

BUILDING PERMIT

This card must be kept posted in a conspicuous place on site of construction.

24 134572 BLD 00 BA

This Building Permit has also been reviewed and approved under the provisions of the Ontario Heritage Act.

Site Address 400 COMMISSIONERS ST

Project Description Industrial;

Interior Alterations

Date Issued Monday July 15, 2024

Kamal Gogna, P. Eng.
Interim Chief Building
Official & Executive Director

Natasha Zappulla
Deputy Chief Building Official and
Director

THIS IS YOUR PERMIT TO CONSTRUCT
PERMIT NUMBER: 24 134572 BLD 00 BA

Owner:

CITY OF TORONTO

Address:

55 JOHN ST 13 FLOOR
TORONTO, ON M5V 3C6
CANADA

CITY OF TORONTO

C/O AHMAD MIAN
35 VANLEY CRES
TORONTO ON M3J 2B7

WORKS DEPARTMENT

METRO HALL STATION 1180
55 JOHN ST

Project Description: Industrial; Interior Alterations

Project Location: 400 COMMISSIONERS ST

Ward:

The issuance of this permit is based on the drawings, specifications, details and information submitted with the application. The submitted documents have been reviewed for compliance with the Ontario Building Code, Zoning By-laws, applicable regulations and legislation.

The referenced permit number listed above and on your permit placard also appears on all plans reviewed for this building permit application. The validity of this permit is restricted to the person/company named as owner. Permit ownership cannot be transferred unless prior written authorization is given by the Chief Building Official.

The extent of construction authorized under this permit is limited to the description contained herein as follows: Proposal to remove and replace the loading dock, overhead doors, lighting, electrical panels and fire protection system.

Stated work and use must be in accordance with the plans, specifications, building permit notes and other information issued with this building permit. Changes to any documents submitted are not to be made unless prior authorization is obtained from the Chief Building Official or designate. False information may be grounds for revocation of the building permit.

Notwithstanding, it is the responsibility of the owner to comply with requirements of the Ontario Building Code and applicable laws as well as to ensure compliance ..

The permit placard must be posted in a conspicuous place on the construction site.

Natasha Zappulla
Deputy Chief Building Official

Issued by: Toronto Building Issuance Te
Date Issued: July 15, 2024

Toronto and East York District

Please see the second page of this letter for additional requirements and inspection information.

WHEN YOU BEGIN DEMOLITION/CONSTRUCTION ...

Site Fencing

As soon as construction or demolition starts, your site must be entirely surrounded by a fence which is in compliance with the City of Toronto Municipal Code Chapter 363, Article III. The minimum requirement is plastic mesh fencing, 1.2 metres high, tied to posts spaced no more than 1.2 metres apart with an 11 gauge top and bottom wire threaded through the mesh and looped around each post. The Municipal Code is available on the City website at: http://www.toronto.ca/legdocs/municode/1184_363.pdf

Construction Noise

Any construction which generates noise is prohibited in residential areas between the hours of 7:00 p.m. one day to 7:00 a.m. the next day, 9:00 a.m. on Saturdays, and all day Sunday and Statutory holidays.

When To Call For Inspection

You are required by Division C, Part 1, Article 1.3.5.1. of the Ontario Building Code, to notify the building inspection office at several prescribed stages of construction. Please contact the building inspection office at the telephone number listed below, when each of the following stages are substantially complete:

Inspection Stages

- | | | |
|-----------------------------|-----------------------------|--------------------------------|
| * Structural Framing | * Insulation/Vapour Barrier | * Fire Separations |
| * Fire Protection Systems | * Fire Access Routes | * Interior Final Inspection |
| * Exterior Final Inspection | * Site Grading Inspection | * Pool Suction/Gravity Outlets |
| * Pool Circulation System | * Occupancy | |

To Schedule your Next Mandatory Inspection

When you are ready to book your inspection, you may request an inspection online from your computer or smart phone using Toronto Building's Inspection Request web application at www.toronto.ca/building-inspection-request.

Alternatively, you may contact your local building inspection office by telephone at 416-338-0700, by fax 416-696-4151 or by email to TOBldgInsp@toronto.ca.

Inspections will take place within two days commencing at the start of business on the day following your notification (Inspection Request).

Please leave a telephone number where you can be reached or a message can be left.

The inspector assigned to your project is Jackson Kwok (416) 338-0866

PERMIT PLANS MUST BE ON SITE

Your permit plans and specifications must be on site at all times. Inspections are conducted with your copy of the plans.

BULLETIN - CONSTRUCTION SAFETY

The responsibilities of the City of Toronto under the Occupational Health and Safety Act apply to all our employees regardless of the location at which they are working.

Responsibilities for the Construction Safety Regulations on construction sites are clearly spelled out in the Act under the definitions of constructor, employer, supervisor and worker.

The City of Toronto believes that the goal of safe and injury free construction sites is a priority for all parties involved in building construction.

Safety training for the City of Toronto Building Inspectors is mandatory. However the delivery of a safe working environment on construction sites must include the compliance of individual builders with the Occupational Health and Safety Act.

Safety measures include the following:

1. Temporary guards on all openings,
2. Correct use of ladders,
3. Temporary or permanent stairs above or below grade by the time the sub floor is complete,
4. Clear and safe access to the site,
5. Protection of trenches and excavation below four feet deep, and
6. Correct use of fall prevention equipment where required.

As the employer responsible for the safety of building inspectors, the City of Toronto has instructed its Building Inspectors not to conduct inspections on sites where conditions exist that could jeopardize their health and safety.

The following are examples of conditions which may jeopardize the health and safety of inspectors:

1. Guards are missing,
2. Ladders do not meet regulations,
3. Temporary or permanent stairs, above or below grade, to all floor levels are not provided as required.
4. Access to the site has impediments or hazards, or
5. Trenches or excavations lack required shoring or slope of bank.

Prior to calling for an inspection the appropriate safety measures shall be in place as a site inadequately provided with these measures is not ready for inspection. The City of Toronto Building Inspectors will cooperate with builders regarding the timing of making provision for these safety measures. However, if the measures are not provided, an Order Not To Cover could be issued and the Ministry of Labour informed.

We look forward to working with you toward the goal of a safe environment for all workers.

Notice of Project - Please be advised that the Ministry of Labour requires a Notice of Project be filed with them before starting any project costing \$50,000 or more.

For more information about the Notice of Project form and construction information please visit Ministry of Labour website at: <https://www.labour.gov.on.ca/english/hs/forms/>

Report an Incident

Notify the ministry of fatalities, critical injuries, work refusals, reprisals and unsafe work practices.

Ministry of Labour Health & Safety Contact Centre

Toll-free: 1-877-202-0008

TTY: 1-855-653-9260

Fax: 905-577-1316

Construction of the work approved in this building permit must be carried out with reasonable care to ensure protection for everyone on the construction site from the hazards associated with all overhead and underground power lines. Obtain further information at: <http://www.torontohydro.com/powerlinesafety>

Permit Advisory Notes

Building permits issued under subsection 8(2) of the Building Code Act, 1992 (the "BCA") have been reviewed for compliance with the BCA, the Ontario Building Code 2012, and "applicable law", as that term is defined in Sentence 1.4.1.3(1) of Division A of the Ontario Building Code. There may be other approvals that you require to carry out the construction and/or demolition authorized by the building permit. The following advisory notes flag for you some of the other approvals that are frequently required to proceed with construction and/or demolition like that authorized by the building permit. These advisory notes are not meant to provide you with an exhaustive list of other approvals that may be required, and you must therefore satisfy yourself that you have obtained all other applicable approvals prior to commencing the construction and/or demolition authorized by the building permit.

-  Permit issuance does not authorize encroachments onto adjacent property.

