F). Ensure valve is open and exposed piping is chrome plated or stainless steel.

3.1.15 Install eye wash fixtures in accordance with manufacturer’s instructions. Ensure exposed piping is painted.

3.1.16 Wall mount mixing valves for emergency fixtures approximately 1.5 m (5 ft) above floor and secure in place. Check and confirm valve operation and temperature of tempered water supply. Provide cabinets. Identify each cabinet and hand 3 identified cabinet keys to Consultant prior to Substantial Performance of the Work.

3.1.17 Set mop service basins on floor over drain piping and connect to roughed-in service. Install wall supply trim and any accessories specified.

3.2 *CAULKING AT PLUMBING FIXTURES AND FITTINGS*

3.2.1 Caulk around plumbing fixtures and fittings where they contact walls, floors, and any other building surface.

3.2.2 Clean areas/surfaces to be caulked and prime in accordance with sealant manufacturer's instructions. Where damage to a building surface may occur, mask surface to prevent damage and ensure a clean exact edge to the caulking bead.

3.2.3 Apply caulking using a gun with proper size and shape of nozzle and force sealant into joints to ensure good surface contact and a smooth and even finished bead of sealant.

3.2.4 If joints have been masked sealant may be tooled in a continuous stroke to obtain complete void filling. Remove masking tape immediately after tooling and before sealant begins to skin.

3.3 *DISHWASHER CONNECTIONS*

3.3.1 Provide roughed-in water and drain connections for Owner supplied dishwasher consisting of:

3.3.1.1 15 mm (1/2") dia. domestic hot water connection with a Dahl "Mini-Ball" valve with hose end and water hammer arrestor;

3.3.1.2 40 mm (1-½") dia. DWV copper drain connection with "P" trap and cleanout plug.

3.4 *CLOTHES WASHER CONNECTIONS*

3.4.1 Provide roughed-in water and drain connections for Owner supplied clothes washer consisting of:

3.4.1.1 15 mm (½") dia. piping connection for both hot and cold water, each terminated in a Dahl "Mini-Ball" Valve with hose end and water hammer arrestor;

3.4.1.2 50 mm (2") dia. standing waste with a height to suit the washer drain and complete with a "P" trap.

3.5 *GEAR EXTRACTOR CONNECTIONS*

3.5.1 Provide roughed-in water and drain connections for Owner supplied clothes washer consisting of:

3.5.1.1 25 mm (1") dia. piping connection for both hot and cold water, each terminated in a Dahl "Mini-Ball" Valve with hose end and water hammer arrestor; include for additional connection to hot water inlet for soap chute.

3.5.1.2 75 mm (3") dia. drain down to trench.

END OF SECTION

1 GENERAL

1.1 *ABBREVIATIONS AND DEFINITIONS*

1.1.1 Abbreviations used in this Specification are as follows:

1.1.1.1 BAS building automation system;
1.1.1.2 DDC direct digital controls;
1.1.1.3 LAN local area network;
1.1.1.4 PC personal computer.

1.2 *SUBMITTALS*

1.2.1 Submit shop drawings/product data sheets for BAS components. As a minimum, submit the following:

1.2.1.1 BAS network architecture, including modes and interconnections;
1.2.1.2 systems schematics, sequences, and flow diagrams;
1.2.1.3 points schedule for each point in BAS, including point type, object name, expanded ID, display units, controller type, and address;
1.2.1.4 samples of graphic display screen types and associated menus;
1.2.1.5 detailed Bill of Materials for each system or application, identifying quantities, part numbers, descriptions, and optional features;
1.2.1.6 control damper schedule including a separate line for each damper and a column for each of damper attributes including code number, fail position, damper type, damper operator, duct size, damper size, mounting and actuator type;
1.2.1.7 control valve schedules including a separate line for each valve and a column for valves as for control dampers;
1.2.1.8 room schedule including a separate line for each HVAC terminal unit indicating type, location and address;
1.2.1.9 details of BAS interfaces and connections to other systems;
1.2.1.10 product data sheets or marked catalogue pages including part number, photograph and description for BAS hardware and software.
1.2.1.11 Submit Contractor's BAS Points List for review and approval by the Owner.

1.3 *CLOSEOUT SUBMITTALS*

1.3.1 Submit a site inspection and start-up report from manufacturer's representative as specified in Part 3 of this Section.

1.3.2 Record "as-built" drawings are to include:

1.3.2.1 schematic outline of BAS for quick reference of overall system scope;
1.3.2.2 adequate record of work as installed, including locations and routing of system wiring.

1.3.3 O&M Manual is to include:

1.3.3.1 hardware specification manual which gives a functional description of hardware components;
1.3.3.2 operator's manual which outlines concise instructions for operation of system and an explanation and recovery route for system alarms;
1.3.3.3 engineering manual which outlines and defines system set-up, definition and application;
1.3.3.4 data manual which indicates applications data programmed into system;
1.3.3.5 system software documentation.

1.4 *DESCRIPTION OF THE BUILDING AUTOMATION SYSTEM*

1.4.1 Building automation system is to consist of a modular, BACnet protocol, open architecture system incorporating direct digital control and monitoring of equipment and

systems and consisting of all hardware and software required for complete, functional DDC control system. BAS is to be accessible through standard personal computers within building through a wireless application protocol device, or remotely through Internet by means of a standard web browser.

