Office of the CAO
Purchasing

August 20, 2024

Addendum No. 1

Bid Call No. T2024-220

Construction of Fire Station 215

MODIFICATIONS

Revision No. 1

Closing date has been extended to September 5, 2024. Construction start date is upon PO issuance and no later than March 1, 2025. Substantial performance shall be by October 31, 2026.

Revision No. 2

The following items have been added as part of this Addendum:

ADD 01 – Architectural Addendum 01

ADD 01 – Civil Addendum 01

ADD 01 – Electrical Addendum E01

ADD 01 – Structural Addendum 01

Existing Survey – 52-0-21

QUESTION AND ANSWERS

Question 1:

Kindly advise if there is a mandatory site visit scheduled for this tender.

Answer 1:

There is no pre-bid meeting scheduled for this tender.

Question 2:

We cannot find any information regarding a site visit. Please clarify if there is a scheduled site visit.

Answer 2:

There is no pre-bid meeting scheduled for this tender.

Question 3:

We would be keen to propose an alternate trench drain product. Product is called 8in (internal width) PRO 200PC. This product is made from Polymer concrete. This trench drain would be supplied with EN1433 Class E ductile iron grate. Below is product spec.

General: The trench drain shall be Vodaland Canada PRO 200PC as manufactured by Vodaland or approved equal.

Specification: Channels shall be 39.4” (1000mm) long and the nominal clear opening shall be 8” (200mm) with 10.2” (260mm) overall width and built in slope of 0.5% or neutral 0% as per specifier’s requirements. Channels shall have male-to-female interlocking joints. Gratings shall be ductile cast iron fastened to steel edge rails and meet the system load class specified. Channels and grate shall withstand a required EN1433 load class E. Catch Basin Shall be 20in (509mm) Long, 15.2 (386mm) and 17.3 (440mm) MEGA 300 Polymer Concrete with Class E Grate. Catch Basin can be stacked to create more depth.

Materials: PRO 200PC trench drain shall be manufactured from polymer concrete with the following approximate properties:

Compressive strength 14,000 Psi
Flexural strength 4,000 Psi
Tensile strength 1,500 Psi
Water absorption 0.05%
Frost proof Yes
Dilute acid and alkali resistant Yes
Salt proof Yes

Answer 3:

In accordance with Specification Section 01 25 00 - Product Substitution Procedures, a request for product substitution may be made with the timeframes stipulated after Contract Award. For the purposes of this Tender, bidders are to price the specified item(s).

Question 4:

We would be keen to propose an alternate Oil Interceptor /Separator. We offer products which have a flow rate from 15GPM to 317GPM. There is no flow rate mentioned in the spec nor the capacity. Please advise.

1. Flow rate, GPM
2. Capacity, US gal

Answer 4:

In accordance with Specification Section 01 25 00 - Product Substitution Procedures, a request for product substitution may be made with the timeframes stipulated after Contract Award. For the purposes of this Tender, bidders are to price the specified item(s).

Question 5:

Entire Div 7 missing from the Specification

Answer 5:

Refer to issued Architectural Addendum 01 herein.

Question 6:

Wondering if the tender closing date can be extend for two weeks

Answer 6:

Closing has been extended per Revision No. 1.

Question 7:

Looking at the spec. manual, section 12 24 13, and the drawings A03.09, they're calling for manually operated sun control AND blackout shades, however, the spec. only gives the sun control fabric spec....3% open, it doesn't give a fabric spec. for the blackout. Could you please confirm what type of blackout fabric required?

Answer 7:

Refer to issued Architectural Addendum 01 herein.

Question 8:

The architectural specification 08 91 19 calls for McGill’s 2” HP-245 Louver (our closest alternate would be the A2097) These louvers are not indicated well on the drawings. The mechanical schedule M-901 notes a 4” E.H Price model DE439 (our alternate would be A4080). Please advise which model is to be used?

Answer 8:

McGill’s 2” HP-245 Louver shall be used.

Question 9:

Drawing A09.00 - FINISHES is missing, Please issue.

Answer 9:

Refer to issued Architectural Addendum 01 herein.

Question 10:

For the purpose of estimating we need to upload the drawings into Auto-cad software. However, Civil drawings are not readable in AutoCad. would you please issue an AutoCad suitable set of Civil drawings?

Answer 10:

CAD files cannot be issued. PDF files are re-issued and have been confirmed to work within AutoCAD.

Question 11:

There are no roofing specs provided in link. Please provide.

Answer 11:

Refer to issued Architectural Addendum 01 herein.

Question 12:

Drawing S2.0 indicates footing SF4 on the plan, However, it is not specified in Strip Footing Schedule on the same page. Please advise.

Answer 12:

Drawing S2.0 has been revised to provide strip footing information in the schedule. Refer to issued Structural Addendum 01 herein.

Question 13:

The BAS points list in Section 25 06 00 refers to BACnet integration of unit heaters, but the unit heater specification (23 82 39.19) does not show that BACnet communications is coming with the unit heaters. Please clarify.

Answer 13:

Will be addressed in Addendum #2.

Question 14:

Is BAS control or monitoring of the following equipment required? If so, please provide a sequence of operation and points list:
- Energy Recovery Ventilators, ERV-1, 2, 3
- Desiccant Dehumidifier, DD-1
- Domestic Hot Water Pump, P-1
- Domestic Hot water Heater, DHWT-1

Answer 14:

Will be addressed in Addendum #2.

Question 15:

The BAS points list in Section 25 06 00 lists control points for In-Floor Heating but there isn't any in-floor heating or boilers shown on the drawings. Please clarify.

Answer 15:

Will be addressed in Addendum #2.

Question 16:

The BAS points list in Section 25 06 00 lists control points for four circulator fans in the Apparatus Bay, but the drawings only show one fan. Please clarify.

Answer 16:

Will be addressed in Addendum #2.

Question 17:

Drawing S2.0 shows SF-4 but it is missing from the schedule. Please provide us size and depth for the SF-4 footing?

Answer 17:

Refer to issued Structural Addendum 01 herein.

Question 18:

Drawing A03.13 shows LKR1 and LKR2 under Cash Allowance in (Base & Cash Allowance's) table, However, these Items are not mentioned as part of cash allowances in section 01 21 13 of specification book. Please clarify.

Answer 18:

LKR1 & LKR2 are base contract scope of work. Refer to issued Architectural Addendum 01 herein.

Question 19:

Specification book specifies two types of lockers (Prefinished Metal Lockers 10 51 13 and Phenolic Lockers 10 51 29), on the other hand, drawings show only LKR3 as locker. Please clarify which type of lockers should be provided for LKR3.

Answer 19:

Both are required as they are two different products. Refer to interior elevations for locations.

Question 20:

Specification section 10 56 29 specifies Storage racks by Ready Rack, please clarify if this is LKR1 and LKR2 mentions on drawing A03.13 under cash allowances.

Answer 20:

LKR1 & LKR2 are base contract scope of work. Refer to issued Architectural Addendum 01 herein.

Question 21:

Division 11, section 11 11 36, specifies Vehicle Charging Equipment, this section is normally under division 16's scope of work. Please clarify

Answer 21: Specification is correct as it follows Master format 2020. General Contractor shall determine division of work with subtrades.

Question 22:

Appendix A1, Page 1876 of the specifications has security equipment design standard and equipment specifications. Electrical drawings do not show any security scope of work, please clarify if security should be carried in the base bid by the general contractor.

Answer 22:

Will be addressed in Addendum #2.

Question 23:

If security needs to be designed based on the design standards provided, the given tender period might not be enough to design a security system for this project. Please consider allocation of cash allowance for this item.

Answer 23:

Will be addressed in Addendum #2.

Question 24:

The specification book mentions (Division 07 – Thermal and moisture protection), However, this section has not been provided. Please issue division 07 spec.

Answer 24:

Refer to issued Architectural Addendum 01 herein.

Question 25:

Civil drawing C2.1 has a note by the garbage enclosure that states (Garbage enclosure foundation and retaining wall to be structurally integrated), please provide structural sections and details.

Answer 25:

Will be addressed in Addendum #2.

Question 26:

Drawing A02.07 Section 1 garbage enclosure gate detail states to refer to structural drawing for garbage enclosure footing, structural drawings do not provide any detail for garbage enclosure footing, please provide details.

Answer 26:

Will be addressed in Addendum #2.

Question 27:

Please clarify if the foundation wall and the wall above grade of garbage enclosure should be reinforced with rebar?

Answer 27:

Will be addressed in Addendum #2.

Question 28:

Please clarify construction start date and substantial completion date.

Answer 28:

Construction start date is upon PO issuance and no later than March 1, 2025. Substantial performance shall be by October 31, 2026.

Question 29:

Drawing A00.04, Assembly P-RCA-1 does not indicate the size of rebar and refers to structural, structural drawing refers to civil drawings, and civil drawing does not provide any details. Please advise.

Answer 29:

Refer to issued Architectural Addendum 01 herein.

Question 30:

Drawing A00.04, Assembly P-RCA-2 refers to structural for welded wire mesh, However, structural drawings do not provide details. Please advise.

Answer 30:

Refer to issued Architectural Addendum 01 herein.

Question 31:

We are unable to find Specification for Division 07, could you please provide us?

Answer 31:

Refer to issued Architectural Addendum 01 herein.

Question 32:

None of the drawings provide a clear understanding of what should be done at the municipal boulevard. Civil drawings state that sidewalk within municipal boulevard should be replaced; however do not provide limits of the sidewalk replacement. Landscape drawings show sidewalk limits and the rest of the area along the municipal road as sod/seed. Limits of municipal sidewalk that should be replaced shown on architectural; however, limits are different than what is shown on landscape drawings. Please provide a drawing with clear limits of the replaced municipal sidewalk.

Answer 32:

Refer to revised A02.03 – Enlarged Site Plan. Goreway Drive is currently undergoing Road Widening and infrastructure installations. All new items will remain as existing. GC to repair / replace any damaged or disturbed areas affected by projects scope of work.

Question 33:

Architectural drawing A02.03 has a legend P-LDA on municipal boulevard, both sides of driveway which stands for light duty asphalt and makeup of asphalt that this legend represents is provided on drawing A00.04. If this is existing light duty asphalt path

then why the legend P-LDA is there. If we need to replace existing asphalt path, then please provide limits of replacement.

Answer 33:

Refer to revised A02.03 – Enlarged Site Plan. Goreway Drive is currently undergoing Road Widening and infrastructure installations. All new items will remain as existing. GC to repair / replace any damaged or disturbed areas affected by projects scope of work.

Question 34:

Architectural drawing A02.03 has a legend P-HDA on the municipal road and makeup of P-HDA is stated on drawing A00.04. Please clarify who is responsible to place asphalt on a municipal road. If GC is responsible, then please clearly indicate the limits.

Answer 34:

Refer to revised A02.03 – Enlarged Site Plan. Goreway Drive is currently undergoing Road Widening and infrastructure installations. All new items will remain as existing. GC to repair / replace any damaged or disturbed areas affected by projects scope of work.

Question 35:

Who is responsible for municipal road restoration after primary duct bank will be provided by Hydro company to the property line? Will Hydro company restore municipal road as it is their portion of work for the duct bank, or GC should carry the restoration of municipal road after Hydro company completes their work?Answer 35:

Alectra is responsible for all scope of work for the primary ductbank to the property line inclusive of municipal road restoration.

Question 36:

Please clarify the following:
1. what white rectangular at driveway on drawing A0.2.03 represents.

2. What squared hatched area with two white rectangular areas on the municipal road in front of driveway represent and who is responsible for this work.

Answer 36:

Refer to A02.03 – Enlarged Site Plan. White bar at driveway is pavement markings for stop bar. Hatched area on municipal road is pavement markings to be completed by owner at later date.

Question 37:

Spec section 04 21 13 Brick Masonry Units lists one type of brick, Please clarify if this brick should be used for garbage enclosure, brick fencing, and cladding of the building.

Answer 37:

Specification section 04 21 13 shall be used for the building, brick fencing, and garbage enclosure. Brick fencing requires larger size as noted in detail.

Question 38:

Drawing S3.1 section detail 10 indicates (Brick wall to be designed by specialty masonry designer. Submit stamped shop drawings to engineer prior to construction.). Architectural drawing A02.07 provides plan view and elevation view of the brick fencing without directions to design requirements, please provide design drawings and all other requirements for this masonry fencing.

Answer 38:

Details for brick fence are revised. Refer to Architectural Addendum 01 and Structural Addendum 01 herein.

Question 39:

Spec section 04 22 00 Concrete Unit Masonry lists three types of masonry units; However, it is not mentioned on drawings where to use which. Please advise.

Answer 39:

Refer to structural masonry notes in Structural Addendum 01 herein.

Question 40

we respectfully request a 1-week extension to the closing date for the above-mentioned project. The reason for this request is due to Corebuild having multiple conflicting tender closings on the current closing date. Please consider this request and advise when you can.

Thank you,

Answer 40:

Closing date has been revised as noted in Revision No. 1.

Question 41:

Mandatory Requirements SP2.3 Project Experience in online submission states that project values must not be less than $8.0M, while Mandatory Requirements SP24 Core Project Team Experience state that project should be not less than $10.0M. It would make sense to provide a Core Project Team that has experience with construction of emergency service buildings; therefore the project values for the team members also should be not less than $8.0M as it is stated under Corporate Project Experience. Please clarify the reason why cap on the project values are different in those two sections.

Answer 41:

Revise requirement for SP4 Core Project Team experience to $8M.

Question 42:

EMS, Fire Station and Police Stations are not build every year; therefore, please adjust requirements of 5 years to 10 years in the online submission part mandatory requirements SP2.3 Project Experience.

Answer 42:

Revise requirement for SP 2.3 Project Experience to 8 years for EMS, Fire Station and Police Station.

Question 43:

Cap of not less than $8.0M neither make sense. The construction market is fluctuating, and we all know that prices in construction industry went up. Therefore value of construction 5 years ago won't be the same nowadays even for identical facilities. What cost $5M 5 years ago today can be $8.0 and above. Please provide a range for the value that makes sense due to changes in a market.

Answer 43:

No change. Bid Form ask for at least 1 submitted projects to be no less than $10M.

Question 44:

Please confirm below for electrical subcontractor
- Please confirm the primary duct bank details.
- Please confirm the size and number of conduits in the communication duct bank.
- Please confirm the meaning of fire alarm symbols in the dormitory area (above the beds).
- Electrical drawings show a cable tray on drawing E-401. E-803, detail 6 shows information for J-hooks. If we have a cable tray, are J-hooks required as well? If so, please confirm where they are required.
- Please confirm the type of receptacles in the south of corridor 108.
- Please confirm the PV scope.
o Are there any preferred PV contractors?
o In the electrical specs it asks for the PV contractor to design, supply, install, etc. PV contractors are not going to be able to put a design together in such short amount of time. Please provide a design or have the PV system covered as a cash allowance item.
- Please confirm who supplies the mobile charger (E-808).

Answer 44:

Will be addressed in Addendum #2.

Question 45:

Please confirm the primary duct bank details

Answer 45:

Will be addressed in Addendum #2.

Question 46:

Please confirm the size and number of conduits in the communication duct bank.

Answer 46: Will be addressed in Addendum #2.

Question 47:

Please confirm the meaning of fire alarm symbols in the dormitory area (above the beds).

Answer 47:

Will be addressed in Addendum #2.

Question 48:

Electrical drawings show a cable tray on drawing E-401. E-803, detail 6 shows information for J-hooks. If we have a cable tray, are J-hooks required as well? If so, please confirm where they are required.

Answer 48:

Will be addressed in Addendum #2.

Question 49:

Please confirm the type of receptacles in the south of corridor 108.

Answer 49:

Will be addressed in Addendum #2.

Question 50:

Please confirm the PV scope.
o Are there any preferred PV contractors?
o In the electrical specs it asks for the PV contractor to design, supply, install, etc. PV contractors are not going to be able to put a design together in such short amount of time. Please provide a design or have the PV system covered as a cash allowance item.

Answer 50:

Will be addressed in Addendum #2.

Question 51:

Please confirm who supplies the mobile charger (E-808).

Answer 51:

Will be addressed in Addendum #2.

Question 52:

Please provide details of guardrail that is to be installed on top of the retaining wall. OPSD standard does not show guardrail.

Answer 52:

Refer to A2.07 – Site details in issued Architectural Addendum 01 herein.

Question 53:

Drawing A03.01 floor assembly SG-Ci-100 shows 50mm high density rigid insulation in crew area. Please confirm this high density rigid insulation is going to be placed under the entire slab in crew area.

Answer 53:

As shown in the building sections, both SG-Ci100 and SG-Ci200 insulation shall be installed under the entire slab on grade.

Question 54:

Roof Anchor is noted on drawing for Hose Tower. Please advise if roof anchor is included in base price, if so please provide specification for this section.

Answer 54:

Roof Anchors are base price. Refer to issued Architectural Addendum 01 and Structural Addendum 01 herein.

Question 55:

Please see below dropbox and provide clarification on symbol listed.
https://www.dropbox.com/scl/fo/svibq6bd60rxhu0anjvcu/AMZBoZPCJdWaPjOoElTDdGY?rlkey=iyaulgtexaqa7qtmdrup191ja&dl=0

Answer 55:

Will be addressed in Addendum #2.

Question 56:

On Drawing E-202 there are two cord reels for EV Fire Truck Power. It is stated as 100A fed from RP-M2 circuits 2,4,6 and 76,78,80. However, on the panel schedule it indicates 20A.

Answer 56:

Will be addressed in Addendum #2.

Question 57:

Section 27 05 28.63 of the spec indicates that the security vendor is under a cash allowance, but the allowance section does not mention this. Please confirm whether the security is included under the cash allowance or not?

Answer 57:

Will be addressed in Addendum #2.

Question 58:

- Please confirm the specs for 100A ceiling receptacle and 100A cord reel as well.
- Please confirm the feeding information of the exit signs. There is no circuit information for them in the drawing.
- Please confirm the location of the DP-PV panel.
- Please confirm the location of fire truck EV charging disconnect switch feeds from DP-DA.

Answer 58:

Will be addressed in Addendum #2.

Question 59:

Please confirm the specs for 100A ceiling receptacle and 100A cord reel as well.

Answer 59:

Will be addressed in Addendum #2.

Question 60:

Please confirm the feeding information of the exit signs. There is no circuit information for them in the drawing.

Answer 60:

Will be addressed in Addendum #2.

Question 61:

Please confirm the location of the DP-PV panel.

Answer 61:

Will be addressed in Addendum #2.

Question 62:

Please confirm the location of fire truck EV charging disconnect switch feeds from DP-DA.

Answer 62:

Will be addressed in Addendum #2.

Question 63:

Section 27 05 28.63 of the spec indicates that the security vendor is under a cash allowance, but the allowance section does not mention this. Please confirm whether the security is included under the cash allowance or not?

Answer 63:

Security is base scope of work and not cash allowance. Spec section will be revised in Addendum 2.

Question 64:

HM door specification 08 13 13 calls up heavy duty and medium duty construction. Please provide locations of each type.

Answer 64:

All hollow metal doors shall be provided as heavy duty.

Question 65:

Please confirm HM doors installed in aluminum frames is correct for # 100.2, 106, 109.1

Answer 65:

Doors 100.2, 106, 109.2 shall be Aluminum Doors. Refer to issued Architectural Addendum 01 herein.

Question 66:

Please provide a wood door specification.

Answer 66:

Provide solid paint grade wood door. Wood sliding doors in dormitory shall be painted.

Question 67:

Two locker specifications are issued, metal and phenolic. Please clarify which specification to use.

Answer 67:

Both are required. Refer to interior elevations of locker room.

Question 68:

Would it be possible to postpone the tender closing date?

Answer 68:

Closing has been extended per Revision No. 1.

Question 69:

Confirm the driveway/drive aisle on site is to paved with a reinforced concrete paving as per construction assembly P-RCA-2 and not heavy duty asphalt paving (P-HDA)?

Answer 69:

Driveway/drive aisle shall be as noted on site plan both P-RCA-1 and P-RCA-2 are used.

Question 70:

Confirm the asphalt bike path, as indicated on the architectural site plan (A02.03), is existing and to remain as is? The site plan includes a light duty asphalt paving (P-LDA) call tag on the existing asphalt bike path. Is this path being replaced with a light duty asphalt bike path?

Answer 70:

Asphalt bike path is not part of scope of work. Work of bike path is part of road widening contract with the City of Brampton. This is to remain. Any disturbance of bike path during construction of Fire Station 215, the GC shall repair and make good all areas affected. Tag P-LDA is removed. Refer to issued Architectural Addendum 01 herein.

Question 71:

The architectural site plan (A02.03) includes a heavy duty asphalt paving (P-HDA) call tag on the municipal roadway near the main entrance to site. Please clarify why or is this a typo and should be removed from the plan?

Answer 71:

Municipal roadway is not part of scope of work of this project. Tag is removed. Any disturbance of Municipal roadway during construction of Fire Station 215, the GC shall repair and make good all areas affected.

Question 72:

1. Confirm the driveway/drive aisle on site is to paved with a reinforced concrete paving as per construction assembly P-RCA-2 and not heavy duty asphalt paving (P-HDA)?
2. Confirm the asphalt bike path, as indicated on the architectural site plan (A02.03),

is existing and to remain as is? The site plan includes a light duty asphalt paving (P-LDA) call tag on the existing asphalt bike path. Is this path being replaced with a light duty asphalt bike path?
3. The architectural site plan (A02.03) includes a heavy duty asphalt paving (P-HDA) call tag on the municipal roadway near the main entrance to site. Please clarify why or is this a typo and should be removed from the plan?

1. **Answer 72:**

2. **Driveway/drive aisle shall be as noted on site plan both P-RCA-1 and P-RCA-2 are used.**

2. **Asphalt bike path is not part of scope of work. Work of bike path is part of road widening contract with the City of Brampton. This is to remain. Any disturbance of bike path during construction of Fire Station 215, the GC shall repair and make good all areas affected. Tag P-LDA is removed. Refer to issued Architectural Addendum 01 herein.**

3. **Municipal roadway is not part of scope of work of this project. Tag is removed. Any disturbance of Municipal roadway during construction of Fire Station 215, the GC shall repair and make good all areas affected**

Question 73:

please consider extend the closing date for two weeks

Answer 73:

Closing has been extended per Revision No. 1.

Question 74:

RFI for BAS/Controls Section:

1- Specification section 25 06 00 - INTEGRATED AUTOMATION POINTS SCHEDULE LIST

Some equipment and counts don’t match the mechanical drawings. Please confirm the following equipment are associated with the actual project:
a) In-floor Heating including Boiler and radiant floor heating.
b) Unit heater UH-9
c) Fan Coil Units (VRF) FC-9, FC-10, FC-11 & FC-12
d) Please confirm the total counts of exhaust fans that should be on the BAS system.
2- Section 23 81 29 VRF System, it mentions that the units come with their own controllers and thermostats and VRF system should be integrated to the BAS system via the BACnet interface. However, Section 25 06 00 points list mentions some hardwired points for VRF units. Please confirm the VRF system shall come with their own controls including thermostats and integrated into the BAS system only.
3- Specifications Section 23 82 39.19, Unit heaters. It mentions that unit heaters come with integral thermostats. However, Section 25 06 00 points list mentions that unit heaters shall have full control by BAS contractor. Please confirm if the unit heaters are standalone (not connected to the BAS system) or part of the BAS system.
4- The following systems are not shown on the controls schematics in the mechanical drawings. Please confirm if they are part of the BAS scope, if so, please provide controls schematics for them.
a. Fan Coil (FC-1 to FC-8) and Condensing Units (CU-1, CU-2) (VRF)
b. Fan Coil (SAC-1, SAC-2) and Condenser Units (SCU-1, CU-2) (Split Unit)
c. Energy Recovery Ventilator (ERV-1 to ERV-3)
d. Unit Heaters (UH-1 to UH-8)
e. Exhaust Fans (EF-2, EF-3, EF-4 & EF-6)
f. Domestic Hot Water Tank System (DHWT-1 and P-1)
g. DESICCANT Humidifier (DD-1)
5- Mechanical drawings M-901 mentions Engine Exhaust System (FEE-1&FEE-2). They are not shown on the floor plans. Please clarify.

Answer 74:

Will be addressed in Addendum #2.

Question 75:

Regarding the generator, please confirm the required size. Drawing E-002 asks for 500kw. The SLD asks for 500kva (400kw). The specs ask for 350kw.

Answer 75:

Will be addressed in Addendum #2.

Question 76:

Division 7 specifications are missing. Page 916 of the specifications to 917 shows a jump from Architectural Woodwork 06 40 00 to Hollow Metal Frames 08 12 13. Please provide the Division 7 specifications.

Answer 76:

Refer to issued Architectural Addendum 01 herein.

Question 77:

We would like to request a 1 week extension of the closing to allow subcontractors additional time to review the tender?

Answer 77:

Closing has been extended per Revision No. 1.

Question 78:

1- Please confirm Split System Air Conditioners Units come with BACnet Card, and if hardwired points (DO command, DI status, and AI space temperature) are required by the BAS supplier.
2- Please confirm if the hardwired points (DO command, DI status, and AI space temperature) for VRF units are NOT required by the BAS supplier.
3- Please confirm if the hardwired points (AI speed feedback and AI space temperature) for destratification fans are required by the BAS supplier.
4- Please confirm clarify the sensor SO2 / CO2.

Answer 78:

Will be addressed in Addendum #2.

Question 79:

1) Please confirm if continuous 50mm rigid insulation is required beneath all interior slab on grade.

2) Drawing S2.0 shows SF4 footing type on plan however its not included in the strip footing schedule. Please advise.

3) Is there any road work required in base bid?

4) How will we access site given the current ongoing road closures and work on Goreway rd?

5) Please confirm road beacons and all associated work is to be completed under cash allowance.

Answer 79:

1. **Insulation shall be underneath the full slab on grade**
2. **Drawing has been re-issued with information for the SF4 footing**
3. **No**
4. **Access to be coordinated with Road Works Contractor prior to site mobilization)**
5. **Road Beacons scope of work is under the cash allowance. GC shall provide all rough-in, trenching etc, to road beacons under base scope of work. Beacons supply and installation complete with electrical wiring completed under the cash allowance**.

Question 80:

1) Are we to strip the entire hardscape and building envelope of all topsoil and fill down to native?

2) Are there liquidated damages on this project?

3) Cash allowance item 1.1.22.12 refers to supply and installation of clock. Is this for the clock on the hose tower?

4) There appears to be a roof anchor of the roof of the hose tower. Is this in contract? If so please provide specifications.

5) A00.03 – Assemblies – Foundation Walls indicate perimeter insulation to sandwich foundation walls. A05.05 shows insulation cast into the foundation wall as well. Please clarify.

6) What is the finish required for the P-TA-1, P-RCA-1 and P-RCA-2 pavement types?

7) In regards to A02.05 detail 7- Is the broom finish portion to be raised, if so by how much?

8) Please clearly indicate which signage is cash allowance and which is base bid.

9) Is road crossing for hydro duct to be carried under base bid?

10) the ceiling finish legend appears to be complete, please advise.

11) What is the ceiling finish in corridor?

12) 32 33 00 is included in table of contents but missing from specification, please advise.

Answer 80:

1. **To be issued in Addendum 2**
2. **Liquidated Damages are specified in the Bid Form.**
3. **Yes, the clock on the hose tower is part of cash allowance. All rough ins etc is base bid.**
4. **Roof anchors are base bid and refer to issued revised drawings for reference.**
5. **Yes both are required, top portion shall be insulation cast into the foundation wall as shown.**
6. **Broom finish for P-TA-1, P-RCA-1 and P-RCA-2 pavement types**
7. **10mm raised for boom finish**

8. **As noted in 01 21 13 Allowances, the digital plyon sign and interior signage is covered under a cash allowance. All other signage, lettering, emblem, municipal signage etc are base bid.**
9. **Road crossing for the primary ductbank is covered by Alectra**
10. **To be issued in Addendum 2**
11. **To be issued in Addendum 2**
12. **To be issued in Addendum 2**

Question 81:

Is the granular b shown under concrete and asphalt paving to be type 1 or 2?

Answer 81:

Sub-base course shall be OPSS Granular B Type II

Question 82:

Division 7 seems to be missing within the specifications. Please provide. We also request an extension to the closing date. Please consider this request due to the missing division within the specifications. Thank you.

Answer 82:

Refer to Architectural Addendum 01. Tender closing date has been revised as per Revision No. 1.

Question 83:

survey drawing A2.00 is not readable, please issue a new version

Answer 83:

Survey has been re-issued as part of this addendum.

Question 84:

The Site Survey on A2.00 is low resolution. Elevations are not readable. Please provide a better definition drawing for A2.00.

Answer 84:

Survey has been re-issued as part of this addendum.

Question 85:

Site Survey A2.00, the definition is so bad it is not even readable, could you please provide better definition drawing for A2.00.

Answer 85:

Survey has been re-issued as part of this addendum.

Question 86:

Can you please provide wall assembly for ACP-1?

Answer 86:

Will be addressed in Addendum #2.

Question 87:

Division 7 is missing form specification; can you please provide it to us?

Answer 87:

Refer to issued Architectural Addendum 01 herein.

Question 88:

Drawing A03.10 refers to BO as Blackout Shade Only, but it is not reflected in the RCP. Could you please confirm where this type of shade is located on the drawings?

Answer 88:

Drawing A03.09 – Level 01 Reflected Ceiling Plan shows locations of WS, BO, or WSBO wherever used.

Question 89:

Please clarify the definition in Site Survey A2.00

Answer 89:

Survey has been re-issued as part of this addendum.

Question 90:

What are the start and substantial completion dates for this project?

Answer 90:

Construction start date is effective upon PO issuance, and no later than March 1, 2025. The new Substantial Performance date shall be by October 31, 2026.

Question 91:

Please confirm that the ready rack systems marked LKR1 and LKR2 are supplied and installed under cash allowance as per drwg A03.13

Answer 91:

Drawing A03.13 has been revised - refer to Architectural Addendum 01. Lockers LKR1 & LKR2 are base bid, not Cash Allowance.

Question 92:

Foundation wall assemblies indicate Air/Vapour Barrier Membrane at foundation wall, while detail 2/A03.02 indicates “FOUNDATION WALL DAMPROOFING SHALL BE CONTINOUS AROUND FROST SLAB FOUNDATION WALLS”. Can you please clarify?

Answer 92:

Air/Vapour Barrier shall be installed at foundation walls and to be continuous around frost slab foundations.

Question 93:

Would you please extend the closing date for 1 week?

Answer 93:

Closing has been extended per Revision N0. 1.

Question 94:

Are there any union requirements for this job?

Answer 94:

No

Question 95:
Is there any possibility of postponing the closing by 2 or 3 days (within the same week)? There is a major Region of Peel closing on August 27th.

Answer 95:

Closing has been extended per Revision No. 1.

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.
naveed

Naveed Ahmed Butt
Senior Buyer
Naveed.ahmedbutt@brampton.ca

1 GENERAL

1.1. GENERAL REQUIREMENTS

1.1.1. Read and be governed by conditions of the Contract *Documents,* including sections of Division 1.

1.1.2. The Air Tightness Testing Contractor (retained under the cash allowance) will provide the air tightness testing services outlined in 1.6 and 1.7 of this specification section. The remainder of this section outlines the Contractor requirements as they relate to the completion of the air barrier systems, preparation of the building for air tightness tests, accommodating the tests in the project schedule and during daily activities, and addressing any areas of concern relating to air leakage.

1.2. SECTION INCLUDES

.1 1.1. General Requirements
.2 1.2. Section Includes
.3 1.1. Section Includes
.4 1.3. Summary
.5 1.4. Related Sections
.6 1.5. References
.7 1.6. Proposed Inspection And Reporting
.8 1.7. Responsibilities
.9 1.8. Administrative Requirements
.10 2.1. Adhesives & Sealants
.11 2.2. Paints & Coatings
.12 3.1. Onsite Quality Control
.13 3.2. Whole Building Air Tightness Testing

1.3. SUMMARY

1.3.1. Section Includes
- 1.3.1.1. Air tightness target for the whole building
- 1.3.1.2. Air tightness target for compartmentalization
  - .1 Crew Side
  - .2 Apparatus Bay Side
- 1.3.1.3. Overview of the air tightness tests that will be carried out during construction
- 1.3.1.4. Sequencing requirements and scheduling milestones relating to the completion of the continuous air barrier system
- 1.3.1.5. Procedural and coordination requirements to accommodate air tightness testing
- 1.3.1.6. Remediation requirements

1.4. RELATED SECTIONS

1.4.1. Section 01 40 00 – Quality Requirements
1.4.2. Section 01 81 21 – Energy Efficiency Requirements

1.5. REFERENCES

1.5.1. Abbreviations and Acronyms
- 1.5.1.1. ATT: Air tightness test
- 1.5.1.2. ACH: Air changes per hour
- 1.5.1.3. ATTC: Air Tightness Testing Contractor

1.5.2. Air Tightness Testing Methods:
- 1.5.2.1. Whole building air tightness testing:
  - .1 ASTM WK35913 Standard Test Method for Determining the Air Leakage Rate of Large or Multi-zone Buildings

1.5.3. Definitions:
- 1.5.3.1. Air Barrier System:

.1 The combination of air barrier assemblies and air barrier components, connected by air barrier accessories to form a continuous barrier to the movement of air through the building enclosure. This includes the top, bottom, and sides of, and all penetrations through, the enclosure.

1.5.3.2. Air Tightness Test:

.1 A type of test used to measure the air infiltration rate through a volume under an induced pressure. This test is carried out using a blower door and typically involves both a positive and negative pressure test.

1.5.3.3. Whole Building Test:

.1 This test is performed on the whole building to measure the airtightness of the exterior building enclosure including windows, doors, walls, floors, and roof. In the case of this project this test shall be undertaken on fire compartment.

1.5.3.4. Negative Pressure Test:

.1 A test wherein air inside the enclosure is drawn to the outdoors. This places the enclosure at a lower (negative) pressure with respect to the outdoors.

1.5.3.5. Positive Pressure Test:

.1 A test wherein outdoor air is pushed into the enclosure. This air movement places the enclosure at a higher (positive) pressure with respect to the outdoors.

1.5.3.6. Blower Door:

.1 Commonly used term for an apparatus used to pressurize and depressurize the space within the building enclosure and quantify air leakage through the enclosure. The blower door typically includes a door fan and an air resistant fabric or a series of hard panels that extends to cover and seal the door opening between the fan shroud and door frame. The door fan is a calibrated fan capable of measuring air flow and is usually placed in the opening of an exterior door. With the air barrier otherwise sealed, air produced by the door fan pressurizes or depressurizes the enclosure depending on the orientation of the fan.

1.5.3.7. Building Enclosure:

.1 The surfaces that separate the inside air from the outside air. This consists of roofs and skylights; above grade walls, windows, curtain walls, and doors; and below grade walls and floors; and connecting flashings, air barrier, and moisture control transition membranes, sealants and expansion joints that separate the interior environment from the outdoors and any adjoining unconditioned spaces.

1.5.3.8. Interior Finishes:

.1 For the purposes of this specification section, interior finishes include, but are not limited to, the upper level ceiling service cavities (including studs, insulation, and drywall), drywall on exterior walls and ceilings, window and door trim on exterior walls, baseboards and other trim on exterior walls and ceilings, flooring products and finishes for slab-on-grade and/or exposed floor assemblies.

1.6. PROPOSED INSPECTION AND REPORTING

1.6.1. Overview of the Whole Building Air Tightness Testing

1.6.1.1. The air tightness target for this project is ≤ 0.080 cfm @ 75 Pa per ft2 of building shell when tested under pressurized and depressurized conditions.

1.6.1.2. The Air Tightness Testing Contractor (ATTC) (retained under the cash allowance) will complete three (3) air tightness tests throughout construction as follows:

.1 Whole Building Air Tightness Testing Round # 1 (one test per wing): This test will be carried out upon completion of the air barrier system, but prior

to interior finishes being installed. For the purposes of this test, it is not imperative that all mechanical and electrical penetrations be in place, not final entry doors. Instead, these areas can be sealed off for this test as the goal will be to verify that the building shell meets the air tightness target identified for the project.

.2 Note: Following the test, areas of excessive air leakage will be identified and documented in a detailed site review report prepared by the ATTC. The Contractor(s) will be expected to remediate any areas of concern before proceeding with Testing Round #2 and the installation of interior finishes.

.3 Whole Building Air Tightness Testing Round #2 (one test per wing): After all mechanical and electrical penetrations are in place, and after, the Contractor has remediated any areas of concern identified during Testing Round #1, the ATTC will return to site to re-test the building and determine if the remediation efforts were successful. Any areas of concern will be shown to the Contractor.

.4 Whole Building Air Tightness Testing Round #3: After the building is complete, but prior to occupancy, the ATTC will return to site to determine the final air tightness value of the building in its completed form.

1.7. RESPONSIBILITIES

1.7.1. Contractor Responsibilities:

1.7.1.1. Unless otherwise indicated as the responsibility of another identified entity, the Contractor shall provide coordination of the sub-contractors, and the sequence of construction to ensure continuity of the air barrier system joints, junctures and transitions between materials and assemblies of materials and products, from substructure to walls to roof. Provide quality assurance procedures as specified herein. Facilitate inspections, tests, and other quality control services specified herein and elsewhere in the Contract Documents and required by authorities having jurisdiction or by the Owner.

1.8. ADMINISTRATIVE REQUIREMENTS

1.8.1. Air Barrier Meeting:

1.8.1.1. At the beginning of the project, the Contractor shall schedule a meeting with the Architect, ATTC, and all Subcontractors responsible for construction of any component of the air barrier system. The purpose of this meeting will be to review the following items:

.1 Air tightness target for whole building air tightness test

.2 Air tightness testing scope of work and milestones

.3 Exterior air barrier system design including the control layers and related details

.4 Air barrier system design including control layers and related details

.5 Sequence of construction

1.8.2. Sequencing – Whole building Air Tightness Test

1.8.2.1. Construction Tests:

.1 Prior to Testing Round #1, all components that make up the air barrier system must be installed prior to testing, including:

(A) Air control layers in the walls, roof and floor

(B) Windows and doors (including weather-stripping, sweeps)

(C) Air barrier accessories (e.g. flashing tapes) required to connect air control layers together or to other air barrier components

.2 Prior to Testing Round #2, all planned penetrations through the air barrier system must be in place before it is carried out. This includes all penetrations relating to mechanical, electrical and structural aspects of the project.

.3 No interior finishes that conceal or prevent access to the air barrier system shall be installed before air tightness tests #1 and #2 have been carried out and approval to proceed has been granted by the Architect.

1.8.2.2. Final Test:

.1 Prior to Testing Round #3, the building must be fully complete and vacant.

1.8.3. Construction Schedule: The following milestones shall be shown in the construction schedule:

1.8.3.1. Air Barrier System Meeting

1.8.3.2. Completion of the Exterior Air Barrier System

1.8.3.3. Whole Building Air Tightness Testing Round #1 (to take place immediately following completion of the air barrier system, but prior to installation of interior finishes)

1.8.3.4. Whole Building Air Tightness Testing Round #2 (to take place after mechanical and electrical penetrations through air control layers are complete)

1.8.3.5. Whole Building Air Tightness Testing Round #3 (to take place after construction is complete and prior to occupancy)

1.8.4. Attendance at Tests:

1.8.4.1. Whole Building Air Tightness Testing Round #1 and Round #2: The Contractor and required sub-trades shall be present at the time that air tightness testing #1 and #2 are carried out by the ATTC.

1.8.4.2. The purpose of attending tests it to witness/identify/review any areas with excess air infiltration and determine a suitable means of remediating the cause.

1.8.5. Site Review Report Responses:

1.8.5.1. The ATTC will conduct inspections intermittently throughout construction. Feedback will be provided to the Contractor(s) both onsite and in the form of a Site Review report. Similarly, a Site Review report will be issued after air tightness testing Round #1 and #2. The Contractor(s) shall respond to all high and medium priority issues identified in the report within 5 working days from the time it was issued. The response shall be provided in written format and correspond to the item numbers used in the original report. If required, the Contractor(s) shall provide photos and/or other supporting documentation that has been requested to demonstrate that the identified issues have been addressed.

2 PRODUCTS

2.1. ADHESIVES & SEALANTS

2.1.1. All adhesives and sealants used on the interior of the building (i.e., inboard side of the weatherproofing system and applied onsite) shall not exceed the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, amended January 7, 2005 as listed in Tables 2 and 4.

2.1.2. Aerosol adhesives used on the interior of the building (i.e., inboard side of the weatherproofing system and applied onsite) shall not exceed the VOC content limits of Green Seal Standard GS-36 as listed in Table 3.

2.1.3. Adhesives used to fabricate laminated composite wood and agrifibre products, either shop applied or field-applied, shall not contain added urea-formaldehyde.

2.1.4. Submit manufacturer documentation (product data sheets, MSDSs or letters) indicating the VOC content in grams per litre less exempt compounds. In the case of adhesives used to fabricate composite wood and agrifibre assemblies, submit manufacturer documentation stating that the product is free of urea-formaldehyde.

2.1.5. No adhesive or sealant shall be applied onsite and within the weatherproofing without being reviewed for compliance by the Consultant.

2.2. PAINTS & COATINGS

2.2.1. All paints and coatings used on the interior of the building (i.e., inboard side of the weatherproofing system and applied onsite) shall not exceed the VOC content limits of the following references and Table 5:

2.2.1.1. Green Seal Standard GS-11, Paints and Coatings, Third Edition, January 1, 2010 for architectural paints, coatings and primers applied to interior walls and ceilings

2.2.1.2. Green Seal Standard GC-03, Anti-Corrosive Paints, Second Edition, January 7, 1997 for anticorrosive and anti-rust paints applied to interior ferrous metal substrates

2.2.1.3. South Coast Air Quality Management District Rule 1113, Architectural Coatings, July 13,2007 for clear wood finishes, floor coatings, stains and shellacs applied to interior elements 4. All paints and coatings not addressed by the references in clauses 1, 2 and 3 or Table 5, shall not exceed a VOC content of 250 g/L less water and less exempt compounds.

2.2.1.4. Note: The VOC content limits specified in these tables are minimum requirements. They are not intended to contradict or lessen the requirements of individual specification sections where products or materials that have been specified have lower VOC content values.

2.2.2. To demonstrate compliance with the above requirements, complete and provide Schedule M1. Submit manufacturer documentation (product data sheets, MSDSs or letters) indicating the VOC content in grams per litre less exempt compounds. Please note that the stated VOC content should exclude water and tinting colour added at the point of sale.

2.2.3. No paint or coating shall be applied onsite and within the weatherproofing without being reviewed for compliance by the Consultant.

3 EXECUTION

3.1. ONSITE QUALITY CONTROL

3.1.1. Site Inspections:

3.1.1.1. The Contractor and subcontractors shall inspect air control layers and components to ensure that they are continuous and create an airtight system.

3.1.2. Conforming Work:

3.1.2.1. Where one or more air control layers or components have been jeopardized, the Contractor shall remediate as required before interior finishes are installed so as not to compromise the effectiveness of the air barrier system and the overall air tightness of the building.

3.1.3. Consultant Inspections:

3.1.3.1. The Air Tightness Contractor will complete inspections of the air barrier system intermittently throughout construction and provide feedback on any areas that need to be remediated so as not to compromise the air tightness of the building. Feedback will be provided verbally onsite and in site review reports.

3.2. WHOLE BUILDING AIR TIGHTNESS TESTING

3.2.1. Construction of the Air Barrier System:

3.2.1.1. The Contractor shall construct the exterior air barrier system and partitions around to reflect the details provided on the drawings and described in the specifications, and according to any further direction provided by the design team.

3.2.1.2. Penetrations through the air barrier system must be kept to an absolute minimum. Where required, penetrations shall be air sealed and made continuous with the air barrier system using suitable, compatible, and durable gaskets and tapes that will last the anticipated service life of the building. Caulking should be avoided wherever possible, except for small fastener

penetrations (e.g. screws into wood framing for the purposes of supporting interior components such as conduits).

3.2.1.3. Penetrations through the roof assembly air control layer is strictly prohibited except as may be required for plumbing stacks, ducts, conduits, refrigerant lines, etc.

.1 All permitted penetrations through the roof assembly must be air sealed using a suitable gasket that is taped to the air control layer on all sides. For large opens where gaskets are not possible (e.g. ducts) air sealing can be accomplished using approved air sealing tapes and membranes.

3.2.1.4. The air barrier system must be complete prior to any air tightness testing. This includes:

.1 Air control layers in the walls, roof and floor

.2 Windows and doors (including weather-stripping, sweeps)

.3 Air barrier accessories (e.g. flashing tapes) required to connect air control layers together or to other air barrier components

.4 All planned penetrations through the air barrier system must be in place before test #2 is carried out. This includes all penetrations relating to mechanical, electrical and structural aspects of the project.

.5 No interior finishes that conceal or prevent access to the air barrier system shall be installed before air tightness testing #1 and #2 are carried out and approval to proceed has been received from the Architect.

3.2.2. Preparation for Whole Building Air Tightness Testing Round #1:

3.2.2.1. Complete the air barrier system as per section 3.2.1.

3.2.2.2. Schedule the air tightness test for a time period when:

.1 The building can be shut down to normal foot traffic for a 2-hour period (once the testing has started, sub contractors will be unable to enter and leave the building).

.2 The ventilation and exhaust ducts through the exterior walls can be temporarily sealed.

.3 No precipitation has occurred 24 hours prior to, or is anticipated to occur, during testing activities in order to prevent water ingress into the enclosure assemblies

.4 The wind speed is forecasted to be consistent and less than 10 kph during testing activities

3.2.2.3. Ensure that a 120 VAC power supply is available inside the building to power the blower door assembly.

3.2.2.4. Clean the floor area prior to testing

.1 During pressurization tests, air will be blown into the building at high enough velocity that it may cause debris, dust and litter to become air borne

.2 During depressurization tests, air will be blown into the building at high enough velocity that it may cause nearby debris, dust and litter to be drawn to the fan guards or become entangles in the fan blades.

3.2.2.5. Prime all plumbing traps located within the envelope (fill with water)

3.2.2.6. Turn off all ventilation, exhaust and recirculation fans

3.2.2.7. Ensure that the ATTC has unhindered access to all mechanical rooms, air handlers, exhaust fans, and outdoor air and exhaust dampers.

3.2.2.8. Ensure that no sub-contractors are working in the area of the blower door equipment.

3.2.2.9. Complete any pre-test checklists required by the ATTC.

3.2.3. 3. Preparation for Whole Building Air Tightness Testing Round #2:

3.2.3.1. Remediate any deficiencies identified by the ATTC during Test #1.

3.2.3.2. Schedule the air tightness test for a period of time when all conditions under 3.2.2.2 are met.

3.2.3.3. Complete all steps listed under 3.2.2.

3.2.4. Preparation for Whole Building Air Tightness Testing Round #3:

3.2.4.1. 1. Schedule the air tightness test for a period of time:

.1 When all conditions under 3.2.2.2 are met

.2 When construction is 100% complete

.3 That is prior to occupancy

3.2.4.2. Complete all steps listed under 3.2.2

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.1 1.2. Section Includes
.2 1.3. Summary
.3 1.4. Administrative Requirements
.4 1.5. Submittals
.5 1.6. Quality Assurance
.6 1.7. Field Conditions
.7 1.8. Delivery, Storage, and Handling
.8 1.9. Warranty
.9 2.1. Performance/Design Requirements
.10 2.2. Materials
.11 2.3. Expansion Joints
.12 3.1. General
.13 3.2. Preparation - Typical
.14 3.3. Membrane Installation
.15 3.4. Field Quality Control

1.3. SUMMARY

1.3.1. Section includes:
- 1.3.1.1. Sheet waterproof membrane at locations as indicated and as follows:
- 1.3.1.2. Throughwall membrane flashing: either Type 1 or Type 2 sheet membrane is acceptable.
- 1.3.1.3. In shower compartments: only Type 1 sheet membrane is acceptable.
- 1.3.1.4. Damp Proof Course (DPC): only Type 2 sheet membrane is acceptable.

1.4. ADMINISTRATIVE REQUIREMENTS

1.4.1. Conduct a pre-installation meeting in accordance with Section 01 31 19.

1.5. SUBMITTALS

1.5.1. Submit required submittals in accordance with Section 01 33 00.

1.5.2. Product data sheets:
- 1.5.2.1. Submit manufacturer's *Product* data sheets for Products proposed for use in the work of this section.

1.5.3. Shop drawings:
- 1.5.3.1. Submit drawings showing locations of joints, section of entire system, section of each sleeve and penetration condition, flashing conditions and other fabrication information in accordance with Section 01 33 00.

1.5.4. Samples:
- 1.5.4.1. Submit samples complete with manufacturer's labels intact, of materials to be used for the work of this section prior to commencement of work, allowing ample time for review and acceptance by Consultant and independent inspection and testing company. Do not proceed with work of this section until samples are accepted.

1.5.5. Manufacturers' instructions:
- 1.5.5.1. Submit Product manufacturer's standard and project specific installation details required to cover the full spectrum of waterproofing conditions applicable to the work of this section.

1.6. QUALITY ASSURANCE

1.6.1. Execute the work of this section only by a Subcontractor who has adequate plant, equipment and skilled workers to perform it expeditiously, is known to have been responsible for satisfactory installations similar to that specified during a period of at least the immediate past 5 years, and has been approved in writing by the self-adhered waterproofing system manufacturer for the installation of their Product.

1.6.2. Mock-Up:

1.6.2.1. Construct area of typical waterproofing installation for approval. Locate at the Place of the Work as part of final installation.

1.6.2.2. Do not proceed until mock-up has been reviewed and accepted by the Consultant.

1.7. FIELD CONDITIONS

1.7.1. Provide forced air circulation during curing period for enclosed applications.

1.7.2. Apply only when air and surface temperatures are maintained above 4°C, have been so for 48 hours, and are not likely to fall lower until the work of this Section is completed, unless otherwise approved.

1.7.3. The work of this Section may proceed at temperatures below 4°C only with mutual documented agreement of inspection and testing company, manufacturer and applicator that, with materials and methods used, specified installation will be achieved.

1.7.4. Ensure application temperature and humidity recommended by material manufacturer are maintained before, during and after installation.

1.7.5. Provide forced air circulation or adequate natural ventilation during installation and curing periods for enclosed application.

1.7.6. Do not expose materials vulnerable to water or sun damage in quantities greater than can be installed the same Day.

1.7.7. Install waterproofing on dry surfaces, free of snow and ice and during weather that will not introduce moisture into waterproofing system.

1.8. DELIVERY, STORAGE, AND HANDLING

1.8.1. Package materials and identify on attached labels the manufacturer, contents and material specification number.

1.8.2. Store solvent-base liquids and surface conditioner away from excessive heat and open flame. Post "NO SMOKING" signs in areas where solvent-base materials are used and stored.

1.8.3. Store surface conditioner at temperature above 5°C.

1.8.4. Pallets of waterproofing membrane shall not be double stacked.

1.9. WARRANTY

1.9.1. Warrant work of this section in accordance with Section 01 78 36.

2 PART 2 - PRODUCTS

2.1. PERFORMANCE/DESIGN REQUIREMENTS

2.1.1. Waterproofing system shall *Provide* watertight protection to prevent the passage of water under hydrostatic pressure.

2.2. MATERIALS

2.2.1. Waterproofing membrane Type 1:

2.2.1.1. Standard ethylene propylene diene monomer (EPDM sheet membrane), to CGSB 37-GP-52M-1984, Type 1, Class A, 1.6 mm (1/16") thick, non-reinforced.

2.2.2. Waterproofing membrane Type 2:

2.2.2.1. Self adhering polymeric waterproofing membrane.

2.2.2.2. Thickness: 1.5 mm (1/16").

2.2.2.3. Tensile strength: in accordance with ASTM D412-16.

(1) Membrane: 2.24 MPa (325 psi) minimum.

2.2.2.4. Elongation: in accordance with ASTM D412-16.

(1) Polymeric membrane: 300 percent minimum.

2.2.2.5. Water vapour transmission:
(1) in accordance with ASTM E96/E96M-13, Method B: 0.05 grains/ft 2/hour maximum.

2.2.2.6. Water absorption: in accordance with ASTM D570-98(2010)e1, 0.1%, 72 hours maximum.

2.2.2.7. Resistance to hydrostatic head: equivalent to 70 m (230 ft) of water minimum.

2.2.2.8. Puncture resistance: in accordance with ASTM E154/E154M-08a(2019), 222 N (50 pounds) minimum.

2.2.2.9. Acceptable Products:
(1) Bakor 'WP 200'.
(2) Colloid Environmental Technologies Company (CETCO) 'Envirosheet', as distributed by DRE Industries Inc.
(3) Tremco 'Permaquik PQ 7100'.
(4) GCP Applied Technologies 'Bituthene 3000' and 'Bituthene Low Temperature'.
(5) IKO 'AquaBarrier FP'
(6) Soprema 'Colphene 3000'.
(7) W.R. Meadows 'Mel-Roll'.
(8) Or equivalent.

2.2.3. Primer/surface conditioner: In accordance with membrane manufacturer's printed installation instructions.

2.2.4. Bonding asphalt: Single component bonding asphalt. Use manufacturer's proprietary mastic

2.2.5. Adhesives: In accordance with membrane manufacturer's printed installation instructions.

2.2.6. Mastic; self-adhered membrane systems: Single component, utility grade, rubber based sealant. Use manufacturer's proprietary mastic.

2.2.7. Sealers:

2.2.7.1. For sheet membrane Type 1: use sealant Type 6 in accordance with Section 07 92 00 in accordance with manufacturer's recommendations.

2.2.7.2. For sheet membrane Type 2:
(1) With Blueskin WP200, use Polybitume 570-05, as manufactured by Bakor or equivalent.
(2) With Per-A-Barrier Wall Membrane, use Bituthene Mastic, as manufactured by Grace Construction Products or equivalent.

2.3. EXPANSION JOINTS

2.3.1. Description:

2.3.1.1. Manufactured from a proprietary copolymer with internal polyester reinforcement, monolithic seam vulcanization.

2.3.1.2. Movement and fabrication: Tri-directional movement capability, joint waterproofing system shall be factory fabricated in one piece for the entire contiguous expansion joint or where length of joint exceeds manufacturer's shipping and handling guidelines shall be lapped and vulcanized by manufacturer's mechanics on site, repair of damaged materials shall be performed by manufacturer's mechanics.

2.3.1.3. Compatible with adhesives and membranes associated with expansion joint construction in accordance with manufacturer's installation requirements.

2.3.1.4. Warranted by manufacturer to cover full warranty duration specified in this section.

2.3.1.5. Hydrostatic pressure limit: Working pressure in column of water shall perform under static limit not to exceed 10 m (33ft).

2.3.2. Acceptable products; to suit type of roofing assembly and movement design requirements:

2.3.2.1. Situra Inc. 'FlamLINE'.

2.3.2.2. Substitutions: in accordance with Section 01 25 00.

3 EXECUTION

3.1. GENERAL

3.1.1. Comply with manufacturer's Product data, including Product application and installation instructions, as well as manufacturer's shipping and storage recommendations.

3.1.2. Examine conditions of substrates and other conditions under which the work of this Section is to be performed and notify the Consultant, in writing, of circumstances detrimental to the proper completion of the Work. Do not proceed with the work of this Section until unsatisfactory conditions are corrected and are acceptable for compliance with manufacturer's written recommendations.

3.2. PREPARATION - TYPICAL

3.2.1. Protect adjacent work areas and finish surfaces from damage or contamination from waterproofing Products during installation operations.

3.2.2. Soil substrates: Grade substrates shall consist of well-levelled soils without voids and debris, and compacted in accordance with Section 31 23 00 for uniform support and containment of waterproofing sheets.

3.2.3. Concrete surfaces shall be smooth, clean, dry and free of any foreign matter that would otherwise hinder either adhesion or regularity of waterproofing membrane installation.

3.2.4. Remove fins, ridges, and other protrusions levelled and smoothly finished to match monolithic concrete surface. Completely fill honeycomb, aggregate pockets, holes and other voids with non-shrink cementitious grout levelled and smoothly finished to match monolithic concrete surface.

3.2.5. Priming:

3.2.5.1. Condition surfaces to receive waterproofing membrane using primer/surface conditioner applied by spray or roller in accordance with manufacturer's mixing and application instructions.

3.2.5.2. Allow primer/surface conditioner to dry adequately before proceeding with waterproofing membrane. Avoid pooling and excess of primer/surface conditioner. Primed surfaces not covered by waterproofing membrane on the same Day must be re-primed.

3.2.5.3. Metal surfaces need not be primed, but should be free of grease, oil, dirt, loose paint, rust or any other contaminants.

3.3. MEMBRANE INSTALLATION

3.3.1. Apply waterproofing membrane system in accordance with manufacturer's instructions.

3.3.2. Provide a chalk line or alternate means of establishing a square start location. Align first sheet of membrane with straight edge and after removing first few feet of release paper from roll lay membrane into place. Continue to pull release paper from roll thereby adhering the membrane onto the substrate. Proceed at a rate that allows opportunity to prohibit air from becoming entrapped between membrane and substrate.

3.3.3. Continue with subsequent rolls aligning each with previous along lap lines provided on membrane. Maintain a minimum overlap of 64 mm (2-1/2").

3.3.4. End laps as encountered at roll ends and splices should overlap the previous membrane a minimum of 150 mm (6"). Stagger end laps. Point exposed edges and terminations with pointing mastic to prevent water from travelling under membrane. Lap to shed water.

3.3.5. Lay membrane carefully to ensure a uniform application and to minimize fishmouths (wrinkles extending to membrane's edge).

3.3.6. Horizontal to vertical inside corner transition areas are to be pre-treated with manufacturer's proprietary fillet extending 19 mm (3/4") vertically and horizontally from the corner. Apply a minimum 225 mm (9") strip of membrane centred at the joint.

3.3.7. Immediately following placement, roll membrane in its entirety to ensure continuous adhesion to the substrate. For verticals, use membrane roller as recommended by manufacturer.

3.3.8. On vertical and horizontal applications membrane terminations shall receive an edge dressing of waterproofing mastic to protect against undermining effects of ponded water or vertical drainage.

3.3.9. Install DPC across the width of the foundation wall and install throughwall membrane flashing in masonry in accordance with the manufacturer's recommendations and as follows:

3.3.9.1. Install membranes under exterior masonry bearing on foundation walls, slabs, shelf angles, and steel angles over openings. Install membranes under weep hole courses as indicated.

3.3.9.2. In cavity and veneered walls, carry throughwall membrane flashing from front edge of masonry, under outer wythe, then up backing not less than 250 mm (10") and as follows:

(1) For masonry backing, embed membrane a minimum of 25 mm (1") in joint of backing masonry.

(2) For frame backing, bond to plywood sheathing using manufacturer's recommended adhesive.

3.3.10. Detail work:

3.3.10.1. Over non-working joints or cracks up to a maximum of 5 mm (3/16"), apply a reinforcing strip of waterproofing membrane, not less than 225 mm (9") in width centered over the joint/crack.

3.3.10.2. Non-working joints or cracks greater than 5 mm (3/16") in width, notify the Consultant. Joints shall be filled flush to the level of the surrounding deck surface prior to the placement of a 225 mm (9") reinforcing strip of waterproofing membrane. Waterproofing liquid membrane should be used to fill voids of this nature.

3.3.10.3. Cold pour joints: Grind or chip as required to smooth joint/crack prior to field membrane application. Treat in same manner as non-working joints/cracks less than 5 mm (3/16") wide.

3.3.10.4. Inspect vertical and horizontal inside/outside corner locations to ensure smoothness and regularity. Outside corners should be continuous and free of sharp edges. Inside corners should be free of rough edges resulting from formwork placement. Repair as required.

3.3.10.5. Install a reinforcing ply of waterproofing membrane over outside corners. Use a width of membrane not less than 225 mm (9") centred over the corner and press into full contact with the substrate. Reinforcing strips shall be installed prior to field membrane application.

3.4. FIELD QUALITY CONTROL

3.4.1. Conduct quality control in accordance with Section 01 45 00.

3.4.2. Work of this section shall be subject to independent inspection and testing.

3.4.3. Manufacturer's field review to be in accordance with Section 01 45 00.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Quality Assurance
.6 1.6. Delivery Storage And Handling
.7 1.7. Warranty
.8 2.1. Insulation Materials – Below Grade
.9 2.2. Insulation Materials – Above Grade
.10 2.3. Accessory Materials
.11 3.1. General Installation Requirements
.12 3.2. Examination
.13 3.3. Installation – General
.14 3.4. Installation – Below Grade At Perimeter Foundation And Under Slab
.15 3.5. Installation – Spray Foam Insulation
.16 3.6. Field Quality Control
.17 3.7. Protection

1.3. SUMMARY

1.3.1. Section includes:
- 1.3.1.1. Semi-rigid insulation; cavity walls.
- 1.3.1.2. Rigid insulation; cavity wall insulation.
- 1.3.1.3. Rigid insulation; below grade insulation at vertical conditions.
- 1.3.1.4. Rigid insulation; below grade insulation at horizontal conditions.
- 1.3.1.5. Foamed-in-place (gap filler) insulation.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Product data sheets:
- 1.4.2.1. Submit manufacturer’s Product data sheets for Products proposed for use in the work of this section.
- 1.4.2.2. Submit data and installation instructions for materials and prefabricated devices, providing descriptions sufficient for identification at the Place of the Work.
- 1.4.2.3. Submit data from manufacturer's or independent laboratory indicating compatibility and adhesive results of proposed materials.

1.4.3. Samples: Submit representative samples of each specified insulation material, insulation clips, adhesives, fasteners, tapes and other material for review.

1.5. QUALITY ASSURANCE

1.5.1. Qualifications:
- 1.5.1.1. Execute work of this section using a *Subcontractor* who has adequate plant, equipment and skilled workers to perform it expeditiously, and is known to have been responsible for satisfactory installations similar to that specified during a period of at least the immediate past 5 years.

1.6. DELIVERY STORAGE AND HANDLING

1.6.1. Delivery and Acceptance Requirements:

1.6.1.1. Deliver material in accordance with Section 01 60 00 - Product Requirements.
1.6.1.2. Deliver materials and accessories in insulation manufacture's original packaging with identification
1.6.1.3. labels intact and in sizes to suit project.
1.6.1.4. Ensure insulation materials are not exposed to moisture during delivery.
1.6.1.5. Replace wet or damaged insulation materials.

1.6.2. Storage and Handling Requirements:
1.6.2.1. Store materials off ground in dry location and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
1.6.2.2. Store in original packaging until installed.

1.6.3. Packaging Waste Management:
1.6.3.1. Separate and recycle waste packaging materials.
1.6.3.2. Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.
1.6.3.3. Collect and separate for disposal paper and plastic material in appropriate on-site storage containers for recycling.

1.7. WARRANTY

1.7.1. Warrant work of this section in accordance with Section 01 78 36.

2 PRODUCTS

2.1. INSULATION MATERIALS – BELOW GRADE

2.1.1. INSUL 1; Rigid insulation, below grade insulation at vertical conditions:
2.1.1.1. Extruded polystyrene, closed-cell, smooth skin, to CAN/ULC S701-11, Type 4, 25 psi compressive strength.
2.1.1.2. Acceptable Products:
(1) 'Styrofoam SM' as manufactured by Dow Chemical.
(2) 'Foamular C-300' as manufactured by Owens Corning.
(3) Or equivalent.

2.1.2. INSUL 2; Rigid insulation; below grade insulation at horizontal conditions:
2.1.2.1. Extruded polystyrene, closed-cell, smooth skin, to CAN/ULC S701-17, Type 4.
2.1.2.2. Compressive Strength, ASTM D1621-10, 275 kPa (40 psi) minimum (measured at 5% deformation or at yield, whichever occurs first).
2.1.2.3. Acceptable Products:
(1) 'Styrofoam Highload 40' as manufactured by Dow Chemical.
(2) 'Foamular NGX 400' as manufactured by Owens Corning.
(3) Or equivalent.

2.1.3. INSUL 3; Rigid insulation; below grade insulation at horizontal conditions, at underside of Apparatus Bay slab only:
2.1.3.1. Extruded polystyrene, closed-cell, smooth skin, to CAN/ULC S701-17, Type 4.
2.1.3.2. Compressive Strength, ASTM D1621-10, 690 kPa (100 psi) minimum (measured at 5% deformation or at yield, whichever occurs first).
2.1.3.3. Acceptable Products:
(1) 'Foamular NGX 1000' as manufactured by Owens Corning.
(2) Or equivalent.

2.2. INSULATION MATERIALS – ABOVE GRADE

2.2.1. INSUL 4 – Batt Insulation (Exterior Cavity Wall)
2.2.1.1. Non-combustible, lightweight, water repellent, rigid insulation board with rigid upper surface to ASTM C612 Type IVB.
2.2.1.2. Thickness: As indicated in the Contract Documents to meet R-Value.
2.2.1.3. Thicknesses 65 mm and above Density:
(1) .2 Outer layer: 100 kg/m3 to ASTM C303.
(2) .3 Inner layer: 60 kg/m3 to ASTM C303
2.2.1.4. Acceptable Products:

(1) 'Cavity Rock by RockWool
(2) Or Equivalent.

2.2.2. INSUL 5 – Batt Insulation (Exterior Cavity Stud Wall Framing)
2.2.2.1. Unfaced, semi-rigid, non-combustible, mineral-wool batt insulation, in accordance with CAN/ULC S702, Type 1
2.2.2.2. Thickness: Full depth of stud
2.2.2.3. Acceptable Products:
(1) 'Rockwool Comfortbatt' by RockWool
(2) Or Equivalent.

2.2.3. INSUL 6 - Batt insulation (Non-rated); except where acoustic batt is indicated in the Contract Drawings.:
2.2.3.1. Unfaced, mineral-fibre batts, in accordance with CAN/ULC S702-09, Type 1.
2.2.3.2. Acceptable manufacturers:
(1) Fibrex.
(2) 2 Johns Manville.
(3) Owens Corning Canada.
(4) 'ComfortBatt' by RockWool
(5) Or Equivalent.

2.2.4. INSUL 7 - Batt insulation (Rated/Acoustic);
2.2.4.1. Unfaced, semi-rigid, non-combustible, mineral-wool batt insulation, in accordance with CAN/ULC S702, Type 1, providing fire resistance to ASTM E136 and sound control to ASTM E90 and ASTM E423.
2.2.4.2. Acceptable Products:
(1) 'SAFB Thermafiber' by Owens Corning Canada.
(2) 'Rockwool AFB evo' by RockWool
(3) Or Equivalent.

2.2.5. INSUL 8 - Foamed-in-place (gap filler) insulation:
2.2.5.1. One-component CFC-free polyurethane foam in accordance with CAN/ULC S710.1-05.
2.2.5.2. Two-component CFC-free polyurethane foam in accordance with CAN/ULC S711.1-05.

2.3. ACCESSORY MATERIALS

2.3.1. Adhesive:
2.3.1.1. Solvent based polymer modified liquid applied membrane, compatible with insulation to be applied, type as manufactured for the attachment of insulation.
2.3.1.2. Acceptable Product:
(1) Bakor Airbloc 21 or 230-21 or equivalent.

2.3.2. Insulation fasteners:
2.3.2.1. Impaling clip of galvanized steel with washer retainer, to be adhered to surface to receive board insulation with adhesive, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

2.3.3. Batt insulation restraint:
2.3.3.1. Zinc coated woven wire and mechanical fasteners.

3 EXECUTION

3.1. GENERAL INSTALLATION REQUIREMENTS

3.1.1. Comply with requirements of Section 01 45 00.
3.1.2. Install materials in accordance with manufacturer's installation instructions.

3.2. EXAMINATION

3.2.1. Take measurements at the Place of the Work to ensure that work is fabricated to fit structure; surrounding construction; around obstructions and projections in place, or as indicated; and to suit locations of services.
3.2.2. Verify that backup construction is aligned for proper installation of work before commencing erection.

3.2.3. Verify that all surfaces to receive spray-in-place insulation are clean and free of all frost, oil, rust, or deleterious materials.
3.2.4. Verify that all environmental conditions required for successful application of materials, can be met.
3.2.5. Report in writing, any defects in surfaces or conditions which may adversely affect the installation or performance of the products provided under this section.
3.2.6. Start of insulation installation indicates installer's acceptance of substrate installation conditions.

3.3. INSTALLATION – GENERAL

3.3.1. Surfaces to receive insulation shall be dry and free of dew, frost, voids, loose material, oil, grease, asphalt curing compounds and other matter detrimental to bond of adhesive. Adhesive shall be compatible with waterproofing on walls.
3.3.2. Apply adhesives, and install insulation in accordance with manufacturer's printed recommendations. Apply at rate as required to prevent displacement of insulation boards during construction operations.
3.3.3. Butt joints tightly and offset vertical joints to form an unbroken thermal envelope. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
3.3.4. Apply insulation to ensure total and complete coverage of surfaces indicated to be insulated, and in direct contact with such surfaces. Unless otherwise specified, apply insulation in single layer of thickness indicated.
3.3.5. Ensure integrity and continuity of insulation at juncture with different types of materials and seal in an acceptable manner.
3.3.6. Do not enclose insulation until it has been reviewed and accepted by the Consultant.

3.4. INSTALLATION – BELOW GRADE AT PERIMETER FOUNDATION AND UNDER SLAB

3.4.1. Below grade vertical insulation:
3.4.1.1. Adhere rigid insulation to face of below grade perimeter walls with adhesive.
3.4.1.2. Perimeter below grade application: extend boards to top of footing from finish floor slab, installed on face of perimeter foundation walls.
3.4.2. Below grade insulation; underslab:
3.4.2.1. Install in accordance with insulation manufacturer's written specifications and in accordance with requirements of 3.3 – General Installations of this section.

3.5. INSTALLATION – SPRAY FOAM INSULATION

3.5.1. Preparation
3.5.1.1. Mask all adjacent surfaces not to receive spray-in-place insulation which may be damaged or stained by insulation installation.
3.5.1.2. Apply primers where recommended by insulation manufacturer.
3.5.2. Application
3.5.2.1. Apply insulation to clean surfaces in accordance with CAN/ULC-S705.2 and manufacturer's printed instructions.
3.5.2.2. Apply insulation in consecutive passes not less than 13mm and not more than 50mm thick, for a total thickness scheduled herein.
3.5.2.3. Finished surface of foam insulation shall be free of voids and imbedded foreign objects.
3.5.2.4. Avoid overspray of adjacent areas and surfaces.
3.5.2.5. Finished installation shall be inspected and approved by Consultant prior to concealment

3.6. FIELD QUALITY CONTROL

3.6.1. Conduct quality control in accordance with Section 01 45 00.

3.7. PROTECTION

3.7.1. Protect installed products and accessories from damage during construction.
3.7.2. Protect polystyrene insulation from extended exposure to sunlight.

3.7.3. Repair damage to adjacent materials caused by insulation installation.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Quality Assurance
.6 2.1. Sheet Vapour Barrier
.7 2.2. Accessories
.8 3.1. Installation
.9 3.2. Attachment
.10 3.3. Exterior Surface Openings
.11 3.4. Perimeter Seals
.12 3.5. Lap Joint Seals
.13 3.6. Electrical Boxes
.14 3.7. Field Quality Control

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Above-grade vapour barrier.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Product data sheets:
1.4.2.1. Submit manufacturer's *Product* data sheets for Products proposed for use in the work of this section.
1.4.3. Samples:
1.4.3.1. Submit sample of proposed Products for review by the *Consultant*.

1.5. QUALITY ASSURANCE

1.5.1. Qualifications: *Provide* work of this Section, executed by competent installers with minimum 5 years' experience in application of Products, systems and assemblies specified and with approval and training of Product manufacturers.
1.5.2. Mock-up:
1.5.2.1. Construct 10 m² (100 ft²) area of typical installation for each type of *Product*.
(1) Construct mock-up of sheet vapour barrier installation including one lap joint, one inside corner and at one electrical box. Mock-up may be part of finished work.
1.5.2.2. Locate at the *Place of the Work* as part of final installation. Space installation to include exterior wall panel incorporating window and insulation.
1.5.2.3. Do not proceed until mock-up has been reviewed by the Consultant.
1.5.2.4. When accepted, mock-up will demonstrate minimum standard of quality required for this work.

2 PRODUCTS

2.1. SHEET VAPOUR BARRIER

2.1.1. Polyethylene film: CAN/CGSB 51.34-M86, Type 1, 0.15 mm (6 mil) thick, with a water vapour permeance of not greater than 45 ng/(P•s•m²), flame spread rating of less than 150 to CAN/ULC-S102-10.

2.2. ACCESSORIES

2.2.1. Joint sealing tape: air resistant pressure sensitive adhesive tape
2.2.2. Acceptable products:
2.2.2.1. Tuck Tape 'Tuck Blue Sheathing Tape for PE Vapour Barrier', 75 mm (3") wide.
2.2.3. Lap sealant;
2.2.3.1. Gunnable sealant, adheres to polyethylene film, non-acrylic based.
(1) In accordance with ASTM C920-14 Type N or S, Grade NS, Use NT or ASTM C919-22.
(2) Acceptable Products:
(A) DOWSIL '758 Silicone Weather Barrier Sealant'.
(B) Substitutions: in accordance with Section 01 25 00
2.2.3.2. Gunnable sealant, adheres to polyethylene film, non-hardening synthetic rubber
(1) Acceptable products:
(A) Pecora 'BA98'.
(B) Tremco 'Acoustical Sealant'.
(C) QuietSeal 'Acoustic Sealant QS-350'.
(D) Or equivalent.
2.2.4. Staples and fasteners: minimum 6.4 mm (1/4") leg.
2.2.5. Moulded box vapour barrier: factory-moulded polyethylene box for use with recessed electric switch and outlet device boxes.

3 EXECUTION

3.1. INSTALLATION

3.1.1. Ensure services are installed and inspected prior to installation of sheet vapour barrier.
3.1.2. Install sheet vapour barrier on interior side of insulation at exterior wall and ceiling assemblies prior to installation of gypsum board to form continuous application.
3.1.3. Use sheets of largest practical size to minimize joints.
3.1.4. Inspect sheets for continuity. Repair punctures and tears with sealing tape before work is concealed.

3.2. ATTACHMENT

3.2.1. Seal vertical joints in sheet vapour barrier over framing by lapping no fewer than two studs.
3.2.2. Fasten sheet vapour barrier to framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 400 mm (16") o.c.

3.3. EXTERIOR SURFACE OPENINGS

3.3.1. Cut sheet vapour retarder to form openings and ensure material is lapped and sealed to frame.

3.4. PERIMETER SEALS

3.4.1. Seal perimeter of sheet vapour barrier as follows:
3.4.1.1. Apply continuous bead of sealant to substrate at perimeter of sheets.
3.4.1.2. Lap sheet over sealant and press into sealant bead.
3.4.1.3. Install staples through lapped sheets at sealant bead into wood substrate.
3.4.1.4. Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.5. LAP JOINT SEALS

3.5.1. Seal lap joints of sheet vapour barrier as follows:
3.5.1.1. Attach first sheet to substrate.
3.5.1.2. Apply continuous bead of sealant over solid backing at joint.
3.5.1.3. Lap adjoining sheet minimum 150 mm (6") and press into sealant bead.
3.5.1.4. Install fasteners through lapped sheets at sealant bead into wood substrate.
3.5.1.5. Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.6. ELECTRICAL BOXES

3.6.1. Seal electrical switch and outlet device boxes that penetrate vapour barrier as follows:
- 3.6.1.1. Install moulded box vapour barrier or double wrap boxes with film sheet providing minimum 305 mm (12") perimeter lap flange.
- 3.6.1.2. Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

3.7. FIELD QUALITY CONTROL

3.7.1. Conduct quality control in accordance with Section 01 45 00.
3.7.2. Work of this section shall be subject to independent inspection and testing.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Inclsudes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Quality Assurance
.6 2.1. Materials
.7 3.1. Installation
.8 3.2. Field Quality Control

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Below-grade vapour barrier; located beneath concrete slabs.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Product data sheets:
1.4.2.1. Submit manufacturer's Product data sheets for Products to be for used in the work of this section.
1.4.3. Samples:
1.4.3.1. Submit sample of proposed Products for review by Consultant.
1.4.4. Manufacturer's instructions:
1.4.4.1. Submit manufacturer's Product installation instruction for Products to be used in the work of this section.
1.4.5. Vapour barrier test results and certification:
1.4.5.1. Provide certification prepared by accredited testing company for test procedures listed in Table 1 of ASTM E1745-17 and paragraphs 7.1.2, 7.1.3, 7.1.4, and 7.1.5 of ASTM E1745-17. Provide the date of the most recent test and the test results for each test.
(1) Accompany certification tests specified above with letter signed by Product manufacturer attesting that material to be provided is of the same formulation and manufacture as the Product tested.

1.5. QUALITY ASSURANCE

1.5.1. Qualifications:
1.5.1.1. *Provide* work of this Section, executed by competent installers with minimum 5 years' experience in application of Products.

2 PRODUCTS

2.1. MATERIALS

2.1.1. Vapour barrier membrane:
2.1.1.1. Performance criteria:
(1) Permeance, as tested after conditioning: not greater than 0.5700 ng/(Pa*s *m²)(0.010 perms (gm/ft²/in-Hg)) to ASTM E1745-17 paragraphs 7.1.2 through 7.1.5.
(2) Strength: Class A to ASTM E1745-17.
(3) Thickness of plastic:
(A) 0.38 mm (15 mils) minimum.
2.1.1.2. Acceptable Products:
(1) Stego Industries 'Stego Wrap Vapor Barrier', thickness specified above.

(2) W.R. Meadows 'PERMINATOR', thickness specified above.
(3) Substitutions: in accordance with Section 01 25 00.

2.1.2. Vapour barrier membrane joint tape:
2.1.2.1. Description:
(1) High density polyethylene tape, pressure sensitive, 100 mm (4") wide, product as per vapour barrier membrane manufacturer's installation instructions.

2.1.3. Penetration flashing:
2.1.3.1. Vapour barrier membrane material and vapour barrier joint tape in accordance with manufacturer's instructions.

3 EXECUTION

3.1. INSTALLATION

3.1.1. Install vapour barrier membrane in accordance with manufacturer's instructions and ASTM E1643-18a.

3.1.2. Extend vapour barrier to the perimeter of the slab and seal to perimeter and penetration conditions. Seal around penetrations such as utilities and columns in order to create a monolithic membrane between the surface of the slab and moisture sources below the slab and at the slab perimeter.

3.1.3. Install vapour barrier membrane using largest practicable sheet size to minimize joints over compacted fill.

3.1.4. Inspect vapour barrier membrane sheets for continuity. Repair punctures and tears in vapour barrier membrane with sealing tape before work is concealed.

3.1.5. Vapour barrier membrane installation shall be continuous and vapour tight.

3.1.6. Overlaps vapour barrier membrane joints 150 mm (6") minimum and tape seal with vapour barrier joint tape.

3.1.7. Unroll vapour barrier membrane with longest dimension parallel with direction of concrete placement.

3.1.8. Lap vapour barrier membrane up foundation walls a minimum of 100 mm (4") and tape seal with vapour barrier joint tape.

3.1.9. Centre vapour barrier joint tape over vapour barrier membrane laps and joints. Keep area of tape adhesion free of dust, dirt, and moisture.

3.1.10. Cut slit around pipes, ductwork, rebar, and wire penetrations to place the initial layer of vapour barrier membrane.
3.1.10.1. Cut a piece of vapour barrier membrane minimum width of 300 mm (12"). The length should be 1 1/2 times the pipe circumference. With a roofer's knife or scissors, cut "fingers" half the width of the film.
3.1.10.2. Wrap vapour barrier membrane around and tape the collar onto the pipe and completely tape fingers to the bottom layer of vapour barrier membrane with vapour barrier joint tape.

3.1.11. In the event that vapour barrier membrane is damaged during or after installation, repairs shall be made. Cut a piece of vapour barrier membrane large enough to cover damage by minimum overlap of 150 mm (6"). Clean adhesion areas of dust, dirt, and moisture. Tape down edges using vapour barrier joint tape.

3.2. FIELD QUALITY CONTROL

3.2.1. Conduct quality control in accordance with Section 01 45 00.

3.2.2. Work of this section shall be subject to independent inspection and testing.

3.2.3. Manufacturer's field review to be in accordance with Section 01 45 00

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. References
.5 1.5. Submittals
.6 1.6. Quality Assurance
.7 1.7. Delivery, Storage, and Handling
.8 1.8. Field Conditions
.9 1.9. Extended Warranty
.10 2.1. Performance/Design Requirements
.11 2.2. Materials – General
.12 2.3. Sheet-Applied, Vapour Impermeable Self-Adhesive Air / Vapour Barrier Membrane System
.13 2.4. Sheet-Applied, Vapour Permeable Sheathing Membrane Air Barrier System
.14 3.1. Installation – General
.15 3.2. Installation – Sheet Applied, Vapour Impermeable, Self-Adhesive Membrane
.16 3.3. Field Quality Control

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Sheet-Applied Self-Adhesive Air / Vapour Barrier Membrane.

1.4. REFERENCES

1.4.1. Definitions:
1.4.1.1. Air barrier material: A building material that is designed and constructed to *Provide* primary resistance to airflow through air barrier system.
1.4.1.2. Air barrier system: The collection of air barrier materials and auxiliary materials applied to substrate, including joints and junctions to abutting construction, to control air movement through the building envelope.

1.5. SUBMITTALS

1.5.1. Submit required submittals in accordance with Section 01 33 00.
1.5.2. Product data sheets:
1.5.2.1. Submit manufacturer's *Product* data sheets for Products proposed for use in the work of this section.
1.5.3. Compatibility statement:
1.5.3.1. Submit manufacturer's compatibility statement validating compatibility of air barrier system materials with substrates and adjacent materials.

1.6. QUALITY ASSURANCE

1.6.1. Qualifications:
1.6.1.1. *Provide* the work of this Section, executed by competent installers with a minimum of 5 years' experience in application of Products, systems and assemblies specified and with approval and training of Product manufacturers.
1.6.2. Mock-up:
1.6.2.1. Construct minimum 10 m2 (100 ft2) area of each typical wall assembly installation for each type of Product.
1.6.2.2. Locate at the Place of the Work as part of final installation.
1.6.2.3. Do not proceed until mock-up has been reviewed by the *Consultant*.

1.7. DELIVERY, STORAGE, AND HANDLING

1.7.1. Package materials and identify on attached labels the manufacturer, contents and material specification number.
1.7.2. Store flammable solvent-base liquids away from excessive heat and open flame. Primer contains solvent. Do not use near open flame.
1.7.3. Store surface conditioner at temperature above 5°C to facilitate handling.
1.7.4. Store roll materials on end.

1.8. FIELD CONDITIONS

1.8.1. Provide forced air circulation during curing period for enclosed applications.
1.8.2. Low temperature application:
  1.8.2.1. Perform adhesion test for membrane when ambient temperature is below -5°C.
  1.8.2.2. Proceed with work when temperature is (or predicted) to fall below -5°C ambient temperature only with the mutual documented agreement of inspection and testing company, manufacturer and applicator.
1.8.3. Do not perform installation during rainy or inclement weather or on wet or frost covered surfaces.
1.8.4. Provide temporary protection of the applied membrane to prevent mechanical damage or damage from spillage of oil or solvents.

1.9. EXTENDED WARRANTY

1.9.1. The work of this Section shall meet the specified building envelope performance requirements during the warranty period.

2 PRODUCTS

2.1. PERFORMANCE/DESIGN REQUIREMENTS

2.1.1. Air barrier system shall perform as continuous air barrier and as liquid-water drainage plane flashed to discharge to exterior of building envelope incidental condensation or water penetration.
2.1.2. At wall and roof cladding transitions, air barrier system shall perform as continuous air barrier and as liquid-water drainage plane flashed to discharge to exterior of building envelope incidental condensation or water penetration by creation of unobstructed drainage plane that extends across the cladding transition or by flashing to discharge to exterior of building envelope incidental condensation or water penetration.
2.1.3. Air barrier system shall accommodate substrate movement, construction material changes, and transitions at perimeter conditions without deterioration which permits air and water leakage exceeding the following specified limits and requirements, or interruption of the drainage plane:
  2.1.3.1. Air permeance of air barrier material: Maximum 0.02 L/s.m2 at 75 Pa (0.004 cfm/ft2 at 1.57 psf) to ASTM E2178-13.
  2.1.3.2. Rate of air leakage of air barrier system: Maximum 0.15 L/s.m2 at 75 Pa (0.030 cfm/ft2 at 1.57 psf) to ASTM E283-04.
  2.1.3.3. Water vapour transmission for air / vapour barriers: Maximum 5.7 ng/Pa.m2.s. (0.1 perms).
  2.1.3.4. Water vapour transmission for vapour permeable air vapour barriers: Minimum 570 ng/Pa.m2 s. (10 perms).
  2.1.3.5. Air barrier membrane system structural performance while maintaining air barrier performance for air leakage: Air barrier system shall transfer wind loads to structure and shall resist 100% of design wind load in accordance with the Ontario Building Code.
  2.1.3.6. Low temperature performance: Minimum -30°C (-22°F).
  2.1.3.7. Compatibility: Air barrier system materials shall be compatible with substrate and adjacent materials with material manufacturers and show no performance deterioration during service conditions.
  2.1.3.8. Self-sealability: ASTM D1970/D1970M-21

2.1.4. Air barrier system shall be joined in an airtight and flexible manner to air barrier material of adjacent building envelope air barrier systems, allowing for relative movement of systems due to thermal and moisture variations and creep. Connection shall be made between the following unless otherwise applicable:
- 2.1.4.1. Foundation and walls.
- 2.1.4.2. Walls and openings (windows, doors, louvres, and other wall penetrations).
- 2.1.4.3. Wall and roof systems.
- 2.1.4.4. Wall and roof over unconditioned space.
- 2.1.4.5. Walls, floor and roof across construction, control, and movement joints.
- 2.1.4.6. Walls, floors and roof to utility, pipe and duct penetrations.

2.2. MATERIALS – GENERAL

2.2.1. Single source responsibility: Materials shall be sourced from one manufacturer including sheet membranes, air barrier sealants, primers, mastics and adhesives.

2.3. SHEET-APPLIED, VAPOUR IMPERMEABLE SELF-ADHESIVE AIR / VAPOUR BARRIER MEMBRANE SYSTEM

2.3.1. Description: Composite preformed modified bituminous membrane system consisting of SBS modified asphalt for low temperature flexibility and polyethylene scrim reinforcing, with physical properties as follows:
- 2.3.1.1. Single source responsibility: Components required for complete air barrier system and through wall flashing membrane behind the opaque wall assemblies to be obtained from single manufacturer. Coordinate with Section 07 27 00.
- 2.3.1.2. Thickness: 1.0 mm (40 mils)
- 2.3.1.3. Application temperature: in accordance with product installation instructions.
- 2.3.1.4. Primer: in accordance with product installation instructions.
- 2.3.1.5. Termination and penetration sealing mastic: in accordance with product installation instructions.
- 2.3.1.6. Acceptable product systems:
  - (1) Henry Company ‘Bakor Blueskin SA' and ‘Blueskin SA LT’.
  - (2) Carlisle Coatings & Waterproofing ‘CCW 705’.
  - (3) Grace Construction Products ‘Perm-A-Barrier Wall Membrane’.
  - (4) IKO ‘AquaBarrier AVB’ and AquaBarrier AVB Low Temp’.
  - (5) Soprema 'Sopraseal Stick 1100 Summer Grade’ and Sopraseal Stick 1100 Winter Grade'.
  - (6) Tremco ‘ExoAir 110 and 110LT’.
  - (7) W.R. Meadows 'Air Shield' and ‘Low Temperature Air Shield’.
  - (8) Or equivalent.

2.4. SHEET-APPLIED, VAPOUR PERMEABLE SHEATHING MEMBRANE AIR BARRIER SYSTEM

2.4.1. Description: Flexible sheet material with high vapour permeability to CAN/CGSB 51.32-M77, for breather type sheathing membranes.

2.4.2. Air barrier tape: as per manufacturer’s printed installation instructions.

2.4.3. Fasteners:
- 2.4.3.1. For steel frame construction: as per manufacturer’s printed installation instructions, rust resistant screws with 50 mm (2") diameter plastic cap.
- 2.4.3.2. For wood frame construction: as per manufacturer’s printed installation instructions, nails with large heads or plastic washers. Wide staples with a 25 mm (1") minimum crown may be used if applied on wood sheathing.

2.4.4. Acceptable Products:
- 2.4.4.1. Dupont ‘Tyvek CommercialWrap’.
- 2.4.4.2. Fabrene Inc. ‘Air-Gard XL’.
- 2.4.4.3. Dow ‘Styrofoam WeatherMate Plus’.
- 2.4.4.4. Fiberweb ‘Typar Metrowrap’.
- 2.4.4.5. Or equivalent.

3 EXECUTION

3.1. INSTALLATION – GENERAL

3.1.1. Surfaces to receive air barrier systems shall be smooth, dry and free from conditions that will adversely affect execution, permanence, or quality of the work of this Section.