Building Permit 332_12

The reviewed plans and specifications must be available on site during construction/demolition. Changes to these plans and specifications are not to be made unless prior written approval is obtained from the Chief Building Official.

The owner/permit holder is required to comply with the following Permit Notes, which are part of the reviewed permit documents:

- ☐ Standards referenced in Section 1.3 of Division B shall be complied with Table 1.3.1.2.:
 - a) Wood - CAN/CSA- O86-09
 - b) Plain and Reinforced Masonry - CSA-S304.1
 - c) Plain, reinforced and Pre-stressed Concrete - CAN/CSA-23.3, CAN/CSA A23.1, CAN/CSA A23.2
 - d) Structural Steel - CAN/CSA-S16-09
 - e) Parking Structures - CSA-S413
- ☐ Emergency lights shall be provided along paths of egress as per 3.2.7. or 9.9.12.
Emergency lighting shall always be maintained to an average level of illumination of at least 10 lx at floor level.
- ☐ Excavations that exceed 1.2 m are required to be shored or cut back at the top so that the angle of the cut does not exceed 1:1. If shoring is to be provided submit drawings with design parameters clearly stated for approval under separate permit application. A soil report and/or calculations may be requested.
- ☐ Existing foundation shall be verified by designer/qualified person that the existing foundation is adequate to support the loads imposed by the new construction.
- ☐ Exit signs shall consist of a green pictogram and white graphic symbol meeting the visibility specifications referred to in ISO 3864-1 and conform to the dimensions indicated in ISO 7010 for the following symbols:
 - (i) E001 emergency exit left;
 - (ii) E002 emergency exit right;
 - (iii) E005 90-degree directional arrow; and
 - (iv) E006 45-degree directional arrow.
- ☐ The City has Relied upon the plans and drawings prepared and submitted by the qualified architects and/or engineers on this project.

The issuance of a permit does not imply a complete design review of this project has been performed and does not relieve the owner and designers from the need to comply with the Ontario Building Code and referenced standards where contravention are subsequently noted.

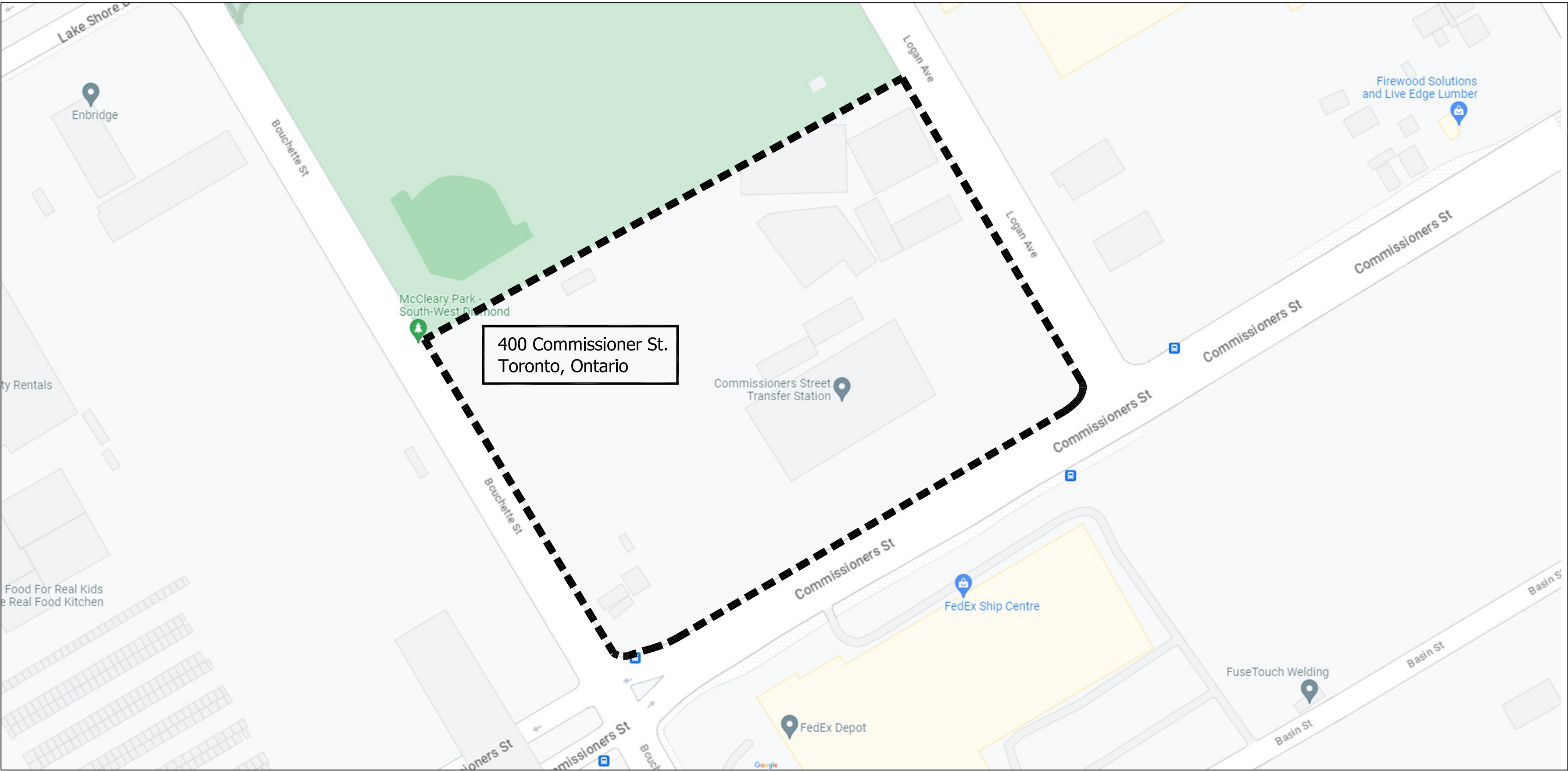


SOLID WASTE MANAGEMENT SERVICES
COMMISSIONER TRANSFER STATION
MRF BUILDING UPGRADES
CONTRACT NO. 23SWM-IRM-026CDU
ISSUED FOR TENDER

Toronto Building
PERMIT REVIEWED FOR COMPLIANCE WITH
THE ONTARIO BUILDING CODE

24 134572 BLD 00

| | | |
|---------------|-------------------|-------------|
| ZONING | | |
| O.B.C. | Arifuzzaman, Shah | 15/Jul/2024 |
| FIRE SERVICES | | |
| O.B.C. (S) | | |



400 COMMISSIONER ST., TORONTO LOCATION PLAN

Proposal to remove and replace the loading dock, overhead doors, lighting, electrical panels and fire protection system.