1.4.2 BAS is to be field expandable, with a distributed architectural design to eliminate dependence upon any single device for alarm reporting and control execution. Failure of any single component or network connection is not to interrupt execution of control strategies at other operational devices. BAS is to maintain all settings and overrides through a system re-boot, and is to incorporate, as a minimum, following integrated features, functions and services:

1.4.2.1 graphic user interface for accessing and viewing BAS information, commanding points, changing setpoints, responding to alarms, programming time-of-day schedules;
1.4.2.2 operator information, alarm management, and control features;
1.4.2.3 enterprise-level information and control access;
1.4.2.4 information management including monitoring, transmission, archiving, retrieval, and reporting functions;
1.4.2.5 diagnostic monitoring and reporting of BAS functions;
1.4.2.6 off-site monitoring and management access;
1.4.2.7 energy management;
1.4.2.8 standard applications for terminal HVAC systems.

1.4.3 BAS is to include, but not be limited to, following:

1.4.3.1 personal computer based server for networking and integrating all hardware components into a single BAS;
1.4.3.2 personal computer based operator work station with colour monitor for colour graphic displays, and a colour printer;
1.4.3.3 portable operator's terminal;
1.4.3.4 network of standalone network automation engine(s);
1.4.3.5 network of field equipment controllers;
1.4.3.6 input/output modules;
1.4.3.7 local display devices;
1.4.3.8 distributed user interfaces;
1.4.3.9 network processing, data storage and communication equipment;
1.4.3.10 all other components required for a complete and operating BAS.

1.5 *QUALITY ASSURANCE*

1.5.1 BAS hardware and software is to be installed by experienced personnel employed and trained by manufacturer/supplier of field equipment controllers. System wiring is to be installed by journeyman electricians or under direct on-site supervision of journeyman electricians.

2 PRODUCTS

2.1 *GENERAL RE: BUILDING AUTOMATION SYSTEM*

2.1.1 Control system components (field devices) other than those specified in this Section are generally specified in Section 25 05 01 – Automatic Control Systems. Components factory installed with equipment or supplied with equipment are specified in mechanical work Sections with equipment.

2.1.2 BAS specified in this Section is an expandable DDC building automation system in accordance with drawing control diagrams and sequences, and points lists.

2.1.3 Manufacturers:

2.1.3.1 Johnson Controls Inc.;

2.1.3.2 Siemens Building Technologies Inc.;
2.1.3.3 ESC Automation

2.2 *BAS ARCHITECTURE*

2.2.1 BAS is to be based industry standard Ethernet TCP/IP communications protocol. Where used, LAN controller cards are to be standard "off-the-shelf" products available through normal PC vendor channels. BAS is to be capable of operating at a communication speed of 100 Mbps, with full peer-to-peer network communication. BAS is to be compatible with other enterprise-wide networks, and where indicated, BAS is to be connected to the enterprise network and share resources with it by way of standard networking devices and practices.

2.2.2 Network automation engines are to provide supervisory control over control network and are to support BACnet Standard MS/TP bus communication protocol (ASHRAE SSPC-135, Clause 9). Control networks are to provide either a "peer-to-peer", master-slave, or supervised token passing communications and are to operate at a minimum communication speed of 9600 baud. DDC controllers are to reside on control network.

2.2.3 BAS is to include appropriate hardware and software to allow BACnet bi-directional data communications between BAS and building equipment/system control panels. BAS is to receive, react to, and return information from connected equipment and systems. Data required by application is to be mapped into automation engine’s data base and is to be transparent to operator. Point inputs and outputs from building equipment/system control panels is to have real-time interoperability with BAS software features such as control software, energy management, custom process programming, alarm management, historical data and trend analysis, totalization, and local area network communications.

2.3 *DEDICATED WEB BASED USER INTERFACE*

2.3.1 User interface is to be web based and is to operate on a personal computer for command entry, information management, network alarm management, and database management functions. Real-time control functions including scheduling, history collection, and alarming are to be resident in appropriate components of BAS network to facilitate greater fault tolerance, availability and reliability.

2.3.2 Architecture of personal computer is to be implemented to conform to industry standards such that it can accommodate applications provided with BAS and mechanical systems and equipment, including but not limited to Microsoft Office Applications. Specifically, it must conform to following interface standards:
2.3.2.1 Microsoft Edge (or other standard browser) for user interface functions;
2.3.2.2 Microsoft Office Professional for creations, modification and maintenance of reports, and sequencing other necessary building management functions;
2.3.2.3 Microsoft Outlook or other email program for supplemental alarm functionality and communication of system events, and reports;
2.3.2.4 required network operating system for exchange of data and network functions such as printing of reports, trends, and specific system summaries.

2.3.3 Personal computer server or operator workstation is to be configured at minimum as follows:
2.3.3.1 memory: 8 GB;
2.3.3.2 processor: Intel;
2.3.3.3 hard drive: 500 GB free hard drive;
2.3.3.4 graphics card: 1 GB DDR3;
2.3.3.5 ports: 1 HMDI, 2 serial, one parallel, and 2 USB-C ports;
2.3.3.6 keyboard: 101 keyboard and 2-button mouse;
2.3.3.7 monitors: 23" LCD monitor with 1920 x 1080 resolution;
2.3.3.8 LAN communications: 10/100/1000 network card.

2.3.4 Operating System Software: Windows 7 Professional 64-bit Microsoft SQL 2008 Server and SQL 2008 Server Express are automatically installed by EBI. Where user interface is not provided via browser, PC is to be equipped with a complete workstation software package including any software or hardware keys, and package is to include original installation discs and licenses for all software, device drivers, peripherals, and software registration cards which are to be handed to Owner.

2.3.5 Printer is to be at minimum equal to Hewlet Packard "DeskJet" colour printer with a speed of 600 DPI black and 300 DPI colour, and 64 K input print buffer.