3.1.2. Air barrier system shall be continuous in the building envelope. Lap and seal air barrier systems in accordance with product manufacturer's installation instructions to construction, control, and expansion joints, across junctions between different building assemblies, and around penetrations through the building assembly.

3.1.3. Wrap into jamb, head and sill of building envelope window openings, door openings, and other openings with air barrier system membrane by returning membrane to inside face of opening unless otherwise indicated.

3.1.3.1. Coordinate air / vapour barrier terminations of work of this section with air / vapour barrier membrane in Section 08 41 00.

3.2. INSTALLATION – SHEET APPLIED, VAPOUR IMPERMEABLE, SELF-ADHESIVE MEMBRANE

3.2.1. Apply self-adhering membrane continuous to prepared and primed substrate in an overlapping shingle fashion to shed moisture towards exterior and in accordance with manufacturer's recommendations and written instructions. Stagger vertical joints 200 mm (8").

3.2.2. Align and position self-adhering membrane, remove protective film and press firmly into place. Ensure minimum 50 mm (2") overlap at end and side laps. Promptly roll laps and membrane with a counter top roller to affect the seal.

3.2.3. At the end of each Day's work seal the top edge of the membrane where it meets the substrate using liquid air seal mastic. Trowel apply a feathered edge to seal termination and shed water.

3.2.4. Seal projections with application of liquid air seal mastic.

3.2.5. Apply self-adhering membrane continuous across junctions between different building assemblies, and around penetrations through the building assembly. Provide 100 mm (4") overlap unless otherwise indicated, or required by manufacturer's installation instructions.

3.2.6. Inspect membrane for punctures, misaligned seams and fishmouths, apply additional layer of membrane over affected area, extending minimum of 150 mm (6") beyond damaged area in all directions.

3.3. FIELD QUALITY CONTROL

3.3.1. Conduct quality control in accordance with Section 01 45 00.

3.3.1.1. Perform pull adhesion tests for project substrates in accordance with ASTM D4541-09e1.

3.3.2. Work of this section shall be subject to independent inspection and testing.

3.3.3. Manufacturer's field review to be in accordance with Section 01 45 00.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Section Includes
.4 1.4. References
.5 1.5. Administrative Requrements
.6 1.6. Action And Informational Submittals
.7 1.7. Closeout Submittals
.8 1.8. Quality Assurance
.9 1.9. Delivery, Storage And Handling
.10 1.10. Field Conditions
.11 1.11. Vegetation Coverage Guarantee
.12 1.12. Warranty
.13 2.1. Vegetated Roofing System Supplier
.14 2.2. Vegetated Roofing System
.15 2.3. Single Source Responsibility
.16 2.4. Performance Requirements
.17 2.5. Protection Materials
.18 2.6. Separation/Protection Layer
.19 2.7. Water Storage Layer/Drainage Board
.20 2.8. Filter Fabric
.21 2.9. Growing Medium
.22 2.10. Vegetation
.23 2.11. Accessories
.24 3.1. Installers
.25 3.2. Inspection
.26 3.3. Preparation
.27 3.4. Installation - General
.28 3.5. Installation Over Protected Membrane Roofing System
.29 3.6. Water Storage Layer/Drainage Board
.30 3.7. Filter Sheet
.31 3.8. Growing Medium
.32 3.9. Vegetation
.33 3.10. Stone Ballast And Border
.34 3.11. Roof Edges, Drains, And Other Penetrations
.35 3.12. Field Quality Control
.36 3.13. Cleaning
.37 3.14. Protection
.38 3.15. Maintenance

1.3. SECTION INCLUDES

1.3.1. Provision of all labour, materials, equipment and incidental services necessary to provide:
- 1.3.1.1. Root Protection Layer.
- 1.3.1.2. Separation/Protection Layer.
- 1.3.1.3. Water Storage Layer/Drainage Board
- 1.3.1.4. FLL Growing Medium
- 1.3.1.5. Vegetation.
- 1.3.1.6. Vegetated roofing accessories.

1.3.2. Comply with requirements of Division 01 General Requirements.

1.4. REFERENCES

1.4.1. ASTM International (ASTM).
- 1.4.1.1. ASTM D4632/D4632M – 2013, Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- 1.4.1.2. ASTM E2399 - 2011 Standard Test Method for Maximum Media Density for Dead Load Analysis of Green Roof Systems.
- 1.4.1.3. ASTM E2400-[2006], Standard Guide for Selection, Installation, and Maintenance of Plants for Green Roof Systems.

1.4.2. Forschungsgesellschaft Landschaftsentwicklung Landschaftbau's (Landscape
1.4.3. Research, Development and Construction Society) (FLL).
- 1.4.3.1. FLL-[2008], Green Roofing Guideline.

1.4.4. International Organization for Standardization (ISO).
- 1.4.4.1. EN ISO 10319-2008, Geosynthetics - Wide-Width Tensile Test.

1.5. ADMINISTRATIVE REQUREMENTS

1.5.1. Pre-installation Meeting: Conduct pre-installation meeting after Award of Contract and one week prior to commencing work of this Section to verify project requirements, substrate conditions and co-ordination with other building sub-trades,and to review vegetated roofing system supplier's installation recommendations and warranty requirements.
- 1.5.1.1. Notify attendees two weeks prior to meeting and ensure meeting attendees include at a minimum:
  - (1) Contractor;
  - (2) Consultant;
  - (3) Vegetated Roof System Provider;
  - (4) Vegetated Roof System Installer;
  - (5) Roofing Membrane Manufacturer's Representative;
  - (6) Roofing Membrane Installer;
- 1.5.1.2. Ensure meeting agenda includes review of methods and procedures related to installation of work of this Section including co-ordination with related work.
- 1.5.1.3. Record meeting proceedings including corrective measures and other actions required to ensure successful completion of work and distribute to each attendee within 1 week of meeting
- 1.5.1.4. Copy of FLL - Green Roofing Guideline will be available for viewing at pre-installation meeting.

1.5.2. Sequencing: Schedule delivery of vegetated mats and plants to ensure installation within 24 hours of arrival at site.
- 1.5.2.1. Sequence work of this section in accordance with vegetated roof supplier's written recommendations for sequencing construction operations and planting.

1.5.3. Scheduling: Recommended Schedule for planting of vegetation:
- 1.5.3.1. Spring planting between April 15th and June 15th.
- 1.5.3.2. Fall planting between September 1st and October 15th.

1.6. ACTION AND INFORMATIONAL SUBMITTALS

1.6.1. Product Data: Product data for components of vegetated roof covering indicating compliance with specified requirements.
- 1.6.1.1. Submit plant list identifying species and vegetation.
  - (1) Indicate planting method, and conditions for care during establishment period.
  - (2) Where selected species are not indigenous provide justification for choice.
  - (3) Include preparation instructions and recommendations, and storage and handling requirements.
  - (4) Include contact information for manufacturer and their representative for this Project.

1.6.2. Letters of Reference: Submit references clearly indicating that vegetated roof technology has been successfully installed on projects on annual basis of similar scope and nature for 15 years minimum.

1.6.3. Letters of Assurance and Certification:

1.6.3.1. Submit FLL certification for root barrier.

1.6.3.2. Submit letter from project structural engineer, registered in Province of Ontario verifying that roofing system can support weight of vegetated roof system when saturated.

1.6.3.3. Submit certification for fire resistance .

1.6.3.4. Submit certification for wind uplift resistance.

1.6.3.5. Roofing membrane: Submit verification that roofing membrane meets minimum requirements for installation of roofing system by roofing system manufacturer

1.6.3.6. Submit letter from vegetated roof system supplier verifying age of vegetated mats. Submit letter from vegetated roofing system supplier that vegetated system is suitable for use with project's roofing system.

1.6.3.7. Submit letter from vegetated roof supplier certifying that the green roof growing medium meets FLL-Guidelines

1.6.3.8. Submit letter from vegetated roof system sub-contractor verifying:

(1) Each vegetated roofing system product, vegetation material, and component are appropriate for use with FLL.

(2) Installer has reviewed and approved details of membrane roof system roof deck, flashings, penetrations and copings.

(3) Installer has been approved by vegetated roof system Consultant.

(4) Vegetated roofing system meets warranty requirements.

(5) Succesful water leakage test has been conducted over the roofing membrane about to be covered by the vegetated roof system.

1.6.4. Shop Drawings: Include on shop drawings:

1.6.4.1. Details of installation showing conditions at terminations, transitions, and penetrations.

1.6.4.2. Details of root protection layer and drainage layer at parapets and other roof appurtenances.

1.6.4.3. Schematic profile detailing thickness of vegetated roofing system materials.

1.6.5. Test and Evaluation Reports: Submit evaluation service reports or other independent testing agency reports showing compliance with specified performance characteristics and physical properties as follows:

1.6.5.1. Submit maintenance evaluation report after each maintenance visit.

1.6.5.2. Submit verification of compliance with Toronto Municipal Green Roof

1.6.5.3. Code.

1.6.6. Vegetated Roofing System Installer's Qualifications: Submit verification of experience.

1.7. CLOSEOUT SUBMITTALS

1.7.1. Supply 24 month maintenance agreement with vegetated roofing system installer for care of vegetation included in Work of this Section.

1.7.2. Operation and Maintenance Data: Supply maintenance data for plants and other materials for incorporation into manual.

1.7.3. Record Documentation:

1.7.3.1. List materials used in vegetated roofing system including plants.

1.7.3.2. Show on roof plan locations of drains and extent of vegetated coverage with identification.

1.7.4. Warranty: Submit warranty documents specified.

1.8. QUALITY ASSURANCE

1.8.1. Vegetated Roofing System Installer's Qualifications:

1.8.1.1. Company or individual specializing in work similar to work of this section with three years minimum documented experience.

1.8.2. Maintenance Qualifications:

1.8.2.1. Submit documentation showing qualifications of maintenance contractor's horticulturalist.

1.8.3. Water Leakage Test:

1.8.3.1. Carry out water leakage testing of roofing system at request of and as directed by Consultant.

1.8.4. Do not conceal roofing membrane with vegetated roofing system until receipt of instruction to proceed has been received from Consultant.

1.9. DELIVERY, STORAGE AND HANDLING

1.9.1. Delivery and Acceptance Requirements:

1.9.1.1. Deliver material in accordance with Section - Common Product Requirements.

1.9.1.2. Deliver materials and accessories in vegetated roofing supplier's original packaging with identification labels intact and in sizes to suit project.

1.9.1.3. Deliver plant materials in manner which preserves quality of plants.

1.9.1.4. Protect vegetation mats from damage due to temperature and wind during transportation.

1.9.1.5. Use closed or open trailers for transportation times of 24 hours maximum.

1.9.1.6. Use climate controlled trailer for transport durations greater than 24 hours.

1.9.2. Storage and Handling Requirements: Upon arrival at site off-load vegetated mats and remove non-breathable wrappings if used.

1.9.2.1. Ensure plants and vegetated mats are installed within 24 hours of arrival at site.

1.9.2.2. Establish holding area to unroll and store vegetated mats until installation if timely installation is not achievable.

(1) Store vegetated mats until installation only after receipt of permission from Consultant.

(2) Consultant has right to have mats removed and replaced with new mats if vegetated mats are damaged or degraded.

1.9.3. Packaging Waste Management:

1.9.3.1. Separate and recycle waste packaging materials in accordance with Section - Construction Waste Management and Disposal.

1.9.3.2. Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.

1.10. FIELD CONDITIONS

1.10.1. Do not install vegetated roofing mats or plants if growing media or ambient conditions are less than 10 ºC.

1.11. VEGETATION COVERAGE GUARANTEE

1.11.1. Deliver mats with 85 % minimum vegetation coverage at time of installation and achieve 95 % minimum vegetation coverage 12 months after installation.

1.11.2. Guarantee is in effect only if maintenance recommendations are followed.

1.12. WARRANTY

1.12.1. Issue Certificate of Warranty for 1 year from date of Building Registration.

2 PRODUCTS

2.1. VEGETATED ROOFING SYSTEM SUPPLIER

2.1.1. ZinCo Canada Inc.,
557 Carlisle Road., Carlisle, Ontario;
Phone: (905) 690-1661
e-mail: greenroof@zinco.ca;
URL: www.zinco.ca, or approved alternate.

2.1.2. Ensure project superintendent has 3 years minimum experience in work similar to work of this Section and oversees critical aspects of installation and testing of Work.

2.2. VEGETATED ROOFING SYSTEM

2.2.1. ZinCo Floradrain ® XD20: Sedum Roof, or approved alternate.

2.3. SINGLE SOURCE RESPONSIBILITY

2.3.1. Co-ordinate installation of vegetated roof system components and vegetation.
2.3.2. Components include but are not limited to:
- 2.3.2.1. Root protection layer;
- 2.3.2.2. Separation/Protection Layer.
- 2.3.2.3. Water Storage Layer/Drainage Board
- 2.3.2.4. FLL Growing Medium
- 2.3.2.5. Vegetation.
- 2.3.2.6. Vegetated roofing accessories.

2.4. PERFORMANCE REQUIREMENTS

2.4.1. Design vegetated roofing system to FLL, Green Roofing Guideline.

2.5. PROTECTION MATERIALS

2.5.1. Root Barrier WSF 40 made of special-polyethylene – Bitumen and Polystyrol resistant - Without plasticizer - UV-stabilized. Thickness: 0,38 mm. Weight: 320 g/m2. Tensile strength: 40 – 47 N/mm, 2. Density: 940 kg/m
- 2.5.1.1. Basis of Design: ZinCo Root Barrier WSF40

2.6. SEPARATION/PROTECTION LAYER

2.6.1. Moisture retention and protection mat SSM45 made of recycled non-rotting fibers for water- and nutrient retention as well as a protection layer. Thickness: 5 mm. Weight approx. 470 g/m2. Water retention capacity: 5 l/m2. Bitumen resistant – Biologically and Chemically neutral. Penetration resistance: > 2000 N. Tensile strength length wise: >8.5 KN/m.
- 2.6.1.1. Basis of Design: ZinCo Canada Protection Mat SSM45

2.7. WATER STORAGE LAYER/DRAINAGE BOARD

2.7.1. Water storage element Floradrain® XD20 made of 100% thermoformed recycled polyethylene, with water storage cells, openings for aeration and diffusion as well as a multidirectional drainage channel system on the underside. Bitumen resistant – Compressive strength: 50 kN/m2. Water retention capacity: 3 l/m2. Weight: approx. 1,0 kg/m2. Dimensions: 1.00 x 20.00 x 0.02 m.
- 2.7.1.1. Basis of Design: ZinCo Canada Drainage Element XD20

2.8. FILTER FABRIC

2.8.1. Filter Sheet SF made of non-rotting thermal consolidated Polypropylene. Water flow rate: 70 l/(m2s) if there is a water column of 100 mm. Apparent Opening size: d90%= 95 µm. Weight: 100 g/m2.
- 2.8.1.1. Basis of Design: ZinCo Canada Filter Sheet SF

2.9. GROWING MEDIUM

2.9.1. Growing medium for extensive Green Roofs - ZinCo Blend-E, produced using light weight recycled or re-used materials and minerals, enriched with high quality compost elements, resistant to flying sparks, frost-resistant, stable structure. Specially engineered by ZinCo Canada and meets the FLL-Standards for Planning, Execution and Upkeep of Green Roof sites. Depth: 80 mm.
2.9.2. Particle Size Distribution
- 2.9.2.1. Proportion of silting components (d < 0.063 mm):
  - (1) < 15 Mass %

2.9.3. Density Measurements
- 2.9.3.1. Bulk Density (at max. water-holding capacity): 1100 – 1500 kg/m3
- 2.9.3.2. Compression Factor: <20% Vol. %

2.9.4. Water/Air Measurements
- 2.9.4.1. Total Pore Volume: > 65 Vol. %
- 2.9.4.2. Maximum water-holding capacity: ≥ 35% Vol. %
- 2.9.4.3. Air-filled porosity at max water-holding: > 10Vol. %
- 2.9.4.4. Water permeability (saturated hydraulic conductivity): ≥0.001 cm/sec

2.9.5. pH
- 2.9.5.1. 6.5 – 9.5

2.9.6. Organic Measurements
- 2.9.6.1. Organic matter content: ≤ 8% mass%

2.9.7. Nutrients
- 2.9.7.1. Phosphorus, P205 (CAL): < 200mg/L
- 2.9.7.2. Potassium, K2O (CAL): < 700mg/L
- 2.9.7.3. Magnesium, Mg (CaCl2): ≥200mg/L
- 2.9.7.4. Nitrate + Ammonium (CaCl2): < 80mg/L

2.9.8. Basis of Design: ZinCo Blend-E

2.10. VEGETATION

2.10.1. Pre-cultivated Vegetation Mats with firmly rooted, for extensive green roofs suitable plant species, pre-cultivated over one growing season in the field. The carrier material decomposes after time.
- 2.10.1.1. Vegetation coverage: 85% minimum.
- 2.10.1.2. Non- woven geotextile fabric tensile strength: to EN ISO 10319.
- 2.10.1.3. Mat thickness: 20 - 25 mm.
- 2.10.1.4. Mat size: 1 x 2 m roll. On request also mats in other dimensions or with non-decaying carriers are available.
- 2.10.1.5. Field weight: 16 - 20 kg/m2.
  - (1) Basis of Design: ZinCo Pre-Grown Sedum Mat

2.11. ACCESSORIES

2.11.1. Precast Concrete Pavers: In accordance with Section 07 52 16.

3 EXECUTION

3.1. INSTALLERS

3.1.1. Use installers with three years minimum experience with work similar to work of this section.

3.2. INSPECTION

3.2.1. Clean up the waterproofing membrane carefully (well-swept). Careful inspection of the waterproofing membrane including seams, penetrations and details after flood testing or electronic leak detection. If the waterproofing system and the Green Roof system are not carried out by the same company, the acceptance of the method used for waterproofing quality should be agreed by all the parties. Identified defects are to be reported in written form. Do not proceed until corrected.
- 3.2.1.1. Visually inspect substrate in presence of Consultant.
- 3.2.1.2. Ensure roofing structure has positive slope and no ponding water.
- 3.2.1.3. Verify with project structural engineer that roofing structure has been designed to incorporate additional structural loading of vegetated roofing system.
- 3.2.1.4. Verify water source for installation, irrigation and maintenance of vegetated roofing system.
- 3.2.1.5. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2.2. Start of vegetated roofing installation indicates installer’s acceptance of substrate conditions.

3.3. PREPARATION

3.3.1. Clean surface of roof to receive vegetated roof system.

3.3.1.1. Remove screws, splinters and other excess materials from surface of roofing.

3.3.2. Protect roofing membrane traffic areas including corridors for transporting vegetated roofing system materials using 25 mm extruded polystyrene horizontal protection board covered with 13 mm plywood.

3.3.3. Ensure underlying roof components are installed and tested in accordance with manufacturer's written recommendations.

3.3.4. Ensure roof leakage test has been performed as directed by Consultant.

3.4. INSTALLATION - GENERAL

3.4.1. Install vegetative roofing in accordance with supplier's written recommendations and to FLL, Green Roofing Guideline.

3.4.2. Ensure vegetative free zone around roof drains and other penetrations.

3.5. INSTALLATION OVER PROTECTED MEMBRANE ROOFING SYSTEM

3.5.1. Install root barrier over roofing surface.

3.5.1.1. Overlap edges 500 mm minimum.

3.5.1.2. Stagger root barrier roll ends to avoid creating continuous perpendicular seam for adjacent rolls.

3.5.1.3. Ensure root barrier continues under non-vegetated areas of roof and up sides of walls and parapet walls.

3.5.1.4. Cut to fit tightly around roof penetrations.

3.5.1.5. Cut root barrier to prevent blocking at overflow scuppers and vegetated roof termination.

3.5.2. Separation/Protection Layer:

3.5.2.1. Deliver and install the moisture retention and protection mat SSM45 directly on the top of the root barrier with a minimum overlap of 100 mm, according to the manufacturer's instructions. The separation sheet must be installed above the growing medium along the edges and at roof penetrations.

3.6. WATER STORAGE LAYER/DRAINAGE BOARD

3.6.1. Deliver and install the Drainage and water storage element Floradrain® XD20 directly on the protection mat or diffusion membrane according to the manufacturer's instructions.

3.6.2. Install the Floradrain elements butt jointed with the evaporation holes facing up and. Cut the drain elements in place along the edges and roof penetrations. Fill the water retention cups of the drain layer once with water.

3.7. FILTER SHEET

3.7.1. Deliver and install the filter sheet SF on the drainage layer with a minimum overlap of 100 mm according to the manufacturer's instructions. The filter must be installed above the growing medium along the edges and roof penetrations. Cut the filter sheet in place along the edges and at roof penetrations.

3.8. GROWING MEDIUM

3.8.1. Deliver and install the growing medium for extensive Green Roofs Blend-E on the filter sheet or Aqua fleece. Spread out the growing medium equally to a depth of 80 mm.

3.8.2. Check the depth on several places to ensure the right thickness. A tolerance of 1 cm is acceptable. Small amounts of growing medium will be delivered in big bags. Lager amounts will be delivered by a blower truck.

3.9. VEGETATION

3.9.1. Install mats same day as the delivery.

3.9.2. Do not store without permission of the grower.

3.9.3. Do not place in full sun.

3.9.4. During hot sunny days water/cool of the soil layer with 15-25 minutes of pre-watering. Hot scorching soil burns the roots and might damage the Sedum mats. Starting in the corner, carefully place each roll at location and unroll the mats over the entire roof area. Make

sure that the mats are in contact with the growing medium. Water immediately for 30-60 minutes after installation.

3.9.5. After installation:

3.9.5.1. Water the first month according to the grower's specification depending on the season and time of year using automatic timers. After completion thoroughly water newly installed vegetation.

3.10. STONE BALLAST AND BORDER

3.10.1. Distribute stone ballast or concrete paver blocks in non-vegetated border areas as indicated. Stone ballast or concrete paver blocks must exceed vegetated roof system by 6 mm minimum.

3.11. ROOF EDGES, DRAINS, AND OTHER PENETRATIONS

3.11.1. Maintain 300 mm minimum between vegetation mats or growing substrates and parapet, roof edge, drains, vents and other roof penetrations.

3.11.2. Ensure vegetation mats and growing substrates have fixed boundary such as edging strip, concrete curb, stones or concrete pavers.

3.11.3. Ensure all fixed boundaries must exceed height of vegetated roof system by 6 mm minimum.

3.12. FIELD QUALITY CONTROL

3.12.1. Field Inspection: Co-ordinate field inspection in accordance with Section - Quality Requirements.

3.12.2. Supplier's Services:

3.12.2.1. Co-ordinate supplier's services with Section - Quality Requirements.

(1) Have supplier review work involved in handling, installation, protection, and cleaning of vegetated roofing and accessories, and submit written reports in acceptable format to verify compliance of Work with Contract conditions.

3.12.2.2. Supplier's Field Services: Provide supplier's field services consisting of product use recommendations and periodic site visits for vegetated roofing installation review in accordance with manufacturer's instructions.

(1) Report any inconsistencies from supplier's recommendations immediately to Consultant.

3.12.3. Schedule site visits to review work at stages listed:

3.12.3.1. Upon completion of Work, after cleaning is carried out.

3.12.4. Obtain reports within three days of review and submit immediately to Consultant.

3.13. CLEANING

3.13.1. Progress Cleaning: Perform cleanup as work progresses.

3.13.1.1. Leave work area clean at end of each day.

3.13.2. Final Cleaning:

3.13.2.1. Remove surplus materials, rubbish, tools, and equipment in accordance with Section - Execution.

3.13.3. Waste Management:

3.13.3.1. Co-ordinate recycling of waste materials with - Construction Waste Management and Disposal.

3.13.3.2. Collect recyclable waste and dispose of or recycle field generated construction waste created during construction or final cleaning related to work of this Section.

3.13.3.3. Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.14. PROTECTION

3.14.1. Protect vegetated roofing from damage during construction period.

3.14.1.1. Prevent deterioration of installed vegetated roof system by limiting use of vegetation surfaces for material and equipment storage, and walking surface.

3.14.2. Repair damage to adjacent materials caused by vegetated roofing installation.

3.15. MAINTENANCE

3.15.1. Conduct maintenance annually for length of warranty.

3.15.2. Maintain vegetated roofing system in accordance with vegetated roofing system supplier's written recommendations.

3.15.3. Extensive Roofing System Maintenance:

3.15.3.1. Initial maintenance: Conduct inspection of entire vegetated roof two times each month for first two months.

(1) Perform weeding, watering, debris removal, addition of growing media and clippings as required to ensure survival of vegetated roofing system and growing of newly transplanted vegetation.

(2) Water vegetated roofing system every two to three days during prolonged hot weather spells.

3.15.3.2. Regular maintenance: Conduct inspection of entire vegetated roof once every 3 months.

(1) In summer months conduct extra inspections during dry spells when irrigation requirements are greater.

(2) Perform weeding, watering, debris removal, addition of growing media and clippings as required to ensure survival of vegetated roofing system.

(3) Add growing media and clippings to any bare areas, as required.

3.15.3.3. Ongoing Maintenance for Consecutive Years:

(1) Fertilize in late spring with a controlled release fertilizer

(2) Conduct inspection of entire vegetated roof once every three months starting in spring until first frost.

(3) Perform weeding, watering, debris removal from roof surface and from drains, addition of growing media and clippings as required to areas experiencing dieback.

3.15.4. Reports:

3.15.4.1. Keep maintenance log and submit quarterly maintenance reports to Owner and Vegetated Roof System Manufacturer to maintain warranty.

(1) Reports should summarize dates, personnel at each visit, growing conditions and work done, in accordance with specification requirements and be signed by approved maintenance contractor's representative.

3.15.5. Responsibility:

3.15.5.1. Maintenance contractor is responsible for replacing vegetation if maintenance is not carried out in accordance with vegetation roofing supplier's written recommendations.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1 General Instructions
.2 1.2. Section Includes
.3 1.2 Summary
.4 1.3 Administrative Requirements
.5 1.4 Submittals
.6 1.5 Quality Assurance
.7 1.6 Delivery, Storage, and Handling
.8 1.7 Field Conditions
.9 1.8 Extended Warranty
.10 2.1 Performance/Design Requirements
.11 2.2 Materials – Panel System
.12 2.3 Accessories
.13 2.4 Finishes
.14 2.5 Fabrication
.15 2.6 Fabrication Tolerances
.16 3.1 Examination
.17 3.2 Air Barrier Membrane Application
.18 3.3 Insulation
.19 3.4 Installation
.20 3.5 Installation Tolerances
.21 3.6 Field Quality Control
.22 3.7 Adjusting and Cleaning
.23 3.8 Protection

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Aluminum panel cladding.

1.4. ADMINISTRATIVE REQUIREMENTS

1.4.1. Coordination:
1.4.1.1. Coordinate with installers of wall mounted items, equipment, and mechanical and electrical work so that installation will not subvert the integrity of the cladding system.
1.4.1.2. Coordinate interface, transition, lapping, flashings and compatibility of membranes with work of Section 07 27 00.

1.5. SUBMITTALS

1.5.1. Submit required submittals in accordance with Section 01 33 00.
1.5.2. Product data sheets:
1.5.2.1. Submit manufacturer's *Product* data sheets for Products proposed for use in the work of this section.
1.5.3. Shop drawings:
1.5.3.1. Submit engineered shop drawings.
1.5.3.2. Indicate panel layout, elevations, dimensions, attachment and anchoring materials and methods, trim and closure pieces, detail and location of joints, sealants and gaskets; include joints necessary to accommodate thermal movement, flashing, accessories and related work of this section.

1.5.3.3. Indicate methods to achieve watertight assembly, including sealants, penetration seals, drainage path of moisture from within assembly to exterior of envelope.

1.5.3.4. Indicate materials, finishes, and colours.

1.5.4. Samples:

1.5.4.1. Submit 2 - 610 x 610 mm (24" x 24") size samples of panel material, of each colour specified.

1.5.5. Certificates:

1.5.5.1. Submit certification from composite aluminum cladding system manufacturer that the manufacturing process and field installation procedure have been both carried out under an independent quality assurance program designed to confirm that the product and its application are consistent with the system as tested and listed in accordance with CAN/ULC S134-92.

1.6. QUALITY ASSURANCE

1.6.1. Qualifications:

1.6.1.1. Installers / applicators / erectors: Execute the work of this section only by a *Subcontractor* who has adequate plant, roll forming machinery, equipment, and skilled workers to perform it expeditiously, and is known to have been responsible for satisfactory installations similar to that specified during a period of at least the immediate past 5 years.

1.6.2. Execute work in accordance with manufacturing process and field installation procedures under an independent quality assurance program design to confirm that the product and its application are consistent with the system as tested and listed in accordance with CAN/ULC S134-92.

1.6.3. Mock-up:

1.6.3.1. Construct panels 10 m2 (100 ft2) of typical wall cladding installation for acceptance as specified in Section 01 33 00. Locate on *Site* as part of final installation.

1.6.3.2. Do not proceed until mock-up has been accepted by the *Contractor*, the *Consultant* and cladding Inspection Company.

1.7. DELIVERY, STORAGE, AND HANDLING

1.7.1. Store materials at temperatures recommended by manufacturer.

1.7.2. Store roll materials on end.

1.7.3. Package materials and identify on attached labels the manufacturer, contents and material specification number.

1.7.4. Store flammable solvent-base liquids away from excessive heat and open flame. Primer contains solvent. Do not use near open flame.

1.8. FIELD CONDITIONS

1.8.1. Comply with manufacturer's instructions.

1.9. EXTENDED WARRANTY

1.9.1. Warrant work of this section in accordance with the Articles of Agreement.

1.9.2. *Provide* special product warranty; aluminum finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1.9.2.1. Failures to paint finish include, but are not limited to, the following:

(1) Color fading more than 5 Hunter units when tested according to ASTM D2244-15.

(2) Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

(3) Cracking, checking, peeling, or failure of paint to adhere to bare metal.

1.9.2.2. Warranty period: 20 years.

1.9.3. The warranty is a total system warranty. The cladding system shall meet both the specified system and the building envelope performance requirements during the warranty period.

2 PRODUCTS

2.1. PERFORMANCE/DESIGN REQUIREMENTS

2.1.1. Design:
- 2.1.1.1. System shall be engineered by delegated Professional Engineer.
- 2.1.1.2. Design for expansion and contraction of component materials of the *Work* produced by an exterior surface temperature range of -35°C to +60°C without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects.
- 2.1.1.3. Design cladding system to accommodate and withstand the following without permanent deformation or damage to, or failure of, cladding system or building structure:
  - (1) Deflection of cladding system due to uniformly distributed specified loads shall not exceed L/90 of the span for walls.
  - (2) Movement within cladding system, and between cladding system and building structure.
  - (3) Cladding system dead loads, snow loads, ice loads, and wind loads, and combinations thereof, in accordance with the Ontario Building Code.
    - (A) Design wind loads shall be based on at least 1/50 hourly wind pressure values as indicated in Ontario Building Code and greater values as required, to maximum allowable deflection without permanent deformation.
- 2.1.1.4. Design to allow positive drainage of condensation occurring within cladding system to exterior of building envelope or drainage outlet.
- 2.1.1.5. Design to allow positive drainage of water to exterior of building envelope or drainage outlet.
- 2.1.1.6. Design wall system and secondary support structure as required to accommodate specified erection tolerances of the structure.
- 2.1.1.7. Design system to meet tolerances specified.
- 2.1.1.8. Panel joinery:
  - (1) Dry-seal, rainscreen joints.
- 2.1.1.9. No visible fasteners, telegraphing or fastening on panel faces or any other compromise of neat and flat appearance.

2.1.2. Performance:
- 2.1.2.1. Comply with the following performance requirements:
  - (1) Components for combustible cladding shall be tested and listed for CAN/ULC S134-92 standard and satisfy requirements of paragraph 3.1.5.5 (c) of the Ontario Building Code.
  - (2) Metal fasteners shall be corrosion resistant.
  - (3) Provide drip detail over windows and door heads, copings, at edges of overhangs, to direct moisture to exterior.
  - (4) Wall system to utilize drain systems to positively drain water from within wall system to exterior.

2.2. MATERIALS – PANEL SYSTEM

2.2.1. System types:
- 2.2.1.1. Concealed fastener with dry joints.

2.2.2. Aluminum panels; composite sheet type with thermosetting core:
- 2.2.2.1. Acceptable Products:
  - (1) 3A Composites USA ‘Alucobond Plus’.
  - (2) Mitsubishi Chemical Functional Products Inc. ‘Alpolic FR’.
  - (3) Ontario Panelization ‘Alcotex ACM Panel System 3’
  - (4) Or equivalent.

2.2.2.2. Two sheets of aluminum sandwiching a solid core of extruded thermoplastic material formed in a continuous process with no glues or adhesives between dissimilar materials. The core material shall be free of voids and/or air spaces and not contain foamed insulation material. Panel system shall be listed for fire resistance rating.
(1) Bond integrity testing to adhere: ASTM D1781-98(2012).
(2) Fire test of exterior wall assemblies: CAN/ULC S134-92.
2.2.2.3. Aluminum sheet: tempered, flattened aluminum sheet, 0.5 mm (0.019") face sheet thickness, 4 mm (0.157") thick panels in the following alloy:
(1) Painting quality: 3003-H14 to ANSI H35.1/H35.1M-2013.
(2) Anodizing quality: 5005-H34 to ANSI H35.1/H35.1M-2013.

2.3. ACCESSORIES

2.3.1. Extruded aluminum accessory components:
2.3.1.1. Aluminum extrusions to ASTM B221-14, to the following minimum wall thickness and alloy:
(1) Thickness:
(B) 2.28 mm (0.090").
2.3.2. Support brackets: Steel brackets to be hot dipped galvanized with zinc coating (0.09 g/m (3.4 mil)) in accordance with CAN/CSA G164-M92.
2.3.3. Fasteners: Self-tapping, purpose made stainless steel screws.
2.3.4. Insulation:
2.3.4.1. Semi-rigid insulation: rock wool type, in accordance with Section 07 21 00.
2.3.5. Air barrier membrane:
2.3.5.1. Composite preformed 1.1 mm (43 mil) thick modified membrane system consisting of SBS modified asphalt for low temperature flexibility and glass scrim or polyethylene reinforcing.
2.3.5.2. Acceptable Products:
(1) Bakor 'Blueskin PE 200 HT'.
(2) W.R. Grace 'Ice & Water Shield'.
(3) Acceptable alternates by W.R. Meadows or Soprema or Vicshield.
(4) Or equivalent.
2.3.6. Sub-girts (z-girts): minimum 1.2mm (18 gauge) zinc-coated steel to ASTM A653/A653M-11 with Grade A coating Z275.
2.3.7. Isolation coating: Bituminuous paint.
2.3.8. Trim, coping, closures, and cap pieces:
2.3.8.1. 3.18 mm (0.125") aluminum, to match cladding system.
2.3.8.2. Factory fabricate components, ready for installation.
2.3.9. Sealant: in accordance with Section 07 92 00.

2.4. FINISHES

2.4.1. Exposed aluminum surfaces: 70% Kynar 500 or Hylar 5000 fluoropolymer resin systems, ceramic pigments and other select inorganic pigments to AAMA Specification 2605.
2.4.1.1. Acceptable Products:
(1) PPG 'Duranar XL'.
(2) Valspar 'Fluropon Classic'.
(3) Or equivalent.
2.4.1.2. Colour:
(1) Colour to later selection by the *Consultant* from the manufacturer's full range. Colour shall be:
(C) Solid.
(D) Pearlescent.
(E) Metallic.

2.5. FABRICATION

2.5.1. Form to profiles indicated on the Drawings and to conform with reviewed shop drawings.

2.5.2. Construct panel lines, breaks, and angles sharp and true, and surfaces free from warp and buckle.
2.5.3. Allow for structural movements within the systems, and to accommodate thermal expansion and contraction between panels and structural members.
2.5.4. Factory form panels with welded corners.
2.5.5. Fabricate systems to prevent entry of water into building and from collection within system assembly.
2.5.6. Join intersecting parts together to achieve tight, accurately fitted joints with adjoining surfaces in true planes.
2.5.7. Fabricate system to conform to requirements of reference standards specified.
2.5.8. Co-operate with applicable sections to ensure all co-ordination required for proper installation of work of this section in conjunction with and incorporated with other work.
2.5.9. Lay out panels to obtain uniform metal and paint grain finish. Mark direction of metal grain and paint application on back of panels.

2.6. FABRICATION TOLERANCES

2.6.1. Comply with the following maximum tolerances:
2.6.1.1. Plumb:
(1) 3.2 mm in 3 m (1/8” in 10’-0”); 6.4 mm in 12.2 m (1/4” in 40’-0”).
2.6.1.2. Level:
(1) 3.2 mm in 3 m (1/8” in 10’-0”); 6.4 mm in 12.2 m (1/4” in 40’-0”).
2.6.1.3. Alignment:
(1) Where surfaces abut in line or are separated by reveal or protruding element up to 12.7 mm (1/2") wide, limit offset from true alignment to 1.6 mm (1/16").
(2) Where surfaces are separated by reveal or protruding element from 12.7 to 25.4 mm (1/2 to 1”) wide, limit offset from true alignment to 3.2 mm (1/8").
(3) Where surfaces are separated by reveal or protruding element of 25.4 mm (1") wide or more, limit offset from true alignment to 6.4 mm (1/4").
2.6.1.4. Variation from plane:
(1) 3.2 mm in 3.6 m (1/8” in 12’-0”); 12.7 mm (1/2") over total length.
2.6.1.5. Panels:
(1) Bow: 0.2% of panel dimensions up to 3.2 mm (1/8") maximum.
(2) Indicated size:
(F) Up to 1220 mm (4’-0"): plus/minus 0.76 mm (0.030").
(G) 1220 mm to 3050 mm (4’-0” to 10’-0”): plus/minus 1.52 mm (0.060").
2.6.1.6. Square or rectangular:
(1) Maximum 3.2 mm (1/8") difference between diagonal measurements.
2.6.1.7. Variation from indicated position: plus/minus 3 mm (1/8").
2.6.2. Tolerances shall not be cumulative.

3 EXECUTION

3.1. EXAMINATION

3.1.1. Take *Site* measurements to ensure that work of this Section is fabricated to fit structure; surrounding construction; around obstructions and projections in place, or as shown on the Drawings; and to suit locations of services.
3.1.2. Verify that backup construction is aligned for proper installation of work of this Section before commencing erection.
3.1.3. Notify the Consultant in writing of conditions detrimental to proper and timely completion of work. Do not proceed with erection until unsatisfactory conditions have been corrected.

3.2. AIR BARRIER MEMBRANE APPLICATION

3.2.1. Install in accordance with manufacturer's installation instructions.
3.2.2. Surfaces must be smooth, clean dry and free from loose contaminants. Brushing and/or scraping of block and concrete surfaces may be required to adequately prepare surface.

3.2.3. Apply primer for membrane work.
3.2.4. Wrap openings with membrane returning to inside face of openings.
3.2.5. Ensure air barrier seals into adjacent systems for complete air barrier to building envelope.

3.3. INSULATION

3.3.1. Carefully cut and fit insulation in pieces to fit surfaces of members to which insulation bears contact.
3.3.2. Cut backs of pieces as required to fit over projecting anchors, fastenings or similar protrusions. Fit boards neatly with tight joints around pipes, ducts, obstructions, openings, corners, and structural members.
3.3.3. Apply insulation to ensure total and complete coverage of surfaces indicated to be insulated, and in direct contact with such surfaces.
3.3.4. Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.

3.4. INSTALLATION

3.4.1. Erect systems complete with flashings forming part of the system, clips, fasteners, closures and caulking to meet same design criteria as specified for fabrication.
3.4.2. Erect panels in straight lines that are true, level, square, and plumb.
3.4.3. Attachment system: Allow for free and noiseless vertical and horizontal thermal movement due to expansion and contraction for a material temperature range of -28.9°C to 82.2 °C (-20 °F to 180 °F). Buckling of panels, opening of joints, undue stress on fasteners, failure to sealants or any other detrimental effects due to thermal movement is not permitted. Allow for ambient temperature at time of fabrication, assembly and erection procedures.
3.4.4. Anchor cladding securely as per recommendations of Professional Engineer and in accordance with reviewed shop drawings to allow for necessary thermal movement, wind loading and structural support.
3.4.5. Seal between work of this section and work of other sections to meet specified requirements of Section 07 92 00 and to achieve a watertight installation.
3.4.6. Cut, flash, and apply sealant to system penetrations. Seal around materials penetrating metal cladding watertight.
3.4.7. Install various components within cladding assembly to Provide positive controlled drainage of moisture to exterior of building envelope or drainage outlet.
3.4.8. Conceal fasteners.
3.4.9. Do not install component parts that are observed to be defective, including warped, bowed, dented, and broken members.
3.4.10. Obtain panel symmetry whenever possible relative to openings in both vertical and horizontal plane.
3.4.11. Brake form metal flashings to profile required, in maximum lengths.
3.4.12. Install head and sill flashings, edge trim, cap pieces and other formed profiles as applicable and/or detailed.
3.4.13. Do not cut, trim, weld or braze component parts during erection in manner that would damage finish, decrease strength or result in a visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.
3.4.14. Separate dissimilar metals and use gasketed fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.
3.4.15. Protect surface of metals in contact with concrete, mortar, plaster or other cementitious surface with isolation coating.

3.5. INSTALLATION TOLERANCES

3.5.1. Comply with the following maximum tolerances:
3.5.1.1. Plumb:

(1) 3.2 mm in 3 m (1/8” in 10’-0”); 6.4 mm in 12.2 m (1/4” in 40’-0”).

3.5.1.2. Level:

(1) 3.2 mm in 3 m (1/8” in 10’-0”); 6.4 mm in 12.2 m (1/4” in 40’-0”).

3.5.1.3. Alignment:

(1) Where surfaces abut in line or are separated by reveal or protruding element up to 12.7 mm (1/2") wide, limit offset from true alignment to 1.6 mm (1/16").

(2) Where surfaces are separated by reveal or protruding element from 12.7 to 25.4 mm (1/2 to 1”) wide, limit offset from true alignment to 3.2 mm (1/8").

(3) Where surfaces are separated by reveal or protruding element of 25.4 mm (1") wide or more, limit offset from true alignment to 6.4 mm (1/4").

3.5.1.4. Variation from plane:

(1) 3.2 mm in 3.6 m (1/8” in 12’-0”); 12.7 mm (1/2") over total length.

3.5.1.5. Panels:

(1) Bow: 0.2% of panel dimensions up to 3.2 mm (1/8") maximum.

(2) Indicated size:

(H) Up to 1220 mm (4’-0"): plus/minus 0.76 mm (0.030").

(I) 1220 mm to 3050 mm (4’-0” to 10’-0”): plus/minus 1.52 mm (0.060").

3.5.1.6. Square or rectangular:

(1) Maximum 3.2 mm (1/8") difference between diagonal measurements.

3.5.1.7. Variation from indicated position: plus/minus 3 mm (1/8").

(1) Tolerances shall not be cumulative.

3.6. FIELD QUALITY CONTROL

3.6.1. Conduct quality control in accordance with Section 01 45 00.

3.6.1.1. Inspection and testing company shall perform inspection for completed *Work*.

(1) Confirm that composite aluminum cladding system and its application are consistent with the system as tested and listed in accordance with CAN/ULC S134-92

3.7. ADJUSTING AND CLEANING

3.7.1. After erection, touch up coatings removed or damaged during erection.

3.7.2. Remove damaged, dented, defaced, defectively finished, or tool marked components and replace with new.

3.7.3. Wash down exposed interior and exterior surfaces using solution of mild domestic detergent in warm water, applied with soft clean wiping cloths. Wipe interior surfaces clean as part of final clean-up.

3.7.4. Remove excess sealant with recommended solvent.

3.8. PROTECTION

3.8.1. Protect panels during fabrication, transportation, storage at the *Place of the Work* and erection.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. References
.5 1.5. Administrative Requirements
.6 1.6. Submittals
.7 1.7. Closeout Submittals
.8 1.8. Quality Assurance
.9 1.9. Delivery, Storage, And Handling
.10 1.10. Site Conditions
.11 1.11. Warranty
.12 2.1. Manufacturers
.13 2.2. Performance / Design Criteria
.14 2.3. Materials
.15 2.4. Accessories
.16 2.5. Finish
.17 2.6. Fabrication
.18 3.1. Examination
.19 3.2. Air Barrier Membrane Application
.20 3.3. Insulation
.21 3.4. Cladding System Installation
.22 3.5. Metal Cladding Installation Tolerances
.23 3.6. Field Quality Control
.24 3.7. Adjusting And Cleaning
.25 3.8. Protection

1.3. RELATED SECTIONS

1.3.1. Section 05 40 00 – Cold-Formed Metal framing: Metal framing for support of aluminum soffits.
1.3.2. Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
1.3.3. Section 06 10 00 - Rough Carpentry.
1.3.4. Section 07 62 00 – Sheet Metal Flashing and Trim.
1.3.5. Section 07 92 00 - Joint Sealants.

1.4. REFERENCES

1.4.1. American Society for Testing and Materials (ASTM)
1.4.1.1. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method (NRC)
1.4.1.2. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
1.4.1.3. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
1.4.1.4. ASTM E283-04 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
1.4.1.5. ASTM E331-00 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

1.4.1.6. ASTM E1477 - Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers (LRV)
1.4.1.7. ASTM E2768-11 – Standard Test Method for Extended Duration Surface Burning Characteristics for Building Materials (30 min Tunnel Test). Results: Zero Flame Spread, Smoke Developed Index of 5. Meets criteria for Class A fire rating

1.4.2. UL & Underwriters Laboratories of Canada (UL/ULC)
1.4.2.1. UL 723, Standard Method of Test for Surface Burning Characteristics of Building Materials
1.4.2.2. CAN/ULC S102, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
1.4.2.3. CAN/ULC S114, Standard Test Method for determination of non-combustibility in building materials

1.4.3. American Architectural Manufacturers Association (AAMA)
1.4.3.1. AAMA 2605 - Voluntary Specification, Performance requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
1.4.3.2. AAMA 2604 - Voluntary Specification, Performance requirements and Test Procedures for High Performing Organic Coatings on Aluminum Extrusions and Panels
1.4.3.3. AAMA 509 - Voluntary Test and Classification Method for Drained and Back Ventilated Rainscreen Wall Cladding Systems
1.4.3.4. AAMA 501.1-17 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure

1.4.4. International Code Council Evaluation Service (ICC-ES)
1.4.4.1. ICC-ES Evaluation Report

1.5. ADMINISTRATIVE REQUIREMENTS

1.5.1. Pre-installation Meetings:
1.5.1.1. Pre-installation Meeting: Refer to Section 01 31 00. Two (2) weeks before starting work of this Section, arrange a site meeting attended by the Consultant, the Contractor, Subcontractors affected by the work for which the pre-installation meeting is being conducted, manufacturer's representative and Inspection and testing company as applicable.
(1) Discuss surface conditions, application procedures, suitability of materials and alternative recommendations.

1.5.2. Coordination:
1.5.2.1. Coordinate with installers of ceiling mounted items, equipment, and mechanical and electrical work so that installation will not subvert the integrity of the cladding system.
1.5.2.2. Coordinate interface, transition, lapping, flashings and compatibility of membranes with work of Section 07 27 00

1.5.3. Sequencing:
1.5.3.1. Sequence work to permit installation of materials in conjunction with related materials and seals.

1.6. SUBMITTALS

1.6.1. Product data: submit manufacturer's printed product literature, specifications and data sheet.
1.6.2. Submit duplicate 6 inch X 6 inch (152mm x 150mm) samples of cladding material, of color and profile specified.
1.6.3. Shop drawings to indicate dimensions, profiles, attachment methods, schedule of wall elevations, trim and closure pieces, soffits, fascia, metal furring, and related work.
1.6.4. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

1.6.5. LEED Submittal Data: Manufacturer's product data for each product specified in this section per ecoscorecard.com.
1.6.6. Submit manufacturer's installation instructions.

1.7. QUALITY ASSURANCE

1.7.1. Qualifications:
1.7.1.1. Manufacturer:
(1) Manufacturer has fabricated product of types under this Section, for projects of similar size and scope, for a continuous period of not less than five (5) years before award of Subcontract, has personnel and plant equipment capable of fabricating product of the types specified and has a written quality control system in place.
1.7.1.2. Installer Qualification:
(1) Execute the work of this Section only by a Contractor who has adequate equipment and skilled workers to perform it expeditiously, and is known to have been responsible for satisfactory installations similar to that specified in the recent past.
1.7.1.3. Licensed Professional:
(1) Retain a Professional Engineer experienced with providing engineering services of the kind indicated, including documentation confirming that engineer is licensed in the jurisdiction in which Project is located.

1.8. ORDERING, DELIVERY, STORAGE AND HANDLING

1.8.1. Ordering: Conform to manufacturer's ordering instructions and lead time requirements to avoid construction delays
1.8.2. Deliver materials and components in manufacturers' unopened containers or bundles. Prevent damage during unloading, storing and installation
1.8.3. Store, protect and handle materials and components in accordance with manufacturer's recommendations to prevent twisting, bending, mechanical damage, contamination and deterioration
1.8.4. Stack metal cladding horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal cladding to ensure dryness, with positive slope for drainage of water. Do not store metal cladding in contact with other materials that might cause staining, denting, or other surface damage

1.9. SITE CONDITIONS

1.9.1. Existing Conditions:
1.9.1.1. Take measurements at the Place of the Work to ensure that the work of this section is fabricated to fit structure, surrounding construction, around obstructions and projections in place.
1.9.1.2. Verify that backup construction is solid for a secure attachment and aligned for proper installation of prefinished metal siding system before commencing erection.

1.10. CLOSEOUT SUBMITTALS

1.10.1. Operation and Maintenance Data:
1.10.1.1. Submit maintenance and cleaning instructions for systems for incorporation into the maintenance manuals.

1.11. WARRANTY

1.11.1. Provide a written guarantee, signed and issued in the name of the owner, covering the metal cladding/cladding material for 15 (fifteen) years from the date of Substantial Completion.
1.11.2. The manufacturer's warranty is limited to replacement of defective material only, rather than installation of the same. Faulty installation shall be corrected by the installing contractor. The warranty required herein is the sole remedy against the manufacturer and

there are no other implied warranties. In any event, the manufacturer shall not be liable for incidentals or consequential damages.

2 PRODUCTS

2.1. PERFORMANCE / DESIGN CRITERIA

2.1.1. Design, fabricate and install work of this Section in accordance with the Ontario Building Code or other applicable codes, requirements or governing authorities.

2.1.2. Design to CAN/CSA S136-16 and building code.

2.1.3. Design for expansion and contraction of component materials of the Work produced by an exterior surface temperature range of -35°C to +60°C without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects.

2.1.4. Design siding system to accommodate and withstand the following without permanent deformation or damage to, or failure of, siding system:

2.1.4.1. Deflection of cladding system due to wind loads shall not exceed L/90 of the span for walls.

2.1.4.2. Design expansion joints to accommodate movement within siding system, and between siding system and building structure.

2.1.4.3. Siding system dead loads, ice loads, and wind loads, and combinations thereof, in accordance with the building code.

(1) Design wind loads shall be based on 1/50 hourly wind pressure values as indicated in building code and greater values as require to maximum allowable deflection without permanent deformation.

2.1.5. Design to allow positive drainage of condensation occurring within siding system to exterior of building envelope or drainage outlet.

2.1.6. Design to allow positive drainage of water to exterior of building envelope or drainage outlet.

2.1.7. Design meal systems to the Architectural Sheet Metal Manual by SMACNA unless otherwise indicated.

2.1.8. Design wall system and secondary support structure to accommodate the specified erection tolerances of the structure.

2.1.9. Design system to meet tolerances specified.

2.2. STG-1 - APPROVED ALUMINUM CLADDING AND COMPONENTS

2.2.1. 6-inch (152mm) V-Groove planks extruded aluminum 6063 T5

2.2.1.1. Finish coating: powder coated finish

2.2.1.2. Color: full range from manufactures selection.

2.2.1.3. Gloss: 30 ± 5.

2.2.1.4. Thickness: 1/16 inch (1.57mm) base metal thickness.

2.2.1.5. Profile: 6-inch (152mm) V-Groove X 24 ft (7315.2mm) plank

2.2.1.6. Substitutions: in accordance with Section 01 25 00.

2.2.2. Thermally broken façade substructure:

2.2.2.1. System shall provide façade substructure with the following attributes:

(1) Thermally broken.

(2) Meet requirements of the building code for non-combustible construction.

(3) Adjustable to permit façade alignment tolerances.

(4) Corrosion resistant performance.

(5) Suitable for rear ventilated rain screen façade design.

2.2.2.2. Z-girt and sub-girts: Preformed Z275 galvanized metal sheet, 1.22 mm (18 gauge) minimum base steel nominal thickness, notched for drainage, to ASTM A653/A653M-13, Grade A.

2.2.2.3. Z-girt shall be prepainted black for added corrosion resistance.

2.2.2.4. Thermally broken spacer systems:

(1) Subject to compliance with the requirements of the Contract Documents, provide one of the following product systems:

(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'

2.3. ACCESSORIES

2.3.1.1. The following Accessories shall be provided to ensure a complete installation:
(1) 3" starter strip
(2) 5/8" starter j-track
(3) 5/8" j-track
(4) 5/8" two piece j-track
(5) 1-3/8" two piece j-track
(6) 3/4" inside corner
(7) 1" outside corner
(8) 2" corner set
(9) 3/16" outside corner
(10) 5/8" termination set
(11) 1-3/8" termination set
(12) 1-3/8" compression joint
(13) 1/2" flat reveal
(14) 3/4" u-reveal set
(15) 1-1/2" u-reveal set
(16) 1-1/2" flat reveal set
(17) 3/4" t&g u-reveal
(18) 1-1/2" t&g u-reveal
(19) 1/2" t&g flat reveal
(20) 2" offset flat reveal, in same material and finishes as cladding.

2.3.1.2. Plank Clips: 316 Stainless steel Quick-Screen Clips that are shipped loose for field installation.

2.4. ACCETABLE MANUFACTURERS

2.4.1.1. Longboard Architectural Products #120 - 1777 Clearbrook Rd.
Abbotsford, BC, Canada V2T 5X5
info@longboardproducts.com
1.800.604.0343

2.4.1.2. Substitutions: in accordance with Section 01 25 00.

2.5. FABRICATION

2.5.1. Factory fabricate all components of the system, ready for field installation.
2.5.2. Construct panel lines, breaks, and angles sharp and true, and surfaces free from warp and buckle.
2.5.3. Allow for structural movements within the systems, and to accommodate thermal expansion and contraction between panels and structural members.
2.5.4. Ensure the metal panels are free of steel contamination from rollers.
2.5.5. Fabricate siding panel systems to prevent entry of water into building and from collection within system assembly.
2.5.6. Join intersecting parts together to provide tight, accurately fitted joints with adjoining surfaces in true planes.
2.5.7. Fabricate formed and notched metal closures to close-off flutes at exterior. Seal also with neoprene foam filler.
2.5.8. Cooperate with applicable sections to ensure coordination required for proper installation of work of this section in conjunction with and incorporated with other work.
2.5.9. Prefinished metal panel terminations shall not have a raw metal edge or exposed fasteners.

3 EXECUTION

3.1. EXAMINATION

3.1.1. Verification of Conditions:
- 3.1.1.1. Take measurements at the Place of the Work to ensure that the work of this Section is fabricated to fit structure, surrounding construction, and obstructions and projections in place.
- 3.1.1.2. Verify that backup construction is aligned for proper installation of prefinished metal panel system before commencing erection.
- 3.1.1.3. Report all discrepancies to the Consultant before beginning the Work on the wall system.
- 3.1.1.4. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2. INSTALLATION

3.2.1. Install cladding and components in accordance with manufacturer's written instructions and shop drawings, including product technical bulletins, datasheets and install videos

3.2.2. Install all cladding planks using Quick-Screen Clips in accordance with the manufacturer's written instructions, technical bulletins, datasheets and install videos to not restrict thermal movement at specified o.c. spacings. Install screws in pre-punched holes. Install one (1) hard-fastened screw per plank, directly through the plank flange to prevent plank migration. All fasteners should penetrate into solid, secure framing or blocking

3.2.3. Install components in accordance with the manufacturer's written instructions and shop drawings, including technical bulletins, datasheets and install videos with positive anchorage to building and provide for thermal movement

3.2.4. Install screw fasteners using power tools having controlled torque adjusted to compress Quick-Screen Clips tight without damage or deformation of the Quick-Screen Clips, screw heads, screw threads or cladding

3.2.5. Hard-fasten any and all butt-joints into solid secure framing or blocking, to maintain tight fitting hairline joints. Never exceed one (1) hard-fastener per plank, all other attachment points to use Quick-Screen Clips to not restrict thermal movement

3.2.6. Do not install damaged panels; repair or replace as required

3.2.7. Erect systems complete with flashings forming part of the system, clips, fasteners, closures and sealant to meet the design criteria as specified for fabrication.

3.2.8. Erect panels in straight lines, that are true, level, square, and plumb to comply with installation tolerances.

3.2.9. Attachment system:
- 3.2.9.1. Allow for free and noiseless vertical and horizontal thermal movement due to expansion and contraction for material temperature range. Buckling of panels, opening of joints, under stress on fasteners, failure to sealants or any other detrimental effects due to thermal movement is not permitted. Allow for ambient temperature at time of fabrication, assembly, and erection procedures.

3.2.10. Anchor cladding securely per engineering recommendations and in accordance with reviewed shop drawing to allow for necessary thermal movement.

3.2.11. Where steel siding contacts dissimilar metals, protect against galvanic action.

3.2.12. Fasten metal siding to supports with fasteners at each location indicated on reviewed shop drawings, at spacing and with fasteners recommended by manufacturer.

3.2.13. Place trim and flashing as indicated per details on the reviewed shop drawings.

3.2.14. Install sealants at junctions with adjoining work, and where shown on the drawings in accordance with Section 07 92 00 – Sealants and to provide a watertight installation

3.2.15. Cut, flash, and apply sealant to system penetrations. Seal around materials penetrating metal cladding watertight.

3.2.16. Install various components within cladding assembly to provide positive controlled drainage of moisture to exterior of building envelope or drainage outlet.

3.2.17. Conceal fasteners.

3.2.18. Do not install component parts that are observed to be defective, including warped, bowed, dented, and broken members.
3.2.19. Obtain panel symmetry whenever possible relative to openings in both vertical and horizontal plane.
3.2.20. Break form metal flashings to profile required, in maximum lengths.
3.2.21. Install head and sill flashings to profiles required, in maximum lengths.
3.2.22. Apply sealant to face of supports for top and bottom closure flashings and at supports for perimeter closure flashings and returns.
3.2.23. Do not cut, trim, weld or braze component parts during erection in a manner that would damage finish, decrease strength or result in a visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.
3.2.24. Separate dissimilar metals and use gasketed fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.
3.2.25. Protect surface of metals in contact with concrete, mortar, plaster or other cementitious surface with isolation coating.

3.3. METAL CLADDING INSTALLATION TOLERANCES

3.3.1. Maximum variation from plane or location shown on reviewed shop drawings: 20 mm (3/4")/10 m (32.8') of length and up to 30mm (1-1/6")/100 m (328') maximum.
3.3.2. Maximum offset from true alignment between two adjacent members abutting end to end or side-by-side, in line: 1 mm (0.039").
3.3.3. Flatness: Maximum deviation from flatness shall be 3.2 mm (1/8") in 1520 mm (5') on panel in any direction for assembled units.

3.4. FIELD QUALITY CONTROL

3.4.1. Conduct quality control in accordance with Section 01 45 00.

3.5. ADJUSTING AND CLEANING

3.5.1. After erection, touch up coatings removed or damaged during erection.
3.5.2. Remove damaged, dented, defaced, defectively finished, or tool marked components and replace with new.
3.5.3. Wash down exposed interior and exterior surfaces using solution of mild domestic detergent in warm water, applied with soft clean wiping cloths. Wipe interior surfaces clean as part of final clean-up.
3.5.4. Remove excess sealant with recommended solvent.

3.6. PROTECTION

3.6.1. The *Consultant* will advise the *Contractor* of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Description Of Work
.4 1.4. Administrative Requirements
.5 1.5. Related Work Specified Elsewhere
.6 1.6. References
.7 1.7. Submittals
.8 1.8. Quality Assurance
.9 1.9. Delivery, Storage, And Handling
.10 1.10. Project Conditions
.11 1.11. Warranty
.12 2.1. Manufacturer
.13 2.2. Wall Panels
.14 2.3. Miscellaneous Cladding Materials
.15 2.4. Accessories
.16 3.1. Examination
.17 3.2. Preparation
.18 3.3. Installation
.19 3.4. Air Barrier Membrane Application
.20 3.5. Insulation
.21 3.6. Exterior Cladding For Rainscreen Applications
.22 3.7. Installation Tolerances
.23 3.8. Protection
.24 3.9. Field Quality Control
.25 3.10. Adjusting And Cleaning
.26 3.11. Protection

1.3. DESCRIPTION OF WORK

1.3.1. The Work of this Section includes Fiber cement panels of the following types:
- 1.3.1.1. Through color high density fiber cement EQUITONE Natura panels.
  - (1) EQUITONE Natura is a high-density fibre cement panel with a through colored core, and a coloured semi-transparent double layer acrylic finish which results in the structure (fibres) of the material shining through. For further information refer to the relevant material information sheet (MIS).
- 1.3.1.2. Through color high density fiber cement EQUITONE Llinea panels.
  - (1) EQUITONE Linea is a high-density through colored fiber cement panel with no coating. The panel has an honest, pure and natural appearance with natural color variations and hues. The natural characteristic of the panel may be accentuated by the production process as well as light or dark inclusions. For further information refer to the relevant material information sheet (MIS).
- 1.3.1.3. Fixed with:
  - (1) Concealed Fischer Tergo+ Anchors

1.4. ADMINISTRATIVE REQUIREMENTS

1.4.1. Coordination:
- 1.4.1.1. Coordinate with installers of wall mounted items, equipment, and mechanical and electrical work so that installation will not subvert the integrity of the cladding system.

1.4.1.2. Coordinate interface, transition, lapping, flashings and compatibility of membranes with work of Section 07 27 00.

1.5. RELATED WORK SPECIFIED ELSEWHERE

1.5.1. Carefully examine Contract Documents for requirements that affect work of this section.

1.6. REFERENCES

1.6.1. International Code Council (ICC):
- 1.6.1.1. AC90 Fiber Cement Siding Used as Exterior Wall Siding

1.6.2. American Society for Testing and Materials (ASTM):
- 1.6.2.1. ASTM C 518-10 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- 1.6.2.2. ASTM C 1185-08 - Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards
- 1.6.2.3. ASTM C 1186-08 - Standard Specification for Flat Fiber-Cement Sheets
- 1.6.2.4. ASTM D 2244-09A - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
- 1.6.2.5. ASTM E 84-07 - Surface Burning Characteristics of Building Materials.
- 1.6.2.6. ASTM E 119-12A - Standard Test Method for Fire Tests of Building Construction and Materials
- 1.6.2.7. ASTM E 136-19A - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degree C
- 1.6.2.8. ASTM E 2226-12 - Standard Practice for Application of House Stream
- 1.6.2.9. ASTM G 115-05A - Standard Practice for opperating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

1.6.3. European Committee For Standardization (CEN):
- 1.6.3.1. EN 15804 – Sustainability of Construction Works. Environmental Product Declarations

1.6.4. Cradle to Cradle Product Inovation Institute (C2CPII):
- 1.6.4.1. Certificate Program Version 3.1

1.7. SUBMITTALS

1.7.1. Products Submittals shall be per Section 01 33 00 – Submittal Procedures.

1.7.2. Product Data: Manufacturer's literature on each product to be used, including, but not limited to:
- 1.7.2.1. Appearance, composition, dimensions, physical properties, and usage.
- 1.7.2.2. Sustainability information.
- 1.7.2.3. Preparation instructions and recommendations for Panels.
- 1.7.2.4. Storage and handling requirements and recommendations.
- 1.7.2.5. Installation methods for the supporting framework and the fiber cement panels.
- 1.7.2.6. Operation and maintenance information

1.7.3. Shop Drawings:
- 1.7.3.1. Provide detailed drawings of non-standard applications of fiber cement materials which are outside the scope of the standard details and specifications provided by the manufacturer.

1.7.4. Code Compliance:
- 1.7.4.1. Documents showing product compliance with local building code shall be submitted prior to the bid. These documents shall include, but not be limited to, appropriate Evaluation Reports and/or test reports supporting the use of the product.

1.7.5. Engineering Calculations:
- 1.7.5.1. Submit engineering calculations as required by the local building code, showing that the installed panels and attachment system meets the wind load requirements for the project.

1.7.6. Selection Samples:

1.7.6.1. For each finish product specified, two complete sets of 5 7/8 x 2 3/8 inches (149 x 60mm) color chips representing manufacturer's full range of colors and patterns available in the US shall be provided upon request.

1.7.7. Verification Samples:

1.7.7.1. For each finish product specified, two samples, minimum size A4 11 11/16" x 8 17/64 inches (297 x 210mm), representing actual product, color, and patterns.

1.8. QUALITY ASSURANCE

1.8.1. Installer Qualifications: All products listed in this section are to be installed by a single installer trained by the manufacture or representative.

1.8.1.1. It is the full resonsibility of the installer to ensure the installation of the Fiber Cement Panel materials are in accordance with the relevant manufacturer's guidelines and recommendation

1.8.2. Color Evaluation: Insignificant change after 2000 hours of accelerated QUV weathering test (ASTM G155-05A).

1.8.3. Mock-Up: Provide a full size mock-up minimum 600 by 600 for evaluation of surface preparation techniques and application workmanship. Mock-up shall include a corner, window sill, jamb and head condition, wall base and wall-roof intersection.

1.8.3.1. Finish areas designated by Architect.

1.8.3.2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.

1.9. DELIVERY, STORAGE, AND HANDLING

1.9.1. Follow all manufacturer's instructions for safe handling and storage of high density fiber cement panels.

1.9.2. Moving panels that are stacked on pallets should be done with a forklift or a crane. Ensure the panels are secured to the pallet in a way that will not cause damage. Panels should be transported under a waterproof cover.

1.9.3. All panel materials must be stored flat on pallets, undercover, and protected from weather and other trades. Limit stacks to a maximum of five pallets. Cover the pallets in a way such that the panels are ventilated.

1.9.4. Panels must remain seperated with packaged interleaving until ready for installation.

1.9.5. Always lift panels off of each other, never slide them over one another, since scratching may occur. Carry panels upright on their back edge and lift with two people, protecting the face from damage.

1.10. PROJECT CONDITIONS

1.10.1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits or which could involve life safety situations.

1.10.2. Field Measurements:

1.10.2.1. Verify actual measurements/openings by field measurements performed by the installer prior to release for fabrication. The General Contractor or Installer shall be responsible for existing site dimensions. Recorded measurements shall be indicated on shop drawings based on field measurements provided by the installer. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1.11. WARRANTY

1.11.1. Warrant work of this section in accordance with the Articles of Agreement.

1.11.2. Provide manufacturer's limited ten (10) year product warranty.

1.11.3. The warranty is a total system warranty. The cladding system shall meet both the specified system and the building envelope performance requirements during the warranty period.

2 PRODUCTS

2.1. MANUFACTURER

2.1.1. As a basis of Design, Fiber Cement Panels shall be manufacturerd BY:
- 2.1.1.1. EQUITONE Inc
- 2.1.1.2. 1731 Fred Lawson Drive, Maryville, TN 37801
- 2.1.1.3. Tel: +1 865-268-2705.
- 2.1.1.4. E-mail: info.usa@equitone.com
- 2.1.1.5. Web: http://www.equitone.com

2.1.2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2. WALL PANELS

2.2.1. Through Color High Density Fiber Cement Panels:
- 2.2.1.1. Product: EQUITONE Natura Fiber Cement Panel
  - (1) Application: Exterior
  - (2) Nominal Thickness: 3/8 inch (10 mm
  - (3) Finish: EQUITONE Natura is a high-density fibre cement panel with a through colored core, and a coloured semi-transparent double layer acrylic finish which results in the structure (fibres) of the material shining through. Irregularities, differences in shade and traces of the manufacturing process are part of the natural characteristics of the material. The rear receives a transparent back-sealing coating.
  - (4) Color:
    - (A) N593 – Green Mist
  - (5) Physical Characteristics:
    - (B) ASTM C518, C1185, ASTM C1186
      - (a) Strength classification Grade III
      - (b) Mean density (dry) 111.8 lb/ft3
      - (c) Mean bending strength perpendicular (dry) 3358 psi
      - (d) Mean bending strength perpendicular (wet) 2160 psi
      - (e) Moisture content 3.9%
      - (f) Water absorption 14.5%
      - (g) Moisture movement 0.05%
      - (h) Water tightness PASS
      - (i) Freeze-thaw resistance PASS
      - (j) Warm water resistance PASS
      - (k) Thermal conductivity 0.236 BTU/h ft °F
  - (6) Fire performance
    - (C) ASTM E84 - Flame spread index 0
    - (D) ASTM E84 - Smoke development index 0
    - (E) ASTM E119 - Assembly fire resistance rating 1hr
    - (F) ASTM E119 - Assembly house stream test PASS
    - (G) ASTM E186 (Opt B) - Material combustability Non-combustible
  - (7) Building Code Compliance
    - (H) AC90 - ESR 3910
  - (8) Certifications
    - (I) 1) EN 15804
      - (a) EQUITONE Natura is certified with an Environmental Product Declaration (EPD). This life cycle assessment includes raw materials and energy production information throughout the manufacturing and use phases of the fiber cement panels.
    - (J) Cradle to Cradle Version 3.1
      - (a) EQUITONE fiber cement products have achieved a Bronze rating according to the Product Innovation Institute certification. The assesment considers 5 main categories: material health;

product circularity; clean air and carbon; water and soil sterwardship; social fairness.

2.2.1.2. Product: EQUITONE Linea Fiber Cement Panel

(1) Application: Exterior

(2) Nominal Thickness: 5/16 inch (8 mm)

(3) Finish: EQUITONE Linea is a high-density through colored fiber cement panel with no coating. The panel has an honest, pure and natural appearance with natural color variations and hues. The natural characteristic of the panel may be accentuated by the production process as well as light or dark inclusions. The front face of the panel features grooves. The top of the ridges are characterised by fine sanding lines in the longitudinal direction. The revealed texture of the fiber cement core in the grooves enhances the 3D surface aspect of the panel. The panel has been made water repellent by means of hydrophobation

(4) Color:

(K) LT85 – Graphite

(5) Physical Characteristics:

(L) ASTM C518, C1185, ASTM C1186

(a) Strength classification Grade IV

(b) Mean density (dry) 101 lb/ft3

(c) Mean bending strength perpendicular (dry) 4475 psi

(d) Mean bending strength perpendicular (wet) 3886 psi

(e) Moisture content 5.9%

(f) Water absorption 19%

(g) Moisture movement 0.02%

(h) Water tightness PASS

(i) Freeze-thaw resistance PASS

(j) Warm water resistance PASS

(k) Thermal conductivity 0.226 BTU/h ft °F’

(6) Fire performance

(M) ASTM E84 - Flame spread index 0

(N) ASTM E84 - Smoke development index 5

(O) ASTM E119 - Assembly fire resistance rating 1hr

(P) ASTM E119 - Assembly house stream test PASS

(Q) ASTM E186 (Opt B) - Material combustibility Non-combustible

(7) Building Code Compliance

(R) AC90 - ESR 3910

(8) Certifications

(S) EN 15804

(a) EQUITONE Linea is certified with an Environmental Product Declaration (EPD). This life cycle assessment includes raw materials and energy production information throughout the manufacturing and use phases of the fiber cement panels.

(2) Cradle to Cradle Version 3.1

(A) EQUITONE fiber cement products have achieved a Bronze rating according to the Product Innovation Institute certification. The assessment considers 5 main categories: material health; product circularity; clean air and carbon; water and soil stewardship; social fairness

2.3. MISCELLANEOUS CLADDING MATERIALS

2.3.1. Perforated Insect/Vermin Screen: Perforation pattern should allow 4.75 in2/ft of open area or be 50% perforated, which ever is greater.

2.3.2. Aluminum Joint Closures and Decorative Corner Profiles: Manufacturer's standard products as detailed. Maximum thickness of non-structural finishing profile to be 1/32” or 21 gauge.

2.3.3. Panel Fastening: Fischer Tergo+ invisible fixing
2.3.4. All third party components should be installed in accordance with the relevant manufacturer's guidelines and recommendations.

2.4. ACCESSORIES

2.4.1. Extruded aluminum accessory components:
2.4.1.1. Aluminum extrusions to ASTM B221-14, to the following minimum wall thickness and alloy:
(1) Thickness:
(B) 2.28 mm (0.090").
2.4.2. Support brackets: Steel brackets to be hot dipped galvanized with zinc coating (0.09 g/m (3.4 mil)) in accordance with CAN/CSA G164-M92.
2.4.3. Fasteners: Self-tapping, purpose made stainless steel screws.
2.4.4. Insulation:
2.4.4.1. Semi-rigid insulation: rock wool type, in accordance with Section 07 21 00.
2.4.5. Air barrier membrane:
2.4.5.1. Composite preformed 1.1 mm (43 mil) thick modified membrane system consisting of SBS modified asphalt for low temperature flexibility and glass scrim or polyethylene reinforcing.
2.4.5.2. Acceptable Products:
(1) Bakor 'Blueskin PE 200 HT'.
(2) W.R. Grace 'Ice & Water Shield'.
(3) Acceptable alternates by W.R. Meadows or Soprema or Vicshield.
(4) Or equivalent.
2.4.6. Sub-girts (z-girts): minimum 1.2mm (18 gauge) zinc-coated steel to ASTM A653/A653M-11 with Grade A coating Z275.
2.4.7. Isolation coating: Bituminuous paint.
2.4.8. Trim, coping, closures, and cap pieces:
2.4.8.1. 3.18 mm (0.125") aluminum, to match cladding system.
2.4.8.2. Factory fabricate components, ready for installation.
2.4.9. Sealant: in accordance with Section 07 92 00.

3 EXECUTION

3.1. EXAMINATION

3.1.1. Take *Site* measurements to ensure that work of this Section is fabricated to fit structure; surrounding construction; around obstructions and projections in place, or as shown on the Drawings; and to suit locations of services.
3.1.2. Verify that backup construction is aligned for proper installation of work of this Section before commencing erection.
3.1.3. Notify the Consultant in writing of conditions detrimental to proper and timely completion of work. Do not proceed with erection until unsatisfactory conditions have been corrected.
3.1.4. Inspect panels for any visual defects before installation as per manufacturer's recommendation.

3.2. PREPARATION

3.2.1. Fabricate in accordance with all manufacturer instructions and use manufacturer specific tools and accessories when applicable.
3.2.2. Prepare and treat panel surfaces and edges using the methods and materials recommended by the manufacturer.
3.2.3. Clean panel surfaces thoroughly prior to installation. Remove any cutting, drilling, or sanding dust from the surface of the panel using a clean micro-fiber cloth.
3.2.4. Comply with local codes and structural engineer's fastening calculations along with manufacturer's recommendations for fastener spacing.

3.3. INSTALLATION

3.3.1. Install in accordance with all manufacturer instructions and approved submittals.

3.3.2. When applicable, use manufacturer specific tools and accessories.
3.3.3. Visible fixings should be installed starting from the center of the panel outward. Comply with manufacturer's instructions for locations of fixed and sliding connections, if applicable.
3.3.4. When possible, install the panels starting from the top of the building and work down the façade. Additionally, start at either an inside corner or center of the elevation and work outward.
3.3.5. Care should be taken to protect the panels from damage when removing spacers and shims.
3.3.6. The use of adhesives or tapes on the finished surface of the panel must be avoided.
3.3.7. Clean the panels after installation in accordance with manufacturer's cleaning and maintenance guidelines

3.4. AIR BARRIER MEMBRANE APPLICATION

3.4.1. Install in accordance with manufacturer's installation instructions.
3.4.2. Surfaces must be smooth, clean dry and free from loose contaminants. Brushing and/or scraping of block and concrete surfaces may be required to adequately prepare surface.
3.4.3. Apply primer for membrane work.
3.4.4. Wrap openings with membrane returning to inside face of openings.
3.4.5. Ensure air barrier seals into adjacent systems for complete air barrier to building envelope.

3.5. INSULATION

3.5.1. Carefully cut and fit insulation in pieces to fit surfaces of members to which insulation bears contact.
3.5.2. Cut backs of pieces as required to fit over projecting anchors, fastenings or similar protrusions. Fit boards neatly with tight joints around pipes, ducts, obstructions, openings, corners, and structural members.
3.5.3. Apply insulation to ensure total and complete coverage of surfaces indicated to be insulated, and in direct contact with such surfaces.
3.5.4. Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.

3.6. EXTERIOR CLADDING FOR RAINSCREEN APPLICATIONS

3.6.1. Detailing Requirements:
3.6.1.1. Air space inlets and outlets are required at the top and bottom of a building or at a wall termination. The minimum openings required are dependent upon the distance (height) between air inlets and outlets. Air outlets at the top of a building or at a wall termination should not exceed the size of the air inlets. The air outlets can be as much as 1/8" less than the air inlets. Do not block vertical airflow at windows, doors, eaves, or at the base of the building. The below guidelines should be followed in regards to air inlet and outlet sizes.
(1) [0 to 16 feet: air inlets min 3/8" and air outlets between 5/16" and 3/8"]
(2) [16 to 33 feet: air inlets min 1/2" and air outlets between 3/8" and 1/2"]
(3) [33 to 66 feet: air inlets min 3/4" and air outlets between 5/8" and 3/4"]
(4) [66 to 165 feet: air inlets min 1" and air outlets between 7/8" and 1"]
3.6.1.2. Airflow behind the panels shall be vertically continuous between openings. The minimum continuous vertical air gap required is dependent upon the distance (height) between air inlets and outlets and can be found below. Air flow behind the fiber cement panels is critical to the performance of the rainscreen construction.
(1) [0 to 33 feet: air gap min 3/4"]
(2) [33 to 66 feet: air gap min 1"]
(3) [66 to 165 feet: air gap min 1 3/16"]

3.6.1.3. For narrow panels with only two rows of fixings, a control joint should be designed in the subframing system every 10 foot.
3.6.1.4. Panels should not be fixed across subframing joints nor building control joints.
3.6.1.5. Additional material between the subframing and the panels should be avoided. Designs were joint vents, screens, trims, etc. are required behind the panel, the material thickness should be limited to 1/32".
3.6.1.6. Rainscreen system detailing should be in accordance with all manufacturer's guidelines.

3.7. INSTALLATION TOLERANCES

3.7.1. Comply with the following maximum tolerances:
3.7.1.1. Plumb:
(1) 3.2 mm in 3 m (1/8" in 10'-0"); 6.4 mm in 12.2 m (1/4" in 40'-0").
3.7.1.2. Level:
(1) 3.2 mm in 3 m (1/8" in 10'-0"); 6.4 mm in 12.2 m (1/4" in 40'-0").
3.7.1.3. Alignment:
(1) Where surfaces abut in line or are separated by reveal or protruding element up to 12.7 mm (1/2") wide, limit offset from true alignment to 1.6 mm (1/16").
(2) Where surfaces are separated by reveal or protruding element from 12.7 to 25.4 mm (1/2 to 1") wide, limit offset from true alignment to 3.2 mm (1/8").
(3) Where surfaces are separated by reveal or protruding element of 25.4 mm (1") wide or more, limit offset from true alignment to 6.4 mm (1/4").
3.7.1.4. Variation from plane:
(1) 3.2 mm in 3.6 m (1/8" in 12'-0"); 12.7 mm (1/2") over total length.
3.7.1.5. Panels:
(1) Bow: 0.2% of panel dimensions up to 3.2 mm (1/8") maximum.
(2) Indicated size:
(C) Up to 1220 mm (4'-0"): plus/minus 0.76 mm (0.030").
(D) 1220 mm to 3050 mm (4'-0" to 10'-0"): plus/minus 1.52 mm (0.060").
3.7.1.6. Square or rectangular:
(1) Maximum 3.2 mm (1/8") difference between diagonal measurements.
3.7.1.7. Variation from indicated position: plus/minus 3 mm (1/8").
(1) Tolerances shall not be cumulative.

3.8. PROTECTION

3.8.1. Protect installed products until completion of project in accordance with manufacturer's guidelines. Tapes or adhesives should not be used on the surfaces of the panels.
3.8.2. Touch-up, repair or replace damaged products before substantial completion in accordance with manufacturer's guidelines

END OF SECTION

1 GENERAL

1.1. GENERAL CONDITIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.1.2. All conditions of Contract and Divisions 0 and 1 apply to this section and to requirements of Canadian Roofing Contractors Association Roofing Manual Specifications as referred to herein.

1.1.3. Abide by all Federal, Provincial, Municipal and Local Laws or Codes, rules and regulations that in any way affect work including all amendments up to project date.

1.2. SECTION INCLUDES

.1 1.1. General Conditions
.2 1.2. Section Includes
.3 1.3. Section Summary
.4 1.4. Administrative & Co-Ordination Requirements
.5 1.5. Standards
.6 1.6. Submittals
.7 1.7. Closeout Submittals
.8 1.8. System Description
.9 1.9. Qualifications
.10 1.10. Quality Control
.11 1.11. Pre-Start Meeting
.12 1.12. Delivery, Storage & Handling
.13 1.13. Field Conditions
.14 1.14. Warranty
.15 2.1. Roofing System Manufacturer
.16 2.2. Performance/Design Requirements – General
.17 2.3. Performance/Design Requirements – Fire Protection
.18 2.4. Roofing Materials
.19 2.5. Accessories
.20 2.6. Expansion Joints
.21 3.1. Examination
.22 3.2. Preparation
.23 3.3. Method Of Installation
.24 3.4. Gypsum Boards
.25 3.5. Vapour Retarder
.26 3.6. Insulation (Bottom Layers)
.27 3.7. Tapered Insulation
.28 3.8. Insulation (Top Layer)
.29 3.9. Membrane Application – Base Sheet
.30 3.10. Membrane Application – Cap Sheet
.31 3.11. Asphalt Application
.32 3.12. Night Seal
.33 3.13. Membrane Flashings
.34 3.14. Scuppers/Mechanical Condensate Pipe/Roof Access
.35 3.15. Field Quality Control
.36 3.16. Adjusting And Cleaning
.37 3.17. Finish

1.3. SECTION SUMMARY

1.3.1. Section Includes

1.3.1.1. Two-ply styrene-butadiene-styrene (SBS) modified bituminous membrane roofing; as follows:
.1 Exposed membrane roofing system.
1.3.1.2. Roofing insulation.
1.3.1.3. Air and vapour barrier.
1.3.1.4. Associated roofing accessories and products.

1.4. ADMINISTRATIVE & CO-ORDINATION REQUIREMENTS

1.4.1. Co-ordinate work of this Section with work of:
1.4.1.1. Section 06 10 53 Rough Carpentry.
1.4.1.2. Section 07 62 00 Sheet Metal Flashing and Trim.
1.4.1.3. Section 07 92 00 Joint Sealants.
1.4.1.4. Section 26 31 00 Solar Photovoltaics.
1.4.2. Coordinate with installation of air barrier at walls to ensure complete continuity of air barrier system for building. Roofing air barrier membrane to lap by 75 mm (3") minimum and terminate with wall system air barrier membrane.
1.4.3. The manufacturer shall meet with the necessary parties at the *Site* to review and discuss project conditions as it relates to the integrity of the roofing assembly.

1.5. STANDARDS

1.5.1. CAN/CSA O80 SERIES-08 – Wood Preservation.
1.5.2. CAN/CGSB 19.13-M87: Single Compound, One-Component, Elastomeric, Chemical Curing.
1.5.3. CSA A123.23: Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
1.5.4. CGSB 37-GP-9MA: Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing.
1.5.5. CGSB 37-GP-64M: Mat Reinforcing, Fibrous Glass, for Membrane Waterproofing Systems and Built-up Roofing.
1.5.6. ASTM C165-12: Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
1.5.7. ASTM D6164/D6164M-11: Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
1.5.8. ASTM A653/A653M-10: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.
1.5.9. ASTM E84-12: Standard Test Method for Surface Burning Characteristics of Building Materials
1.5.10. UL 790: Standard Test Methods for Fire Tests of Roof Coverings
1.5.11. UL 1256: Fire Test of Roof Deck Constructions.

1.6. SUBMITTALS

1.6.1. Submit required submittals in accordance with Section 01 33 00.
1.6.2. Product data sheets:
1.6.2.1. Submit manufacturer's *Product* data sheets for each type of product indicated.
1.6.3. Shop drawings; general details:
1.6.3.1. Include plans, elevations, sections, details, and attachments to other work for the following:
.1 Base flashings, cants, and membrane terminations.
.2 Tapered insulation, including slopes.
.3 Crickets, saddles, and tapered edge strips, including slopes.
.4 Insulation fastening patterns.
1.6.4. Certificates:

1.6.4.1. Installer certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
1.6.4.2. Manufacturer certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in Subsection 2.2 "Performance Requirements" below.
.1 Submit evidence of compliance with performance requirements.
1.6.5. Roofing manufacturer's warranty and design criteria:
1.6.5.1. Submit copy of completed roofing manufacturer's pre-installation notification form at least 10 Working *Days* prior to commencement of roofing installation.
1.6.5.2. Submit copy of roofing manufacturer's warranty specimen and warranty design criteria for roofing system prior to commencement of roofing installation.
1.6.6. Samples:
1.6.6.1. Submit samples complete with manufacturer's labels intact, of materials to be used for work of this Section prior to commencement of work. Allowing ample time for review and acceptance by the *Consultant* and roofing inspection company. Do not proceed with work until samples are accepted.

1.7. CLOSEOUT SUBMITTALS

1.7.1. Submit closeout submittals in accordance with Section 01 77 00.
1.7.2. Operation and maintenance data:
1.7.2.1. Submit manufacturer's maintenance instructions for incorporation into the operation and maintenance manuals.

1.8. SYSTEM DESCRIPTION

1.8.1. 2-Ply Modified Bituminous Roof Areas
1.8.1.1. Modified Bituminous Conventional Roofing System: 1-ply granulated modified bitumen membrane (white cap sheet) torched in place, 1-ply modified bitumen membrane (base sheet) torched in place over stone wool insulation in adhesive, over min. 2% tapered insulation in adhesive, over polyisocyanurate insulation in adhesive over self-adhering vapour retarder adhered over gypsum boards mechanically fastened in place over the metal deck. Membrane flashing to be 2-plies modified bitumen membranes, 1-ply modified bitumen membrane (base sheet) self-adhered in place and 1-ply granulated modified bitumen membrane (white cap sheet) torched in place.

1.9. QUALIFICATIONS

1.9.1. Qualifications:
1.9.1.1. Manufacturers: Company specializing in manufacturing the Products specified in this section, with a minimum of 10 years' experience.
1.9.1.2. Installers / applicators / erectors: Provide work of this section, executed by competent installers with minimum 5 years' experience in application of Products, systems and assemblies specified and with approval and training of *Product* manufacturers.
.1 *Work* of this Section shall be installed by a *Subcontractor* that is a member in good standing of the Canadian Roofing Contractors Association (CRCA) and Ontario Industrial Roofing Contractors Association (OIRCA), who has been a member for at least 5 years.
.2 Roofing *Subcontractor* must be approved by the membrane manufacturer for the warranty program specified. Submit *Subcontractor*'s certification letter prepared by the membrane manufacturer.
1.9.2. Execute work of this Section only under full time supervision of qualified *Subcontractor*'s site supervisor.
1.9.3. Mock-up:

1.9.3.1. Prepare a 10 m² (100 ft²) mock-up of the work of this Section. Incorporate materials and methods of fabrication and installation identical with project requirements.
1.9.3.2. Install mock-up at roof area location directed by the Consultant. Retain accepted mock-up of sufficient size and scope to show typical pattern of seams, fastening details, edge construction, and workmanship.

1.10. QUALITY CONTROL

1.10.1. Quality controls are listed in the GENERAL CONDITIONS under section 01 45 00 QUALITY CONTROL – GOOD ROOFING PRACTICES

1.11. PRE-START MEETING

1.11.1. A pre-start meeting is to be scheduled one week prior to any work commencing. The roofing contractor, the consultant, the on-site contact and/or owner's representative should be present. The following items will be discussed at the pre-start meeting:
1.11.1.1. Methods and procedures relating to the roof assembly installation
1.11.1.2. On-site procedures
1.11.1.3. On-site material storage
1.11.1.4. The construction schedules

1.12. DELIVERY, STORAGE & HANDLING

1.12.1. Deliver roofing materials to the *Site* in original containers with seals unbroken and labelled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.
1.12.2. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
1.12.3. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.
1.12.4. Handle materials carefully to preclude damage. Follow manufacturer's written recommendations.
1.12.5. Package materials and identify on attached labels the manufacturer, brand, contents, weight as applicable, and Product and specification numbers.
1.12.6. Protect edges of roll goods from damage during handling, and store rolls on end to prevent flattening.
1.12.7. Do not store roofing materials on roof. Store them in a dry area protected from inclement weather while roofing installation is not in progress. Store above materials under opaque, breathable and waterproof tarpaulins or in sheds.
1.12.8. Prevent compression of insulation panels at any point and breakage of edges and corners. Discard wet, cupped, bowed, or otherwise damaged insulation from *Place of the Work*.
1.12.9. Protect edges and corners of precast concrete paving slabs to prevent damage.