DRAWING INDEX

| ITEM | CITY DWG No. | DISCIPLINE | DRAWING DESCRIPTION |
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| 2 | 1601-2023-3-2 | A1 | SITE PLAN |
| 3 | 1601-2023-3-3 | A2 | KEY FLOOR PLAN |
| 4 | 1601-2023-3-4 | A3 | LOADING DOCK FLOOR PLAN, AND ELEVATION |
| 5 | 1601-2023-3-5 | A4 | ELEVATION, CROSS SECTION AND SECTION DETAILS |
| 6 | 1601-2023-3-6 | S1 | GENERAL NOTES |
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| 13 | 1601-2023-3-13 | S8 | FOUNDATION SECTIONS |
| 14 | 1601-2023-3-14 | S9 | ELEVATIONS |
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| 17 | 1601-2023-3-17 | E1 | GENERAL NOTES AND ABBREVIATIONS |
| 18 | 1601-2023-3-18 | E2 | GROUND FLOOR PLAN - ELECTRICAL DEMO AND NEW PLAN |
| 19 | 1601-2023-3-19 | E3 | ELECTRICAL SINGLE LINE DIAGRAM, LUMINAIRES, MECHANICAL AND PANEL SCHEDULES |
| 20 | 1601-2023-3-20 | E4 | ELECTRICAL SPECIFICATIONS |
| 21 | 1601-2023-3-21 | M1 | PART GROUND FLOOR PLANS - PLUMBING, VENTILATION AND SPRINKLERS |
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| 23 | 1601-2023-3-23 | M3 | MECHANICAL SPECIFICATIONS |
| 24 | 1601-2023-3-24 | ESC1 | EROSION AND SEDIMENT CONTROL PLAN |
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Brampton, ON L6T 4V1
Canada
www.exp.com

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| No. | DATE | REVISIONS | INITIAL | SIGNED |
| 5 | | | | |
| 4 | NOV. 16, 2023 | 100% DRAFT DESIGN SUBMISSION | PJP | |
| 3 | OCT. 20, 2023 | 70% DESIGN SUBMISSION – CLIENT COMMENTS | PJP | |
| 2 | OCT. 3, 2023 | 70% DESIGN SUBMISSION – CLIENT COMMENTS | PJP | |
| 1 | JULY 18/23 | 70% DESIGN SUBMISSION | PJP | |

Toronto Building
Heritage Preservation Services

Toronto

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MATT KELIHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND
RESOURCE MANAGEMENT

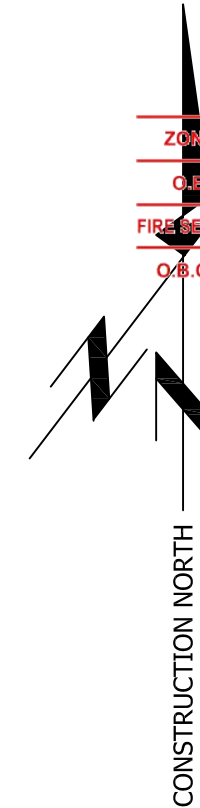
COMMISSIONERS TRANSFER STATION
BUILDING UPGRADE
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

COVER SHEET

| | | | | | | | |
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| DESIGN: | | DRAFTING: | A.M.S. | CHECK: | P.J.P. | CONTRACT No. | 23SWM-IRM-026CDU |
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| DATE: | JULY 18, 2023 | | | | G1 | | |

20230904-4060 ELECTIONS DRAWINGS CAD DRAWINGS/BLM/20230904-00.DWG (G1)

RECEIVED 15/Jul/2024



B O U C H E T T E S T R E E T

L O G A N A V E .

C O M M I S S I O N E R S S T R E E T

SITE PLAN

Scale: 1:300

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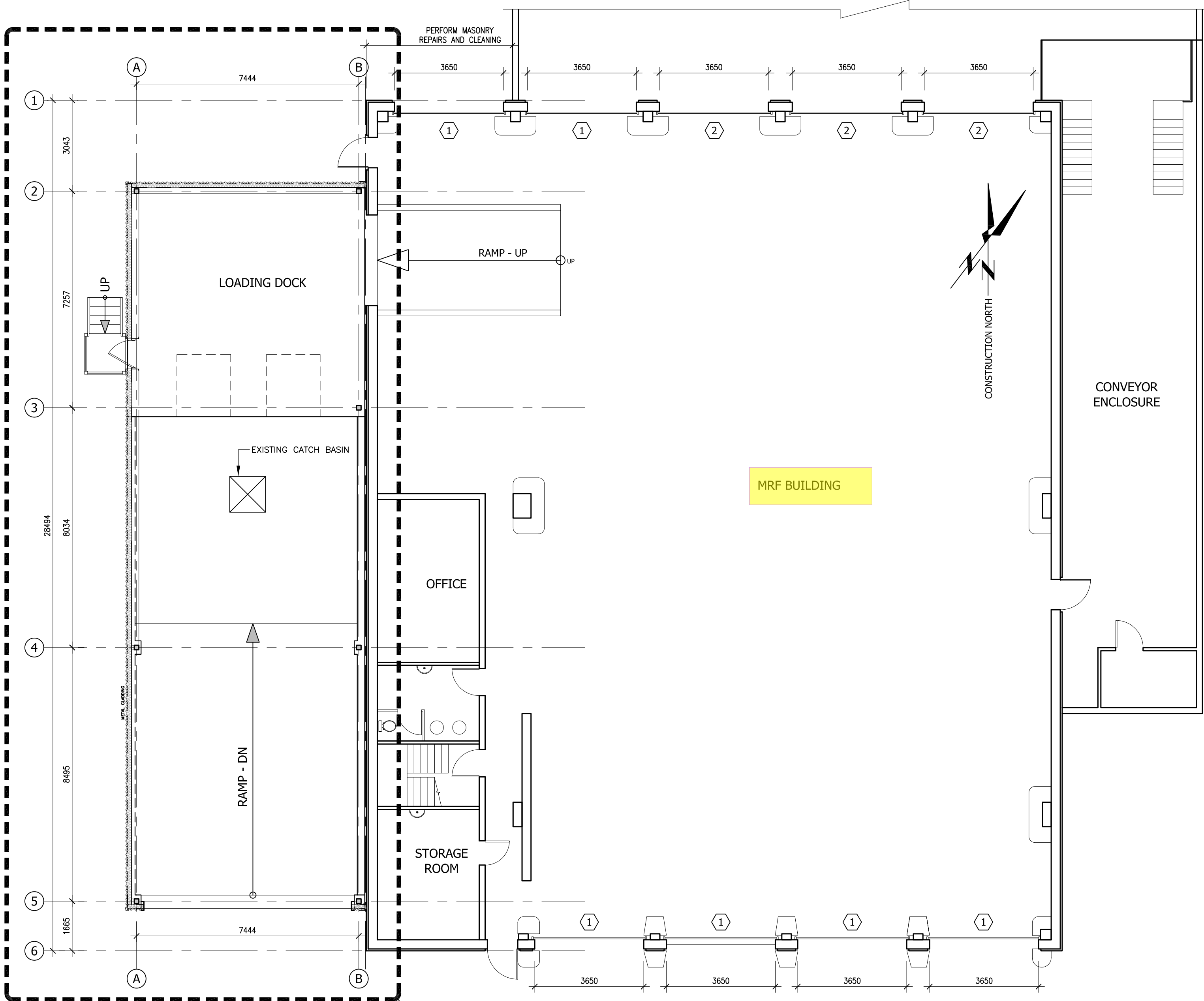
SITE PLAN