2.4 *DISTRIBUTED WEB BASED USER INTERFACE*

2.4.1 Features and functions of dedicated web based user interface described above are to be available on any computer connected directly or via a wide area or virtual private network to BAS network, which conforms to the following specifications:

2.4.1.1 software is to run on Microsoft Edge (or other standard browser);

2.4.1.2 minimum hardware requirements are:

(1) 2 GB RAM;

(2) 2.0 GHz clock speed Pentium 4 microprocessor;

(3) 120 GB hard drive;

(4) keyboard with 83 keys minimum;

(5) SVGA 1024 x 768 resolution display with 64K colours and 16 bit colour depth;

(6) mouse or other pointing feature.

2.5 *REMOTE ACCESS VIA SMART PHONE AND/OR TABLET DEVICES*

2.5.1 Available with an operator interface designed for use on various modern smart phone devices with network connectivity with the follow features:

2.5.1.1 Mobile user interface operating over standard TCP network connection, performing well down to standard mobile 3G speeds, and optimized to ensure very high performance across different network topologies.

2.5.1.2 Solution written with HTML5 web standards and browser agnostic, not deploying or using ActiveX controls, nor requiring installation of Java Runtime engine.

2.5.1.3 Mobile solution incorporating full scope of responsibilities of BAS operators for remote mobile users, allowing them to view or control points within their assigned facility locations.

2.5.1.4 Without alternation, mobile user interface operable within any standard internet browser from a normal personal computer.

2.5.2 Along with optimized smart phone user interface, a dedicated tablet access user interface, optionally providing full operator workstation functionality, on a tablet style device. Tablet interface is to support standard operator workstation features including full operator scope of responsibility, and operable using commercial off-the-shelf technology.

2.6 *USER INTERFACE APPLICATION COMPONENTS*

2.6.1 Integrated browser based client application is to be used as user operator interface program. System is to employ an event-driven rather than a device polling methodology to dynamically capture and present new data to user. Additional features are as follows:

2.6.1.1 inputs, outputs, set-points, and other parameters as defined in Part 3 of this Section, shown on drawings, or required as part of system software are to be displayed for operator viewing and modification from operator interface software;

2.6.1.2 user interface software is to provide help menus and instructions for each operation and/or application;

2.6.1.3 system is to support customization of user interface configuration and a home page for each operator;

2.6.1.4 system is to support user preferences in alarm, trend, display, and applications screen presentations;

2.6.1.5 controller software operating parameters are to be displayed for operator to view/modify from user interface, and these parameters are to include set-points, alarm limits, time delays, PID tuning constants, run times, point statistics, schedules, etc.;

2.6.1.6 operator interface is to incorporate comprehensive support for functions including but not limited to following:

(1) user access for selective information retrieval and control command execution;

(2) monitoring and reporting;

(3) alarm, non-normal, and return to normal condition annunciation;

(4) selective operator override and other control actions;

(5) information archiving, manipulation, formatting, display and reporting;

(6) BAS internal performance supervision and diagnostics;

(7) on-line access to help menus;

(8) on-line access to current BAS as-built records and documentation;

(9) means for controlling, re-programming, and re-configuration of the BAS operation and for the manipulation of the BAS database information in compliance with applicable Codes and Regulations for individual BAS applications.

2.6.1.7 system is to support a list of application programs configured by users that are called up by the Tools Menu, hyperlinks within graphic displays, and key sequences;

2.6.1.8 operation of control system is to be independent of user interface, which is to be used for operator communication only.

2.6.2 System is to have a minimum of 5 levels of nesting, and the capability of displaying multiple navigation trees to aid operator in navigating throughout all systems and points connected, adding custom trees, defining any logical grouping of points and arranging them on a tree in any order, and nesting groups within other groups. Navigation trees are to be "dockable" to other displays such as graphics, meaning trees will appear as part of display but can be detached and then minimized to Windows task bar or closed altogether, however, a simple keystroke will reattach navigation to primary display of user interface.

2.6.3 Alarms are to be routed directly from network automation engines to PC’s and servers, and it is to be possible for specific alarms from specific points to be routed to specific PC’s and servers. BAS is to annunciate diagnostic alarms indicating system failures and non-normal operating conditions, annunciate application alarms as required by points lists and sequences, and as a minimum, permit 4 categories of alarm sounds customizable through user defined wav files. Alarm management segment of user interface is to provide, as a minimum, following alarm functions:

2.6.3.1 log, date, and time of alarm occurrence;

2.6.3.2 generate a "pop-up" window or populate a dedicate section of screen with audible alarm to inform a user that an alarm has been received;

2.6.3.3 permit a user with the appropriate security level to acknowledge, temporarily silence, or discard an alarm;
2.6.3.4 provide an audit trail on PC hard drive for alarms by recording user acknowledgement, deletion or disabling of an alarm, name of the user, alarm, action taken, and time/date of alarm;
2.6.3.5 facilitate ability to direct alarms to an email address or alphanumeric pager, in addition to pop-up window described above;
2.6.3.6 any attribute of any object in system may be designated to report an alarm.

2.6.4 Reports and summaries are to be generated and directed to user interface displays with subsequent assignment to printers or discs. Summaries and reports are to be accessible via standard user interface functions, and selection of a single menu item, tool bar item, or tool bar button is to print any displayed report or summary. System is to permit creation of custom reports and queries via a standard web services XML (Extensible Mark-up Language) interface and commercial of-the-shelf software such as Microsoft Access, Microsoft Excel, or Crystal Reports. As a minimum, BAS is to provide following reports and summaries:
2.6.4.1 all points in BAS;
2.6.4.2 all points in each BAS application;
2.6.4.3 all points in a specific controller;
2.6.4.4 all points in a user-defined group of points;
2.6.4.5 all points currently in alarm;
2.6.4.6 all points locked out;
2.6.4.7 all BAS schedules;
2.6.4.8 all user defined and adjustable variables, schedules, interlocks, etc.