1.13. FIELD CONDITIONS

1.13.1. Weather limitations:
1.13.1.1. Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.14. WARRANTY

1.14.1. *Provide* Ontario Industrial Roofing Contractors Association (OIRCA) 2 year warranty for labour, materials, and workmanship.
1.14.2. Warrant work of this section in accordance with Section 01 78 36 for a period of 2 years.

1.14.3. In addition, roofing manufacturer shall *Provide* total system warranty including the following:
- 1.14.3.1. Roofing membrane manufacturer will issue a written document in the *Owner's* name, valid for duration listed below, for the repair of leaks in the roofing membrane to restore the roofing system to dry and watertight condition, to the extent that membrane manufacturing or installation defects caused water infiltration. Include copy of required warranty with close out documentation.
- 1.14.3.2. Warranty shall cover entire cost of the repair(s) required to maintain dry and watertight roofing system during the full warranty duration.
- 1.14.3.3. Warranty shall include for labour, materials, and workmanship.
- 1.14.3.4. Warranty shall be non-prorated with no dollar limit (NDL) for duration of warranty.
- 1.14.3.5. 10-year warranty duration

2 PRODUCTS

2.1. ROOFING SYSTEM MANUFACTURER

2.1.1. General:
- 2.1.1.1. Single source responsibility: each roofing component to be by one manufacturer.

2.1.2. Acceptable roof system manufacturers: Subject to compliance with requirements, *Provide* products by one of the following:
- 2.1.2.1. Firestone Building Products.
- 2.1.2.2. GAF Materials Corporation.
- 2.1.2.3. IKO Industries.
- 2.1.2.4. Siplast.
- 2.1.2.5. Soprema.
- 2.1.2.6. Or equivalent.

2.2. PERFORMANCE/DESIGN REQUIREMENTS – GENERAL

2.2.1. Roofing system: The roofing system shall include roofing system materials required to achieve roofing membrane manufacturer's warranty.

2.2.2. Roofing materials, components, and assemblies shall resist environmental and wind (uplift) loads, and effects of those loads in accordance with the Ontario Building Code.

2.2.3. General performance: Installed roofing system and base flashings shall withstand wind uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing system and base flashings shall remain watertight.

2.2.4. Material compatibility: *Provide* roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

2.2.5. Roofing system: Prevent water from entering building and roofing assembly through roofing membrane.

2.2.6. Roofing system design:
- 2.2.6.1. Roofing system assemblies shall have been successfully tested by a qualified testing agency to resist project roofing uplift pressures in accordance with the Ontario Building Code.
- 2.2.6.2. Roofing system shall meet roofing system manufacturer's 145 kph (90 mph) wind speed requirements or equivalent FM Class 60 Windstorm Classification for wind uplift pressures, and to cladding design wind loads indicated in wind study report, as applicable.

2.2.7. Roof covering classification: Roof assembly shall have a Class C classification as determined in conformance with CAN/ULC S107-10 "Standard Methods of Fire Tests of Roof Coverings".

2.2.8. Air barrier system shall accommodate substrate movement, construction material changes, and transitions at perimeter conditions without deterioration and air leakage exceeding the following specified limits and requirements:
- 2.2.8.1. Air permeance of air barrier material: Maximum 0.02 L/s m2 at 75 Pa (0.004 cfm/ft2 at 1.57 psf) to ASTM E2178-13.
- 2.2.8.2. Rate of air leakage of air barrier system: Maximum 0.15 L/s m2 at 75 Pa (0.030 cfm/ft2 at 1.57 psf) to ASTM E283-04 (2012).
- 2.2.8.3. Water vapour transmission for air / vapour barriers: Maximum 5.7 ng/Pa.m2.s. (0.1 perms).
- 2.2.8.4. Pull-off strength of liquid or sheet applied membrane and laps: Cohesive or substrate failure permitted when tested to specified wind load. Air barrier system shall transfer wind load to structure and shall resist 100% of design wind load or minimum of 2.15 kPa (45 psf), whichever is greater.
- 2.2.8.5. Low temperature flexibility: to -30°C (-22°F) to CGSB 37-GP-56M-1985.

2.2.9. Air barrier system shall be joined in an airtight and flexible manner to air barrier material of adjacent building envelope air barrier systems, allowing for relative movement of systems due to thermal and moisture variations and creep. Connection shall be made between the following unless otherwise applicable:
- 2.2.9.1. Walls and openings.
- 2.2.9.2. Across construction, control, and expansion joints.
- 2.2.9.3. Penetrations.

2.2.10. Solar Reflectance: roof Cap Sheet shall have a minimum SRI of 90.

2.3. PERFORMANCE/DESIGN REQUIREMENTS – FIRE PROTECTION

2.3.1. At the end of each *Working Day*, use a heat detector gun or equipment as recommended by membrane manufacturer to spot smouldering or concealed fire. Schedule the Work to ensure workers are still on location at least 2 hours after torch application.

2.3.2. Never apply the torch directly to any wood surfaces. Conform with fire safety recommendations of the manufacturer and the CRCA.

2.3.3. Throughout roofing installation, maintain the Place of the Work in a clean condition and have one approved ABC fire extinguisher within 6 m of each roofing torch. Torches must never be placed near combustible or flammable Products.

2.4. ROOFING MATERIALS

2.4.1. Roofing Membrane and Flashing Sheets

2.4.1.1. Roof Membrane (Modified Bitumen – Cap Sheet):
- .1 Modified bituminous membranes, white granulated top and thermofusible bottom surfaces, 250gm/sq.m., non-woven polyester composite reinforced, conforming to CGSB 37.56-M and ASTM D-6162
- .2 Thickness: 4mm

2.4.1.2. Roof Membrane (Modified Bitumen – Base Sheet):
- .1 Modified Bituminous membranes, thermo-fusible top & bottom surfaces, 180gm/sq.m., non-woven polyester reinforced, conforming to CAN/CGSB-37.56.
- .2 Thickness: 3mm

2.4.1.3. Flashing Membrane (Modified Bitumen – Cap Sheet):
- .1 Modified bituminous membranes, white granulated top and thermofusible bottom surfaces, 250gm/sq.m., non-woven polyester reinforced, conforming to CGSB 37.56-M and ASTM D-6162

2.4.1.4. Flashing Membrane (Modified Bitumen – Base Sheet):
- .1 Modified Bituminous membranes, thermo-fusible top & self-adhering bottom surfaces, 180gm/sq.m., non-woven polyester reinforced, conforming to CAN/CGSB-37.56.

2.4.1.5. Auxiliary Roofing Membrane Materials

.1 General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing system.
.2 Mastic sealant: Polyisobutylene, plain or modified bitumen, non-hardening, non- migrating, non-skinning, and non-drying.
.3 Metal flashing sheet: Metal flashing sheet is specified in Section 07 62 00.
.4 Miscellaneous accessories: Provide miscellaneous accessories recommended by roofing manufacturer.
.5 Aggregate surfacing: gravel with no foreign material, ASTM D1863/D1863M- 05(2011) e1, water washed, dry, free of dirt and dust, hard, dry, clean, and graded in sizes from 9 mm to 12 mm.

2.4.2. Roof Insulation
2.4.2.1. General:
.1 Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.
2.4.2.2. Insulation (Top Layer):
.1 High density, bitumen-coated stone wool insulation board conforming to ASTM C726
(A) Basis of design: Rock Wool TopRock DD Plus
2.4.2.3. Tapered Insulation:
.1 Fully tapered polyisocyanurate insulation to provide a slope of as noted in the Contract Documents per design.
.2 Crickets are to be used at all openings and/or mechanical curbs. Flat areas around the drains are not to exceed 50ft2. Meeting and exceeding the requirements of CAN/CSA-A247-M86 and CAN/ULC-S706.
2.4.2.4. Insulation (Bottom Layer):
.1 Polyisocyanurate insulation
.2 Type: closed cell polyisocyanurate foam roof board insulation with inorganic coated glass facer, meeting the requirements of CAN/ULC S704, Type 2 Class 3 materials and ASTM C1289, Type II, Class 2, Grade 2.
.3 Board size:
(A) 1220 mm x 1220 mm (4 ft x 4 ft).
2.4.2.5. Insulation Sump:
.1 Polyisocyanurate, pre-manufactured, one-piece drain sump. Meeting the requirements of CAN/ULC S704.
.2 Drain sumps to be 2440mm x 2440mm (8’x8’)

2.4.3. Vapour Retarder:
2.4.3.1. Self-adhesive bottom side, and tri-laminated woven polyethylene facer & SBS modified bitumen. Underside covered with silicone release film.

2.4.4. Primer (Vapour Retarder):
2.4.4.1. As recommended by material manufacturer.

2.4.5. Gypsum Fasteners:
2.4.5.1. Corrosion resistant plates and fasteners as required and approved by the insulation manufacturer.

2.4.6. Substrate Boards
2.4.6.1. Coverboards / Protection Board
.1 Glass/Mineral Fiber Board:
(A) Asphalt treated and coated fiberboard to CAN/ULC S706-02,
.2 Thickness: 12.7 mm (1/2").
.3 Acceptable Products:
(A) DensDeck Prime Roof Guard
(B) or approved alternate
2.4.6.2. Gypsum Boards:

.1 ASTM C1177/C1177M-08, glass-mat, water-resistant gypsum substrate, factory primed.
.2 Thickness:
(A) 12.7 mm (1/2").
.3 Acceptable Products:
(A) 1/2" Gypsum board 4'x8'. DensDeck Prime/EONIC by Georgia Pacific or approved alternate

2.4.7. Self-Adhering Membrane (Perimeter Parapets):
2.4.7.1. Self-adhering, self-sealing, composite membrane consisting of a high softening point with SBS rubberized asphalt compound.
2.4.8. Self-Adhering Membrane Adhesive (Perimeter Parapets):
2.4.8.1. Rubber based adhesive for self adhering membranes.
2.4.9. Asphalt Materials
2.4.9.1. Asphalt primer: CGSB 37-GP-9Ma-1983.
2.4.9.2. Roofing asphalt: CAN/CSA A123.4-04, Type 2 or Type 3.

2.5. ACCESSORIES

2.5.1. General:
2.5.1.1. Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with roofing assembly.
2.5.2. Fasteners:
2.5.2.1. Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate and acceptable to roofing manufacturer.
2.5.3. Insulation adhesive:
2.5.3.1. Modified asphaltic insulation adhesive: Insulation manufacturer's recommended modified asphaltic, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.
2.5.4. Wood Blocking, Plywood Sheathing:
2.5.4.1. Construction grade; free from warping and visible decay; pressure-treated spruce, to CAN/CSA O80 SERIES-08.
2.5.5. Cant Strip:
2.5.5.1. Insulation cant strips; perlite: ASTM C728-13, perlite insulation board, cut to *Provide* 45 degree transition from horizontal to vertical surfaces
2.5.5.2. Cant Strip Adhesive:
.1 solvent free, fastener free, insulation attachment; Fas-n-Free Adhesive by Tremco or approved alternate
2.5.6. Metal Flashing:
2.5.6.1. 26 gauge pre-painted galvanized; Series 8000 baked enamel finish; colour to match be confirmed by the Owner, to ASTM A653/A653M-10. 24-gauge metal for all cleats and hook strips.
2.5.7. Pitch Pan:
2.5.7.1. Pre-manufactured type; 16 oz. copper, fully soldered, minimum 152.4 mm (6") high above finished roof level, complete with copper caps and sealant.
2.5.8. Pitch Pan Sealant:
2.5.8.1. M-1 Structural sealant and 1-part pourable sealer by ChemLink or Joint & Termination Sealant #9600 and Semi-Self Leveling Sealer #4500 by Lucas or approved alternate.
2.5.9. Sealant:
2.5.9.1. single component; moisture cure; polyurethane sealant conforming to ASTM-C920.
2.5.10. Fasteners:
2.5.10.1. 25 mm square or round head, ring shanked galvanized or non-ferrous type, length as required to suit application.

2.5.11. Drains:
2.5.11.1. boxed copper retro drain with flange, with dome and seals by Platinum Technologies Inc.
2.5.12. Control Flow Mechanism:
2.5.12.1. By Platinum Technologies Inc.
2.5.13. Vent Stack:
2.5.13.1. insulated aluminum vent stack with factory applied polyurethane foam insulation and vent stack cap. By Platinum Technologies Inc.
2.5.14. Tall Cones:
2.5.14.1. all sizes (1.5” – 12”): By Platinum Technologies Inc.
2.5.15. Gooseneck Flashing: 30" Stainless Steel Gooseneck 1.9" I.D. and Spun Aluminum Base
2.5.16. Termination Bar:
2.5.16.1. 10’ Alum Term Bar – Item NO. – Term-10 (#90354) By Platinum Technologies Inc.
2.5.17. Gas Line Supports:
2.5.17.1. Plastic gas line support with prefabricated insulation cushion.
2.5.18. Foam Gasket:
2.5.18.1. EMSEAL MST Multi-Use Sealant Tape or EMSEAL UST Sealant Tape.
2.5.19. NOTE: The contractor must supply all primers, mastics, and membranes from a single source Manufacturer. No alternates will be accepted without written approval from the Consultant.

2.6. EXPANSION JOINTS

2.6.1. Description:
2.6.1.1. Manufactured from a proprietary copolymer with internal polyester reinforcement, monolithic seam vulcanization.
2.6.1.2. Movement and fabrication: Tri-directional movement capability, joint waterproofing system shall be factory fabricated in one piece for the entire contiguous expansion joint or where length of joint exceeds manufacturer’s shipping and handling guidelines shall be lapped and vulcanized by manufacturer’s mechanics on site, repair of damaged materials shall be performed by manufacturer’s mechanics.
2.6.1.3. Compatible with adhesives and membranes associated with expansion joint construction in accordance with manufacturer’s installation instructions.
2.6.1.4. Warranted by manufacturer to cover full warranty duration specified in this Section.
2.6.1.5. Hydrostatic pressure limit: Working pressure in column of water shall perform under static limit not to exceed 10 m (33 ft).
2.6.2. Acceptable Products; to suit type of roofing assembly and movement design requirements:
2.6.2.1. Situra Inc. ‘RedLINE’.
2.6.2.2. Situra Inc. ‘FlamLINE’.
2.6.2.3. Or equivalent.

3 EXECUTION

3.1. EXAMINATION

3.1.1. Examine substrates, areas, and conditions, with roofing installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
3.1.1.1. Verify that roof openings and penetrations are in place and curbs are set and braced.
3.1.1.2. Verify that blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

3.1.1.3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 05 31 23.
3.1.1.4. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2. PREPARATION

3.2.1. Supply and install perimeter safety warning as prescribed by the Ontario Occupational Health and Safety Code and all local codes before starting any other work.
3.2.2. The ground areas around the building are to be protected as much as possible. All disposal boxes must be placed on planks. The interior areas of the building, where the roofing contractor has access, are to be protected.
3.2.3. It is the responsibility of the roofing contractor to contact the Owner to mark the exact location of buried utilities.
3.2.4. Inspect the structural deck and report any deficiencies to the Owner's Representative. Do not apply any new roofing over deficiencies, other than temporary waterproofing, until all deficiencies have been corrected.
3.2.5. Do not install new roofing than can be completely waterproofed in one day.
3.2.6. The roofing contractor shall be responsible for all roof leaks at the building once they begin to set-up and load materials onto the roof at the beginning of the project.
3.2.7. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing manufacturer's written instructions. Remove sharp projections.

3.3. METHOD OF INSTALLATION

3.3.1. Prepare surfaces and complete waterproofing work in conformance with roofing manufacturer's printed installation instructions.
3.3.2. Install roofing elements on clean and dry surfaces, in conformance with manufacturer's instructions and recommendations.
3.3.3. Roofing work must be completed in a continuous fashion as surfaces are readied and weather conditions permit.
3.3.4. Seal seams that are not covered by a cap sheet membrane in the same Day. Do not install cap sheet when moisture is present at/in the base sheet seams.
3.3.5. Whenever membranes are torch-applied, a continuous and even bead of molten bitumen must be visible as the membrane is unrolled and torched.
3.3.6. Lay roofing membrane free from wrinkles, air pockets, fishmouths, tears, and prominent lap joints. Full bond cap sheet to base sheet. Seams shall be lapped and fully bonded.
3.3.7. Prior to installation of base sheet and cap sheet, allow sheet to relax after unrolling. Relax time to be as recommended by manufacturer based on concurrent ambient temperature.
3.3.8. Extend roofing to outer edges of roof and up vertical surfaces at least 200 mm (8") above horizontal roofing, and full height beneath counter flashing and top of curb flashing.
3.3.9. Complete roofing up to line of termination for each *Day*'s work.

3.4. GYPSUM BOARDS

3.4.1. Ensure gypsum boards are mechanically fastened in place over the steel deck. All gypsum board edges and ends are to be butted tight. Gypsum boards are to be staggered.
3.4.2. Ensure that all gypsum boards are fully supported. Mechanically fasten the gypsum boards with 10 fasteners per 4'x8' board within the field, 16 fasteners within 12' of perimeters and 32 fasteners within 12' of each corner. It is the roofing contractor's responsibility to confirm the location of any conduits, on the underside of the metal deck, prior to and during the fastening of gypsum boards.
3.4.3. Ensure substrate board is immediately protected with membrane.

3.4.4. Tape all seams in substrate board prior to the installation of the air / vapour barrier. Use 150 mm (6") wide strips of self adhering base sheet to prevent leakage into the building.

3.4.5. Should any conduits be damaged, it will be the roofing contractor's responsibility to repair them at their own costs.

3.5. VAPOUR RETARDER

3.5.1. Verify all substrates to receive the vapour retarder primer are clean, dry and free from any contaminants that could affect adhesion of the primer and/or vapour retarder.

3.5.2. All substrates to receive vapour retarder are to be primed. The primer is to be applied by brush, roller or sprayer. Allow primer to be dry to touch prior to applying the vapour retarder.

3.5.3. Over the clean, dry and primed substrates (metal deck, wood blocking, etc.) apply 1-ply of self adhered vapour retarder membrane fully adhered to the gypsum boards.

3.5.4. Roll out the vapour retarder and allow it to relax prior to application. Cut lengths to fit the application. Set in place and pull back the release film 152.4mm to 304.8mm (6" to 12") and place it on the prepared surface. Remove the release film from the remainder of the sheet and apply pressure to ensure proper contact with prepared surface.

3.5.5. Overlaps:

3.5.5.1. side laps to be 76.2mm (3") and end laps to be 152.4mm (6")

3.5.6. Commence the vapour retarder application at the lowest edge of drain. Proceed up the slope form the lowest point on the roof.

3.5.7. At terminations and penetrations, the vapour retarder is to be extended up the vertical surface, above the insulation a minimum of 50.8mm (2"). Where cant strips are to be installed the vapour retarder is to be extended 50.8mm (2") above the top of the cant strip.

3.6. INSULATION (BOTTOM LAYERS)

3.6.1. Ensure vapour retarder is clean, dry, continuous, and ready for insulation application.

3.6.2. Install 3-layers of 3.0" polyisocyanurate insulation in adhesive. Insulation is to be placed with all joints staggered a minimum of 609.6mm (2') per row.

3.6.3. Verify all substrates to receive insulation are clean, dry and free from contaminants that could affect adhesion of the foamable adhesive and installation of the board.

3.6.4. Apply foamable adhesive directly to the vapour retarder or insulation in a ribbon pattern. The ribbons are to be between 12.7mm to 19mm (1/2" to ¾") wide ribbons. The ribbons are to be spaced 6" continuously across each board within the field, 4" continuously across each board within 12' from a perimeter and 4" continuously across each board within 10' of a corner.

3.6.5. As foamable adhesive is applied, embed the insulation immediately. Do not allow the adhesive to skin over.

3.6.6. Keep insulation a minimum of 75mm (3") from heat emitting devices and a minimum of 52mm (2") from sidewalls of CAN/ULC S604 Type "A" chimneys and CN/CGA 149.2 Type B & L vents, (commonly called B-Vents or Hot Stacks).

3.6.7. Ensure that all insulation boards are fully supported, joints staggered, and all edges are butted tight with no gaps between boards.

3.6.8. Do not apply more insulation than can be covered with membranes in the same Workday.

3.6.9. Install sloped prefabricated insulation sumps 2438.4mm x 2438.4mm (8'x8') around all roof drains. Adjust the insulation thickness to accommodate the sumps.

3.6.10. No damaged or wet insulation will be accepted. All rejected materials will be marked and must be stored on site. They are not to be removed until the Project is completed.

3.7. TAPERED INSULATION

3.7.1. Verify all substrates to receive tapered insulation boards are clean, dry and free from contaminants that could affect adhesion of the and installation of the board.

3.7.2. Install tapered insulation over the polyisocyanurate insulation in adhesive, as designed.

3.7.3. Verify all substrates to receive insulation are clean, dry and free from contaminants that could affect adhesion of the foamable adhesive and installation of the board.
3.7.4. Apply foamable adhesive directly to the vapour retarder or insulation in a ribbon pattern. The ribbons are to be between 12.7mm to 19mm (1/2" to ¾") wide ribbons. The ribbons are to be spaced 6" continuously across each board within the field, 4" continuously across each board within 12' from a perimeter and 4" continuously across each board within 10' of a corner.
3.7.5. As foamable adhesive is applied, embed the insulation immediately. Do not allow the adhesive to skin over.
3.7.6. Tapered insulation boards are to be butted tight to the next board, outside perimeters, curbs and walls.
3.7.7. Ensure that all boards are fully supported, joints staggered, and all edge are butted tight with no gaps between boards.
3.7.8. No damaged or wet boards will be accepted. All rejected materials will be marked and must be stored on site. They are not to be removed until the project is completed.

3.8. INSULATION (TOP LAYER)

3.8.1. Ensure tapered insulation is clean, dry, continuous, and ready for insulation application.
3.8.2. Install 1-layers of 3.0" stone wool insulation in adhesive. Insulation is to be placed with all joints staggered a minimum of 609.6mm (2') per row.
3.8.3. Verify all substrates to receive insulation are clean, dry and free from contaminants that could affect adhesion of the foamable adhesive and installation of the board.
3.8.4. Apply foamable adhesive directly to the tapered insulation in a ribbon pattern. The ribbons are to be between 12.7mm to 19mm (1/2" to ¾") wide ribbons. The ribbons are to be spaced 6" continuously across each board within the field, 4" continuously across each board within 12' from a perimeter and 4" continuously across each board within 10' of a corner.
3.8.5. As foamable adhesive is applied, embed the insulation immediately. Do not allow the adhesive to skin over.
3.8.6. Keep insulation a minimum of 75mm (3") from heat emitting devices and a minimum of 52mm (2") from sidewalls of CAN/ULC S604 Type "A" chimneys and CN/CGA 149.2 Type B & L vents, (commonly called B-Vents or Hot Stacks).
3.8.7. Ensure that all insulation boards are fully supported, joints staggered, and all edges are butted tight with no gaps between boards.
3.8.8. Do not apply more insulation than can be covered with membranes in the same Workday.
3.8.9. No damaged or wet insulation will be accepted. All rejected materials will be marked and must be stored on site. They are not to be removed until the Project is completed.

3.9. MEMBRANE APPLICATION – BASE SHEET

3.9.1. Unroll the modified bituminous base sheet membranes and allow them to relax, as per manufacturer's written instructions. Ensure the modified bituminous base membranes are clean and dry.
3.9.2. Over the overlay boards, apply 1-ply base sheet membrane fully torched in place
3.9.3. Ensure that approximately 6.35mm (1/4") bleed out is achieved at all laps.
3.9.4. Ensure the roofing substrates and/or construction elements pose no fire hazards during the use of torch equipment. Do not torch on to wood substrates or at locations that could project flames onto combustible materials.
3.9.5. Ensure that the cap sheet membranes lie flat, with no wrinkles, fishmouths, or blisters, and are fully bonded.

3.10. MEMBRANE APPLICATION – CAP SHEET

3.10.1. Unroll the granulated modified bituminous cap sheet membranes and allow them to relax, as per manufacturer's written instructions. Ensure the modified bituminous base membranes are clean and dry.

3.10.2. Offset all cap sheet membranes 457.2mm (18”) from the base sheet membranes.
3.10.3. Beginning at the drains, perpendicular to the slope and shingled to shed water, install the modified bituminous cap sheet torched in place to the base sheet. The modified bituminous cap sheet field membranes are to be terminated at the top of the cant strip.
3.10.4. Install the modified bituminous cap sheet membrane in parallel courses with the end laps staggered a minimum of 914.4mm (36”) from each other and a minimum of 914.4mm (36”) from the base sheet membranes. Side laps are to be 76.2mm (3”) and end laps are to be 152.4mm (6”). All corners, at end laps are to be cut as per membrane manufacturer’s requirements.
3.10.5. Ensure that approximately 6.35mm (1/4”) bleed out is achieved at all laps.
3.10.6. Ensure the roofing substrates and/or construction elements pose no fire hazards during the use of torch equipment. Do not torch on to wood substrates or at locations that could project flames onto combustible materials.
3.10.7. Ensure that the cap sheet membranes lie flat, with no wrinkles, fishmouths, or blisters, and are fully bonded.

3.11. ASPHALT APPLICATION

3.11.1. Asphalt Heating:
3.11.1.1. Heat roofing asphalt and apply within plus or minus 14°C (25°F) of equiviscous temperature unless otherwise required by roofing system manufacturer. Do not raise roofing asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed roofing asphalt manufacturer's recommended temperature limits during roofing asphalt heating. Do not heat roofing asphalt within 14°C (25°F) of flash point. Discard roofing asphalt maintained at a temperature exceeding finished blowing temperature for more than 4 hours.
3.11.2. Apply asphalt at EVT and do not spread more than 1830 mm (6 ft) of hot asphalt in front of each roll and reduce distance accordingly during cold weather. Ensure hot asphalt in kettle is in constant use and circulation to avoid distillation.
3.11.3. Apply asphalt at minimum rate of 1.2 kg/m² (25 lb/100 ft²) and as specified herein for aggregate surfacing flood coat.

3.12. NIGHT SEAL

3.12.1. Roofer is responsible to have all roofs closed-in and in a watertight condition at the end of each production day.
3.12.2. It is the Foreman’s responsibility to thoroughly check this detail at the end of each day before leaving the roof.

3.13. MEMBRANE FLASHINGS

3.13.1. Install flashings, including laps, splices, joints, bonding, adhesion and attachment as required and in accordance with manufacturer’s written instructions and details.
3.13.2. Install flashings to ensure the roof is watertight at the end of each working day.
3.13.3. Membrane flashings will be comprised of 1-ply modified bituminous base sheet membrane in self-adhered in place and 1-ply granulated modified bituminous cap sheet membrane torched in place.
3.13.4. The contractor is responsible to disconnect and reconnect any electrical conduit, metal railings, ladders, cabling, and/or gas lines which affect the roof installation.
3.13.5. Flashing membranes are to be terminated 304.8mm (12”) above the base of vertical surfaces at all locations.
3.13.6. PERIMETER (OUTSIDE PERIMETERS):
3.13.6.1. After the application of the modified bituminous base sheet field membranes, apply 1- ply modified bituminous base sheet flashing membranes self-adhered in place, extending onto the field of the roof a minimum of 101.6mm (4”).

3.13.6.2. Once the modified bituminous cap sheet field membranes have been installed, 1-ply modified bituminous granulated cap sheet flashing membranes are to be fully torched in place, extending onto the field of the roof a minimum of 101.6.35mm (4”). Cap sheet flashing membrane to be installed in 1-meter widths with 76.2mm (3”) side laps. Cap sheet flashing side laps to be staggered 101.6.35mm (4”) from the cap sheet field membrane overlaps.

3.13.6.3. Continuously seal the top edge of the granulated modified bituminous cap sheet membrane flashings with elastomeric sealant.

3.13.6.4. At high wall locations, a termination bar is to be installed through the flashing membranes, approximately 12.7mm (0.5”) below the top of the membrane. It is to be secured 152.4mm (6”) on centre.

3.13.6.5. Fully cover the membrane flashings with new pre-painted metal flashings.

3.13.7. MASONRY WALL (INSIDE PERIMETER):

3.13.7.1. Flashing membranes at masonry walls are to be terminated 304.8mm at the top of the masonry walls. If weep holes are present in the masonry, flashing membranes are to be kept one brick course below the weep holes.

3.13.7.2. Apply one coat of quick dry primer on all surfaces to receive modified bituminous membranes at a rate of 150 sq.ft. per gallon. Ensure that all surfaces are clean and dry before primer application.

3.13.7.3. Unroll the modified bituminous membrane flashings and allow them to relax, as per manufacturer’s written instructions. Ensure existing modified bituminous cap sheet membranes are clean and dry.

3.13.7.4. After the application of the base sheet field membranes, install 1-ply modified bituminous base sheet membrane flashings adhered in place extending up the wall and down onto the field of the roof.

3.13.7.5. After the application of the base sheet flashings and cap sheet field membranes, install 1-ply modified bituminous cap sheet membrane flashings torched in place extending up the wall and down onto the field of the roof. Ensure the laps of the new ply does not coincide with the laps of the existing ply.

3.13.7.6. Termination bars are to be installed through the flashing membranes, approximately 12.7mm (1/2”) below the top of the membranes. It is to be secured 152.4mm (6”) on centre.

3.13.7.7. Fully cover the membrane flashings with new pre-painted metal flashings and apply a continuous bead of sealant between the masonry and new metal flashings.

3.13.8. METAL WALL:

3.13.8.1. Where peel & stick membrane is found behind the metal siding, it is to be peeled up and protected during the new membrane flashing installation. Once the new membrane flashings have been installed, the peel & stick membrane is to be shingled over the new membrane flashings. If required, cut existing wall panels to accommodate the new roof height. Install new metal drip edge along the base of the metal panels.

3.13.8.2. Unroll the modified bituminous membrane flashings and allow them to relax, as per manufacturer’s written instructions. Ensure existing modified bituminous cap sheet membranes are clean and dry.

3.13.8.3. After the application of the base ply field membranes, install 1-ply modified bituminous base sheet membrane flashings adhered in place extending up the wall and down onto the field of the roof.

3.13.8.4. After the application of the base sheet flashings and cap sheet field membranes, install 1-ply modified bituminous cap sheet membrane flashings torched in place extending up the wall and down onto the field of the roof. Ensure the laps of the new ply does not coincide with the laps of the existing ply.

3.13.8.5. Termination bars are to be installed through the flashing membranes, approximately 12.7mm (1/2") below the top of the membranes. It is to be secured 152.4mm (6") on centre.

3.13.8.6. Continuously seal the top edge of the membrane flashings with elastomeric sealant.

3.13.8.7. Below metal drip edge, install new metal flashings to tie-in the drip closure, as it was existing. Fully cover the membrane flashing with pre-painted metal flashings. Dimensions for the new metal can be taken from the existing flashings.

3.13.9. EQUIPMENT CURB FLASHINGS:

3.13.9.1. Ensure all unit curbs are a minimum of 304.8mm (12") above the finished roof level.

3.13.9.2. If required, temporarily disconnect each HVAC/fan unit, completely lift the unit off the curb and set it on the roof while flashing the curb. The curb is to be set on plywood, protecting the roof membrane. Once the curb has been flashed, the unit is to be lifted off the roof and set back on the curb. Then once the unit has been reinstalled and reconnected it is to be tested to ensure it is working properly. The unit work must be performed only by qualified HVAC contractors. Roofing contractor is responsible for these costs in his bid price.

3.13.9.3. Apply one coat of quick dry asphalt primer on all surfaces to receive asphalt at a rate of 150 sq. ft. per gal. Ensure that all surfaces are clean and dry before primer application.

3.13.9.4. After the application of the modified bituminous base sheet field membrane, apply 1 ply of modified bituminous base sheet flashing membrane self-adhererd in place, extending over top of the curb, and down onto the field of the roof a minimum of 101.6.35mm (4").

3.13.9.5. After the application of the modified bituminous cap sheet field membrane, apply 1 ply of modified bituminous cap sheet flashing membrane fully torched in place, extending a minimum of 101.6.35mm (4") beyond the 1st ply onto the field of the roof and extending over top of the curb. Ensure that the laps of the 2nd ply do not coincide with the laps of the 1st ply.

3.13.9.6. The cap sheet flashing membrane is to be nailed every 150.8mm (6") o.c. at the top of the curb.

3.13.9.7. Fully cover the membrane flashings with new pre-painted 26-gauge metal.

3.13.9.8. Install new foam gasket over top of the metal flashings prior to reinstalling mechanical equipment. Ensure foam gasket is continuous, creating a permanent seal between the mechanical equipment/skylights and metal flashings.

3.13.10. EQUIPMENT SLEEPERS/SEPARATION CURB:

3.13.10.1. Ensure all sleepers/separation curbs a minimum of 304mm (12") above the finished roof level. Wood blocking and cant strip to be pressure treated. Ensure positive drainage between sleepers and under the mechanical equipment.

3.13.10.2. If required temporarily disconnect each HVAC/fan unit, completely lift the unit off the sleepers and set it on the roof while flashing the sleepers. The HVAC/fan unit is to be set on plywood, protecting the roof membrane. Once the sleepers have been flashed, new metal is to be installed, the unit is to be lifted off the roof and set back on the curb. Once the unit has been reinstalled and reconnected, it is to be tested to ensure it is working properly. The unit work must be performed only by qualified HVAC contractors. The roofing contractor is responsible for these costs in his/her bid price.

3.13.10.3. Apply one coat of quick dry primer on all surfaces to receive modified bituminous membranes at a rate of 150 sq.ft. per gallon. Ensure that all surfaces are clean and dry before primer application.

3.13.10.4. After the application of the 1-ply base sheet field membranes, apply 1-ply of modified base sheet membrane flashing self-adhered in place extending on the roof surface a minimum of 101.6mm (4") on each side of the sleeper/separation curb.

3.13.10.5. After the installation of the 1-ply cap sheet field membrane, apply 1 ply granulated modified bituminous cap sheet torched in place extending a minimum of 101.6mm (4") beyond the base sheet membrane onto the roof surface on each side of the sleeper/separation curb.

3.13.10.6. The cap sheet flashings are to be extended a minimum of 203.2mm (8") beyond the toe of the cant strip onto the field of the roof, on both sides of the sleepers.

3.13.10.7. Fully cover the membrane flashings with new pre-painted metal.

3.13.11. PITCH PANS:

3.13.11.1. Pitch pans must be a minimum of 152.4mm (6") high with a 102mm (4") primed roof flange. The sides of the pan will be a minimum of 52 mm (2") from the projection. Where possible use a gooseneck instead of a pitch pan. Non-flexible pipes will require a pitch pan. Gooseneck flashing to be used with flexible electrical feed lines.

3.13.11.2. Over the new 2-ply roofing membranes, embed the flange of the pitch pan/gooseneck in elastomeric sealant.

3.13.11.3. Install one (1) ply of modified bituminous base sheet membrane self-adhered in place over the flange and applied tight to the upright and extending a minimum of 204mm (8") beyond the flange.

3.13.11.4. Apply one (1) ply of modified bituminous cap sheet membrane self-adhered in place, extending a minimum of 102mm (4") beyond the ply of modified bituminous base sheet membrane onto the roof surface. Elastomeric sealant is to be applied where the modified bituminous membranes meet the pitch pan along the base.

3.13.11.5. Ensure the penetration and the inside walls of the new pitch pans are clean and free from any dirt or debris before applying any sealant.

3.13.11.6. Apply M1 structural sealant around the inside walls and base of the pitch pan. Apply M1 sealant around the roof projection.

3.13.11.7. Fill all pitch pans using 1-part pourable sealant.

3.13.11.8. Install new pitch pans as required at mechanical units and at other roof penetrations/projections. No conduits, satellite cables, or gas lines are to be carried through the curb flashings. The roofing Contractor is responsible for the disconnection and reconnection, where required using a Mechanical / Electrical Sub-Contractor.

3.13.12. VENTS/PLUMBING STACKS:

3.13.12.1. All plumbing vent (soil stack) pipes are to be extended to suit, so that the inside portion of the cap is within the plumbing vent pipe. Stacks to be a minimum of 304.8mm (12") above the finished roof surface. All stacks are to be pre-insulated as listed in the Materials section. Mechanically fasten cap with Two (2) self-tapping, stainless steel metal screws.

3.13.12.2. Mechanically fasten a metal cone flashing down to the metal deck. The cone must extend up past the finished roof level a minimum of 52mm (2"). Install the roofing vapour retarder so that it extends above the insulation surface and onto it 152.4mm (6"). The insulation should butt up against the metal cone.

3.13.12.3. Over the new two (2) ply roofing membranes, embed the flange of the soil stack in elastomeric sealant.

3.13.12.4. Install one (1) ply of modified bituminous base sheet membrane self-adhered in place over the flange applied tight to the upright and extending a minimum of 204mm (8") beyond the flange.

3.13.12.5. Apply one (1) ply of granulated modified bituminous cap sheet membrane self-adhered in place extending a minimum of 102mm (4") beyond the ply of modified bituminous base sheet membrane onto the roof surface. Elastomeric sealant is to be applied where the modified bituminous membranes meet the stack flashings along the base.

3.13.12.6. Stack is to be insulated. Mechanically fasten cap with TWO (2) self-tapping, stainless steel metal screws.

3.13.13. FURNACE STACKS:

3.13.13.1. Prime all flanges, paint all furnace stacks using Double "D" aluminum paint.

3.13.13.2. Mechanically fasten a metal tall cone flashing down to the metal deck. The tall cone must extend up past the finished roof level a minimum of 52mm (2"). Install the roofing vapour retarder so that is extends above the insulation surface and onto it 152.4mm (6"). The insulation should butt up against the metal cone.

3.13.13.3. Over the new 2-ply roofing membranes, embed the flange of the tall cone flashing in elastomeric sealant.

3.13.13.4. Install one (1) ply of modified bituminous base sheet membrane self-adhered in place over the flange applied tight to the upright and extending a minimum of 204mm (8") beyond the flange.

3.13.13.5. Apply one (1) ply granulated modified bituminous cap sheet membrane extending a minimum of 102mm (4") beyond the ply of modified bituminous base sheet membrane onto the roof surface. Elastomeric sealant is to be applied where the modified bituminous membranes meet the tall cone stack flashings along the base.

3.13.13.6. Hand insulate with portion of batt insulation after the tall cone is installed over the mechanical pipe.

3.13.13.7. Replace any damaged rain collars and re-caulk all collars.

3.13.14. OVERFLOW SCUPPERS:

3.13.14.1. Install new fully soldered stainless-steel scupper drain. The new scupper drains are to have a 152.4mm x 200mm tail piece to accept new 24-gauge pre-painted metal, open faced downpipes.

3.13.14.2. Apply one coat of quick dry primer on all surfaces to receive asphalt and membranes at a rate of 150 sq. ft. per gallon. Ensure that all surfaces are clean and dry before primer application.

3.13.14.3. The field membranes are to be extended directly into the scupper opening fully covering the wood blocking.

3.13.14.4. The new scupper drain is to be primed to accept asphalt and membranes. New scupper is to be set into a full bed of mastic.

3.13.14.5. Install 1-ply modified bituminous base sheet membrane flashing self-adhered in place over the flange. The base sheet flashings are to extend a minimum of 152.4mm(6") beyond the flange of the scupper onto the field of the roof in all directions and be carried into the scupper. The granulated modified bituminous cap sheet field membranes are to be carried into the scupper over the modified bituminous base sheet flashings.

3.13.14.6. .6 New metal flashings are to be installed fully covering the membrane flashings and picture framing the scupper along the outside perimeter of the roof.

3.13.15. EXPANSION JOINT:

3.13.15.1. Build up expansion joint with wood blocking in accordance with Section 07 95 13 Expansion Joint Cover Assemblies, and the Detail Drawings.

3.13.15.2. Mechanically fasten 26-gauge metal closure, 609.6mm (2') on centre, over the metal deck as per detail. Metal closure is to span two flutes on each side of the joint.

3.13.15.3. All surfaces to receive self-adhering membrane and primer are to be clean and dry. Prime all surfaces to receive self-adhering membrane. Install self-adhering membrane, fully bonded, over metal closure and onto existing membrane 76.2mm (3”) on both side of expansion joint.

3.13.15.4. Roll out the vapour retarder and allow it to relax prior to application. Cut lengths to fit application. Set in place and pull back the release film 152.4mm to 304.8mm (6” to 12”) and place it on the prepared surface. Remove the release film from the remainder of the sheet and apply pressure to ensure proper contact with prepared substrate. Ensure the membranes lie flat, with no wrinkles, fishmouths, or blisters and is well bonded.

3.13.15.5. Overlaps: side and end laps to be 76.2mm (3”). Ensure the vapour retarder is properly supported. All end laps are to be staggered.

3.13.15.6. Construct wood blocking as per details. Leave a 76.2mm (3”) gap, centered over the metal closure. Offset blocking layers 304.8mm (12”). Assemble wood blocking using two staggered rows of nailing. Space nails in any row a maximum of 609.6mm (24”) on center. Wood blocking is to be continuous and butted.

3.13.15.7. Fill the 76.2mm (3”) gap with stone wool batt insulation. The gap is to be filled from the top of the metal closure to the top of the wood blocking. Insulation is to be continuous and butted tight.

3.13.15.8. Mechanically fasten 26-gauge metal closure, 609.6mm (2’) on center, over the top of the wood blocking as per detail. Metal closure is to span the 76.2mm (3”) gap and the wood blocking. metal closure is to be continuous across the joint.

3.13.16. BASE SHEET & CAP SHEET FLASHINGS:

3.13.16.1. Apply one coat of quick dry primer on all surfaces to receive modified bituminous membranes at a rate of 150 sq.ft. per gallon. Ensure that all surfaces are clean and dry before primer application.

3.13.16.2. Unroll the modified bituminous membranes and allow them to relax, as per manufacturer’s written instructions.

3.13.16.3. Side laps are to be 76.2mm (3”) and end laps are to be 152.4mm (6”). End laps are to be staggered a minimum of 304.8mm (12”).

3.13.16.4. Base sheet flashing membranes are to be installed in 1-meter widths with 76.2mm (3”) side laps. The base sheet flashings are to be extended a minimum of 101.6mm (4”) beyond the edge of the self-adhering membrane onto the field of the roof. The base sheet flashing membranes are to be self-adhered in place.

3.13.16.5. Cap sheet flashing membranes are to be installed in 1-meter widths with 76.2mm (3”) sides laps and are to be staggered from the base sheet flashing membranes. The cap sheet flashing is to be self-adhered in place and extended 101.6mm (4”) beyond the edge of the base sheet flashing membrane onto the field of the roof.

3.13.16.6. Fully cover the expansion joint with new pre-painted metal flashings.

3.13.17. ROOF DRAINS:

3.13.17.1. Plug the drains temporarily while working around them.

3.13.17.2. Sump the area around the new drains 12.7mm (0.5”) deep and cantered equally over the drain in all directions. 2440mm x 2440mm (8’x8’) drain sumps are to be installed.

3.13.17.3. Over the new two (2) ply roofing membranes, install the new drain in a full bed of elastomeric sealant. Check the drainpipes on the underside of the deck to ensure the installation of the proper length of down-pipe. Ensure that the pipe does not impede the flow of water. Plug the drains temporarily while working around them.

3.13.17.4. Apply one (1) coat of primer to the flange of the drain.

3.13.17.5. Install one (1) ply of modified bituminous base sheet membrane extending a minimum of 609.6.35mm (24") from the centre of the drain.

3.13.17.6. Apply one (1) ply of granulated modified bituminous cap sheet extending a minimum of 102mm (4") beyond the ply of modified bituminous base sheet membrane onto the surface of the roof.

3.13.17.7. The new metal strainer and control flow mechanism are to be installed immediately following the installation of the flashing membranes. Therefore, if the roof has ten (10) drains and only two (2) drains have been flashed (that particular day), those two (2) drains are to have the metal strainer and the control flow mechanism installed at the end of that workday.

3.14. SCUPPERS/MECHANICAL CONDENSATE PIPE/ROOF ACCESS

3.14.1. Install new concrete patio pavers on 25.4mm (1") extruded polystyrene insulation. The extruded polystyrene insulation is to be cut 50.8mm (2") smaller (all the way around) than the concrete patio pavers. Therefore, if the concrete paver is 609.6mm x 609.6mm (2'x2') the extruded polystyrene insulation should be 508mm x 508mm (1'8"x 1'8").

3.14.2. Install four concrete patio pavers pm 25.4mm (1") extruded polystyrene insulation, in a square pattern at roof hatch and all access doors.

3.15. FIELD QUALITY CONTROL

3.15.1. Conduct quality control in accordance with Section 01 45 00 and as follows:

3.15.1.1. Inspection and testing:

.1 Prior to installation of cap sheet membrane, base sheet membrane installation shall be reviewed by manufacturer and inspection and testing company, who shall each submit field review reports to the Consultant.

.2 Independent inspection and testing company shall perform:

.1 Inspections and *Provide* inspection reports.

.2 Tests and *Provide* test reports:

.3 Core cuts (if requested).

3.15.2. Manufacturer's field review to be in accordance with Section 01 45 00.

3.16. ADJUSTING AND CLEANING

3.16.1. Remove applicator's equipment and debris as work progresses, and at completion of the work of this Section in accordance with Sections 01 77 00.

3.16.2. Remove bituminous markings from finished surfaces.

3.16.3. Repair or replace defaced or disfigured finishes caused as a result of the work of this Section.

3.17. FINISH

3.17.1. Perform a daily clean up to collect all wrappings, empty containers, and any other debris from the project site.

3.17.2. Upon completion, all debris is to be disposed of in a legally acceptable manner.

3.17.3. Prior to the final inspection, the Contractor is to perform a pre-inspection to review all work and to verify that all flashings have been completed as well as the application of all caulking.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Quality Assurance
.6 1.6. Delivery, Storage, and Handling
.7 2.1. Prefinished Aluminum Flashing
.8 2.2. Prefinished Metal Finishes
.9 2.3. Accessories
.10 2.4. Fabrication
.11 3.1. Flexible Flashing Underlayment Installation
.12 3.2. Roof Flashing Installation
.13 3.3. Installation of Roof Accessories
.14 3.4. Installation Tolerances
.15 3.5. Field Quality Control
.16 3.6. Adjusting and Cleaning
.17 3.7. Protection

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Supply and installation of prefinished metal (steel) flashings.
1.3.1.2. Supply and installation of prefinished metal (aluminum) flashings.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Shop drawings:
1.4.2.1. Submit shop drawings including the following:
(1) Plans, elevations, sections, and attachment details.
(2) Detail fabrication and installation layouts, expansion-joint locations, and key details. Distinguish between shop and field assembled work.
(3) Include identification of material, thickness, weight, and finish for each item and location in the work.
(4) Include details for forming, including profiles, shapes, seams, and dimensions.
(5) Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
(6) Include details of termination points and assemblies.
(7) Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contracting from fixed points.
(8) Include details of roof penetrations flashing.
(9) Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counter flashings as applicable.
(10) Include details of special conditions.
(11) Include details of connections to adjoining work.
1.4.3. Samples:
1.4.3.1. Submit full-size samples of each specified flashing material formed to detailed profile including corner, curb, cap, and parapet flashing, and coping including lock-joints and hold-down clips.

1.4.3.2. Submit 2 - 50 mm x 50 mm (2" x 2") samples of each type of sheet metal material, colour and finish.

1.5. QUALITY ASSURANCE

1.5.1. Qualifications:

1.5.1.1. Installers / applicators / erectors: *Provide* work of this section, executed by competent installers with a minimum of 5 years' experience in application of Products, systems and assemblies specified and with approval of *Product* manufacturers.

(1) *Work* of this section shall be installed by a *Subcontractor* that is a member in good standing of the Canadian Roofing Contractors Association (CRCA).

(2) Work of this section shall be installed by a Subcontractor that is a member in good standing of the Canadian Roofing Contractors Association (CRCA) and Ontario Industrial Roofing Contractors Association (OIRCA), who has been a member for at least 5 years.

(3) Sealant shall be applied by a Subcontractor of recognized standing, having preferably not less than 5 years of proven experience in this type of work, and who has the necessary equipment and skilled mechanics to carry out the work of this section satisfactorily and can substantiate this to satisfaction of the *Consultant*.

1.5.2. Quality standards:

1.5.2.1. Quality of fabrication and installation of sheet metal work shall comply with recommendations published by Sheet Metal and Air Conditioning Contractors National Association.

1.6. DELIVERY, STORAGE, AND HANDLING

1.6.1. Comply with AAMA CW-10 – Care and Handling of Architectural Aluminum from Shop to Site.

1.6.2. Keep materials and equipment free from debris, ice, snow and contaminants. Allow air to circulate around metal components, sheets and break shapes.

1.6.3. Protect holes, and reglets from water and ice during freezing weather.

1.7. WARRANTY

1.7.1. Warrant work of this section in accordance with Section 01 78 36.

2 PRODUCTS

2.1. PREFINIHSED STEEL FLASHING

2.1.1. Sheet steel: Commercial quality to ASTM A653/A653M-13 with Z275 designation zinc
2.1.2. coating.

2.1.2.1. Minimum thickness:

(1) 0.61 mm (0.0239") (24 gauge)

2.2. PREFINISHED ALUMINUM FLASHING

2.2.1. Aluminum flat sheet: Flat aluminum sheet to ASTM B209/B209M-21a, to the following minimum thickness and alloy:

2.2.1.1. Painting quality: 5005H14 to ANSI H35.1/H35.1M-2017.

2.2.1.2. Minimum thickness:

(1) 1.02 mm (0.040").

(A) At parapets: 1.27mm (0.050").

(B) At exterior base details: 3.17 mm (0.125")

2.3. PREFINISHED METAL FINISHES

2.3.1. Provide the following finish to exposed prefinished metal (steel/aluminum as applicable):

2.3.1.1. Type 1; Finish: factory prefinished CSSBI 10000 Series.
(1) 10000 Series (Polyvinylidene Fluoride - PVDF) will not visibly (within 10 metres to the unaided naked eye) crack, chip, or peel (lose adhesion) for thirty-five (35) years from date of application. This does not include minute fracturing that may occur during the normal fabrication process. 10000 Series (Polyvinylidene Fluoride - PVDF) will not chalk in excess of a number eight (8) rating, in accordance with ASTM D4214-07(2015) method D659 at any time for thirty-five (35) years from date of installation (35.5 yrs from application); will not change colour more than five (5.0) Hunter ΔE units as determined by ASTM D2244-15.
(2) Colour to later selection by the *Consultant* from the manufacturer's full range.

2.4. ACCESSORIES

2.4.1. Isolation coating:
2.4.1.1. to CAN/CGSB-1.108, bituminous type.
2.4.2. Sealants:
2.4.2.1. in accordance with Section 07 92 00, colour as selected by the Consultant from the manufacturer's full range.
2.4.2.2. Concealed flashing sealants; hooked-type expansion joints with limited movement: Butyl sealant to ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied.
2.4.3. Cleats:
2.4.3.1. of matching metal to flashing material, continuous, and of greater thickness than flashing material. Offset joints in cleats 305 mm (12”) with joints in perimeter edge metal. Allow a 12.7 mm (1/2") gap between pieces.
2.4.4. Fasteners:
2.4.4.1. Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
2.4.4.2. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head:
(1) Exposed screws: 38 mm (1-1/2") long minimum at 450 mm (18") on centre maximum. Heads matching colour of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM washer under heads of exposed fasteners.
(2) Blind fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
(3) Cleat fasteners: Corrosion-resistant barbed angular ring or screw shank nail; length to achieve approximately 32 mm (1-1/4") penetration into nailer; fasten at 150 mm (6") on centre.
2.4.4.3. Fasteners for prefinished aluminum sheet: Aluminum or Series 300 stainless steel.
2.4.4.4. Fasteners for prefinished galvanized steel sheet: Series 300 stainless steel or hot dip galvanized steel to ASTM A153/A153M-09 and ASTM A653/A653M-13 Class G185
2.4.4.5. Fasteners and plates to meet the requirements of Factory Mutual 4470-Standard for wind uplift and corrosion resistance.
2.4.5. Flexible flashing membrane; high temperature grade for use at locations where membrane is not protected by insulation:
2.4.5.1. Description:
(1) Thickness: 0.76 mm (30 mils) minimum.
(2) Self-adhesive grade rubberized membrane backed by high density polyethylene.
(3) Primer for substrate.
(4) High temperature grade to resist softening at 105°C minimum.

2.4.5.2. Acceptable Products:
(1) Henry 'Blueskin PE 200 HT'.
(2) Firestone ‘Clad-Gard SA’.
(3) GCP Applied Technologies ‘Ultra’.
(4) Soprema 'LASTOBOND SHIELD HT’.

2.4.6. Flexible flashing membrane; standard temperature grade for use at locations where membrane is protected by material with insulating properties:
(1) Description:
(2) Thickness: 1 mm (40 mils) minimum.
(3) Self-adhesive grade rubberized membrane backed by high density polyethylene.
(4) Primer for substrate.

2.4.6.2. Acceptable Products:
(1) Bakor 'Blueskin Roof RF200'.
(2) Grace ‘Ice & Water Shield’.
(3) Soprema 'LASTOBOND SHIELD’.
(4) Or equivalent.

2.5. FABRICATION

2.5.1. Fabricate metal flashings and other sheet metal work in accordance with applicable SMACNA "Architectural Sheet Metal Manual (Seventh Edition) details and as indicated.
2.5.2. Form pieces in 3048 mm (10 ft) maximum lengths. Make allowance for expansion at joints.
2.5.3. Sealed joints: Form non-expansion but movable joints in metal to accommodate sealant.
2.5.4. Expansion provisions: Form expansion joints of intermeshing hooked flanges, not less than 25.4 mm (1") deep, filled with sealant concealed within joints.
2.5.4.1. Joints that *Provide* expansion and contraction capabilities should be located near the corners within approximately 610 mm (24”) from each direction of the corner measured from the interior side.
2.5.5. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" and by FMG Loss Prevention Data Sheet 1-49 for application, and of greater thickness of metal being secured.
2.5.6. Hem exposed edges on underside 12.7 mm (1/2"). Mitre and seal corners with sealant.
2.5.7. At parapets, Provide 25.4 mm (1") minimum overlap between bottom of wood blocking or flashing anchorage support and edge of drip or termination of flashing.
2.5.8. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
2.5.9. Apply isolation coating to metal surfaces to be embedded in concrete or mortar.
2.5.10. Provide 25.4 mm (1") minimum overlap between bottom of wood blocking or flashing anchorage support and edge of drip or termination of flashing.
2.5.11. Shop fabricate inside and outside corners.

3 EXECUTION

3.1. FLEXIBLE FLASHING UNDERLAYMENT INSTALLATION

3.1.1. Apply primer to concrete masonry and precast concrete substrates.
3.1.2. Install in a consecutive weatherboard method starting at bottom or base of wall and working up.
3.1.3. Provide minimum of 50 mm (2") side laps and 75 mm (3") end laps.
3.1.4. Cut to manageable lengths, position membrane for alignment, remove protective poly-film and firmly apply pressure to assure adhesion.
3.1.5. Eliminate wrinkles or gaps, roll entire membrane surface (including seams) with a counter top or “J-roller” to ensure full contact and adhesion.
3.1.6. Seal membrane terminations, heads of mechanical fasteners, masonry tie fasteners, around penetrations, duct work, electrical and other apparatus extending through the air barrier membrane and around the perimeter edge of membrane terminations.

3.1.7. Flashing membrane shall be applied in weatherboard fashion starting at bottom of base of wall and working up, in and around the full perimeter of openings, to *Provide* water tight protection and according to the following procedures:
- 3.1.7.1. Apply the first strip horizontally immediately below the sill, cut it sufficiently long to extend past each side of the window, so that it projects even with the vertical jamb flashing to be applied later. Turn sill flashing up 50 mm (2") at ends of sill.
- 3.1.7.2. Sill flashing shall overlap wall membrane. Overlap jamb at head flashing membrane in the same manner.

3.2. ROOF FLASHING INSTALLATION

3.2.1. Install sheet metal work in accordance with SMACNA's "Architectural Sheet Metal Manual (Seventh Edition)".

3.2.2. Provide watertight flashing installing capable of resisting specified uplift pressures in accordance with roofing specifications, thermally induced movement and exposure to weather.

3.2.3. Provide minimum 10% slope for drainage towards roof at parapet locations, with minimum 2% sloped to drain at remaining flashing locations.

3.2.4. Provide continuous cleats for attachment of flashings at exterior face of wall and fasten at 150 mm (6”) spacing and not less than 2 fasteners per cleat.

3.2.5. Provide radius (3-piece) copings for curved wall condition unless otherwise indicated.

3.2.6. Prefabricate corner copings in 610 mm (24") x 610 mm (24") sections.

3.2.7. Concealed fastenings and cleats, from view except where exposed flashings are accepted by the Consultant prior to installation.
- 3.2.7.1. Roof side fastening of copings shall be accomplished using either cleats or exposed colour matched screws with EDPM backed metal washers fastened through oversized holes in coping to allow for thermally induced movement and spaced at maximum spacing of 610 mm (24”) centre to centre and not less than 2 fasteners per section of coping.

3.2.8. Flash joints using S-lock forming tight fit over hook strips/cleats; unless otherwise indicated.

3.2.9. Install surface mounted flared joint true and level, and caulk top of reglet with sealant at reglets.

3.2.10. Insert metal flashings to other materials and flashings to form weather-tight junction.

3.2.11. Provide prefinished metal flashing over equipment curbs which are covered with roofing membrane.

3.2.12. Turn top edge of flashing into recessed reglet or mortar joint where indicated, to minimum depth of 25 mm (1"). Wedge flashing securely into joint. Seal flashing at reglet and cap flashing with sealant.

3.2.13. Expansion provisions:
- 3.2.13.1. Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 3048 mm (10 ft) and Provide uniform joint spacing with no joints allowed within 610 mm (24") of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 25.4 mm (1") deep, filled with sealant concealed within joints.

3.2.14. Provide vapour permeable synthetic building paper separation between galvanized steel and treated wood where applicable.

3.2.15. Install flexible flashing membrane in accordance with the manufacturer's printed installation instructions.

3.3. WALL FLASHING INSTALLATION

3.3.1. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture
3.3.2. according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

3.3.3. Ensure that sill flashing extends past cladding complete with drip edge. At concrete openings, ensure that sill flashing project out past concrete openings.
3.3.4. Through-wall flashing: Installation of through-wall flashing is specified in Division 4.
3.3.5. Reglets: Installation of reglets is specified in Division 3.

3.4. INSTALLATION OF ROOF ACCESSORIES

3.4.1. Incorporate devices to which roofing and flashing may be secured.
3.4.2. Install work to ensure that roofing and flashings will be properly applied to maintain building envelope weather-tight.

3.5. INSTALLATION TOLERANCES

3.5.1. Installation tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 6 mm in 6 m (1/4 inch in 20 feet) on slope and location lines as indicated and within 3.2 mm (1/8") offset of adjoining faces and of alignment of matching profiles.

3.6. FIELD QUALITY CONTROL

3.6.1. Conduct quality control in accordance with Section 01 45 00.
3.6.1.1. The work of this Section will be inspected and tested in conjunction with inspection and testing of roofing work.

3.7. ADJUSTING AND CLEANING

3.7.1. Remove deposits, stains or protections and wash metals left unpainted and exposed to view as recommended by manufacturer of metal or paint finish.

3.8. PROTECTION

3.8.1. The *Consultant* will advise the *Contractor* of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents*, including Sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Delivery, Storage, and Handling
.6 2.1. Roof Hatches; Ladder Access
.7 2.2. Fabrication
.8 3.1. Installation

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Roof hatches.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Product data sheets:
1.4.2.1. Submit manufacturer's *Product* data sheets for *Products* proposed for use in the work of this section.
1.4.3. Shop drawings:
1.4.3.1. Show profiles, accessories, locations, and dimensions.
1.4.3.2. Include details of interface with work of other sections.

1.5. DELIVERY, STORAGE, AND HANDLING

1.5.1. Package and brace products to prevent damage in shipment and handling. Protect finish surfaces by sturdy wrappings or covering.

2 PRODUCTS

2.1. ROOF HATCHES; LADDER ACCESS

2.1.1. Description: Preassembled, insulated cover and insulated metal curb, welded corner construction, c/w padlock latch, hinge, handle, and other hardware as required.
2.1.2. Cover: Break formed, hollow-metal design with concealed insulation, overlapping flange, and internally reinforced live load to meet Ontario Building Code.
2.1.2.1. Aluminum: Cover and frame; 2.3 mm (0.09") (11 gauge) aluminum with a 127 mm (5") beaded flange with formed reinforcing members. Interior and exterior surfaces shall be thermally broken.
2.1.3. Gasket: Extruded EPDM rubber gasket permanently adhered to cover.
2.1.4. Hinges: Heavy-duty pintle hinges with 9.5 mm (3/8") type 316 stainless steel hinge pins.
2.1.5. Latch: Slam latch with interior and exterior turn handles and padlock hasps.
2.1.6. Lift Assistance: Compression spring operators enclosed in telescopic tubes. Automatic hold-open arm with grip handle release.
2.1.7. Hardware:
2.1.7.1. Aluminum: Engineered composite compression spring tubes. Steel compression springs with electrocoated acrylic finish. Type 316 Stainless steel hinges. All other hardware is zinc plated/chromate sealed.
2.1.8. Size:
2.1.8.1. 914 mm x 762 mm (36" x 30") size.
2.1.9. Finish:
2.1.9.1. Aluminum: Powder Cost Standard finish: Yellow.

2.1.10. Acceptable *Products*:
- 2.1.10.1. The Bilco Company model 'Type S-50-TB.'
- 2.1.10.2. Or equivalent.

2.1.11. Provide safety post for access.
- 2.1.11.1. Basis-of-Design Manufacturer: Type LU Ladder Safety Post by The BILCO Company or equivalent.
- 2.1.11.2. Furnish and install at all roof hatches, ladder safety post Model LU-1. The ladder safety post shall be pre-assembled from the manufacturer.
- 2.1.11.3. Performance characteristics:
  - (1) Tubular post shall lock automatically when fully extended.
  - (2) Safety post shall have controlled upward and downward movement.
  - (3) Release lever shall disengage the post to allow it to be returned to its lowered position.
  - (4) Post shall have adjustable mounting brackets to fit ladder rung spacing up to 14” (356mm) on center and clamp brackets to accommodate ladder rungs up to 1-3/4” (44mm) in diameter.
- 2.1.11.4. Post: Shall be manufactured of high strength square tubing. A pull up loop shall be provided at the upper end of the post to facilitate raising the post.
- 2.1.11.5. Material of construction: Shall be steel (Model LU-1).
- 2.1.11.6. Balancing spring: A stainless steel spring balancing mechanism shall be provided to provide smooth, easy, controlled operation when raising and lowering the safety post.
- 2.1.11.7. Hardware: All mounting hardware shall be Type 316 stainless steel.
- 2.1.11.8. Finishes: Factory finish shall be yellow powder coat steel (Model LU-1)

2.2. FABRICATION

2.2.1. Fit joints and junctions between components tightly, to prevent entry of water into component voids and interior of building. Cap open ends of sections exposed to view.

2.2.2. Fabricate work with materials and component sizes, complete with metal gauges, reinforcing, anchors, and fastenings of adequate strength to ensure that it will remain free of warping, buckling, opening of joints and seams, and distortion within limits of intended and specified use. Conceal and weld connections wherever possible.

3 EXECUTION

3.1. INSTALLATION

3.1.1. Install in accordance with manufacturer's written installation requirements.

3.1.2. Incorporate devices to which roofing, and flashing may be secured, and install work to ensure that roofing and flashings will be properly installed to maintain weather-tight building.

3.1.3. Verify under work of this section that installed products function properly.

3.1.4. Adjust hardware to function smoothly and without binding and to ensure that components fit in a weather-tight fashion.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Administrative Requirements
.5 1.5. Submittals
.6 1.6. Quality Assurance
.7 1.7. Delivery Storage, and Handling
.8 1.8. Field Conditions
.9 2.1. Manufacturers
.10 2.2. Performance/Design Requirements
.11 2.3. Materials
.12 3.1. Manufacturer's Instructions
.13 3.2. Preparation
.14 3.3. Installation
.15 3.4. Identification
.16 3.5. Field Quality Control

1.3. SUMMARY

1.3.1. Section includes:
- 1.3.1.1. Materials installed in cavities, joints, around penetrations, and openings in floors, walls, partitions, and other building components to restrict the spread of fire and smoke.

1.3.2. Section excludes:
- 1.3.2.1. Firestopping and smoke seals, for mechanical, electrical and communications penetrations of fire resistant assemblies, and firestopping and smoke seals within their respective assemblies. Refer to Divisions 21, 22, and 23 and Divisions 26, 27, 28

1.4. ADMINISTRATIVE REQUIREMENTS

1.4.1. Coordination:
- 1.4.1.1. Coordinate joint firestopping and smoke seal work with Section 01 33 00, section titled Project Firestopping Manual and Coordination.
- 1.4.1.2. Coordinate with other sections to assure that pipes, conduit, cable, and other items that penetrate fire rated construction, have been permanently installed prior to installation of firestop assemblies.
- 1.4.1.3. Schedule the Work to assure that penetrations and other construction that conceals penetrations are not erected prior to the installation of firestop and smoke seals.

1.4.2. Conduct a pre-installation meeting in accordance with Section 01 31 19.
- 1.4.2.1. Representatives for mechanical and electrical work and independent inspection and testing company shall attend pre-installation meeting.

1.5. SUBMITTALS

1.5.1. Submit required submittals in accordance with Section 01 33 00.

1.5.2. *Product* data: Submit data and installation instructions for Products and prefabricated devices, providing descriptions sufficient for identification at the *Place of the Work*.
- 1.5.2.1. Materials list of Products proposed for use in the work of this Section; complying with listed systems designs.

1.5.2.2. Listing agency's detailed drawing showing opening, penetrating items, and firestopping materials, identified with listing agency's name and number or designation, fire rating achieved, and date of listing.

1.5.2.3. Manufacturer's specifications, detail sheets, and other data needed to prove compliance with the specified requirements;

1.5.2.4. Certificates:

(1) Submit the following certification documents with closeout submittals

(A) Manufacturer's certification: Submit manufacturer's certification that installed firestopping and smoke seal Products are suitable for the use indicated and comply with specified requirements.

(B) Installation certification: Installer shall submit certification that all joint firestopping system installations are completed and that installations comply with listed systems designs

1.5.2.5. Submit fire resistance rating test listings for firestopping and smoke seal systems.

1.5.2.6. Manufacturer's engineering judgment identification number and shop drawing details when no ULC, c-UL or other Canadian listed assembly is available for an application. Engineered judgment must include both project name and *Subcontractor*'s name who will install firestop system as described in shop drawing.

1.5.3. Shop drawings:

1.5.3.1. Submit drawings indicating fire resistance rated assembly number, required temperature, hose stream, and flame rating, material thicknesses, installation methods and materials of firestopping and smoke seals, primers, supports, damming materials as applicable, reinforcements, anchorages, fastenings and methods of installation for each condition to be encountered.

1.5.3.2. Designate on shop drawings static through penetrations and dynamic joint systems, relative positions, expansion and control joints in rated slabs and walls, firestopping details at receptacles and similar poke-through devices and surrounding permanent materials. Identify re-entry locations.

1.5.3.3. Engineered shop drawings; for engineering judgements:

(1) Where Project conditions require modification to an accredited third party testing agency's listed system design to address a particular firestopping condition that is not covered by a listed system, submit engineered shop drawings detailing the modifications to the listed system design as an engineering judgment or equivalent fire-resistance-rated assembly, for each Project location and condition.

(2) Submit the manufacturer's engineering judgment identification number and shop drawing details prepared by a professional engineer. The engineering judgment submittal shall include both Project name, Project location, and Subcontractor's name who will install firestop system as described in engineering judgement shop drawings.

(3) Provide complete details of specific application of listed system and its modifications upon which the engineered judgement is based upon.

(4) For perimeter fire barrier systems:

(A) Submit engineered shop drawings for engineering judgements covering perimeter fire barrier systems. Identify each cladding assembly type in contact with each perimeter fire barrier system.

1.5.4. Manufacturers' instructions:

1.5.4.1. Manufacturer of the Products proposed for use in the work of this Section shall prepare a firestopping manual scheduling the products to be used for each assembly and installation required in the Work.

1.5.4.2. Manual shall include manufacturer's Product data sheets as specified under this specification section.

1.5.4.3. Firestopping manual shall be submitted within 4 weeks of the *Contract* award.

1.6. QUALITY ASSURANCE

1.6.1. Qualifications:

1.6.1.1. *Provide* work of this Section, executed by competent installers with minimum 5 years' experience in application of Products, systems and assemblies specified and with approval, training and certification of *Product* manufacturers.

(1) Submit proof of manufacturer's installer certification for each installer of firestopping and smoke sealant systems.

(2) Manufacturer's willingness to sell its firestopping Products to the *Contractor* or to a *Subcontractor* or installer engaged by the *Contractor* does not in itself confer qualification on the buyer.

1.6.1.2. Applicator shall designate a single individual as project foreperson who shall be present at the *Place of the Work* at all times when the work of this Section is being performed.

1.6.2. Regulatory requirements:

1.6.2.1. Firestop systems shall be listed in accordance with CAN/ULC-S115-05 and tested assemblies shall achieve a fire resistance rating in accordance with the Ontario Building Code.

1.6.2.2. Proposed firestopping and smoke seal materials and methods shall conform to applicable governing codes having local jurisdiction.

1.7. DELIVERY STORAGE, AND HANDLING

1.7.1. Deliver the materials to the *Place of the Work* in the manufacturer's unopened containers, containing the classification label, with labels intact and legible at time of use.

1.7.2. Store materials in accordance with manufacturer's recommendations with proper precautions to ensure fitness of material when installed.

1.7.3. Do not use damaged or adulterated materials and materials exceeding their expiry date.

1.8. FIELD CONDITIONS

1.8.1. Comply with manufacturer's instructions relative to temperature and humidity conditions, before, during and after installation.

1.9. WARRANTY

1.9.1. Warrant work of this section in accordance with Section 01 78 36.

2 PRODUCTS

2.1. MANUFACTURERS

2.1.1. General: Manufacturers of firestopping and smoke seal system Products and installation specialists for the work of this section are limited to applicable assemblies as required for the Work and having listing mark on packaging.

2.1.2. Acceptable manufacturers for work of this section:

2.1.2.1. 3M Canada Inc.
2.1.2.2. A/D Fire Protection Systems Inc.
2.1.2.3. Dow Corning.
2.1.2.4. Hilti Canada Corp.
2.1.2.5. Nuco – Self-Seal Firestopping Products.
2.1.2.6. Tremco Commercial Sealants & Waterproofing.
2.1.2.7. STI Firestop
2.1.2.8. Or equivalent.

2.2. PERFORMANCE/DESIGN REQUIREMENTS

2.2.1. Firestop and smoke sealant systems shall consist of material, or combination of materials installed to retain integrity of fire-rated construction by effectively impeding spread of flame, smoke, and/or hot gasses through perimeter joint or gaps, construction joints, or at perimeter fire containment in or adjacent to fire-rated barriers.

2.2.2. Smoke sealants applied over firestopping materials or combination smoke seal/firestop seal material shall form air tight barriers to prevent passage of gas and smoke.

2.2.3. Fire-resistance rating of firestopping system shall be equivalent to rating of adjacent floor, wall or other fire separation assembly.

2.2.4. Firestopping system at fire rated assemblies with assembly STC rating requirements shall provide STC rating equal to STC rating of fire rated assembly.

2.2.5. Confirm locations of exposed/non-exposed firestopping/smoke seal surfaces with Consultant prior to application.

2.2.6. Provide movement capability at movement joints in accordance with design requirements for movement joint.

2.2.7. Head-of-wall joints; with dynamic designation:

2.2.7.1. Joint assemblies shall permit vertical movement allowing wall to move independent of structure due to forces including, but not limited to, live loads, dead loads, thermal expansion/contraction, and wind sway. Such movement shall not damage the wall assembly or its fire protection components.

(1) Provide head-of-wall joints with dynamic designation.

2.2.8. Regulatory Requirements:

2.2.8.1. Joint firestop systems shall be listed in accordance with CAN/ULC-S115-11 and shall achieve required fire resistance rating in accordance with building code.

2.2.8.2. Proposed firestopping and smoke seal materials and methods shall conform to applicable governing codes having local jurisdiction.

2.2.9. Provide also smoke sealants applied over firestopping materials or combination smoke seal/firestop seal material to form air tight barriers to retard the passage of gas and smoke.

2.2.10. Provide firestopping and smoke sealant system assemblies as practical and as required to coordinate with the schedule and sequencing of the *Work*.

2.3. MATERIALS

2.3.1. Single source responsibility for firestopping and smoke seal materials:

2.3.1.1. Obtain firestopping and smoke seal materials from single manufacturer for each different Product required.

2.3.1.2. Manufacturer shall instruct applicator in procedures for each material.

2.3.2. Firestopping and smoke seal systems shall conform to the following:

2.3.2.1. VOC content not to exceed 250 grams per litre minus water.

2.3.2.2. Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gasses in compliance with requirements of CAN/ULC- S115-11 and not to exceed opening sizes for which they are intended.

2.3.2.3. Provide firestopping materials and systems with fire-resistance rating not less than the fire-resistance rating of applicable adjacent assembly.

2.3.2.4. Listed in accordance with CAN/ULC-S115-11.

2.3.2.5. For services that penetrate a fire separation or a membrane forming part of an assembly required to have a fire-resistance rating, Provide firestop system with "F" rating as required by the Ontario Building Code.

2.3.2.6. For combustible pipe penetrations through a fire separation required to have a fire-resistance rating, Provide firestop system with “F” rating as required by the Ontario Building Code.

2.3.2.7. For services that penetrate a fire wall or a horizontal fire separation that is required to have a fire-resistance rating, Provide firestop system with “FT” rating as required by the Ontario Building Code.

2.3.2.8. For joints in fire-separations, Provide firestop system as required by the Ontario Building Code.

2.3.2.9. Products shall be compatible with abutting dissimilar membranes, architectural coatings, finishes at floors, walls and ceilings. Check with requirements of the *Contract Documents* and manufacturer of selected materials being installed.

2.3.3. Smoke sealants for overhead and vertical joints shall be non-sagging; sealants for floors shall be self-levelling.

2.3.4. Smoke sealants at vertical through penetrations in areas with floor drains shall be waterproof type.
2.3.5. Smoke seal sealant colour at exposed locations: Grey. (Red will not be accepted).
2.3.6. Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems).
2.3.7. Metal deck/wall penetration conditions with sprayed fireproofing: spray-on fire-rated firestop mastic.
2.3.8. Joint firestopping and smoke seal for head-of-wall joints at metal decking:
2.3.8.1. Firestopping: Trapezoidal shaped firestop thermal material shaped to match metal deck profile for head-of-wall joints at metal deck locations.
2.3.8.2. Smoke sealant: Smoke seal firestop surfaces with listed smoke sealant by spraying, brushing, or troweling material in accordance with listed system design.

3 EXECUTION

3.1. MANUFACTURER'S INSTRUCTIONS

3.1.1. Compliance:
3.1.1.1. Comply with manufacturer's written *Product* data including *Product* technical bulletins, *Product* installation instructions and *Product* packaging instructions.

3.2. PREPARATION

3.2.1. Examine sizes, anticipated movement and conditions to establish correct thickness and installation of back-up materials.
3.2.2. Clean bonding surfaces to remove deleterious substances including dust, paint, rust, oil, grease, moisture, frost and other foreign matter which may otherwise impair effective bonding.
3.2.3. Prime and mask adjacent surfaces. Mask areas adjacent to sprayed firestopping to limit firestopping overspray to area not greater than 25 mm (1") of minimum required.
3.2.4. Remove insulation from insulated pipe and duct where such pipes or ducts penetrate a fire separation unless listed assembly permits such insulation to remain within assembly, or where mechanical trades have installed special fire rated insulated sleeves.
3.2.5. Secure pipe, conduit, cable, and other items that penetrate firestopping and smoke seal systems.

3.3. INSTALLATION

3.3.1. Mix and apply firestopping, gas and smoke seals in accordance with manufacturer's written instructions and tested designs to achieve required flame rated seal, to prevent the passage of gas and smoke and, where specifically designated, the passage of fluids.
3.3.2. Provide temporary forming and packing as required and other accessories in accordance with manufacturers' written instructions. Apply materials with sufficient pressure to properly fill and consolidate the mass to seal openings.
3.3.3. Provide fill materials for through-penetration firestop systems by techniques to achieve the following results:
3.3.3.1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.
3.3.3.2. Install materials so that they contact and adhere to substrates formed by openings and penetrating items.
3.3.4. *Provide* joint fillers to *Provide* support of firestop materials during application and at the position required to produce the cross-sectional shapes and depths of installed firestop material relative to joint widths that allow optimum sealant movement capability and develop fire-resistance required.
3.3.5. For materials that will remain exposed after completing the Work, finish to Provide smooth, uniform surfaces. Tool or trowel exposed surfaces.
3.3.6. Seal joints to ensure an air and water resistant seal, capable of withstanding compressions and extensions due to thermal, wind or seismic joint movement.

3.3.7. Notify the Consultant when random completed installations are ready for review, as directed by the Consultant, prior to concealing or enclosing firestopping and as applicable, smoke seals.
3.3.8. Remove temporary forming and dams only after materials have gained sufficient strength.

3.4. IDENTIFICATION AND DOCUMENTATION

3.4.1. Identify through-penetration firestopping and smoke seal systems with pressure- sensitive, self-adhesive, printed vinyl labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestopping system installation where labels will be visible to anyone seeking to remove penetrating items or firestopping and smoke seal systems. Include the following information on labels:
3.4.1.1. The words: “Warning: Through-Penetration Firestopping system – Do Not Disturb”;
3.4.1.2. Applicator’s name, address and phone number;
3.4.1.3. Designation of applicable testing and inspection agency;
3.4.1.4. Date of installation;
3.4.1.5. Manufacturer’s name for firestopping and smoke seal system materials.
3.4.2. Provide documentation for each joint firestop system application addressed. This documentation is to identify each joint location on the entire Project.
3.4.3. Documentation for installed joint firestop systems is to include:
3.4.3.1. Sequential location number.
3.4.3.2. Project name.
3.4.3.3. Date of installation.
3.4.3.4. Detailed description of joint firestop system location.
3.4.3.5. Listed firestop system design number or engineered judgment number.
3.4.3.6. Type of joint.
3.4.3.7. Width of joint.
3.4.3.8. Overall length of joint.
3.4.3.9. Number of sides addressed.
3.4.3.10. Hourly rating of firestop joint system to be achieved.
3.4.3.11. Installers name.

3.5. FIELD QUALITY CONTROL

3.5.1. Quality control to be in accordance with Section 01 45 00.
3.5.2. Field tests and inspections:
3.5.2.1. Inspection consultant to review installation of the work of this section and to perform random tests to verify its completion in accordance with the requirements of the Contract Documents.
3.5.2.2. Give at least 48 hours’ notice before operations commence, and arrange for a pre-job conference with the Contractor, Subcontractor, inspection and testing company, manufacturer, and the Consultant present.
3.5.2.3. Inspection and testing company shall examine penetration firestopping in accordance with ASTM E2174-09 and ASTM E2393-20a as applicable. Inspection and testing company shall examine firestopping and shall determine, in general, that firestopping has been installed in accordance with the requirements of the Contract Documents and the tested and listed firestop system.
3.5.2.4. Representatives of the manufacturer(s) shall have access to the Work. Contractor shall Provide assistance and facilities for such access in order that the manufacturer(s) representative(s) may properly perform its function.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the *Contract Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Quality Assurance
.6 1.6. Field Conditions
.7 1.7. Extended Warranty
.8 2.1. Sealants
.9 2.2. Accessories
.10 3.1. Manufacturer’s Recommendations
.11 3.2. Preparation
.12 3.3. Masking
.13 3.4. Installation
.14 3.5. Interior Sealant Schedule
.15 3.6. Field Quality Control
.16 3.7. Adjusting and Cleaning
.17 3.8. Protection

1.3. SUMMARY

1.3.1. Section includes:
1.3.1.1. Exterior building sealants.
1.3.1.2. Interior building sealants.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Submit manufacturer's and *Product* name for each sealant which will be used in the *Work* prior to commencing the *Work*.
1.4.3. Product data sheets:
1.4.3.1. Submit manufacturer’s Product data sheets for Products proposed for use in the work of this section.
1.4.3.2. Submit manufacturer's and Product name for each sealant which will be used in the Work prior to commencing the Work.
1.4.3.3. For Products specified to comply with SWR Institute Sealant Validation Program, provide written confirmation from SWRI of Product compliance.
1.4.4. Test and evaluation reports:
1.4.4.1. Test sealant in contact with samples of materials to be sealed to verify adhesion will be achieved and no staining of the material will result. Prepare sample joints at the *Place of the Work* of each type of sealant for each joint condition.
(1) Submit test results to the *Consultant* prior to application of sealants.
1.4.4.2. Test sealant in contact with samples of porous materials to be sealed to ensure that no staining of the material will result in accordance with ASTM C1248-18
(1) Submit test results to the *Consultant* prior to application of sealants.
1.4.5. Samples
1.4.5.1. Submit 2440 mm (96") long sealant joint mock-up.
1.4.5.2. Submit "wet sample" sealant colour samples for each sealant *Product* and colour.

1.5. QUALITY ASSURANCE

1.5.1. Qualifications:

1.5.1.1. *Provide* work of this Section, executed by competent installers with minimum 5 years' experience in application of Products, systems and assemblies specified and with approval and training of *Product* manufacturers. Installer to comply with quality assurance articles referenced in ASTM C1193-13 for installation of joint sealants.

1.5.2. Conduct quality control in accordance with Section 01 45 00.

1.6. FIELD CONDITIONS

1.6.1. Verify substrates and ambient air temperature at the *Place of the Work* before, during and after application to ensure compliance with manufacturer's recommendations. Surfaces shall be frost-free, dust-free, clean and completely dry at time of installation.

1.6.2. Weather Conditions:

1.6.2.1. In accordance with manufacturer's instructions, do not apply silicone joint sealants in snow, rain, fog or mist, or when such conditions are expected. Allow joint surfaces to attain dry conditions as recommended by manufacturer before sealant application.

1.6.3. Sealant and substrate materials:

1.6.3.1. Conform to sealant manufacturer's specifications and recommendations. Keep organic sealant materials heated to at least 16°C when working at temperatures below 10°C.

1.6.4. Do not proceed with installation of joint sealants under the following conditions:

1.6.4.1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer, or are below 5° C (40° F).

1.6.4.2. When joint substrates are wet.

1.6.4.3. Where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

1.6.4.4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7. EXTENDED WARRANTY

1.7.1. Warrant work of this section for a period of 2 years, in accordance with Section 01 78 36.

1.7.2. Repair or replace joint sealants which fail to perform as air tight and water-tight joints; or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, or general durability; or appear to deteriorate or become unserviceable or causing an objectionable appearance resulting from either defective or non-conforming materials and workmanship or in any other manner not clearly specified by submitted manufacturer's data as an inherent quality of the material for the exposure indicated.

1.7.3. Defects shall include, but are not limited to:

1.7.3.1. Staining from abutting materials or filler.

1.7.3.2. Migrating, bleeding into, or staining abutting materials.

1.7.3.3. Unsightly surface deformation by causes other than movement.

1.7.3.4. Excessive colour change, chalking, or dust pick-up.

1.7.3.5. Failing adhesively or cohesively where maximum elongation is less than 25% of designed width of exposed joints.

1.7.3.6. Hardening to more than 25% over specified hardness.

2 PRODUCTS

2.1. SEALANTS

2.1.1. General:

2.1.1.1. Colours: Sealant colours shall match colours of adjacent materials, as selected and approved by the *Consultant*:

(1) Colours shall be selected from manufacture's full range of colours, generally to match adjacent finished colours

2.1.1.2. Comply with ASTM C920-11 and other requirements indicated for each liquid-applied chemically curing sealant, including those referencing ASTM C920-11 classifications for type, grade, class, and uses.

2.1.1.3. Provide joint sealants, primer(s) and backings that are compatible with one another and with joint substrates under conditions of service and application as demonstrated by joint sealant manufacturer based on proven test results and field experience.

2.1.1.4. For sealants to be applied to porous substrates: Provide products that have undergone testing according to ASTM D1248-12 and have not stained porous joint substrates indicated for Work.

2.1.1.5. Sealant supplied shall not exude any material(s) which travels into adjacent materials, or travels onto surfaces of adjacent materials; causing damage, or attracting soiling, which becomes apparent during the service life of the building.

2.1.2. Interior sealants shall have VOC limit of less than 50 g/L.

2.1.3. Sealant designations:

2.1.3.1. Type 1 – Urethanes Two Part.

(1) Non-sag, multi-component, epoxidized polyurethane sealant to CAN/CGSB 19.24-M90, Type 2, Class B.
(2) Location: use at all locations except where noted otherwise.
(3) Acceptable *Product*: Dymeric, as manufactured by Tremco Ltd. or equivalent.

2.1.3.2. Type 2 – Silicones One Part.

(1) One-part, acetoxy silicone sealant, mildew resistant, to CAN/CGSB 19.22-M89.
(2) Location: for washroom fixtures and vanity tops.
(3) Acceptable *Product*: Tremsil 200, as manufactured by Tremco Ltd. or equivalent.

2.1.3.3. Type 3 – Acrylics One Part.

(1) Acrylic terpolymer sealant, solvent release, to CGSB 19-GP-5M-1984.
(2) Location: at interior joints between windows, door frames, and screen frames.
(3) Acceptable *Product*: Mono 555, as manufactured by Tremco Ltd. or equivalent.

2.1.3.4. Type 4 – Acoustical Sealant.

(1) Siliconized acrylic latex sealant, to CGSB 19.21-M87.
(2) Location: at all perimeter joints and openings in gypsum board systems.
(3) Acceptable *Product*: Tremflex 834, as manufactured by Tremco Ltd. or equivalent.

2.1.3.5. Type 5 – Urethanes Two Part.

(1) Non-sag, multi-component, chemically cured, polyurethane sealant to CAN/CGSB 19.24-M90, Type 2, Class B.
(2) Location: at control joints in masonry assemblies.
(3) Acceptable *Product*: Dymeric511, as manufactured by Tremco Ltd. or equivalent.

2.1.3.6. Type 6 – Urethanes Two Part.

(1) Non-sag, multi-component, chemically cured, polyurethane sealant to CAN/CGSB 19.24.
(2) Location: at all locations calling for EPDM membrane.
(3) Acceptable *Product*: Lexcan pourable sealer or equivalent.

2.1.3.7. Type 7 – Urethanes One Part.

(1) Non-sag, single component, polyurethane sealant to CAN/CGSB 19.13-M87.
(2) Location: at metal flashing and trim.
(3) Acceptable *Product*: RC-1 Sealant as manufactured by Lexsuco or equivalent.

2.1.3.8. Type 8 – Polyurethane One Part

(1) Non-sag, single component, moisture curing, modified polyurethane sealant to CGSB 19.12, class MC-2-25-B-N.

(2) Location: as toe bead filling void beneath glazing strip in Window Wall in accordance with Section 08500 Aluminum Windows.
(3) Acceptable *Product*: DyMonic, as manufactured by Tremco Ltd. or equivalent.

2.1.3.9. Type 9 – Structural Silicone.
(1) Non-sag, single component, elastomeric, chemical curing, neutral core, medium modulus silicone sealant to CAN/CGSB 19.13-M87, MCG-2-25-A-L.
(2) Location: as structural silicone sealant in Window Wall in accordance with Section 08500 Aluminum Windows.
(3) Acceptable *Product*: Spectrum 2, as manufactured by Tremco Ltd. or equivalent.

2.1.3.10. Type 10 – Acrylics One Part.
(1) Single component, elastomeric, water based, acrylic firestop sealant to CAN/ULC-S115-11.
(2) Location: fire rated joints and penetrations in fire rated systems.
(3) Acceptable *Product*: TREMstop Acrylic, as manufactured by Tremco Ltd. or equivalent.

2.1.3.11. Interior sealant, mildew resistant one part silicone sealant in accordance with the following:
(1) Comply with:
(A) ASTM C920-11, Type S, Grade NT, Class 25
(B) CAN/CGSB 19.22-M89.
(2) Acceptable Products:
(C) GE Silicones "Sanitary SCS1700 Sealant";
(D) BASF Building Systems "OmniPlus";
(E) Dow Corning "786";
(F) Tremco, Inc. "Tremsil 200";
(G) Or equivalent.