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A1

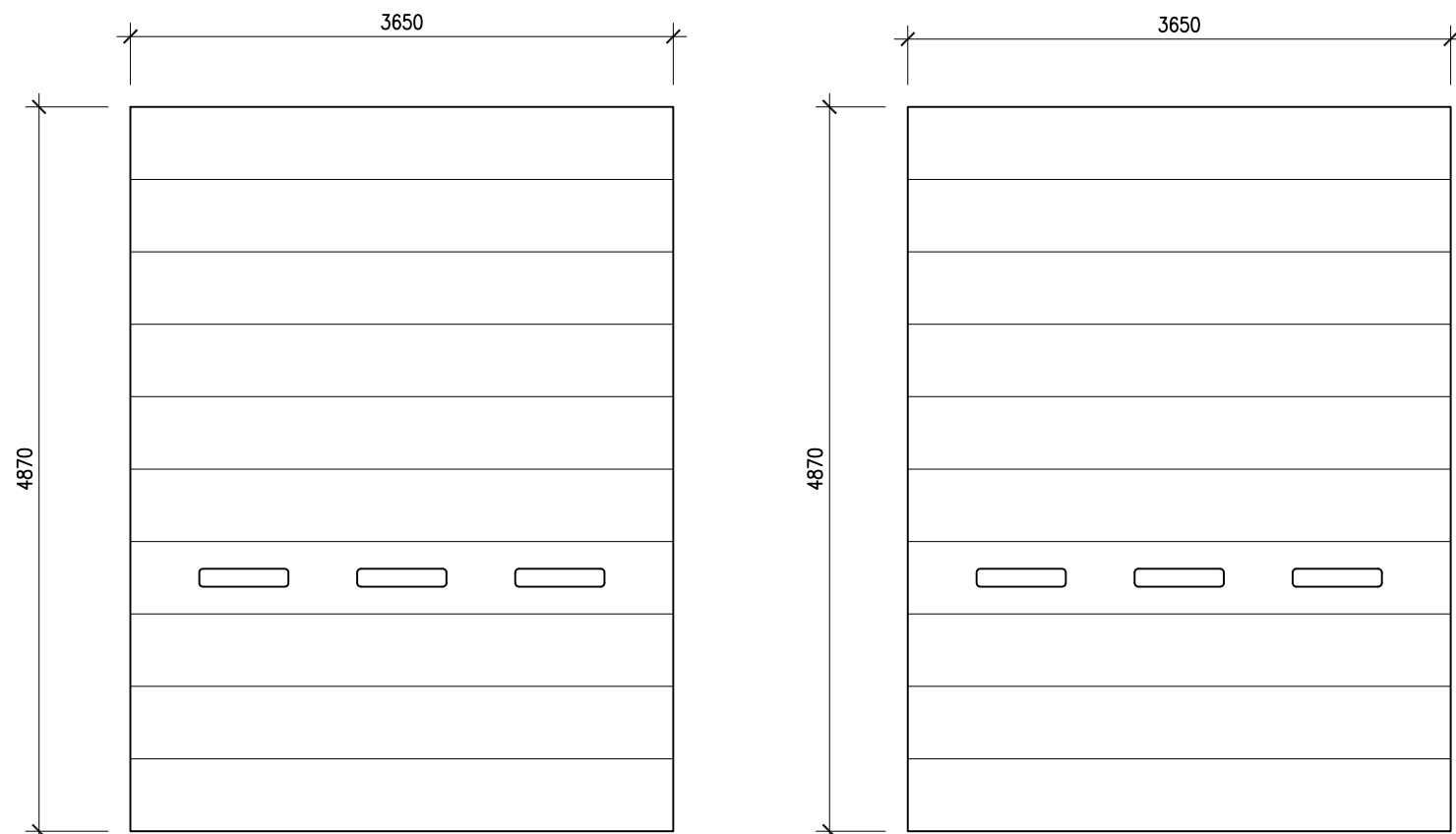
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KEY FLOOR PLAN

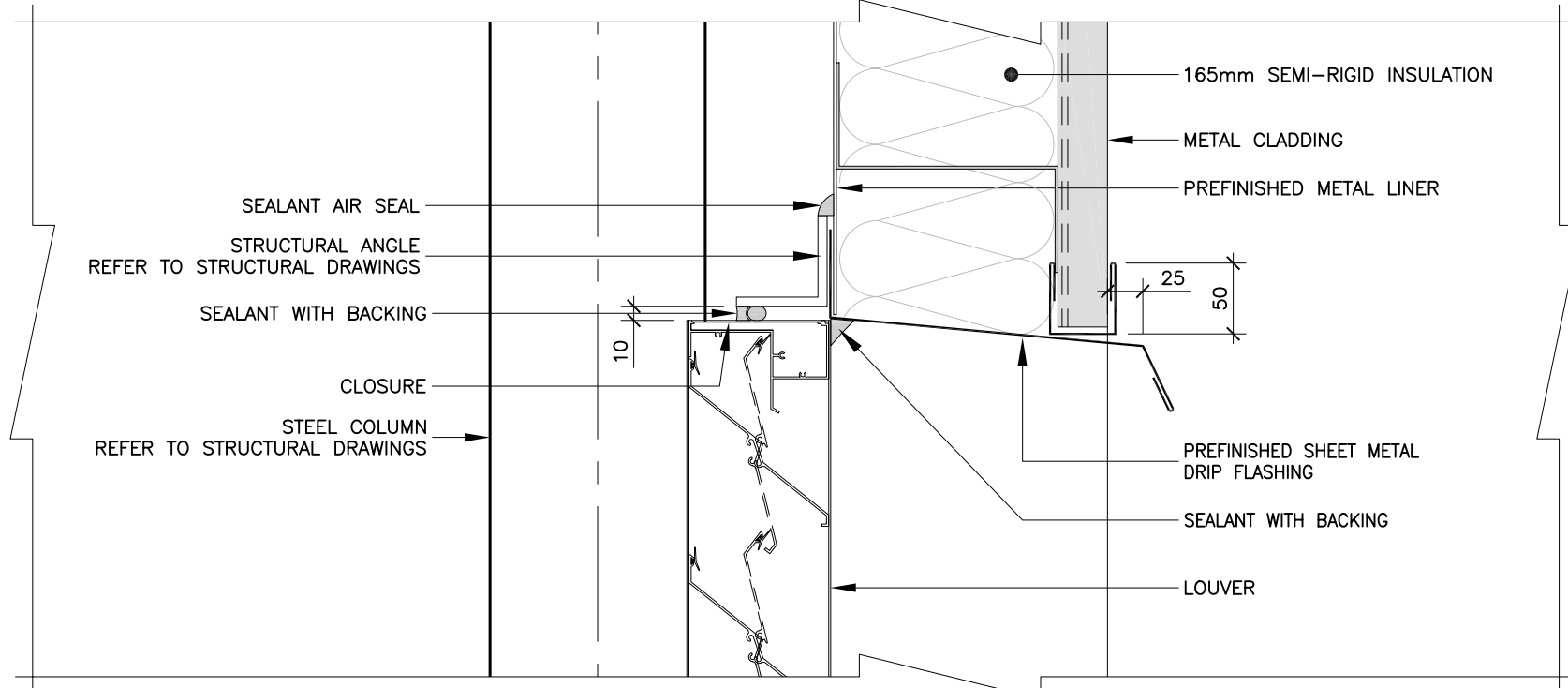
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Maintain integrity of existing fire and life safety system