2.6.5 Graphical display for time-of-day scheduling and override scheduling of building operations is to be provided, with weekly schedules for each group of equipment with a specific time use schedule, and it is to be possible to define one or more exception schedules for each schedule including reference to calendars, with monthly calendars provided to permit simplified scheduling of holidays and special days for a minimum of 5 years in advance, user selected with the pointing device or keyboard. Changes to schedules made from user interface are to directly modify network automation engine schedule database. Selection of a single menu item or tool bar button is to print any displayed schedule. As a minimum, following functions are to be provided:
2.6.5.1 weekly schedules;
2.6.5.2 exception schedules;
2.6.5.3 monthly calendars;
2.6.5.4 global schedules.

2.6.6 BAS Is to be complete with multiple-level password access protection to permit user/manager to user interface control and display, database manipulation capabilities deemed appropriate for each user, based on an assigned password. Password access protection features are to include:
2.6.6.1 each user is to have a user name (24 characters minimum), a password (12 characters minimum), and access levels;
2.6.6.2 each user may change his or her password at any time;
2.6.6.3 when editing or entering passwords, system is not to echo actual characters for display on monitor;
2.6.6.4 minimum of 500 unique password is to be supported;
2.6.6.5 operators are to be able to perform only those commands available for their respective passwords, and display of menu selections is to be limited to only those items defined for access level assigned to password of each user;
2.6.6.6 BAS is to automatically generate a report of log-on/log-off and system activity for each user, and any action that results in a change in operation or

configuration of control system is to be recorded, including acknowledgement and deletion of alarms;

2.6.6.7 minimum of 5 levels of access is to be supported individually or in any combination of following:

(1) Level 1 – view data;

(2) Level 2 – command;

(3) Level 3 – operator overrides;

(4) Level 4 – database modification;

(5) Level 5 – database configuration;

(6) Level 6 – all privileges including password add/modify.

2.6.7 User interface is to be equipped with screen management capabilities that allows user to activate, close, and simultaneously manipulate a minimum of 4 active display windows plus a network of user defined navigation trees.

2.6.8 Graphics application program is to be an integral part of user interface and is to include a create/edit function and a runtime function, and system architecture is to support a number of graphic documents (graphic definition files) limited only by memory and computing resources to be generated and executed. Graphics are to be capable of displaying and providing animation based on real-time data that is acquired, derived, or entered. Additional features include following:

2.6.8.1 maximum of 16 graphic applications are to be able to be executed at any one time on a user interface or workstation with 4 visible to user, and each graphic application is to capable of following functions:

(1) all graphics are to be fully scalable;

(2) graphics are to support a maintained aspect ratio;

(3) multiple fonts are to be supported;

(4) unique background is to be assigned on a per graphic basis;

(5) colour of animations and values on displays is to indicate status of object attribute.

2.6.8.2 it is to be possible to change values (set-points) and states in system controlled equipment by using drop-down windows accessible via pointing device;

2.6.8.3 graphic editing tool is to be provided to permit creation and editing of graphic files, and graphic editor is to be capable of performing/defining animations, defining runtime binding, and:

(1) in general, facilitate creation and positioning of point objects by dragging from tool bars or drop-downs and positioning where required;

(2) be capable of adding additional content to any graphic by importing backgrounds in the SVG, BMP, or JPG file formats.

2.6.8.4 many graphic displays representing part of building and various building components are exact duplicates, with exception that various variables are bound to different field values, consequently, it is to be possible to bind value of a graphic display to aliases, as opposed to physical field tags.

2.6.9 Trend and change of value data is to be stored within the automation engines or server and uploaded to a dedicated trend database or exported in a selectable data format via a data export utility. Uploads to a dedicated database are to occur based on one of user-defined interval, manual command, or when trend buffers are full. Exports are to be as requested by user or on a time scheduled basis. System is to be equipped with a configurable data storage sub-system for collection of historical data which can be stored

in either Microsoft Access or SQL database format. Each automation engine is to store, trend, and point history data for analog and digital inputs and outputs as follows:

2.6.9.1 any point, physical or calculated, may be designated for trending, and methods of collection are to be defined time interval or a change of value;

2.6.9.2 each automation engine or server is to capable of storing multiple samples for each physical point and software variable based on available memory, including an individual sample time/date stamp, and points may be assigned to multiple history trends with different collection parameters.

2.6.10 Trend viewing utility with access to data points and capability of defining trend study displays to include multiple trends is to be provided, and is to include:

2.6.10.1 capability of retrieving any historical database point for use in displays and reports by specifying point name and associated trend name;

2.6.10.2 displays which are able to be single or stacked graphs with on-line selectable display characteristics such as ranging, colour, and plot style;

2.6.10.3 display magnitude (zoom capability) and units selectable by operator at any time without reconfiguration of processing or collection of data;

2.6.10.4 display magnitude is to be automatically scaled to show full graphic resolution of data being displayed;

2.6.10.5 trend studies are to be capable of calculating and displaying calculated variables including highest value, lowest value, and time based;

2.6.10.6 display is to support user's ability to change colours, sample sizes, and types of markers.

2.6.11 BAS is to be equipped with a database manager that separates database monitoring and management functions by supporting 2 separate windows. Database secure access is to be accomplished using standard SQL authentication including ability to access data for use outside of BAS application. Additional features are as follows:

2.6.11.1 database management function is to include summarized information on trend, alarm, event, and audit for backup, purge, and restore database management functions;

2.6.11.2 database manager is to support 4 tabs as follows:

(1) statistics, which is to display database server information and trend, alarm (event), and audit information on BAS database;

(2) maintenance, which is to be an easy method of purging records from BAS server trend, alarm (event), and audit databases by supporting separate screens for creating a backup prior to purging, selecting database, and allowing for retention of a selected number of day's data;

(3) backup, which is to provide means to create a database backup file and select a storage location;

(4) restore, which is to provide a restricted means of restoring a database by requiring user to log into an Expert Mode in order to view Restore screen.