2.2. ACCESSORIES

2.2.1. General:
2.2.1.1. *Provide* component joint sealant primers, backings and fillers that are compatible with joint substrates and other sealants or joint fillers specified and approved for applications indicated under joint sealant schedule.

2.2.2. Cylindrical sealant backings:
2.2.2.1. *Provide* joint backings that meet ASTM C1330-02, Type O (open-cell polyurethane), or Type B (non-absorbent bi-cellular backing materials with surface skin), sized 25 percent or greater than joint opening with proper density to control sealant depth and profile. Follow joint sealant manufacturer's recommendations with backing selections for optimum joint sealant performance, in accordance with the following schedule:
2.2.2.2. Use open cell foam with non-absorbing closed cell skin (Sof-Rod) for vertical joints; round shape for open joints and triangular shape for angular joints.
2.2.2.3. Use closed cell foam for horizontal joints.

2.2.3. Bond-breaker tape:
2.2.3.1. Polyethylene tape or other approved plastic tape as recommended by joint sealant manufacturer to prevent 3-sided joint adhesion to rigid, inflexible joint fillers or joint surfaces at back of joint where such adhesion would restrict proper sealant movement or result in sealant failure.

2.2.4. Masking Tape:
2.2.4.1. Non-staining, non-absorbent and compatible with joint sealants and adjacent surfaces.

2.2.5. Sealant primers:
2.2.5.1. Use primers only as recommended by sealant manufacturer where required to enhance adhesion of sealant to specific joint substrates indicated and as

determined for use from pre-construction mock-up testing. Select primers in consultation with sealant manufacturer and manufacturer of substrate material which do not have a detrimental effect on sealant adhesion or in-service performance.

2.2.6. Cleaners for nonporous surfaces:

2.2.6.1. Provide non-staining, chemical cleaners of type which are acceptable to manufacturer of sealant and sealant backing material, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.

2.2.6.2. *Provide* cleaner conditioner required for glass and glazed surfaces as recommended by sealant manufacturer.

3 EXECUTION

3.1. MANUFACTURER'S RECOMMENDATIONS

3.1.1. Unless specified otherwise herein, comply with the recommendations and directions of the manufacturer whose materials are being used in the work of this Section.

3.2. PREPARATION

3.2.1. Prior to installation, clean substrates of substances that could impair the bond of joint sealants. Clean and prepare joint surfaces immediately before installing joint sealants. Protect adjacent work areas and finished surfaces from damage during joint sealant installation.

3.2.2. Clean porous joint surfaces by using heavy-duty brushing, light abrasive, mechanical abrading or combination of these methods to produce a clean, sound surface for optimum bond with joint sealants per manufacturer's recommendations. Provide a dry, dust-free and cleaned substrate for optimum results.

3.2.3. Non-porous surfaces should be cleaned using the two-cloth solvent wipe method as referenced in ASTM C1193-16 and outlined by joint sealant manufacturer's instruction. IPA (isopropyl alcohol) is not a degreasing solvent yet may be used in new construction for non-porous joint cleaning and preparation. Use xylene, toluene or MEK for degreasing solvent and general cleaning of non-porous surfaces.

3.2.4. Rusting or scaling surfaces must be prepared using abrasive cleaning methods as recommended by joint sealant manufacturer prior to joint sealant installation. Efflorescence, mould, mildew and algae must be removed and neutralized prior to joint sealant installation.

3.2.5. Coordinate cleaning, priming and installation to avoid contamination of wet, freshly coated or adjacent finished surfaces. Prepare finish-coated surfaces per joint sealant manufacturer's specific recommendations.

3.2.6. Test materials for indications of staining or poor adhesion before any sealing is commenced. Submit reports in writing to the *Consultant* of results.

3.3. MASKING

3.3.1. Where necessary to prevent contamination or marring surfaces of adjacent materials, mask areas adjacent to joints with masking tape prior to priming or sealing application. Remove tape immediately after joint has been completed and an initial set achieved.

3.4. INSTALLATION

3.4.1. Review the complete Contract Documents for extent of sealant work required.

3.4.2. Comply with joint sealant manufacturer's installation instructions for products, primers and applications indicated unless more stringent project-specific instructions or requirements apply.

3.4.3. Apply joint sealants for continuous waterproof sealant joint protection. Vertical joints should be lapped over horizontal joints as recommended by sealant manufacturer. Comply with installation recommendations in ASTM C1193-16 for use of joint sealants as applicable to each specific sealant installation.

3.4.4. Install sealant primers only when recommended by sealant manufacturer and demonstrated at pre-construction tests after joint surface preparation has been completed and when surfaces are verified as clean and dry. Allow any primer installation to completely dry or cure prior to installation of backing or joint sealants.

3.4.5. Install joint sealants in accordance with joint sealant manufacturer's instructions using proven techniques that comply with the following and in proper sequence with installation of primers and backings.

3.4.5.1. Using proper joint sealant dispensing equipment, place sealants by pushing sealant beads into opening to fully wet-out joint sealant substrates. Fill sealant joint opening to full and proper configuration.

3.4.5.2. Install, providing uniform cross-sectional shapes and depths in relation to joint width for optimum sealant movement capability per joint sealant manufacturer's instructions.

3.4.6. Joint sealant tooling is required for non-sag joint sealant installations. Immediately after placing fresh sealants and before skinning or curing begins, tool sealants using metal spatulas designed for this purpose in accordance with manufacturer's recommendations. *Provide* a smooth, uniform sealant finish, eliminating air pockets and ensuring good contact for optimum sealant adhesion within each side of the joint opening.

3.4.6.1. *Provide* concave joint configuration as indicated per figure 5-A in ASTM C1193-16 unless otherwise indicated. Dry tooling is required for joint sealants, and wet tooling agents are not allowed.

3.4.6.2. Remove excess sealant from surfaces adjacent to joint openings using metal spatula, promptly cleaning any sealant residue from adjacent finished surfaces. Remove masking after joint sealant is installed.

3.4.7. Allow single-component sealants to fully cure before adhesion testing is performed as recommended by joint sealant manufacturer.

3.4.8. Match approved sealant mock-up for colour, finish and overall aesthetics. Remove, refinish or re-install work not in compliance with the Contract Documents.

3.4.9. When surfaces of adjacent materials are to be painted, perform sealant work before these surfaces are painted.

3.4.10. Check to make sure shop paint is compatible with primer and sealant. When incompatible, inform the Consultant and change primer and sealant to compatible type acceptable to the Consultant.

3.4.11. Check form release agent used on concrete for compatibility with primer and sealant. If they are incompatible inform the Consultant and change primer and sealant to compatible type, or clean concrete to sealant manufacturer's acceptance.

3.4.12. Install joint backing material, filler strips, gaskets, bond breakers and similar type material of comparable performance characteristics. Install bond breaker tape or packing over asphalt impregnated fibre board as recommended by sealant manufacturer.

3.4.13. Where joints are 12.7 mm (1/2") or deeper, insert backing material in continuous uniform compression with setback from finished face of adjoining materials equal to required depth of sealant (width/depth ratio) as specified herein.

3.4.14. On horizontal traffic surfaces, support joint filler against vertical movement which might result from traffic loads, including foot traffic.

3.4.15. Pack joints tightly with sealant backing set at depth specified for sealant. Fill other voids with filler.

3.4.16. Install bond breaker tape in bottom of joints in lieu of sealant backing where proper depth cannot be obtained when backing is installed.

3.4.17. Maintain correct sealant depth. Sealant depth shall be 1/2 the width of the joint, maximum depth shall be 12.7 mm (1/2"), minimum depth shall be 6 mm (1/4"). Comply with manufacturer's written recommendations.

3.4.18. Fillet bead sealant joints to be sized to Provide proper contact area with substrates, in accordance with manufacturer's written recommendations.

3.4.19. Apply sealants using pressure-operated guns fitted with suitable nozzles in accordance with manufacturer's directions. Apply sealants in such manner as to ensure good adhesion to sides of joints and to completely fill voids in joints.

3.4.20. Apply sealants so that surfaces of joints are smooth, full bead, free from ridges, wrinkles, sags, air pockets and embedded impurities. Tool sealant surfaces to produce a smooth surface.
3.4.21. Remove droppings and excess sealant as work progresses, before material achieves initial set. Do not use soap and water in tooling.
3.4.22. Install sealant materials and primers when surfaces are prepared, and ambient temperature and weather conditions are prevalent, consistent with manufacturer's recommendations. Primer is mandatory for gun applied sealants.
3.4.23. Install sealant with exterior face of sealant set back 10 mm (3/8") from face of adjacent materials at building movement joints, unless otherwise indicated.
3.4.24. Do not apply sealants to areas where installation of paints, coatings or flooring is in progress. Apply sealants after such work is complete and fully cured.

3.5. INTERIOR SEALANT SCHEDULE

3.5.1. Include in work of this section sealants to seal open joints in surfaces exposed to view, and to make building weather-tight and air-tight, as applicable, as indicated, and as otherwise specified, except where specified under the work of other sections.
3.5.2. Install sealant to:
- 3.5.2.1. Movement and control joints on exposed insitu concrete walls
- 3.5.2.2. Interior control and expansion joints in floor and wall surfaces.
- 3.5.2.3. Raked out joints at junctions of masonry with concrete walls and columns, and at intersection of masonry walls and partitions where joint reinforcement is installed.
- 3.5.2.4. Perimeters of exterior and interior door and window frames.
- 3.5.2.5. Joints at tops of non-load bearing masonry walls at the underside of insitu concrete.
- 3.5.2.6. Exposed interior control joints in gypsum board.
- 3.5.2.7. Millwork junctions with walls.

3.5.3. Mildew resistant sealant at wet areas:
- 3.5.3.1. Perimeter joints of wet fixtures such as:
  - (1) Water closets.
  - (2) Janitor sinks.
  - (3) Showers.
- 3.5.3.2. Wall tile joints, tile to tile at shower corners. Gap between tile backer board and edge of shower base.
- 3.5.3.3. Counter/wall junctions at countertops.

3.6. FIELD QUALITY CONTROL

3.6.1. Conduct quality control in accordance with Section 01 45 00.
- 3.6.1.1. Field-adhesion testing: Installer to keep daily log of sealant installation recording self-performed field-adhesion test at each elevation of the project and as follows:
  - (1) Record field adhesion testing on digital video camera and submit to Consultant.
  - (2) Document and perform field adhesion testing in accordance with manufacturer’s recommended field-adhesion requirements and submit written reports co-signed by sealant manufacturer’s representative. Coordinate with Section 01 45 00.
  - (3) Perform 5 field adhesion tests for the first 300 m (1000 lineal feet) and one test in each 300 m (1000 lineal feet) of sealant joint length thereafter. One (1) test per floor height and per elevation is also recommended. When the sealant is used to weatherseal between 2 dissimilar substrates, the sealant adhesion to each side of the joint should be individually tested.
  - (4) Field test joint sealants in accordance with Method A, Field-Applied Sealant Joint Hand-Pull Tab, in Appendix X-1 in ASTM C1193-16 and in compliance with manufacturer’s specific recommendations.

(5) Evaluation: In compliance with joint sealant manufacturer, joint sealants tested and not indicating adhesive failure within the substrates are considered satisfactory results. For joint sealants that fail to adhere to the substrate, clean, re-install and then re-test until satisfactory results are obtained.

3.6.1.2. Manufacturer's field review to be in accordance with Section 01 45 00.

3.6.1.3. Provide manufacturer's field service consisting of periodic site visits by manufacturer or their distributor representative for observation of joint sealant application.

3.7. ADJUSTING AND CLEANING

3.7.1. Clean off excess sealant or sealant residue adjacent to sealant joint installations as the work progresses by methods approved by joint sealant manufacturer. Do not damage adjacent surfaces with harmful removal techniques and protect finished surfaces beyond those that have been masked. Protect installed sealants during and after final curing from damage resulting during construction. Remove and replace damaged joint sealants.

3.7.2. Remove temporary coverings and masking protection from adjacent work areas upon completion. Remove construction debris from the Site on a planned and regular basis.

3.7.3. Remove droppings and clean off excess sealant or sealant residue adjacent to sealant joint installations as the work progresses by methods approved by joint sealant manufacturer before material achieves initial set.

3.7.4. Do not damage adjacent surfaces with harmful removal techniques and protect finished surfaces beyond those that have been masked.

3.7.5. Remove and replace damaged joint sealants.

3.7.6. Remove temporary coverings and masking protection from adjacent work areas upon completion.

3.8. PROTECTION

3.8.1. Protect installed sealants during and after final curing from damage resulting during construction.

END OF SECTION

1 GENERAL

1.1. GENERAL INSTRUCTIONS

1.1.1. Read and be governed by conditions of the Contract *Documents,* including sections of Division 1.

1.2. SECTION INCLUDES

.1 1.1. General Instructions
.2 1.2. Section Includes
.3 1.3. Summary
.4 1.4. Submittals
.5 1.5. Closeout Submittals
.6 1.6. Quality Assurance
.7 1.7. Delivery, Storage, And Handling
.8 1.8. Extended Warranty
.9 2.1. Acceptable Manufacturers
.10 2.2. Hardware – Manual Controlled Shades
.11 2.3. Assembly
.12 2.4. Shade Mounting System
.13 2.5. Aluminum Finish
.14 2.6. Shade Fabric Types
.15 2.7. Fabrication
.16 3.1. Installation
.17 3.2. Adjusting And Cleaning
.18 3.3. Closeout Activities

1.3. SUMMARY

1.3.1. Section Includes
- 1.3.1.1. Roller window sunshades at interior locations.
- 1.3.1.2. Roller window room darkening (black-out) shades at interior locations.

1.4. SUBMITTALS

1.4.1. Submit required submittals in accordance with Section 01 33 00.
1.4.2. Product data sheets:
- 1.4.2.1. Submit manufacturer's Product data sheets for Products proposed for use in the work of this section.
- 1.4.2.2. Submit flammability performance data.
- 1.4.2.3. Submit manufacturers' installation instructions.

1.4.3. Shop drawings:
- 1.4.3.1. Submit shop drawings or fully dimensioned catalogue cuts.
- 1.4.3.2. Window treatment schedule: Use same designations indicated on the Contract Documents.
- 1.4.3.3. Clearly indicate general construction, configurations, jointing methods and locations, fastening methods, handing of controls, required blocking locations, banding (tandem shades), and installation details.

1.4.4. Samples:
- 1.4.4.1. Submit samples of each material and finish colour selected and each accessory.

1.5. CLOSEOUT SUBMITTALS

1.5.1. Submit closeout submittals in accordance with Section 01 77 00.
1.5.2. Operation and maintenance data:
- 1.5.2.1. Submit manufacturer's operation and maintenance instructions for inclusion in the operation and maintenance manuals.

1.6. QUALITY ASSURANCE

1.6.1. Qualifications:
- 1.6.1.1. Manufacturers:
  - (1) Company specializing in manufacturing the Products specified in this section, with a minimum of 10 years' experience.
- 1.6.1.2. Installers / applicators / erectors:
  - (1) Work of this section shall be by forces in the direct employ or under control of the system manufacturer, skilled, trained, and experienced in work of similar scope and complexity.

1.6.2. Mock-ups:
- 1.6.2.1. Erect 1 full size mock-up each roller shade type at the *Place of the Work* for review. Completed and accepted mock-up shall act as the standard to which balance of the work of this section will be judged.

1.7. DELIVERY, STORAGE, AND HANDLING

1.7.1. Before delivery to the Place of the Work, check each shade for operation; remove finger marks and smudges.

1.7.2. Package Products to prevent distortion in shipment and handling. Label packages and crates and protect finish surfaces by sturdy wrappings.

1.8. EXTENDED WARRANTY

1.8.1. Warrant work of this section in accordance with Section 01 78 36 for a period of 2 years.

2 PRODUCTS

2.1. ACCEPTABLE MANUFACTURERS

2.1.1. Subject to compliance with requirements, *Provide* products by one of the following manufacturers:
- 2.1.1.1. Altex
- 2.1.1.2. Elite Window Fashions
- 2.1.1.3. MechoShade Systems, Inc.
- 2.1.1.4. Solarfective Products by Legrand Global
- 2.1.1.5. SunProject Inc.
- 2.1.1.6. Sun Glow Window Covering Products of Canada Ltd.
- 2.1.1.7. Or equivalent

2.2. HARDWARE – MANUAL CONTROLLED SHADES

2.2.1. Chain operated, with infinite positioning. Left or right hand operation and banding as applicable to suit *Place of the Work* condition.
- 2.2.1.1. Drive assembly:
  - (1) Must allow finger tip control and include a built in shock absorber system to prevent chain breakage under normal operating conditions;
  - (2) Factory set for the size and travel of the shades;
  - (3) Capable of being field adjusted from the exterior of the shade unit without having to disassemble the hardware.
  - (4) Drive Chain: No. 10 stainless steel bead chain formed in a continuous loop. The chain shall have passed a 40 kg (90 lb) load test. Chain may be positioned at either, or both, ends of the shade without disassembly of the shade unit.
  - (5) Provide counter balancing mechanism designed to offset the weight of the shade and give fingertip control.

2.2.2. Control shades and room darkening shades independently.

2.3. ASSEMBLY

2.3.1. Provide fully factory assembled shade unit consisting of 2 shade brackets, one piece extruded aluminum shade tube, extruded aluminum fascia, aluminum profile hembars, extruded vinyl fabric spline, and fabric as specified.

2.3.2. Fabric shall hang straight, without shifting sideways more than 3 mm (1/8") in either direction due to warp distortion or weave design.
2.3.3. Factory modify housings where necessary to bypass columns.
2.3.4. End brackets:
2.3.4.1. A two piece molded ABS construction with nylon drive sprocket. Bracket colour shall coordinate with the fascia colour.
2.3.5. Shade tube:
2.3.5.1. Minimum 1.52 mm (0.060") thick extruded aluminum with three equally spaced continuous stiffening fins, non-sag design, maximum deflection under full load of fabric L/700.
2.3.6. Fascia:
2.3.6.1. Minimum 1.5 mm (1/6") thick extruded aluminum.
2.3.7. Hembar:
2.3.7.1. Extruded aluminum with matching plastic end finials.
2.3.8. Mounting:
2.3.8.1. Removal of shade system shall not require the disassembly of the shade unit.
2.3.9. Room darkening shade features:
2.3.9.1. 13 mm (1/2") pile mounted in prefinished 38 mm x 28 mm (1-1/2" x 1-1/8") extruded aluminum side and bottom channels finished to match mullions. Include Dynamic hembar to allow for variance in window sill level.

2.4. SHADE MOUNTING SYSTEM

2.4.1. Design extruded aluminum bracket to accept preassembled shade system.
2.4.1.1. Use brackets to facilitate the alignment with shade opening.
2.4.2. Modular construction:
2.4.2.1. Shades shall be removable as a complete modular unit without any component disassembly required.

2.5. ALUMINUM FINISH

2.5.1. Exposed aluminum: Clear anodized AA-M12C22A31.
2.5.2. Unexposed aluminum: Mill finish.

2.6. SHADE FABRIC TYPES

2.6.1. Sun control fabric; dimensionally stable shade fabric:
2.6.1.1. Acceptable Products; 3% open area:
(1) Solarfective 'Solarblock 300 Series'
(2) or equivalent.
2.6.1.2. Colour: as selected by the *Consultant* from the manufacturer's full range.
2.6.2. Room darkening (blackout) fabric; dimensionally stable fabrics:
2.6.2.1. Acceptable Products:
(1) .1 Solarfective Products Limited 'SolarStop Blackout Fabric'
(2) or Equivalent.
2.6.2.2. Colour: as selected by the Consultant from the manufacturer's full range.
2.6.3. Performance:
2.6.3.1. Fabric shall hang flat, without buckling or distortion. Edge, where trimmed, shall hang true and straight, without shifting sideways more than 3 mm (1/8") in either direction due to warp distortion or weave design.
2.6.3.2. Colour fast, retain its shape, and not be affected by moisture or heat.
2.6.4. Flammability:
2.6.4.1. Certified by an independent Laboratory to pass CAN/ULC S109-14.

2.7. FABRICATION

2.7.1. Finished assemblies shall be, square, true to size and free from distortion, twist, or other defects that could affect their strength, operation or appearance.
2.7.2. Factory applied finish shall be uniform, smooth and without blemishes.

2.7.3. The fabric shall be colour fast, retain its shape, not be affected by moisture or heat, and shall be non-flammable. Cut fabric to eliminate glare and reflection from shining surfaces while maintaining exterior view. The top of the fabric is retained in recessed spline of the shade roller and the bottom of the fabric is retained by the hem bar.

3 EXECUTION

3.1. INSTALLATION

3.1.1. Install shade systems in plumb, squared, adequately anchored, maintaining uniformed clearances, accurate alignment levels, and parallel with the window plane. Fabric shall not travel more than 3 mm (1/8") in either direction within channels after installation.
3.1.2. Fabric shall be pre-measured and manufactured off-Site.
3.1.3. Shades shall be snapped into place without screws or visible fasteners.
3.1.4. Incorporate reinforcing, fastening and anchorage required for installation of shades.
3.1.5. Securely attach installation fittings to their mounting surfaces with stainless steel or hardened aluminum screws of proper length and type, and durable anchors.
3.1.6. Install shade roller true and level, and with cloth to hang flat without buckling or distortion.
3.1.7. Room darkening shades (black-out) to be installed to eliminate passage of light from exterior.

3.2. ADJUSTING AND CLEANING

3.2.1. Verify that installed shade system functions properly and adjust it accordingly to ensure satisfactory operation.
3.2.2. Refinish damaged or defective work so that no variation in surface appearance is discernible.

3.3. CLOSEOUT ACTIVITIES

3.3.1. Demonstration
3.3.1.1. Before acceptance of system, arrange for demonstration of equipment with authorized representatives of the Owner, to be performed by representative of shade manufacturer to assure proper function, operation and explanation.
3.3.1.2. Conduct comprehensive demonstration for the Owner’s staff on operation and care of interior window treatments.

END OF SECTION

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ARCHITECTURAL

DWG #	REV	DRAWING TITLE
A00.00 – GENERAL INFORMATION		
A00.00	07/16/2024	COVER SHEET
A00.01	08/13/2024	DRAWING LISTS, OBC MATRIX
A00.02	08/13/2024	TYPICAL DETAILS LIST, ABBREVIATIONS
A00.03	08/13/2024	CONSTRUCTION ASSEMBLY MATRIX - EXTERIOR ENVELOPE
A00.04	08/13/2024	CONSTRUCTION ASSEMBLY MATRIX - EXTERIOR
A00.05	08/13/2024	CONSTRUCTION ASSEMBLY MATRIX - INTERIOR
A00.06	07/16/2024	TYPICAL FIXTURE MOUNTING HEIGHTS
A00.07	07/16/2024	TYPICAL UNIVERSAL WASHROOM CODE REQUIRMENTS
A01.00 – FIRE, LIFE SAFETY, & AODA		
A01.00	08/13/2024	FIRE, LIFE SAFETY, & AODA PLAN
A01.01	07/17/2024	SITE PLAN - PEEL REGION GARBAGE VEHICLE TRACKING
A01.02	07/17/2024	AERIAL FIRE TRUCK TRACKING SWEEP
A02.00 - SITE PLANS		
A02.00	07/16/2024	SITE SURVEY
A02.01	07/16/2024	SITE PLAN - DEMOLITION
A02.02	08/13/2024	OVERALL SITE PLAN
A02.03	08/13/2024	ENLARGED SITE PLAN
A02.04	08/13/2024	SITE PLAN - LAYOUT
A02.05	07/17/2024	SITE DETAILS
A02.06	07/16/2024	SITE DETAILS
A02.07	08/13/2024	SITE DETAILS
A02.08	Date 13	CANOPY DETAILS, FOUNDATION, RCP & ROOF PLAN
A03.00 – FLOOR PLANS		
A03.00	08/13/2024	FOUNDATION PLAN
A03.01	08/13/2024	LAYOUT - SLAB SETOUT PLAN
A03.02	07/16/2024	FOUNDATION AND SLAB DETAILS
A03.03	07/16/2024	FLOOR PLAN
A03.04	08/13/2024	INTERIOR PARTITION PLAN
A03.05	07/16/2024	CLEARSTORY PLAN
A03.06	08/13/2024	ROOF PLAN
A03.07	07/16/2024	ROOF PLAN -EDGE OF DECK
A03.08	07/16/2024	ROOF PLAN - PV PANEL LAYOUT
A03.09	07/16/2024	LEVEL 01 - REFLECTED CEILING PLAN
A03.10	07/16/2024	LEVEL 01 - REFLECTED CEILING PLAN LEGEND AND DETAILS
A03.11	08/13/2024	LEVEL 01 - FINISHES PLANS
A03.12	07/16/2024	LEVEL 01 - REFLECTED CEILING FINISHES PLANS
A03.13	08/13/2024	LEVEL 01 - FFE
A04.00 – BUILDING ELEVATIONS		
A04.00	08/13/2024	EXTERIOR ELEVATIONS
A04.01	08/13/2024	EXTERIOR ELEVATIONS
A04.02	08/13/2024	BUILDING SIGNAGE
A04.03	07/16/2024	CLADDING ELEVATIONS
A04.04	07/16/2024	CLADDING ELEVATIONS
A05.00 – BUILDING SECTIONS		
A05.00	07/16/2024	BUILDING SECTIONS
A05.01	07/16/2024	BUILDING SECTIONS
A05.02	07/16/2024	BUILDING SECTIONS
A05.03	07/16/2024	BUILDING SECTIONS
A05.04	07/16/2024	BUILDING SECTIONS
A05.05	Date 13	WALL SECTIONS
A05.06	Date 13	WALL SECTIONS
A05.07	Date 13	WALL SECTIONS
A05.08	Date 13	WALL SECTIONS
A05.09	Date 13	WALL SECTIONS
A06.00 – GLAZING, & LOUVER ELEVATIONS		
A06.01	08/13/2024	EXTERIOR GLAZING ELEVATIONS
A06.02	08/13/2024	INTERIOR GLAZING ELEVATIONS
A07.00 – BUILDING DETAILS		
A07.01	07/16/2024	EXTERIOR ENVELOPE TYPICAL DETAILS
A07.02	08/13/2024	EXTERIOR TYPICAL DETAILS
A07.03	08/13/2024	INTERIOR TYPICAL DETAILS
A07.04	08/13/2024	HOSE TOWER DETAILS
A07.05	08/13/2024	HOSE TOWER DETAILS
A08.00 – INTERIOR, WASHROOMS & MILLWORK		
A08.00	07/16/2024	MILLWORK DETAILS - GENERAL NOTES, COUNTER TOPS, GENERAL DETAILS
A08.01	08/13/2024	WASHROOM PLANS & ELEVATIONS
A08.02	08/13/2024	INTERIOR ELEVATIONS
A08.03	08/13/2024	INTERIOR ELEVATIONS
A08.04	08/13/2024	DORMITORY PLANS & ELEVATIONS
A08.05	07/16/2024	KITCHEN MILLWORK PLANS & ELEVATIONS
A08.06	07/16/2024	DAYROOM MILLWORK PLANS & ELEVATIONS
A08.07	07/16/2024	CORRIDOR MILLWORK PLANS & ELEVATIONS
A08.08	08/13/2024	LAUNDRY MILLWORK PLANS & ELEVATIONS
A08.09	07/16/2024	MILLWORK SECTION DETAILS
A08.10	07/16/2024	MILLWORK SECTION DETAILS
A08.11	07/16/2024	MILLWORK SECTION DETAILS
A10.00 – SCHEDULES		
A10.00	08/13/2024	DOOR KEY PLAN & SCHEDULE
A10.01	07/16/2024	DOOR PANELS, FRAMES, & DETAILS

7

STRUCTURAL

DWG #	DRAWING TITLE
S0.0	TITLE PAGE
S1.0	GENERAL NOTES
S1.1	GENERAL NOTES AND LOAD DIAGRAM
S2.0	FOUNDATION PLAN
S3.0	FOUNDATION DETAILS
S3.1	FOUNDATION SECTIONS
S4.0	LOW ROOF, HIGH ROOF AND CANOPY FRAMING PLANS
S4.1	BAY ROOF AND TOWER ROOF FRAMING PLANS
S5.0	FRAMING DETAILS
S5.1	FRAMING DETAILS
S6.0	STEEL COLUMN SCHEDULE AND PIER/BASE PLATE DETAILS
S6.1	STEEL COLUMN SCHEDULE
S6.2	STEEL COLUMN SCHEDULE
S6.3	STEEL ELEVATIONS
S6.4	Unnamed
S7.1	SCHEDULES

MECHANICAL

DWG #	DRAWING TITLE
M-000	COVER PAGE
M-001	MECHANICAL LEGEND & DRAWING LIST
M-100	MECHANICAL SITE PLAN
M-200	FOUNDATION PLAN - PLUMBING & DRAINAGE
M-201	LEVEL 01 PLAN - PLUMBING & DRAINAGE
M-202	ROOF PLAN - PLUMBING & DRAINAGE
M-301	LEVEL 01 PART PLAN - VENTILATION
M-302	ROOF PLAN - VENTILATION
M-401	LEVEL 01 PLAN - REFRIGERATION
M-501	LEVEL 01 PLAN - FIRE PROTECTION
M-700	VRV SCHEMATIC
M-701	FIRE PROTECTION SCHEMATIC
M-751	MECHANICAL CONTROL SEQUENCES I
M-752	MECHANICAL CONTROL SEQUENCES II
M-801	MECHANICAL DETAILS I
M-802	MECHANICAL DETAILS II
M-803	MECHANICAL DETAILS III
M-804	MECHANICAL DETAILS IV
M-805	MECHANICAL DETAILS V
M-901	MECHANICAL SCHEDULES I
M-902	MECHANICAL SCHEDULES II

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CIVIL

VV	DRAWING TITLE
C2.1	SITE GRADING, AND EROSION & SEDIMENT CONTROL PLAN
C2.2	SITE SERVICING PLAN
C2.3	NOTES & DETAILS PLAN

ELECTRICAL

DWG #	DRAWING TITLE
E-000	COVER PAGE
E-001	ELECTRICAL LEGEND AND GENERAL NOTES
E-002	ELECTRICAL SITE PLAN
E-003	ELECTRICAL SITE PHOTOMETRIC 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 IV
E-806	ELECTRICAL DETAILS VI
E-807	ELECTRICAL DETAILS VII
E-808	EV FIRE TRUCK DETAILS
E-901	SINGLE LINE DIAGRAM
E-902	SCHEDULES FOR LIGHTING
E-903	EQUIPMENT WIRING SCHEDULE

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landscape architecture

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LANDSCAPE

DWG #	DRAWING TITLE
L-1	TREE PROTECTION PLAN
L-2	TREE PROTECTION PLAN
L-3	LANDSCAPE PLAN
L-4	DETAILS
L-5	DETAILS

7

[PLOT DATE: 2024-09-13 4:30:19 PM]

ONTARIO BUILDING CODE DATA MATRIX

PART 3 - FIRE PROTECTION, OCCUPANT SAFETY AND ACCESSIBILITY

OBC REFERENCE...

	Name of...	DPAI Architecture Inc.	Name of Project	City of Brampton Fire Station 215		
	Address 1	25 Main Street West, Suite 1800	Location/Address	10539 Goreway Drive, Brampton		
	Address 2	Hamilton, ON L8P 1H1	Date	June 27, 2024		
	Contact	Sebastian Lubczynski				

3.00	BUILDING CODE VERSION	O.Reg. 332/12			LAST AMENDMENT	O.Reg. 762/20		
3.01	PROJECT TYPE	New Construction						[A] 1.1.2.
3.02	MAJOR OCCUPANCY CLASSIFICATION	OCCUPANCY				USE		3.1.2.1.(1)
		D	Business & Personal Services			Fire station crew area		
		F3	Low Hazard Industrial			Storage Garage		
3.03	SUPERIMPOSED MAJOR OCCUPANCIES	NO						3.2.2.7.
3.04	BUILDING AREA (m²)	DESCRIPTION			EXISTING	NEW	TOTAL	[A] 1.4.1.2.
		Group C			N/A	67	67	
		Group D			N/A	377	377	
		Group F3			N/A	379	379	
		TOTAL			0	822	822	
3.05	GROSS AREA (m²)	DESCRIPTION			EXISTING	NEW	TOTAL	[A] 1.4.1.2.
		Group C			N/A	219	219	
		Group D			N/A	429	429	
		Group F3			N/A	409	409	
		TOTAL			0	1,057	1,057	
3.06	MEZZANINE AREA (m²)	DESCRIPTION			EXISTING	NEW	TOTAL	3.2.1.1.
		N/A			0	0	0	
		TOTAL			0	0	0	
3.07	BUILDING HEIGHT	STOREYS ABOVE GRADE		STOREYS BELOW GRADE		(m) ABOVE GRADE		[A] 1.4.1.2. & 3.2.1.1.
		1		N/A		7.80		
3.08	HIGH BUILDING	No						3.2.6
3.09	NUMBER OF STREETS/ FIREFIGHTER ACCESS	1	STREET(S)					3.2.2.10. & 3.2.5.
3.10	BUILDING CLASSIFICATION	3.2.2.56.	Group D, up to 2 Storeys, Sprinklered					3.2.2.20-83.
	(SIZE AND CONSTRUCTION RELATIVE TO OCCUPANCY)	3.2.2.79.	Group F, Division 3, up to 2 Storeys, Sprinklered					
3.11	SPRINKLER SYSTEM	Required		PROVIDED:	Entire Building			3.2.1.5. &
		DESCRIBE	Entire building shall be sprinklered in accordance to 3.10 Building Classification					3.2.2.17.
3.12	STANDPIPE SYSTEM	Not Required						3.2.9.
3.13	FIRE ALARM SYSTEM	Required			TYPE PROVIDED	Single Stage		3.2.4.
3.14	WATER SERVICE/ SUPPLY IS ADEQUATE	Yes						
3.15	CONSTRUCTION TYPE	RESTRICTIONS	Combustible Permitted					3.2.2.2.20.-83.
		ACTUAL	Combination			HEAVY TIMBER...	N/A	3.2.1.4.
3.16	IMPORTANCE CATEGORY	Post-Disaster				-		4.1.2.1.(3), T4.1.2.1.B.
3.17	SEISMIC HAZARD INDEX (IE Fa Sa...	0.25	Seismic Design Required					4.1.8.18.(1)
3.18	REASON FOR REQUIREMENT	IMPORTANCE CATEGORY						4.1.8.18.(2)
3.19	OCCUPANT LOAD	FLOOR LEVEL / AREA		OCCUPANCY TYPE		BASED ON	OCCUPANT LOAD (PERSONS)	3.1.17.
		Fire Station		Personal Services		Design of space	15	
		TOTAL					15	
3.20	HAZARDOUS SUBSTANCES	No						3.3.1.2. & 3.3.1.19.
3.21	REQUIRED FIRE SEPARATIONS	RATING	LOCATIONS					
		1.5HR	Apparatus Bay demising wall					
		1HR	Electrical Room					
		1HR	Mechanical Room					
3.22	REQUIRED FIRE RESISTANCE RATINGS	HORIZONTAL ASSEMBLY			RATING (H)	SUPPORTING ASSEMBLY (H)	NONCOMBUSTIBLE IN LIEU OF RATING?	3.2.2.20.-83, 3.2.1.4.
		FLOORS OVER BSMT			N/A	N/A	YES	
		FLOORS			45min	45min	YES	
		MEZZANINE			N/A	N/A	YES	
		ROOF			N/A	N/A	YES	
3.23	SPATIAL SEPARATION	WALL	EBF AREA (m2)	U.P.O AREA (m2)	L.D. (m)	L/H OR H/L	Permitted Max % of Openings	Proposed % of Openings	3.2.3.
		North	286.20	37.00	91.00	N/A	100.00%	12.93%	
		East	257.00	114.50	12.74	N/A	100.00%	44.55%	
		South	280.20	60.00	9.91	N/A	100.00%	21.41%	
		West	255.80	115.00	27.40	N/A	100.00%	44.96%	
		WALL	REQUIRED FRR (H)	LISTED DESIGN OR DESCRIPTION			CONSTRUCTION TYPE	CLADDING TYPE	
		North	Not Required	N/A			Combustible Permitted	Combustible Permitted	
		East	Not Required	N/A			Combustible Permitted	Combustible Permitted	
		South	Not Required	N/A			Combustible Permitted	Combustible Permitted	
		West	Not Required	N/A			Combustible Permitted	Combustible Permitted	
3.24	BARRIER-FREE DESIGN	Yes							3.8.
3.25	BARRIER-FREE ENTRANCES	No. OF ENTRANCES PEDESTRIAN ENTRANCES				2			3.8.1.2 (1)
		No. OF ENTRANCES REQ'D TO BE BARRIER FREE				1			3.8.1.2 (1)
3.26	BUILDING EXITS	LEVEL	REQUIRED	PROVIDED					3.4.2.1
		1	4	5					
3.27	MAX TRAVEL DISTANCE TO EXIT	OCCUPANCY		REQUIRED	PROVIDED				3.4.2.5
		Personal Services		40	15.5				
		Low Hazard Industrial Storage Garage		60	22.8				
3.28	PLUMBING FIXTURE REQUIREMENTS	RATIO:	MALE:FEMALE = 50:50 EXCEPT AS NOTED OTHERWISE						3.7.4.
		FLOOR LEVEL/AREA		OCCUPANT LOAD	OBC SENTENCE	FIXTURES REQUIRED	FIXTURES PROVIDED		
		Fire Station		15.00	3.7.4.7.(1)	2	5		
3.29	ENERGY EFFICIENCY	COMPLIANCE PATH:							
		CLIMATIC ZONE:	ZONE 6						
3.30	BUILDING ENVELOPE REQUIREMENTS	DESCRIPTION				INSUL. REQUIRED	INSUL. PROVIDED		SB-10 Div 3
		ROOF							
		INSULATION ENITERLY ABOVE DECK				R-35 CI	R- 57 CI		
		WALLS, ABOVE GRADE							
		MASS				R-19 CI	R-25 CI		
		STEEL FRAMED				R-13 + R-15 CI	R20 + R-33 CI		
		WALLS, BELOW GRADE							
		FLOORS							
		SLAB-ON-GRADE FLOORS							
		UNHEATED				R-15 for 48"	R-15 Full Slab		
3.30	NOTES								
1		*ALL REFERENCES ARE TO DIVISION B OF THE OBC UNLESS PRECEDED BY [A] FOR DIVISION A AND [C] FOR DIVISION C*							

ONTARIO BUILDING CODE DATA MATRIX

Revised: 2021 08 21

SEISMIC DESIGN REQUIREMENTS FOR NON-STRUCTURAL ELEMENTS (CATEGORIES 6 TO 22 TABLE 4.1.8.18)

OBC REFERENCE

01	IMPORTANCE CATEGORY		Post-Disaster	-		4.1.2.1.(3). & 5.2.2.1.(2)
02	SITE CLASS		C			
03	5% SPECTRAL RESPONSE ACCELERATION Sa(0.2)		0.168			4.1.8.4.(1) & SB-1, T.1.2.
04	EARTHQUAKE IMPORTANCE FACTOR (IE)		1.50			T.4.1.8.5.
05	PEAK GROUND ACCELERATION (PGA)		0.11			4.1.8.4.(1) & SB-1 T.1.2
06	PGA FACTOR		0.8			4.1.8.4.(4)(a)(b)
07	PGA REFERENCE (PGAref)		0.0848			4.1.8.4.(4)
08	SITE COEFFICIENT (Fa = F(0.2))		1.00			4.1.8.4.(7) & T.4.1.8.4.B
09	SEISMIC HAZARD INDEX	IEFaSa(0.2) =	0.25	0.35 OR GREATER?	NO	4.1.8.18.(1)
				LESS THAN 0.35?	YES	4.1.8.18.(2)
	SEISMIC DESIGN REQUIRED FOR CATEGORIES 6 TO 22, TABLE 4.1.8.18.?			Required		4.1.8.18.(2)
	REASONING FOR REQUIREMENT:			IMPORTANCE CATEGORY		

* May 2021

BRAMPTON

BRAMPTON FIRE STATION 215

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ONTARIO ASSOCIATION OF ARCHITECTS
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LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
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:

DRAWING LISTS, OBC MATRIX

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE:

DRAWING NO.: **A00.01** REVISION: **7**

ABBREVIATION LIST

ABBREV.	WORD
W.O.	WINDOW OPENING
W.W.F.	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT
WD.	WOOD
WRGBB	WATER RESISTENT GYPSUM BACKING BOARD
WS	WINDOW SHADE
WT	WALL TILE

ABBREVIATION LIST

ABBREV.	WORD
M	METER
M.O	MASONRY OPENING
M.P	METAL PLATE
MAINT	MAINTENANCE
MAS	MASONRY
MAX	MAXIMUM
MECH	MECHANICAL
MED	MEDIUM
MFG	MANUFACTURING
MFR	MANUFACTURER
MI	MIRROR
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
MTC COORD	MULTIPLE TRADE COORDINATION REQUIRED
MTD	MOUNTED
MTL	METAL
MWLLBD(L)	MURPHY WALL BED - LATERAL
MWLLBD(V)	MURPHY WALLBED - VERTICAL
N	
N	NORTH
N.S	NON-SLIP
N.T.S	NOT TO SCALE
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTARCT
NO	NUMBER
O	
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OH.	OVERHEAD
OPG.	OPENING
OPP.	OPPOSITE
ORN.	ORNAMENTAL
OZ.	OUNCE
P	
P.B.	PUSH BUTTON
P.C.	PRECAST
P.P.	PUSH PLATE
P.T.D.	PAPER TOWEL DISPENSER
PAR.	PARALLEL
PART	PARTITION
PER.	PERIMETER
PERP.	PERPENDICULAR
PL.	PLATE
PLAM.	PLASTIC LAMINATE
PLF.	PLATFORM
PNL.	PANEL
PNT	PAINT
PR.	PAIR
PREFAB	PREFABRICATED
PRFN	PRE-FINISHED
PT	PORCELAIN TILE
PTL	PUSH TO LOCK
PVC.	POLYVINYLCHLORIDE
Q	
QTR.	QUARTER
QTY.	QUANTITY
R	
R.	RADIUS
R.D.	ROOF DRAIN
R.H.	RIGHT HAND
R.O.	ROUGH OPENING
R.W.	RAIN WATER
RCA	REINFORCED CONCRETE APRON
REF.	REFRIGERATOR
REQ'D	REQUIRED
RES.	RESIDENTIAL
REX	REQUEST TO EXIT
RM.	ROOM
RSL	RESILIENT
S	
S.	SOUTH
S.C.S.	SOLID CORE STEEL
S.C.W.	SOLID CORE WOOD
S.M.	SHEET METAL
S.N.D.	SANITARY NAPKIN DISPENSER
S.P.	STEEL PLATE
S.S.	STAINLESS STEEL
S.SK.	SERVICE SINK
S.T.C.	SOUND TRANSMISSION CLASS
SC(OT)	SCUPPER - OVERFLOW TYPE
SCHED.	SCHEDULE
SECT.	SECTION
SER.	SERVICE
SH.	SHOWER
SHLV.	SHELVING
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ.	SQUARE
SQ.FT.	SQUARE FEET, SQUARE FOOT
SSUR	SOLID SURFACING (MATERIAL)
SSUR(IS)	SOLID SURFACE (MATERIAL) FOR ISLAND COUNTERTOPS
SSUR(WS)	SOLID SURFACE (MATERIAL) FOR WINDOW SILLS
STA.	STANDARD
STD.	STATION
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SYS.	SYSTEM
T	
T.&G.	TONGUE AND GROVE
T.T.D.	TOILET TISSUE DISPENSER
T.T.H.	TOILET TISSUE HOLDER
T/O	TOP OF
TEL.	TELEPHONE
TEMP.	TEMPERARTURE
THR.	THRESHOLD
THRU.	THROUGH
TOFM	TOILET - FLOOR MOUNTED
TOWM	TOILET - WALL MOUNTED
TV.	TELEVISION
TYP.	TYPICAL
U	
U.L.C.	UNDERWRITERS' LABORATORIES CANADA
U.N.O.	UNLESS NOTED OTHERWISE
U.O.S.	UNLESS OTHERWISE SPECIFIED
U.S.S.	UNDER SIDE OF STRUCTURE
UNFIN.	UNFINISHED
UR.	URINAL
V	
V.C.T.	VINYL COMPOSITE TILE
V.P.	VENT PIPE
VEST.	VESTIBULE
VIF.	VERIFY
W	
W.	WEST
W.C.	WATER CLOSET
W.M.	WIRE MESH

ABBREVIATION LIST

ABBREV.	WORD
A	
&	AND
@	AT
A.F.F	ABOVE FINISH FLOOR
AL	ALUMINIUM
ARCH	ARCHITECTURAL
ATC	ACOUSTIC TILE CEILING
AUTO	AUTOMATIC
B	
B.O	BOTTOM OF
B/W	BETWEEN
BAB	ROOF ANCHOR - BOLT AROUND BEAM
BD	BOARD
BF	BARRIER FREE
BIT	BITUMINOUS
BLDG	BUILDING
BLKG	BLOCKING
BS	BLACK-OUT WINDOW SHADE
C	
C.B.U	CONCRETE BLOCK UNIT
C.L.	CENTERLINE
C.M.U	CONCRETE MASONRY UNIT
C/W	COMPLETE WITH
CA ITEM	CASH ALLOWANCE ITEM
CAB	CABINET
CHAN	CHANNEL
CL	CLOSET
CLG	CEILING
CNTR	COUNTER
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CORR	CORRIDOR
CPT	CARPET
CR	CARD READER
CT	CERAMIC FLOOR TILE
CTB	CERAMIC TILE BASE
CWT	CERAMIC WALL TILE
D	
D.F	DRINKING FOUNTAIN
D.O	DOOR OPERATOR
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
DWR	DRAWER
E	
E	EAST
E.W	EACH WAY
EFG	ENTRANCE FLOOR GRILLE
EL	ELEVATION
ELECT	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENTR	ENTRANCE,ENTRY
EQ	EQUAL
EQUIP	EQUIPMENT
ES	ELECTRIC STRIKE
EXIST	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F	
F.A	FIRE ALARM
FAPS	FIRE ALARM PULL STATION
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FRR	FIRE RESISTANCE RATING
FRS	FIRE ROUTE SIGN
FT	FEET,FOOT
FTG	FOOTING
G	
G.W.B	GYPSUM WALL BOARD
GA	GAUGE
GALV	GALVANIZED
GL	GLAZING
GND	GROUND
GR	GRADE
GYP	GYPSUM BOARD
H	
H.S.P	HOSE STAND PIPE
H.V.A.C	HEATING, VENTILATION, AIR CONDITIONING
HB	HOSE BIB
HD	HAND DRYER
HDA	HEAVY DUTY ASPHALT
HDW	HARDWARE
HLR	HORIZONTAL LIFELINE FALL PROTECTION SYSTEM - ROOF MOUNTED
HLW	HORIZONTAL LIFELINE FALL PROTECTION SYSTEM -WALL MOUNTED
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
I	
I.D	INSIDE DIAMETER
IN	INCH,INCHES
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
J	
J.C	JANITOR CLOSET
JT	JOINT
K	
K.P	KICK PLATE
L	
L.F	LINEAR FOOT
L.H	LEFT HAND
L.P	LOW POINT
LAM	LAMINATE
LAV	LAVATORY
LDA	LIGHT DUTY ASPHALT
LINO	LINOLEUM
LKR	LOCKER
LNT	LINTEL
LRG	LARGE
LVL	LEVEL
LVR	LOUVER
LVR.O	LOUVER OPENING
M	

TYPICAL DETAILS LIST

SHEET NUMBER	DETAIL NAME
A10.01	TYPICAL DOOR INSTALLATION DETAILS
A10.01	DOOR HARDWARE TYPES & HEIGHTS
FOUR FOLD DOOR	
A07.03	FOUR FOLD DOOR DETAILS
LOUVRES	
A07.01	LOUVRE CONNECTION DETAILS
SLIDING DOOR	
A10.01	SLIDING DOOR DETAILS
DIV 9 - FINISHES	
CEILING DETAILS	
A03.10	GYPSUM BOARD BULKHEAD TO ADJACENT CEILINGS
A03.10	TYPE 'B' - GYPSUM BOARD DIVIDER TO ADJACENT CEILINGS
A03.10	GYPSUM BOARD CEILING TO PARTITION WALL
A03.10	TYPICAL ACOUSTIC TILE LAYOUT
A03.10	TYPICAL ACT TO PARTITION WALL
A03.10	WPC-2 - ARMSTRONG WOODWORKS LINEAR PLANK
A03.10	WPC-1 - ARMSTRONG WOODWORKS GRILLE
FLOOR DRAIN	
A07.03	SCHLUDER KERDI-LINE TILEABLE LINEAR DRAIN
FLOOR PAINTING	
A07.03	STOP SIGN @ FOUR FOLD DOORS
FLOOR PROTECTION	
A07.03	CARDBOARD TEMPORARY FLOOR PROTECTION
FLOORING DETAILS	
A03.02	TYPICAL FLOOR SOCKET DETAIL
A07.03	TRANSITION STRIP - 1 - RENO-U - CONC-PCT
A07.03	TRANSITION STRIP - 2 - RUB-CT
WALL BASES	
A07.03	WALL BASE - CT
A07.03	WALL BASE - RUBBER
WALL FINISHES	
A08.10	FELT WALLCOVERING & HEADBOARD SEAM
DIV 10 - SPECIALTIES	
OTHER	
A03.02	TRENCH DRAIN DETAIL
DIV 11 - EQUIPMENT	
ELECTRICAL	
A07.03	TV ON DRYWALL PARTITION DETAIL
A07.03	TV ON BLOCK PARTITION DETAIL
EV CHARGING STATION	
A02.06	VCS-1 - VEHICLE CHARGING STATION C/W BUMPER
FIRE & SMOKE PROTECTION	
A01.00	FIRE EXTINGUISHER CABINET DETAIL
ROOF ACCESSORIES	
A03.08	SOLAR PANEL RACKING SYSTEM
WASHER EXTRACTOR	
A03.02	WASHER EXTRACTOR DETAIL 65lb
A03.02	WASHER EXTRACTOR TRENCH DETAIL
DIV 12 - FURNISHINGS	
SILLS	
A07.03	WINDOW SILL DETAIL
TABLES	
A08.11	FIRE HYDRANT DINING TABLE
A08.11	FIRE HYDRANT DINING TABLE - JOINERY DETAIL
WINDOW SHADES	
A07.03	WINDOW SHADES
IN DEVELOPMENT	
LOGO INLAY	
A03.11	TILE INLAY LOGO DETAIL

10

TYPICAL DETAILS LIST

SHEET NUMBER	DETAIL NAME
DIV 0 - GENERAL REQUIREMENTS	
FIXTURE MOUNTING HEIGHTS	
A00.06	FIXTURE MOUNTING HEIGHT GENERAL NOTES
A00.06	FIXTURE MOUNTING HEIGHTS - CHANGE TABLES
A00.06	WASHROOM ACCESSORIES MOUNTING HEIGHTS
A00.06	CONTROLS MOUNTING HEIGHTS
A00.06	OTHER FIXTURE MOUNTING HEIGHTS
A00.07	EMERGENCY CALL SYSTEM GENERAL NOTES
A00.07	FIXTURE MOUNTING HEIGHT GENERAL NOTES
A00.07	ECS - UNIVERSAL WASHROOMS
A01.00	PLAN OF ADO INSTALLATION REQUIREMENTS
DIV 2 - SITE CONSTRUCTION	
BOLLARDS	
A02.06	TYPICAL BOLLARD DETAILS
CONCRETE SLAB JOINTS	
A02.05	CONCRETE SIDEWALK PAVEMENT
CURB & RAMP DETAILS	
A02.05	BARRIER CURB - ADJACENT TO SIDEWALK / HARD SURFACES
A02.05	BARRIER CURB - ADJACENT TO LANDSCAPED AREAS
A02.05	BARRIER CURB - DEPRESSED ENTRANCE CURB
DEMO SITE ITEMS	
A02.01	CATCH BASIN SEDIMENT TRAP DETAIL
A02.01	MUD MAT
FENCING	
A02.01	TEMPORARY CONSTRUCTION FENCING
A02.07	CHAIN LINK FENCE DETAIL
A02.07	CHAIN LINK FENCE GATE DETAIL
A02.07	DECORATIVE FENCE DETAIL
A02.07	PERFORATED BRICK FENCE DETAIL
FLAGPOLES	
A02.06	FLAG POLE BASE
GARBAGE ENCLOSURE	
A02.07	GARBAGE ENCLOSURE GATE DETAIL
A02.07	GARBAGE ENCLOSURE PLAN DETAIL
GENERATOR	
A02.06	EXTERIOR GENERATOR DETAIL
LIGHTING	
A02.06	LIGHT STANDARD HIGH BASE DETAIL
A02.06	LIGHT STANDARD LOW BASE DETAIL
PARKING	
A02.05	AODA RETURN CURB RAMP DETAIL
A02.05	AODA PARKING SPACE
SIGNAGE	
A02.01	PROJECT SIGN DETAIL
A02.05	SIGNS FIXED POST
A02.05	MUNICIPAL SIGNAGE
A02.05	PYLON SIGN - DIGITAL
A02.05	ACCESSIBLE PARKING SIGNAGE
TACKTILE INDICATORS	
A02.05	TACTILE HAZARD INDICATOR TILE
DIV 3 - CONCRETE	
CONCRETE SLAB JOINTS	
A03.02	TYPICAL CONCRETE SLAB JOINT DETAIL
CONCRETE SURFACE	
A03.02	CONCRETE TRANSITION APRON
EDGE CONDITION	
A03.02	THERMALLY BROKEN SLAB EDGE DETAIL @ EXTERIOR DOORS
A03.02	THERMALLY BROKEN SLAB EDGE DETAIL (TYP)
FOUNDATION	
A03.02	FROST SLAB DETAIL
DIV 4 - MASONRY	
MASONRY	
A04.02	SOLIDER COURSE ON ANGLE
MASONRY CONNECTOR	
A07.01	FERO THERMAL TIE DETAILS
DIV 5 - METALS	
ACCESS LADER	
A07.02	INTERIOR ROOF ACCESS LADDER DETAIL
A07.02	EXTERIOR ROOF ACCESS LADDER DETAIL
EQUIPMENT	
A08.08	TYPICAL STAINLESS STEEL DECON SINK - SINGLE SIDE PAN
FOUR FOLD DOOR	
A07.02	FOUR FOLD DOOR JAMB DETAIL
RAILING DETAILS	
A02.07	GUARD RAIL - CONCRETE MOUNTED EXTERIOR
STAIR - HOSE TOWER	
A07.05	STAIR SECTION DETAIL
A07.05	HOSE TOWER PLATFORM - HANDRAIL/GUARD DETAIL
A07.05	HOSE TOWER PLATFORM - DRYING PEGS
DIV 6 - WOOD & PLASTICS	
CW - BASE CABIENTS	
A08.09	BASE - 1 DR 1 DWR - FULL OVERLAY
A08.09	BASE - 4 DWR EQ. - FULL OVERLAY
A08.09	BASE - 2 DR UNDER-MOUNT SINK - FULL OVERLAY
A08.09	BASE - WORKSURFACE
A08.09	BASE - 3 DWR EQ. - FULL OVERLAY
A08.09	BASE - 1 DRAWER FOR WASTE BIN
A08.10	BASE - 1 DR 1 SHLF - FULL OVERLAY
A08.10	BASE - ISLAND - 2 DWR EQ. - STRAIGHT - FULL OVERLAY
A08.10	BASE - ISLAND - 3 DWR EQ. - STRAIGHT - FULL OVERLAY
A08.10	BASE - CREDENZA - SLIDING DOOR
A08.10	BASE - 1 DWR - STORAGE BIN
CW - BED	
A08.10	BED - PLAN & SECTIONS - W/ FELT LEDGE
CW - COUNTERTOP DETAILS	
A08.00	SOLID SURFACING COUNTER TOP
A08.00	STAINLESS STEEL COUNTER TOP
CW - FULL HEIGHT CABINETS	
A08.09	FH - 2D
A08.09	FH - DC - 4DR
A08.09	FH - 2 DR STOR - SINGLE - PULL OUT - FULL OVERLAY
A08.09	FH - OPEN SHLF CLOSET - FULL OVERLAY
A08.10	FH - 2D - W/COUNTER
A08.10	CW - FH - FRIDGE
A08.10	FH - CUBBIE BASE W/ LOCKER
CW - GENERAL BLOCKING REQUIREMENTS	
A08.00	CASEWORK BLOCKING REQUIREMENTS
CW - PANELING	
A08.00	WOOD PANELING DETAIL
CW - UPPER CABIENTS	
A08.00	UPPER - OPEN 2 SHLF - FULL OVERLAY
A08.00	UPPER - OPEN 1 SHLF - FULL OVERLAY
A08.09	UPPER - 1DR 1SHLF - FULL OVERLAY
A08.09	UPPER - 2DRMCW - FULL OVERLAY
DIV 7 - THERMAL & MOISTURE PROTECTION	
FIRE & SMOKE PROTECTION	
A01.00	TOP OF MASONRY FIRESTOPPING DETAIL TO DECK
A01.00	TYP. FRR DETAIL - FIRE DAMPER INSTALLATION
GREEN ROOF	
A07.02	GREEN ROOF DETAILS
ROOF & WALL ACCESSORIES	
A07.01	PARAPET COPING DETAILS
A07.02	ROOF HATCH DETAIL
A07.02	ROOF DRAIN SUMP
A07.02	ROOF CURB DETAIL
A07.02	ROOF PAVER DETAIL
A07.02	ROOF DRAIN C/W RAIN CHAIN
A07.02	ROOF DRAIN C/W DRAIN PIPE EXTENSION
A07.02	ROOF ANCHOR @ JOIST DETAIL
WEATHER BARRIERS	
A07.01	SHEATHING TAPE DETAILS
A07.01	ZIP SHEATHING DETAILS
DIV 8 - OPENINGS	
DOORS	
A10.01	DOOR ELEVATION LEGEND
A10.01	FRAME / JAMB TYPES
A10.01	FRAME TYPES
A10.01	FIRE RATED DOOR REQUIREMENTS

GENERAL NOTES - PROJECT

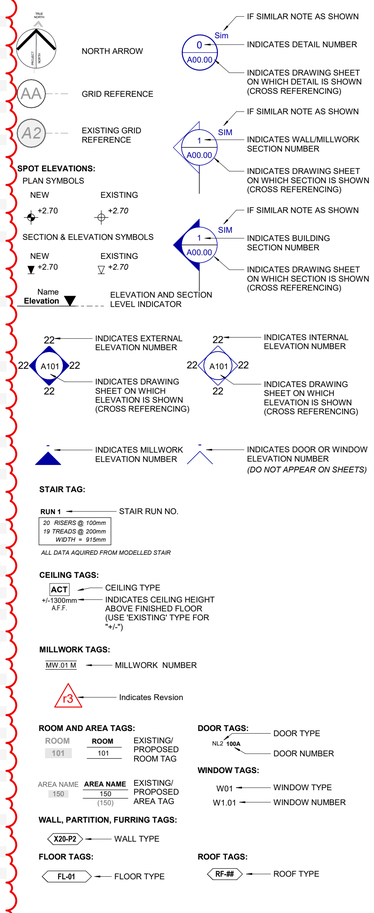
1. REVIEW OF CONTRACT DOCUMENTS

1. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE RESPECTIVE SPECIFICATIONS INCLUDED IN THE BID DOCUMENTS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS DURING THE BIDDING PERIOD. ALLOWANCES WILL NOT BE MADE FOR ERRORS IN BIDS AS A RESULT OF FAILURE TO REVIEW DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS
2. GENERAL CONTRACTOR AND SUBTRADES SHALL READ ALL THE GENERAL NOTES WITHIN THE CONTRACT DOCUMENTS. GENERAL NOTES CONTAIN INFORMATION THAT IS ESSENTIAL TO UNDERSTANDING AND EXECUTION OF THE SCOPE OF WORK
3. IT IS STRONGLY ADVISED THAT THE CONTRACTOR ENSURE ALL SUBTRADES REFER AND COORDINATE WITH A-SERIES DRAWINGS IN THE EXECUTION OF THEIR RESPECTIVE SCOPE OF WORK
4. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH MECHANICAL, ELECTRICAL, AND STRUCTURAL DRAWINGS
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH DEMOLITION DRAWING PACKAGE. APPLICABLE SCOPE IS AS SHOWN IN THIS COMPLETE CONTRACT DOCUMENT PACKAGE.

2. GENERAL REQUIREMENTS

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL EXISTING BY-LAWS, CODES, MUNICIPAL GOVERNMENTS AND AUTHORITIES HAVING JURISDICTION. OBTAIN ALL PERMITS REQUIRED IN ACCORDANCE WITH THE CONTRACT.
2. DETAILS ILLUSTRATED HEREIN ARE REPRESENTATIVE OF THE CHARACTER, QUALITY, AND PROFILES REQUIRED FOR THE WORK. CONDITIONS NOT COVERED BY SPECIFIC DETAILS ARE SIMILAR TO THOSE DETAILED.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. CONTRACTOR TO NOTIFY CONSULTANT IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK AND ORDERING OF MATERIALS.
4. DO NOT SCALE THE DRAWINGS. VERIFY ALL CONDITIONS ON-SITE BEFORE PROCEEDING WITH WORK. ANY CONFLICT OR DISCREPANCY BETWEEN INFORMATION ON DRAWINGS AND ACTUAL FIELD CONDITIONS SHOULD BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR RESOLUTION PRIOR TO COMMENCING WORK
5. GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE IN FULL FOR ALL SIGNAGE, FENCES, AND FREQUENT REMOVAL OF DEBRIS FROM THE SITE.
6. GENERAL CONTRACTOR SHALL PAY FOR AND COORDINATE ANY FIRE ALARM/SMOKE AND/OR HEAT DETECTOR BY-PASSES/RESTORATION.

GRAPHIC SYMBOLS:



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LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
10	ADDENDUM 01	08/13/2024
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:

TYPICAL DETAILS LIST, ABBREVIATIONS

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: 1 : 1

DRAWING NO.: **A00.02** REVISION: **10**

PLOT DATE: 2024-08-13 4:03:23 PM

ASSEMBLIES - EXTERIOR SCREENS

CW-1

WIDTH	R-VALUE		FIRE RATING	N/A
	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

ALUMINUM FRAMED GLAZING SYSTEM
ALUMICOR 'THERMAWALL TW2200 SERIES'
FRAME DEPTH OF 8" (152.4mm) FOR 2-1/2" (63.5mm)
C/W TRIPLE GLAZED IGU'S

7

INTERIOR

FBC-1

WIDTH	R-VALUE		FIRE RATING	N/A
	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

FIBER CEMENT PANEL CLADDING SYSTEM
MOUNTED TO THERMALLY BROKEN SUPPORTING SUB-FRAMING
(REFER TO GENERAL NOTES)

INTERIOR

ACP-1

WIDTH	R-VALUE		FIRE RATING	N/A
	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

PREFINISHED ALUMINUM COMPOSITE PANEL SYSTEM
MOUNTED TO THERMALLY BROKEN ENGINEERED SUPPORTING
SUB-FRAMING (DEPTH VARIES)
(REFER TO GENERAL NOTES)

INTERIOR

L-SHBO

WIDTH	R-VALUE		FIRE RATING	N/A
	R-VALUE CI MIN.	N/A	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

PREFABRICATED LOUVER
BLANK OFF PANEL
UNLESS INDICATED OTHERWISE
ALIGN LOUVER TO EXTERIOR WALL FACE
PROVIDE SUPPLEMENTAL FRAMING TO CONNECT LOUVER TO
SUPPORTING WALL ASSEMBLY (TYP.)
* WHERE REQ'D COORDINATE LOCATION(S) OF SUPPORTING WALL
ASSEMBLY (TYP.)

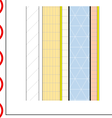
INTERIOR

ASSEMBLIES - PARAPETS

PAR-1

WIDTH	R-VALUE	72	FIRE RATING	N/A
515.4	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT



EXTERIOR

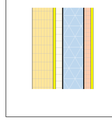
90mm BRICK MASONRY c/w THERMAL CONNECTORS
25mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP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

INTERIOR

PAR-2

WIDTH	R-VALUE	70	FIRE RATING	N/A
431.8	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT



EXTERIOR

150mm MINERAL WOOL INSULATION - R25
- 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

INTERIOR

PAR-3

WIDTH	R-VALUE	45	FIRE RATING	N/A
275.4	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

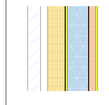
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
152mm WIND LOAD BEARING STEEL STUDS @ 400 O.C, c/w
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
63mm EXTERIOR ZIP R-SHEATHING c/w POLYISO RIGID INSUL. R-12
- ROOFING MEMBRANE

INTERIOR

PAR-4

WIDTH	R-VALUE	66	FIRE RATING	N/A
493.6	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT



EXTERIOR

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

INTERIOR

PAR-5

WIDTH	R-VALUE	66	FIRE RATING	N/A
400.4	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

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

INTERIOR

ASSEMBLIES - SOFFITS

STG-1

TYPE	R-VALUE		FIRE RATING	
FLAT	R-VALUE CI MIN.		SRI VALUE	
	ULC / OBC			

EXT

INT

EXTERIOR

125mm PREFINISHED V-GROVE TONGUE & GROVE METAL SOFFIT
- WOODGRAIN FINISH
- BASIS OF DESIGN - LONGBOARD TONGUE & GROVE PLANKS

INTERIOR

ASSEMBLIES - EXTERIOR WALLS

X-B-3

WIDTH	R-VALUE	35	FIRE RATING	N/A
555	R-VALUE CI MIN.	R21.5	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

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

INTERIOR

X-B-3a

WIDTH	R-VALUE	27	FIRE RATING	N/A
440	R-VALUE CI MIN.	R21.5	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

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

INTERIOR

X-B-1a

WIDTH	R-VALUE	22	FIRE RATING	N/A
315	R-VALUE CI MIN.	R21.5	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

125mm MINERAL WOOL INSULATION - R21.5
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
190mm CONCRETE MASONRY UNITS

INTERIOR

X-S-1

WIDTH	R-VALUE	64	FIRE RATING	N/A
465.4	R-VALUE CI MIN.	R21.5	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

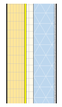
90mm BRICK MASONRY c/w THERMAL CONNECTORS
50mm CONTINUOUS AIR SPACE
125mm MINERAL WOOL INSULATION - R21.5
- AIR BARRIER MEMBRANE
13mm EXTERIOR GYPSUM SHEATHING
152mm WIND LOAD BEARING STEEL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
- VAPOUR BARRIER MEMBRANE
13mm GYPSUM WALL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

INTERIOR

X-S-1a

WIDTH	R-VALUE	58	FIRE RATING	N/A
350.4	R-VALUE CI MIN.	R21.5	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT



EXTERIOR

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

INTERIOR

ASSEMBLIES - ROOFS

RF-1

TYPE	R-VALUE	56.8	FIRE RATING	
FLAT	R-VALUE CI MIN.	57	SRI VALUE	90
	ULC / OBC			

EXT

INT

EXTERIOR

- 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

INTERIOR

RT-2

TYPE	R-VALUE	6.0	FIRE RATING	
FLAT	R-VALUE CI MIN.	0	SRI VALUE	90
	ULC / OBC			

EXT

INT

EXTERIOR

- 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

INTERIOR

VRA

TYPE	R-VALUE		FIRE RATING	
FLAT	R-VALUE CI MIN.		SRI VALUE	
	ULC / OBC			

EXT

INT

EXTERIOR

- SEDUM PLANTING MATS AS SPECIFIED
100mm GROWING MEDIUM
0.6mm FILTER SHEET
25mm DRAINAGE BOARD
5mm PROTECTION MAT
0.34mm ROOT BARRIER

INTERIOR

ASSEMBLIES TYPE CODIFICATION

CODE

WIDTH	R-VALUE		FIRE RATING	N/A
250	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

-mm ASSEMBLY COMPONENT DESCRIPTION

3

INTERIOR

2 1 4 7 6 5 9 8

GENERAL NOTES:

1. ASSEMBLY CODE ASSIGNED TO ALL ASSEMBLIES.
2. INDICATIVE ASSEMBLY SECTION.
3. ASSEMBLY DESCRIPTION, LISTED WITH THICKNESS AND DESCRIPTION OF ASSEMBLY LAYERS, FROM EXTERIOR FACE TO INTERIOR FACE OF ASSEMBLY.
4. ASSEMBLY OVERALL WIDTH.
5. THE R-VALUES GIVEN INDICATES THE CLEAR-FIELD EFFECTIVE VALUES. THESE ARE THE MINIMUM REQUIRED TO MEET THE PASSIVEHOUSE TARGETS. NOTE THAT THE EFFECTIVE R-VALUE CAN BE LESS THAN THE NOMINAL INSULATION R-VALUE BASED ON THERMAL BRIDGING ASSUMPTIONS. IT COULD ALSO BE MORE, AS IT INCLUDES THERMAL PERFORMANCE OF SUBSEQUENT LAYERS (I.E. AIR CAVITIES, DRYWALL, ETC.).
6. MINIMUM R-VALUE OF THE CONTINUOUS INSULATION AS REQUIRED BY OBC.
7. ULC LISTING OR OBC CODE REFERENCE FOR SPECIFIED ASSEMBLIES.
8. REQUIRED FIRE-RESISTANCE RATING OR OVERALL ASSEMBLY.
9. REQUIRED ACOUSTIC PERFORMANCE RATING OF OVERALL ASSEMBLY.

ASSEMBLIES - FOUNDATION WALLS

F1

WIDTH	R-VALUE	1	FIRE RATING	N/A
190	R-VALUE CI MIN.	0	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

- DAMPROOFING
190mm REINFORCED CAST-IN PLACE CONCRETE
- REFER TO STRUCTURAL DRAWINGS

INTERIOR

F2-i2

WIDTH	R-VALUE	31	FIRE RATING	N/A
350	R-VALUE CI MIN.	R15 MIN.	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
200mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

INTERIOR

F3-i2

WIDTH	R-VALUE	31	FIRE RATING	N/A
400	R-VALUE CI MIN.	R15 MIN.	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

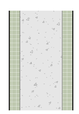
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
290mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

INTERIOR

F4-i2

WIDTH	R-VALUE	31	FIRE RATING	N/A
450	R-VALUE CI MIN.	R15 MIN.	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT



EXTERIOR

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

INTERIOR

F5-i2

WIDTH	R-VALUE	32	FIRE RATING	N/A
590	R-VALUE CI MIN.	R15 MIN.	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT

EXTERIOR

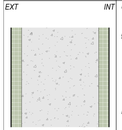
75mm R15 Min. ADHERED RIGID INSULATION
- SELF-ADHERED AIR/VAPOUR BARRIER MEMBRANE
440mm REINFORCED CAST-IN PLACE CONCRETE
75mm R15 Min. ADHERED RIGID INSULATION

INTERIOR

F6-i2

WIDTH	R-VALUE	33	FIRE RATING	N/A
695	R-VALUE CI MIN.	R15 MIN.	STC RATING	N/A
	ULC / OBC	N/A		

EXT / INT



EXTERIOR

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

INTERIOR

GENERAL NOTES - WALL ASSEMBLIES

1. ***EXTERIOR WALL ASSEMBLIES***
   1. THE SPECIFICATIONS, INSTALLATION, AND PERFORMANCE OF AIR BARRIER SYSTEMS AND VAPOUR BARRIERS MUST MEET OR EXCEED DIV. B PART 5 OF THE ONTARIO BUILDING CODE.
   2. THE REQUIREMENTS FOR AN AIR BARRIER AND A VAPOUR BARRIER ARE INTENDED TO BE PROVIDED AS CONTINUOUS PLANES WITHIN THE BUILDING ENVELOPE, ENSURE CONTINUITY OF AIR AND VAPOUR MEMBRANES BETWEEN COMPONENTS, TO ADJACENT CONSTRUCTION AND AT ALL PENETRATIONS TO PREVENT OR RETARD PASSAGE OF MOISTURE LADEN AIR AND/OR THE DIFFUSION OF WATER VAPOUR.
   3. EXTERIOR ASSEMBLIES NOTING STUD FRAMING SHALL BE CONSTRUCTED USING WIND-LOAD BEARING FRAMING DESIGNED TO CARRY REQUIRED LATERAL LOADS. PROVIDE ENGINEERED SHOP DRAWING PRIOR TO COMMENCEMENT OF WORK.
2. ***INTERIOR WALL ASSEMBLIES***
   1. **GENERAL REQUIREMENTS**
      1. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK.
      2. ALL PARTITIONS TO EXTEND TO U/S OF STRUCTURE UNLESS OTHERWISE NOTED. PROVIDE LATERAL BRACING AS REQUIRED
      3. FURRING TO EXTEND TO 150MM ABOVE FINISHED CEILING OR TO U/S OF STRUCTURE WHERE NO CEILING EXISTS UNLESS OTHERWISE NOTED. REFER TO REFLECTED CEILING PLANS
      4. WHERE INTERIOR DOORS ARE CLOSE TO AN INSIDE CORNER, PROVIDE MIN. 150MM CLEARANCE FROM DOOR JAMB TO ADJACENT WALL.
      5. PROVIDE STEEL REINFORCING AS REQUIRED IN ALL INTERIOR GLAZED SCREENS (ALUMINUM OR HOLLOW METAL) TO U/S OF DECK AND/OR FIRE RATED FLOOR ASSEMBLY.
      6. WALL ACCESS PANELS - WHERE POSSIBLE, ACCESS PANELS IN WALLS TO BE LOCATED ON SIDE WALLS OR IN LOCATION WITH MINIMAL VISUAL IMPACT. ACCESS PANELS TO PAINTED TO MATCH WALL FINISH. IN WASHROOMS ACCESS PANELS TO BE GALVANIZED STEEL PAINTED TO MATCH WALL FINISH. ALL ACCESS PANELS TO BE KEYED WITH THE SAME LOCK.
   2. **LOAD BEARING PARTITIONS (INTERIOR)**
      1. WHERE A PARTITION IS A LOAD BEARING WALL, REFER TO THE STRUCTURAL DRAWINGS FOR DESIGN REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK.
   3. **STEEL STUD FRAMED PARTITIONS (INTERIOR)**
      1. ALL PARTITIONS ARE TO UNDERSIDE OF DECK UNLESS OTHERWISE NOTED.
      2. PROVIDE DEFLECTION DETAIL AT TOP OF ALL WALLS THAT ABUT UNDERSIDE OF DECK OR STRUCTURE. SEE ALSO TOP OF WALL DETAILS AS INDICATED.
      3. WHERE SOUND ATTENUATION BATTS ARE CALLED FOR ON THE WALL TYPE, SEAL PERIMETER OF WALLS AND AROUND PENETRATIONS THROUGH WALLS WITH ACOUSTIC SEALANT. APPLY CONTINUOUS ACOUSTIC SEALANT TO BOTH SIDES OF TRACK AT THE JUNCTIONS WITH FLOORS AND ROOF DECKS, AND AROUND PENETRATIONS TO PARTITIONS. RECESSED OUTLETS ARE TO BE STAGGERED SO THAT ONLY ONE OUTLET IS INSTALLED BETWEEN TWO STUDS.
      4. DO NOT FASTEN METAL STUDS TO CURTAIN WALL MULLIONS OR TEE BAR GRIDS.
      5. WHERE INTERIOR DOORS ARE CLOSE TO AN INSIDE CORNER, PROVIDE MIN. CLEARANCE FROM DOOR JAMB TO ADJACENT WALL AS INDICATED ON DETAIL TITLED 'FRAME TYPES'
      6. CONTRACTOR SHALL ENSURE STEEL STUD THICKNESS, SIZE AND SPACING IS ADEQUATE FOR THE HEIGHTS OF PARTITIONS INDICATED. CONTRACTOR SHALL PROVIDE BRACING AS REQUIRED.
      7. USE WATER RESISTANT GYPSUM WALL BOARD ON ALL WET SIDES OF PARTITIONS.
   4. **MASONRY PARTITIONS (INTERIOR)**
      1. HEIGHT OF CONCRETE MASONRY UNIT WALLS TO BE TO UNDERSIDE OF FLOOR/ROOF DECK ABOVE UNLESS OTHERWISE NOTED.
      2. WHERE CONCRETE UNIT MASONRY WALLS ABUT REINFORCED CONCRETE WALLS AND PIERS, RAKE BACK MORTAR JOINT WHERE THE TWO MATERIALS MEET AND PROVIDE CONTINUOUS SEALANT
   5. **FIRE RATED PARTITIONS (INTERIOR)**
      1. FOR WALL ASSEMBLIES THAT DENOTE FRR (FIRE RESISTANCE RATING), THE ASSEMBLY SHALL BE CONSTRUCTED AS A FIRE SEPARATION AT THE LOCATIONS INDICATED IN THE CONTRACT DRAWINGS GRAPHICALLY USING LINES AND/OR TEXT AND SYMBOLS
      2. AT RECESSED PANEL INSTALLATIONS (E.G. ELECTRICAL PANELS) WITHIN RATED WALLS PROVIDE FOR CONTINUITY OF THE REQUIRED RATING BEHIND THE PANEL. REFER TO THE ONTARIO BUILDING CODE DIVISION B, SECTION 3.1.9.2 FOR REQUIREMENTS FOR COMBUSTIBILITY OF SERVICE PENETRATIONS AND SECTION 3.1.10.2 FOR RATING OF FIREWALLS.
      3. WHERE FIRE RATED PARTITIONS ABUT NON-RATED PARTITIONS THE FIRE RATED ASSEMBLY SHALL BE CONTINUOUS AND UNINTERRUPTED BY THE ABUTTING WALLS TO MAINTAIN A CONTINUOUS FIRE SEPARATION.
      4. SEAL PERIMETER OF FIRE RATED WALLS AND AROUND PENETRATIONS THROUGH FIRE RATED WALLS WITH APPROVED FIRESTOP MATERIALS. DO NOT SEAL CLEARANCE SPACES WITHIN FIRE DAMPERS. SEAL ONLY IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
      5. WHERE DUCTS, PIPES, AND CONDUITS PENETRATE RATED PARTITIONS, ENSURE FIRE-SEALANT IS PROVIDED IN GAPS/OPEININGS
   6. **ACOUSTIC PARTITIONS**
      1. WHERE ACOUSTIC BLANKET INSULATION IS SPECIFIED AS A COMPONENT PART OF A WALL OR PARTITION ASSEMBLY, CONTRACTOR SHALL PROVIDE A CONTINUOUS SEALANT TO BOTH STUDS AND TRACKS ALONG PARTITION PERIMETER.
      2. IN ACOUSTIC PARTITIONS, RECESSED OUTLETS ARE TO BE STAGGERED, AND CONTINUOUS FLEXIBLE SEALANT SHALL BE PROVIDED AT THE JUNCTIONS WITH FLOORS, CEILINGS AND STRUCTURAL MEMBERS. CONTRACTOR SHALL PROVIDE FLEXIBLE SEALANT AROUND PENETRATIONS IN THE PARTITION.
   7. **BLOCKING FOR MILLWORK & SPECIALITIES**
      1. PROVIDE BLOCKING IN PARTITIONS AND WALLS (INTERIOR AND EXTERIOR) FOR THE FOLLOWING:
         1. WINDOW FRAMES, MILLWORK, FIXTURES AND FITTINGS, HANDRAILS, GRAB BARS, TACKBOARDS, WHITEBOARDS, MIRRORS, WASHROOM ACCESSORIES AND OTHER ITEMS AS REQUIRED.
         2. PROVIDE BLOCKING TO ACCOMMODATE ALL SURFACE MOUNTED AND FURRED-IN ACCESSORIES AND FIXTURES UNLESS OTHERWISE INDICATED.

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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.

SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
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LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
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:

CONSTRUCTION ASSEMBLY MATRIX - EXTERIOR ENVELOPE

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A00.03** REVISION: **7**

PLOT DATE: 2024-08-13 4:33:27 PM

ASSEMBLIES - FLOORS LANDSCAPING

L-LSS

TYPE	LANDSCAPING BED

PLANTING BED
- REFER TO LANDSCAPE DRAWINGS FOR DETAILS

L-SOD

TYPE	SOD

-- SOD
200mm TOP SOIL

ASSEMBLIES - FLOORS PAVEMENT

P-TA-1

TYPE	REINFORCED CONCRETE TRANSITION APRON

200mm REINFORCED CONCRETE SLAB ON GRADE
- r/w 15M @ 300 T&BEW EPOXY COATED REBAR REINFORCING
50mm RIGID INSULATION - HIGH DENSITY - 100 PSI
150mm COMPACTED GRANULAR 'A'
450mm COMPACTED GRANULAR 'B'
*SLOPE APRON 1 : 10 MAX

P-RCA-1

TYPE	REINFORCED CONCRETE APRON

200mm REINFORCED CONCRETE SLAB ON GRADE
- r/w 15M @ 300 T&BEW EPOXY COATED REBAR REINFORCING
50mm RIGID INSULATION - HIGH DENSITY - 100 PSI
150mm COMPACTED GRANULAR 'A'
450mm COMPACTED GRANULAR 'B'

P-RCA-2

TYPE	REINFORCED CONCRETE APRON

200mm REINFORCED CONCRETE SLAB ON GRADE
- 2 LAYERS 152x152 MW18.7/18.7 WELDED WIRE MESH
150mm COMPACTED GRANULAR 'A'
450mm COMPACTED GRANULAR 'B'

6

P-LDA

TYPE	LIGHT DUTY ASPHALT

40mm ASPHALT SUFRACE COURSE HL-3
65mm ASPHALT BINER COURSE HL-8
150mm GRANULAR 'A' BASE
300mm GRANULAR 'B' SUBBASE

P-SW-1

TYPE	SIDEWALKS

150mm CONCRETE - BROOM FINISH
6mil. POLYETHYLENE VAPOUR BARRIER
150mm GRANULAR 'A' COMPACTED

P-GEN

TYPE	REINFORCED CONCRETE GENERATOR PAD

305mm REINFORCED CONCRETE SLAB ON GRADE
- REINFORCING - REINFORCING - 20M EPOXY COATED BARS @300MM
- T&B.E.W.
50mm RIGID INSULATION EXTENDING 1200 BEYOND PAD EACH SIDE (DOW
- HL LOAD 100)
300mm COMPACTED GRANULAR 'B' TYPE II

P-CURB

TYPE	CONCRETE CURBS

400mm HIGH CONCRETE CURB
200mm COMPACTED GRANULAR B
* COORDINATE WITH CIVIL DRAWINGS FOR CURBS BEYOND 400mm HIGH

ASSEMBLIES TYPE CODIFICATION

2	1	4		7	6	5	9	8
CODE		WIDTH	R-VALUE				FIRE RATING	N/A
		250	R-VALUE CI MIN.				STC RATING	N/A
			ULC / OBC	N/A				

INT EXTERIOR
EXT
-mm ASSEMBLY COMPONENT DESCRIPTION
3
INTERIOR

GENERAL NOTES:

1. ASSEMBLY CODE ASSIGNED TO ALL ASSEMBLIES.
2. INDICATIVE ASSEMBLY SECTION.
3. ASSEMBLY DESCRIPTION, LISTED WITH THICKNESS AND DESCRIPTION OF ASSEMBLY LAYERS, FROM EXTERIOR FACE TO INTERIOR FACE OF ASSEMBLY.
4. ASSEMBLY OVERALL WIDTH.
5. THE R-VALUES GIVEN INDICATES THE CLEAR-FIELD EFFECTIVE VALUES. THESE ARE THE MINIMUM REQUIRED TO MEET THE PASSIVEHOUSE TARGETS. NOTE THAT THE EFFECTIVE R-VALUE CAN BE LESS THAN THE NOMINAL INSULATION R-VALUE BASED ON THERMAL BRIDGING ASSUMPTIONS. IT COULD ALSO BE MORE, AS IT INCLUDES THERMAL PERFORMANCE OF SUBSEQUENT LAYERS (I.E. AIR CAVITIES, DRYWALL, ETC.).
6. MINIMUM R-VALUE OF THE CONTINUOUS INSULATION AS REQUIRED BY OBC.
7. ULC LISTING OR OBC CODE REFERENCE FOR SPECIFIED ASSEMBLIES.
8. REQUIRED FIRE-RESISTANCE RATING OR OVERALL ASSEMBLY.
9. REQUIRED ACOUSTIC PERFORMANCE RATING OF OVERALL ASSEMBLY.

GENERAL NOTES - WALL ASSEMBLIES

1. ***EXTERIOR WALL ASSEMBLIES***
   1. THE SPECIFICATIONS, INSTALLATION, AND PERFORMANCE OF AIR BARRIER SYSTEMS AND VAPOUR BARRIERS MUST MEET OR EXCEED DIV. B PART 5 OF THE ONTARIO BUILDING CODE.
   2. THE REQUIREMENTS FOR AN AIR BARRIER AND A VAPOUR BARRIER ARE INTENDED TO BE PROVIDED AS CONTINUOUS PLANES WITHIN THE BUILDING ENVELOPE, ENSURE CONTINUITY OF AIR AND VAPOUR MEMBRANES BETWEEN COMPONENTS, TO ADJACENT CONSTRUCTION AND AT ALL PENETRATIONS TO PREVENT OR RETARD PASSAGE OF MOISTURE LADEN AIR AND/OR THE DIFFUSION OF WATER VAPOUR.
   3. EXTERIOR ASSEMBLIES NOTING STUD FRAMING SHALL BE CONSTRUCTED USING WIND-LOAD BEARING FRAMING DESIGNED TO CARRY REQUIRED LATERAL LOADS. PROVIDE ENGINEERED SHOP DRAWING PRIOR TO COMMENCEMENT OF WORK.
2. ***INTERIOR WALL ASSEMBLIES***
   1. **GENERAL REQUIREMENTS**
      1. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK.
      2. ALL PARTITIONS TO EXTEND TO U/S OF STRUCTURE UNLESS OTHERWISE NOTED. PROVIDE LATERAL BRACING AS REQUIRED
      3. FURRING TO EXTEND TO 150MM ABOVE FINISHED CEILING OR TO U/S OF STRUCTURE WHERE NO CEILING EXISTS UNLESS OTHERWISE NOTED. REFER TO REFLECTED CEILING PLANS
      4. WHERE INTERIOR DOORS ARE CLOSE TO AN INSIDE CORNER, PROVIDE MIN. 150MM CLEARANCE FROM DOOR JAMB TO ADJACENT WALL.
      5. PROVIDE STEEL REINFORCING AS REQUIRED IN ALL INTERIOR GLAZED SCREENS (ALMINUM OR HOLLOW METAL) TO U/S OF DECK AND/OR FIRE RATED FLOOR ASSEMBLY.
      6. WALL ACCESS PANELS - WHERE POSSIBLE, ACCESS PANELS IN WALLS TO BE LOCATED ON SIDE WALLS OR IN LOCATION WITH MINIMAL VISUAL IMPACT. ACCESS PANELS TO PAINTED TO MATCH WALL FINISH. IN WASHROOMS ACCESS PANELS TO BE GALVANIZED STEEL PAINTED TO MATCH WALL FINISH. ALL ACCESS PANELS TO BE KEYED WITH THE SAME LOCK.
   2. **LOAD BEARING PARTITIONS (INTERIOR)**
      1. WHERE A PARTITION IS A LOAD BEARING WALL, REFER TO THE STRUCTURAL DRAWINGS FOR DESIGN REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK.
   3. **STEEL STUD FRAMED PARTITIONS (INTERIOR)**
      1. ALL PARTITIONS ARE TO UNDERSIDE OF DECK UNLESS OTHERWISE NOTED.
      2. PROVIDE DEFLECTION DETAIL AT TOP OF ALL WALLS THAT ABUT UNDERSIDE OF DECK OR STRUCTURE. SEE ALSO TOP OF WALL DETAILS AS INDICATED.
      3. WHERE SOUND ATTENUATION BATTS ARE CALLED FOR ON THE WALL TYPE, SEAL PERIMETER OF WALLS AND AROUND PENETRATIONS THROUGH WALLS WITH ACOUSTIC SEALANT. APPLY CONTINUOUS ACOUSTIC SEALANT TO BOTH SIDES OF TRACK AT THE JUNCTIONS WITH FLOORS AND ROOF DECKS, AND AROUND PENETRATIONS TO PARTITIONS. RECESSED OUTLETS ARE TO BE STAGGERED SO THAT ONLY ONE OUTLET IS INSTALLED BETWEEN TWO STUDS.
      4. DO NOT FASTEN METAL STUDS TO CURTAIN WALL MULLIONS OR TEE BAR GRIDS.
      5. WHERE INTERIOR DOORS ARE CLOSE TO AN INSIDE CORNER, PROVIDE MIN. CLEARANCE FROM DOOR JAMB TO ADJACENT WALL AS INDICATED ON DETAIL TITLED 'FRAME TYPES'
      6. CONTRACTOR SHALL ENSURE STEEL STUD THICKNESS, SIZE AND SPACING IS ADEQUATE FOR THE HEIGHTS OF PARTITIONS INDICATED. CONTRACTOR SHALL PROVIDE BRACING AS REQUIRED.
      7. USE WATER RESISTANT GYPSUM WALL BOARD ON ALL WET SIDES OF PARTITIONS.
   4. **MASONRY PARTITIONS (INTERIOR)**
      1. HEIGHT OF CONCRETE MASONRY UNIT WALLS TO BE TO UNDERSIDE OF FLOOR/ROOF DECK ABOVE UNLESS OTHERWISE NOTED.
      2. WHERE CONCRETE UNIT MASONRY WALLS ABUT REINFORCED CONCRETE WALLS AND PIERS, RAKE BACK MORTAR JOINT WHERE THE TWO MATERIALS MEET AND PROVIDE CONTINUOUS SEALANT
   5. **FIRE RATED PARTITIONS (INTERIOR)**
      1. FOR WALL ASSEMBLIES THAT DENOTE FRR (FIRE RESISTANCE RATING), THE ASSEMBLY SHALL BE CONSTRUCTED AS A FIRE SEPARATION AT THE LOCATIONS INDICATED IN THE CONTRACT DRAWINGS GRAPHICALLY USING LINES AND/OR TEXT AND SYMBOLS
      2. AT RECESSED PANEL INSTALLATIONS (E.G. ELECTRICAL PANELS) WITHIN RATED WALLS PROVIDE FOR CONTINUITY OF THE REQUIRED RATING BEHIND THE PANEL. REFER TO THE ONTARIO BUILDING CODE DIVISION B, SECTION 3.1.9.2 FOR REQUIREMENTS FOR COMBUSTIBILITY OF SERVICE PENETRATIONS AND SECTION 3.1.10.2 FOR RATING OF FIREWALLS.
      3. WHERE FIRE RATED PARTITIONS ABUT NON-RATED PARTITIONS THE FIRE RATED ASSEMBLY SHALL BE CONTINUOUS AND UNINTERRUPTED BY THE ABUTTING WALLS TO MAINTAIN A CONTINUOUS FIRE SEPARATION.
      4. SEAL PERIMETER OF FIRE RATED WALLS AND AROUND PENETRATIONS THROUGH FIRE RATED WALLS WITH APPROVED FIRESTOP MATERIALS. DO NOT SEAL CLEARANCE SPACES WITHIN FIRE DAMPERS. SEAL ONLY IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
      5. WHERE DUCTS, PIPES, AND CONDUITS PENETRATE RATED PARTITIONS, ENSURE FIRE-SEALANT IS PROVIDED IN GAPS/OPENINGS
   6. **ACOUSTIC PARTITIONS**
      1. WHERE ACOUSTIC BLANKET INSULATION IS SPECIFIED AS A COMPONENT PART OF A WALL OR PARTITION ASSEMBLY, CONTRACTOR SHALL PROVIDE A CONTINUOUS SEALANT TO BOTH STUDS AND TRACKS ALONG PARTITION PERIMETER.
      2. IN ACOUSTIC PARTITIONS, RECESSED OUTLETS ARE TO BE STAGGERED, AND CONTINUOUS FLEXIBLE SEALANT SHALL BE PROVIDED AT THE JUNCTIONS WITH FLOORS, CEILINGS AND STRUCTURAL MEMBERS. CONTRACTOR SHALL PROVIDE FLEXIBLE SEALANT AROUND PENETRATIONS IN THE PARTITION.
   7. **BLOCKING FOR MILLWORK & SPECIALITIES**
      1. PROVIDE BLOCKING IN PARTITIONS AND WALLS (INTERIOR AND EXTERIOR) FOR THE FOLLOWING:
         1. WINDOW FRAMES, MILLWORK, FIXTURES AND FITTINGS, HANDRAILS, GRAB BARS, TACKBOARDS, WHITEBOARDS, MIRRORS, WASHROOM ACCESSORIES AND OTHER ITEMS AS REQUIRED.
         2. PROVIDE BLOCKING TO ACCOMMODATE ALL SURFACE MOUNTED AND FURRED-IN ACCESSORIES AND FIXTURES UNLESS OTHERWISE INDICATED.