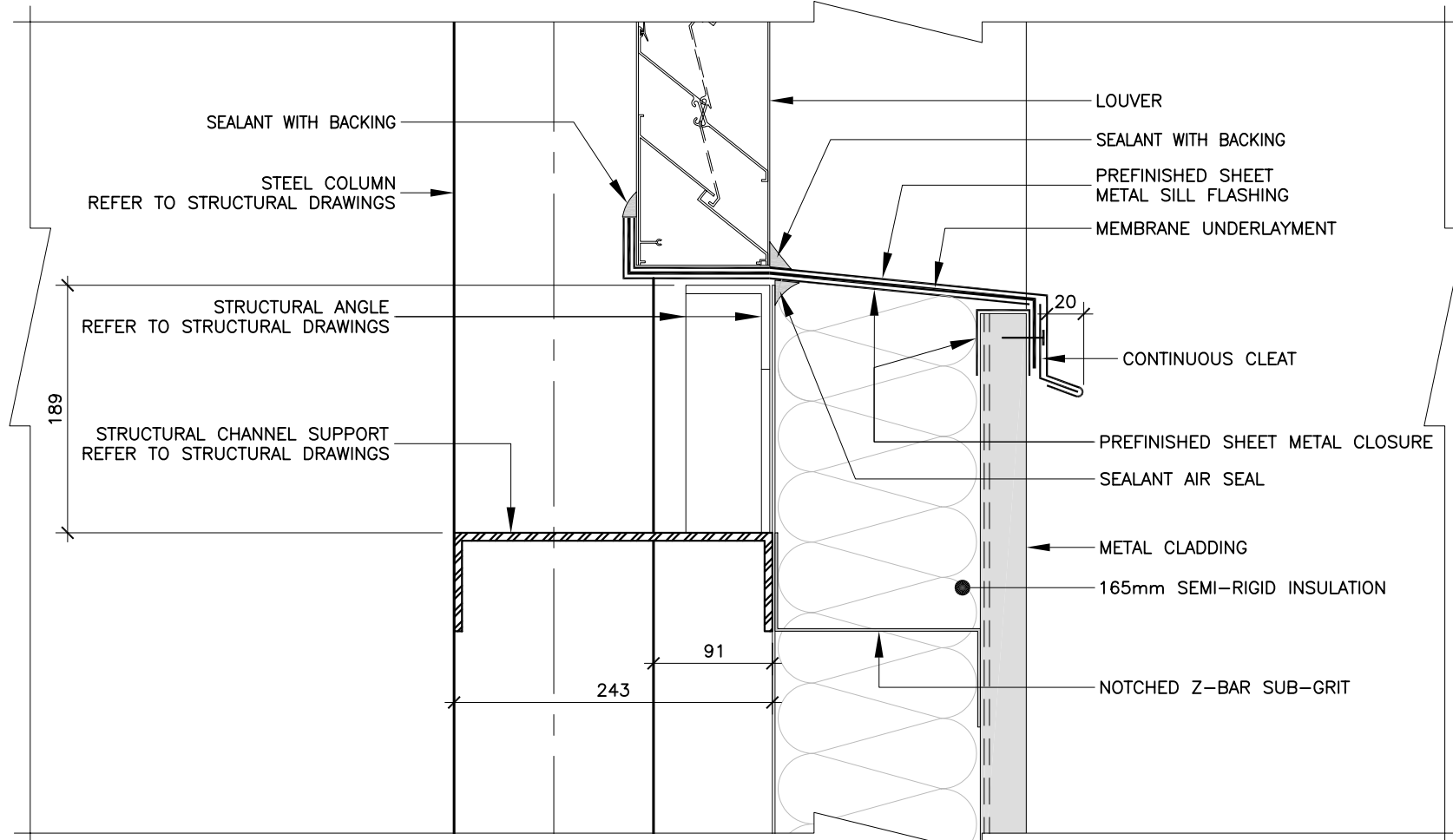
OVERHEAD DOOR SCHEDULE

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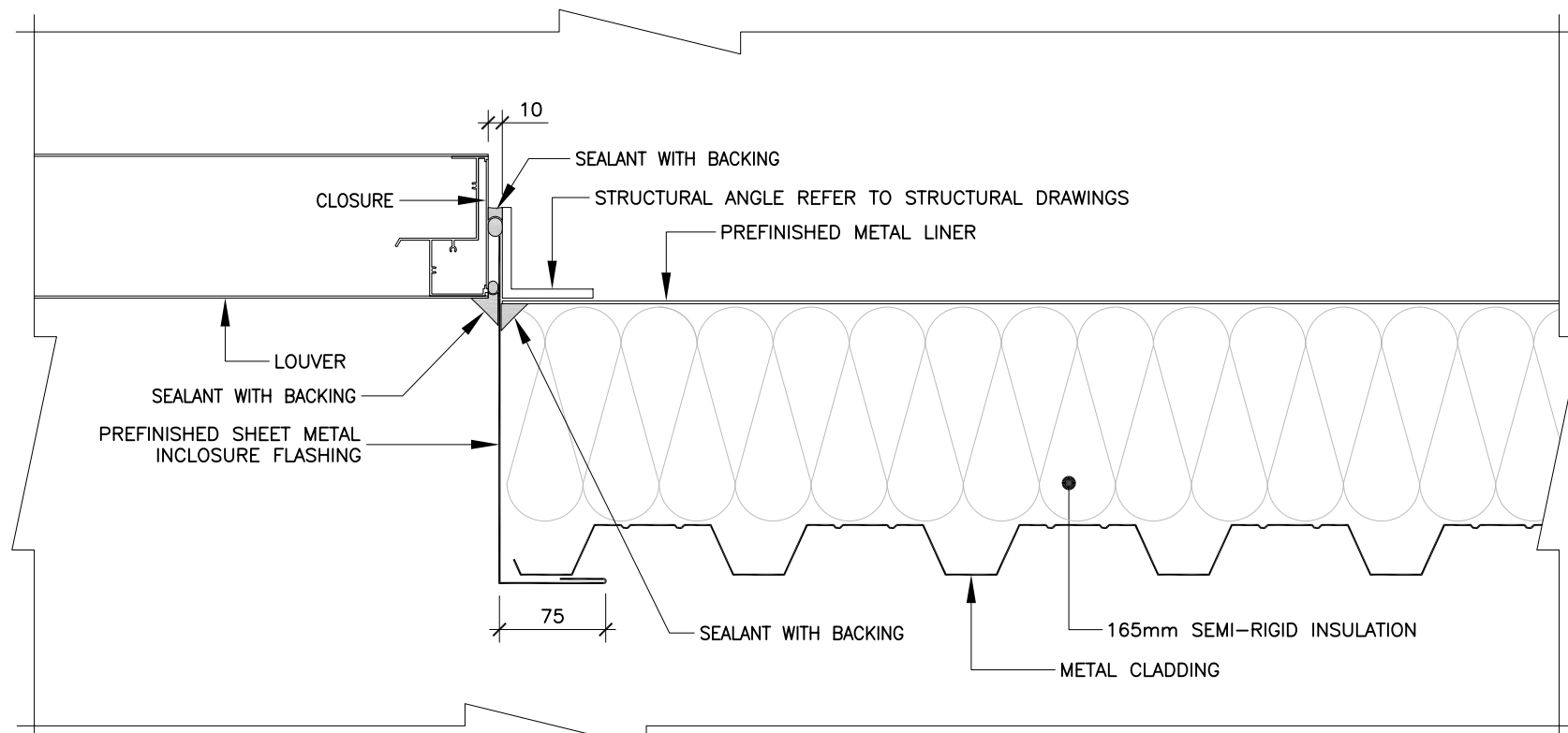
1 LOUVER HEAD DETAIL