2.6.11.3 status bar is to appear at bottom of BAS database manager tabs and is to indicate information on current display activity with icons as follows:

(1) Ready;

(2) Purging Record From Database;

(3) Action Failed;

(4) Refreshing Statistics;

(5) Restoring Database;

(6) Shrinking A Database;

(7) Backing-Up A Database;

(8) Resetting Internet Information Services;

(9) Shutting Down BAS Deice Manager;

(10) Action Successful.

2.6.11.4 database manager monitoring functions are to be accessed through Monitoring Settings window and are to continuously read database information once user has logged in;

2.6.11.5 system is to advise user via task bar icons and email messages when a database value has exceeded a warning or alarm limit;

2.6.11.6 Monitoring Settings window is to have following sections:

(1) General: allow user to set and review scan intervals and start times;

(2) Email: allow user to create and review email and telephone text messages to be delivered when a warning or alarm is generated;

(3) Warning: allow user to define warning limit parameters, set reminder frequency, and link email message;

(4) Alarm: allow user to define alarm limit parameters, set reminder frequency, and link email message;

(5) Database Login: protect system from unauthorized database manipulation by creating a read access and write access for each trend, alarm (event), and audit databases as well as an Expert Mode required to restore a database.

2.6.11.7 Monitoring Settings taskbars to display following informational icons:

(1) Normal: indicates by colour and size that databases are within their limits;

(2) Warning: indicates by colour and size that one or more databases have exceeded their warning limit;

(3) Alarm: which indicates by colour and size that one or more databases have exceeded their alarm limit.

2.6.11.8 BAS is to indicate via taskbar icons and email messages when a database value has exceeded a warning or alarm limit;

2.6.12 BAS is to be equipped with a demand limiting and load rolling program for purpose of limiting peak energy usage and reducing overall energy consumption. Program is to support both Sliding Window and Fixed Window methods of predicting demand. Additional features are as follows:

2.6.12.1 system is to support 3 levels of sensitivity in Sliding Window demand calculations for fine tuning the system, as follows:

(1) Low Setting: sheds loads later and over shortest period of time and maximizes period of time equipment is on;

(2) Medium Setting: sheds loads earlier over a period of time greater than Low Setting, and increases time equipment is on and decreases probability of exceeding "Tariff Target";

(3) High Setting: sheds loads earlier and over a longer period of time than Medium Setting to minimize probability of exceeding "Tariff Target".

2.6.12.2 system is to have both a Shed Mode and a Monitor Only Mode of operation, as follows:

(1) when Shed Mode is engaged, system is to actively control demand;

(2) when Monitor Mode is engaged, system is to simulate shedding action but will not take any action.

2.6.12.3 Demand Limiting Program is to monitor energy consumption rate and compare it to a user defined "Tariff Target", and maintain consumption below target by selectively shedding loads based on a user defined strategy;

2.6.12.4 Demand Limiting Program is to be capable of supporting a minimum of 10 separate load priorities, with each load user assigned, and a minimum of 12 separate "Tariff Targets" defining maximum allowed average power usage during current interval;

2.6.12.5 system is to support a maximum shed time for each load as determined by user, and system is to restore load before maximum shed time has expired;

2.6.12.6 system is to support a minimum shed time for each load as determined by user, and system is not to restore load before minimum shed time has expired;

2.6.12.7 system is to support a minimum release time for each load as determined by user, and system is not to shed load until it has been off for minimum release time;

2.6.12.8 system is to support three user defined options if meter does not function properly, as follows:

(1) shedding – currently shed loads will be released as their maximum shed time expires;

(2) maintain current shed rate – system will use demand limiting shed rate that was present when meter began to function improperly;

(3) use unreliable meter shed rate – system is to control to a user defined unreliable shed rate target.

2.6.12.9 Load Rolling Program is to sum the loads currently shed and compare sum to a user defined load rolling target, and system is to maintain consumption below target by selectively shedding loads based on a user defined load priority;

2.6.12.10 Load Rolling Program is to be capable of supporting a minimum of 10 separate load priorities with each load user defined to a load priority;

2.6.12.11 Load Rolling Program is to be capable of supporting a minimum of 12 separate "Tariff Targets" defining amount of energy by which demand must be reduced;

2.6.12.12 system is to equip user with a Load Tab that displays all demand limiting and load rolling parameters for any selected load;

2.6.12.13 system is to be complete with a Load Summary that displays all loads associated with demand limiting and load rolling program, and status icons for each load are to indicate:

(1) Load Is Offline;

(2) Load Is Disabled;

(3) Load Is Shed;

(4) Load Is Locked;

(5) Load Is In Comfort Override.

2.6.12.14 Load Summary is to include a load summary runtime view listing following load conditions:

(1) Load Priority;

(2) Shed Strategy;

(3) Load Rating;

(4) Present Value;

(5) Ineligible Status;

(6) Active Timer;

(7) Time Remaining;

(8) Last Shed time.

2.7 *NETWORK AUTOMATION ENGINES*

2.7.1 Network automation engines are to be ULC listed and labelled, BACnet Testing Labs (BTL) certified and labelled, fully user programmable supervisory controllers to monitor a network of a minimum of 100 distributed application-specific controllers for a global strategy and direction and to communicate on a peer-to-peer basis with other network automation engines.