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
6	ADDENDUM 01	08/13/2024
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:

CONSTRUCTION ASSEMBLY MATRIX - EXTERIOR

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL | CHECKED BY: SRL

PROJECT NO.: 12303 | SCALE: As indicated

DRAWING NO.: **A00.04** | REVISION: **6**

[PLOT DATE: 2024-08-12 4:30:26 PM]

ASSEMBLIES - PARTITIONS - CONTINUED

P3-S-1

WIDTH	R-VALUE	0	FIRE RATING	N/A
165	R-VALUE CI MIN.	--	STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
13mm GYPSUM WALL BOARD
152mm METAL STUDS @ 406mm O.C.

INTERIOR

ASSEMBLIES - CEILINGS

ACT-1

WIDTH	R-VALUE	N/A	FIRE RATING	
	R-VALUE CI MIN.	N/A	STC RATING	
	ULC / OBC			

EXTERIOR
- 1200 x 600mm ACOUSTIC LAY-IN TILE
- HANGER WIRE @ MAIN TEES TO STRUCTURE
- WIRE SPACING 1200mm O/C MAX.

INTERIOR

GB

WIDTH	R-VALUE	N/A	FIRE RATING	
	R-VALUE CI MIN.	N/A	STC RATING	
	ULC / OBC			

EXTERIOR
12.7mm GYSPUM BOARD
- METAL FURRING CHANNELS @ 400mm O/C max.
- BRIDGING CHANNEL @ 400mm O/C MAX.
- or DRYWALL CEILING SUSPENSION SYSTEM
- HANGER WIRES TO STRUCTURE

INTERIOR

GB-B

WIDTH	R-VALUE	N/A	FIRE RATING	
	R-VALUE CI MIN.	N/A	STC RATING	
	ULC / OBC			

EXTERIOR
12.7mm GYSPUM BOARD
- METAL FURRING CHANNELS @ 400mm O/C max.
- BRIDGING CHANNEL @ 400mm O/C MAX.
- or DRYWALL CEILING SUSPENSION SYSTEM
- HANGER WIRES TO STRUCTURE

INTERIOR

GB-WR

WIDTH	R-VALUE	N/A	FIRE RATING	
	R-VALUE CI MIN.	N/A	STC RATING	
	ULC / OBC			

EXTERIOR
12.7mm GYSPUM BOARD (WATER RESISTANT)
- METAL FURRING CHANNELS @ 400mm O/C max.
- BRIDGING CHANNEL @ 400mm O/C MAX.
- or DRYWALL CEILING SUSPENSION SYSTEM
- HANGER WIRES TO STRUCTURE

INTERIOR

EXP

WIDTH	R-VALUE	N/A	FIRE RATING	
	R-VALUE CI MIN.	N/A	STC RATING	
	ULC / OBC			

EXTERIOR
EXPOSED CEILING - FINISH - REFER TO ROOM FINISH SCHEDULE

INTERIOR

C-T

WIDTH	R-VALUE	N/A	FIRE RATING	
	R-VALUE CI MIN.	N/A	STC RATING	
	ULC / OBC			

EXTERIOR
12.7mm WALL TILE TO MATCH FINISH SPECIFIED ON SHOWER WALLS
- GYSPUM BOARD (WATER RESISTANT)
- METAL FURRING CHANNELS @ 400mm O/C max.
- BRIDGING CHANNEL @ 400mm O/C MAX.
- or DRYWALL CEILING SUSPENSION SYSTEM
HANGER WIRES TO STRUCTURE

INTERIOR

ASSEMBLIES - PARTITIONS - CONTINUED

P1-Si-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
90	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

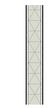
EXTERIOR
13mm GYSPUM WALL BOARD
64mm METAL STUDS @ 400mm O.C., C/W
64mm MINERAL WOOL INSULATION (WIDTH OF STUD)
13mm GYSPUM WALL BOARD

INTERIOR

P2-Si-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
118	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT



EXTERIOR
13mm GYPSUM WALL BOARD
92mm METAL STUDS @ 400mm O.C., C/W
92mm MINERAL WOOL INSULATION (WIDTH OF STUD)
13mm GYPSUM WALL BOARD

INTERIOR

P5-Si-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
123.4	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

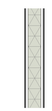
EXTERIOR
- CERAMIC TILE
13mm TILE BACKER BOARD
92mm METAL STUDS @ 400mm O.C., C/W
92mm MINERAL WOOL INSULATION (WIDTH OF STUD)
13mm GYPSUM WALL BOARD

INTERIOR

P8-Si-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
133.4	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT



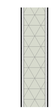
EXTERIOR
8mm CERAMIC TILE
13mm TILE BACKER BOARD
92mm METAL STUDS @ 400mm O.C., C/W
92mm MINERAL WOOL INSULATION (WIDTH OF STUD)
13mm TILE BACKER BOARD
- CERAMIC TILE

INTERIOR

P13-Si-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
189.4	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT



EXTERIOR
8mm CERAMIC TILE
13mm TILE BACKER BOARD
152mm METAL STUDS @ 400mm O.C., C/W
152mm MINERAL WOOL INSULATION (WIDTH OF STUD)
13mm TILE BACKER BOARD
- CERAMIC TILE

INTERIOR

IS3

WIDTH	R-VALUE		FIRE RATING	N/A
	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
INTERIOR SCREEN - FIRE RATED
HM FRAME
FIRE PROTECTION RATED GLASS

INTERIOR

IS1

WIDTH	R-VALUE		FIRE RATING	N/A
	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
- ALUMINUM FRAMED GLAZING SYSTEM
- - ENTRANCE FRAMING - INTERIOR SCREEN

INTERIOR

P1-S-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
90	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
13mm GYPSUM WALL BOARD
64mm METAL STUDS @ 400mm O.C., C/W
13mm GYPSUM WALL BOARD

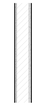
INTERIOR

ASSEMBLIES - PARTITIONS

B-90-1

WIDTH	R-VALUE	1	FIRE RATING	N/A
116	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT



EXTERIOR
13mm GYPSUM WALL BOARD
90mm CONCRETE MASONRY UNITS
13mm GYPSUM WALL BOARD

INTERIOR

B-140-1

WIDTH	R-VALUE	1	FIRE RATING	N/A
140	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
140mm CONCRETE MASONRY UNITS

INTERIOR

B-140-2

WIDTH	R-VALUE	1	FIRE RATING	N/A
153	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
140mm CONCRETE MASONRY UNITS
13mm GYPSUM BOARD

INTERIOR

B-190-1

WIDTH	R-VALUE	1	FIRE RATING	N/A
190	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
190mm CONCRETE MASONRY UNITS

INTERIOR

B-240-1

WIDTH	R-VALUE	2	FIRE RATING	N/A
240	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
240mm CONCRETE MASONRY UNITS

INTERIOR

B-290-1

WIDTH	R-VALUE	2	FIRE RATING	N/A
290	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
290mm CONCRETE MASONRY UNITS

INTERIOR

P1-S-1

WIDTH	R-VALUE	0	FIRE RATING	N/A
77	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

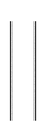
EXTERIOR
13mm GYPSUM WALL BOARD
64mm METAL STUDS @ 400mm O.C., C/W

INTERIOR

P3-S-2

WIDTH	R-VALUE	0	FIRE RATING	N/A
178	R-VALUE CI MIN.	--	STC RATING	N/A
	ULC / OBC	N/A		

EXT INT



EXTERIOR
13mm GYPSUM WALL BOARD
152mm METAL STUDS @ 406mm O.C.
13mm GYPSUM WALL BOARD

INTERIOR

ASSEMBLIES TYPE CODIFICATION

CODE

WIDTH	R-VALUE		FIRE RATING	N/A
250	R-VALUE CI MIN.		STC RATING	N/A
	ULC / OBC	N/A		

EXT INT

EXTERIOR
-mm ASSEMBLY COMPONENT DESCRIPTION

INTERIOR

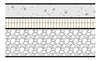
GENERAL NOTES:

1. ASSEMBLY CODE ASSIGNED TO ALL ASSEMBLIES.
2. INDICATIVE ASSEMBLY SECTION.
3. ASSEMBLY DESCRIPTION, LISTED WITH THICKNESS AND DESCRIPTION OF ASSEMBLY LAYERS, FROM EXTERIOR FACE TO INTERIOR FACE OF ASSEMBLY.
4. ASSEMBLY OVERALL WIDTH.
5. THE R-VALUES GIVEN INDICATES THE CLEAR-FIELD EFFECTIVE VALUES. THESE ARE THE MINIMUM REQUIRED TO MEET THE PASSIVEHOUSE TARGETS. NOTE THAT THE EFFECTIVE R-VALUE CAN BE LESS THAN THE NOMINAL INSULATION R-VALUE BASED ON THERMAL BRIDGING ASSUMPTIONS. IT COULD ALSO BE MORE, AS IT INCLUDES THERMAL PERFORMANCE OF SUBSEQUENT LAYERS (I.E. AIR CAVITIES, DRYWALL, ETC.).
6. MINIMUM R-VALUE OF THE CONTINUOUS INSULATION AS REQUIRED BY OBC.
7. ULC LISTING OR OBC CODE REFERENCE FOR SPECIFIED ASSEMBLIES.
8. REQUIRED FIRE-RESISTANCE RATING OR OVERALL ASSEMBLY.
9. REQUIRED ACOUSTIC PERFORMANCE RATING OF OVERALL ASSEMBLY.

ASSEMBLIES - FLOORS - INTERIOR

SG-Ci-100

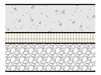
TYPE	INSULATED CONCRETE SLAB ON GRADE			
R-VALUE	N/A	FIRE RATING	N/A	
R-VALUE CI MIN.	N/A	ULC / OBC		



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

SG-Ci-200

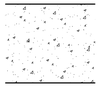
TYPE	INSULATED CONCRETE SLAB ON GRADE			
R-VALUE	N/A	FIRE RATING	N/A	
R-VALUE CI MIN.	N/A	ULC / OBC		



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

RCP

TYPE	WASHER EXTRACTOR PAD			
R-VALUE	N/A	FIRE RATING	N/A	
R-VALUE CI MIN.	N/A	ULC / OBC		



560 mm REINFORCED CONCRETE PAD - REFER TO STRUCTURAL
6mil VAPOUR BARRIER
75mm R-10 RIGID INSULTATION - HIGH DENSITY
200mm COMPACTED GRAVEL
*PROVIDE MIN 300mm BELOW LINT SCREEN
*TO BE 150mm ABOVE ADJACENT FINISHED FLOOR

7

GENERAL NOTES - WALL ASSEMBLIES

1. ***EXTERIOR WALL ASSEMBLIES***
   1. THE SPECIFICATIONS, INSTALLATION, AND PERFORMANCE OF AIR BARRIER SYSTEMS AND VAPOUR BARRIERS MUST MEET OR EXCEED DIV. B PART 5 OF THE ONTARIO BUILDING CODE.
   2. THE REQUIREMENTS FOR AN AIR BARRIER AND A VAPOUR BARRIER ARE INTENDED TO BE PROVIDED AS CONTINUOUS PLANES WITHIN THE BUILDING ENVELOPE, ENSURE CONTINUITY OF AIR AND VAPOUR MEMBRANES BETWEEN COMPONENTS, TO ADJACENT CONSTRUCTION AND AT ALL PENETRATIONS TO PREVENT OR RETARD PASSAGE OF MOISTURE LADEN AIR AND/OR THE DIFFUSION OF WATER VAPOUR.
   3. EXTERIOR ASSEMBLIES NOTING STUD FRAMING SHALL BE CONSTRUCTED USING WIND-LOAD BEARING FRAMING DESIGNED TO CARRY REQUIRED LATERAL LOADS. PROVIDE ENGINEERED SHOP DRAWING PRIOR TO COMMENCEMENT OF WORK.
2. ***INTERIOR WALL ASSEMBLIES***
   1. **GENERAL REQUIREMENTS**
      1. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK.
      2. ALL PARTITIONS TO EXTEND TO U/S OF STRUCTURE UNLESS OTHERWISE NOTED. PROVIDE LATERAL BRACING AS REQUIRED
      3. FURRING TO EXTEND TO 150MM ABOVE FINISHED CEILING OR TO U/S OF STRUCTURE WHERE NO CEILING EXISTS UNLESS OTHERWISE NOTED. REFER TO REFLECTED CEILING PLANS
      4. WHERE INTERIOR DOORS ARE CLOSE TO AN INSIDE CORNER, PROVIDE MIN. 150MM CLEARANCE FROM DOOR JAMB TO ADJACENT WALL.
      5. PROVIDE STEEL REINFORCING AS REQUIRED IN ALL INTERIOR GLAZED SCREENS (ALUMINUM OR HOLLOW METAL) TO U/S OF DECK AND/OR FIRE RATED FLOOR ASSEMBLY.
      6. WALL ACCESS PANELS - WHERE POSSIBLE, ACCESS PANELS IN WALLS TO BE LOCATED ON SIDE WALLS OR IN LOCATION WITH MINIMAL VISUAL IMPACT. ACCESS PANELS TO PAINTED TO MATCH WALL FINISH. IN WASHROOMS ACCESS PANELS TO BE GALVANIZED STEEL PAINTED TO MATCH WALL FINISH. ALL ACCESS PANELS TO BE KEYED WITH THE SAME LOCK.
   2. **LOAD BEARING PARTITIONS (INTERIOR)**
      1. WHERE A PARTITION IS A LOAD BEARING WALL, REFER TO THE STRUCTURAL DRAWINGS FOR DESIGN REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF WORK.
   3. **STEEL STUD FRAMED PARTITIONS (INTERIOR)**
      1. ALL PARTITIONS ARE TO UNDERSIDE OF DECK UNLESS OTHERWISE NOTED.
      2. PROVIDE DEFLECTION DETAIL AT TOP OF ALL WALLS THAT ABUT UNDERSIDE OF DECK OR STRUCTURE. SEE ALSO TOP OF WALL DETAILS AS INDICATED.
      3. WHERE SOUND ATTENUATION BATTS ARE CALLED FOR ON THE WALL TYPE, SEAL PERIMETER OF WALLS AND AROUND PENETRATIONS THROUGH WALLS WITH ACOUSTIC SEALANT. APPLY CONTINUOUS ACOUSTIC SEALANT TO BOTH SIDES OF TRACK AT THE JUNCTIONS WITH FLOORS AND ROOF DECKS, AND AROUND PENETRATIONS TO PARTITIONS. RECESSED OUTLETS ARE TO BE STAGGERED SO THAT ONLY ONE OUTLET IS INSTALLED BETWEEN TWO STUDS.
      4. DO NOT FASTEN METAL STUDS TO CURTAIN WALL MULLIONS OR TEE BAR GRIDS.
      5. WHERE INTERIOR DOORS ARE CLOSE TO AN INSIDE CORNER, PROVIDE MIN. CLEARANCE FROM DOOR JAMB TO ADJACENT WALL AS INDICATED ON DETAIL TITLED 'FRAME TYPES'
      6. CONTRACTOR SHALL ENSURE STEEL STUD THICKNESS, SIZE AND SPACING IS ADEQUATE FOR THE HEIGHTS OF PARTITIONS INDICATED. CONTRACTOR SHALL PROVIDE BRACING AS REQUIRED.
      7. USE WATER RESISTANT GYPSUM WALL BOARD ON ALL WET SIDES OF PARTITIONS.
   4. **MASONRY PARTITIONS (INTERIOR)**
      1. HEIGHT OF CONCRETE MASONRY UNIT WALLS TO BE TO UNDERSIDE OF FLOOR/ROOF DECK ABOVE UNLESS OTHERWISE NOTED.
      2. WHERE CONCRETE UNIT MASONRY WALLS ABUT REINFORCED CONCRETE WALLS AND PIERS, RAKE BACK MORTAR JOINT WHERE THE TWO MATERIALS MEET AND PROVIDE CONTINUOUS SEALANT
   5. **FIRE RATED PARTITIONS (INTERIOR)**
      1. FOR WALL ASSEMBLIES THAT DENOTE FRR (FIRE RESISTANCE RATING), THE ASSEMBLY SHALL BE CONSTRUCTED AS A FIRE SEPARATION AT THE LOCATIONS INDICATED IN THE CONTRACT DRAWINGS GRAPHICALLY USING LINES AND/OR TEXT AND SYMBOLS
      2. AT RECESSED PANEL INSTALLATIONS (E.G. ELECTRICAL PANELS) WITHIN RATED WALLS PROVIDE FOR CONTINUITY OF THE REQUIRED RATING BEHIND THE PANEL. REFER TO THE ONTARIO BUILDING CODE DIVISION B, SECTION 3.1.9.2 FOR REQUIREMENTS FOR COMBUSTIBILITY OF SERVICE PENETRATIONS AND SECTION 3.1.10.2 FOR RATING OF FIREWALLS.
      3. WHERE FIRE RATED PARTITIONS ABUT NON-RATED PARTITIONS THE FIRE RATED ASSEMBLY SHALL BE CONTINUOUS AND UNINTERRUPTED BY THE ABUTTING WALLS TO MAINTAIN A CONTINUOUS FIRE SEPARATION.
      4. SEAL PERIMETER OF FIRE RATED WALLS AND AROUND PENETRATIONS THROUGH FIRE RATED WALLS WITH APPROVED FIRESTOP MATERIALS. DO NOT SEAL CLEARANCE SPACES WITHIN FIRE DAMPERS. SEAL ONLY IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
      5. WHERE DUCTS, PIPES, AND CONDUITS PENETRATE RATED PARTITIONS, ENSURE FIRE-SEALANT IS PROVIDED IN GAPS/OPENINGS
   6. **ACOUSTIC PARTITIONS**
      1. WHERE ACOUSTIC BLANKET INSULATION IS SPECIFIED AS A COMPONENT PART OF A WALL OR PARTITION ASSEMBLY, CONTRACTOR SHALL PROVIDE A CONTINUOUS SEALANT TO BOTH STUDS AND TRACKS ALONG PARTITION PERIMETER.
      2. IN ACOUSTIC PARTITIONS, RECESSED OUTLETS ARE TO BE STAGGERED, AND CONTINUOUS FLEXIBLE SEALANT SHALL BE PROVIDED AT THE JUNCTIONS WITH FLOORS, CEILINGS AND STRUCTURAL MEMBERS. CONTRACTOR SHALL PROVIDE FLEXIBLE SEALANT AROUND PENETRATIONS IN THE PARTITION.
   7. **BLOCKING FOR MILLWORK & SPECIALITIES**
      1. PROVIDE BLOCKING IN PARTITIONS AND WALLS (INTERIOR AND EXTERIOR) FOR THE FOLLOWING:
         1. WINDOW FRAMES, MILLWORK, FIXTURES AND FITTINGS, HANDRAILS, GRAB BARS, TACKBOARDS, WHITEBOARDS, MIRRORS, WASHROOM ACCESSORIES AND OTHER ITEMS AS REQUIRED.
         2. PROVIDE BLOCKING TO ACCOMMODATE ALL SURFACE MOUNTED AND FURRED-IN ACCESSORIES AND FIXTURES UNLESS OTHERWISE INDICATED.

BRAMPTON

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NO.	ISSUES/REVISIONS	DATE
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:

CONSTRUCTION ASSEMBLY MATRIX - INTERIOR

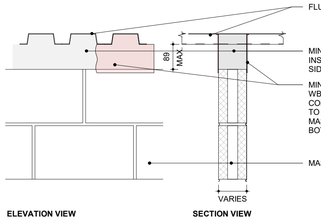
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A00.05** REVISION: **7**

PLOT DATE: 2024-08-12 4:30:35 PM

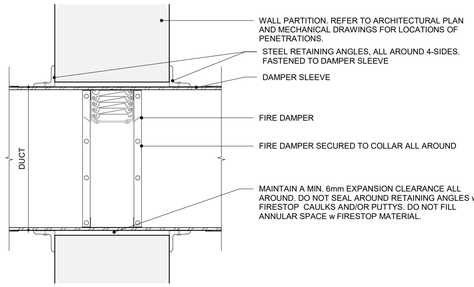


EXECUTION NOTES

1. REFER TO STRUC. DWGs FOR REQ'D LATERAL SUPPORT OF MASONRY WALLS.
2. REFER TO SPECIFICATIONS FOR REQUIREMENTS ON FIRESTOP SYSTEMS.
3. DETAIL PROVIDED IS TYPICAL. GENERAL CONTRACTOR SHALL ACCOMODATE TO FIELD CONDITIONS AND PROVIDE ALTERNATIVE DETAIL FOR REVIEW BY CONSULTANT.
4. REFER TO LIFE SAFETY PLANS FOR FIRE RATING OF WALL REQUIREMENTS.
5. ENSURE FIRE RATED SEALNT SEALS TO DECK PROFILE
6. CONTRACTOR SHALL MAINTAIN REQUIRED FIRE RESISTANCE RATING OVER ENTIRE ASSEMBLY

1 TOP OF MASONRY FIRESTOPPING DETAIL TO DECK

1 : 10

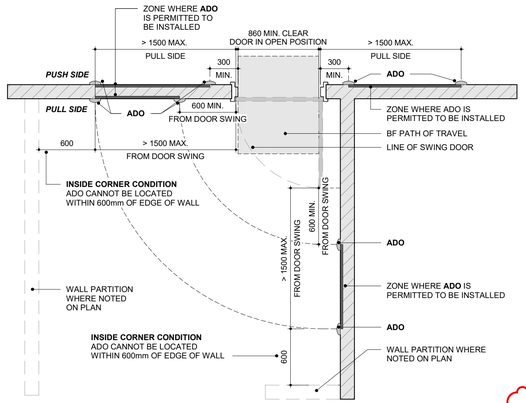


EXECUTION NOTES

1. DETAIL PROVIDED IS SUPPLEMENTAL TO MANUFACTURES INFORMATION.
2. INSTALL ALL FIRE DAMPERS PER MANUFACTURES INSTRUCTIONS.
3. SUBMIT SHOP DRAWINGS TO CONSULANT FOR REVIEW PRIOR TO INSTALLATION.
4. TYPE A FIRE DAPER SHOWN. DETAIL SHALL BE APPLIED TO ALL SPECIFIED DAMPER TYPES.
5. VERTICAL DETAIL ILLUSTRATED.
6. ENSURE TO MAINTAIN FIRE RESISTANCE RATING

4 TYP. FRR DETAIL - FIRE DAMPER INSTALLATION

1 : 5

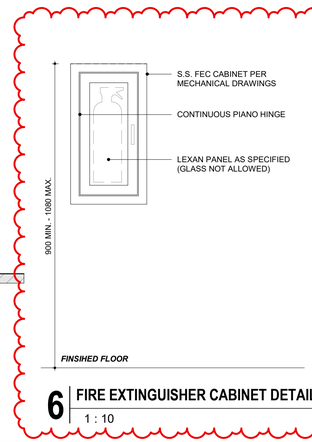


GENERAL NOTE

1. DETAIL PROVIDED TO GUIDE GENERAL CONTRACTOR IN THE INSTALLATION REQUIREMENTS OF THE AUTO DOOR OPERATORS IN VARIOUS LOCATIONS.
2. GENERAL CONTRACTOR SHALL REVIEW & COORDINATE WITH ARCHTIECTURAL & ELECTRICAL DRAWINGS FOR DESIRED LOCATIONS.

5 PLAN OF ADO INSTALLATION REQUIREMENTS

1 : 30



FIRE EXTINGUISHER AND CABINET SPECIFICATIONS

.1 EACH FIRE EXTINGUISHER CABINET SHALL BE NATIONAL FIRE EQUIPMENT MODEL #102RS RECESSED 1.6 MM PRIME COATED STEEL CABINET WITH 2.8 MM GAUGE DOOR AND TRIM, 4.8 MM THICK LEXAN VIEWING PANEL AND CORBIN LATCH.

.2 SUPPLY IN EACH F.E. CABINET AND WHERE SHOWN, U.L.C. #3A:10BC (2.27 KG) RATED PRESSURE POWER MULTI-PURPOSE FIRE EXTINGUISHER COMPLETE WITH ENAMEL STEEL JACKET, PRESSURE GAUGE, LOCKING PIN, HOSE AND NOZZLE, HANGER BRACKET.

.3 PROVIDE U.L.C. #3A-10BC (2.27 KG) CLASS A, B, AND C FIRE CLASSIFICATION RATED PRESSURE POWDER MULTI-PURPOSE FIRE EXTINGUISHER WITH BAKED ENAMEL STEEL CASING, PRESSURE GAUGE AND HANGER.

EXECUTION NOTES

1. REFER TO FLOOR PLANS FOR LOCATIONS & NUMBERS. COORDINATE BETWEEN MECHANICAL AND ARCHITECTURAL DRAWINGS.
2. FED AND FE PER MECHANICAL.

6 FIRE EXTINGUISHER CABINET DETAIL

1 : 10

OCCUPANCY LAYOUT

- Group C (Residential)
- Group D (Offices)
- Group F (Industrial)

GENERAL NOTES - FIRE & LIFE SAFETY

1. GENERAL REQUIREMENTS

1. FLOOR PLANS ON THIS DRAWING ARE INTENDED FOR FIRE SEPARATION, FIRE RESISTANCE RATINGS, AND AODA ONLY. REFER TO A03.00 DRAWING SERIES FOR FLOOR PLAN NOTES AND DIMENSIONS.
2. FOR WALL ASSEMBLIES THAT BEAR THE NOTE "CONSTRUCT AS FIRE SEPARATION WHERE NOTED', THE ASSEMBLY SHALL BE CONSTRUCTED AS A FIRE SEPARATION AT THE LOCATIONS INDICATED IN THE CONTRACT DRAWINGS.
3. ALL PENETRATIONS THROUGH NEW AND EXISTING FIRE SEPARATIONS ARE TO BE SEALED TO MEET REQUIREMENTS OF THE SEPARATION NOTED.
4. PROVIDE FIRESTOPPING AND SMOKE SEALS IN ACCORDANCE WITH CODE REQUIREMENTS, AT OPENINGS AND AROUND PENETRATIONS, AT UN-PENETRATED OPENINGS, AT PROJECTING AND RECESSED ITEMS AND AT OPENINGS AND JOINTS WITHIN FIRE SEPARATIONS AND ASSEMBLIES HAVING FIRE RESISTANCE RATING, EXCLUDING THOSE INSIDE SEALED MECHANICAL AND ELECTRICAL ASSEMBLIES (E.G. INSIDE DUCTS, DAMPERS, BUS DUCTS, ETC.).
5. AT RECESSED PANEL INSTALLATIONS (E.G. ELECTRICAL PANELS) WITHIN RATED WALLS PROVIDE FOR CONTINUITY OF THE REQUIRED RATING BEHIND THE PANEL. REFER TO THE ONTARIO BUILDING CODE DIVISION B, SECTION 3.1.9.2 FOR REQUIREMENTS FOR COMBUSTIBILITY OF SERVICE PENETRATIONS AND SECTION 3.1.10.2 FOR RATING OF FIREWALLS.
6. WHERE FIRE RATED PARTITIONS ABUT NON-RATED PARTITIONS THE FIRE RATED ASSEMBLY SHALL BE CONTINUOUS AND UNINTERRUPTED BY THE ABUTTING WALLS TO MAINTAIN A CONTINUOUS FIRE SEPARATION.
7. SEAL PERIMETER OF FIRE RATED WALLS AND AROUND PENETRATIONS THROUGH FIRE RATED WALLS WITH APPROVED FIRESTOP MATERIALS. DO NOT SEAL CLEARANCE SPACES WITHIN FIRE DAMPERS. SEAL ONLY IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
8. ENSURE SEAL PROVIDES AND MAINTAINS A FIRE-RESISTANCE RATING AS DETERMINED BY OBC FOR ADJACENT FLOOR, WALL OR OTHER FIRE SEPARATION ASSEMBLY TO REQUIREMENTS OF AND AS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND TO CONSULTANT.
9. ENSURE FIRESTOP SYSTEMS INTENDED FOR INSTALLATION IN FIRE SEPARATIONS HAVE ASSIGNED FIRE RATINGS AS DEFINED HEREIN WHEN TESTED IN ACCORDANCE WITH CAN/ULC-S115. ENSURE FIRESTOP SYSTEMS INTENDED FOR USE IN FIRE RESISTIVE WALL AND/OR FLOOR ASSEMBLIES ARE EVALUATED IN ACCORDANCE WITH CAN/ULC-S101 (REFER TO ULC GUIDE NO. 40 U19).

FIRE & LIFE SAFETY LEGEND

WALL ASSEMBLY FRR REQUIREMENTS

- 0HR FRR SEPERATION
- 45MIN FRR SEPERATION
- 1HR FRR SEPERATION
- 1.5HR FRR SEPERATION
- 2HR FRR SEPERATION
- 3HR FRR SEPERATION
- 4HR FRR SEPERATION
- EXIT PATH & TRAVEL DISTANCE

SYMBOL LEGEND

- EXIT SIGNAGE- WALL/CEILING MOUNTED
- FIRE HOSE CABINET - SEMI RECESSED
- FIRE HOSE CABINET - SURFACE MOUNTED
- EXIT LOCATION OF EXIT
- WALL MOUNTED STROBE
- WALL MOUNTED HORN/STROBE
- FAPS MANUAL FIRE PULL STATION

FIRE EXIT TRAVEL DISTANCE

TAG	FROM ROOM	TO ROOM	REQUIRED DISTANCE	MEASURED TRAVEL	COMPLIANCE
GROUP D					
F1	OFFICE 102	VESTIBULE 100	40 m	11.59 m	YES
F2	KITCHEN 104	VESTIBULE 100	40 m	20.44 m	YES
F3	WASHROOM 117	VESTIBULE 100	40 m	29.13 m	YES
F4	ACCESSIBLE WASHROOM 103	VESTIBULE 100	40 m	8.56 m	YES
F5	DORM STORAGE 114	VESTIBULE 100	40 m	34.67 m	YES
F6	FITNESS 108	ACCESS CORRIDOR 107	40 m	12.29 m	YES
F7	LOCKERS 115	ACCESS CORRIDOR 107	40 m	15.22 m	YES
F8	ELECTRICAL ROOM 124	ACCESS CORRIDOR 107	40 m	13.02 m	YES
GROUP F					
F9	BUNKER GEAR ROOM 129	APPARATUS BAY 126	45 m	15.12 m	YES
F10	APPARATUS BAY 126	APPARATUS BAY 126	45 m	22.57 m	YES
F11	APPARATUS BAY 126	APPARATUS BAY 126	45 m	22.57 m	YES
F12	HOSE TOWER 131	APPARATUS BAY 126	45 m	5.62 m	YES

OCCUPANCY AREA SCHEDULE

OCCUPANCY	RM#	ROOM NAME
Group C (Residential)		
Group C (Residential)	113.01	DORMITORY
Group C (Residential)	113.02	DORM 1
Group C (Residential)	113.03	DORM 2
Group C (Residential)	113.04	DORM 3
Group C (Residential)	113.05	DORM 4
Group C (Residential)	113.06	DORM 5
Group C (Residential)	113.07	DORM 6
Group C (Residential)	113.08	DORM 7
Group C (Residential)	113.09	DORM 8
Group C (Residential)	113.10	DORM 9
Group C (Residential)	113.11	DORM 10
Group D (Offices)		
Group D (Offices)	100	VESTIBULE
Group D (Offices)	101	ACCESS CORRIDOR
Group D (Offices)	102	OFFICE
Group D (Offices)	103	ACCESSIBLE WASHROOM
Group D (Offices)	104	KITCHEN
Group D (Offices)	105	DAYROOM
Group D (Offices)	107	ACCESS CORRIDOR
Group D (Offices)	108	FITNESS
Group D (Offices)	109	ACCESS CORRIDOR
Group D (Offices)	110	MEDICAL STORAGE - 1
Group D (Offices)	111	MEDICAL STORAGE - 2
Group D (Offices)	112	RIP & RUN
Group D (Offices)	114	DORM STORAGE
Group D (Offices)	115	LOCKERS
Group D (Offices)	116	WASHROOM
Group D (Offices)	117	WASHROOM
Group D (Offices)	118	WASHROOM
Group D (Offices)	119	WASHROOM
Group D (Offices)	120	ACCESS CORRIDOR
Group D (Offices)	121	JANITOR'S CLOSET
Group D (Offices)	122	I.T.
Group D (Offices)	123	MECHANICAL ROOM
Group D (Offices)	124	ELECTRICAL ROOM
Group D (Offices)	127	OUTDOOR STORAGE
Group D (Offices)	142	APPARATUS BAY
Group F (Industrial)		
Group F (Industrial)	125	CLEAN ROOM
Group F (Industrial)	126	APPARATUS BAY
Group F (Industrial)	128	BUNKER GEAR LAUNDRY
Group F (Industrial)	129	BUNKER GEAR ROOM
Group F (Industrial)	130	TOOL ROOM
Group F (Industrial)	131	HOSE TOWER
Grand total		

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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:

FIRE, LIFE SAFETY, & AODA PLAN

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A01.00** REVISION: **7**

[PLOT DATE: 2024-08-13 4:29:43 PM]

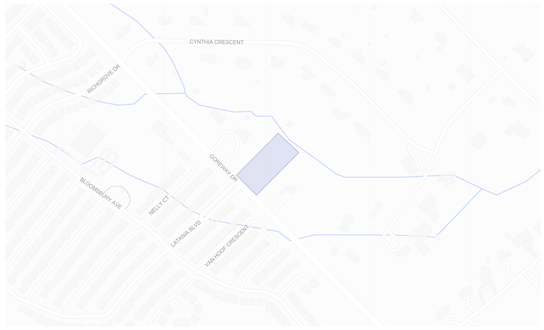
PROJECT SITE STATISTICS DATA

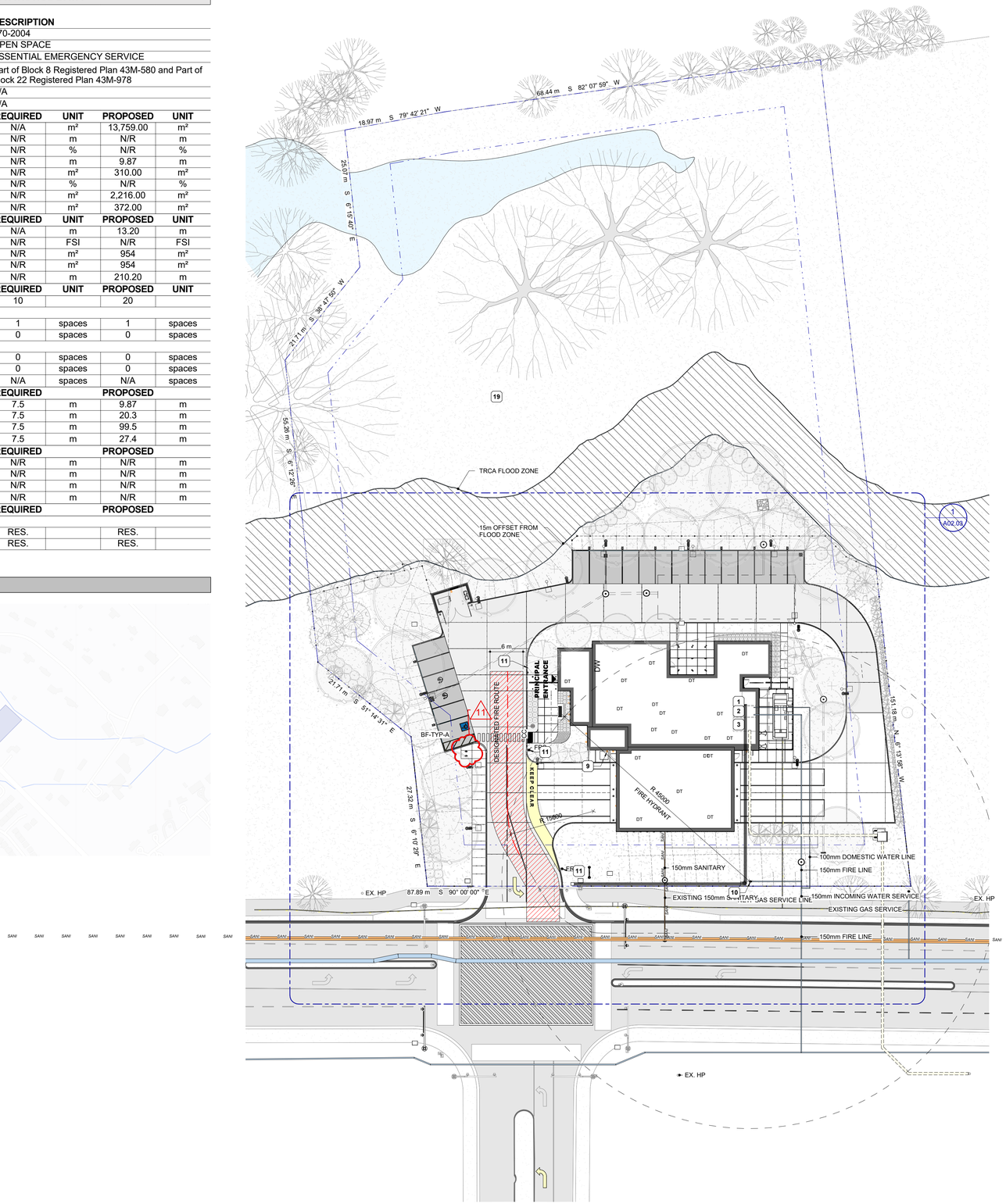
ZONING INFORMATION

ITEM	DESCRIPTION	DESCRIPTION
1	ZONING BY-LAW	270-2004
2	ZONING CATEGORY	OPEN SPACE
3	PERMITTED USES	ESSENTIAL EMERGENCY SERVICE
4	LOT AND PLAN NUMBER	Part of Block 8 Registered Plan 43M-580 and Part of Block 22 Registered Plan 43M-978
5	BUILDING TENURE	N/A
6	CoA DECISIONS	N/A

LOT REQUIREMENTS		REQUIRED	UNIT	PROPOSED	UNIT
7	LOT AREA	N/A	m²	13,759.00	m²
8	LOT FRONTAGE MINIMUM	N/R	m	N/R	m
9	LOT COVERAGE MAXIMUM %	N/R	%	N/R	%
10	FRONT YARD MINIMUM	N/R	m	9.87	m
11	GREEN ROOF AREA	N/R	m²	310.00	m²
12	YARD SOFT LANDSCAPE MINIMUM	N/R	%	N/R	%
13	HARDSCAPED AREA (HIGH...	N/R	m²	2,216.00	m²
14	PAVED AREA	N/R	m²	372.00	m²
PRINCIPAL BUILDING REQUIREMENTS		**REQUIRED**	**UNIT**	**PROPOSED**	**UNIT**
15	BUILDING HEIGHT MAXIMUM	N/A	m	13.20	m
16	FLOOR SPACE INDEX	N/R	FSI	N/R	FSI
17	BUILDING FOOTPRINT	N/R	m²	954	m²
18	GROSS BUILDING AREA	N/R	m²	954	m²
19	ESTABLISHED GRADE	N/R	m	210.20	m
PARKING / LOADING / BICYCLE SPACES		**REQUIRED**	**UNIT**	**PROPOSED**	**UNIT**
20	PARKING SPACES	10		20	
21	BARRIER-FREE PARKING SPACES				
	Type A	1	spaces	1	spaces
	Type B	0	spaces	0	spaces
22	BICYCLE PARKING				
	Class A	0	spaces	0	spaces
	Class B	0	spaces	0	spaces
23	LOADING SPACES	N/A	spaces	N/A	spaces
BUILDING TO PROPERTY SETBACKS		**REQUIRED**		**PROPOSED**	
24	FRONT YARD SETBACK	7.5	m	9.87	m
25	SIDE YARD SETBACK	7.5	m	20.3	m
26	REAR YARD SETBACK	7.5	m	99.5	m
27	SIDE YARD SETBACK	7.5	m	27.4	m
LANDSCAPE BUFFER PROPERTY...		**REQUIRED**		**PROPOSED**	
28	LANDSCAPE BUFFER FRONT YARD	N/R	m	N/R	m
29	LANDSCAPE BUFFER SIDE YARD	N/R	m	N/R	m
30	LANDSCAPE BUFFER REAR YARD	N/R	m	N/R	m
31	LANDSCAPE BUFFER SIDE YARD	N/R	m	N/R	m
ADDITIONAL SITE REQUIREMENTS		**REQUIRED**		**PROPOSED**	
32	RESERVED				
	RESERVED	RES.		RES.	
	RESERVED	RES.		RES.	

KEY PLAN





1 SITE PLAN - OVERALL
1 : 400

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.
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24	FUTURE EV CHARGER STATION. INSTALL CONCRETE BASE ONLY @ LOCATION.

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DAVID PRICHEM
LICENCE 4318

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0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

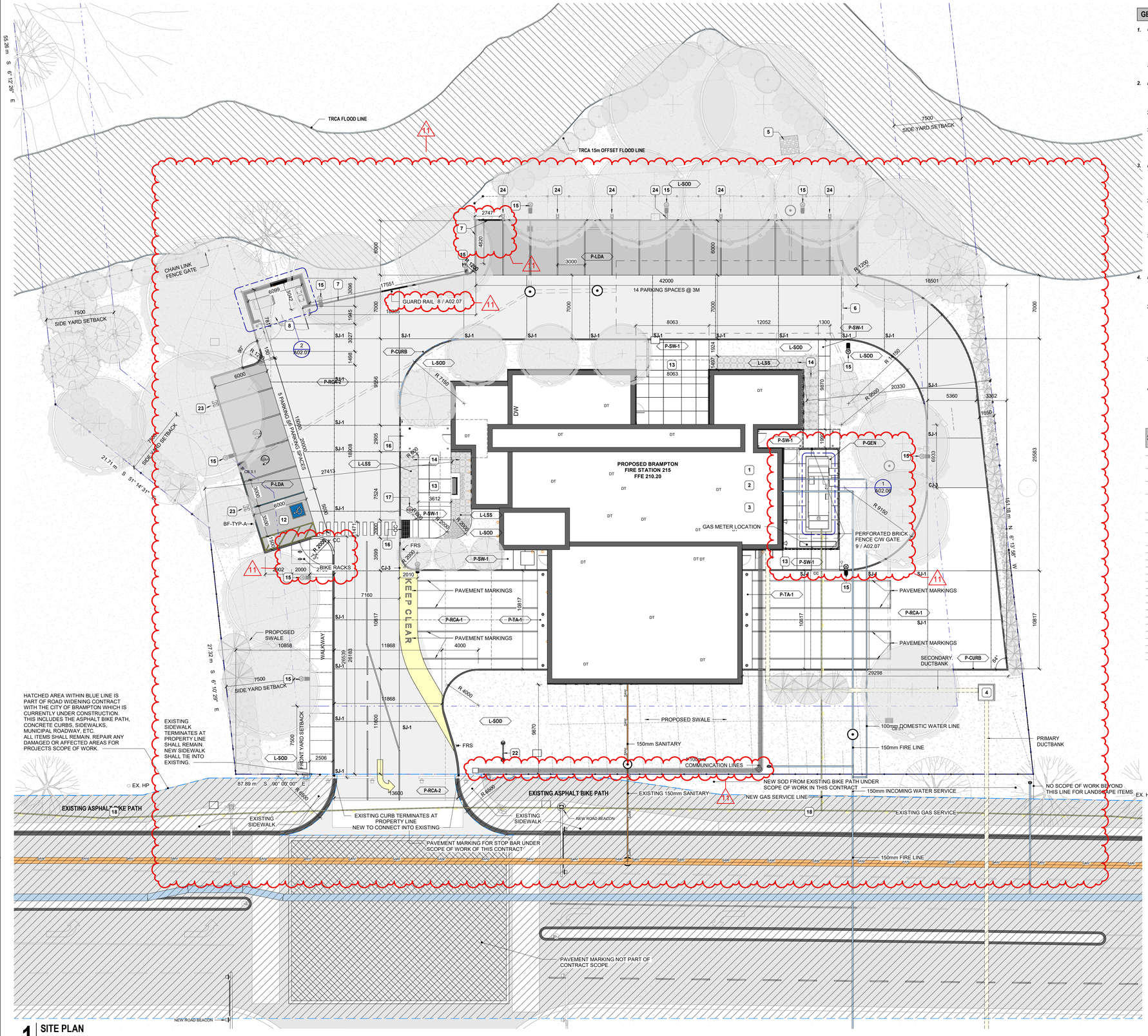
OVERALL SITE PLAN

ISSUE DATE:	08/13/2024
DRAWN BY: AR / SL	CHECKED BY: SRL
PROJECT NO.: 12303	SCALE: As indicated

DRAWING NO.: **A02.02**

REVISION: **11**

[PLOT DATE: 2024-08-12 4:30:54 PM]



1 **SITE PLAN**
1 : 200

GENERAL NOTES - SITE PLAN

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   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.
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0		DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

ENLARGED SITE PLAN

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A02.03** REVISION: **11**

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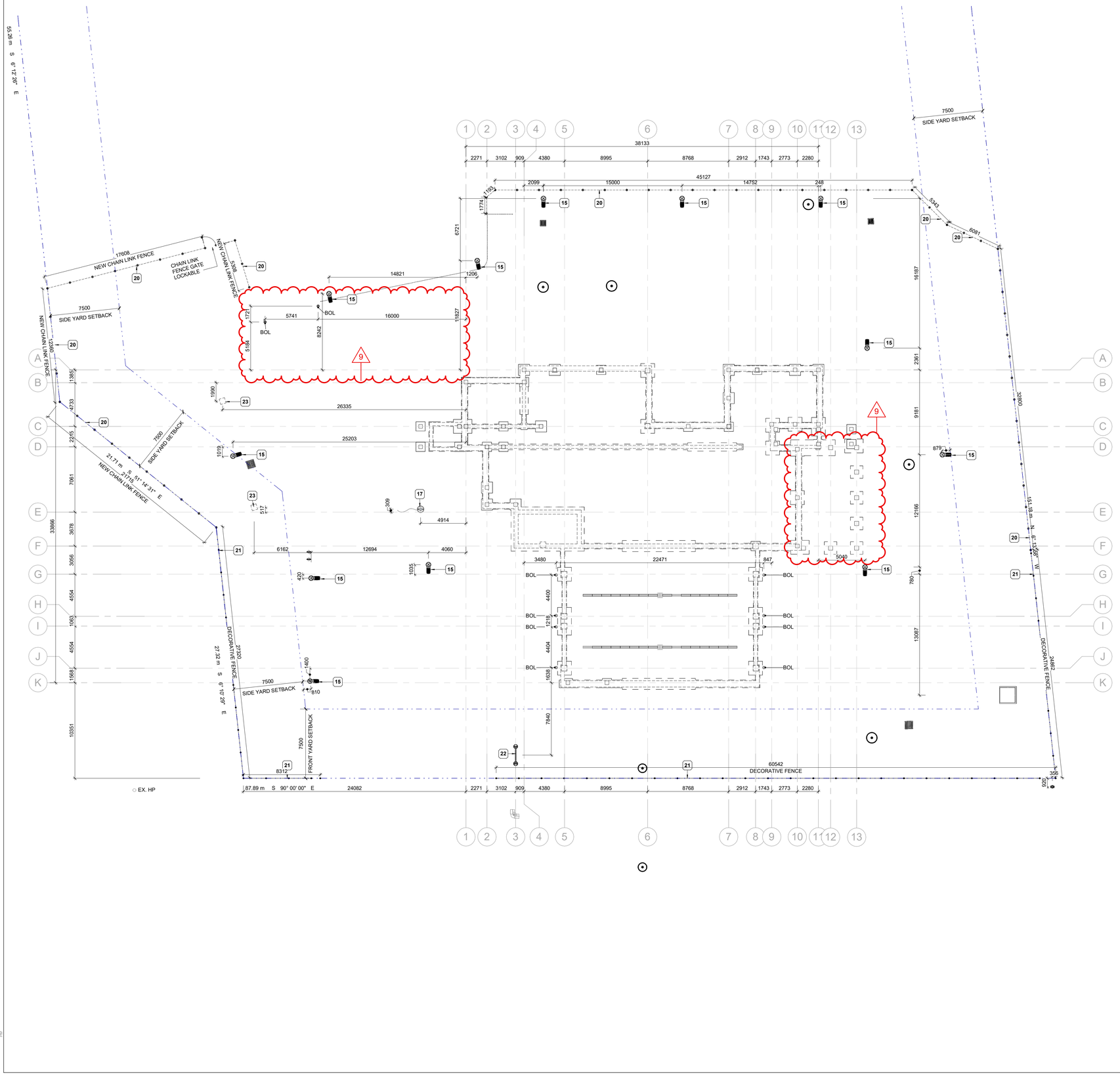

SITE LAYOUT PLAN

1. GENERAL REQUIREMENTS

1. INTENT OF DRAWING IS TO PROVIDE CLARIFTY FOR LOCATIONS OF BELOW GRADE INFRASTRUCTRE, AS NOTED:
   1. BOLLAR LOCATIONS
   2. EV CHARGING STATION
   3. FLAG POLE LOCATION
   4. LIGHT POLE LOCATIONS
   5. FENCING
2. GENERAL CONTRACTOR AND SUBTRADES SHALL REVIEW ALL DRAWINGS FOR COORDIANTION AND INSTALLATION OF ON SITE ITEMS

SITE PLAN NOTES

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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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4318

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0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

SITE PLAN - LAYOUT

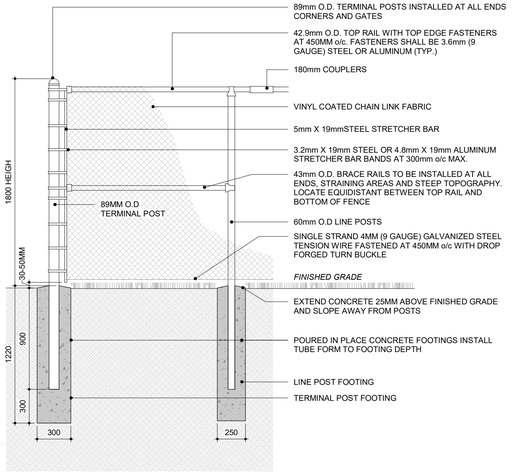
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SRL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A02.04** REVISION: **9**

[PLOT DATE: 2024-08-12 4:31:12 PM]

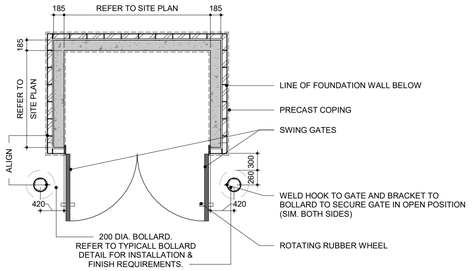


EXECUTION NOTES

1. ENGINEERING STAMPED DRAWING REQUIRED PRIOR TO FABRICATION.
2. ALL FABRIC SHALL BE 3.6MM (9 GAUGE WITH 11 GAUGE STEEL CORE) KNUCKLED AT TOP AND BOTTOM.
3. FABRIC SHALL BE VINYL COATED. COLOUR: BLACK
4. FABRIC SHALL BE INSTALLED ON EXTERNAL SIDE OF FENCE POSTS AND SECURED TO TOP RAIL, LINE RAIL AND BOTTOM TENSION WIRE WITH WIRE TIES AT 450MM o/c.
5. ALL POSTS AND RAILS SHALL BE GALVANIZED STEEL PIPE, STANDARD WEIGHT CONFORMING TO ASTM A120.
6. ALL POSTS AND RAILS SHALL BE POLYESTER POWDER COATED TO MATCH FENCE FABRIC
7. ALL REQUIRED FITTINGS AND HARDWARE SHALL CONFORM TO ASTM A152.
8. ALL REQUIRED FITTINGS AND HARDWARE SHALL BE COLOURED TO MATCH FENCE FABRIC
9. CONCRETE SHALL BE CLASS C2, 32 MPa CONCRETE COMPLETE WITH 5-8% AIR ENTRAINMENT

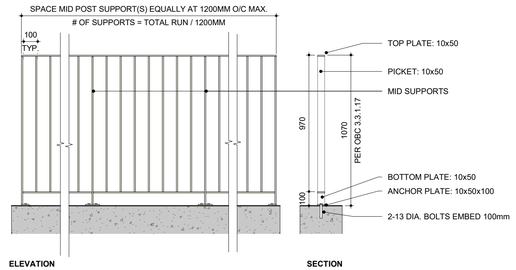
5 CHAIN LINK FENCE DETAIL

1 : 25



2 GARBAGE ENCLOSURE PLAN DETAIL

1 : 50

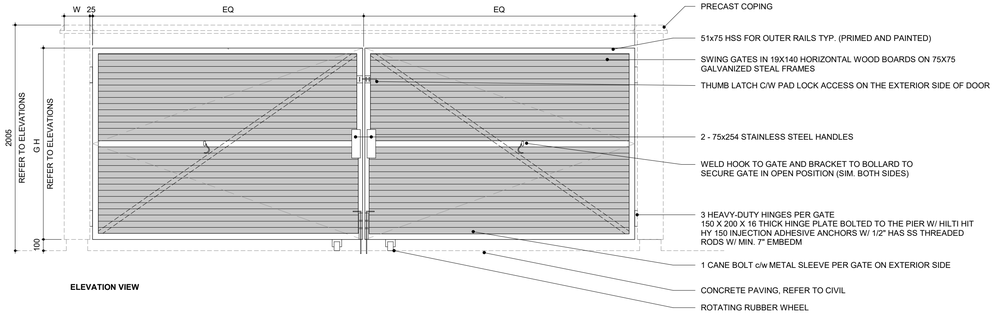


EXECUTION NOTES

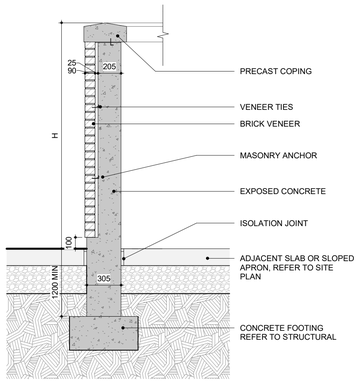
1. ALL GUARD RAILS TO BE DESIGNED IN ACCORDANCE WITH OBC AND OHSA REQUIREMENTS AND REGULATIONS.
2. FABRICATE AND INSTALL IN ACCORDANCE WITH ANSI/NAAMM AMP 521 (CURRENT VERSION)
3. ALL WELDS TYPE 2 OR BETTER
4. GRIND SMOOTH ALL WELDS
5. FULL GUARD RAIL SYSTEM SHALL BE STEEL, PRIMED & PAINTED BLACK

8 GUARD RAIL - CONCRETE MOUNTED EXTERIOR

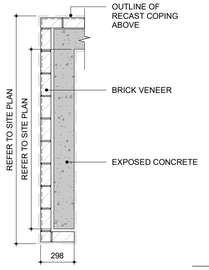
1 : 20



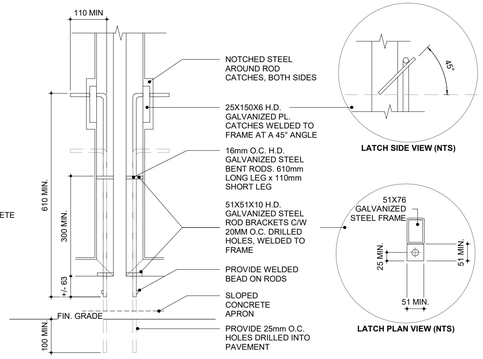
ELEVATION VIEW



SECTION VIEW



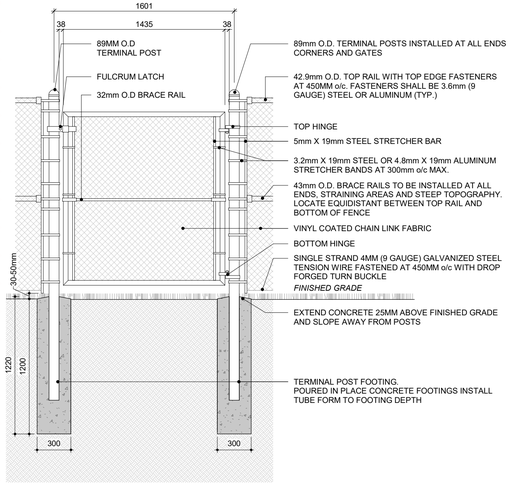
PLAN VIEW



LATCH ELEVATION VIEW (NTS)

1 GARBAGE ENCLOSURE GATE DETAIL

1 : 25



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8. ALL REQUIRED FITTINGS AND HARDWARE SHALL BE COLOURED TO MATCH FENCE FABRIC
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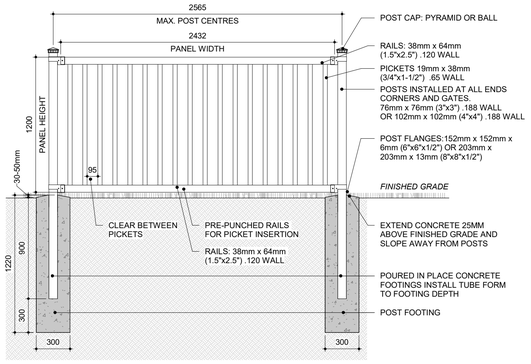
6 CHAIN LINK FENCE GATE DETAIL

1 : 25



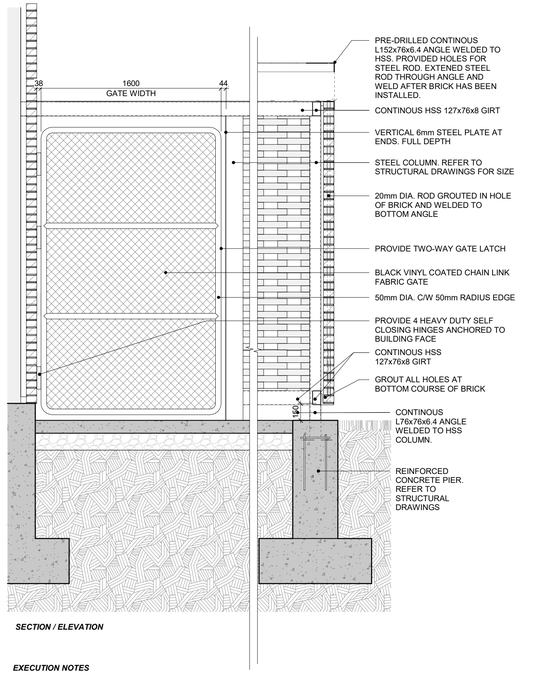
EXECUTION NOTES

1. POSTS RAILS & PICKETS: EXTRUDED MARINE ALUMINUM 6061-T6 PRIMME ALUMINUM
2. FINISH: SEVEN STAGE ARCHITECTURALLY CERTIFIED PRETREATMENT AS PER AAMA 2604. SUPER DURABLE ELECTROSTATICALLY APPLIED POWDER COAT - MIN THICKNESS 2.5 mils
3. FITTINGS: 12GA. STAMPED MARINE GRADE ALUMINUM FINISH
4. WELDS: ALUMINUM - FULL BEAD ON PUBLIC SIDE, TACK WELD ON PRIVATE SIDE
5. CONCRETE SHALL BE CLASS C2, 32 MPa CONCRETE COMPLETE WITH 5-8% AIR ENTRAINMENT

PANEL HEIGHT	PANEL WIDTH	POST CENTERS
UP TO 6FT. HIGH	95 3/4" [2432mm]	101" [2565mm]
7FT. AND HIGHER	74 3/4" [1899mm]	80" [2032mm]

7 DECORATIVE FENCE DETAIL

1 : 25



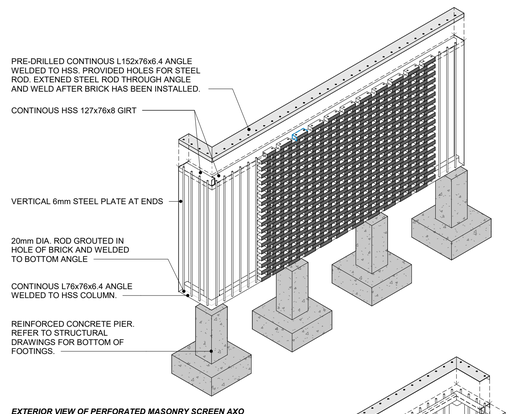
SECTION / ELEVATION

EXECUTION NOTES

1. BOTTOM COURSE OF BRICK SHALL MATCH TOP OF FOUNDATION WALL OF BUILDING FACE BE ALIGNED SUCH THAT ALL GROUT LINES MATCH IN HEIGHT.
2. REFER TO STRUCTURAL DRAWINGS FOR BOTTOM OF FOOTING AND REINFORCING REQUIREMENTS FOR CONCRETE PIERS.
3. REFER TO PLANS AND ELEVATIONS FOR FULL EXTENT OF FENCE, LENGTH, HEIGHT.
4. CONCRETE SHALL BE CLASS C2, 32 MPa CONCRETE COMPLETE WITH 5-8% AIR ENTRAINMENT
5. ALL STEEL SHALL BE SHOP PRIMIED AND FINISHED BLACK.
6. SUBMIT ENGINEERED SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.
7. **BASIS OF DESIGN FOR BRICK MASONRY: SHALL MATCH BRICK OF BUILDING, SIZE SHALL BE NORMAN (295mm WIDE)**

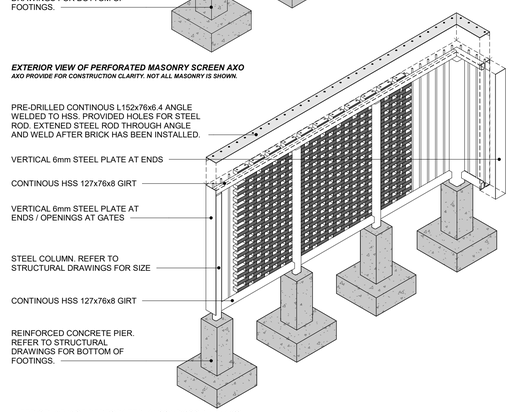
9 PERFORATED BRICK FENCE DETAIL

1 : 25



EXTERIOR VIEW OF PERFORATED MASONRY SCREEN AXO

AXO PROVIDE FOR CONSTRUCTION CLARITY. NOT ALL MASONRY IS SHOWN.



INTERIOR VIEW OF PERFORATED MASONRY SCREEN AXO

AXO PROVIDE FOR CONSTRUCTION CLARITY. NOT ALL MASONRY IS SHOWN.

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NO.	ISSUES/REVISIONS	DATE
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DRAWING TITLE:

SITE DETAILS

ISSUE DATE: 08/13/2024

DRAWN BY: SL CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A02.07** REVISION: **10**

[PLOT DATE: 2024-08-12 4:31:16]

GENERAL NOTES - FOUNDATION

1. ***GENERAL REQUIREMENTS***

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH FOUNDATION PLANS PREPARED BY THE STRUCTURAL ENGINEER, MECHANICAL AND ELECTRICAL DRAWINGS.
2. ROUTING OF UNDERGROUND SERVICES IS SCHEMATIC. ALL UNDERGROUND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH MECHANICAL AND ELECTRICAL DRAWINGS.
3. PROVIDE SLEEVES FOR ALL PENETRATIONS THROUGH FOUNDATION WALLS WHERE INDICATED AND WHERE REQUIRED (TYP.)
4. PROVIDE DROPS IN FOUNDATION WALLS WHERE INDICATED AND WHERE REQUIRED AT EXTERIOR OPENINGS. AT DOORS AND OVERHEAD DOORS, EXTEND FLOOR SLABS AT FOUNDATION DROPS TO EXTERIOR FACE OF FOUNDATION WALL. ENSURE SLAB HAS POSITIVE SLOPE TO EXTERIOR FROM EXTERIOR FACE OF DOOR OR OVERHEAD DOOR (TYP.)
5. TAKE CARE DURING PLACEMENT OF CONCRETE TO MITIGATE FACTORS THAT CONTRIBUTE TO SURFACE DEFECTS. ENSURE FACE OF FOUNDATION WALLS THAT WILL REMAIN EXPOSED (TYPICALLY 300MM MINIMUM) IS FREE OF HONEYCOMBING OR OTHER SURFACE DEFECTS.
6. ENSURE FACE OF FOUNDATION WALLS THAT ABUT AN ADJACENT CONCRETE SLAB OR SIDEWALK ARE SMOOTH TO ENSURE TIGHT PLACEMENT OF EXPANSION JOINT OR EXPANSION JOINT CAP AND CAULKED JOINT. SCRAPE OR GRIND AS REQUIRED.

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0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

FOUNDATION PLAN

ISSUE DATE: 08/13/2024

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

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A03.00** REVISION: **7**

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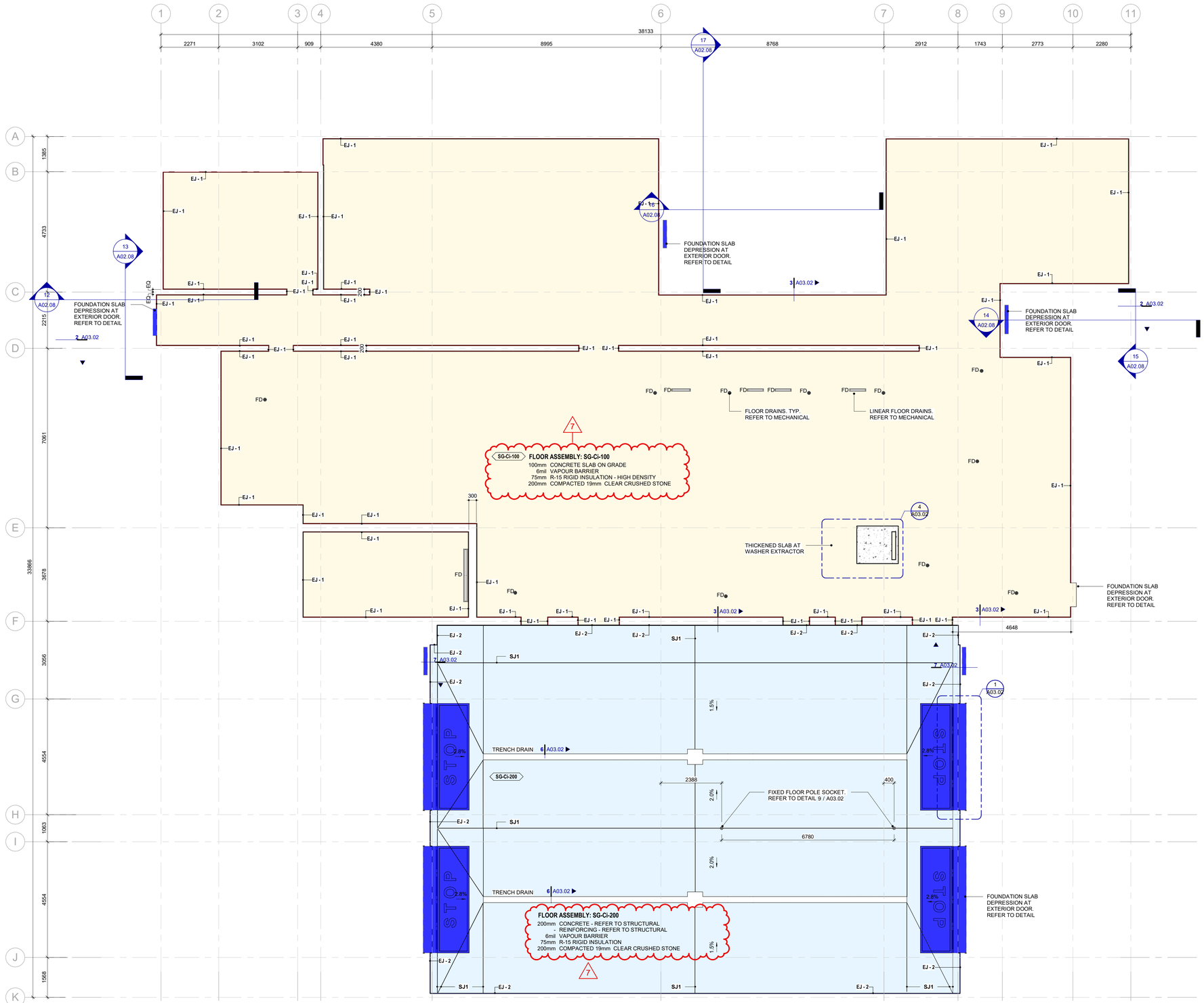

GENERAL NOTES - SLAB SETOUT

1. ***GENERAL REQUIREMENTS***
   1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH FOUNDATION PLANS PREPARED BY THE STRUCTURAL ENGINEER.
   2. APPARATUS / VEHICLE BAY SLABS ARE REINFORCED CONCRETE SLABS THAT SHALL BE PREPARED PROPERLY PRIOR TO EXECUTION.
2. ***SLAB AND FOUNDATION DEPRESSIONS***
   1. PROVIDE DROPS IN FOUNDATION WALLS WHERE INDICATED AND WHERE REQUIRED AT EXTERIOR OPENINGS.
   2. WHERE SLABS ABUT OVERHEAD DOORS OR DOOR OPENINGS, SLAB MUST BE CROWNED BENEATH DOOR TO ENSURE FLOW OF WATER FROM EXTERIOR FACE OF DOOR TO EXTERIOR.
   3. AT DOOR OPENINGS EXTEND SLAB TO EXTERIOR FACE OF FOUNDATION WALL. AT OVERHEAD DOOR OPENINGS, EXTEND SLAB TO MIDDLE OF SUPPORTING FOUNDATION WALL TO ABUT TO REINFORCED EXTERIOR CONCRETE APRON
3. ***CONTROL JOINTS AND EXPANSION JOINTS***
   1. WHERE SLABS ABUT A WALL, THE WALL MUST BE SMOOTH AND FREE OF PROJECTIONS SO THAT THE EXPANSION JOINT SITS DIRECTLY AGAINST THE WALL. THIS ALLOWS FOR A CLEAN AND CONSISTENT CAULKED JOINT WHEN FINISHED.
   2. EXPANSION JOINT MUST BE SET WITH AN EXPANSION JOINT CAP (SNAP-CAP AS MANUFACTURED BY WR MEADOWS OR EQUIVALENT). AFTER PLACEMENT OF SLAB, REMOVE TOP OF EXPANSION JOINT CAP AND CAULK JOINT.
   3. TRENCH DRAINS MUST BE PROPERLY SET IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND MANUFACTURERS RECOMMENDATIONS PRIOR TO PLACEMENT OF SLABS. PROVIDE PROPER SPACERS IN TOP OF TRENCH DRAIN TO ENSURE THAT EDGE RAILS DONT DEFLECT DURING PLACEMENT / FINISHING OF SLAB. FAILURE TO DO THIS MAY RESULT IN IMPROPER FIT OF TRENCH DRAIN GRATES.
   4. COORDINATE SAWCUTTING OF SLAB TO PREVENT EXCESSIVE RAVELING (TOO EARLY) OR CRACKING (TOO LATE).

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1	DESIGN DEVELOPMENT 100%	08/01/2024
0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

LAYOUT - SLAB SETOUT PLAN

ISSUE DATE: 08/13/2024

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

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A03.01** REVISION: **7**

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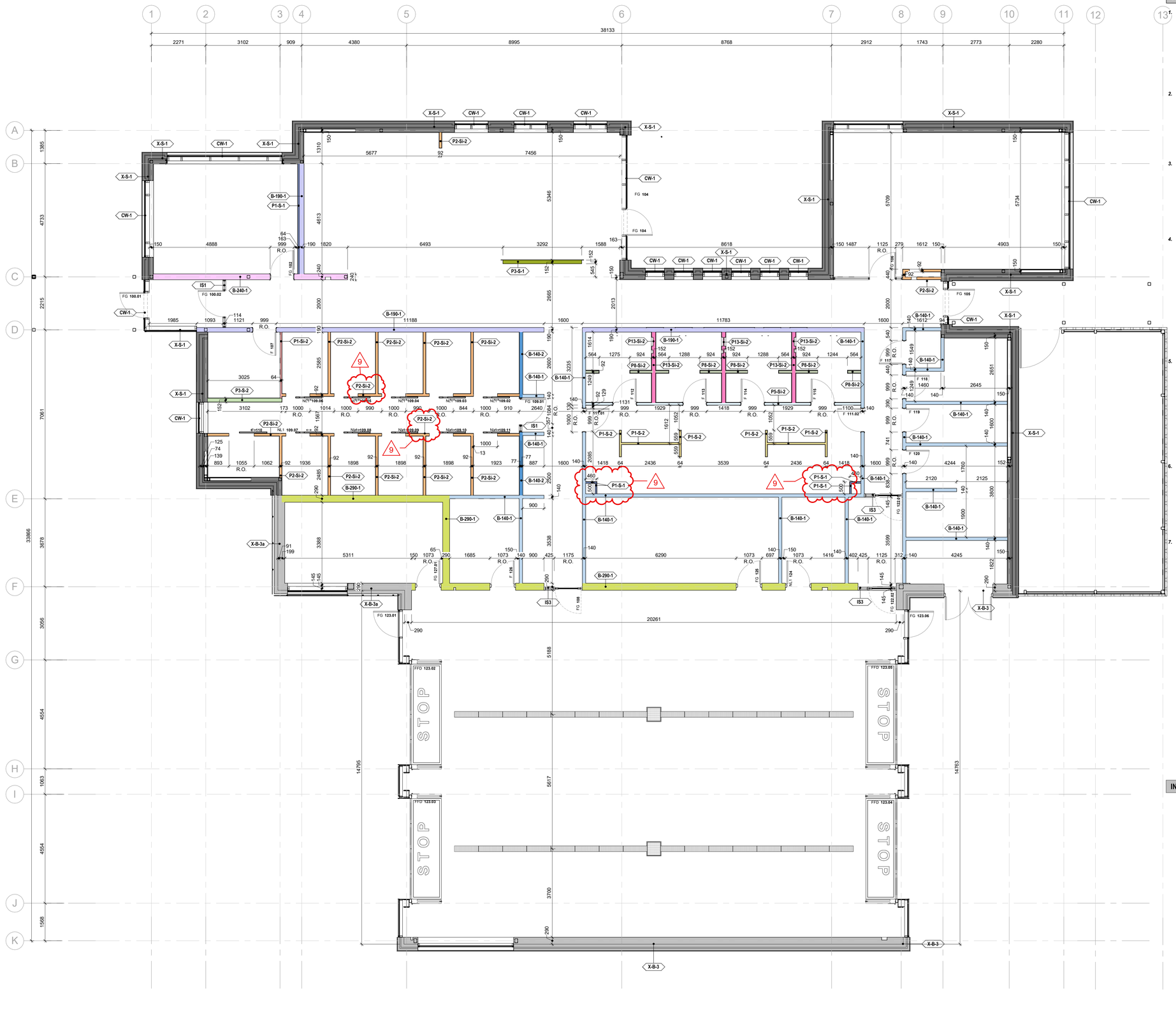

GENERAL NOTES - PARTITIONS

1. GENERAL REQUIREMENTS

1. DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL & ELECTRICAL ENGINEERING DRAWING& SPECIFICATIONS. REPORT ANY DISCREPANCIES BETWEEN CONSULTANTS' DRAWINGS TO DPAI FOR CLARIFICATION.
2. PARTITIONS ARE DISTINGUISHED ON THIS FLOOR PLAN BY SYMBOL DESIGNATION, GRAPHIC DESIGNATION OR A COMBINATION OF BOTH DESIGNATIONS.
3. DETAILS MODIFYING THE CONFIGURATION OF PARTITION TYPES SHOWN ON PLANS SHALL GOVERN. VERIFY WITH CONSULTANT ON SITE EXACT WALL TYPES TO BE USED IF UNCLEAR, THE CONTRACTOR SHALL BE BOUND TO THE CONSULTANTS INTERPRETATION OF WALL TYPES.

2. COORDINATION

1. IN AREAS WHERE INTERFERENCE BY OTHER TRADES MAKE IT IMPOSSIBLE TO ERECT PARTITIONS TO SPECIFIED HEIGHT, PROVIDE ANGLE AND TRAPEZE BRACING AT PARTITION ABOVE CEILING TO ENSURE STRUCTURAL STABILITY.
2. COORDINATE WITH SECTION 06 10 53 FOR INSTALLATION OF ALL WOOD BLOCKING AND BACKING FOR WALL MOUNTED DEVICES, ACCESSORIES, AND MILLWORK, ETC. PROVIDE STUD LAYOUT/SPACING TO SUIT (COORDINATE WITH DRAWINGS FOR AREAS RECEIVING METAL BLOCKING/BACKING).

3. LAYOUT

1. ALL PARTITIONS ARE TO BE CHALKED ON SITE & APPROVED BY CONSULTANT PRIOR TO INSTALLATION OF FLOOR & CEILING TRACK.
2. CONTRACTOR TO ENSURE THE FLOOR SLAB IS LEVEL PRIOR TO CONSTRUCTION OF PARTITIONS. PROVIDE SKIM COAT IF/AS REQUIRED. VARIANCE NOT TO EXCEED 20mm IN AREAS WHERE FILING CABINETS OR SHELVING UNITS ARE LOCATED. REFER TO FURNITURE PLAN FOR CABINET LAYOUTS.
3. CONTRACTOR TO REVIEW MECHANICAL DRAWINGS TO ENSURE PROVISION FOR AIR TRANSFER OPENINGS ABOVE CEILING PARTITION CONSTRUCTION.

4. METAL STUD FRAMING

1. "METAL STUDS" INDICATED FOR INTERIOR PARTITIONS REFER TO THOSE SPECIFIED IN SECTION 09 22 00 - METAL SUPPORTS FOR GYPSUM AND CEMENT BOARD. REFER TO SPECIFICATIONS FOR ADDITIONAL CRITERIA SUCH AS MINIMUM STUD SPACING, MINIMUM GAUGE AND PERMISSIBLE DEFLECTION LIMITS.
2. SEE SECTION 05 41 13 - LATERAL LOAD-BEARING COLD-FORMED METAL FRAMING. SUBMIT ENGINEERED SHOP DRAWINGS.
3. CO-ORDINATE STUD LOCATIONS AND ADDITIONAL METAL FRAMING WITH DRAWINGS FOR WORK BY ELECT./ MECH. CONTRACTORS (RECESSED ELECTRICAL PANELS, DEVICE BOXES, SERVICE PENETRATIONS, GRILLES, TERMINALS, DUCTING, FRAMING AROUND FIRE DAMPERS, SERVICE PENETRATIONS ETC.)
4. MECHANICALLY FASTEN INSULATION TO METAL STUDS TO PREVENT SAGGING WHERE METAL STUDS EXCEEDS 3-5/8".
5. PROVIDE 14 GAUGE STRUCTURAL METAL STUDS FLOOR TO CEILING AT ALL DOOR JAMBS AND INTERMEDIATE BRACING ABOVE INTERMEDIATE POINT OF DOUBLE DOORS.

5. GYPSUM BOARD PARTITIONS

1. MOISTURE-RESISTANT (CEMENTITIOUS BOARD) TO BE PROVIDED FOR PARTITIONS IN AREAS OF HIGH HUMIDITY AND/OR WET AREAS, AND WALLS CONTAINING WATER LINES (WASHROOMS, HOUSEKEEPING, SOILED UTILITY, HAND HYGIENE STATIONS, EYEWASH SINKS, ETC.).
2. TIGHTLY FIT ALL GYPSUM BOARD AND ACOUSTIC INSULATION AROUND DUCTS, PIPES, CONDUITS, AND STRUCTURAL MEMBERS PASSING THRU PARTITIONS. COORDINATE WITH MECHANICAL AND ELECTRICAL DIVISIONS. PROVIDE AIR TIGHT SEALS AT PENETRATIONS, FLOOR/WALL INTERFACE, U/S SLAB.
3. PARTITIONS ARE INDICATED WITH CONVENTIONAL GYPSUM WALLBOARD U.N.O.; UPGRADE TO PREMIUM TYPES OF WALLBOARD (I.E., FIRE-RATED, MOISTURE-RESISTANT, TILE-BACKER BOARD, ACOUSTICALLY ENHANCED, ABUSE RESISTANT, ETC.) BASED ON THEIR LOCATION AND ACCORDING TO REQUIREMENTS OF SECTION 09 29 00.

6. STC PARTITIONS

1. SOUND TRANSMISSION CLASS (STC) IS A RATING SYSTEM THAT DESCRIBES THE ABILITY OF AN ASSEMBLY TO REDUCE THE TRANSMISSION OF SOUND. CONFIGURE SOUND-RATED WALL ASSEMBLIES ACCORDING TO THE MINIMUM REQUIREMENTS STIPULATED IN THE STC TESTS LISTED. STC RATINGS LISTED ARE BASED ON LABORATORY TESTING AND ARE NOT INDICATIVE OF RESULTS IN FIELD.
2. REFER TO SECTION 09 29 00 FOR ACOUSTIC SEALANTS.
3. SOUND ATTENUATION BATTS (SAB) ARE SPECIFIED IN SECTION 09 29 00. WHERE SAB ARE INDICATED, THEY SHALL EXTEND CONTINUOUSLY FROM FLOOR TO STRUCTURE ABOVE.

7. FIRE RATED PARTITIONS

1. FOR FIRE SEPARATION AND LIFE SAFETY DRAWING REFER TO A01 SERIES DRAWINGS.
2. NON-RATED FIRE SEPARATIONS DENOTED WITH 0HR FIRE RATING TO BE SEALED TO PREVENT THE PASSAGE OF SMOKE. SMOKE SEPARATION (FIRE SEPARATION INDICATED). SEAL PENETRATIONS AND EDGES WITH SMOKE SEAL CAULKING. PROVIDE FOAMED IN-PLACE INSULATION AT INTERFACE OF TOP TRACK TO U/S OF STRUCTURE TO FILL VOIDS. COVER FOAMED IN-PLACE INSULATION WITH THERMAL BARRIER.
3. SEALANTS INDICATED MAY BE FOR FIRE RATING, SMOKE RATING, AIR PRESSURE CONTAINMENT, ACOUSTIC RATING, VERMIN CONTROL, MOVEMENT (CRACK) CONTROL AND/OR BIOLOGICAL CONTAINMENT. SEALANT JOINTS ARE TO BE SIZED FOR EXPECTED MOVEMENT OF JOINT WITH EXPANSION/CONTRACTION CAPACITY OF SEALANT MATERIAL TO MAINTAIN THE INTEGRITY OF THE SEAL FOR THESE APPLICABLE PARAMETERS. SEE SPECIFICATION SECTION 07 92 00 FOR INTERIOR JOINT SEALANTS.
4. REFER TO SECTION 07 84 00 FOR HEAD-OF-WALL FIRESTOPPING AND SEALING OF THRU-WALL PENETRATIONS. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED BY ULC APPROVED MATERIAL AND BY THE ABOVE SECTION U.N.O.
5. "LINE OF STRUCTURE" INDICATED FOR EACH PARTITION IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS OR GEOMETRY.
6. FIRE RESISTANT AND FIRE RESISTANT SMOKE BARRIER RATINGS ARE TO CONTINUE THROUGH ALL OPENINGS IN RATED PARTITIONS.
7. SMOKE RESISTANT, FIRE RESISTANT, AND FIRE RESISTANT SMOKE BARRIER PARTITIONS SHALL EXTEND AND SEAL TO INSIDE FACE OF EXTERIOR SHEATHING, INCLUDING EXTENSIONS THROUGH SOFFITS.