Scale: 1:5



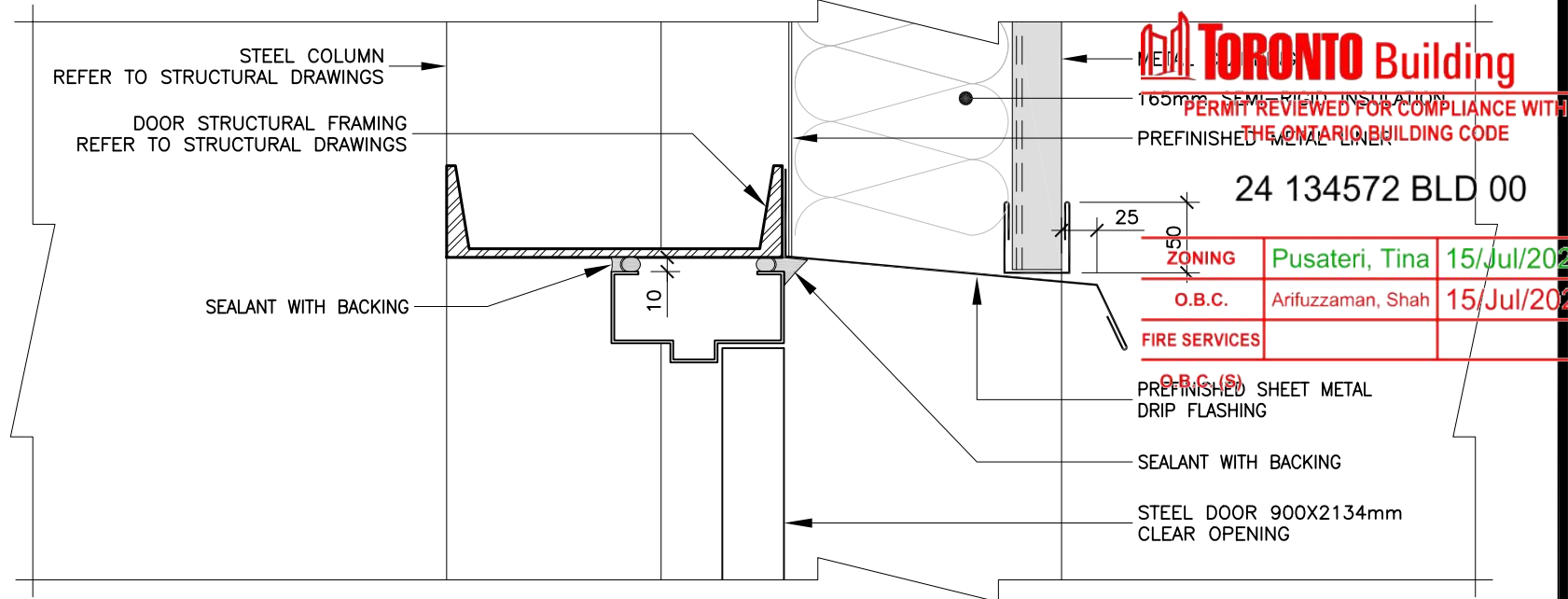
2 LOUVER SILL DETAIL

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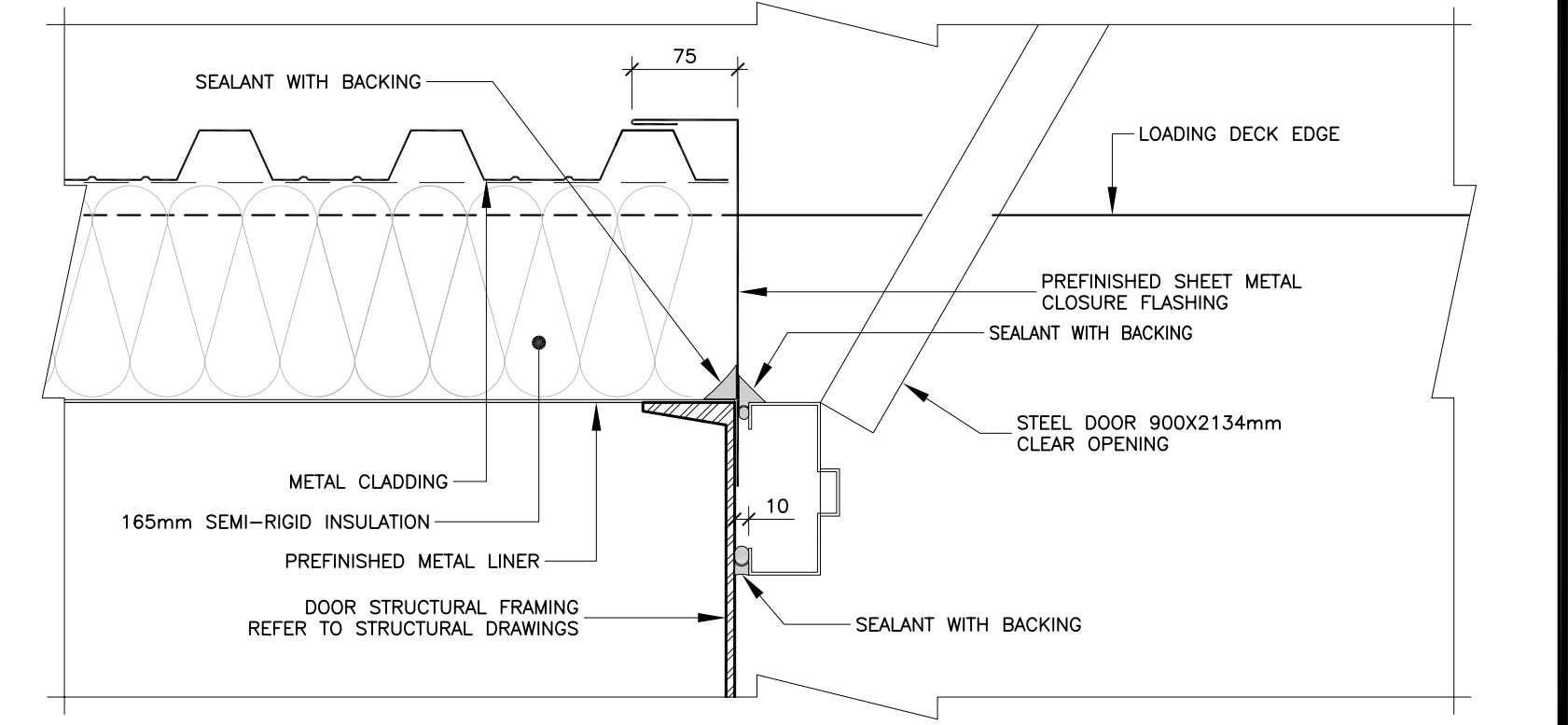
3 LOUVER JAMB DETAIL