2.7.2 Each network automation engine is to have ability to deliver a web based user interface as specified above, and computers connected physically or virtually to automation network are to have access to web-based user interface. Additional characteristics/requirements are as follows:

2.7.2.1 web-based user interface software is to be imbedded in each network automation engine;

2.7.2.2 each network automation engine is to support a minimum of 4 concurrent users;

2.7.2.3 user is to be capable of accessing all system data through one network automation engine;

2.7.2.4 remote users connected to network through an internet service provider or by telephone dial-up are also to have total system access through one network automation engine;

2.7.2.5 each network automation engine is to be capable of generating web-based user interface graphics, and this capability is to be imbedded in network automation engine;

2.7.2.6 user interface is to support following functions using a standard version of Microsoft Edge:

(1) configuration;

(2) commissioning;

(3) data archiving;

(4) monitoring;

(5) commanding;

(6) system diagnostics.

2.7.2.7 each network automation engine is to permit temporary use of portable devices without interrupting normal operation of permanently connected modems.

2.7.3 Each network automation engine is to be a multi-tasking, multi-user, microprocessor-based real time digital control processor sized to meet requirements of system with a minimum word size of 32 bits, and standard operating systems.

2.7.4 Each network automation engine is to have sufficient memory to support its own operating system, databases, and control programs to provide supervisory control for control level devices.

2.7.5 Each network automation engine is to include an integrated, hardware based real time clock.

2.7.6 Each network automation engine is to be equipped with LED indicators to identify following conditions:

2.7.6.1 Power, On/Off;

2.7.6.2 Ethernet Traffic, Ethernet Traffic/No Ethernet Traffic;

2.7.6.3 Ethernet Connection Speed, 10 Mbps/100 Mbps;

2.7.6.4 FC Bus A, Normal Communications/No Field Communications;

2.7.6.5 FC Bus B, Normal Communications/No Field Communications;
2.7.6.6 Peer Communication, Data Traffic Between Network Automation Engines;
2.7.6.7 Run, NAE Running/NAE in Start-up/NAE Shutting Down/Software Not Running;
2.7.6.8 Battery Fault, Battery Defective/Data Protection Battery Not Installed;
2.7.6.9 24 VAC, 24 VAC Present/Loss of 24 VAC;
2.7.6.10 Fault, General Fault;
2.7.6.11 Modem RX, NAE Modem Receiving Data;
2.7.6.12 Modem TX, NAE Modem Transmitting Data.

2.7.7 Each network automation engine is to be equipped with ports for operation of operator input/output devices such as industry standard computers, modems, and portable operator's terminals. Ports are to be as follows:
2.7.7.1 2 USB ports;
2.7.7.2 2 URS-232 serial data communication ports;
2.7.7.3 2 RS-485 ports;
2.7.7.4 one Ethernet port.

2.7.8 Each network automation engine is to continually perform self-diagnostics, communications diagnostics, and diagnostics of all pane components, and transmit both local and remote annunciation of any detected component failure, low battery condition, and repeated failures to establish communication.

2.7.9 In event of loss of normal power each network automation engine is to continue to operate for a user adjustable period of up to 10 minutes after which there is to be an orderly shut-down of all programs to prevent loss of database or operating system software, and:
2.7.9.1 during a loss of normal power, control sequences are to go to normal system shutdown conditions, and critical configuration data is to be saved into Flash memory;
2.7.9.2 upon restoration of normal power and after a minimum off-time delay, controller is to automatically resume full operation through a normal soft-start sequence without manual intervention.

2.8 *FIELD EQUIPMENT CONTROLLERS*

2.8.1 Each field equipment controller is to be a fully user programmable BACnet Testing Labs (BTL) certified and labelled digital controller that communicates via BACnet MS/TP protocol. Each controller is to be housed in a plenum rated plastic housing with removable base to permit pre-wiring of analog and binary input/output field points without controller in place.

2.8.2 Each controller is to employ a finite state control engine to eliminate unnecessary conflicts between control functions at crossover points in their operational sequences, and is to be factory programmed with a continuous adaptive tuning algorithm that sense changes in physical environment and continually adjusts loop tuning parameters appropriately.

2.8.3 Each field equipment controller is to:
2.8.3.1 include troubleshooting LED's to identify following conditions:
(1) Power On;
(2) Power Off;
(3) Download or Start-Up In Progress-Not Ready For Normal Operation;
(4) No Faults;
(5) Device Fault;
(6) Field Controller Bus-Normal Data Transmission;
(7) Field Controller Bus-No Data Transmission;

(8) Field Controller Bus-No Communication;

(9) Sensor Actuator Bus-Normal Data Transmission;

(10) Sensor Actuator Bus-No Data Transmission;

(11) Sensor Actuator Bus-No Communication.

2.8.3.2 support universal inputs, configured to monitor any of following:
(1) analog input, voltage mode;

(2) analog output, current mode;

(3) analog input, resistive mode;

(4) binary input, dry contact maintained mode;

(5) binary input, pulse counter mode.

2.8.3.3 support binary inputs configured to monitor either of following:
(1) dry contact maintained mode;

(2) pulse counter mode.

2.8.3.4 support analog outputs configured to output either of following:
(1) analog output, voltage mode;

(2) analog output, current mode.

2.8.3.5 support binary outputs, 24 VAC Triac;

2.8.3.6 support configurable outputs capable of following:
(1) analog output, voltage mode;

(2) binary output mode.

2.8.3.7 have ability to reside on a master-slave/token-passing field controller bus supporting BACnet standard protocol as follows:
(1) support communications, including input/output communications between field controllers and network automation engines;

(2) support a minimum of one hundred input/output modules and field equipment controllers in any combination;

(3) operate at a maximum distance of 4560 m (15,000 ft) between field controller and furthest connected device.

2.8.3.8 have ability to monitor and control a network of sensors and actuators over a master-slave/token-passing sensor-actuator bus supporting BACnet standard protocol as follows:
(1) bus is to support a minimum of ten devices per trunk;

(2) bus is to operate at a maximum distance of 365 m (1200 ft) between field controller and furthest connected device.