INTERIOR WALL ASSEMBLIES

- B-90-1
- B-140-1
- B-140-2
- B-190-1
- B-240-1
- B-290-1
- P1-S-1
- P1-S-2
- P1-Si-2
- P2-Si-2
- P3-S-1
- P3-S-2
- P5-Si-2
- P8-Si-2
- P13-Si-2
- P14-Si-2

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NO.	ISSUES/REVISIONS	DATE
9	ADDENDUM 01	08/13/2024
8	TENDER	07/16/2024
7	CLASS A ESTIMATE	05/21/2024
6	90% CONTRACT DOCUMENTS	05/21/2024
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:

INTERIOR PARTITION PLAN

ISSUE DATE: 08/13/2024

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

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A03.04** REVISION: **9**

PLOT DATE: 2024-08-13 4:31:28 PM

GENERAL NOTES - ROOF PLAN

1. ***GENERAL REQUIREMENTS***
   1. ROOF PLAN DOES NOT SHOW ALL PENETRATIONS THROUGH ROOF.
   2. CONTRACTOR SHALL REVIEW ALL CONTRACT DRAWINGS AND SPECIFICATIONS TO DETERMINE FULL SCOPE OF WORK.
   3. MAKE PROVISIONS FOR ROOF PENETRATIONS WHERE INDICATED AND REQUIRED UNDER THE SCOPE OF THIS CONTRACT.
2. ***INSULATION***
   1. PROVIDE TAPERED INSULATION AT PERIMETER OF ALL ROOFS, SKYLIGHTS AND AS INDICATED. SLOPE SHALL BE NO LESS THAN 2%.
   2. UNLESS NOTED OTHERWISE, SUMP ALL ROOF DRAINS IN ACCORDANCE WITH APPLICABLE CRCA DETAIL. AS INDICATED OR AS REQUIRED. PROVIDE TAPERED CRICKETS OR SIMILAR TYPE MEASURES TO ENSURE THAT ROOF WATER FLOWS TO DRAINS.
   3. SLOPE OF ROOF STRUCTURE TO BE SUPPLEMENTED BY TAPERED INSULATION. SLOPE ROOF INSULATION MIN. 1.5% TO DRAINS, TYPICAL. CRICKETS, CONSTRUCTED OUT OF TAPERED INSULATION, ARE TO PROVIDE TWO TIMES THE SLOPE OF THE ROOF STRUCTURE.
3. ***PENETRATIONS***
   1. ALL ROOF PENETRATIONS SHALL BE SEALED USING TALL CONE FLASHING OR PITCH POCKETS AS REQUIRED. CONES SHALL BE SEAMLESS AND INCLUDE A STORM COLLAR.
4. ***EQUIPMENT***
   1. UPSTANDS ON ROOF FOR MECHANICAL UNITS, PARAPETS, SKYLIGHTS TO COME COMPLETE WITH CANT STRIPS.
   2. WITHOUT EXCEPTION, ROOF MOUNTED EQUIPMENT AND FITTINGS THAT REQUIRE A ROOF CURB SHALL BE SUPPORTED BY A CURB OF SUFFICIENT HEIGHT SO THAT THE TOP OF CURB IS AT LEAST 250mm ABOVE THE ADJACENT ROOF SURFACE. CONTRACTOR TO COORDINATE WITH SUPPLIERS/MANUFACTURERS ACCORDINGLY.
5. ***MEMBRANES***
   1. CONTINUOUS VAPOUR RETARDER MEMBRANE COMPONENT OF ROOF ASSEMBLIES TO BE WRAPPED UP AT ALL PARAPETS, CURBS, EXTERIOR WALL ASSEMBLIES BY A MIN. 200mm OR AS DETAILED ON DRAWINGS. TIE INTO VAPOUR BARRIER & AVB MEMBRANES ON ALL VERTICAL SURFACES. PROVIDE 'PEEL & STICK' TYPE TRANSITION MEMBRANES IN ORDER TO ENSURE CONTINUITY OF AIR BARRIERS/BUILDING ENVELOPE.
6. ***ROOF ANCHORS***
   1. REFER TO SPECIFICATIONS FOR ROOF ANCHORS AND RELATED REQUIREMENTS.
   2. FULLY COORDINATE ROOF ANCHOR LOCATIONS WITH STRUCTURAL DRAWINGS & ROOF ANCHOR SHOP DRAWINGS TO ENSURE PROPER PLACEMENT OF ALL ROOF ANCHORS.
   3. LAYOUT SHOWN IS PERLIMINARY ONLY. FINAL LAYOUT TO BE CONFIRMED WITH ROOF ANCHOR SUPPLIER.

ROOF DRAIN WITH CHAIN LINK. REFER TO DETAIL: 9 / A07.02

ROOF DRAIN WITH DRAIN PIPE. REFER TO DETAIL: 10 / A07.02

ROOF DRAIN WITH DRAIN PIPE. REFER TO DETAIL: 10_/_A07.02

ROOF ANCHORS LOCATED ABOVE JOISTS BELOW. REFER TO DETAIL: 11 / A07.02

ROOF ACCESS LADDER

ROOF PAVERS: 8 / A07.02

6

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0	60% CONTRACT DOCUMENTS	04/16/2024

DRAWING TITLE:

ROOF PLAN

ISSUE DATE: 08/13/2024

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PROJECT NO.: 12303 SCALE: As indicated

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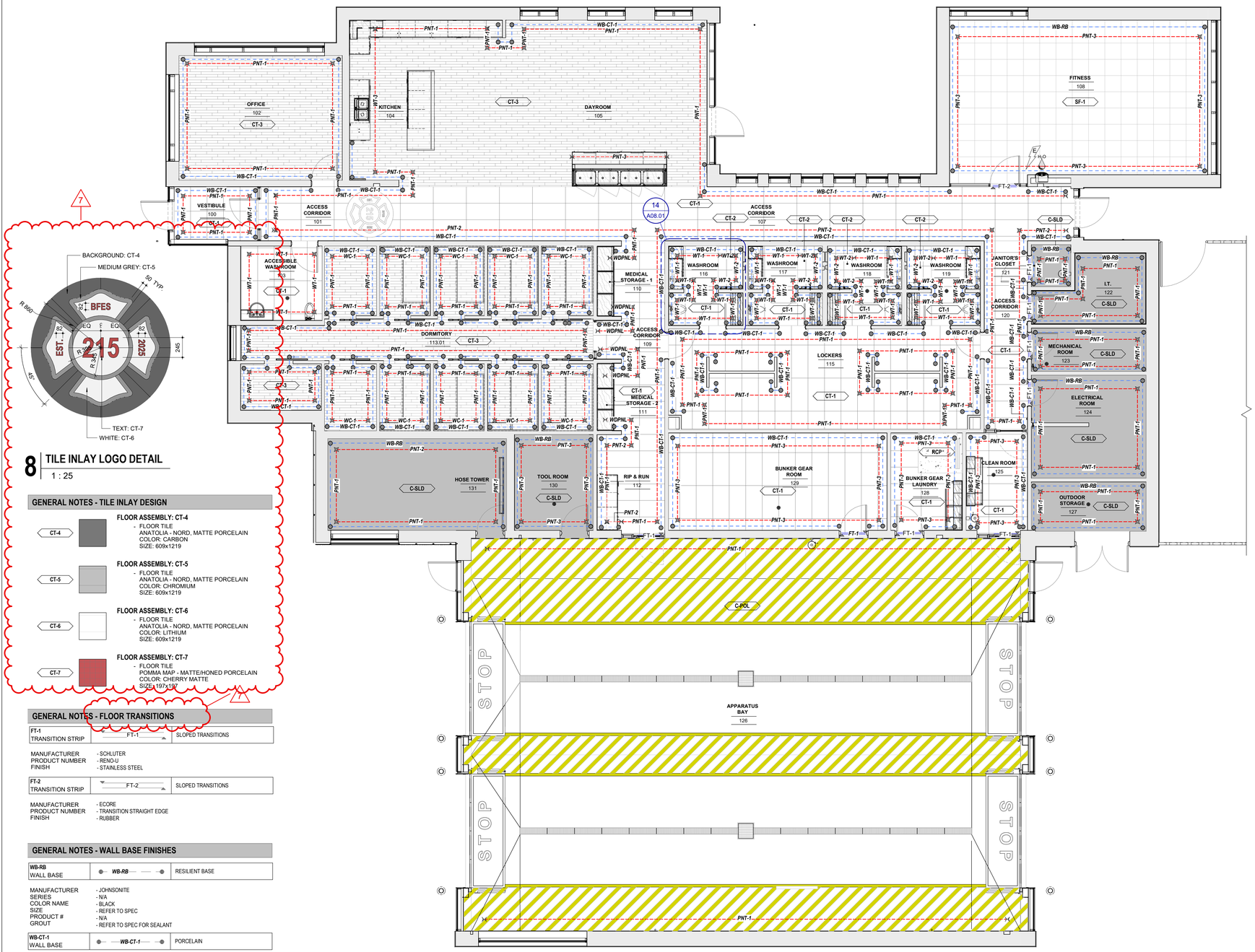

1 LEVEL 01 - FLOOR FINISHES PLANS
1 : 75

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	- REND-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

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

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 #	- 8237K-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: CT-1 (U.N.O)

CT-2 — FLOOR ASSEMBLY: CT-2
- SHOWER FLOOR TILE
ANATOLIA - NORD, MATTE PORCELAIN
COLOUR: PALLADIUM
SIZE: 304x609
WALLBASE: 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

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LEVEL 01 - FINISHES PLANS

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BASE CONTRACT & CASH ALLOWANCE FURNITURE, FIXTURE & EQUIPMENT SCHEDULE

GENERAL NOTES

REFER TO & COORDINATE WITH CONSULTANT DRAWINGS AND SPECIFICATIONS FOR FULL SPECS OF EQUIPMENT. COORDINATE WITH...

CODE	DESCRIPTION	SUPPLIER	MODEL NO.	QTY
BASE CONTRACT				
DINNING				
TBL1	DINING TABLE	CONTRACTOR	N/A	1
EQUIPMENT				
GMB	GLASS MARKER BOARD, FRAMLESS FLOATING 1200x2400	ASI	REFER TO SPEC	1
LKR1	24x20x82 LOCKER, RED RACKS	READY RACK	RRWM-4/24, RRWM-5/24, RRWM-6/24	22
LKR2	24X20X82 FREESTANDING RED RACK, DOUBLE-SIDED	READY RACK	RFDS-4/24	3
WBTB3	WHITEBOARD/TACKBOARD 800x3000	FORBO	REFER TO SPEC	1
WBTK2	WHITEBORD/TACKBOARD 1200x1200	FORBO	REFER TO SPEC	2
WSBO	WINDOW SHADE c/w BLACKOUT SHADE	Draper,Inc	WSBO	7
GYM EQUIPMENT				
MIR	FLAT MIRROR	CONTRACTOR	MI	5
MIR3	FLAT MIRROR	CONTRACTOR	MI	2
PLYB-1	20mm MAPLE PLYWOOD	CONTRACTOR	N/A	2
PLYB-2	20mm MAPLE PLYWOOD	CONTRACTOR	N/A	2
JANITOR'S CLOSET				
MBH	UTILITY SHELF WITH RAG HOOKS AND BROOM HOLDERS	BOBRICK WASHROOM EQUIPMENT, INC	B-239	1
LAUNDRY EQUIPMENT				
WREX	WASHER EXTRACTOR	UNIMAC	UW065 TOUCH	1
LOCKER ROOM EQUIPMENT				
BCH	PHENOLIC BENCH TOP C/W STEEL FIXED PEDESTALS	ASI STORAGE SOULTIONS	241mm W x 1100mm L	6
CG	CORNER GUARD	CONSTRUCTION SPECIALTIES	CG-T1	1
LKR3	18"x21" GLADIATOR SERIES, 1 TIER LOCKER	HADRIAN INC. (LOCKER)	ATHLETIC GLADIATOR - 1 TIER & PHENOLIC CUBBIE - SINGLE TIER	43
LKR4	PHENOLIC CUBBIES	ASI STORAGE SOLUTIONS	PHENOLIC CUBBIES	43
MIR4	FLAT MIRROR		MI	1
WASHROOM				
MIR4	FLAT MIRROR		MI	3
CASH ALLOWANCE				
GYM EQUIPMENT				
BCH	BENCH	TBC	TBC	2
DBR	DUMBBELL RACK	TBC	TBC	1
ELP	ELLIPTICAL	TBC	TBC	1
RWM	ROWING MACHINE	TBC	TBC	1
SMM	SMITH MACHINE	TBC	TBC	1
STBK	STATIONARY BIKE	TBC	TBC	1
TRDML	TREADMILL	TBC	TBC	1
KITCHEN APPLIANCES				
DW	HOT AND COLD UNDERCOUNTER DISHWASHER	STERO	SU	1
FRDG	SIGNATURE SERIES FRENCH DOOR REFRIDGERATOR	NEW AIR	NSR-115-H	1
FRZ	SIGNATURE SERIES UNDERCOUNTER FREEZER, WITH 4" CASTOR REPLACEMENTS	NEW AIR	NUF-029-SS	1
MW	COMMERCIAL MICROWAVE OVEN	CELCOOK	CEL1100HT	1
STV	36" RESTAURANT RANGE, GAS	GARLAND	G36-6R	1
LAUNDRY EQUIPMENT				
WRDR	FRONT LOAD EXTRA POWER STACKED WASHER AND DRYER	MAYTAG	YMED6630MBK	1

OWNER PURCHASED FURNITURE, FIXTURE & EQUIPMENT SCHEDULE

GENERAL NOTES

REFER TO & COORDINATE WITH CONSULTANT DRAWINGS AND SPECIFICATIONS FOR FULL SPECS OF EQUIPMENT. COORDINATE WITH...

CODE	DESCRIPTION	SUPPLIER	MODEL NO.	QTY
DAYROOM 104				
CH4	LOUNGE CHAIR	TBC	TBC	10
TBL2	SIDE TABLE	TBC	TBC	2
TBL4	CENTER TABLE	TBC	TBC	1
TV	WALL MOUNTED TV	TBC	TBC	1
DINNING				
				1
CH3	DINING CHAIR	TBC	TBC	12
TV	WALL MOUNTED TV	TBC	TBC	1
DORMITORY				
CAB	PEDESTAL	TBC	TBC	2
CH2	TASK CHAIR	TBC	TBC	2
TBL2	SIDE TABLE	TBC	TBC	2
WS2	WORKSTATION	TBC	TBC	2
OFFICE 102				
CH1	TASK CHAIR	Knoll, Inc.	TBC	3
CSO	Haworth - Compose Storage Open - 2/2High - SPECIAL	Haworth	BZSN	3
KSB	K-STAND BASE	KNO	KHATB3CEL30GS	3
MR	MONITOR ARM	Humanscale	M21TB	3
PED-1	PEDESTAL BOX		R2P162J	3
PED-2	PEDESTAL WITH HINGED DOOR		R2P302L	3
TBL-3	1 x Round Table with X Base, Standard Desk Height, 48" Wide	KNO	DT1ACX48	1
WRKS-2	WORK SURFACE - 90Wx24Dx1-1/4H		RSA902	1
WRKSUR-2	WORK SURFACE - 42Wx24Dx1-1/4H		RSA422	3
WRSUR-1	WORK SURFACE	KNO	KHATTRR7029N	3
PATIO				
OCH-01	OUTDOOR CHAIR	TBC	TBC	4
OTB-01	PATIO TABLE	TBC	TBC	2
TBL6	OUTDOOR PICNIC TABLE	TBC	TBC	4
RIP AND RUN				
	FLOOR PRINTER	TBC	TBC	1
WASHROOM				
PTD-1	Surface-Mounted Roll Paper Towel Dispenser ROLL PAPER TOWEL DISPENSER	Bobrick	B-72860	4
TTD-1	SURFACE MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	TBC	TBC	4

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

PROJECT NO.: 12303 SCALE: 1 : 75

DRAWING NO.: **A03.13** REVISION: **7**

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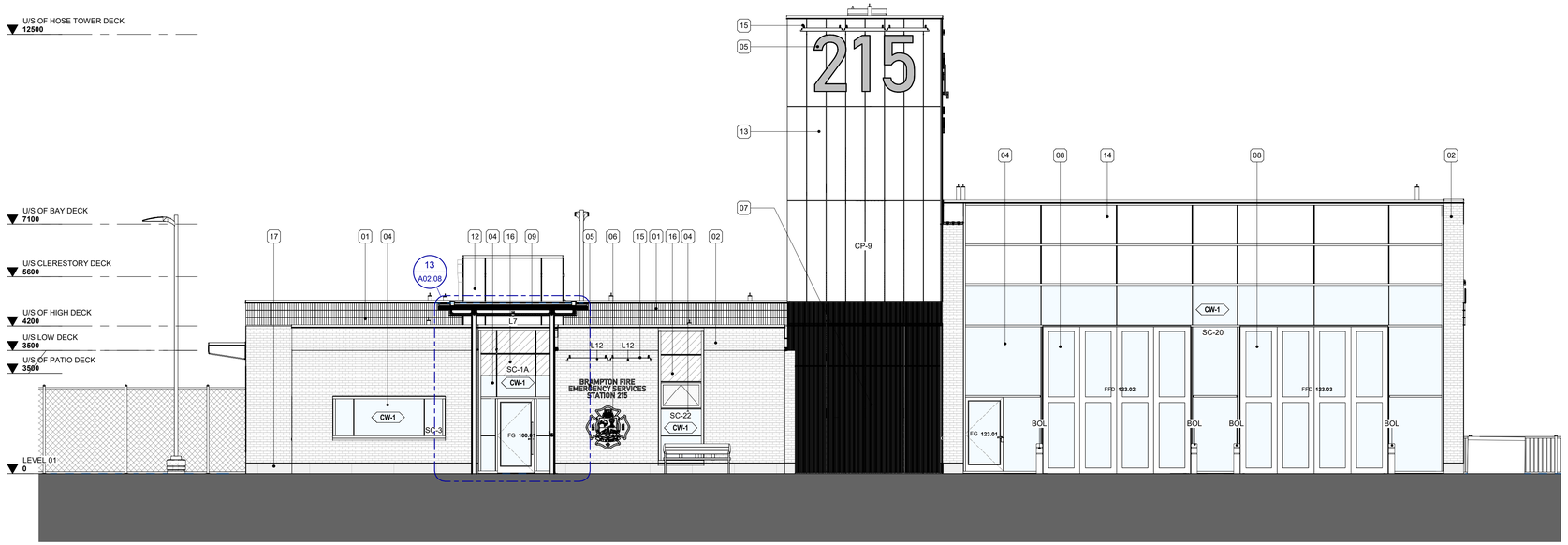
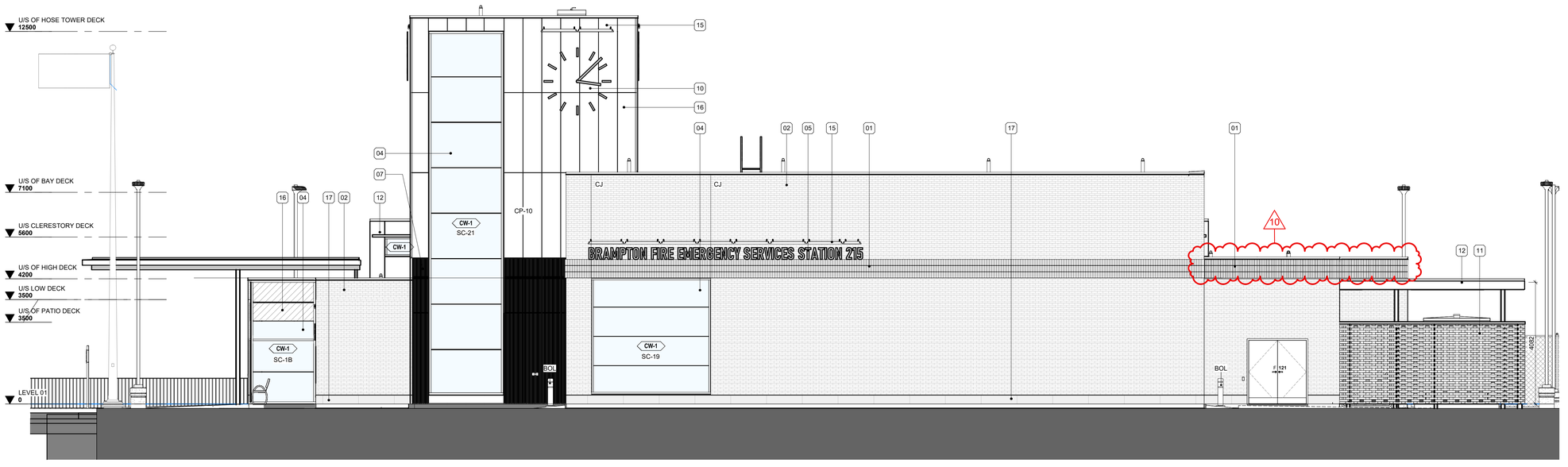


1 BUILDING ELEVATION

1 : 75



2 BUILDING ELEVATION

1 : 75

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

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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:

EXTERIOR ELEVATIONS

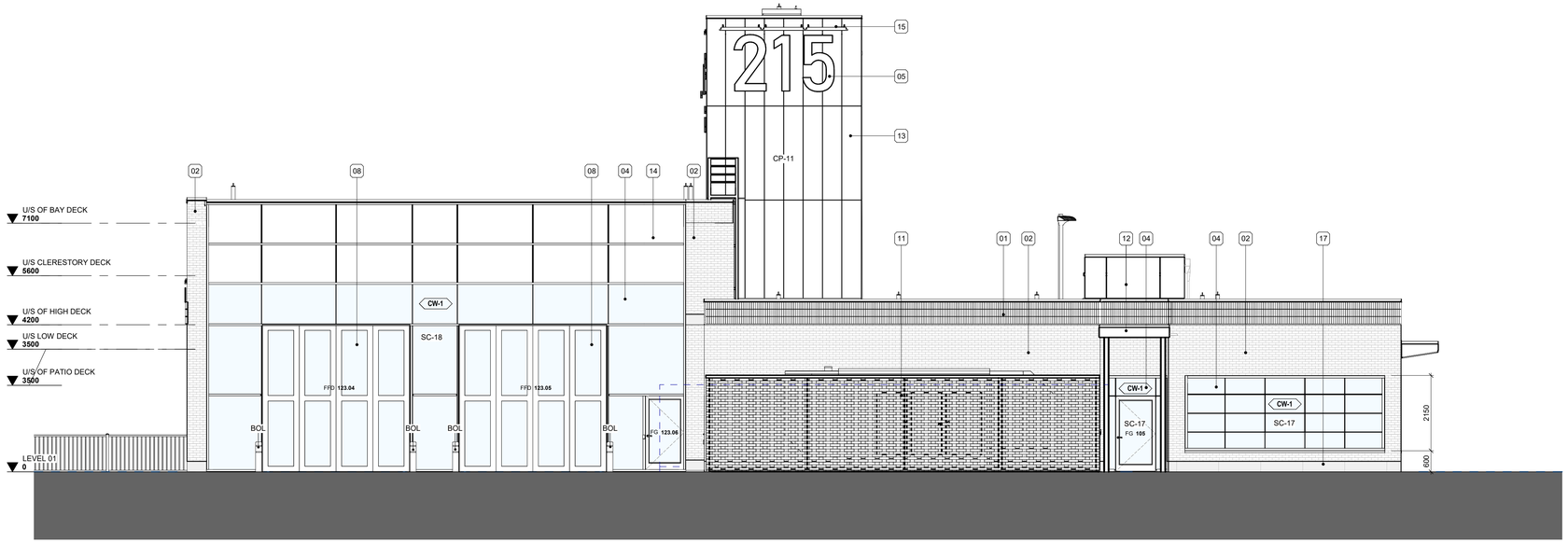
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: As indicated

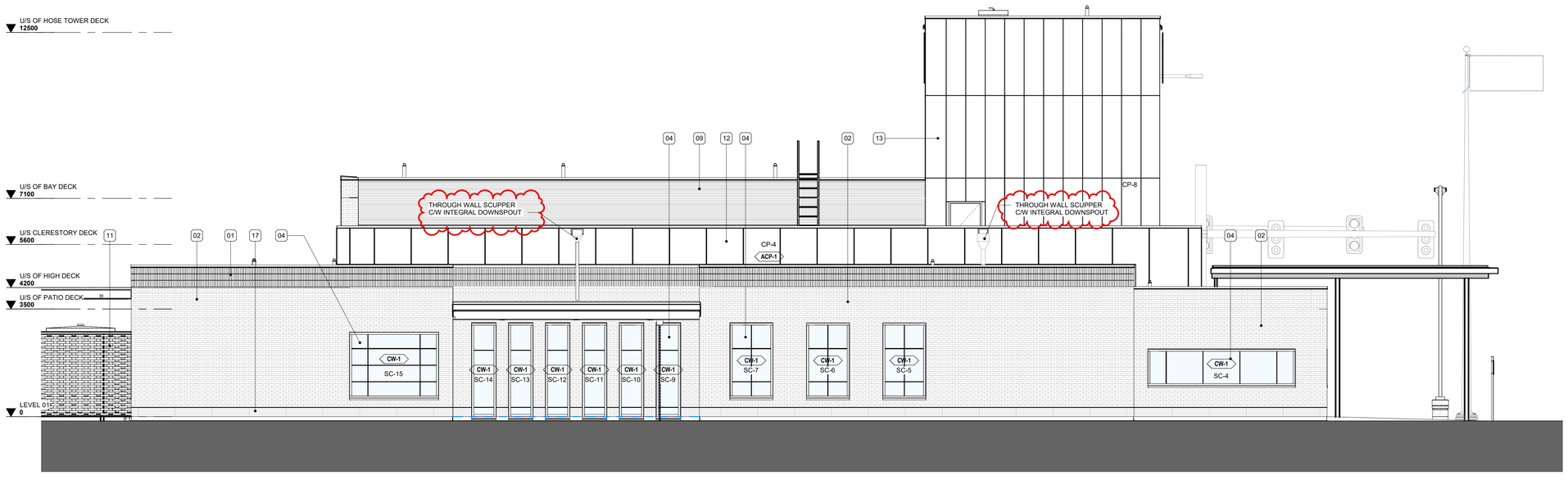
DRAWING NO.: **A04.00** REVISION: **10**

PLOT DATE: 2024-08-12 4:31:59 PM



1 EAST ELEVATION

1 : 75



2 NORTH ELEVATION

1 : 75

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.
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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

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PRIDHAM
LICENCE
4318

NO.	ISSUES/REVISIONS	DATE
10	ADDENDUM 01	08/13/2024
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:

EXTERIOR ELEVATIONS

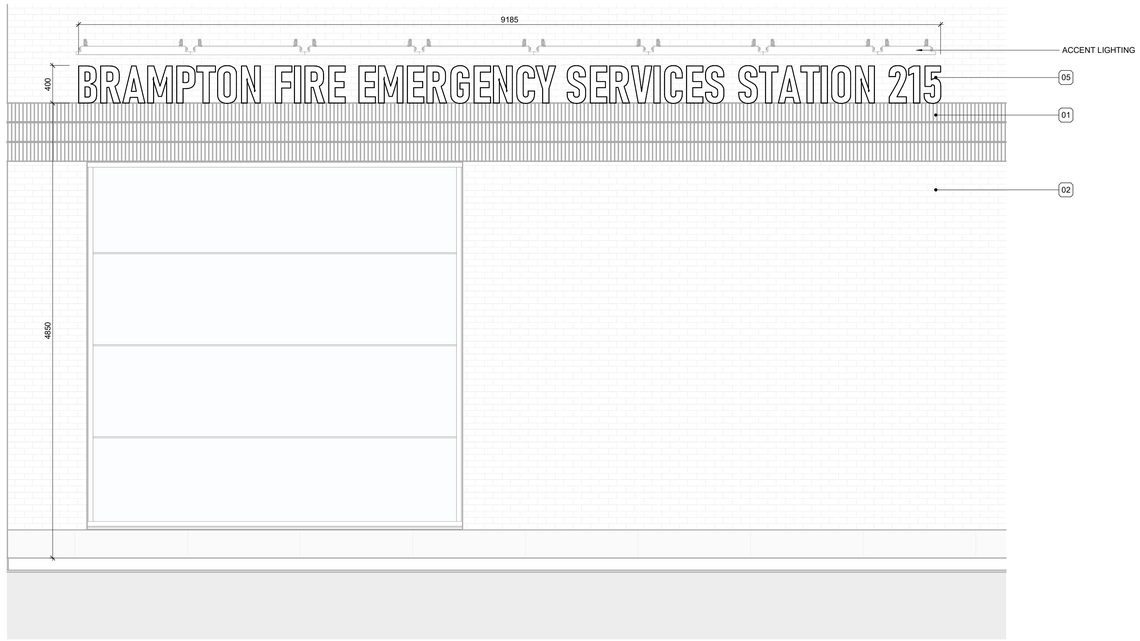
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY:Checker

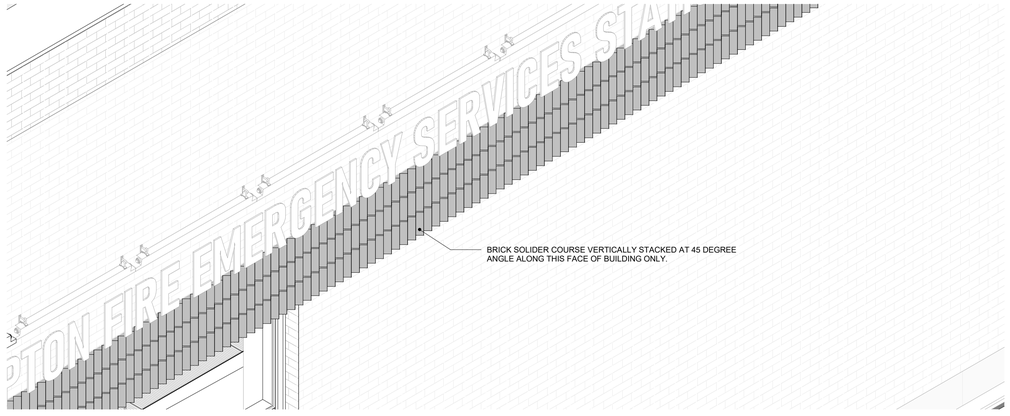
PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A04.01** REVISION: **10**

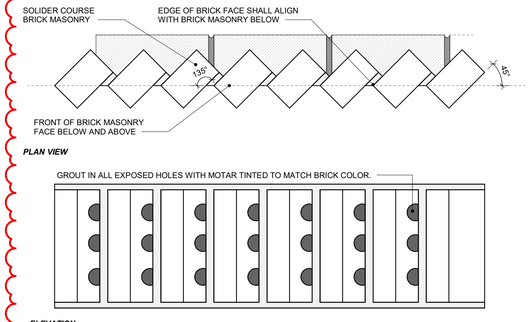
I PLOT DATE: 2024-08-12 4:22:06 PM



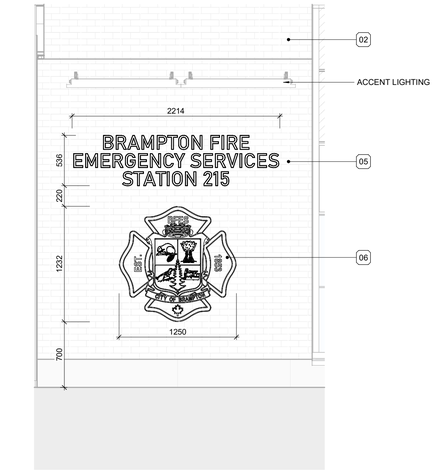
4 BUILDING SIGNAGE
1 : 30



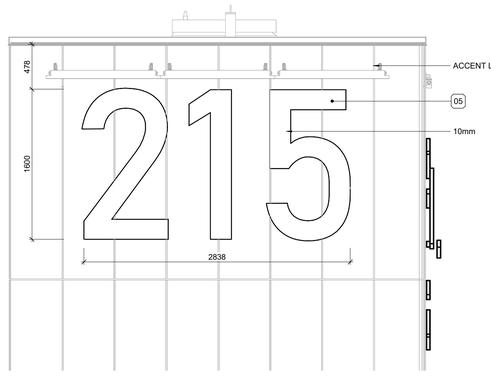
5 AXO - BRICK MASONRY



6 SOLIDER COURSE ON ANGLE
1 : 5



1 BUILDING SIGNAGE
1 : 30



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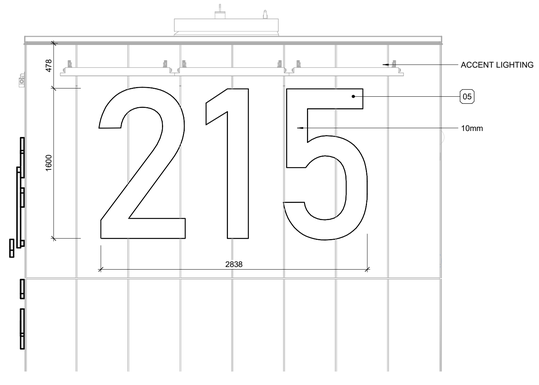
1 : 30



3 BUILDING SIGNAGE
1 : 30

GENERAL NOTES - BUILDING ELEVATIONS

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NO.	ISSUES/REVISIONS	DATE
3	ADDENDUM 01	08/13/2024
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1	CLASS A ESTIMATE	05/21/2024
0	90% CONTRACT DOCUMENTS	05/21/2024

DRAWING TITLE:

BUILDING SIGNAGE

ISSUE DATE: 08/13/2024

DRAWN BY: AR CHECKED BY: SL

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A04.02** REVISION: **3**

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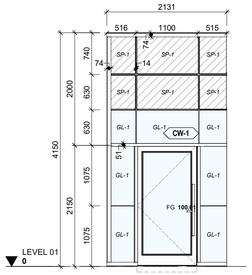
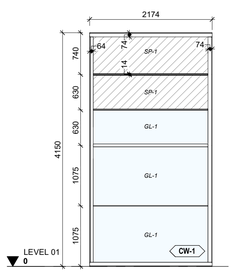


20 SC-1A ELEVATION
1 : 50



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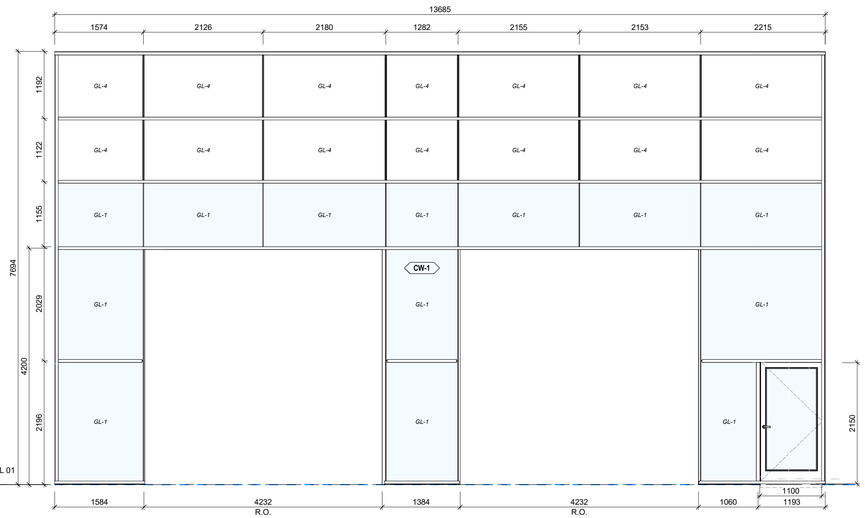

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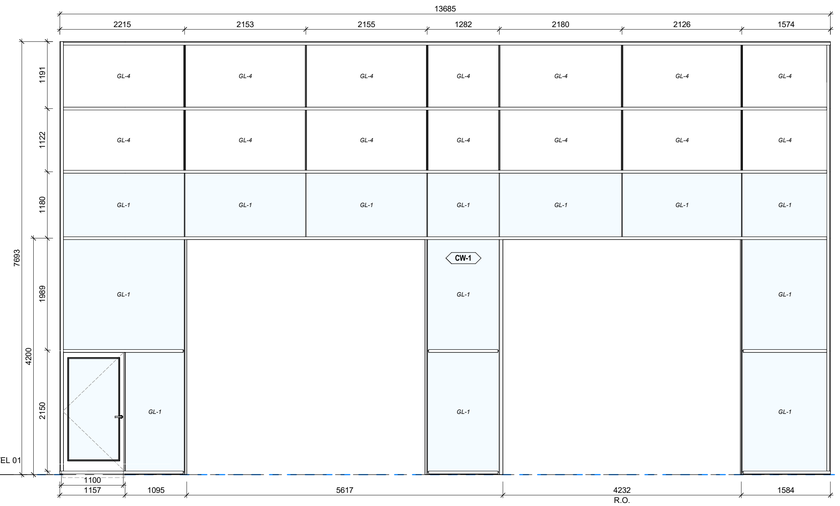
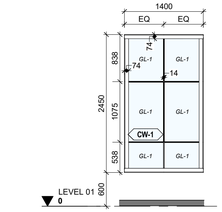


22 SC-20 ELEVATION
1 : 50



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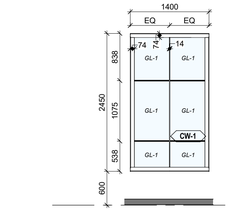

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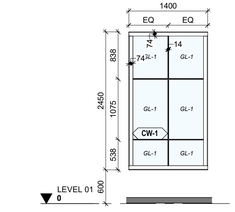
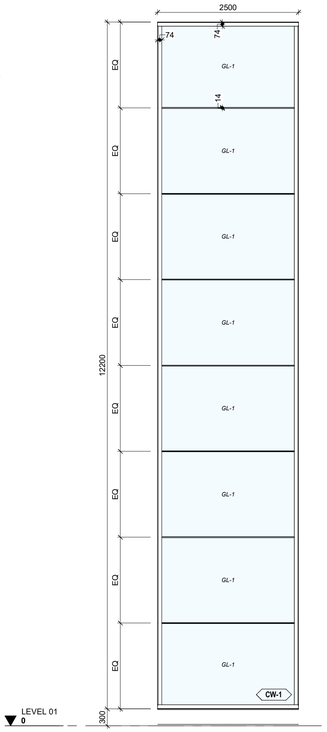


17 SC-7 ELEVATION
1 : 50



18 SC-21 ELEVATION
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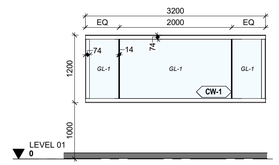

9 SC-3 ELEVATION
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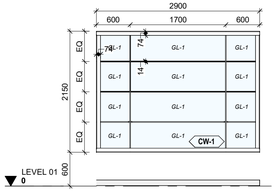

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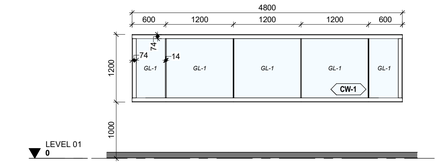

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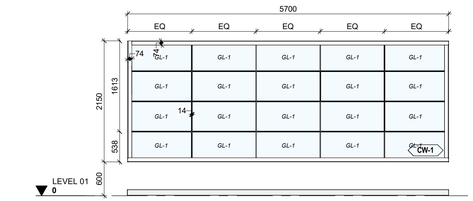
1 : 50



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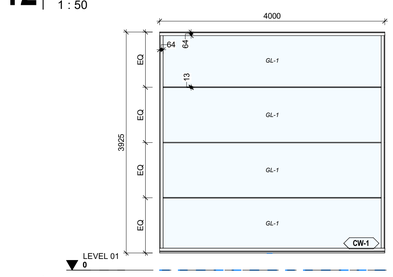

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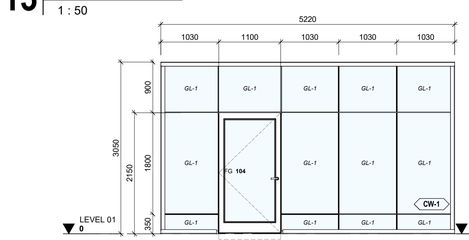

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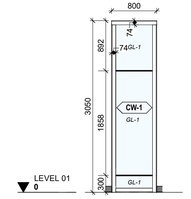

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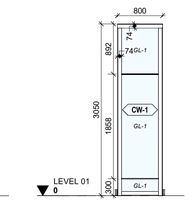
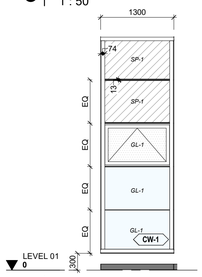


6 SC-9 ELEVATION
1 : 50



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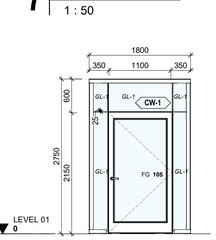
1 : 50



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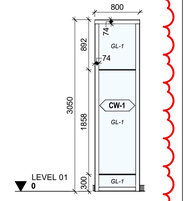
1 : 50



1 SC-14 ELEVATION
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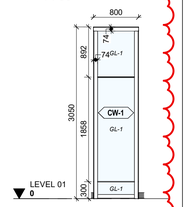

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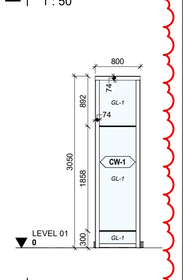

3 SC-12 ELEVATION
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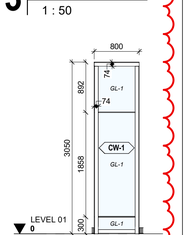

4 SC-11 ELEVATION
1 : 50

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	2,745 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	2,745 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	2,745 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	2,745 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	2,745 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	800 mm	2,745 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-17	5,700 mm	2,150 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-30	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

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NO.	ISSUES/REVISIONS	DATE
8	ADDENDUM 01	08/13/2024
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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:

EXTERIOR GLAZING ELEVATIONS

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: 1 : 50

DRAWING NO.: **A06.01** REVISION: **8**

[PLOT DATE: 2024-08-13 4:23:17 PM]

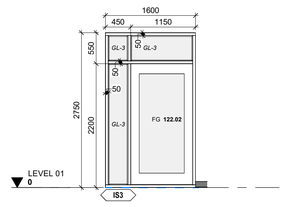
CURTAIN WALL SCHEDULE1

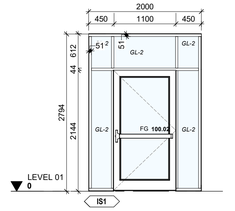
FUNCTION	TYPE	MARK	WIDTH	HEIGHT	BASIS OF DESIGN	FINISH COLOR
EXTERIOR SCREEN	CW-1	SC-1A	2,131 mm	4,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR SCREEN	CW-1	SC-1B	2,431 mm	4,150 mm	Alumicor 'ThermaWall TW2200 Series', TRIPLE-GLAZED IGUs	BLACK ANODIZED
EXTERIOR 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	2,745 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	2,745 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	2,745 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	2,745 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	2,745 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	800 mm	2,745 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-17	5,700 mm	2,150 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-30	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

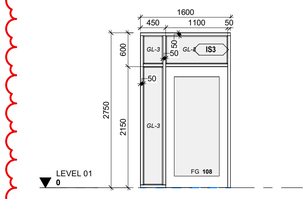
CODE	TYPE	DESCRIPTION
GL-1	INSULATED GLAZING UNIT (TRIPLE GLAZED)	VITRO ARCHITECTURAL GLASS 'SOLARBAN 90'
GL-2	CLEAR TEMPERED GLAZING	10mm TEMPERED
GL-3	FIRE RATED GLAZING	FIRELITE NT
GL-4	TRANSLUCENT GLAZING UNITS	SOLERA-T R18 + AEROGEL

6

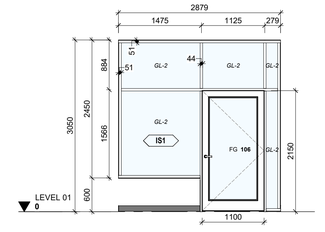




4 SC-25 ELEVATION
1 : 50



1 SC-2 ELEVATION
1 : 50



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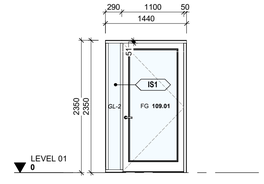
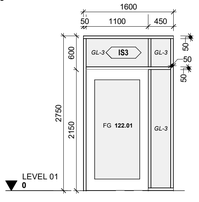
1 : 50



2 SC-23 ELEVATION
1 : 50



6 SC-27 ELEVATION
1 : 50

3 SC-24 ELEVATION
1 : 50

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0	DESIGN DEVELOPMENT 100%	08/01/2024

DRAWING TITLE:

INTERIOR GLAZING ELEVATIONS

ISSUE DATE: 08/13/2024

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

PROJECT NO.: 12303 — SCALE: 1 : 50

DRAWING NO.: **A06.02** — REVISION: **6**

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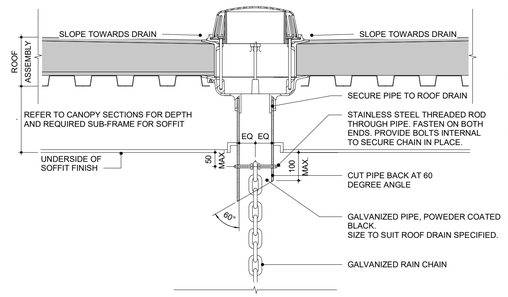
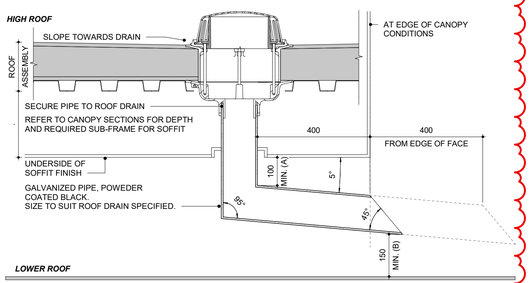


WITHOUT EXCEPTION

1. UNLESS NOTED OTHERWISE, ALL ROOF DRAINS SHALL BE SUMPED IN ACCORDANCE WITH APPLICABLE CRCA DETAIL
2. MIN SLOPE OF SUMP FROM SUMP EDGE TO DRAIN - 8%
3. BOTTOM OF CHAIN SHALL BE SECURED AND CONNECTED TO TRENCH DRAIN

9 ROOF DRAIN C/W RAIN CHAIN

1 : 10

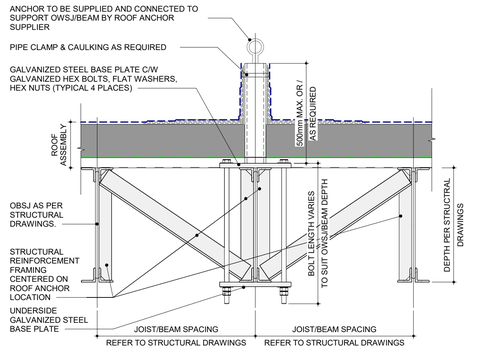


EXECUTION NOTES:

1. UNLESS NOTED OTHERWISE, ALL ROOF DRAINS SHALL BE SUMPED IN ACCORDANCE WITH APPLICABLE CRCA DETAIL
2. DIRECTION OF WATER FLOW SHALL BE CONFIRMED WITH CONSULANT PRIOR TO INSTALLATION.
3. IF ROOF DRAIN IS AT EDGE CONDITION OF CANOPY, PIPE EXTENSION SHALL BE AT MINIMUM OF 400mm FROM FINISHED FACE OF CANOPY
4. HIEGHT (A) SHALL BE WHERE CANOPY IS NOT ABOVE ANOTHER ROOF. HEIGHT (B) SHALL BE AT LOCATIONS WHERE ROOF IS BELOW AND DRAINAGE IS REQUIRED TO BE SPILLED TO LOWER ROOF. PIPE SHALL BE EXTENDED DOWN TO A MINIMUM OF 150mm ABOVE FINISHED ROOF ASSEMBLY.

10 ROOF DRAIN C/W DRAIN PIPE EXTENSION

1 : 10



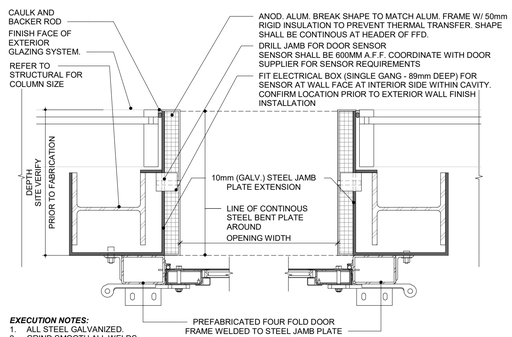
EXECUTION NOTE

1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND WITH CRCA DETAIL FL.14 - MBM.
2. JOIST SUPPLIER SHALL DESIGN JOIST FOR LOCALIZED LOADING RELATED TO ROOF ANCHOR LOCATION
3. ROOF ANCHOR BASIS OF DESIGN: PROBEL FA-PBE76 C/W FLASHING. SIZE TO SUIT PROJECT CONDITIONS.

11 ROOF ANCHOR @ JOIST DETAIL

1 : 10

[PLOT DATE: 2024-08-12 4:32:24 PM]

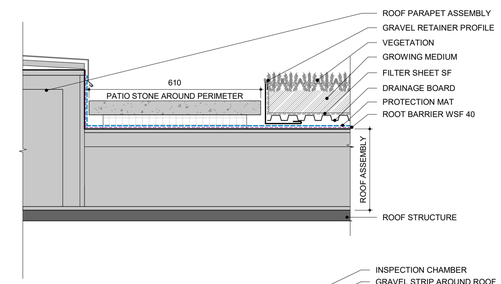


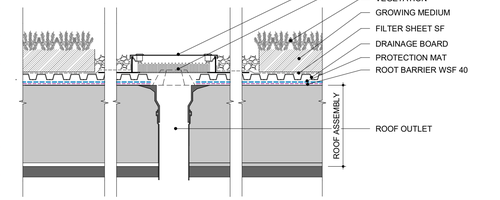
EXECUTION NOTES:

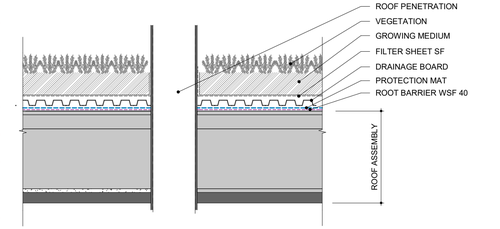
1. ALL STEEL GALVANIZED.
2. GRIND SMOOTH ALL WELDS
3. CONFIRM FOUR FOLD DOOR MOUNTING REQUIREMENTS WITH DOOR MANUFACTURER PRIOR TO INSTALLATION.

6 FOUR FOLD DOOR JAMB DETAIL

1 : 10



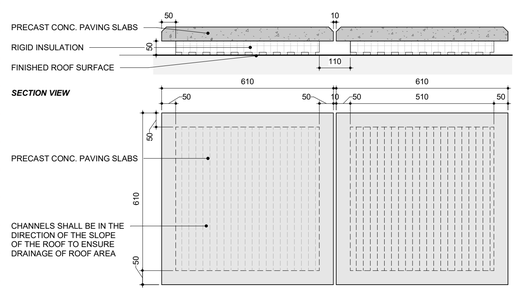




* SHOP DRAWING AND SUBMITTAL REQUIRED PRIOR TO INSTALLATION

7 GREEN ROOF DETAILS

1 : 10

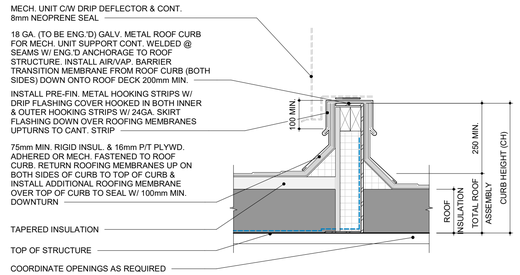


EXECUTION NOTES

1. PROVIDE ROOF PAVERS AROUND PERIMETER OF GREEN ROOF ASSEMBLIES AND NOTED ON ROOF PLANS.
2. RIGID INSULATION SHALL BE CUT 50MM BACK FROM EDGE OF PAVER (TYPICAL) TO PERMIT WATER DRAINAGE.
3. ON MEMBRANE ROOF SURFACES, INSULATION SHALL BE RAIN CHANNELED ON BOTTOM EDGES.

8 ROOF PAVER DETAIL

1 : 10

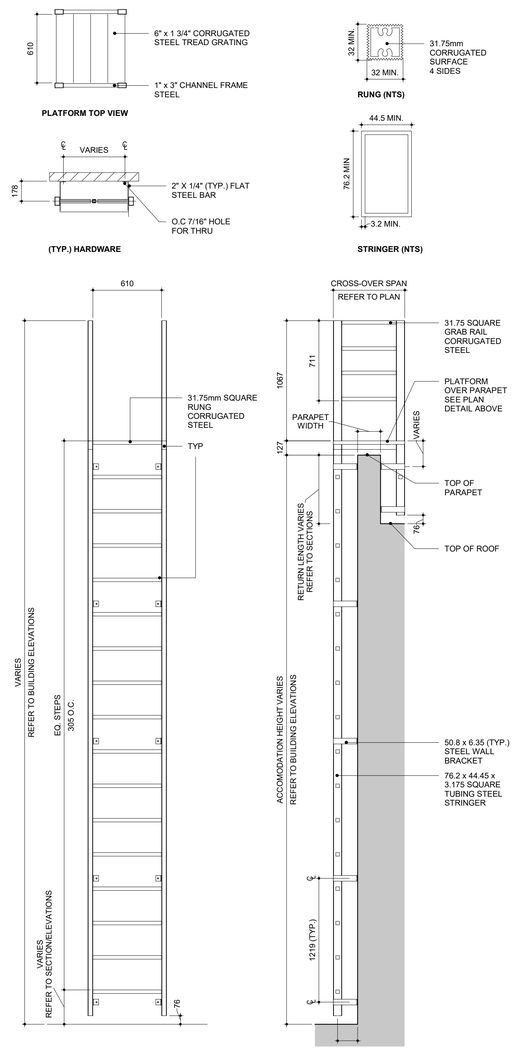


EXECUTION REQUIREMENTS

1. ROOF MOUNTED EQUIPMENT AND FITTINGS THAT REQUIRE A ROOF CURB SHALL BE SUPPORTED BY A CURB OF SUFFICIENT HEIGHT SO THAT THE TOP OF CURB IS AT MINIMUM 250mm ABOVE THE ADJACENT ROOF SURFACE.
2. ROOF CURB HEIGHT (CH) **SHALL BE** NOTED ON SHOP DRAWING SUBMITTALS. ROOF CURB HEIGHT SHALL BE THE THICKNESS OF THE ROOF ASSEMBLY + 250mm.
3. ALL CURB LOCATIONS SHALL BE COORDINATED WITH STRUCTURAL STEEL SUBMITTALS.
4. CONTRACTOR SHALL COORDINATE WITH SUPPLIERS / MANUFACTURERS ACCORDINGLY.

4 ROOF CURB DETAIL

1 : 10

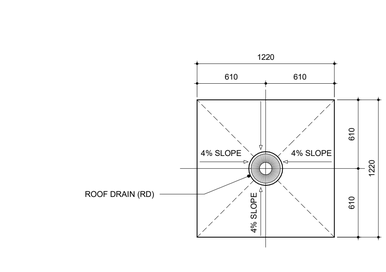


NOTES:

1. ALL STEEL GALVANIZED.
2. GRIND SMOOTH ALL WELDS
3. PROVIDE WEEP HOLES AS REQUIRED FOR ALL TUBULAR STEEL
4. ALL LADDERS TO BE DESIGNED IN ACCORDANCE WITH OBC AND OHSA REQUIREMENTS AND REGULATIONS. REF. OHSA ENG DATA SHEET 2-04 (CURRENT REVISION).
5. CAGE REQUIRED IF LADDER EXCEEDS 5m IN HEIGHT. REFER TO CAGE DETAILS.

5 EXTERIOR ROOF ACCESS LADDER DETAIL

1 : 25

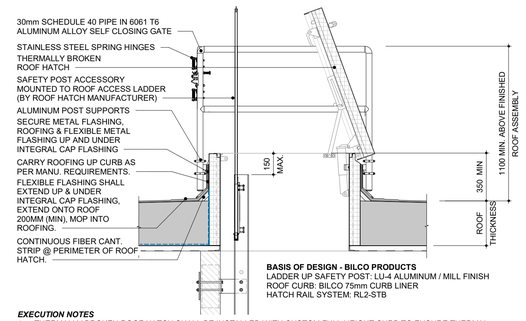


EXECUTION REQUIREMENTS

1. UNLESS NOTED OTHERWISE, ALL ROOF DRAINS SHALL BE SUMPED IN ACCORDANCE WITH APPLICABLE CRCA DETAIL
2. MIN SLOPE OF SUMP FROM SUMP EDGE TO DRAIN - 4%
3. ROOF DRAIN TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION

1 ROOF DRAIN SUMP

1 : 25



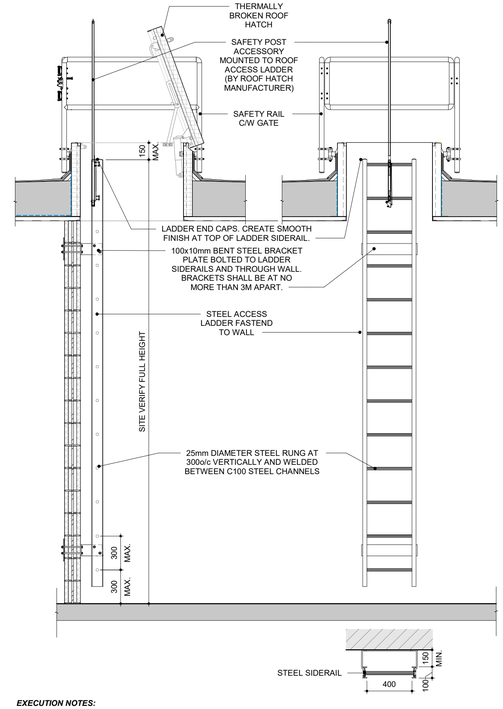
BASIS OF DESIGN - BILCO PRODUCTS
LADDER UP SAFETY POST: LU-4 ALUMINUM / MILL FINISH
ROOF CURB: BILCO 75mm CURB LINER
HATCH RAIL SYSTEM: RL2-STB

EXECUTION NOTES

1. THERMALLY BROKEN ROOF HATCH SHALL BE INSTALLED WITH CUSTOM FULL HEIGHT CURB TO ENSURE THERMAL PERFORMANCE OF THE BUILDING ENVELOPE.
2. TOP OF ROOF HATCH SHALL BE AT MINIMUM 350mm ABOVE THE ADJACENT FINISHED ROOF SURFACE.
3. TOP OF ROOF HATCH HEIGHT **MUST** BE NOTED ON SUBMITTALS.

2 ROOF HATCH DETAIL

1 : 20



EXECUTION NOTES:

1. ALL STEEL GALVANIZED.
2. ALL LADDERS TO BE DESIGNED IN ACCORDANCE WITH OBC AND OHSA REQUIREMENTS AND REGULATIONS. REF. OHSA ENG DATA SHEET 2-04 (CURRENT REVISION).
3. GRIND SMOOTH ALL WELDS
4. PRIME AND PAINT ALL STEEL

3 INTERIOR ROOF ACCESS LADDER DETAIL

1 : 25

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1	CLASS A ESTIMATE	05/21/2024
0	90% CONTRACT DOCUMENTS	05/21/2024

DRAWING TITLE:

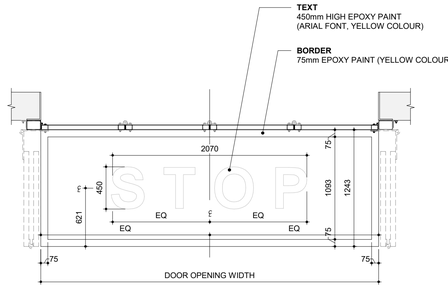
EXTERIOR TYPICAL DETAILS

ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY: SL

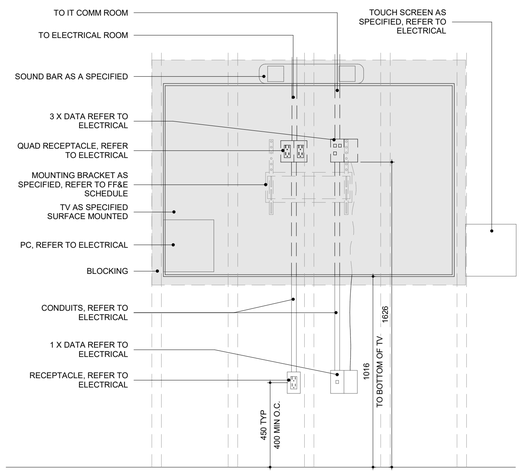
PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A07.02** REVISION: **3**



11 STOP SIGN @ FOUR FOLD DOORS

1 : 30



NOTES:

1. REFER TO ELECTRICAL FOR ELECTRICAL COMPONENT SPECIFICATIONS AND REQUIRMENTS.
2. FOR MOUNTING HEIGHTS SHOWN AS A RANGE, SELECT HEIGHT AND INSTALL ALL FIXTURES AT THAT HEIGHT (TYP.). FIXTURES THAT ARE WITHIN VISUAL SIGHTLINE OF EACH OTHER SHALL BE AT SAME HEIGHT.
3. FOR MOUNTING HEIGHTS NOT SHOWN. CONFIRM HEIGHT WITH CONSULTANT PRIOR TO INSTALLATION. NO CONTROLS, OPERATING OR DISPENSING COMPONENTS HIGHER THAN 1100mm AFF.
4. ALL DIMENSIONS SUBJECT TO SPECIFIC MUNICIPAL REQUIREMENTS. CONFIRM WITH CONSULTANT PRIOR TO INSTALLATION.
5. SECURE ALL WALLMOUNTED ITEMS TO PLYWOOD OR SHEET METAL BACKING/BLOCKING TYPICAL ALL LOCATIONS. FASTENING OF WALL MOUNTED ITEMS THROUGH GYPSUM ONLY WILL NOT BE PERMITTED
   - A. SHADED AREAS INDICATE APPROXIMATE LOCATION OF 3/4" PLYWOOD OR SHEET METAL BACKING (18 GA.) UNLESS NOTED OTHERWISE. COORDINATE W/FIXTURE. TYPICAL 8" (200MM) WIDE STRIP.
   - B. SHADED AREAS INDICATE APPROXIMATE LOCATION OF SHEET METAL (18 GA.) COMBINED WITH 3/4" PLYWOOD BACKING TO HELP RESIST AXIAL FORCES, UNLESS NOTED OTHERWISE. COORDINATE WITH FIXTURE. TYPICAL 8" (200MM) WIDE STRIP.

9 TV ON DRYWALL PARTITION DETAIL

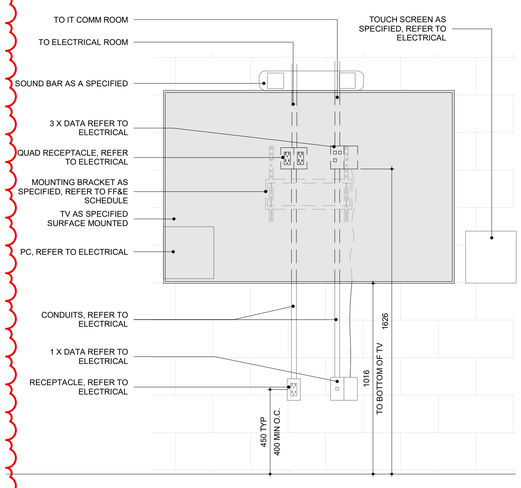
1 : 15

EXECUTION NOTES:

1. PROVIDE ALL CONDUIT AND JUNCTION BOXES REQUIRED FOR INTERCONNECTION BETWEEN COMPONENTS OF 4-FOLD DOORS. PROVIDE PULL STRINGS IN ALL CONDUITS. MINIMUM CONDUIT SIZE 27 mm (1") UNLESS DICTATED OTHERWISE BY 4-FOLD DOOR MANUFACTURER.
2. ALL WIRING FOR DOORS (INCLUDING LOW VOLTAGE WIRING) TO BE INSTALLED IN SURFACE MOUNTED EMT (CONDUIT). WIRING SHOWN IS SCHEMATIC ACTUAL INSTALLATION TO SUIT SITE CONDITIONS. ALLOW FOR EMT OR FLEXIBLE CONDUIT FOR FINAL CONNECTIONS.
3. PROVIDE ALL LOW VOLTAGE CONDUCTORS REQUIRED FOR INTERCONNECTION BETWEEN CONTROL COMPONENTS OF 4-FOLD DOORS.
4. LOCATIONS OF DEVICES ARE SCHEMATIC. REFER TO FLOOR PLANS FOR LOCATION OF CONTROL PANELS.
5. CONCEAL CONDUITS WHEREVER POSSIBLE IN WALLS.
6. COORDINATE EXACT CONDUIT ROUGH-IN REQUIREMENTS WITH EQUIPMENT SHOP DRAWINGS.
7. GENERAL CONTRACTOR TO SCHEDULE A MEETING BETWEEN THE 4-FOLD DOOR, ELECTRICAL CONTRACTOR, AND SECURITY CONTRACTOR TO CONFIRM EXACT DELINEATION OF ROUGH-IN WORK BETWEEN TRADES PRIOR TO START OF INSTALLATION.
8. INSTALL AND ADJUST DOORS TO MAINTAIN AIR TIGHT SEAL.
9. FOUR FOLD DOORS SHALL BE FACTORY FINISH. COLOR TO BE SELECTED BY CONSULTANT.
10. PROVIDE ALL STICKERS AND LABELS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS
11. SENSOR CONFIGURATION: CONFIGURE SENSOR SO THAT DOORS CLOSE 12 SECOND AFTER PHOTOSENSOR (BEAM TO BEAM) IS BROKEN
12. SUBMIT SHOP DRAWING C/W ALL REQUIRED DEVICES PRIOR TO FABRICATION OF FOUR FOLD DOORS.

13 FOUR FOLD DOOR DETAILS

1 : 50

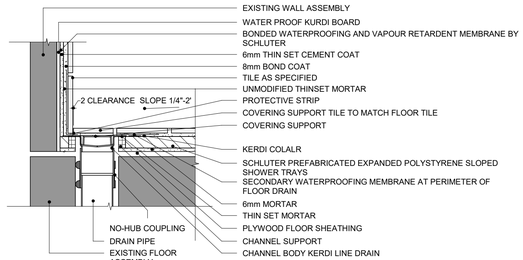


NOTES:

1. REFER TO ELECTRICAL FOR ELECTRICAL COMPONENT SPECIFICATIONS AND REQUIRMENTS.
2. FOR MOUNTING HEIGHTS SHOWN AS A RANGE. SELECT HEIGHT AND INSTALL ALL FIXTURES AT THAT HEIGHT (TYP.). FIXTURES THAT ARE WITHIN VISUAL SIGHTLINE OF EACH OTHER SHALL BE AT SAME HEIGHT.
3. FOR MOUNTING HEIGHTS NOT SHOWN. CONFIRM HEIGHT WITH CONSULTANT PRIOR TO INSTALLATION. NO CONTROLS, OPERATING OR DISPENSING COMPONENTS HIGHER THAN 1100mm AFF.
4. ALL DIMENSIONS SUBJECT TO SPECIFIC MUNICIPAL REQUIREMENTS. CONFIRM WITH CONSULTANT PRIOR TO INSTALLATION.
5. SECURE ALL WALLMOUNTED ITEMS TO PLYWOOD OR SHEET METAL BACKING/BLOCKING TYPICAL ALL LOCATIONS. FASTENING OF WALL MOUNTED ITEMS THROUGH GYPSUM ONLY WILL NOT BE PERMITTED
   - A. SHADED AREAS INDICATE APPROXIMATE LOCATION OF 3/4" PLYWOOD OR SHEET METAL BACKING (18 GA.) UNLESS NOTED OTHERWISE. COORDINATE W/FIXTURE. TYPICAL 8" (200MM) WIDE STRIP.
   - B. SHADED AREAS INDICATE APPROXIMATE LOCATION OF SHEET METAL (18 GA.) COMBINED WITH 3/4" PLYWOOD BACKING TO HELP RESIST AXIAL FORCES, UNLESS NOTED OTHERWISE. COORDINATE WITH FIXTURE. TYPICAL 8" (200MM) WIDE STRIP.

10 TV ON BLOCK PARTITION DETAIL

1 : 15



NOTES:

1. COVERING SUPPORT TILE: EDGE OF TILE TO BE FLUSH WITH THE FRONT SIDE OF THE COVERING SUPPORT. OVERHANG COVERING SUPPORT TO COVER THE BONDING FLANGE AT ADJACENT VERTICAL SURFACES.
2. WHEN CHANNEL BODY IS LOCATED NEXT TO A VERTICAL SURFACE, A PROTECTIVE STRIP IS TO BE USED.
3. 1/16" / 1.58mm GAP BETWEEN ALL VERTICAL SURFACES.
4. FLOOR TO BE LEVELED PRIOR TO PLACING KERDI SHOWER TRAY. TRAY TO BE FLUSH WITH SURFACE OF CHANNEL SUPPORT.
5. REFER SCHLUTER KERDI-LINE TO INSTALLATION GUIDE

5 SCHLUDER KERDI-LINE TILEABLE LINEAR DRAIN

1 : 5

INSTALLATION LOCATIONS

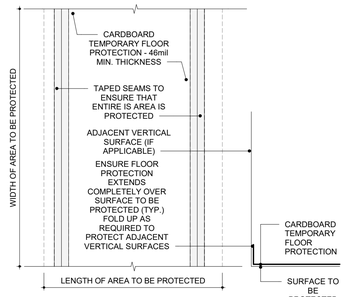
1. SUPPLY AND INSTALL CARDBOARD TEMPORARY FLOOR PROTECTION ON ALL FINISHED CONCRETE FLOOR SURFACES UNTIL PROJECT COMPLETION
2. SUPPLY AND INSTALL CARDBOARD TEMPORARY FLOOR PROTECTION ON ALL FINISHED FLOOR SURFACES THAT MAY BE IMPACTED BY ALL REMAINING WORK TO BE COMPLETED.

EXECUTION

1. SWEEP OR VACUUM ALL DIRT AND DEBRIS OFF SURFACE TO BE COVERED.
2. ROLL OUT BOARD
3. CUT TO DESIRED LENGTH WITH UTILITY KNIFE.
4. TAPE THE SEAMS.
5. WHEN TAPING DIRECTLY TO THE FLOOR, CONSULT THE FLOORING MANUFACTURER FOR RECOMMENDED TAPE.
6. USE MULTIPLE ROLLS AS REQUIRED TO COVER ENTIRE SURFACE

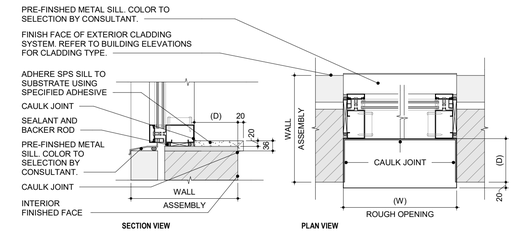
BASIS OF DESIGN

1. RAM BOARD - HEAVY DUTY TEMPORARY FLOOR PROTECTION - 46mil MIN. THICKNESS



6 CARDBOARD TEMPORARY FLOOR PROTECTION

1 : 20

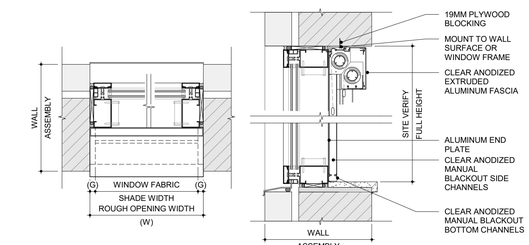


EXECUTION NOTES

1. ALL WINDOWS / GLAZING SHALL RECEIVE A SILL THAT ARE NOT FLUSH WITH THE FLOOR.
2. DEPTH (D) OF SOLID SURFACE SILL SHALL BE SITE CONFIRMED WHEN THE INSTALLATION OF THE WINDOW FRAME IS INSTALLED.
3. WIDTH (W) OF SILL SHALL BE SITE CONFIRMED WHEN THE ROUGH FINISHED OPENING IS COMPLETED (I.E BLOCK ROUGH OPENING, OR GYPSUM BOARD INSTALLED AT STUD ASSEMBLIES).
4. PRODUCT SAMPLE SUBMITTAL IS REQUIRED PRIOR TO FABRICATION, INCULSIVE OF LAYOUT SHOP DRAWING.
5. SILL SHALL BE PLACED LEVEL ON APPROPRIATE SUBSTRATE SUITABLE AT EACH WINDOW LOCATION.ENSURE SILL PLACED ON LEVEL, SOUND SUBSTRATE SUITABLE FOR THIS APPLICATION

7 WINDOW SILL DETAIL

1 : 10

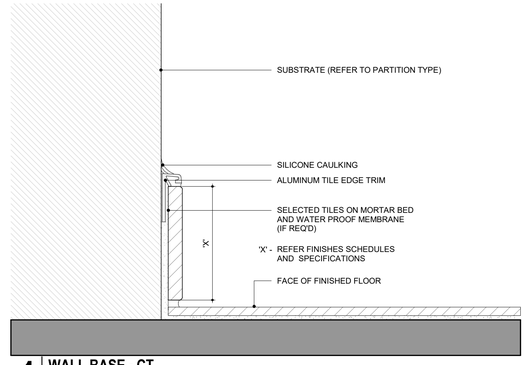


EXECUTION NOTES

1. OVERALL WIDTH (W) OF SHADE CASSETTE SHALL BE MEASURED FROM FINISHED FACE OF WALL ASSEMBLY. MINIMIZE LIGHT GAP (G) ON EITHER END.
2. SUBMIT SHOP DRAWINGS AND FLOOR PLAN LAYOUT FOR REVIEW PRIOR TO FABRICATION.
3. REFER TO SPECIFICATIONS FOR WINDOW SHADE FABRIC AND BLACKOUT FABRIC. PROVIDE SAMPLES FOR REVIEW.
4. ILLUSTRATION SHOWN IS FOR WINDOW SHADES C/W BLACK OUT BLIND. GC SHALL PROVIDE BOTH SINGLE CASSETEE OPTIONS NOTED AS ***WS*** **(WINDOW SHADE)** AND DUAL CASSETTES NOTED AS ***WSBO***.

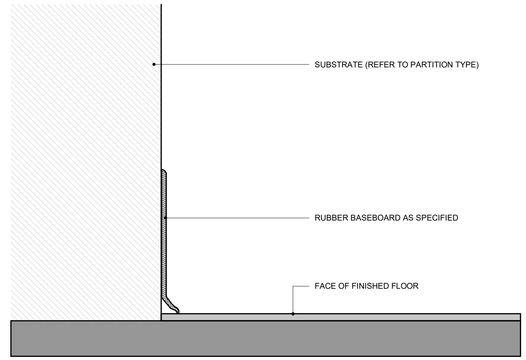
8 WINDOW SHADES

1 : 10



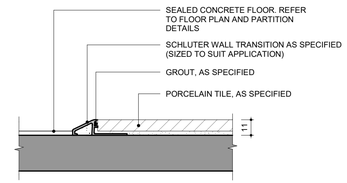
1 WALL BASE - CT

1 : 2



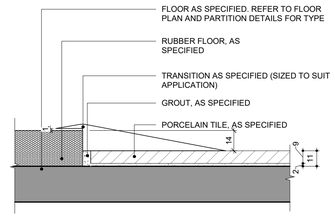
2 WALL BASE - RUBBER

1 : 2



3 TRANSITION STRIP - 1 - RENO-U - CONC-PCT

1 : 2



4 TRANSITION STRIP - 2 - RUB-CT

1 : 2

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NO.	ISSUES/REVISIONS	DATE
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:

INTERIOR TYPICAL DETAILS

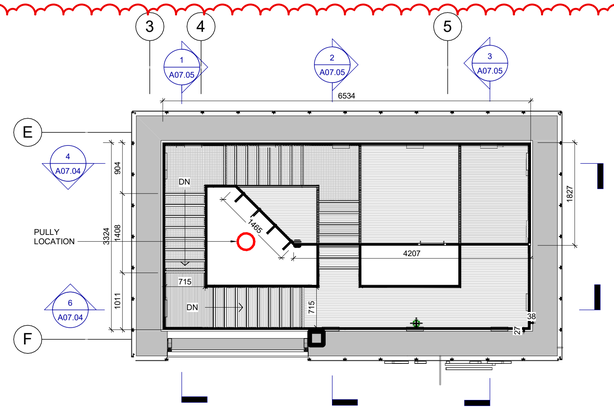
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: As indicated

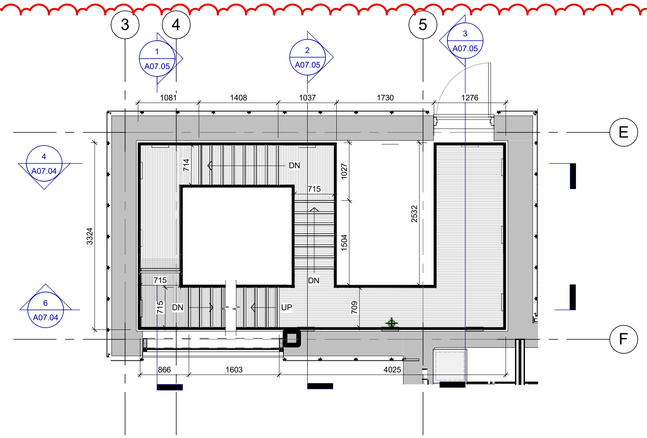
DRAWING NO.: **A07.03** REVISION: **7**

[PLOT DATE: 2024-08-12 4:32:27]



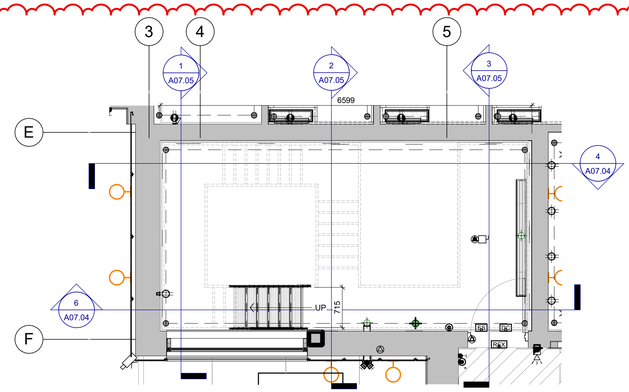
5 HOSE TOWER LANDING PLAN

1 : 50



3 HOSE TOWER CLERESTORY DECK PLAN

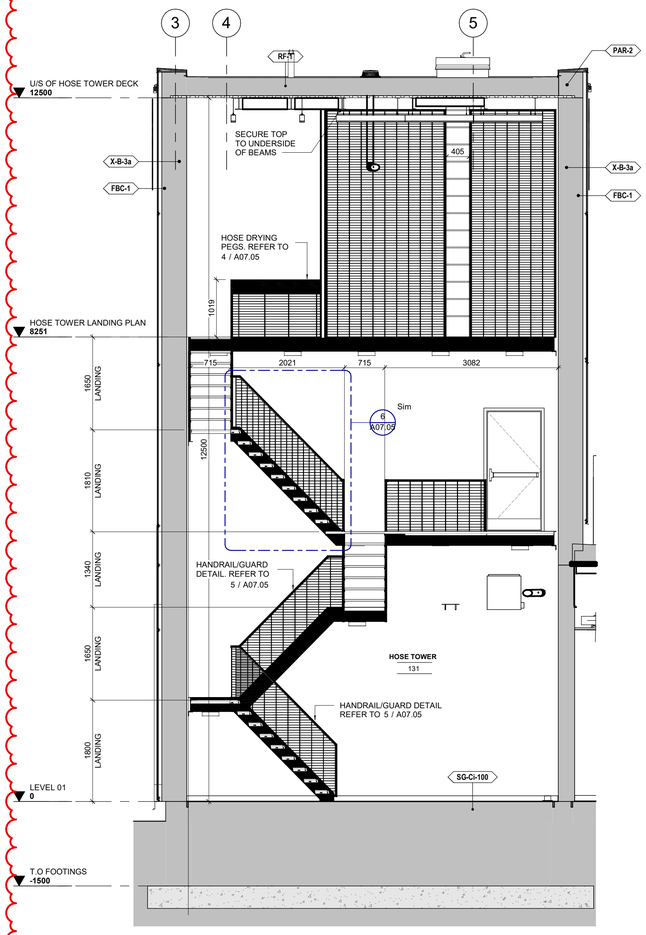
1 : 50



1 HOSE TOWER FLOOR PLAN

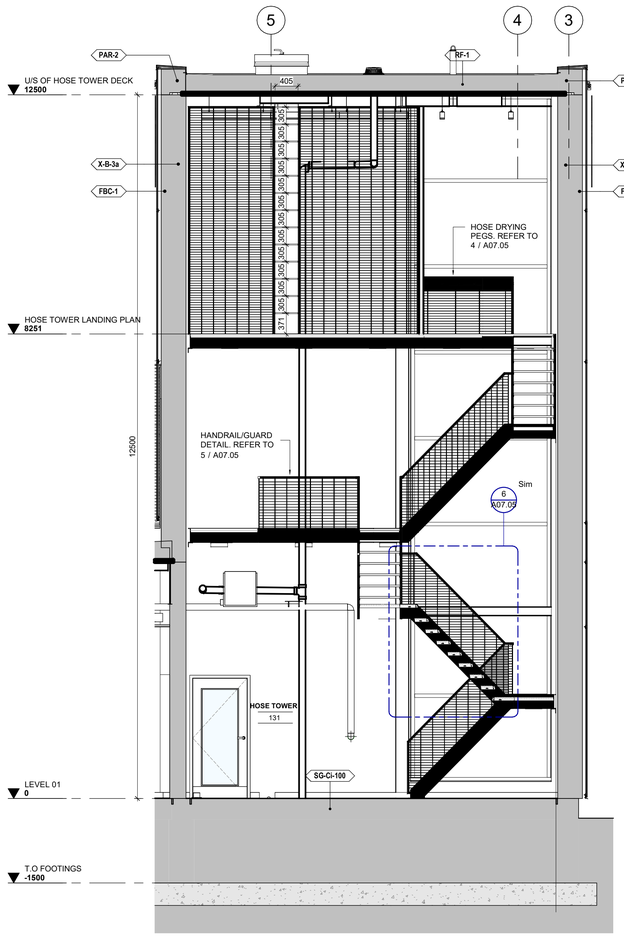
1 : 50

7



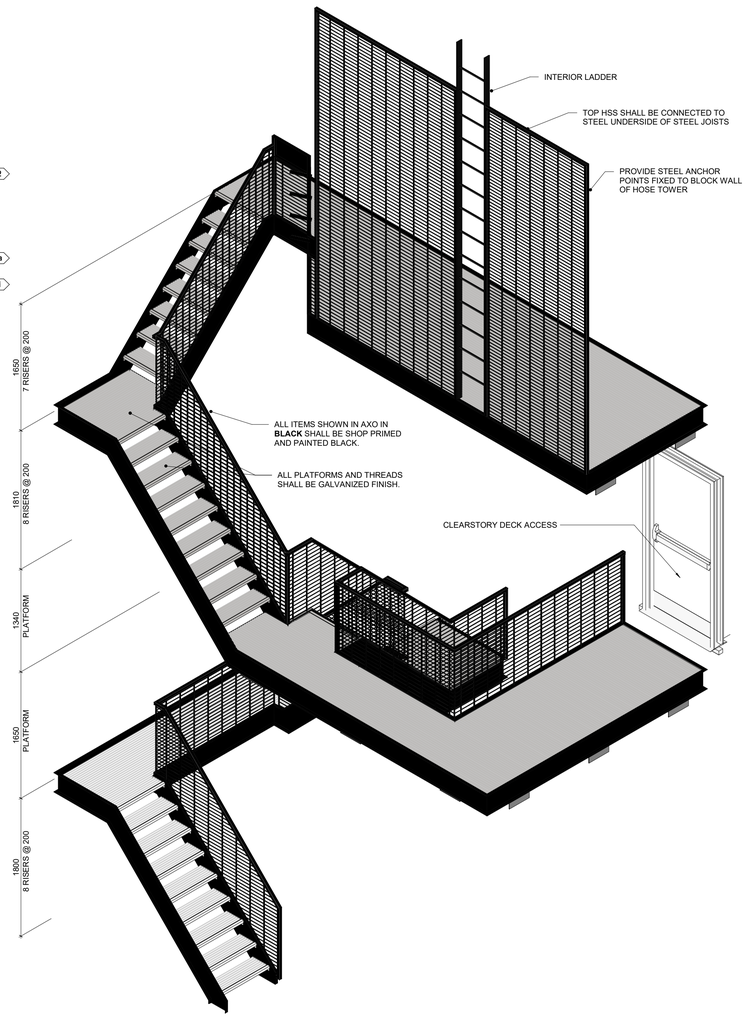
6 HOSE TOWER SECTION

1 : 50



4 HOSE TOWER SECTION

1 : 50



2 HOSE TOWER AXONOMETRIC

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0	DESIGN DEVELOPMENT 50%	20/09/2023

DRAWING TITLE:

HOSE TOWER DETAILS

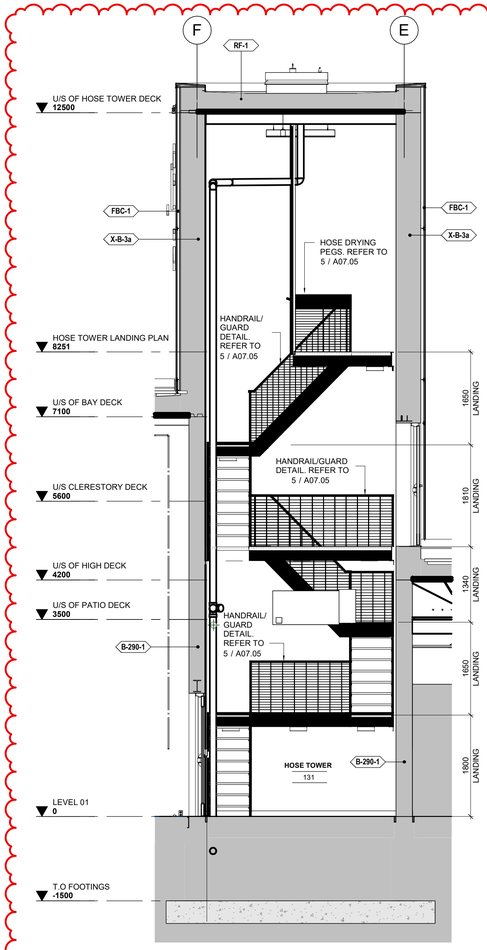
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: 1 : 50

DRAWING NO.: **A07.04** REVISION: **7**

PLOT DATE: 2024-08-13 4:33:34 PM



3 HOSE TOWER SECTION

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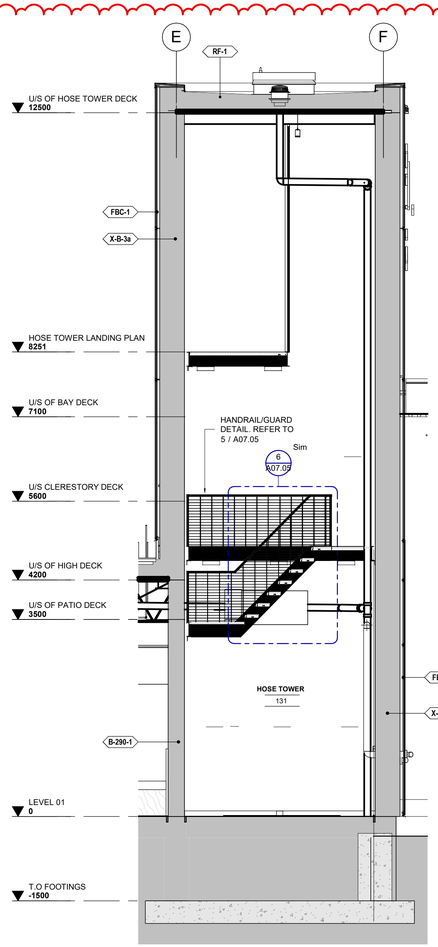

2 HOSE TOWER SECTION

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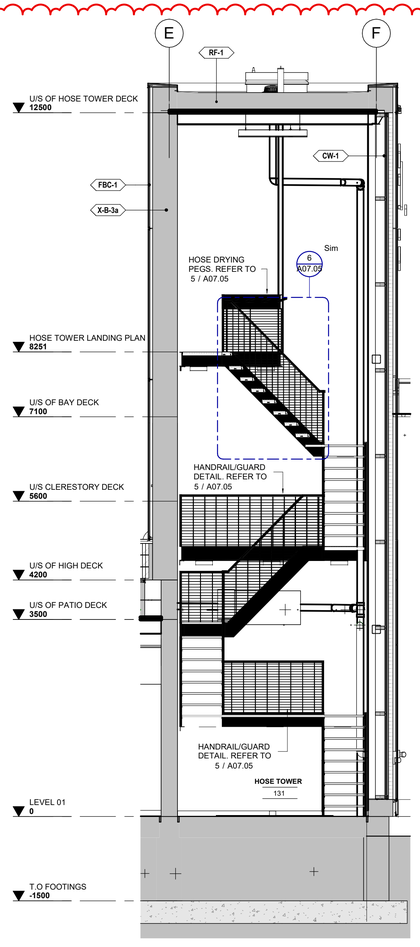

1 HOSE TOWER SECTION

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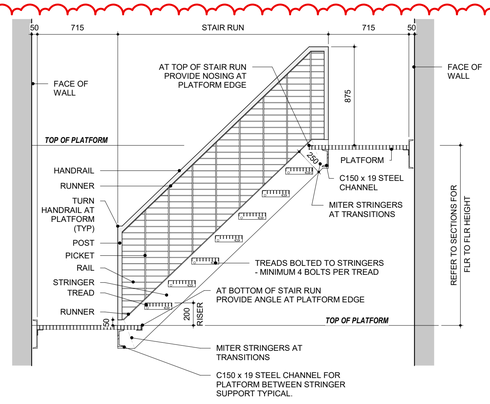
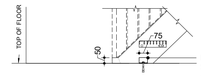


TYPICAL STAIR SECTION



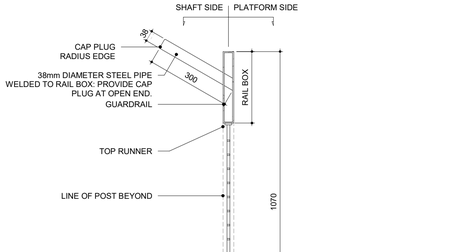
TYPICAL STAIR SECTION AT FLOOR

STAIR COMPONENTS
1. HANDRAIL - HS 38 x 38 x 4.8 SQUARE TUBE
2. POST - HS 38 x 38 x 4.8 SQUARE TUBE
3. PICKET - 10MM STEEL SQUARE BAR WELDED TO TOP AND BOTTOM RUNNERS
4. RUNNER - 25 X 6MM STEEL FLAT BAR
5. STRINGER - MC 250 x 12.5 STEEL CHANNEL
6. TREAD - PREFABRICATED TREAD W-19-4 BORDEN TYPE BB WELDED c/w CHECKERPLATE NOSING
7. PLATFORM - W-19-4 BORDEN TYPE BB WELDED.
8. RAIL - 5mm x 10mm STEEL SQUARE BAR WELDED TO PICKETS AND POSTS

EXECUTION NOTES
1. ALL STEEL GALVANIZED. GRIND SMOOTH ALL WELDS
2. STAIR TREADS TO BE PREFABRICATED WITH SAME GRATING AS PLATFORMS AND 'MEBAC' SLIP RESISTANT NOSINGS.
3. ALL HANDRAILS AND GUARDRAILS TO BE DESIGNED IN ACCORDANCE WITH OBC REQUIREMENTS.