Scale: 1:5



4 DOOR HEAD DETAIL

Scale: 1:5



5 DOOR JAMB DETAIL

Scale: 1:5

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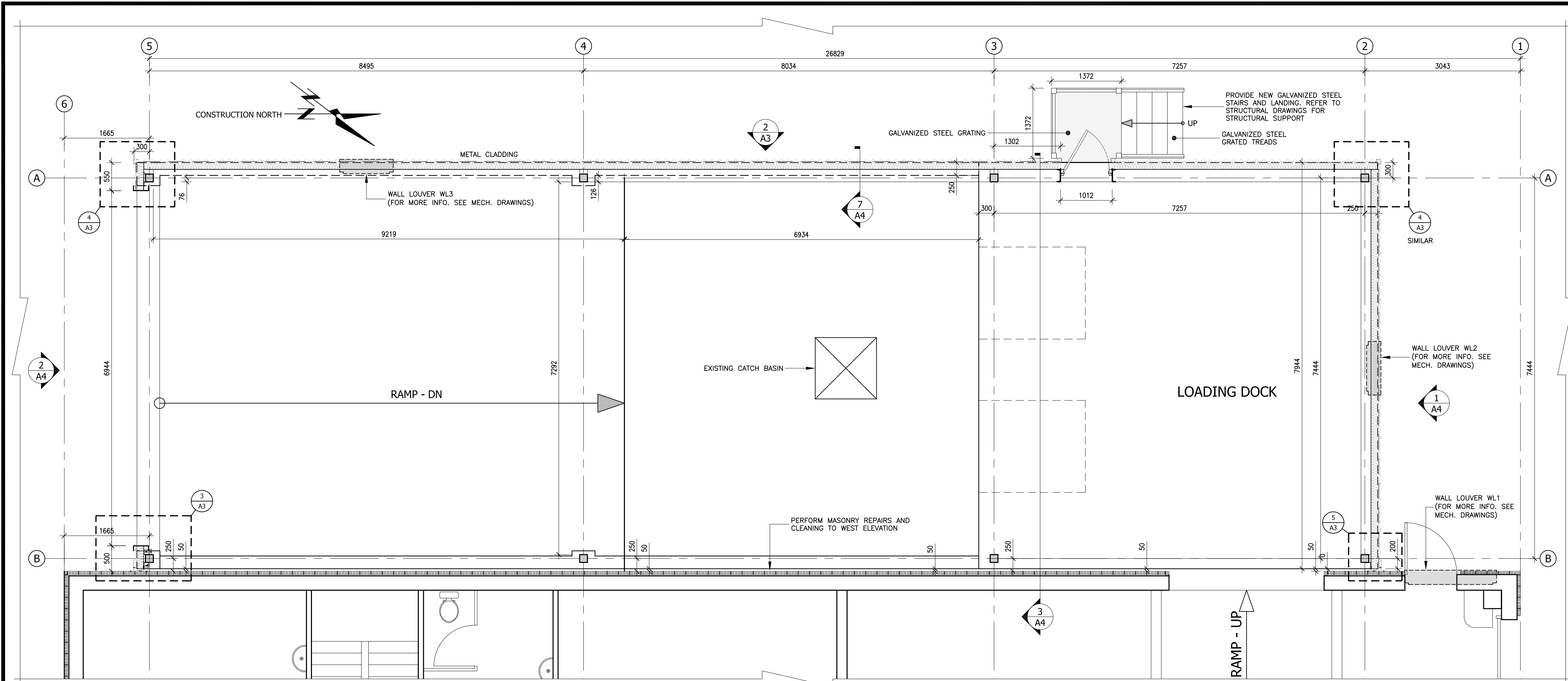
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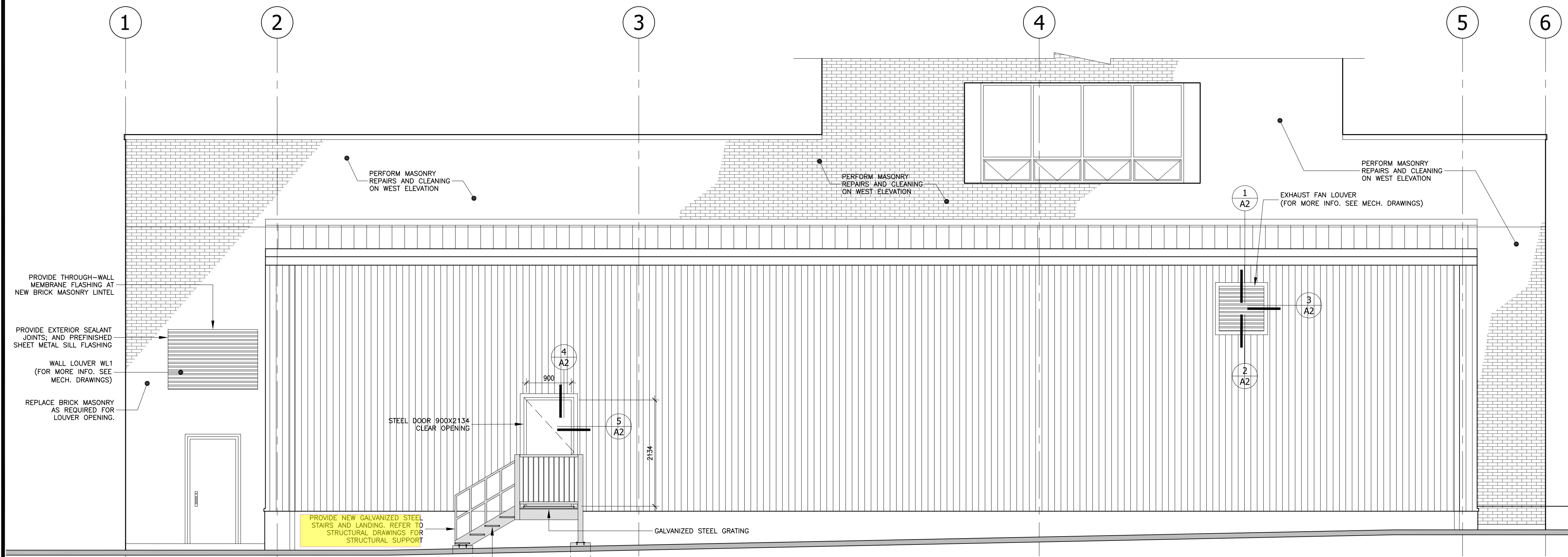
KEY FLOOR PLAN