2.8.3.9 capability of executing complex control sequences involving direct wired input/output points as well as input and output devices communicating over field controller bus or sensor-actuator bus;

2.8.3.10 support, but not limited to, following:
(1) hot water, chilled water/central plant applications;

(2) custom air handling units for special applications;

(3) terminal units;

(4) special programs as required for systems control.

2.8.3.11 support a password protected local controller LCD back-lit display with 6 key keypad as an integral part of field controller or as a remote device communicating over sensor-actuator bus to permit user to view monitored points without logging into system, and to view and change set-points, modes of operation, and parameters.

2.9 *INPUT/OUTPUT MODULES*

2.9.1 Input/output modules to facilitate additional inputs and outputs for use in field equipment controllers are to be similar to field equipment controllers but less display and with a minimum of 4 and a maximum of 17 points.

2.10 *SYSTEM CONFIGURATION TOOLS*

2.10.1 System configuration tool is a software package supplied with BAS to enable a computer platform to be used as a stand-alone engineering configuration tool for a network automation engine and to permit programming of field equipment controllers. Configuration tool is to provide an archive database for configuration and application data and is to have same look and feel at user interface regardless of whether configuration is being done online or offline. Additional features and characteristics are as follows:

2.10.1.1 tool is to include:

(1) basic system navigation tree for connected networks;

(2) integration of system enabled devices;

(3) customized user navigation tress;

(4) point naming operator parameter setting;

(5) graphic diagram configuration;

(6) alarm and event message routing;

(7) graphical logic connector tool for custom programming;

(8) downloading, uploading, and archiving databases.

2.10.1.2 tool is to have capability to automatically discover field devices on connected buses and networks;

2.10.1.3 tool is to be capable of configuring from a library of standard applications, simulating to verify applications, and commissioning field equipment controllers and field devices;

2.10.1.4 tool is to be complete with a Bluetooth Wireless Technology wireless access point to enable a wireless enabled portable computer to make a temporary Ethernet connection to automation network.

2.10.2 Bluetooth Wireless Technology converter is to provide temporary wireless connection between sensor-actuator bus or field-controller bus and a wireless enabled portable computer. Converter is to be powered through a connection to either sensor-actuator bus or the field-controller bus and is to support downloading and troubleshooting field equipment controllers and field devices from portable computer over wireless connection. Converter is to be complete with LED indicators for following conditions:

2.10.2.1 Power: On/Off;

2.10.2.2 Fault: Fault/No Fault;

2.10.2.3 SA/FC Bus: Bus Activity/No Bus Activity;

2.10.2.4 Bluetooth: Bluetooth Communication Established/Bluetooth Communication Not Established.

2.11 *WIRING MATERIALS*

2.11.1 System wiring, conduit, boxes, and similar materials are to be in accordance with requirements specified in Division 26 – Electrical.

3 EXECUTION

3.1 *GENERAL RE: INSTALLATION OF THE BAS*

3.1.1 Provide a complete building automation system in accordance with requirements of this Section of the Specification, Section 25 05 01 – Automatic Control Systems, drawings, and the input/output points list(s).

3.1.2 Unless otherwise specified, perform BAS work in accordance with system manufacturer's instructions.

3.2 *INSTALLATION OF DIRECT DIGITAL CONTROL SYSTEM COMPONENTS*

3.2.1 Provide required direct digital control hardware, software, accessories, and wiring for a complete BAS. Refer to drawing control diagrams and sequences, points list(s), and Section 25 05 01 – Automatic Control Systems.

3.2.2 Provide operator workstation, including required power and data connections, in a location as directed by the Owner or as indicated on drawings.

3.2.3 DDC work is to be performed by skilled technicians, properly trained and are qualified for this work.

3.2.4 Materials and equipment used are to be standard components, regularly manufactured for this and/or other systems, and not custom designed especially for this project. Systems and components are to have been thoroughly tested and proven in actual use.

3.2.5 System is to be modular, permitting expansion by adding hardware and software without changes in communication or processing equipment.

3.2.6 Provide new communications bus as required complete with required ancillaries. Connect and extend existing communications bus.

3.2.7 Provide 1 supervisory controller (SC) per cabinet fan (air handler). Provide necessary field equipment controllers (FEC).

3.2.8 Provide necessary quantity of SC to accomplish requirements of this specification, and to minimize number of mechanical systems that would be inoperative in event of a FEC failure. A maximum of 2 major mechanical systems are to be controlled by 1 FEC.

3.2.9 Surface wall mount SC and FEC control units in Mechanical Rooms ensuring they are not mounted on vibrating surfaces, and connect to 15A-1P circuit breakers dedicated for control system applications, in branch panel circuit boards in adjacent spaces. Power wiring from control units to circuit breakers is to be the responsibility of the controls contractor. Wiring is to be in conduit and conduit and wiring are to be in accordance with standards and requirements of Division 26 – Electrical. Refer to electrical drawings for locations of branch circuit panelboards with dedicated circuits for controls system applications.

3.2.10 Indicate via number, and systems controlled by SC and FEC. Indicate via a lamacoid label mounted inside panel the identification number of electrical panel supplying power to SC and FEC.

3.2.11 Submit schedule(s) of input/output points to Consultant for review. Directly connect each SC and FEC to point devices in accordance with control diagrams and schedule of miscellaneous control points as shown on drawings. Sensor wires for each analogue input are to be 18 AWG twisted-shielded cable. Other types of wire required are to be as recommended by system supplier.

3.2.12 Provide required sensors, remote devices, etc., and required interface accessories. Mount duct and/or plenum sensors half-way across duct or plenum.