6 STAIR SECTION DETAIL

1 : 25



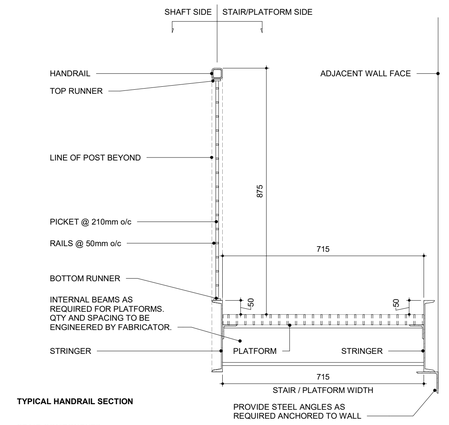
TYPICAL GUARD SECTION - TOP PLATFORM

STAIR COMPONENTS
1. POST - HS 38 x 38 x 4.8 SQUARE TUBE
2. PICKET - 10mm STEEL SQUARE BAR WELDED TO TOP AND BOTTOM RUNNERS
3. RUNNER - 25 x 6mm STEEL FLAT BAR
4. STRINGER - MC 250 x 12.5 STEEL CHANNEL
5. GUARDRAIL - MC 250 x 12.5 STEEL CHANNEL
6. DRYING PEG - 38 dia. STEEL TUBE
7. PLATFORM - W-19-4 BORDEN TYPE BB WELDED.
8. RAIL - 5mm x 10mm STEEL SQUARE BAR WELDED TO PICKETS AND POSTS

EXECUTION NOTES
1. ALL STEEL GALVANIZED AND SHOP PRIMED AND PAINTED. GRIND SMOOTH ALL WELDS
2. PROVIDE WEEP HOLES IN CLOSED STEEL PARTS
3. GRIND SMOOTH ALL WELDS
4. ALL HANDRAILS AND GUARDRAILS TO BE DESIGNED IN ACCORDANCE WITH OBC REQUIREMENTS.

4 HOSE TOWER PLATFORM - DRYING PEGS

1 : 10



TYPICAL HANDRAIL SECTION

STAIR COMPONENTS
1. HANDRAIL - HS 38 x 38 x 4.8 SQUARE TUBE
2. POST - HS 38 x 38 x 4.8 SQUARE TUBE
3. PICKET - 10MM STEEL SQUARE BAR WELDED TO TOP AND BOTTOM RUNNERS
4. RUNNER - 25 X 6MM STEEL FLAT BAR
5. STRINGER - MC 250 x 12.5 STEEL CHANNEL
6. TREAD - PREFABRICATED TREAD W-19-4 BORDEN TYPE BB WELDED c/w CHECKERPLATE NOSING
7. PLATFORM - W-19-4 BORDEN TYPE BB WELDED.
8. RAIL - 5mm x 10mm STEEL SQUARE BAR WELDED TO PICKETS AND POSTS

EXECUTION NOTES:
1. ALL STEEL GALVANIZED AND SHOP PRIMED AND PAINTED. GRIND SMOOTH ALL WELDS
2. GRIND SMOOTH ALL WELDS
3. ALL HANDRAILS AND GUARDRAILS TO BE DESIGNED IN ACCORDANCE WITH OBC REQUIREMENTS.

5 HOSE TOWER PLATFORM - HANDRAIL/GUARD DETAIL

1 : 10

7

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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:

HOSE TOWER DETAILS

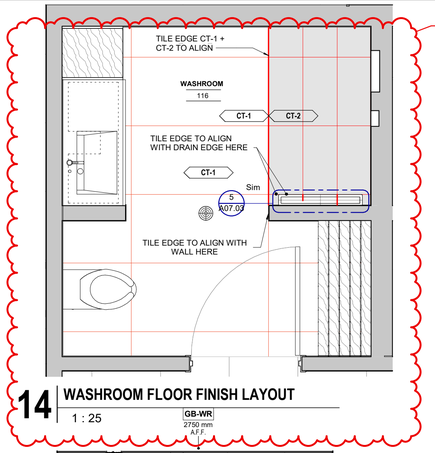
ISSUE DATE: 08/13/2024

DRAWN BY: AR / SL CHECKED BY:Checker

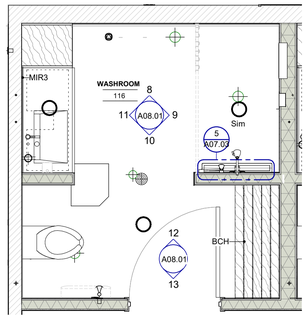
PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: A07.05 REVISION: 7

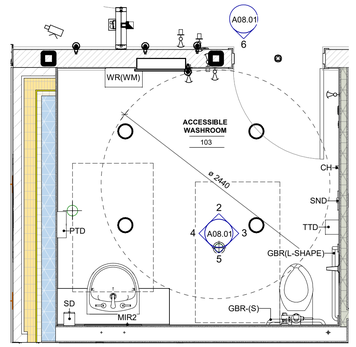
PLOT DATE: 2024-08-12 4:23:28 PM



14 WASHROOM FLOOR FINISH LAYOUT
1 : 25



7 TYPICAL WASHROOM & SHOWER
1 : 30



1 UNIVERSAL WASHROOM
1 : 30

Washroom Accessories Schedule

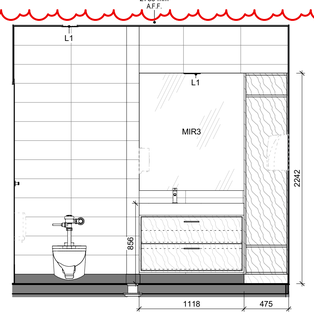
General Notes:
Refer to & coordinate with consultant drawings and specifications for full specs of equipment....

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

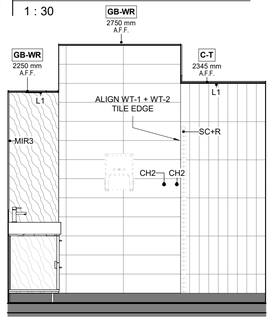
WASHROOM ACCESSORIES SCHEDULE

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
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
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



11 TYPICAL WASHROOM & SHOWER
1 : 30



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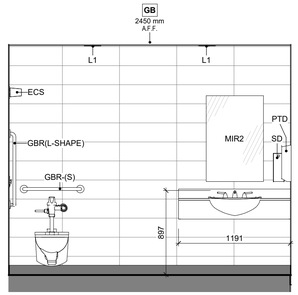

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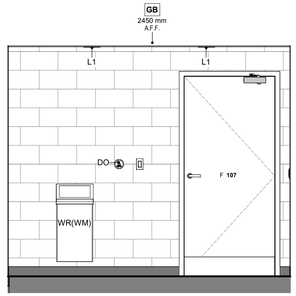

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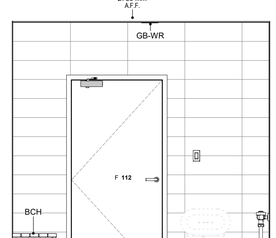

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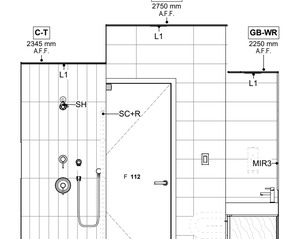

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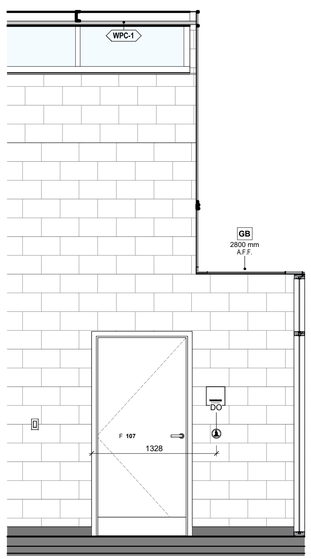

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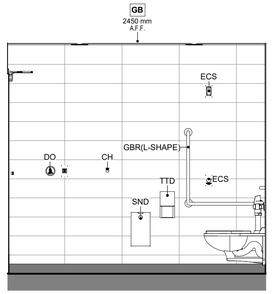

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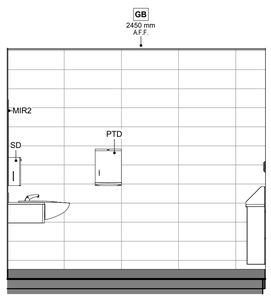

4 UNIVERSAL WASHROOM
1 : 30

13 TYPICAL WASHROOM & SHOWER
1 : 30

10 TYPICAL WASHROOM & SHOWER
1 : 30

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DAVID PREMI
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NO.	ISSUES/REVISIONS	DATE
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:

WASHROOM PLANS & ELEVATIONS

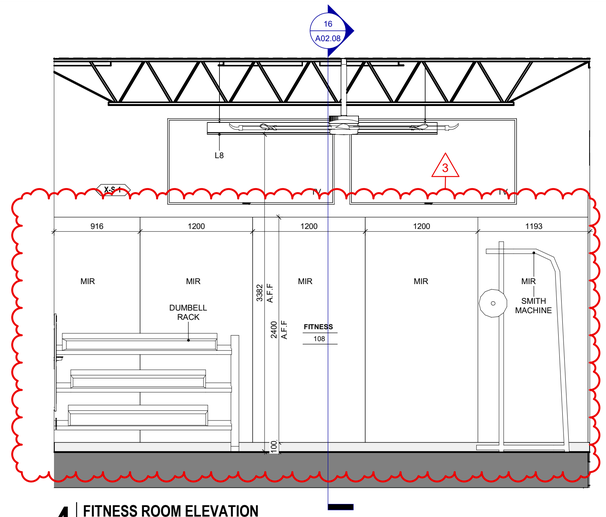
ISSUE DATE: 08/13/2024

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

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A08.01** REVISION: **7**

[PLOT DATE: 2024-08-13 4:32:45 PM]



4 FITNESS ROOM ELEVATION
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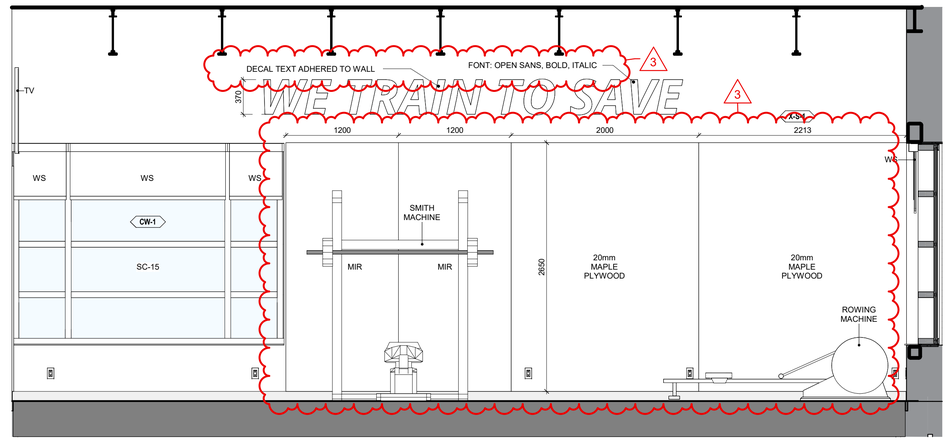

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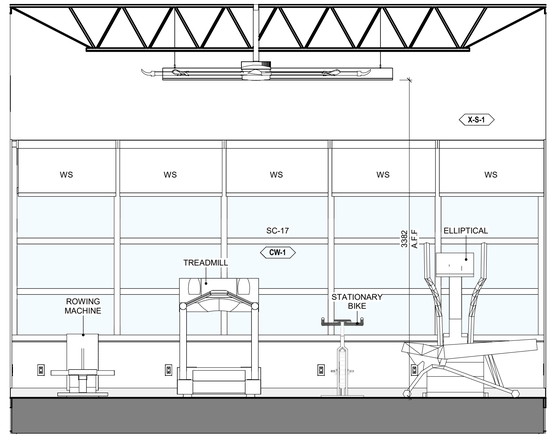

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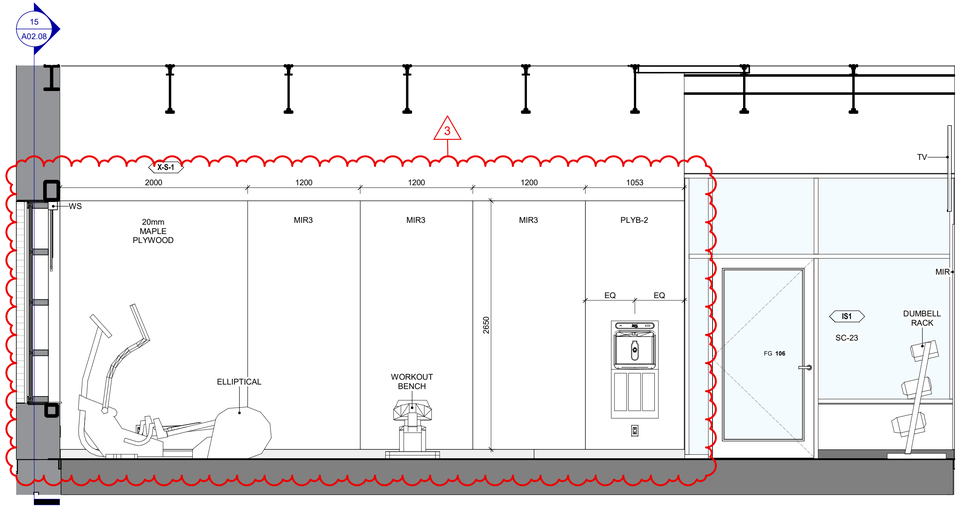

3 FITNESS ROOM ELEVATION
1 : 30

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NO.	ISSUES/REVISIONS	DATE
3	ADDENDUM 01	08/13/2024
2	TENDER	07/16/2024
1	CLASS A ESTIMATE	05/21/2024
0	90% CONTRACT DOCUMENTS	05/21/2024

DRAWING TITLE:

INTERIOR ELEVATIONS

ISSUE DATE: 08/13/2024

DRAWN BY: AR CHECKED BY: SL

PROJECT NO.: 12303 SCALE: 1 : 30

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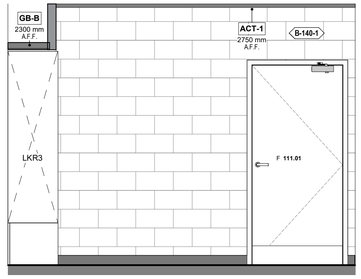
PLOT DATE: 2024-08-12 4:33:48 PM



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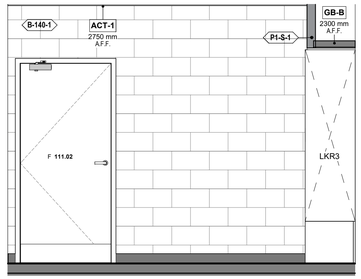

6 LOCKER ROOM
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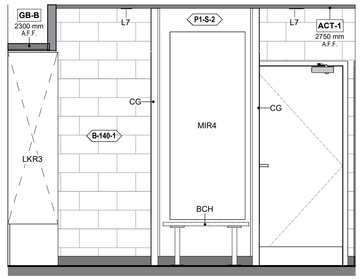

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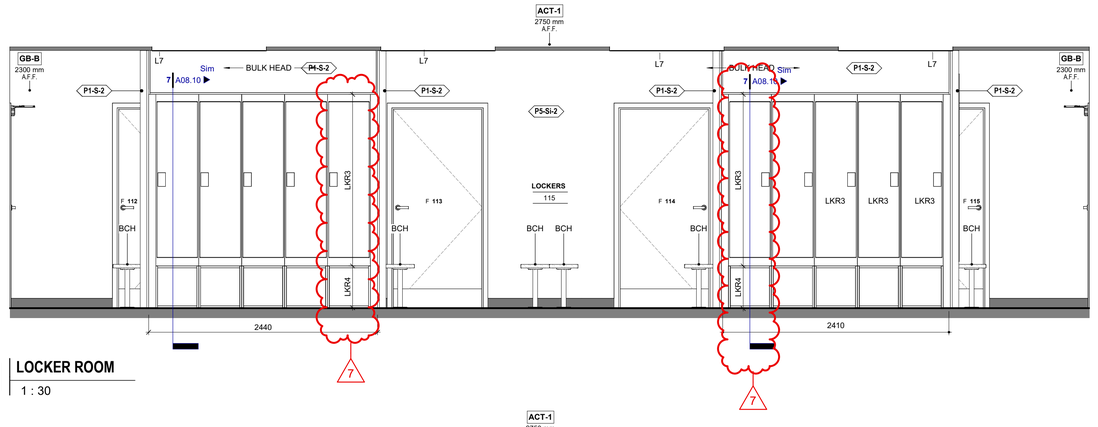

1 LOCKER ROOM
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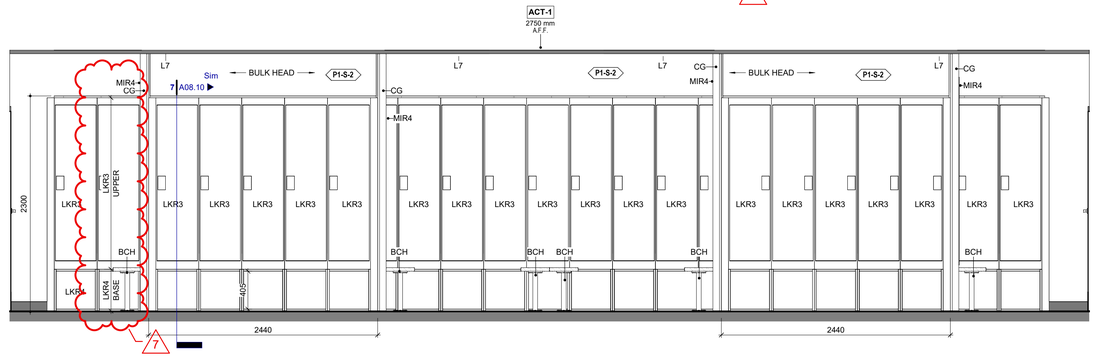

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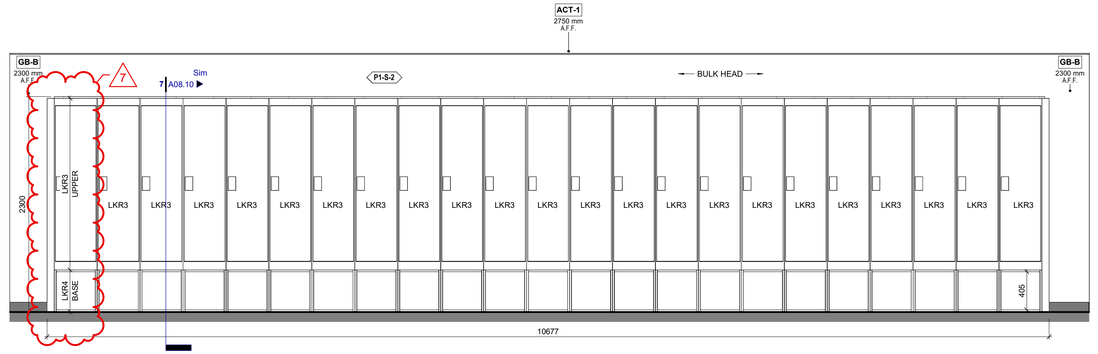

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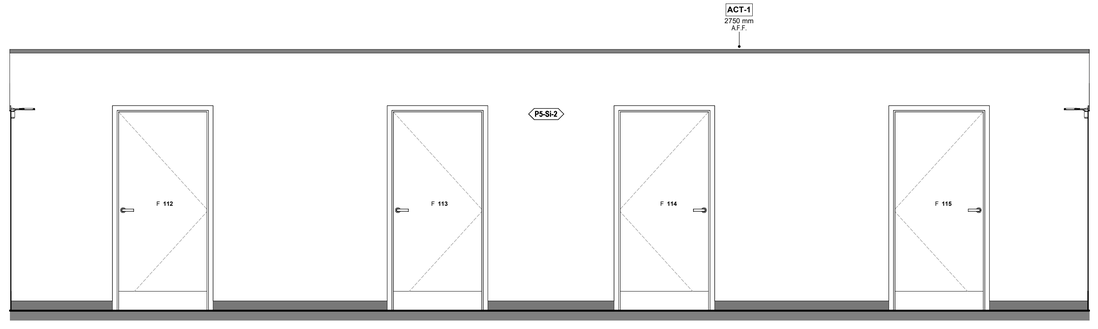

4 LOCKER ROOM
1 : 30

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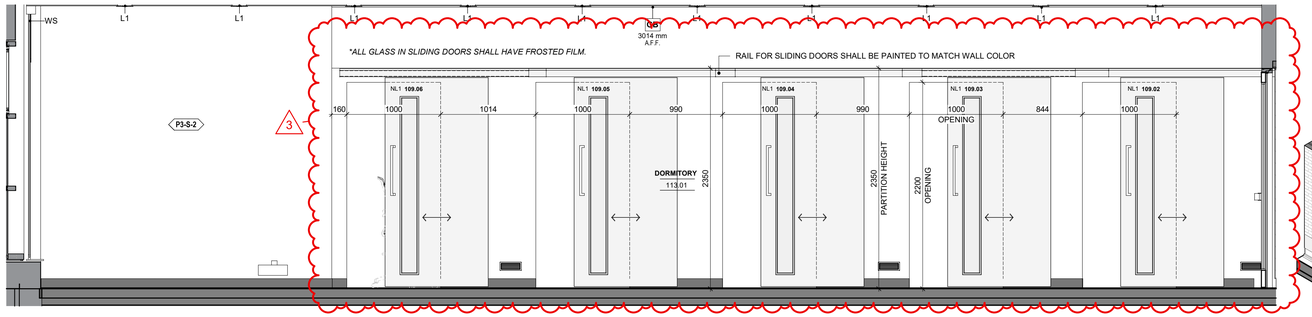
DRAWING TITLE:

INTERIOR ELEVATIONS

ISSUE DATE: 08/13/2024
DRAWN BY: AR CHECKED BY:Checker
PROJECT NO.: 12303 SCALE: 1 : 30
DRAWING NO.: REVISION:

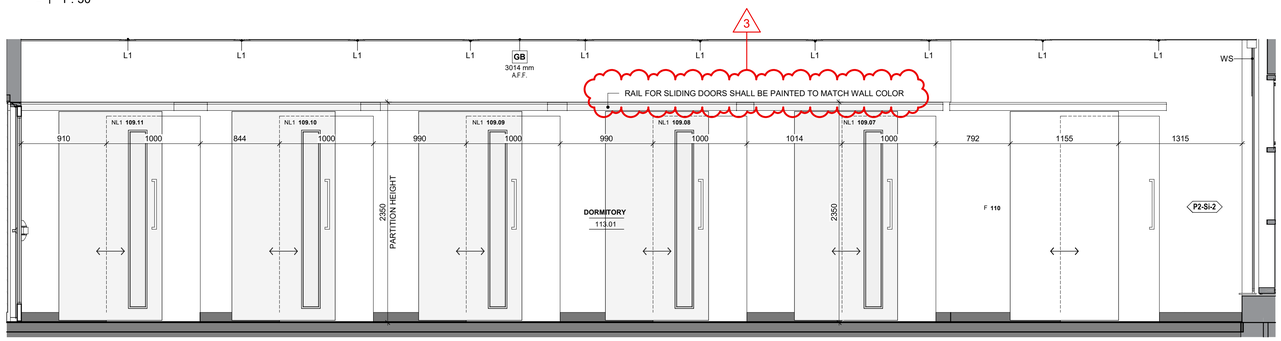
A08.03 **7**

I PLOT DATE: 2024-08-12 4:32:54 PM



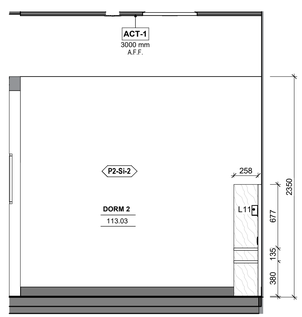
4 DORMITORY CORRIDOR ELEVATION

1 : 30



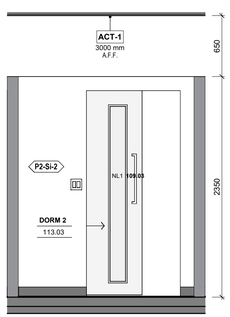
5 DORMITORY CORRIDOR ELEVATION

1 : 30



9 DORM ROOM

1 : 30



8 DORM ROOM

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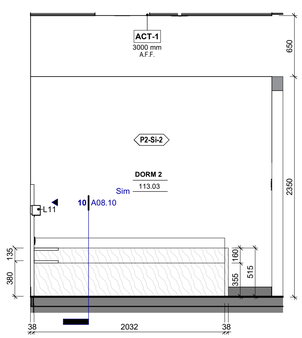

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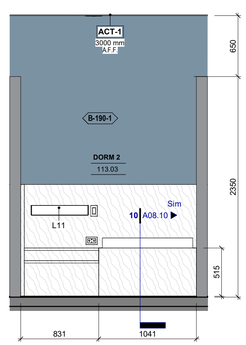

6 DORM ROOM

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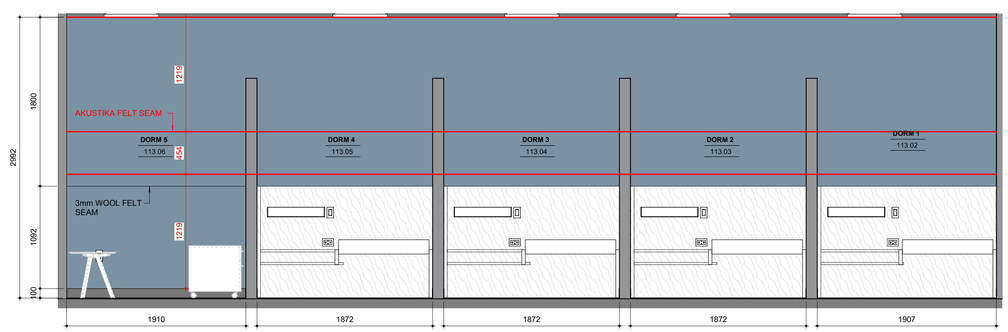

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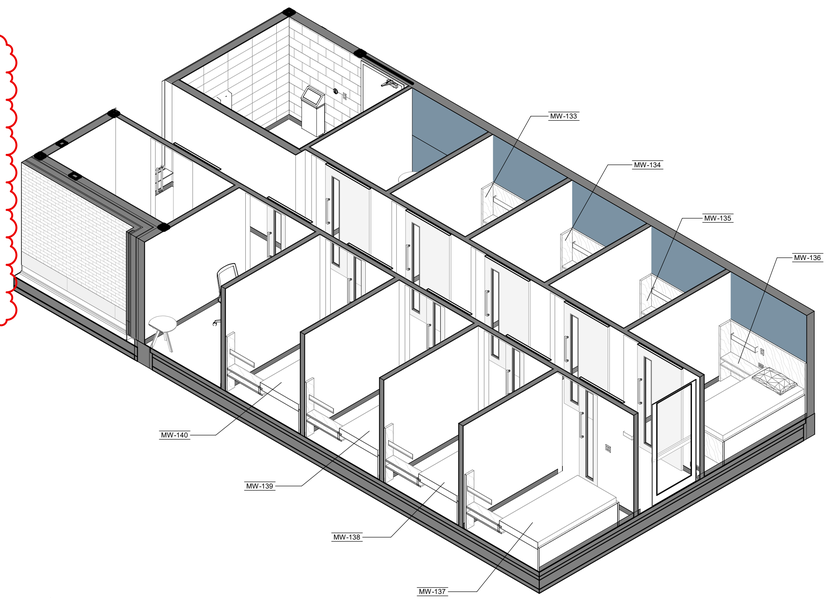

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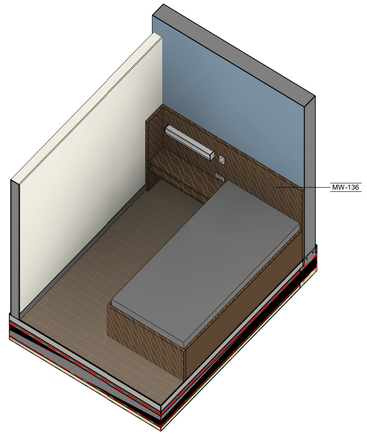
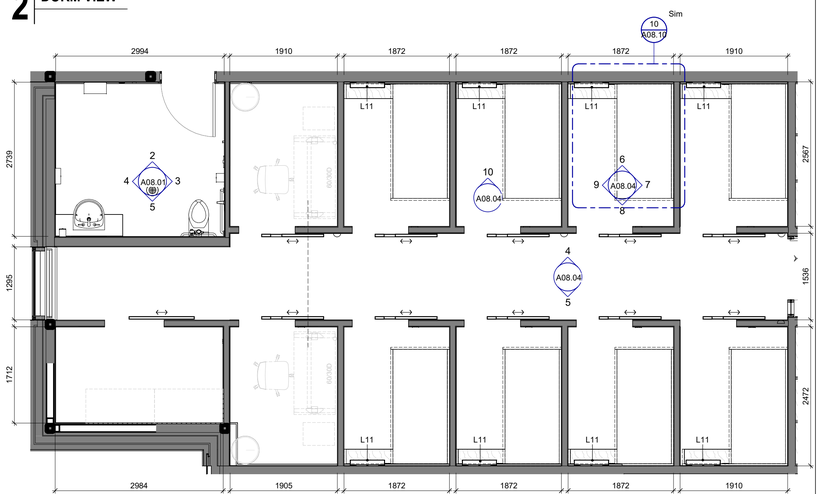


2 DORM VIEW



3 DORMITORY PLAN

1 : 50

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DRAWING TITLE:

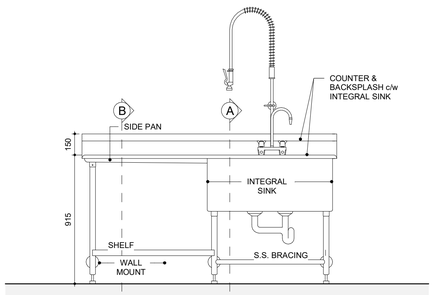
DORMITORY PLANS & ELEVATIONS

ISSUE DATE:	08/13/2024
DRAWN BY: AR	CHECKED BY: SL
PROJECT NO.: 12303	SCALE: As indicated

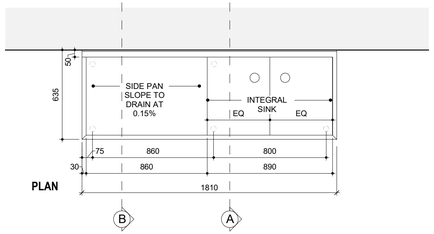
DRAWING NO.: **A08.04**

REVISION: **3**

[PLOT DATE: 2024-08-13 8:33:01 PM]



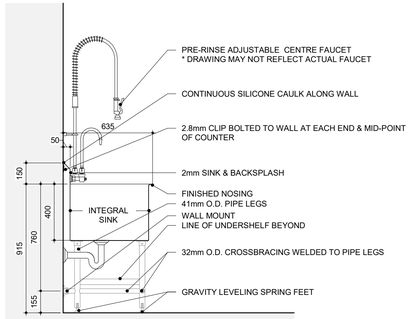
ELEVATION



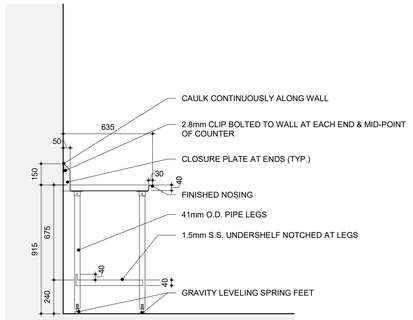
PLAN

EXECUTION NOTES
1. ALL MATERIALS SHALL BE STAINLESS STEEL GRADE 316 UNLESS OTHERWISE NOTED
2. SHOP DRAWING REQUIRED PRIOR TO FABRICATION
3. SHELF SHALL BE BOBRICK B-676 OR EQUIVALENT IF SHOWN IN ELEVATION

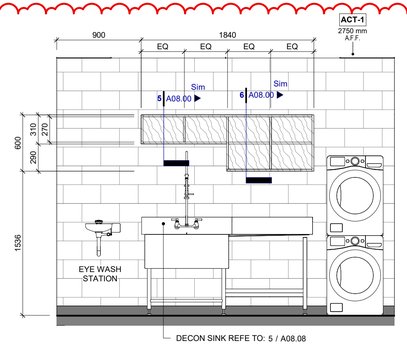
5 TYPICAL STAINLESS STEEL DECON SINK - SINGLE SIDE PAN
1 : 20



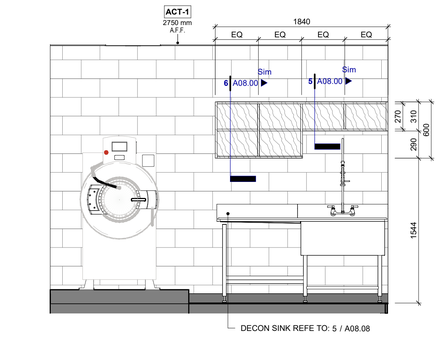
SECTION A



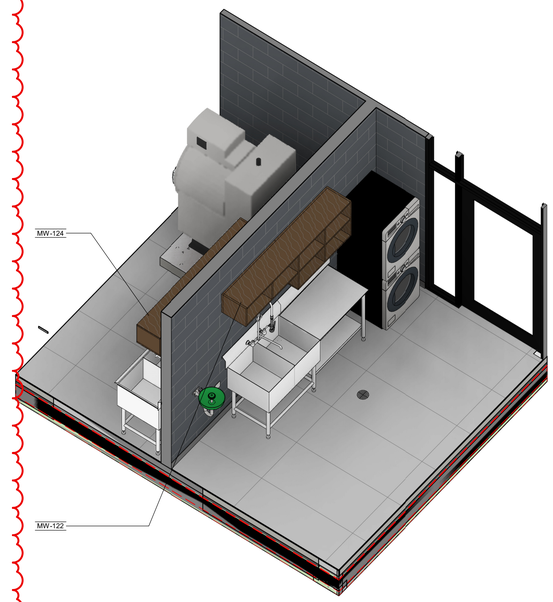
SECTION B



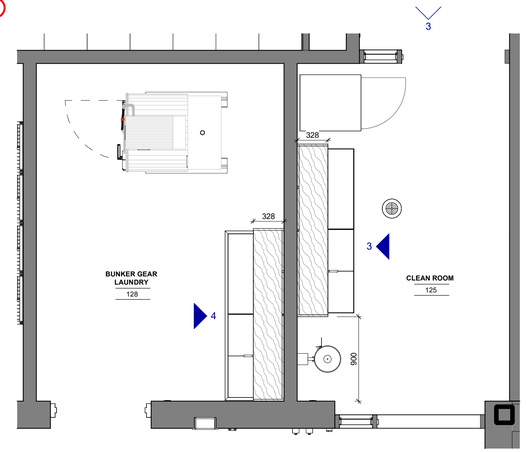
3 CLEAN ROOM ELEVATION
1 : 30



4 BUNKER GEAR LAUNDRY ROOM ELEVATION
1 : 30



1 LAUNDRY VIEW



2 LAUNDRY & CLEAN PLAN
1 : 30

7

[PLOT DATE: 2024-09-13 4:33:05 PM]

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SEALS

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID PREMI
LICENCE
4316

NO.	ISSUES/REVISIONS	DATE
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:

LAUNDRY MILLWORK PLANS & ELEVATIONS

ISSUE DATE: 08/13/2024

DRAWN BY: AR CHECKED BY:Checker

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A08.08** REVISION: **7**

DOOR & HARDWARE SCHEDULE1

No.	DIRECTION: FROM	DIRECTION: TO	DESCRIPTION	OPENING: WIDTH	LEAF 1	LEAF 2	HEIGHT	RO WIDTH	RO HEIGHT	DOOR TYPE: TYPE	THICKNESS	DOOR MATERIAL	DOOR FINISH	INSULATION	GLAZING	LOUVER	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FIRE + SMOKE REQ.: FIRE RATING	SMOKE SEAL
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		
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	

No.	BF DOOR OPERATION: AUTODOOR OPERATOR	ELECTRIC STRIKE	ACTUATOR BUTTON	PUSH TO LOCK	DOOR OPERATION: DOOR CLOSER	DOOR LEVER	VERTICAL PULL	'D' PULL	DOOR PUSH BAR	PANIC HARDWARE	KICK PLATE	PUSH PLATE	SECURITY: CARD READER	DOOR BELL	DOOR CONTACT	ELECTRIC STRIKE	KEY PAD	REX	ACCESSORIES: ASTRAGAL	THRESHOLD	TRANSITION STRIP	WEATHER STRIP	DOOR SWEEP	WALL STOP	FLOOR STOP	SIGNAGE	LOCKSET: STOREROOM	OFFICE / PRIVACY	PASSAGE	COMMENTS
Exterior																														
100.01	•	•	•	•	•		•			•				•	•	•		•		•		•	•				•			
104					•	•							•		•	•		•		•		•	•				•			
105					•	•				•			•		•	•		•		•		•	•				•			
121						•				•	•		•		•	•		•			•									
123.01					•	•				•			•		•	•		•		•		•	•				•			
123.02															•							•	•							
123.03															•							•	•							
123.04															•							•	•							
123.05															•							•	•							
123.06					•	•				•			•		•	•		•		•		•	•				•			
127.02						•				•	•									•		•	•							
Interior																														
100.02	•	•	•		•	•				•	•		•	•	•	•		•									•			
102						•					•														•				•	
106					•	•															•								•	
107	•	•	•	•	•	•					•														•		•			
108					•	•				•	•		•		•	•		•			•								•	
109.01						•				•																			•	
109.02																														
109.03																														
109.04																														
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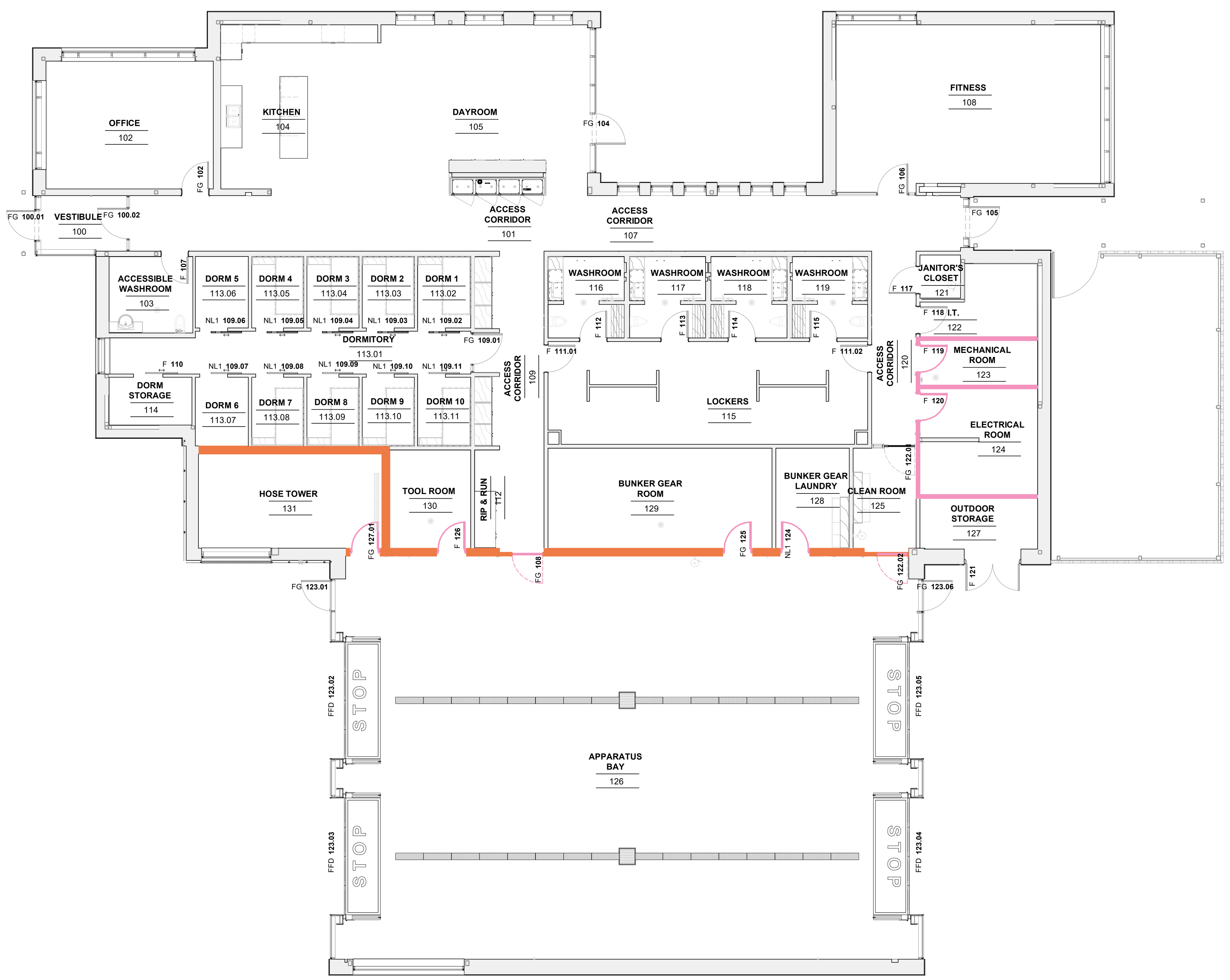
109.08																														
109.09																														
109.10																														
109.11																														
110																														
111.01					•	•					•																		•	
111.02					•	•					•																		•	
112					•	•					•																	•		OCCUPIED WHEN IN USE ...
113					•	•					•																	•		
114					•	•					•																	•		
115					•	•					•																	•		
117						•					•		•		•	•		•			•						•			
118						•					•		•		•	•		•			•						•			
119						•					•		•		•	•		•			•						•			
120						•					•		•		•	•		•			•						•			
122.01					•	•				•	•										•								•	
122.02					•	•				•	•		•		•	•		•			•								•	
124						•					•		•		•	•		•			•								•	
125						•					•		•		•	•		•			•								•	
126						•				•	•		•		•	•		•											•	
127.01						•				•	•		•		•	•		•											•	



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.

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

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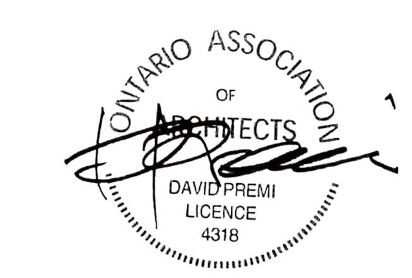
T: 905-522-0220

SEALS



NO.	ISSUES/REVISIONS	DATE
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:

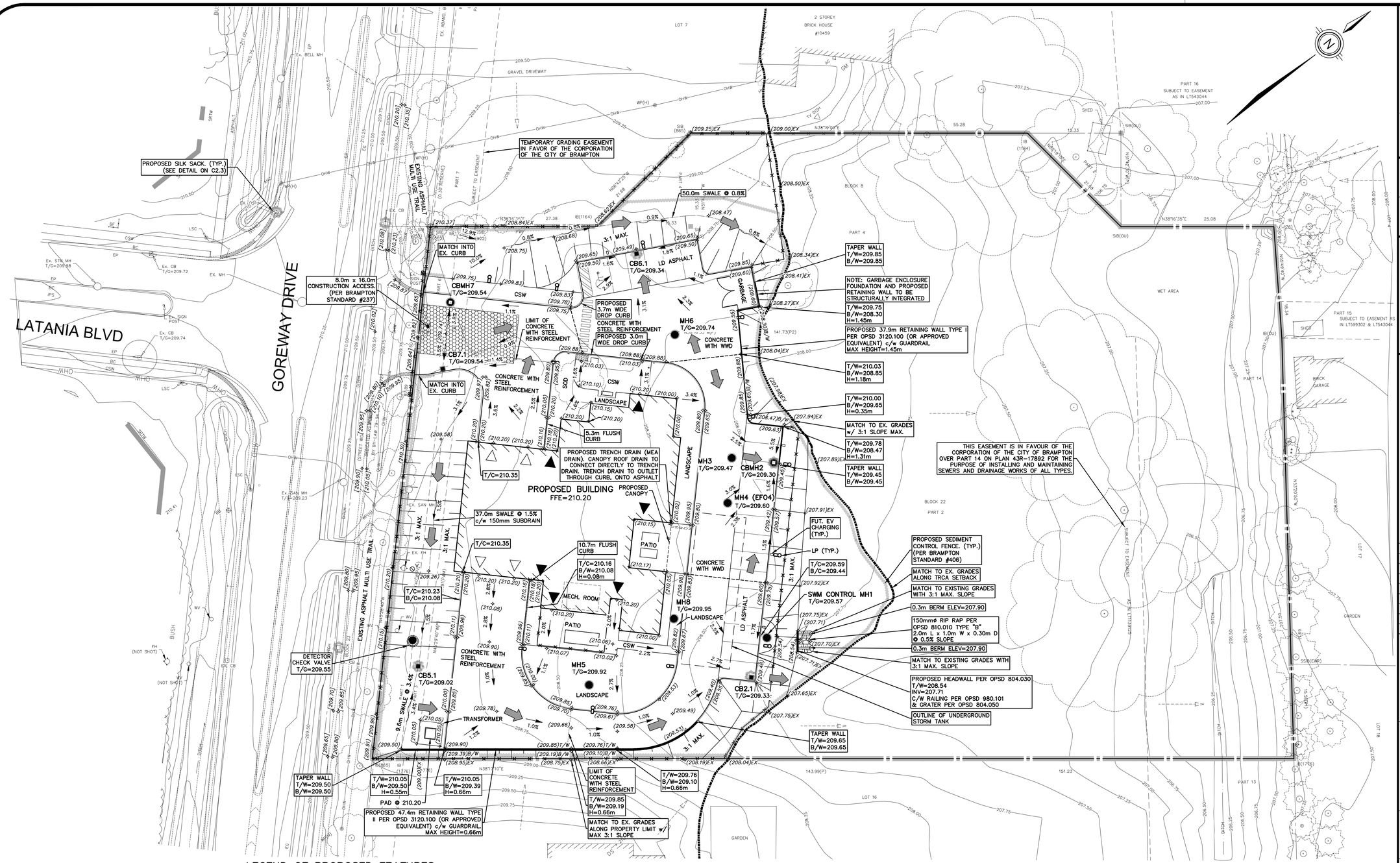
DOOR KEY PLAN & SCHEDULE

ISSUE DATE: 08/13/2024

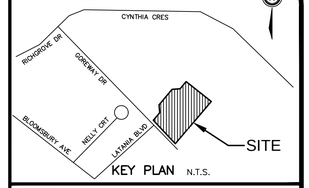
DRAWN BY: SL CHECKED BY: SM

PROJECT NO.: 12303 SCALE: As indicated

DRAWING NO.: **A10.00** REVISION: **7**



CITY OF BRAMPTON



KEY PLAN N.T.S.

GEODETIC BM ELEV. = 207.565m

ELEVATIONS ARE REFERRED TO THE CITY OF BRAMPTON HORIZONTAL CONTROL MONUMENT NO.042050289, BEING A BRASS CAP IN CONCRETE 0.1m BELOW GRADE MONUMENT IS LOCATED 13.20m WEST OF CENTRELINE OF GOREWAY DR. AND ±250.00m NORTH OF CENTRELINE OF LUROSS GATE

SITE BENCHMARK ELEV. = NA m

NOTE TO CONTRACTOR :

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NOTE:

1. **PROPERTY–LINE IS APPROXIMATE ONLY.**
2. **EXISTING TOPOGRAPHICAL INFORMATION PROVIDED BY DAVID B. SEARLES SURVEYING LTD.**
3. **INVERTS DENOTED WITH "±" ARE TAKEN FROM PLAN AND PROFILE DRAWINGS PROVIDED BY CITY OF BRAMPTON AND ARE CONSIDERED APPROXIMATE ONLY. CONTRACTOR TO FIELD VERIFY AND REPORT ANY DISCREPANCIES TO ENGINEER.**
4. **THIS PLAN IS PART OF A SET OF PLANS WHICH COMPRISE OF THE FOLLOWING: C2.1, C2.2, C2.3, AND THE SWM REPORT.**

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MTE

Engineers, Scientists, Surveyors

905-639-2552

NOT FOR CONSTRUCTION

CLIENT

DPAI ARCHITECTURE INC.

25 MAIN STREET WEST SUITE 1800 HAMILTON, ON

PROJECT REGION OF PEEL FILE No. C603546

BRAMPTON FIRE STATION 215

10539 GOREWAY DRIVE BRAMPTON, ON

DRAWING

SITE GRADING, AND EROSION & SEDIMENT CONTROL PLAN

Project Manager	J. ASZTALOS	Project No.	53251-200
Design By	MKX	Checked By	JRA
Drawn By	RXJ/LXQ	Checked By	MKX
Surveyed By	OTHERS	Drawing No.	C2.1
Date	SEPT.18/23		
Scale	1:300	Sheet 1 of 3	

LEGEND OF EXISTING FEATURES

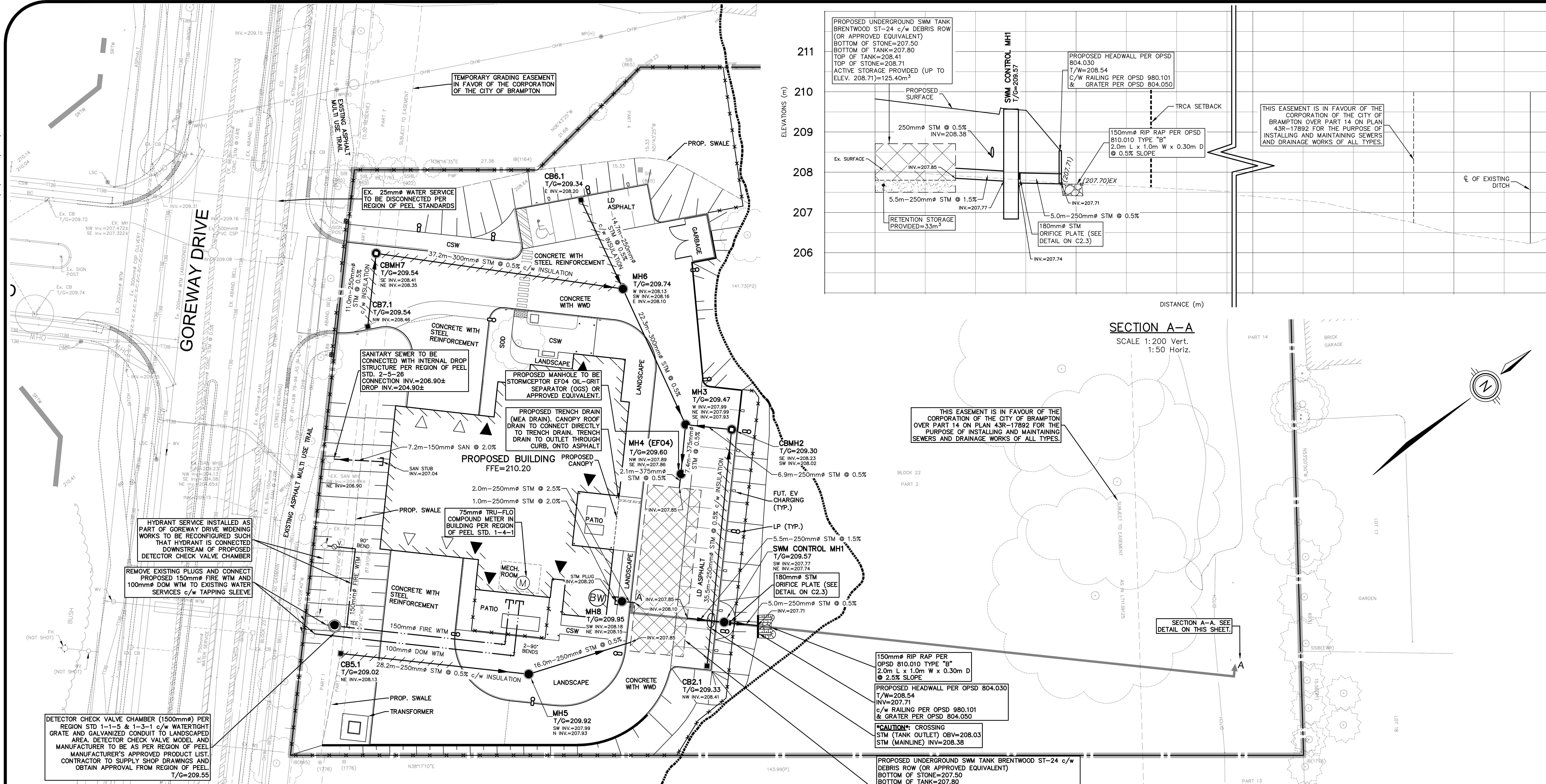
- SITE BOUNDARY
- EASEMENT
- EXISTING CONTOURS (326.00)
- EXISTING DIRECTION OF DRAINAGE
- EXISTING CURB (Ex. Drop Curb)
- EXISTING BUILDING
- EXISTING FENCE
- EXISTING RETAINING WALL

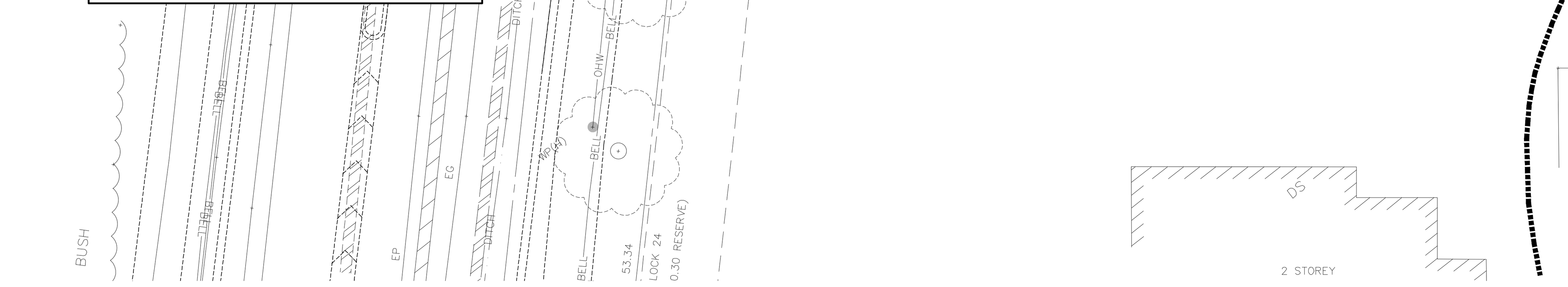
LEGEND OF PROPOSED FEATURES

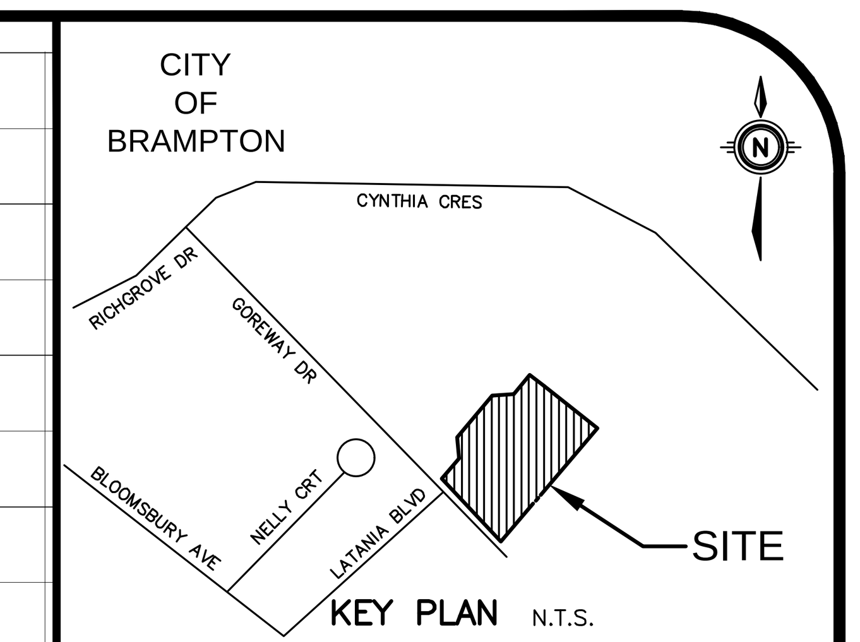
- (326.00) PROPOSED SPOT ELEVATIONS
- [326.00] PROPOSED SPOT ELEVATIONS (BY OTHERS)
- (326.00)EX EX =MAINTAIN EXISTING
- T/G=326.00 T/G =TOP OF CASTING/GRATE INV =INVERT ELEVATION
- FFE=326.00 FFE =FINISHED FLOOR ELEVATION
- 1.0% 1.0% DIRECTION OF DRAINAGE/SWALE
- DRAINAGE SPLIT
- (TOP) 3:1 (BOTTOM) EMBANKMENT (SLOPE AS NOTED)
- PROPOSED BUILDING
- OVERHEAD DOOR
- MAN DOOR
- (DROP CURB) CONCRETE CURB
- LIGHT POLE
- PROPOSED TACTILE
- RETAINING WALL
- RIP RAP (SIZE & TYPE AS NOTED)
- SEDIMENT CONTROL FENCE (PER CITY STANDARD #406)
- SILT SACK (SEE DETAIL ON C2.3)
- CONSTRUCTION ACCESS (PER CITY STANDARD #237)
- TRCA SETBACK
- OVERLAND FLOW ROUTE (MAJOR STORM)
- PROPOSED SWALE
- FENCE

CITY OF BRAMPTON ENGINEERING NOTES:

- ALL THE CONSTRUCTION WORK FOR THIS PROJECT SHALL COMPLY WITH THE STANDARD DRAWINGS AND SPECIFICATIONS OF THE COB AND THE ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS AND DRAWINGS (OPSS/D).
- ALL SURFACE DRAINAGE SHALL BE COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. DRAINAGE OF ABUTTING PROPERTIES SHALL NOT BE ADVERSELY AFFECTED.
- PROPOSED ELEVATIONS ALONG SITE PROPERTY LINES MUST MATCH EXISTING ELEVATIONS.
- A SILT FENCE AS PER COB STANDARD #406 MUST BE PLACED AROUND THE PERIMETER OF THE SITE.
- AT ALL ENTRANCES TO THE SITE, THE ROAD CURB AND SIDEWALK WILL BE CONTINUOUS THROUGH THE DRIVEWAY. THE DRIVEWAY GRADE WILL BE COMPATIBLE WITH THE EXISTING SIDEWALK AND A CURB DEPRESSION WILL BE PROVIDED FOR AT EACH ENTRANCE. ACCESS CONSTRUCTION AS PER COB STANDARD #237.
- SIDEWALK TO BE REMOVED AND REPLACED AS PER O.P.S.D. 310.010.
- THE PORTION OF THE DRIVEWAY WITHIN THE MUNICIPAL BOULEVARD MUST BE PAVED WITH 40mm HL3 AND 50MM HL8. SUB BASE TO BE 150MM GRANULAR 'A' (OR 130MM OF 20mm CRUSHER RUN LIMESTONE) AND 300MM GRANULAR 'B' (OR 225mm OF 50mm CRUSHER RUN LIMESTONE) COMPACTED TO 100% STANDARD PROCTOR DENSITY.
- A UTILITY CLEARANCE RADIUS OF 1.2 METRES BETWEEN THE PROPOSED DRIVEWAY ENTRANCE CURB RETURN AND ALL ABOVE GROUND UTILITIES MUST BE MAINTAINED.
- ROAD OCCUPANCY /ACCESS PERMIT MUST BE OBTAINED 48 HOURS PRIOR TO COMMENCING ANY WORKS WITHIN THE MUNICIPAL ROAD ALLOWANCE.
- THE SERVICE CONNECTION TRENCH WITHIN THE TRAVELED PORTION OF THE ROAD ALLOWANCE SHALL BE BACKFILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ROAD OCCUPANCY / ACCESS PERMIT APPLICATION.
- WITHIN THE COB'S RIGHT–OF–WAY, STORM SEWERS AND STORM SEWER CONNECTIONS MUST BE CONCRETE, OR APPROVED EQUAL, WITH TYPE 'B' BEDDING THROUGHOUT. THE STRENGTH OF THE CONCRETE PIPE MUST BE AS PER COB STANDARD #341 AND AS FOLLOWS: MINIMUM 65–D FOR REINFORCED PIPE AND MINIMUM ES FOR NON–REINFORCED PIPE.
- THE MINIMUM CATCH BASIN LEAD DIAMETER ALLOWED IS 200MM.
- STORM SEWER PIPES CONNECTING TO THE COB'S STORM SEWER SHALL NOT BE SMALLER THAN 200MM.
- ALL CATCH BASIN MAINTENANCE HOLES AND MAINTENANCE HOLES WITH INLET CONTROL DEVICES MUST HAVE A MINIMUM 0.3 METRE SUMP AND TOP AS PER MUNICIPAL STANDARDS.
- FOUNDATION DRAINS SHALL NOT BE CONNECTED TO THE STORM SEWER ON SITES WITH STORMWATER MANAGEMENT CONTROL.
- IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEERING CONSULTING FIRM TO ENSURE THAT AN ELEVATION DETAIL OF EXISTING AERIAL PLANT IS SUBMITTED WHEN OVERHEAD CABLING IS PRESENT. CABLES SHALL NOT BE LESS THAN 4.7 METRES FROM THE HIGHEST POINT OF THE FINISHED PAVEMENT TO THE LOWEST POINT OF THE AERIAL CABLE DIRECTLY ABOVE THE PAVEMENT AREA TO ENSURE CLEARANCES ARE MET.







LEGEND OF EXISTING FEATURES

SITE BOUNDARY	
EASEMENT	
EXISTING SANITARY SEWER	
EXISTING WATERMAIN	
EXISTING STORM SEWER	
EXISTING OVERHEAD WIRE	
EXISTING GAS MAIN	
EXISTING BELL	

LEGEND OF PROPOSED FEATURES

EMBANKMENT (SLOPE AS NOTED)	CONCRETE CURB
	LIGHT POLE
SANITARY SEWER	PROPOSED TACTILE
	RETAINING WALL
STORM SEWER	TRCA SETBACK
	PROPOSED SWALE
WATERMAIN	ORIFICE PLATE (SEE DETAIL ON C2.3)
SHALLOW PIPE INSULATION (SEE DETAIL ON C2.3)	FENCE
SEWER CROSSING	BACKWATER VALVE ON STORM CONNECTION
PROPOSED BUILDING	
OVERHEAD DOOR	
MAN DOOR	

REGION OF PEEL NOTES

- PUBLIC AND PRIVATE SERVICES, APPURTENANCES, MATERIALS AND CONSTRUCTION METHODS MUST COMPLY WITH THE MOST CURRENT REGION OF PEEL STANDARDS AND SPECIFICATIONS, THE LOCAL MUNICIPALITY'S REQUIREMENTS FOR THE ONTARIO BUILDING CODE AND ONTARIO PROVINCIAL STANDARDS. ALL WORKS SHALL ADHERE TO ALL APPLICABLE LEGISLATION, INCLUDING REGIONAL BY–LAWS.
- WATERMAIN AND/OR WATER SERVICE MATERIALS 100mm (4") AND LARGER MUST BE PVC DR18 CONSTRUCTED AS PER AWWA C900–16. SIZE 50mm (2") AND SMALLER MUST BE TYPE K SOFT COPPER CONSTRUCTED AS PER ASTM B88–49 OR POLYETHYLENE CONSTRUCTED AS PER CSA B.137.10
- WATERMAINS AND/OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 1.7m (5'6") WITH A MINIMUM HORIZONTAL SPACING OF 1.2m (4') FROM THEMSELVES AND ALL OTHER UTILITIES.
- PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED WITH AT LEAST A 50mm (2") OUTLET ON 100mm (4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. THEY MUST ALSO BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100mm (4") DIAMETER MINIMUM ON A HYDRANT.
- ALL CURB STOPS TO BE 3.0m (10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
- HYDRANT AND VALVE SET TO REGION STANDARD 1–6–1 DIMENSION A AND B, 0.7m (2') AND 0.9m (3') AND TO HAVE PUMPER NOZZLE.
- WATERMAINS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SITE PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.
- WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3m (12") OVER/0.5m (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
- ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.
- ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.
- LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF THEIR WORK. WHETHER SHOWN ON THE PLANS OR NOT AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO THE UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION, WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
- ALL PROPOSED WATER PIPING MUST BE ISOLATED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE CROSS–CONNECTION CONTROL DEVICE, CONSISTENT WITH THE DEGREE OF HAZARD, FOR BACKFLOW PREVENTION OF THE ACTIVE DISTRIBUTION SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1–7–7 OR 1–7–8.
- ALL WATER METERS MUST BE INSTALLED IN HEATED AND ACCESSIBLE SPACE.
- PROPOSALS TO CONNECT TO AN EXISTING SERVICE LATERAL REQUIRES APPROVAL FROM THE REGION OF PEEL INSPECTOR AT CONSTRUCTION STAGE

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2. CONFIRMATION OF EXISTING INVERTS
   72 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS TO LOCATE, EXPOSE AND VERIFY INVERTS OF EXISTING SEWERS AT CONNECTION POINTS AND REPORT FINDINGS TO MTE. SHOULD THE CONTRACTOR PROCEED WITHOUT COMPLETING THESE LOCATES, EXTRA COSTS RESULTING FROM DELAYS AND STANDBY TIME WILL NOT BE CONSIDERED.
3. SHOP DRAWINGS
   CONTRACTOR TO PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL FOR ALL CHAMBERS, TANKS AND STRUCTURES PRIOR THE START OF CONSTRUCTION AND PRIOR TO ORDERING ANY STRUCTURES AND PARTS.

GEODETIC BM ELEV. = 207.565m
ELEVATIONS ARE REFERRED TO THE CITY OF BRAMPTON HORIZONTAL CONTROL MONUMENT NO.042050289, BEING A BRASS CAP IN CONCRETE 0.1m BELOW GRADE MONUMENT IS LOCATED 13.20m WEST OF CENTRELINE OF GOREWAY DR. AND ±250.00m NORTH OF CENTRELINE OF LUROSS GATE

SITE BENCHMARK ELEV. = NA m

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MTE
Engineers, Scientists, Surveyors
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NOT FOR CONSTRUCTION

CLIENT
DPAI ARCHITECTURE INC.
25 MAIN STREET WEST SUITE 1800 HAMILTON, ON

PROJECT — REGION OF PEEL FILE No. C603546
BRAMPTON FIRE STATION 215
10539 GOREWAY DRIVE BRAMPTON, ON

DRAWING
SITE SERVICING PLAN

Project Manager: J. ASZTALOS	Project No.: 53251-200
Design By: MKX	Checked By: JRA
Drawn By: RXJ/LXQ	Checked By: MKX
Surveyed By: OTHERS	Drawing No.: C2.2
Date: SEPT.18/23	
Scale: 1:300	Sheet 2 of 3

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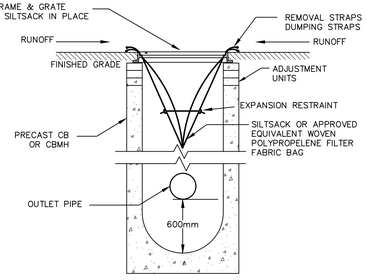
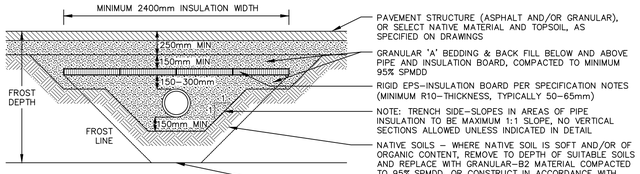
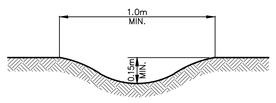
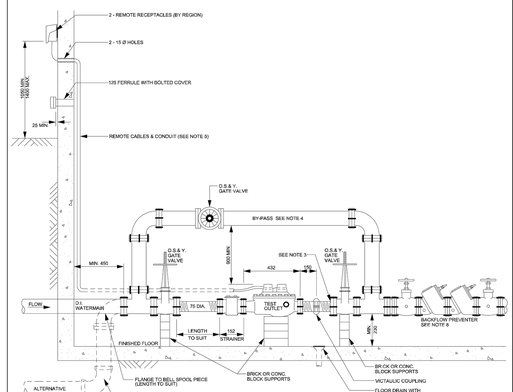
August 7, 2024 – 3:02:35 PM – Plotted By: Chirag Moniya









CONSTRUCTION NOTES AND SPECIFICATIONS

1. GENERAL

1.1. THESE PLANS ARE NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY THE CITY OF BRAMPTON AND REGION OF PEEL.

1.2. THESE PLANS ARE TO BE USED FOR SERVICING AND GRADING ONLY; ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THESE PLANS MUST NOT BE USED TO SITE THE PROPOSED BUILDING.

1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.

1.4. THESE PLANS ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF MTE CONSULTANTS INC.

1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:

1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.

1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.

1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.

1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.

1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO EXISTING WORKS.

1.7. ALL THE CONSTRUCTION WORK FOR THIS PROJECT SHALL COMPLY WITH THE STANDARD DRAWINGS AND SPECIFICATIONS OF THE CITY OF BRAMPTON AND THE ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.

1.8. ALL WORKS ON A MUNICIPAL RIGHT–OF–WAY WILL BE INSTALLED BY MUNICIPALITY UPON APPLICATION BY OWNER AT OWNER'S EXPENSE OR OWNER'S CONTRACTOR MAY INSTALL WORKS IN RIGHT OF WAY UPON APPLICATION AND APPROPRIATE PAYMENT TO CITY. THE CONTRACTOR IS TO MAKE CONNECTION TO THE SERVICES AND RESTORE ALL AFFECTED PROPERTY TO ORIGINAL CONDITION.THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL BOULEVARD AREAS.

1.9. ROAD OCCUPANCY/ACCESS PERMIT MUST BE OBTAINED 48HRS PRIOR TO COMMENCING ANY WORKS WITHIN MUNICIPAL ROAD ALLOWANCE.

1.10. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.

1.11. PLAN TO BE READ IN CONJUNCTION WITH SWM REPORT AND DRAWINGS C2.1 AND C2.2 PREPARED BY MTE CONSULTANTS INC.

1.12. SITE PLAN INFORMATION TAKEN FROM PLAN PREPARED BY, DPAI ARCHITECT INC., RECEIVED APRIL 12, 2024.

1.13. EXISTING TOPOGRAPHIC AND LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY DAVID B. SEARLES SURVEYING LTD., COMPLETED ON JULY 22, 2023. MTE ASSUMES THAT ALL TOPOGRAPHICAL INFORMATION IS AN ACCURATE REPRESENTATION OF CURRENT CONDITIONS.

1.14. FILTER FABRIC TO BE TERRAFIX 270R OR APPROVED EQUIVALENT.

1.15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF THE LOCAL MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

1.16. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

1.17. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN ALL SEWER AND SERVICE TRENCHES.

1.18. WHERE THE STABILITY, SAFETY OR FUNCTION OF THE EXISTING ROADWAY OR UNDERGROUND FACILITIES MAY BE IMPAIRED DUE TO CONTRACTOR'S METHOD OF OPERATION, THE CONTRACTOR SHALL PROVIDE SUCH PROTECTION AS MAY BE REQUIRED INCLUDING SHEATHING, SHORING AND DRIVING OF PILES WHERE NECESSARY, TO PREVENT DAMAGE TO SUCH WORKS OR PROPOSED WORKS. CONSTRUCTION FOR SHORING, BRACING AND PROTECTION SCHEMES SHALL CONFORM TO THE SPECIFICATIONS OPSS 539.

1.19. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO M.T.O. MANUAL "UNIFORM TRAFFIC CONTROL DEVICE" LATEST ADDITION.

1.20. ALL CONSTRUCTION WORKS SHALL BE CARRIED OUT IN ACCORDING WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.

2. GRADING

2.1. ALL SURFACE DRAINAGE SHALL BE COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. DRAINAGE OF ABUTTING PROPERTIES SHALL NOT BE ADVERSELY AFFECTED.

2.2. PROPOSED ELEVATIONS ALONG SITE PROPERTY LINES MUST MATCH EXISTING ELEVATIONS.

2.3. A SILTFENCE AS PER CITY OF BRAMPTON STANDARD #406 MUST BE PLACED AROUND PERIMETER TO SITE.

2.4. ALL ENTRANCES TO THE SITE, THE ROAD CURB AND SIDEWALK WILL BE CONTINUOUS THROUGH THE DRIVEWAY. THE DRIVEWAY GRADE WILL BE COMPATIBLE WITH THE EXISTING SIDEWALK AND A CURB DEPRESSION WILL BE PROVIDED AT EACH ENTRANCE. ACCESS CONSTRUCTION AS PER CITY OF BRAMPTON STANDARD #237.

2.5. A UTILITY CLEARANCE RADIUS OF 1.2m BETWEEN THE PROPOSED DRIVEWAY ENTRANCE CURB RETURN AND ALL ABOVE GROUND UTILITIES MUST BE MAINTAINED.

2.6. RETAINING WALLS TO BE DESIGNED BY OTHERS. FOR WALLS EXCEEDING 1.0m IN HEIGHT, SHOP DRAWINGS MUST BE SUBMITTED FOR REVIEW AND APPROVAL AND BUILDING PERMIT MUST BE OBTAINED. WALLS OVER 0.6m IN HEIGHT REQUIRE GUARDS. HIGH SIDE OF RETAINING WALLS TO BE BACKFILLED WITH FREE DRAINING MATERIAL.

2.7. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND COVER.

3. GENERAL SERVICING AND SEWER ABANDONMENT

3.1. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1.0 METER FROM FOUNDATION WALL.

3.2. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND IN COMPLIANCE WITH LOCAL APPLICABLE CODES AND REGULATIONS; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.

3.3. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED AND CAMERA INSPECTED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.

3.4. ALL EXISTING UNUSED SEWERS MUST BE PROPERLY ABANDONED, BY EITHER COMPLETELY REMOVING THOSE FROM THE GROUND, OR BY GROUTING EITHER END OF THE SEWER WITH A MINIMUM 300mm THICK CONCRETE PLUG.

3.5. UNUSED MAINTENANCE HOLES AND CATCH BASINS MUST BE COMPLETELY REMOVED.

3.6. OPENING IN MAINTENANCE HOLES WHERE SERVICES WERE REMOVED MUST BE BRICKED AND PARGED

4. STORM SEWERS

4.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A".TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

4.2. STORM SEWERS, 150mm AND SMALLER, SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM–D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.

4.3. STORM SEWERS 200mm TO 375mm SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM–D3034 OR RIBBED PVC SEWER PIPE CSA B182.4–M90 ASTM–F794 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.

4.4. STORM SEWERS, 450mm AND LARGER, SHALL BE CONCRETE PIPE, CSA–A257.2 65–D WITH RUBBER GASKET JOINT OR RIBBED PVC SEWER PIPE CSA B182.4–M90 ASTM–F794 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.

4.5. THE MINIMUM CATCHBASIN LEAD DIAMETER ALLOWED IS 250mm.

4.6. MANHOLES AND MANHOLE CATCHBASINS TO BE 1200mm DIAMETER PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.

4.7. CATCHBASINS TO BE 600mm SQUARE PRECAST AS PER OPSD 705.010.

4.8. DITCH INLET CATCHBASINS TO BE 600mm SQUARE AS PER OPSD 705.030,WITH SLOPE ON GRATES UNLESS OTHERWISE SPECIFIED.

4.9. ALL STORM STRUCTURES TO HAVE A MINIMUM 600mm DEEP SUMP. WHEN THE STRUCTURE INCLUDES THE INSTALLATION OF A SNOUT (OR APPROVED EQUIVALENT) THE SUMP DEPTH TO BE MIN 2.5 TIMES THE OUTLET PIPE DIAMETER SIZE.

4.10. MANHOLE AND CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.

4.11. STORM MANHOLE LIDS TO BE PER OPSD 401.010 – TYPE 'B' CATCHBASIN AND CATCHBASIN MANHOLE GRATES TO BE PER OPSD 400.100. DITCH INLET CATCHBASIN GRATES TO BE PER OPSD 403.010.

4.12. ADJUSTMENT UNITS FOR STORM STRUCTURES TO BE IN ACCORDANCE WITH OPSD 704.010 OR 704.011.

4.13. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.2m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED SEWER PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI–1.76 (R10) INSULATING FACTOR (TYPICALLY 50–65mm). INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm–800mm DIAMETER AND 3.0m FOR 801mm–1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL COVER). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM–SM OR –HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD–M28 OR OTHER ENGINEER–APPROVED EQUIVALENT.

4.14. ALL BUILDING FOUNDATION DRAINS TO BE CONNECTED TO THE STORM SEWER SYSTEM. STORM CONNECTION TO INCLUDE BACKWATER VALVE.

4.15. CONTRACTOR RESPONSIBLE FOR TESTING OF STORM SEWERS IN ACCORDANCE WITH OPSS 410.

4.16. TRENCH DRAINS IN WALKWAYS TO BE MEA DRAIN (OR APPROVED EQUIVALENT) WITH HEEL–PROOF GRATE.

5. SANITARY SEWERS

5.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

5.2. SANITARY SEWERS 150mm AND SMALLER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM–D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.

5.3. SANITARY SEWERS 200mm TO 600mm INCLUSIVE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM–D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.

5.4. SANITARY SEWERS GREATER THAN 600mm SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM–D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.

5.5. ALL SANITARY CLEANOUTS TO BE NYLOPLAST MODEL 2812AG025 (SDR–35) WITH SOLID GRATES OR APPROVED EQUIVALENT.

5.6. MANHOLES TO BE 1200mm DIAMETER PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.

5.7. MANHOLES TO BENCHED PER OPSD 701.021.

5.8. SANITARY MANHOLE LIDS TO BE PER OPSD 401.010 – TYPE 'A'.

5.9. MANHOLE FRAMES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.

5.10. ADJUSTMENT UNITS FOR SANITARY STRUCTURES TO BE IN ACCORDANCE WITH OPSD 704.010 OR 704.011

5.11. SANITARY SEWERS AND SERVICES TO HAVE MINIMUM 1.4m COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI–1.76 (R10) INSULATING FACTOR (TYPICALLY 50–65mm). INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm–800mm DIAMETER AND 3.0m FOR 801mm–1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL PLACEMENT). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM–SM OR –HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD–M28 OR OTHER ENGINEER–APPROVED EQUIVALENT.

5.12. CONTRACTOR RESPONSIBLE FOR TESTING OF SANITARY SEWERS IN ACCORDANCE WITH OPSS 410.

6. WATERMAINS

6.1. ALL WATERMAINS AND WATER SERVICE MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT REGION OF PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.

6.2. WATER SERVICE CONNECTIONS 50mm AND SMALLER, SHALL BE TYPE "K" SOFT COPPER ASTM B88, ALUMINIUM COMPOSITE CSA B137.10 AND AWWA C901. COPPER SERVICE SHALL HAVE 5.5Kg ANODE.

6.3. WATERMAINS 100mm AND LARGER SHALL BE PVC C900 CLASS 150 INSTALLED WITH MINIMUM 1.7 METRES OF COVER. FITTINGS 100mm AND LARGER SHALL BE PC CLASS 150 (DR18) AWWA C900–16.

6.4. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 1.7m COVER ON TOP OF PIPE, WITH A MINIMUM HORIZONTAL SPACING OF 1.2m FROM THEMSELVES AND OTHER UTILITIES. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR "WATER PIPE INSULATION DETAIL".

6.5. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING etc. MUST BE PROVIDED WITH AT LEAST A 50mm (2") OUTLET TO 100mm (4') AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. THEY MUST ALSO BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100mm (4") DIAMETER MINIMUM.

6.6. ALL CURB STOPS TO BE 3.0m OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.

6.7. HYDRANT AND VALVE SET TO REGION STANDARD 1–6–1. DIMENSION 'A' AND 'B', 0.7m (2') AND 0.9m (3') AND TO HAVE PUMPER NOZZLE.

6.8. WATERMAINS TO BE INSTALLED TO GRADES SHOWN ON APPROVED PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.

6.9. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3m (12") OVER/0.5m (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.

6.10. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.

6.11. ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.

6.12. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

6.13. WATERMAIN FITTINGS TO BE SUPPLIED WITH MECHANICAL JOINT RESTRAINTS. FOR WATERMAIN PIPE SIZES 150mmø OR LESS ALL PIPE JOINTS TO BE RESTRAINED WITHIN 5.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. FOR WATERMAIN PIPE SIZES GREATER THAN 150mmø ALL PIPE JOINTS TO BE RESTRAINED WITHIN 10.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. ALL TEE'S TO HAVE MINIMUM 2.0m SOLID PIPE LENGTH ON EACH RUN OF THE TEE, OR PROVIDE A THRUST BLOCK PER OPSD 1103.010.

6.14. ALL METALLIC FITTINGS (EXCLUDING CURB/MAIN STOP AND BRASS FITTINGS) AND APPURTENANCES INCLUDING SADDLES, VALVES, TEES, BENDS ETC ARE TO BE WRAPPED WITH AN APPROVED PETROLATUM SYSTEM CONSISTING OF PASTE, MASTIC AND TAPE. PARTICULAR ATTENTION SHALL BE PAID TO ANODE INSTALLATION. CONTRACTOR TO REFER TO THE MOST RECENT EDITION OF AREA MUNICIPALITIES DESIGN GUIDELINES AND SUPPLEMENTAL SPECIFICATIONS FOR MUNICIPAL SERVICES.

6.15. PVC WATERMAIN SHALL HAVE TWU STRANDED COPPER, AWG8 TRACER WIRE STRAPPED TO TOP AT 5 METRE INTERVALS. TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT ALL HYDRANTS AND CAD WELDED TO THE LOWER FLANGE OF THE HYDRANT.

6.16. MAIN STOPS, CURB STOPS AND COUPLINGS SHALL BE AWWA C–800 COPPER TO COPPER FLANGED OR COMPRESSION CONNECTION OR APPROVED EQUIVALENT

6.17. SERVICE BOXES TO BE FERGUSON ECLIPSE TYPE FIGURE 222 SIZE NO. 9 OR APPROVED EQUIVALENT COMPLETE WITH ROD AND PLUG.

6.18. WATER CONNECTIONS MAY BE PLACED IN THE SAME TRENCH WITH A STORM OR SANITARY CONNECTION ONLY IF A MINIMUM VERTICAL SEPARATION OF 500mm IS MAINTAINED BETWEEN THE WATER SERVICE AND ANY OTHER PIPE, IN ACCORDANCE WITH SECTION 7.3.5.7.(2)(a)(i) OF THE ONTARIO BUILDING CODE .

6.19. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 1.7m COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE WATER PIPE INSULATION. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI–3.52 (R20) INSULATING FACTOR (TYPICALLY 100–130mm). INSULATION BOARD WIDTH SHALL BE 2.4m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 3.0m FOR 201mm–305mm DIAMETER. INSULATION BOARD SHALL BE INSTALLED WITH MINIMUM 2–LAYERS, OVERLAPPED MINIMUM 300mm AT ALL JOINTS. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL PLACEMENT). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME.ACCEPTABLE PRODUCTS ARE DOW STYROFOAM–SM OR –HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD–M28 OR OTHER ENGINEER–APPROVED EQUIVALENT.

6.20. REGION OF PEEL MUNICIPALITY TO SUPPLY WATER METER. CONTRACTOR TO INSTALL CHAMBER, METER, ALL VALVES, PIPING AND REMOTE METER READOUT AT LOCATION ON BUILDING EXTERIOR ACCEPTABLE TO MUNICIPALITY.

6.21. ALL WATERMAIN TO BE PRESSURE TESTED IN ACCORDANCE WITH OPSS 441. DISINFECT ALL WATERMAIN IN ACCORDANCE WITH AWWA C651–05 INCLUDING CHLORINATION, BACKFLOW PREVENTOR AND 24 HOUR DUPLICATE SAMPLING. ALL TESTING AND DISINFECTION TO BE COMPLETED UNDER THE SUPERVISION OF THE ENGINEER.

7. EROSION AND SEDIMENT CONTROL

7.1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND VEGETATIVE COVER IS ESTABLISHED.

7.2. ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.

7.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES.

7.4. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.

7.5. MUD MATS TO BE PROVIDED ON–SITE AT ALL LOCATIONS WHERE CONSTRUCTION VEHICLES EXIT THE SITE. MUD MATS SHALL BE A MINIMUM OF 3.0m WIDE, 15.0m LONG (LENGTH MAY VARY DEPENDING ON SITE LAYOUT) AND 0.3m DEEP AND SHALL CONSIST OF 200mm CLEAR STONE MATERIAL OR APPROVED EQUIVALENT. PROPOSED EROSION FENCING TO TIE INTO MUD MAT. CONTRACTOR TO ENSURE ALL VEHICLES LEAVE THE SITE VIA THE MUD MAT AND THAT THE MAT IS MAINTAINED IN A MANNER TO MAXIMIZE EFFECTIVENESS AT ALL TIMES.

7.6. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.

7.7. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.

7.8. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE DEPARTMENT OF PUBLIC WORKS.

7.9. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.

7.10. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.

8. MAINTENANCE RECOMMENDATIONS

8.1. DURING THE COURSE OF CONSTRUCTION CONTRACTOR TO REMOVE SEDIMENT AND CONTAMINANTS FROM STORMWATER MANAGEMENT FACILITIES MONTHLY. FOLLOWING CONSTRUCTION CONTRACT COMPLETION, OWNER TO HIRE QUALIFIED CONTRACTOR TO REMOVE SEDIMENT AND CONTAMINANTS ANNUALLY AND REINSTATE STORMWATER MANAGEMENT FACILITIES ACCORDING TO THE DESIGN OUTLINED ON THIS PLAN, AS REQUIRED.

8.2. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.

8.3. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

8.4. THE PROPOSED STORMCEPTOR(STC) WILL REQUIRE REGULAR ANNUAL MAINTENANCE. OWNER TO ENTER INTO A MAINTENANCE AGREEMENT WITH A SUITABLE CONTRACTOR TO COMPLETE THIS WORK.

MINIMUM PAVEMENT STRUCTURE

MATERIAL		RECOMMENDED THICKNESS
		ACCESS ROAD & PARKING LOT
ASPHALTIC CONCRETE	HL3	40mm (96% MAXIMUM RELATIVE DENSITY)
	HL8	65mm (96% MAXIMUM RELATIVE DENSITY)
GRANULAR 'A' BASE		150mm (100% SPMDD)
GRANULAR 'B' SUBBASE		300mm (100% SPMDD)

BASED ON PRELIMINARY GEOTECHNICAL INVESTIGATION PREPARED BY WOOD (APRIL 18, 2022)
CONTRACTOR RESPONSIBLE FOR CONFIRMING PAVEMENT SPECIFICATIONS WITH THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION. HEAVY DUTY ASPHALT AND CONCRETE ROAD PAVING WITH REINFORCEMENT TO BE SPECIFIED BY GEOTECHNICAL ENGINEER; REBAR SPECIFICATIONS TO BE PROVIDED BY STRUCTURAL ENGINEER.

MAINTENANCE SCHEDULE

–INSPECT AFTER EVERY MAJOR RAIN EVENT.
–INSPECT EVERY 3 WEEKS MINIMUM.
–SILTSACK SHOULD NEVER BE OVER HALF FULL.
–FULL BAG CAN BE REMOVED, DUMPED, CLEANED AND REUSED
(TO REMOVE INSERT 25mm REBAR INTO REMOVAL FLAP POCKETS)
(TO DUMP INSERT 25mm REBAR INTO BOTH DUMPING STRAPS)

TEMPORARY SILTSACK SILTATION CONTROL IN CB

N.T.S.

TYPICAL DRAINAGE SWALE

N.T.S.

SEWER PIPE INSULATION DETAIL

FOR STORM SEWER PIPES HAVING LESS THAN 1200mm COVER, SANITARY SEWER HAVING LESS THAN 1400mm COVER AND MINIMUM 615mm COVER
N.T.S.

NOTE

1. PROVISION IS TO BE MADE FOR THE DISPOSAL OF WATER USED FOR IN PLACE TESTING OF TRU-FLO COMPOUND METER EITHER THROUGH FLOOR DRAIN OR THE 125mm FERRULE.
2. IF HOT WATER TANK IS WITHIN 3.0m OF METER, THEN A CHECK VALVE IS REQUIRED BETWEEN THE METER AND HOT WATER TANKS.
3. FLANGED ENDS COMPLETE WITH TAPPED BLIND FLANGE.
4. BY-PASS MAY BE ONE PIPE SIZE SMALLER THAN METER SIZE AND MAY BE INSTALLED HORIZONTALLY.
5. WHERE METER ROOM IS NOT ADJACENT TO AN OUTSIDE WALL OR IS BELOW EXTERIOR FINISHED GRADE,THE CONTRACTOR/APPLICANT SHALL PROVIDE A CONTINUOUS 12mm E.M.T. CONDUIT COMPLETE WITH NYLON FISH LINE FROM METER ROOM TO 1000mm ABOVE EXTERIOR FINISHED GRADE.
6. MIN. 300mm CLEARANCE BETWEEN WALL AND EDGE OF METER.
7. METER SHALL BE ACCESSIBLE AT ALL TIMES.
8. WHERE REQUIRED, BACKFLOW PREVENTOR SHALL BE INSTALLED AFTER BOTH THE METER AND BY-PASS

Region of Peel working with you	PUBLIC WORKS STANDARD DRAWING	REV. DATE: NOVEMBER 2011	
		APPROVED BY A.L.	DRAWN BY AINLEY GROUP
75 TRU-FLO COMPOUND METER IN BUILDING		STD. DWG. NUMBER 1-4-1	SCALE N.T.S.

NOTES:
1. GEOTEXTILE TO HAVE A MINIMUM TEAR RESISTANCE OF 200 N. WATER FLOW THROUGH RATE MINIMUM 4000 L/MIN/M² AND UV STABILITY MIN 70% AT 500H.
2. GEOTEXTILE TO HAVE A HORIZONTAL OVERLAP OF 1000mm AT JOINTS.
3. PAGE WIRE FENCE OR APPROVED EQUIVALENT AS BACKING FOR GEOTEXTILE FILTER FABRIC.
4. GEOTEXTILE TO BE FASTENED TO T-BAR AND PAGE WIRE FENCE VIA METAL ZIP-TIES, 4mm GALVANIZED TENSION WIRE, OR EQUIVALENT.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS OTHERWISE SHOWN

BRAMPTON Flower City brampton.ca	TEMPORARY SINGLE ROW SEDIMENT CONTROL FENCE APPROVED: APRIL 2023 ORIGINAL: APR 2023	REV. 1 463 N.T.S

NOTE: PLATE TO FIT CURVED MANHOLE WALL AND SEALED TO PREVENT LEAKAGE. CONTRACTOR TO PROVIDE SHOP DRAWINGS.

ON–LINE ORIFICE DETAIL

N.T.S.

KEY PLAN N.T.S.

GEODETIC BM ELEV. =207.565m
ELEVATIONS ARE REFERRED TO THE CITY OF BRAMPTON HORIZONTAL CONTROL MONUMENT NO.042050289, BEING A BRASS CAP IN CONCRETE 0.1m BELOW GRADE MONUMENT IS LOCATED 13.20m WEST OF CENTRELINE OF GOREWAY DR. AND ±250.00m NORTH OF CENTRELINE OF LUROSS GATE

SITE BENCHMARK ELEV. = NA m

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.

NOTE:

1. **PROPERTY–LINE IS APPROXIMATE ONLY.**
2. **EXISTING TOPOGRAPHICAL INFORMATION PROVIDED BY DAVID B. SEARLES SURVEYING LTD.**
3. **INVERTS DENOTED WITH "±" ARE TAKEN FROM PLAN AND PROFILE DRAWINGS PROVIDED BY CITY OF BRAMPTON AND ARE CONSIDERED APPROXIMATE ONLY. CONTRACTOR TO FIELD VERIFY AND REPORT ANY DISCREPANCIES TO ENGINEER.**
4. **THIS PLAN IS PART OF A SET OF PLANS WHICH COMPRISE OF THE FOLLOWING: C2.1, C2.2, C2.3, AND THE SWM REPORT.**

No.	REVISION	BY	YYYY–MM–DD
8.			
7.			
6.			
5.			
4.	REVISED PER CITY COMMENTS	JRA	2024–07–11
3.	ISSUED FOR TENDER	JRA	2024–06–26
2.	REISSUED FOR APPROVALS & PERMIT	JRA	2024–04–24
1.	ISSUED FOR SPA	JRA	2023–09–18

MTE
Engineers, Scientists, Surveyors
905-639-2552

CLIENT
DPAI ARCHITECTURE INC.
25 MAIN STREET WEST SUITE 1800 HAMILTON, ON

PROJECT
REGION OF PEEL FILE No. C603546
BRAMPTON FIRE STATION 215
10539 GOREWAY DRIVE BRAMPTON, ON

DRAWING
NOTES & DETAILS PLAN

Project Manager J. ASZTALOS	Project No. 53251-200
Design By MKX	Checked By JRA
Drawn By RXJ/LXQ	Checked By MKX
Surveyed By OTHERS	Drawing No. C2.3
Date SEPT.18/23	
Scale AS SHOWN	Sheet 3 of 3

P:\P\53251\200\53251-200-C2
MTE FILE PATH:
August 7, 2024 – 3:02:49 PM – Plotted By: Chirag Maniya

Project Name:	City of Brampton Fire Station 215 10539 Goreway Drive, Brampton, ON	**Date Issued:**	August 9, 2024
Quasar Project #:	CM-22-269		
DPAI Project #:	12303		

Distribution		
DPAI	Sebastian Lubczynski	sebastian@dpai.ca
Quasar Consulting Group	Terry Sedore	Terry.sedore@quasarcg.com
Quasar Consulting Group	George Mikhael	George.mikhael@quasarcg.com
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Quasar Consulting Group	Dayton Chuck	Dayton.chuck@quasarcg.com

Addendum #:	E01
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 Drawings

.1 Drawing E-202 – Level 01 Plan – Power and Systems

i) Provide one 15A 120V receptacle fed from panel RP-RB in IT room 118 for Motorola station controller.

ii) Provide one 15A 120V receptacle fed from panel RP-RB in IT room 118 for Motorola lighting controller.

iii) Provide a data outlet and ¾" conduit from the Motorola station controller to the local network switch located in IT room 118. Data cabling to be provided by others.

iv) Provide a data outlet and ¾" conduit from the Motorola lighting controller to the local network switch located in IT room 118. Data cabling to be provided by others.

.2 Drawing E-302 – Roof Plan – Power and Systems

i) Electrical contractor to provide weatherproof box for Mach alert antenna.

ii) Revised sheet keynote legend and added sheet keynote P2 "electrical contractor to provide a weatherproof box at Mach alert antenna and ¾" conduit back to Motorola station controller located in IT room 118. Coordinate final location of antenna with supplier."

.3 Drawing E-904 – Electrical Panelboard Schedules I

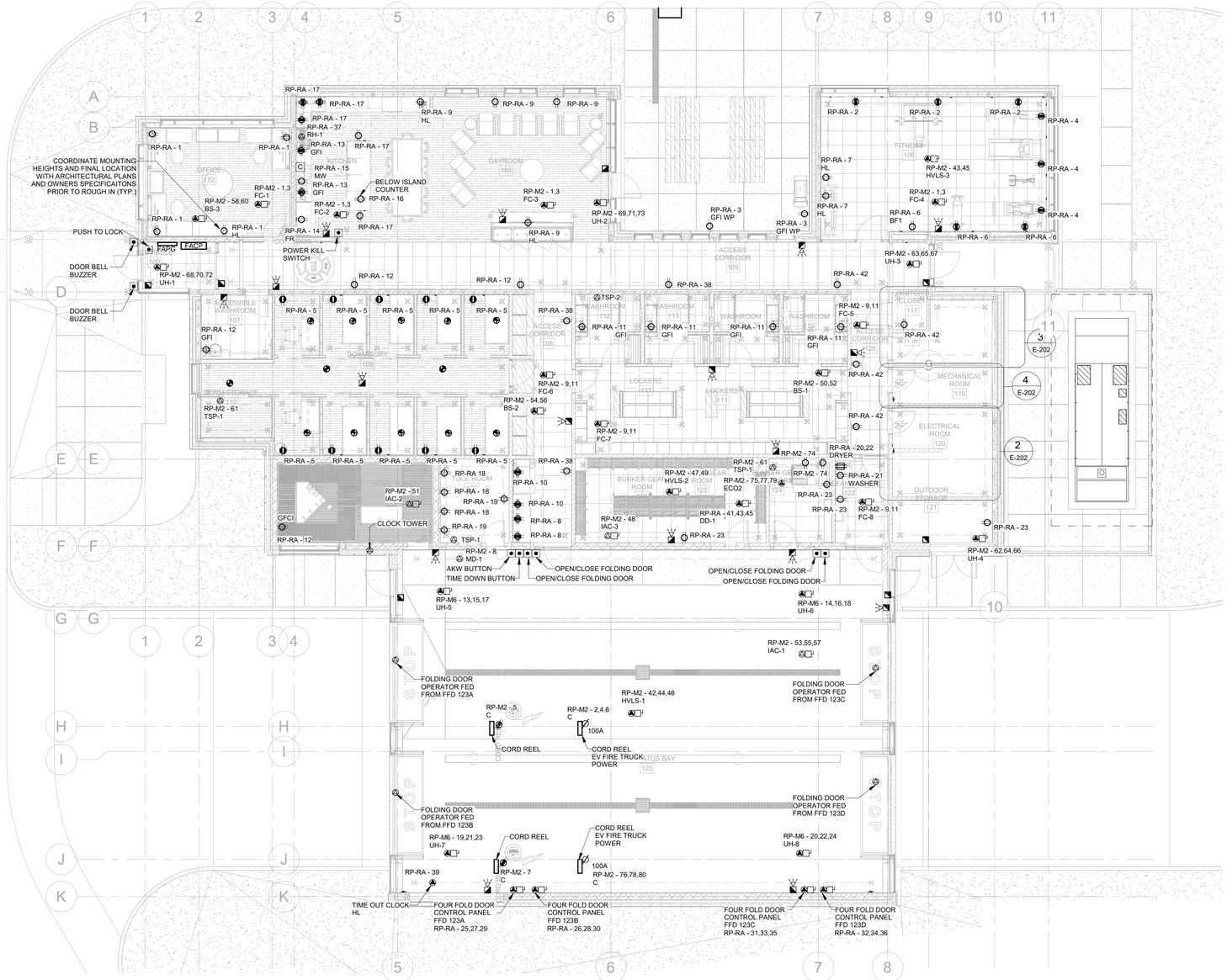
i) Provide one 15A/1P breaker to panel RP-RB on circuit 25 in IT room 118 for Motorola station controller receptacle. Provide all raceways and wiring to receptacle.

ii) Provide one 15A/1P breaker to panel RP-RB on circuit 27 in IT room 118 for Motorola lighting controller receptacle. Provide all raceways and wiring to receptacle.

Quasar Consulting Group

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

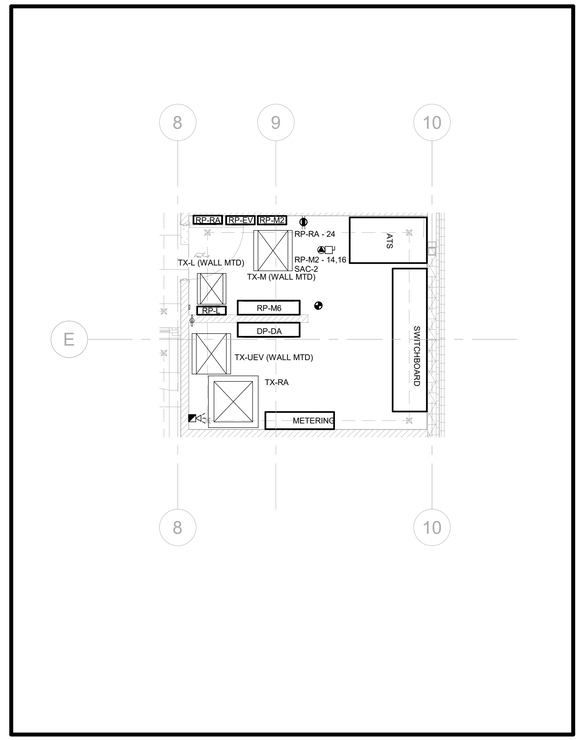
Team Lead



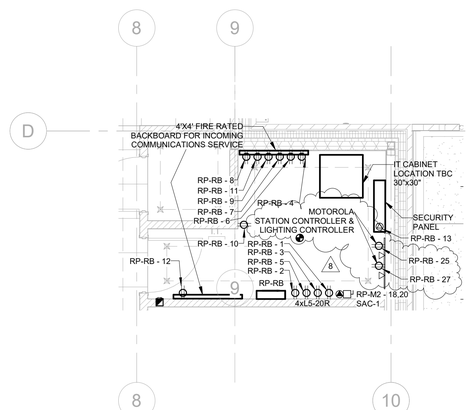
1 LEVEL 01 PLAN - POWER & SYSTEMS
1 : 100

GENERAL NOTES

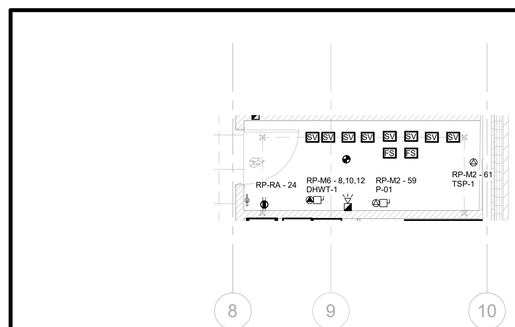
1. Apparatus bay is to be considered a wet location, defined as Category 1 in OESC Section 22.



2 ELECTRICAL ROOM 120 - LAYOUT
1 : 50



3 IT ROOM 118 - LAYOUT
1 : 50



4 MECHNICAL ROOM 119 LAYOUT
1 : 50

BRAMPTON FIRE STATION 215

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

SEALS

NO.	ISSUES/REVISIONS	DATE
8	ISSUED FOR ADD-E01	2024-08-09
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:

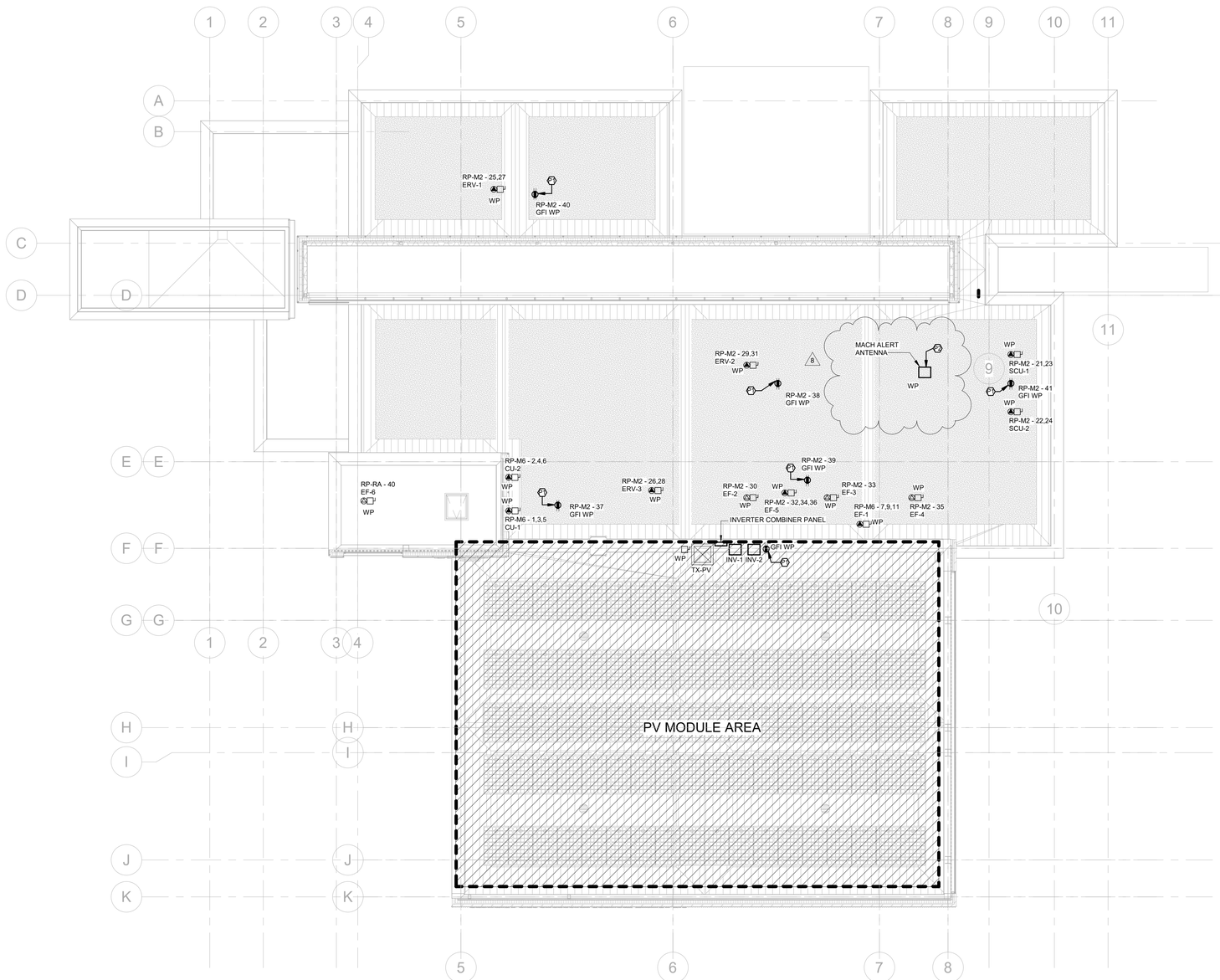
LEVEL 01 PLAN - POWER & SYSTEMS

ISSUE DATE:	2024-08-09
DRAWN BY: E.S	CHECKED BY: T.S
PROJECT NO.: CM-22-269	SCALE: As indicated

DRAWING NO.:

E-202

[PLOT DATE: 8/9/2024 10:36:07 AM]



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 PHENOLIQ (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

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

SEALS

NO.	ISSUES/REVISIONS	DATE
8	ISSUED FOR ADD-E01	2024-08-09
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:

ROOF PLAN - POWER & SYSTEMS

ISSUE DATE: 2024-08-09
DRAWN BY: E.S CHECKED BY: T.S
PROJECT NO.: CM-22-269 SCALE: 1 : 100

DRAWING NO.:
E-302

[PLOT DATE: 8/9/2024 10:26:05 AM]

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			1	20 A	3	POWER	2
3	POWER	2	20 A	1		360 VA		1	20 A	3	POWER	4
5	POWER	10	20 A	1			1800 VA	1	20 A	3	POWER	6
7	POWER	2	20 A	1	360 VA			1	20 A	2	POWER	8
9	POWER	4	20 A	1		720 VA		1	20 A	2	POWER	10
11	POWER	4	20 A	1			720 VA	1	20 A	4	POWER	12
13	POWER	2	20 A	1	360 VA			1	20 A	1	FRIDGE	14
15	MICROWAVE	1	20 A	1		180 VA		1	20 A	1	POWER	16
17	POWER	5	20 A	1			900 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	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	2219 VA						2
3						1000 VA	2219 VA	3	20 A	1	POWER	4
5	POWER	1	20 A	1			180 VA	2219 VA				6
7	POWER	1	20 A	1	180 VA	500 VA						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								2	20 A	1	SAC-2	16
17												18
19						250 VA		2	20 A	1	SAC-1	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						167 VA	2219 VA					76
77	POWER	1	20 A	3			167 VA	2219 VA	3	20 A	1	POWER	78
79					167 VA	2219 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:		11921 VA	11131 VA	10881 VA					
			Total Amps:		100 A	93 A	91 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	33932 VA	100.00%	33932 VA		
				Total Conn. Load:	33932 VA
				Total Est. Demand:	33932 VA
				Total Conn.:	94 A
				Total Est. Demand:	94 A

Notes:

BRAMPTON FIRE STATION 215

QUASAR CONSULTING GROUP

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

SEALS

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

DRAWING TITLE:

ELECTRICAL
PANELBOARD
SCHEDULES I

ISSUE DATE: 2024-08-09
DRAWN BY: Author
CHECKED BY: Checker
PROJECT NO.: CM-22-269
SCALE:

DRAWING NO.:

E-904

[PLOT DATE: 8/9/2024 10:36:06 AM]

PLAN OF SURVEY OF
PART OF LOT 7 AND PART OF BLOCK 8 REGISTERED PLAN 43M–580 AND BLOCK 22 REGISTERED PLAN 43M–978
CITY OF BRAMPTON
REGIONAL MUNICIPALITY OF PEEL

SCALE 1: 500

10 5 0 5 10 15 20 30 40 50 metres

David B. Searles Surveying Ltd.
ONTARIO LAND SURVEYORS

METRIC

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

LEGEND

■	DENOTES	MONUMENT FOUND
□	DENOTES	MONUMENT SET
IB	DENOTES	IRON BAR
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
OU	DENOTES	ORIGIN UNKNOWN
WIT	DENOTES	WITNESS
865	DENOTES	D.P. MCLEAN O.L.S.
922	DENOTES	SCHAEFFER DZADOV BENNETT LTD,O.L.S.
1184	DENOTES	E. BIASON O.L.S.
1776	DENOTES	DAVID J. PESCE, O.L.S.
EWR	DENOTES	EPLETT, WOROBEC RAIKES SURVEYING LTD, O.L.S.
RW	DENOTES	REPLACED WITH
M	DENOTES	MEASURED
P	DENOTES	PLAN 43R–34500
P1	DENOTES	REGISTERED PLAN 43M–978
P2	DENOTES	REGISTERED PLAN 43M–580
P3	DENOTES	PLAN 43R–12143
P4	DENOTES	SURVEYOR'S REAL PROPERTY REPORT BY J.K. YOUNG COMPANY L.T.D. DATED 13 OCTOBER, 1993.
AC	DENOTES	AIR CONDITIONER
ANC	DENOTES	ANCHOR
BB	DENOTES	BELL BOX
BC	DENOTES	BACK OF CURB
BF	DENOTES	BOARD FENCE
CB	DENOTES	CATCH BASIN
CLF	DENOTES	CHAIN LINK FENCE
CRTW	DENOTES	CONCRETE RETAINING WALL
CSP	DENOTES	CULVERT (STEEL PIPE)
CSW	DENOTES	CONCRETE SIDE WALK
CUL	DENOTES	CULVERT
DI	DENOTES	DITCH INLET
DS	DENOTES	DOOR SILL
EG	DENOTES	EDGE OF GRAVEL
EP	DENOTES	EDGE OF PAVEMENT
EW	DENOTES	EDGE OF WATER
FH	DENOTES	FIRE HYDRANT
GM	DENOTES	GAS METER
HM	DENOTES	HYDRO METER
INV	DENOTES	INVERT
IPS	DENOTES	INTERLOCKING PAVING STONES
LSC	DENOTES	LIGHT STANDARD (CONCRETE)
MB	DENOTES	MAILBOX
MHC(B)	DENOTES	MAINTENANCE HOLE COVER (BELL)
MHC(SAN)	DENOTES	MAINTENANCE HOLE COVER (SANITARY)
MHC(STM)	DENOTES	MAINTENANCE HOLE COVER (STORM)
PWF	DENOTES	POST AND WIRE FENCE
SP	DENOTES	SIGN POST
SRTW	DENOTES	STONE RETAINING WALL
WP(H)	DENOTES	WOODEN POLE (HYDRO)
WV	DENOTES	WATER VALVE
TV	DENOTES	TV DISH
RW	DENOTES	REPLACED WITH
ø	DENOTES	DIAMETER
BOS	DENOTES	BOTTOM OF SLOPE
DL	DENOTES	DITCH LINE
OHW	DENOTES	OVERHEAD WIRES
TOS	DENOTES	TOP OF SLOPE
SAN	DENOTES	UNDERGROUND SANITARY SERVICE
FO	DENOTES	UNDERGROUND FIBER OPTIC SERVICE
G	DENOTES	UNDERGROUND GAS SERVICE
	DENOTES	CONIFEROUS TREE
	DENOTES	DECIDUOUS TREE
	DENOTES	TREE LINE

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE *SURVEYS ACT*, THE *SURVEYORS ACT*, AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 22nd DAY OF JULY, 2021

PRELIMINARY

DATE

BONEY CHERIAN
ONTARIO LAND SURVEYOR

BEARING NOTE

BEARINGS ARE GRID BEARINGS DERIVED FROM GPS OBSERVATIONS USING THE SMARTNET NETWORK AND ARE REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 17 (81°00' WEST), NAD83 (CSRS 2010).

BEARINGS ON REGISTERED PLAN 43M–978 (P1), REGISTERED PLAN 43M–580 (P2), PLAN 43R–12143 (P3) AND SURVEYOR'S REAL PROPERTY REPORT BY J.K. YOUNG COMPANY L.T.D., DATED 13 OCTOBER, 1993.(P4) HAVE BEEN ROTATED 00°56'00" COUNTERCLOCKWISE TO MAKE COMPARISONS.

DISTANCE NOTE

DISTANCES SHOWN HEREON ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.9997025.

NOTE

PROPERTY LIMITS ARE NOT FENCED UNLESS OTHERWISE NOTED ON THE FACE OF THE PLAN.

BENCHMARK NOTE

ELEVATIONS ARE REFERRED TO THE CITY OF BRAMPTON HORIZONTAL CONTROL MONUMENT No.042050289, BEING A BRASS CAP IN CONCRETE 0.10m BELOW GRADE MONUMENT IS LOCATED 13.20 m WEST OF CENTRELINE OF GOREWAY DR. AND +/– 250.00 m NORTH OF CENTRELINE OF LUROSS GATE., HAVING AN ELEVATION OF 207.565 m.

VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928
(1978 SOUTHERN ONTARIO READJUSTMENT)

CAUTION

LOCATIONS OF ALL UTILITIES ARE APPROXIMATE. ALL UTILITIES SHOULD BE CONTACTED PRIOR TO ANY DIGGING OR CONSTRUCTION.

LOCATIONS OF UNDERGROUND SERVICES ARE BASED ON LOCATE CONDUCTED BY MARK IT LOCATES INC. PROJECT NUMBER 2021–11066PLEASE REFER TO LOCATE REPORT DATED 2021–07–19

David B. Searles Surveying Ltd.
ONTARIO LAND SURVEYORS
4255 Sherwoodtowne Blvd., Suite 206, Mississauga, Ontario L4Z 1Y5
Tel: (905) 273–6840 Fax: (905) 896–4410
Email: info@dbsearles.ca

Calculator	Draftsperson
BJ	IV
Editor	**Plan Index No.**
BJ	H19

Calculation File	Drawing File	File No.
52–21CALC.DWG	52–0–21.DWG	52–0–21

Addendum

Project Name:	Brampton Fire Station 215	**MTE File No.:**	53251-100
Client:	DPAI Architecture Inc	**Date:**	August 09, 2024
Client File No:	12303	**Addendum No.:**	01

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

This Addendum consists of two (2) page(s).

Item 1	**Brick Fence**
S2.0	1. Remove strip footing & foundation wall below brick fence. 2. Relocate fence support columns & center columns on piers. 3. Revise base plate type at columns along grid D, between 10 & 12 from BPL.7 to BPL.6 4. Extend 400DP. Footing at grid D-10 to be 500mm left of grid 12.
S3.1	1. Revise Section Detail 10/S3.1: remove foundation wall & footing, add HSS127x76x8.0 (LLV) + L76x76x6.4 at base of fence between columns, add 20mm Ø steel rod for brick reinforcement, remove note to retain special masonry designer. 2. Add brick fence Elevation Detail A/S3.1 3. Revise Section Detail 11/S3.1: revise detail to show HSS & angles framing into side of HSS column. Center steel column & base plate on concrete pier.
S4.0	1. Revise brick fence framing to note top and bottom horizontal HSS's.
S5.1	1. Revise Section Detail 6/S5.1 to add 20mm Ø steel rod for brick reinforcement, remove note to retain special masonry designer, and add reference to Detail A/S3.1
S6.0	1. Revise base plate BPL.6 from 250x20x250 to 305x20x250 & add note to galvanize or powder coat base plate. 2. Revise base plate BPL.7 from 305x20x250 to 305x20x305 & add note to galvanize or powder coat base plate.
Item 2	**Roof Anchor**
S4.0	1. Show general location of roof anchors. Add roof anchor location to legend. 2. Revise beam between grids 2 & 3 and D & E supporting roof anchor from C250x37 to W250x39
S4.1	1. Show general location of roof anchors. Add roof anchor location to legend.
S5.1	1. Add typical details for steel beams & OWSJ supporting roof anchors.
Item 3	**Pavers on Roof**
S4.0	1. Show hatched region on roof to show extent of roof pavers to be placed on the roof. 2. Add note on loads to show additional design load of roof pavers.
S4.1	1. Show hatched region on roof to show extent of roof pavers to be placed on the roof. 2. Add note on loads to show additional design load of roof pavers.
Item 4	**Hose Pulley in Tower**
S4.1	1. Revise beam along grid line 4 from C200x17 to W200x27 2. Add beam between W200x27 and W200x31 for hose pulley attachments

Item 5	**Typical Block Details**
S7.1	1. Rename sheet to *Schedules & Typical Details* 2. Add typical details for lateral support of block walls.
Item 6	**Strip Footings**
S2.0	1. Add SF4 to schedule: 700x200 reinforced w/ cont. 4-15M

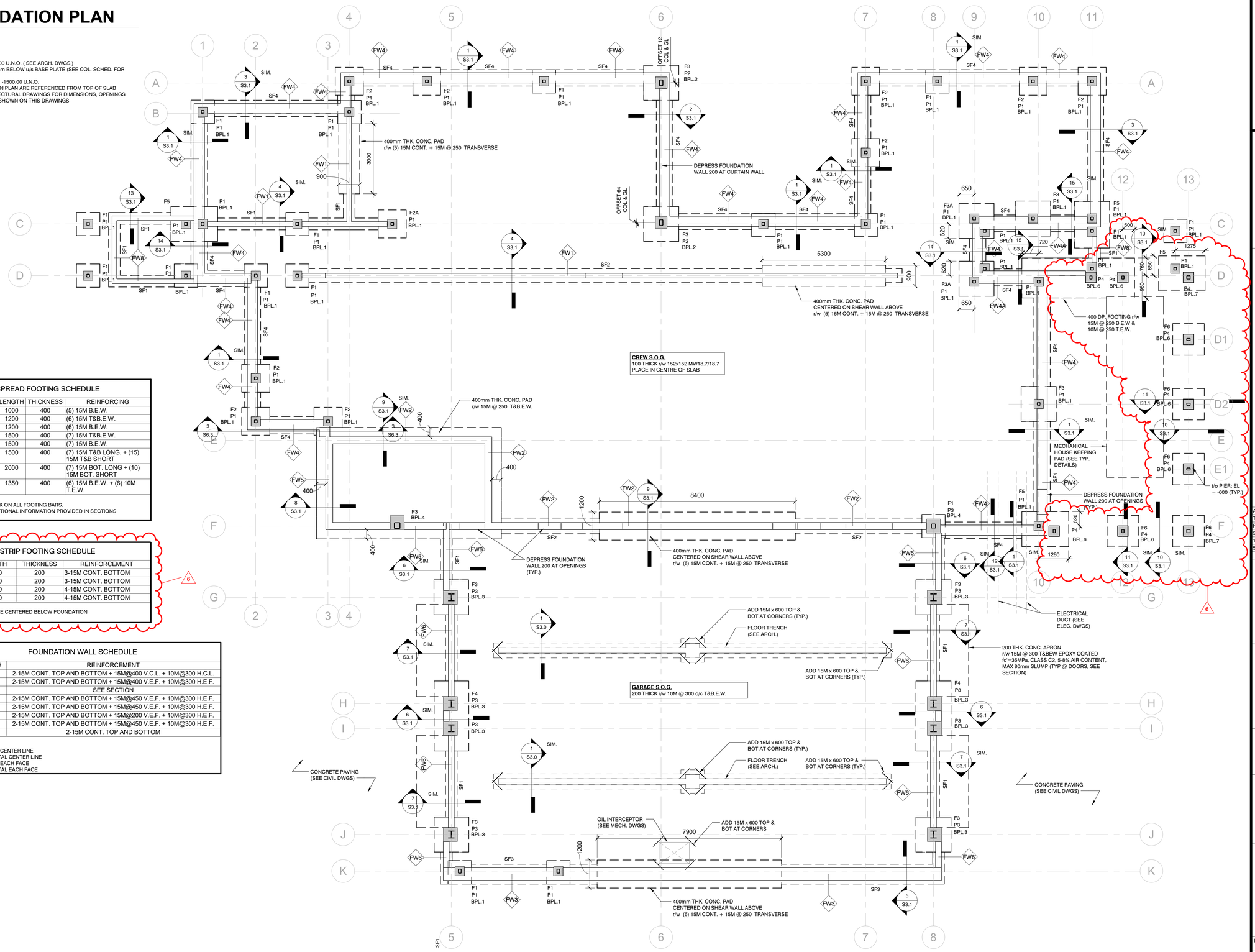
End of Addendum 01

S2.0
FOUNDATION PLAN
C:\Users\MBoeringa\Documents\Revit User Files\53251-100 Brampton Fire 215 v24_mboeringaWLUE8.rvt
MTE Computer Dwg No.

FOUNDATION PLAN

1 : 75

NOTES:
1. T/O SLAB EL. = 0.000 U.N.O. (SEE ARCH. DWGS.)
2. T/O PIER EL. = 50mm BELOW u/s BASE PLATE (SEE COL. SCHED. FOR BPL. ELEVS.)
3. T/O FOOTING EL. = -1500.00 U.N.O.
4. ALL ELEVATIONS ON PLAN ARE REFERENCED FROM TOP OF SLAB
5. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWINGS



SPREAD FOOTING SCHEDULE

TYPE	WIDTH	LENGTH	THICKNESS	REINFORCING
F1	1000	1000	400	(5) 15M B.E.W.
F2	1200	1200	400	(6) 15M T&B.E.W.
F2A	1200	1200	400	(6) 15M B.E.W.
F3	1500	1500	400	(7) 15M T&B.E.W.
F3A	1500	1500	400	(7) 15M B.E.W.
F4	3000	1500	400	(7) 15M T&B LONG. + (15) 15M T&B SHORT
F5	1500	2000	400	(7) 15M BOT. LONG + (10) 15M BOT. SHORT
F6	1350	1350	400	(6) 15M B.E.W. + (6) 10M T.E.W.

NOTES:
1. PROVIDE 1" HOOK ON ALL FOOTING BARS.
2. * DENOTES ADDITIONAL INFORMATION PROVIDED IN SECTIONS

STRIP FOOTING SCHEDULE

TYPE	WIDTH	THICKNESS	REINFORCEMENT
SF1	500	200	3-15M CONT. BOTTOM
SF2	600	200	3-15M CONT. BOTTOM
SF3	850	200	4-15M CONT. BOTTOM
SF4	700	200	4-15M CONT. BOTTOM

NOTE:
STRIP FOOTINGS ARE CENTERED BELOW FOUNDATION WALLS (U.N.O.)

FOUNDATION WALL SCHEDULE

TYPE	WIDTH	REINFORCEMENT
FW1	200	2-15M CONT. TOP AND BOTTOM + 15M@400 V.C.L. + 10M@300 H.C.L.
FW2	300	2-15M CONT. TOP AND BOTTOM + 15M@400 V.E.F. + 10M@300 H.E.F.
FW3	545	SEE SECTION
FW4	440	2-15M CONT. TOP AND BOTTOM + 15M@450 V.E.F. + 10M@300 H.E.F.
FW4A	540	2-15M CONT. TOP AND BOTTOM + 15M@450 V.E.F. + 10M@300 H.E.F.
FW5	300	2-15M CONT. TOP AND BOTTOM + 15M@200 V.E.F. + 10M@300 H.E.F.
FW6	250	2-15M CONT. TOP AND BOTTOM + 15M@450 V.E.F. + 10M@300 H.E.F.
FW8	200	2-15M CONT. TOP AND BOTTOM

LEGEND:
V.C.L.... VERTICAL CENTER LINE
H.C.L.... HORIZONTAL CENTER LINE
V.E.F..... VERTICAL EACH FACE
H.E.F..... HORIZONTAL EACH FACE

8/9/2024 8:56:28 AM JDG

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CLIENT

DPAI ARCHITECTURE INC

PROJECT

BRAMPTON FIRE STATION 215

GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING

FOUNDATION PLAN

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S2.0
Scale:	AS NOTED		

S3.1
FOUNDATION SECTIONS
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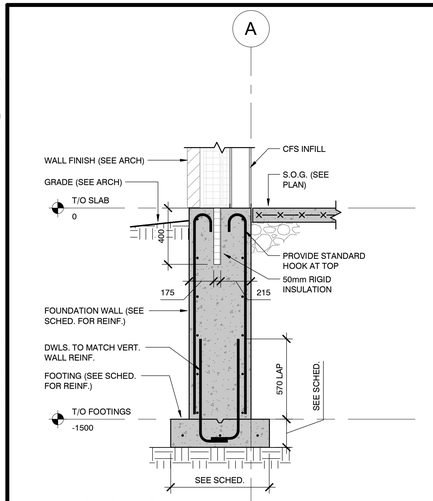
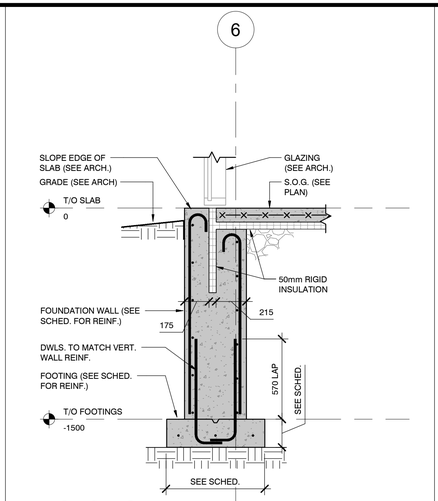
MTE Computer Dwg No.



1 S3.1 **SECTION DETAIL**
1 : 20



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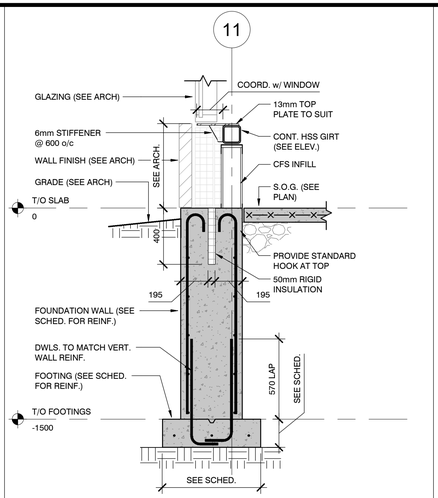

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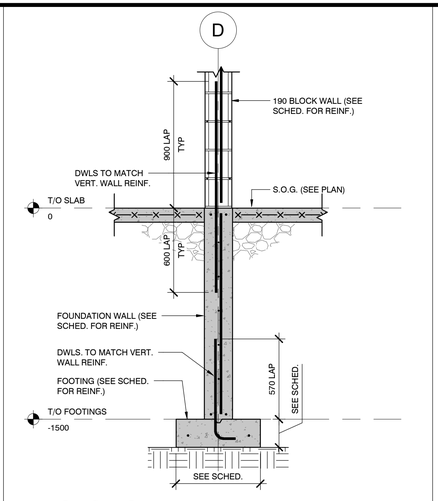

4 S3.1 **SECTION DETAIL**
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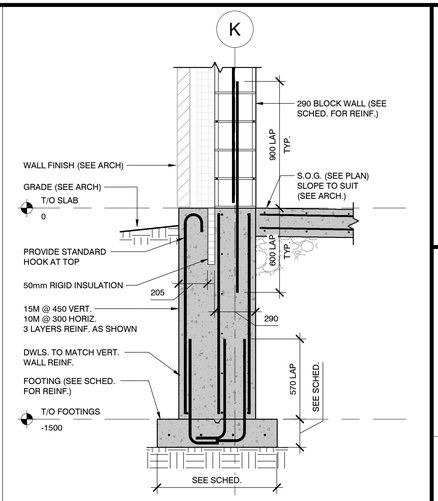

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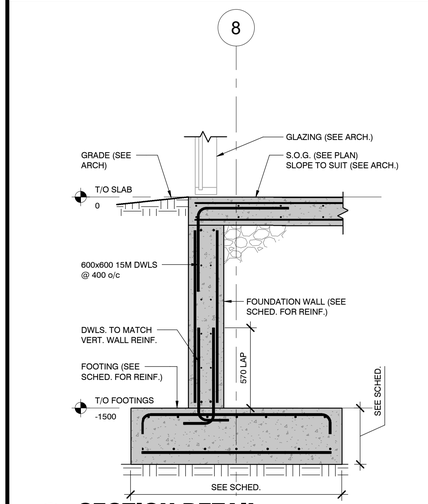

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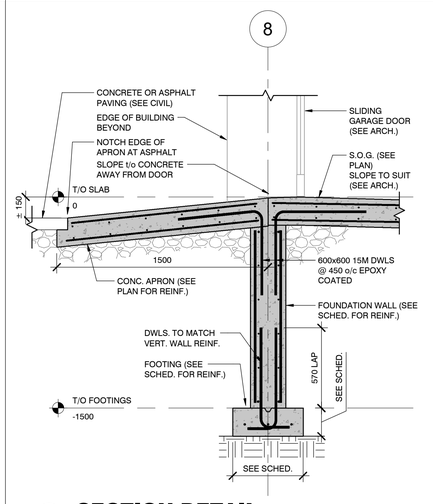

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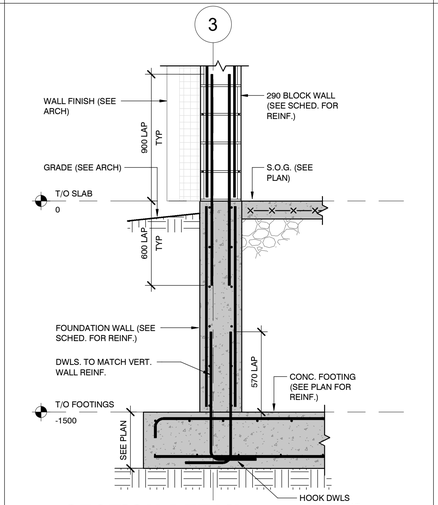

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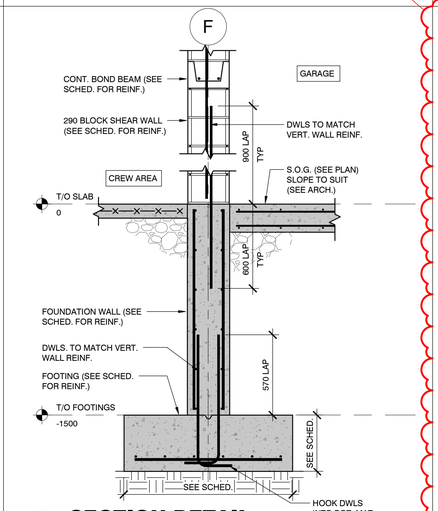

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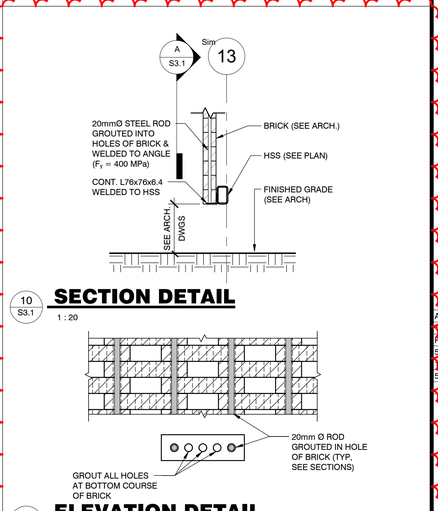
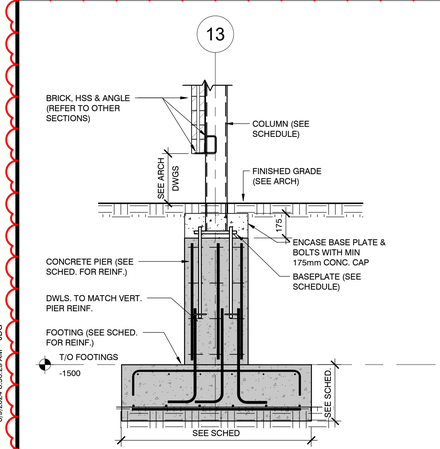


10 S3.1 **SECTION DETAIL**
1 : 20

A S3.1 **ELEVATION DETAIL**
1 : 10



11 S3.1 **SECTION DETAIL**
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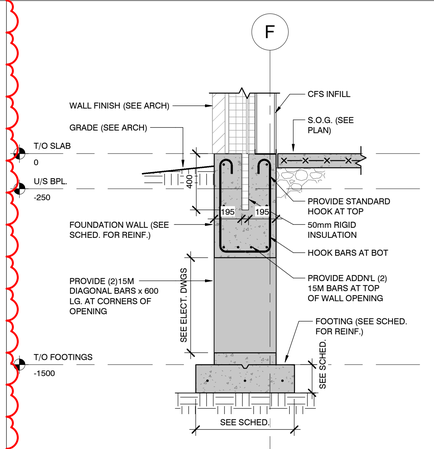

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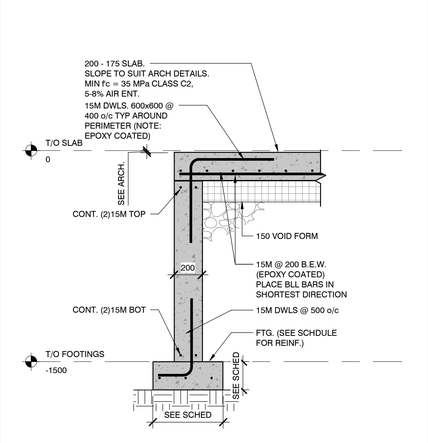

13 S3.1 **SECTION DETAIL**
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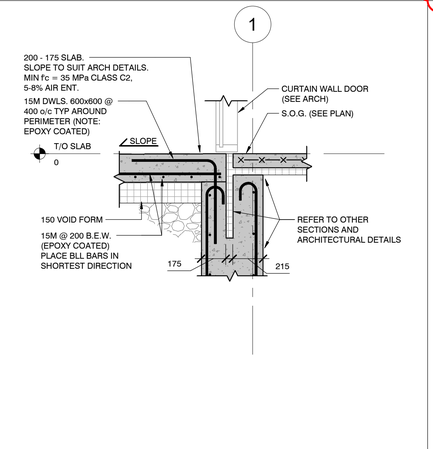

14 S3.1 **SECTION DETAIL**
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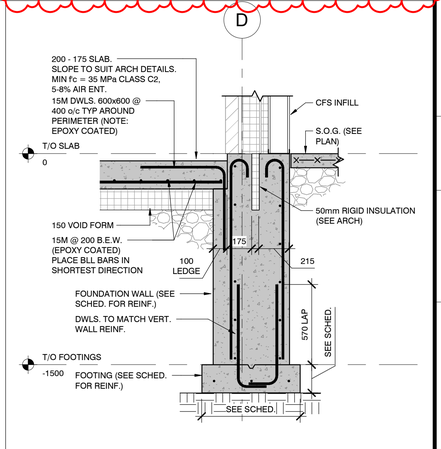

15 S3.1 **SECTION DETAIL**
1 : 20

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CLIENT
DPAI ARCHITECTURE INC

PROJECT
BRAMPTON FIRE STATION 215
GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING
FOUNDATION SECTIONS

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S3.1
Scale:	AS NOTED		

8/9/2024 8:56:39 AM JDG

S4.0

LOW ROOF, HIGH ROOF & CANOPY FRAMING PLANS
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MTE Computer Dwg No.

HIGH AND LOW ROOF FRAMING PLAN

1 : 75

NOTES:

1. u/s HIGH ROOF DECK EL. = ± 4200.00 U.N.O. (SEE ARCH. DWGS.)
2. BEAM DROPS ARE REFERENCED FROM HIGH ROOF
3. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWING.
4. REFER TO ELEVATION DETAILS FOR GIRTS AND BRACING NOT SHOWN ON PLAN
5. REFER TO MECHANICAL DRAWINGS FOR ROOF TOP UNIT WEIGHTS AND LOCATIONS.
6. JOIST BRIDGING SHOWN FOR ILLUSTRATION ONLY. NUMBER OF BRIDGING LINES & LOCATIONS TO BE DETERMINED BY JOIST SUPPLIER.

LOADS:

- SUPERIMPOSED ROOF DECK DEAD LOAD = 2.25 kPa (INCLUDES A GREEN ROOF ALLOWANCE OF 1.20 kPa)

DENOTES CONCRETE ROOF PAVERS. DESIGN FOR ADDITIONAL LOAD OF 1.2 kPa IN AREA NOTED

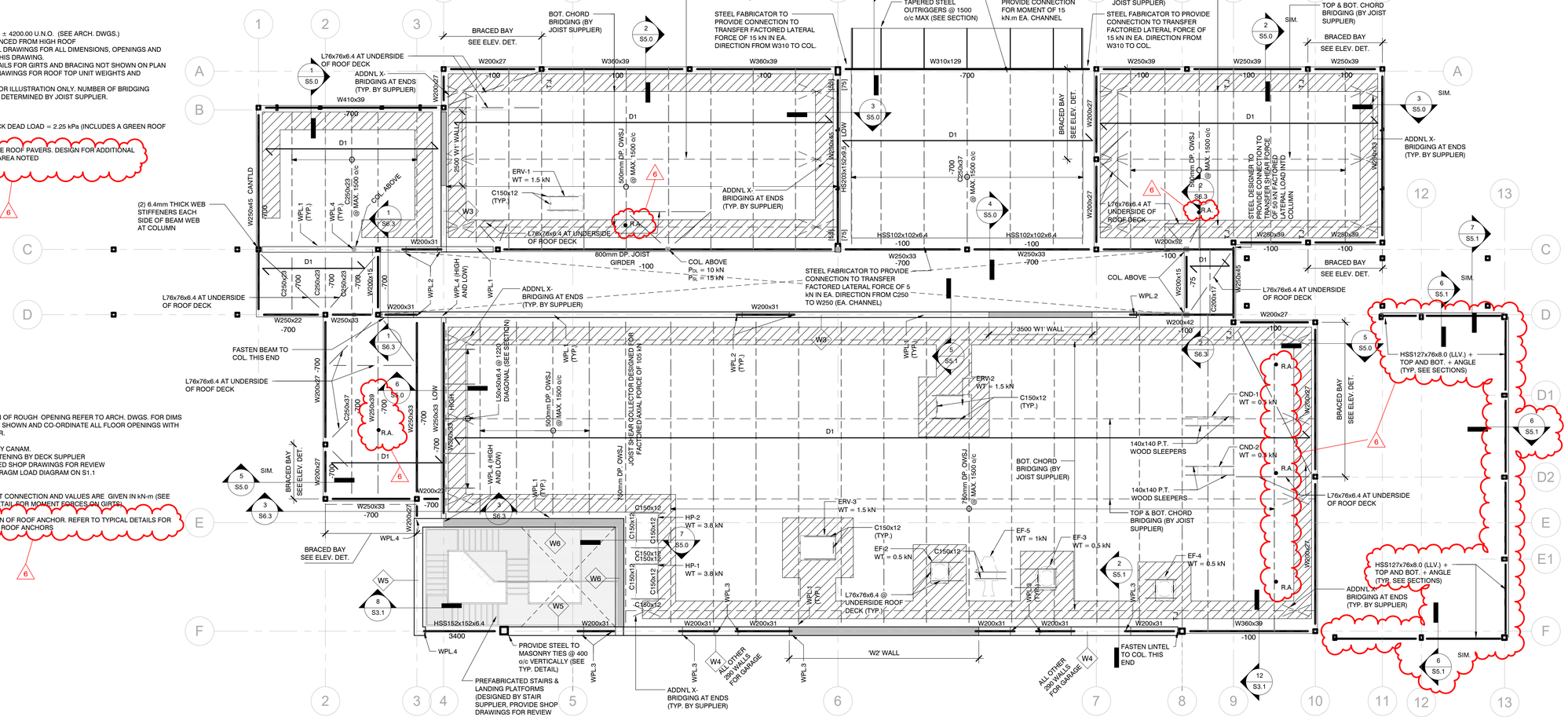
LEGEND:

DENOTES LOCATION OF ROUGH OPENING REFER TO ARCH. DWGS. FOR DIMS AND OPENINGS NOT SHOWN AND CO-ORDINATE ALL FLOOR OPENINGS WITH MECH. CONTRACTOR.

D1..... 38mm ROOF DECK BY CANAM.
- GAUGE AND FASTENING BY DECK SUPPLIER
- PROVIDE STAMPED SHOP DRAWINGS FOR REVIEW
- REFER TO DIAPHRAGM LOAD DIAGRAM ON S1.1

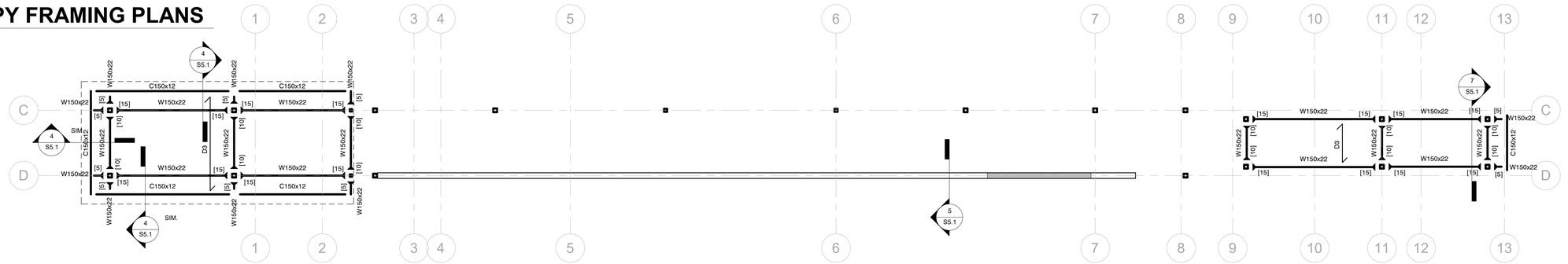
▶ [##]... INDICATES MOMENT CONNECTION AND VALUES ARE GIVEN IN kN-m (SEE ALSO ELEVATION DETAIL FOR MOMENT FORCES ON GIRTS)

● R.A.... INDICATES LOCATION OF ROOF ANCHOR. REFER TO TYPICAL DETAILS FOR STEEL SUPPORTING ROOF ANCHORS



CANOPY FRAMING PLANS

1 : 75



LEGEND:

DENOTES LOCATION OF ROUGH OPENING REFER TO ARCH. DWGS. FOR DIMS AND OPENINGS NOT SHOWN AND CO-ORDINATE ALL FLOOR OPENINGS WITH MECH. CONTRACTOR.

D3..... 38mm x 1.21mm P-3606 ROOF DECK BY CANAM
- 914/4 SUPPORT PATTERN w/ 19mm PUDDLE WELDS & SIDE LAP BUTTON PUNCH @ 300 o/c
- FASTEN PERIMETER w/ 19mm PUDDLE WELDS @ 300 o/c

▶ [##]... INDICATES MOMENT CONNECTION AND VALUES ARE GIVEN IN kN-m (SEE ALSO ELEVATION DETAIL FOR MOMENT FORCES ON GIRTS)

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PROJECT

BRAMPTON FIRE STATION 215

GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING

LOW ROOF, HIGH ROOF & CANOPY FRAMING PLANS

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S4.0
Scale:	AS NOTED		

S4.1

BAY ROOF & TOWER ROOF FRAMING PLANS
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MTE Computer Dwg No.

BAY AND CELERESTORY ROOF FRAMING PLAN

1 : 75

NOTES:

1. u/s BAY ROOF DECK EL. = ± 7100.00 U.N.O. (SEE ARCH. DWGS.)
2. u/s CELERESTORY ROOF DECK E. = ± 5600.00 U.N.O. (SEE ARCH. DWGS.)
3. STEEL ELEVATIONS ON PLAN ARE REFERENCED FROM u/s BAY ROOF
4. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWING.
5. REFER TO ELEVATION DETAILS FOR GIRTS AND BRACING NOT SHOWN ON PLAN
6. REFER TO MECHANICAL DRAWINGS FOR ROOF TOP UNIT WEIGHTS AND LOCATIONS.
7. JOIST BRIDGING SHOWN FOR ILLUSTRATION ONLY. NUMBER OF BRIDGING LINES & LOCATIONS TO BE DETERMINED BY JOIST SUPPLIER.

LOADS:

- SUPERIMPOSED ROOF DECK DEAD LOAD AT GARAGE = 1.66 kPa (INCLUCING SOLAR PV. ALLOWANCE OF 0.5 kPa)
- SUPERIMPOSED ROOF DECK DEAD LOAD AT CELESTORY = 1.16 kPa

DENOTES CONCRETE ROOF PAVERS. DESIGN FOR ADDITIONAL LOAD OF 1.2 kPa IN AREA NOTED (CAN OMIT THE SOLAR PV ALLOWANCE IN THESE AREAS) 6

EDGE OF LOW ROOF FRAMING BELOW (SEE CORRESPONDING PLAN)

EDGE OF HIGH ROOF FRAMING BELOW (SEE CORRESPONDING PLAN)

BRACED BAY (SEE ELEV. DET.)

W150x30 -1500

C100x7 @ MAX 1500 o/c

D2

EDGE CANOPY ROOF FRAMING BELOW (SEE CORRESPONDING PLAN)

LEGEND:

DENOTES LOCATION OF ROUGH OPENING REFER TO ARCH. DWGS. FOR DIMS AND OPENINGS NOT SHOWN AND CO-ORDINATE ALL FLOOR OPENINGS WITH MECH. CONTRACTOR.

D2..... 51mm REVEAL SERIES RS2.0 ROOF DECK BY CANAM.
- GAUGE AND FASTENING BY DECK SUPPLIER
- PROVIDE SAMPED SHOP DRAWINGS FOR REVIEW
- REFER TO DIAPHRAGM LOAD DIAGRAM ON S1.1

[##]... INDICATES MOMENT CONNECTION AND VALUES ARE GIVEN IN kN-m (SEE ALSO ELEVATION DETAIL FOR MOMENT FORCES ON GIRTS)

R.A.... INDICATES LOCATION OF ROOF ANCHOR. REFER TO TYPICAL DETAILS FOR STEEL SUPPORTING ROOF ANCHORS 6

HANGER FOR TOP STAIR LANDING (AS REQ'D BY MISC. METALS/STAIR DESIGNER)

(3)L102x89x7.9 (LLV)

HSS152x152x6.4

8200

WPL.4

PREFABRICATED STAIRS & LANDING PLATFORMS (DESIGNED BY STAIR SUPPLIER, PROVIDE SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION) STAIRS TO BE DESIGNED TO SUPPORT WEIGHT OF HOSES

PROVIDE STEEL TO MASONRY TIES @ 400 o/c VERTICALLY (SEE TYP. DETAIL)

EDGE OF HIGH ROOF FRAMING BELOW (SEE CORRESPONDING PLAN)

ALL OTHER 290 WALLS FOR GARAGE

'W2' WALL

(3)L127x89x7.9(LLV) ABOVE MECH. OPNG

(3)L102x89x7.9(LLV) ABOVE MECH. OPNG

BOT. CHORD BRIDGING (BY JOIST SUPPLIER)

ADDNL X-BRIDGING AT ENDS (TYP. BY SUPPLIER)

TOP & BOT. CHORD BRIDGING (BY JOIST SUPPLIER)

L76x76x6.4 AT u/s ROOF DECK. WELD TO TOP CHORD OF OWSJ. (TYP.)

L76x76x6.4 FOR FAN MOUNTING

1200mm DP. OWSJ @ MAX. 1800 o/c

FAN WT = 1.5 kN MOUNT TO JOIST BOT. CHORD AS PER MANUF. SPEC.

W410x100 + CONT. PL. BELOW

5900 'W2' WALL

EDGE OF HIGH ROOF FRAMING BELOW (SEE CORRESPONDING PLAN)

ADDNL X-BRIDGING AT ENDS (TYP. BY SUPPLIER)

PULLY MOUNTED TO UNDERSIDE OF BEAM. MAX LIFTED WEIGHT: 2.5 kN (500 lbs)

HANGER FOR TOP STAIR LANDING (AS REQ'D BY MISC. METALS/STAIR DESIGNER)

WPL.4 (TYP.)

WPL.3

W200x27

W200x31

C150x12

C200x17

TOWER ROOF FRAMING PLAN

1 : 75

NOTES:

1. u/s BAY TOWER DECK EL. = ± 12500.00 (U.N.O.) (SEE ARCH. DWGS.)
2. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWING.
3. REFER TO ELEVATION DETAILS FOR GIRTS AND BRACING NOT SHOWN ON PLAN
4. REFER TO MECHANICAL DRAWINGS FOR ROOF TOP UNIT WEIGHTS AND LOCATIONS.

LEGEND:

D2..... 51mm REVEAL SERIES RS2.0 ROOF DECK BY CANAM.
- GAUGE AND FASTENING BY DECK SUPPLIER
- PROVIDE SAMPED SHOP DRAWINGS FOR REVIEW
- REFER TO DIAPHRAGM LOAD DIAGRAM ON S1.1

R.A..... INDICATES LOCATION OF ROOF ANCHOR. REFER TO TYPICAL DETAILS FOR STEEL SUPPORTING ROOF ANCHORS 6

LOADS:

- SUPERIMPOSED ROOF DECK DEAD LOAD = 1.16 kPa

FULLY GROUTED 290 O-BLOCK r/w (1) 20M VERT.

290 BLOCK WALL (SEE PLAN AND SCHED.)

STEEL COL. (SEE SCHED.)

1 S4.1 **PLAN DETAIL**

1 : 10

8/9/2024 8:50:31 AM JDG

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50% DESIGN DEVELOPMENT	1	SEP. 18, 2023

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CLIENT

DPAI ARCHITECTURE INC

PROJECT

BRAMPTON FIRE STATION 215

GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING

BAY ROOF & TOWER ROOF FRAMING PLANS

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S4.1
Scale:	AS NOTED		

S5.1
FRAMING DETAILS
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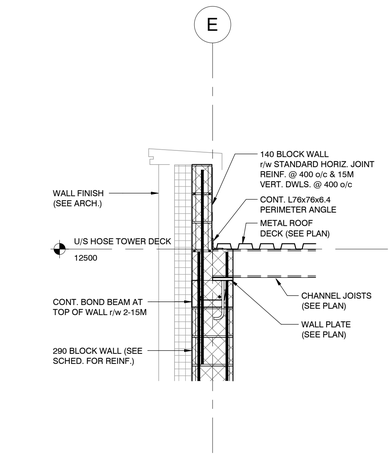
MTE Computer Dwg No.



1 S5.1 **SECTION DETAIL**
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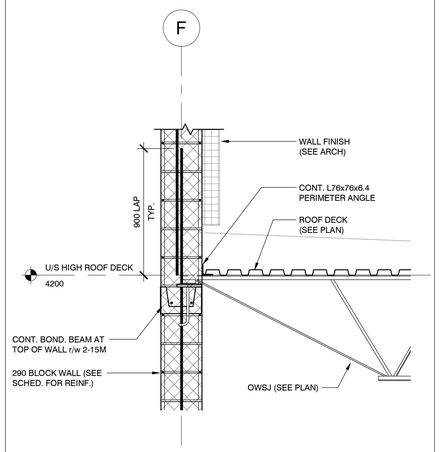

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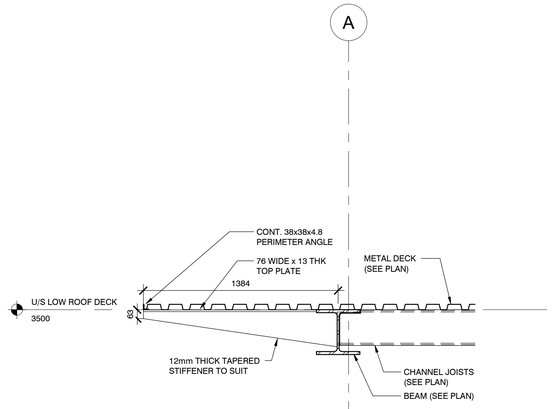

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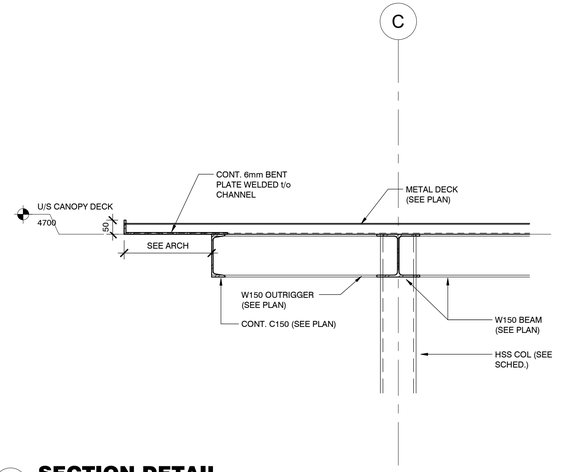

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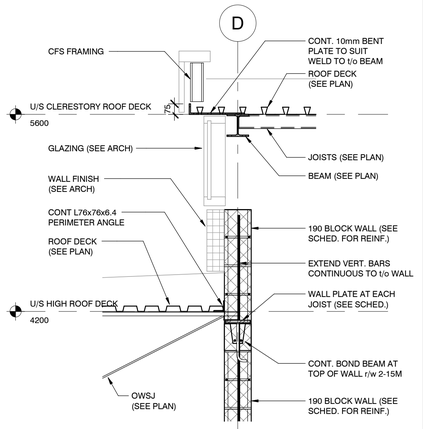

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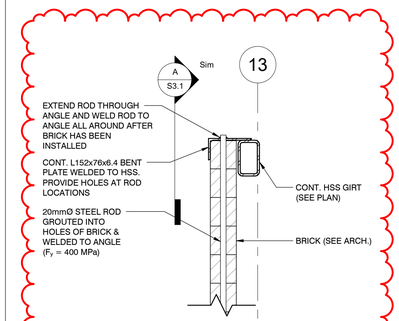

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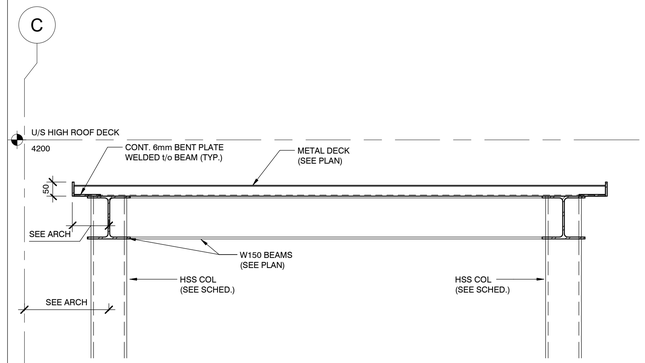

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7 S5.1 **SECTION DETAIL**
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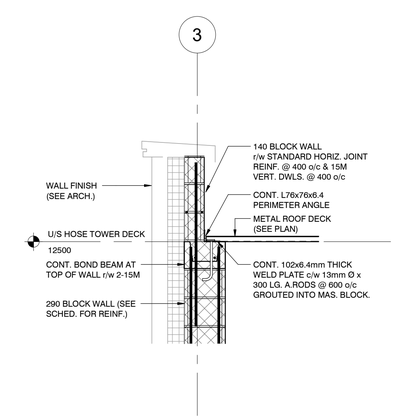
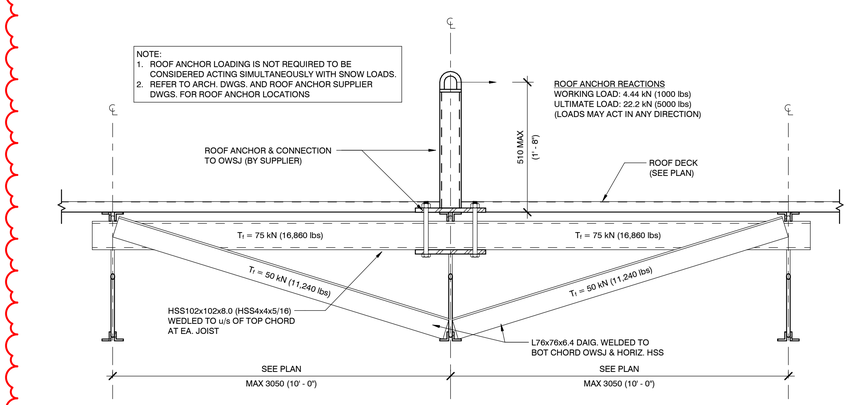
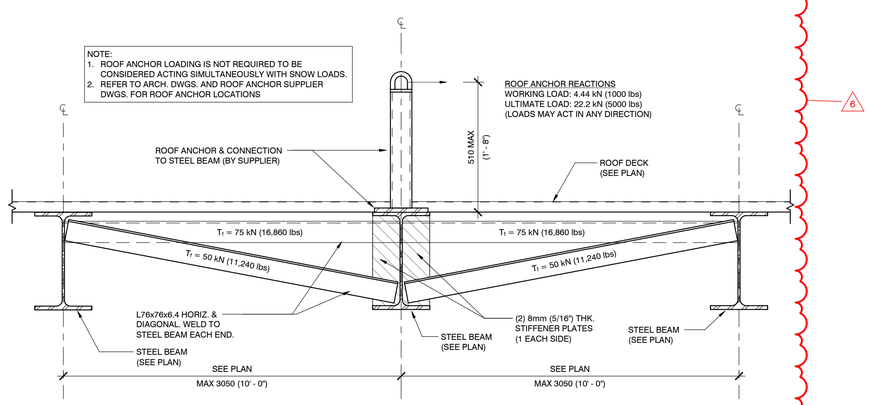


8 S5.1 **SECTION DETAIL**
1 : 20



TYPICAL - ROOF ANCHOR AT OWSJ
NTS



5

TYPICAL - ROOF ANCHOR AT STEEL BEAM
NTS

8/9/2024 8:56:31 AM JDG

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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TENDER	5	JUN. 26, 2024
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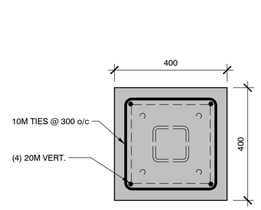
PROJECT
BRAMPTON FIRE STATION
215
GOREWAY DRIVE, BRAMPTON ONTARIO

DRAWING
FRAMING DETAILS

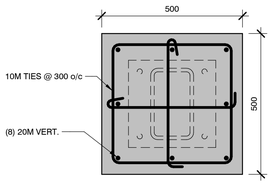
Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S5.1
Scale:	AS NOTED		

STEEL COLUMN SCHEDULE

	A(75)-4	A(75)-5(3970)	A(75)-5(-1059)	A-6	A(75)-7	A(-2984)-7	A(75)-8(165)	A(75)-10(-248)	A(75)-11	B(75)-1	B(75)-4	C-1	C-1(-718)	C-1(-4914)	C-2(969)	C-3(-1318)	C-4(1839)	C-5(3227)	C-6	C-6(4384)	C-7	C-8(146)	C(233)-9	C(-300)-9(451)	C(233)-10(-245)	C(233)-11	C(-300)-11	C(-300)-13(-572)	D-1(-718)	D-1(-4914)	D-2	D-2(969)	
U/S CLERESTORY ROOF DECK																																	U/S CLERESTORY ROOF DECK
5600 U/S CANOPY DECK																																	5600 U/S CANOPY DECK
4700 U/S HIGH ROOF DECK		4100	4100				4100	4100										HSS102x102x4.8	HSS102x102x4.8			HSS127x127x4.8		4000	4100		4000	4000			HSS76x76x4.8		4700 U/S HIGH ROOF DECK
4200 U/S LOW ROOF DECK												TO SUIT CANT. BEAM																					4200 U/S LOW ROOF DECK
3500 T/O SLAB	HSS127x127x9.5	HSS127x127x6.4	HSS127x127x9.5	HSS254x152x13	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x6.4	HSS127x127x9.5	HSS127x127x9.5	HSS76x76x4.8	HSS127x127x9.5	HSS127x127x13		HSS254x152x13	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x9.5	HSS127x127x6.4		3500 T/O SLAB
0 U/S BPL.																																	0 U/S BPL.
-250																																	-250
Column Locations	A(75)-4	A(75)-5(3970)	A(75)-5(-1059)	A-6	A(75)-7	A(-2984)-7	A(75)-8(165)	A(75)-10(-248)	A(75)-11	B(75)-1	B(75)-4	C-1	C-1(-718)	C-1(-4914)	C-2(969)	C-3(-1318)	C-4(1839)	C-5(3227)	C-6	C-6(4384)	C-7	C-8(146)	C(233)-9	C(-300)-9(451)	C(233)-10(-245)	C(233)-11	C(-300)-11	C(-300)-13(-572)	D-1(-718)	D-1(-4914)	D-2	D-2(969)	



PIER 1 (P1) PLAN
(N.T.S.)



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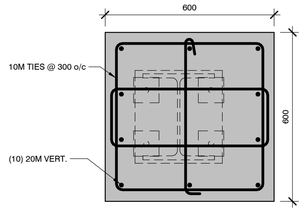

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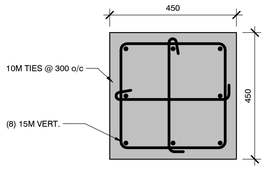

PIER 4 (P4)PLAN
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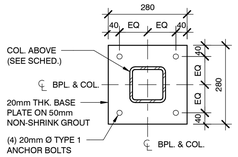

BASE PLATE 1 (BPL.1) PLAN
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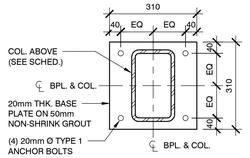

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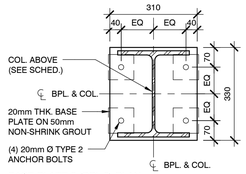
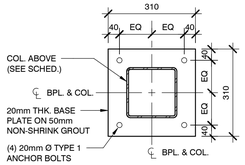
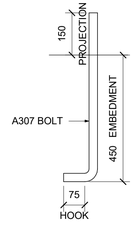


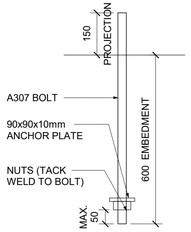
BASE PLATE 3 (BPL.3) PLAN
(N.T.S.)



BASE PLATE 4 (BPL.4) PLAN
(N.T.S.)



TYPE 1 ANCHOR BOLT (N.T.S.)



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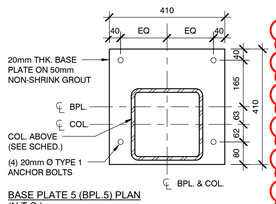
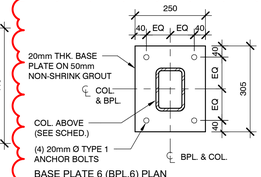
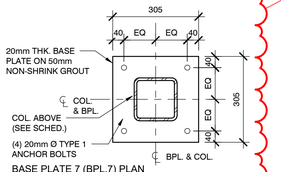


BASE PLATE 5 (BPL.5) PLAN
(N.T.S.)



BASE PLATE 6 (BPL.6) PLAN
(N.T.S.)

NOTE: HOT-DIP GALV. OR POWDER COAT



BASE PLATE 7 (BPL.7) PLAN
(N.T.S.)

NOTE: HOT-DIP GALV. OR POWDER COAT

6

COLUMN NOTES:

1. VERIFY ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS
2. 6.4mm LEVELLING PLATES ARE PERMITTED IF FABRICATOR CHOOSES SO.
3. ALL BASE PLATES TO BEAR ON 50mm NON-SHRINK GROUT U.N.O.
4. ELEVATIONS PROVIDED ARE TO TOP OF CAP PLATE AND UNDERSIDE OF BASE PLATE.
5. VERIFY COLUMN LOCATIONS AND OFFSETS BETWEEEN COLUMNS AND PIERS WITH ARCH. DRAWINGS.

SHADED COLUMNS:

- SHADED COLUMN INDICATE EXPOSED EXTERIOR STEEL COLUMN
- COLUMN AND BASEPLATE TO BE PAINTED AS PER CISC/CPMA 2-75 OVER BRUSH OFF BLAST CLEANING, ONE FIELD COAT ENAMEL
- ALTERNATIVELY, COLUMN AND BASEPLATE TO BE HOT-DIP GALVANIZED

NOTE TO CONTRACTOR:

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CLIENT

DPAI ARCHITECTURE INC

PROJECT

BRAMPTON FIRE STATION 215

GOREWAY DRIVE, BRAMPTON ONTARIO

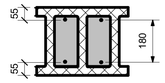
DRAWING

STEEL COLUMN SCHEDULE & PIER/BASE PLATE DETAILS

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S6.0
Scale:	AS NOTED		

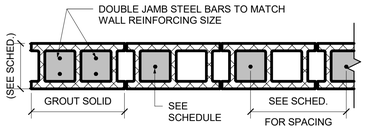
8/9/2024 8:55:32 AM Author

CONCRETE BLOCK WALL SCHEDULE

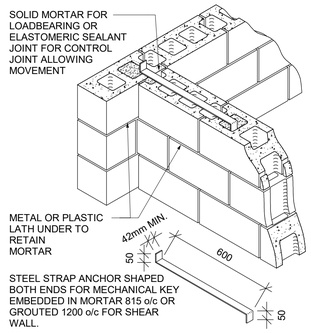
MARK / LEVEL	W1	W2	W3	W4	W5	W6
FULL HEIGHT U.N.O.	- 190 CONCRETE BLOCK - **(FULLY GROUTED)** - BLOCK COMP. STRENGTH = **15 MPa** - 15M @ 800 VERT. - **BOND BEAM @ 1200 o/c r/w (1) 20M CONT.** - 3.66mmØ JOINT REINF. @ 400 o/c	- 290 CONCRETE BLOCK - **(FULLY GROUTED)** - BLOCK COMP. STRENGTH = **15 MPa** - 15M @ 800 VERT. - **BOND BEAM @ 1200 o/c r/w (1) 20M CONT.** - 3.66mmØ JOINT REINF. @ 400 o/c	- 190 CONCRETE BLOCK - BLOCK COMP. STRENGTH = **15 MPa** - 15M @ 800 VERT. - 3.66mmØ JOINT REINF. @ 400 o/c	- 290 CONCRETE BLOCK - BLOCK COMP. STRENGTH = **20 MPa** - 15M @ 800 VERT. - 3.66mmØ JOINT REINF. @ 400 o/c	- 290 CONCRETE BLOCK - BLOCK COMP. STRENGTH = **20 MPa** - (2) 15M @ 200 VERT. - 3.66mmØ JOINT REINF. @ 400 o/c 	GROUND TO CREW ROOF: - 290 CONCRETE BLOCK **- (FULLY GROUTED)** - BLOCK COMP. STRENGTH = **20 MPa** - 15M @ 400 VERT. **- BOND BEAM @ 1200 o/c REINF. w/ (1) 15M CONT.** - 3.66mmØ JOINT REINF. @ 400 o/c CREW ROOF TO TOWER ROOF: - 290 CONCRETE BLOCK **- (FULLY GROUTED)** - BLOCK COMP. STRENGTH = **20 MPa** - 15M @ 400 VERT. - 3.66mmØ JOINT REINF. @ 400 o/c

NOTES:

1. ALL MASONRY CORES WITH REINFORCEMENT TO BE FULLY GROUTED.
2. ALL WALLS NOTED FULLY GROUTED ARE TO BE 100% FILLED WITH GROUT.
3. CO-ORDINATE ALL WALL OPENINGS WITH ARCHITECTURAL DRAWINGS AND MECHANICAL CONTRACTOR.
4. PROVIDE ADDITIONAL BAR/ MATCHING WALL REINFORCING SIZE. FULL HEIGHT @ ALL WALL ENDS. INTERSECTIONS AND OPENINGS UNLESS OTHERWISE NOTED ON DRAWINGS.
5. PROVIDE STANDARD TENSION SPLICES FOR ALL HORIZONTAL AND VERTICAL WALL REINFORCEMENT.
6. ALL BARS CONNECTING BETWEEN FLOORS TO BE TIED TOGETHER (REFER TO SECTION DETAILS).
7. SOLID FILLED VOIDS TO BE MADE WITH 20MPa FLOWABLE GROUT (MORTAR FILL NOT PERMITTED).
8. PROVIDE DOWELS FROM THE FOOTING TO WALLS ABOVE TO MATCH VERTICAL WALL REINFORCEMENT.

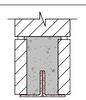
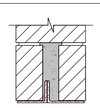
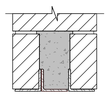


TYPICAL WALL SINGLE LAYER REINFORCING DIAGRAM



TYPICAL SECTION DETAIL
AT INTERSECTING BLOCK WALLS (N.T.S.)

NON-LOAD BEARING BLOCK LINTEL SCHED.

WIDTH	<1200	1500	2100	2400	3600	SECTION DETAIL
90	2 ⌞L 51x38x4.8 (L.L.V.)	2 ⌞L 64x51x4.8 (L.L.V.)	X	X	X	
140	2 ⌞L 64x64x6.4	2 ⌞L 64x64x6.4	2 ⌞L 89x64x6.4 (L.L.V.)	2 ⌞L 89x64x9.5 (L.L.V.)	X	
190	2 ⌞L 89x3x6.4 (L.L.H.)	2 ⌞L 89x3x6.4 (L.L.H.)	2 ⌞L 89x89x6.4	2 ⌞L 127x89x6.4 (L.L.V.)	2 ⌞L 127x89x7.9 (L.L.V.)	
240	L102x3x6.4 (L.L.H.) L127x3x6.4 (L.L.H.)	L102x3x6.4 (L.L.H.) L127x3x6.4 (L.L.H.)	L102x89x7.9 (L.L.H.) L127x89x7.9 (L.L.H.)	L152x102x7.9 (L.L.V.) L127x127x7.9	L152x102x7.9 (L.L.V.) L127x127x7.9	
290	3 ⌞LL 89x3x6.4 (L.L.H.)	3 ⌞LL 89x3x6.4 (L.L.H.)	3 ⌞LL 89x89x6.4	3 ⌞LL 127x89x6.4 (L.L.V.)	3 ⌞LL 127x89x7.9 (L.L.V.)	

NOTES:
1. STRUCTURAL STEEL SHALL BE G40.12
2. BEARING LENGTH = 150mm AT EACH END
3. CONNECT ANGLES @ 600 o/c BY WELDING or BOLTING FOR ANGLES WITH A TOTAL LENGTH OF 1800 or MORE.

REBAR LAP SPLICE SCHEDULE

BAR SIZE	SPLICE LENGTH	REMARKS
15M	600	-
20M	800	-
25M	1400	-

NOTES:
1. LAP BARS TO TIE TO FULL HEIGHT WALL BARS BELOW AND ABOVE FLOOR LEVELS.

MASONRY VENEER LINTEL SCHED.

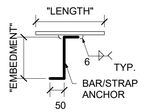
MAX. CLEAR SPAN	SIZE	REMARKS
2100	L89x76x6.4 (LLH)	
2700	L102x102x6.4	
3050	L127x89x7.9 (LLV)	
3350	L127x89x9.5 (LLV)	
3650	L152x102x9.5 (LLV)	
3950	L152x102x11.0 (LLV)	
4250	L178x102x11.0 (LLV)	
4550	L203x102x11.0 (LLV)	

NOTES:
1. LINTEL BEARING LENGTH TO BE MIN. 150mm
2. ALL STRUCTURAL STEEL MEMBERS TO BE HOT DIPPED GALVANIZED.
3. SEE ARCHITECTURAL DRAWINGS FOR SPANS.

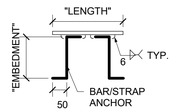
WALL PLATE SCHED.

TYPE	PLATE SIZE THK.xLG.xWD.	ANCHORAGE
WPL.1	16x175x280	(2) 13mm Ø ROD w/300 EMBEDMENT
WPL.2	16x250x175	(2) 12mm Ø ROD w/300 EMBEDMENT
WPL.3	16x230x280	(2) 12mm Ø ROD w/300 EMBEDMENT
WPL.4	16x175x175	(2) 12mm Ø ROD w/300 EMBEDMENT

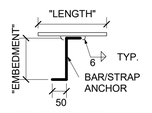
NOTES:
1. CONCRETE FILL SOLID (3) MASONRY COURSES MIN. BENEATH ALL BEARING PLATES.
2. PLATE DIMENSION NOTED AS "LENGTH" TO BE PARALLEL WITH BEAM WEB.
3. FIELD WELD BEAM TO BEARING PLATE w/ (2) 6mm x 38mm LG. FILLET WELDS (EACH SIDE)



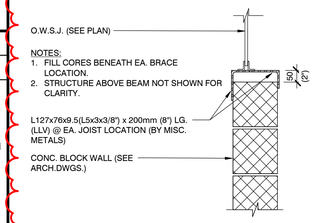
TYP. ELEVATION DETAIL
@ WALL PLATE (N.T.S.)



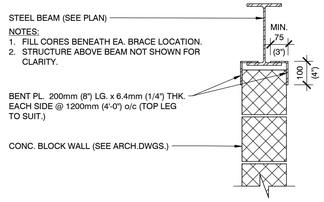
TYP. ELEVATION DETAIL
@ WALL PLATE (N.T.S.)



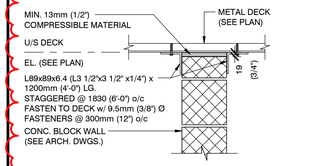
TYP. SECTION DETAIL
@ CONT. WELD PLATE (N.T.S.)



TYPICAL SECTION DETAIL
AT PARTITION WALL BRACING 1:12 (1" = 1'-0")

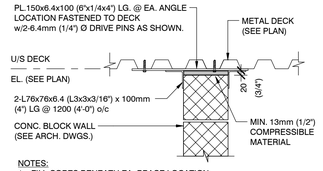


TYPICAL SECTION DETAIL
AT PARTITION WALL 1:12 (1" = 1'-0")



NOTES:
1. FILL CORES BENEATH EA. BRACE LOCATION.

TYPICAL SECTION DETAIL
AT PARTITION WALL BRACING 1:12 (1" = 1'-0")



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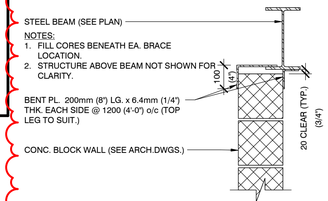
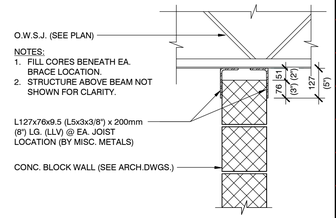
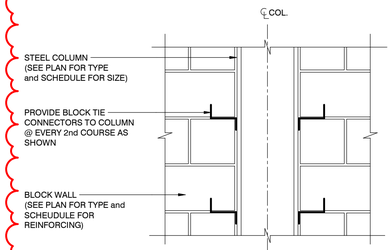


TYPICAL SECTION DETAIL
AT PARTITION WALL BRACING 1:12 (1" = 1'-0")



TYPICAL SECTION DETAIL
AT PARTITION WALL BRACING 1:12 (1" = 1'-0")



TYPICAL ELEVATION DETAIL
AT BLOCK TIE CONNECTION TO COLUMN 1:12 (1" = 1'-0")

6

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.

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 01	6	AUG. 09, 2024
TENDER	5	JUN. 26, 2024
PERMIT	4	MAY 10, 2024
90% CONTRACT DOCUMENTS	3	APR. 05, 2024
100% DESIGN DEVELOPMENT	2	JAN. 05, 2024
50% DESIGN DEVELOPMENT	1	SEP. 18, 2023

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
SCHEDULES & TYPICAL DETAILS

Project Manager:	MXC	Start Date:	AUGUST 2023
Design By:	MYB	Project No.:	53251-100
Drawn By:	JDG	Drawing No.:	S7.1
Scale:	AS NOTED		

8/9/2024 8:56:32 AM JDG