3.2.13 Differential pressure sensor used to provide space pressurization control through regulation of return air quantities must be mounted with snubbers on indoor pressure leg to prevent sudden fluctuations caused by door openings, etc. Mount outdoor air ports in locations that minimize effects of abnormal surface flow conditions and wind gusts.

3.2.14 Supply and turn over to the Consultant prior to application for a Certificate of Substantial Performance of the Work, reports to be used in assisting Owner in defining and debugging DDC programs. These reports are to consist, as a minimum, of following:
3.2.14.1 process control language (PCL) logs;
3.2.14.2 control loop logs;
3.2.14.3 PCL master point.

3.2.15 Submit Point Data Input forms to the Consultant that the Owner will fill out with DDC system supplier's assistance. Input this point data into the system.

3.2.16 Contacts will be supplied as part of mechanical work or electrical work for alarm and status points for systems and equipment other than building environmental systems and equipment. Connect to DDC system in accordance with point schedule.

3.3 *IMPLEMENTATION OF ENERGY MANAGEMENT PROGRAMS*

3.3.1 Implement energy management programs indicated for building equipment and systems.

3.3.2 Ensure energy management program adjustable parameters are accessible to and adjustable by building operations personnel at operator’s workstation.

3.3.3 Configure energy management programs so they may be enabled/disabled on an individual basis for each system to which they apply.

3.4 *CONTROL WIRING*

3.4.1 Perform required control wiring work for control systems except:
3.4.1.1 power wiring connections to equipment and panels, except as noted below;
3.4.1.2 control wiring associated with mechanical plant equipment and systems whose control is not part of work specified in this Section;
3.4.1.3 starter interlock wiring.

3.4.2 Except as specified below, install wiring in conduit. Unless otherwise specified, final 600 mm (2') connections to sensors and transmitters, and wherever conduit extends across flexible duct connections is to be liquid-tight flexible conduit.

3.4.3 Control wiring in ceiling spaces and wall cavities may be plenum rated cable installed without conduit but neatly harnessed, secured, and identified.

3.4.4 Wiring work is to be in accordance with BAS manufacturer’s certified wiring schematics and instructions, and wiring standards specified in electrical work Division of this Specification.

3.5 *IDENTIFICATION AND LABELLING OF EQUIPMENT AND CIRCUITS*

3.5.1 Refer to Section 20 05 00 – Common Work Results for Mechanical.

3.5.2 Identify BAS equipment as follows:
3.5.2.1 enclosures: engraved laminated nameplates with lettering such as BAS Panel CP2, or BAS Relays, or BAS E/P Transformers, with all wording listed and approved prior to manufacture of nameplates;
3.5.2.2 panel points: a weather-proof input/output layout sheet for each controller with the name of each point connected to controller, and associated wire labelling information;

3.5.2.3 wiring: numbered sleeves or plastic rings at both ends of conductor, with numbering corresponding to conductor identification on shop drawings and "as-built" record drawings;

3.5.2.4 interface components: a weather-proof layout sheet clearly illustrating/identifying purpose of each component within enclosure such that an operator or service technician can quickly identify exact use of each relay, transducer, contactor, etc., with each sheet fastened securely to back of enclosure door.

3.6 *SYSTEM STARTUP*

3.6.1 For equipment/system manufacturer certification requirements, refer to Section 20 05 00 – Common Work Results for Mechanical.

3.6.2 For equipment/system start-up requirements, refer to Section 20 05 00 – Common Work Results for Mechanical.

3.7 *CLOSEOUT ACTIVITIES*

3.7.1 Include for demonstration and training sessions for each of 2 groups of Owner's operating and maintenance personnel as follows:

3.7.1.1 3 full, 8 hour day orientation sessions at system manufacturer's office to educate personnel on BAS architecture, hardware, and software, with an overview of BAS operation and capabilities including but not limited to operational programmes, equipment functions (both individually and as part of a total integrated system), BAS commands, advisories, alarms, and appropriate operator intervention required in responding to BAS operation;

3.7.1.2 2 full, 8 hour day sessions at site using BAS for a "hands-on" demonstration of BAS functions and features with instruction regarding chronological flow of information from field devices, contacts and sensors to operator's workstation, an overview of communications network describing interplay between initiating devices, field hardware panels, systems communications, and their importance within operating BAS, and alarm indications and appropriate responses;

3.7.1.3 2 full, 8 hour day seasonal (summer-winter) site sessions to perform additional instruction regarding seasonal changes and how they affect BAS.

3.7.2 Include for 2 follow-up site training and troubleshooting visits, one 6 months after Substantial Completion and other at end of warranty period, both when arranged by Owner and for a full day to provide additional system training as required.

END OF SECTION

1 GENERAL

1.1 *SECTION INCLUDES*

1.1.1 Building Automation System integration requirements related to electrical systems.

1.2 *RELATED REQUIREMENTS*

1.2.1 Division 26 – Electrical.

2 PRODUCTS

2.1 *POINTS SPECIFIED BUT NOT DESCRIBED IN SEQUENCES*

2.1.1 Any remaining points not detailed in this section are to be monitored and available for trending data.

2.2 *SECTION 26 27 13 – ELECTRICITY METERING*

2.2.1 Customer meters to building automation system.

2.3 *SECTION 26 32 13.16 – GAS-ENGINE-DRIVEN GENERATOR SETS*

2.3.1 Connect all generator alarm and status contacts.

2.4 *SECTION 26 36 23.13 – BYPASS-ISOLATION AUTOMATIC TRANSFER SWITCHES*

2.4.1 Connect all transfer switch alarms and status contacts.

3 EXECUTION

3.1 *INSTALLATION*

3.1.1 In accordance with Section 25 05 01 and Section 25 05 02.

END OF SECTION