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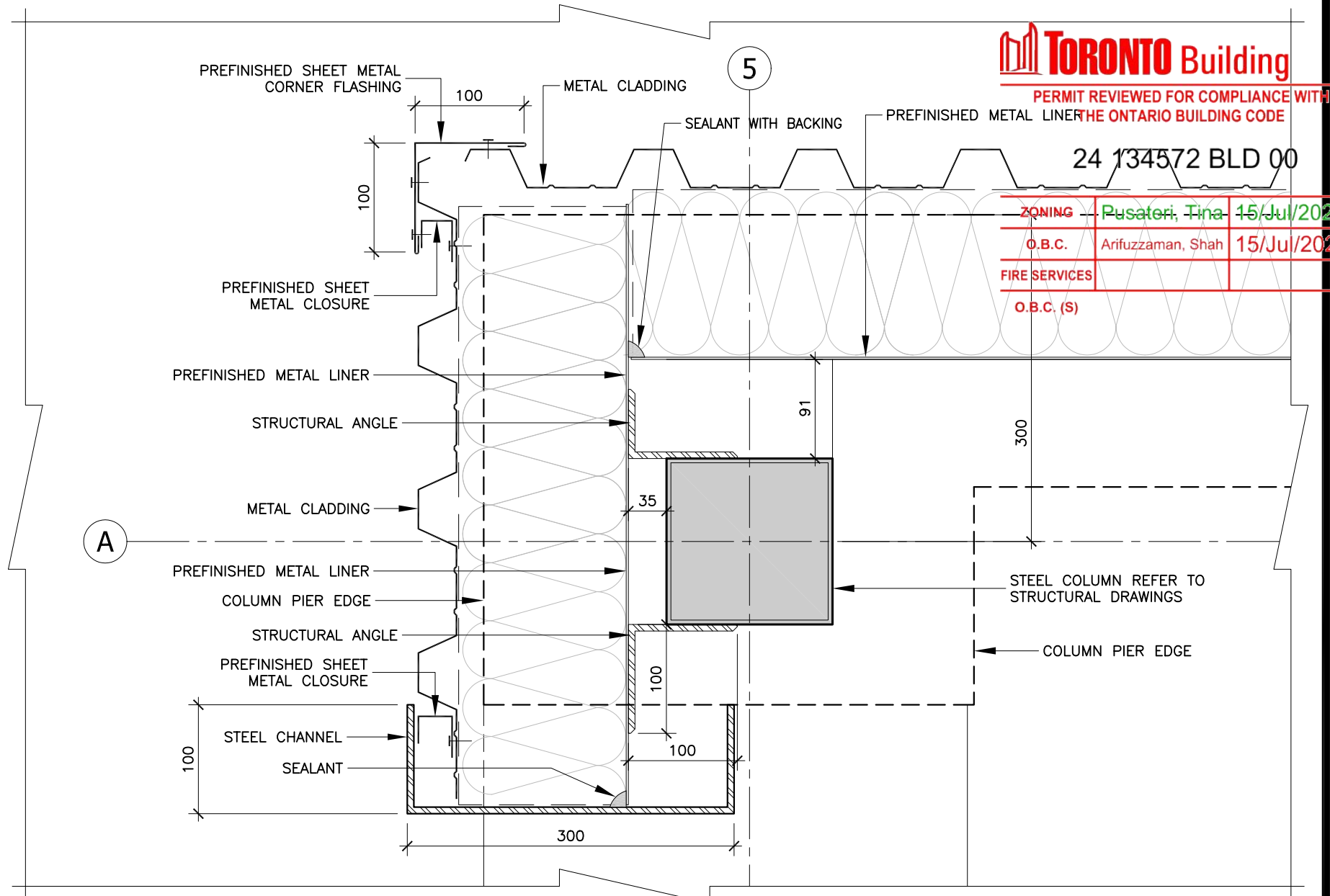
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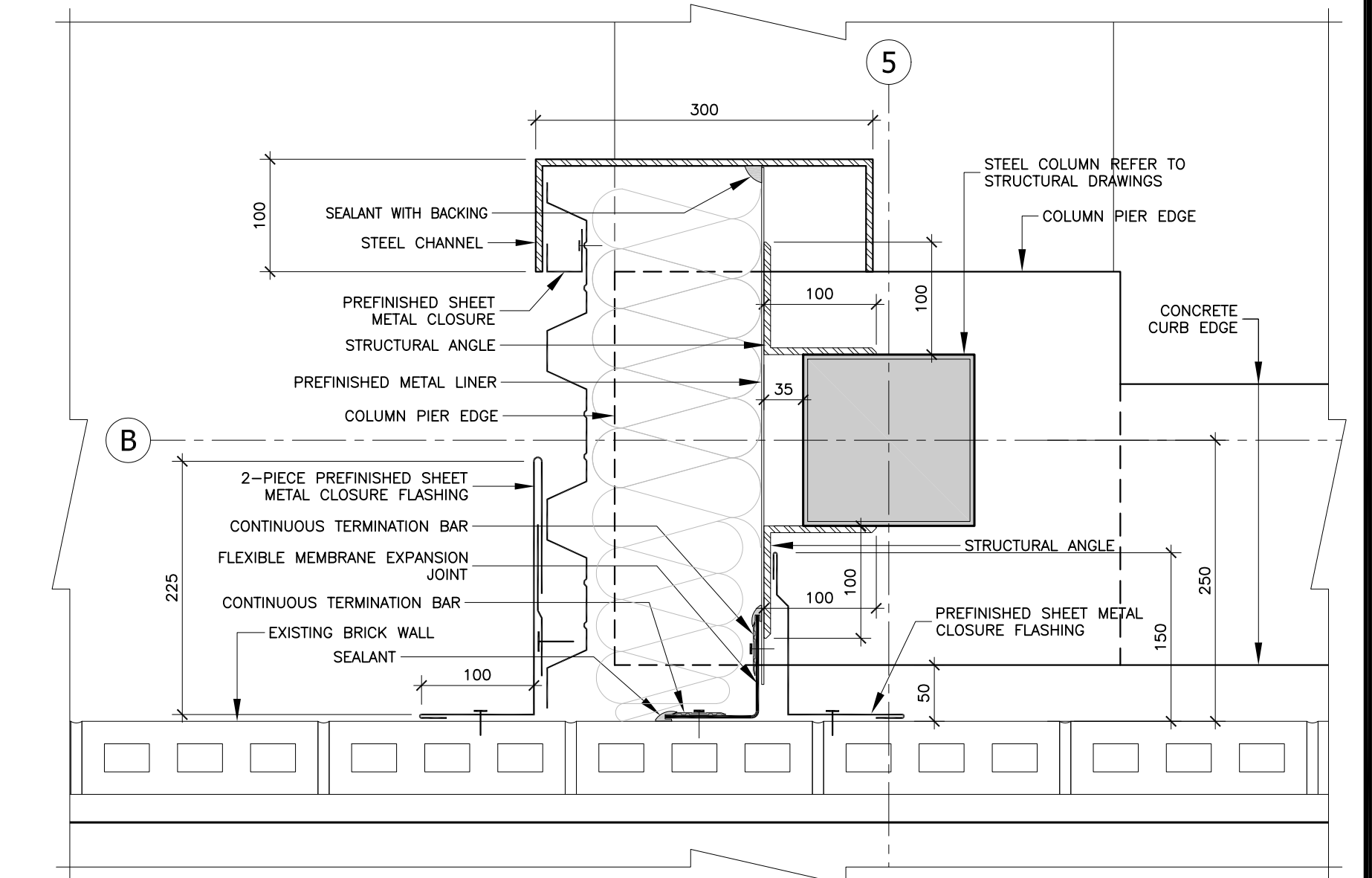
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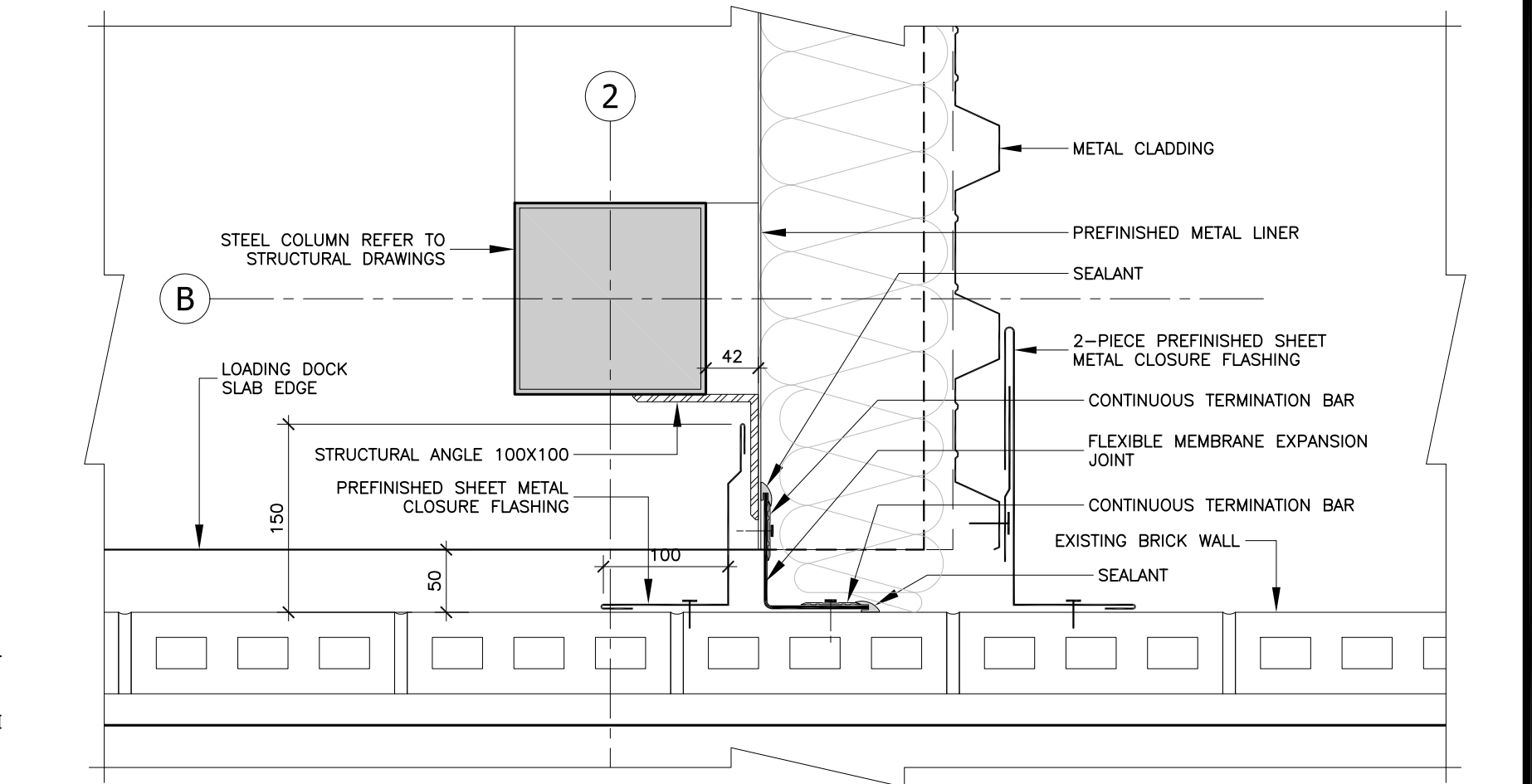
2 WEST ELEVATION
Scale: 1:50






3 PLAN DETAIL - CORNER DETAIL
Scale: 1:5

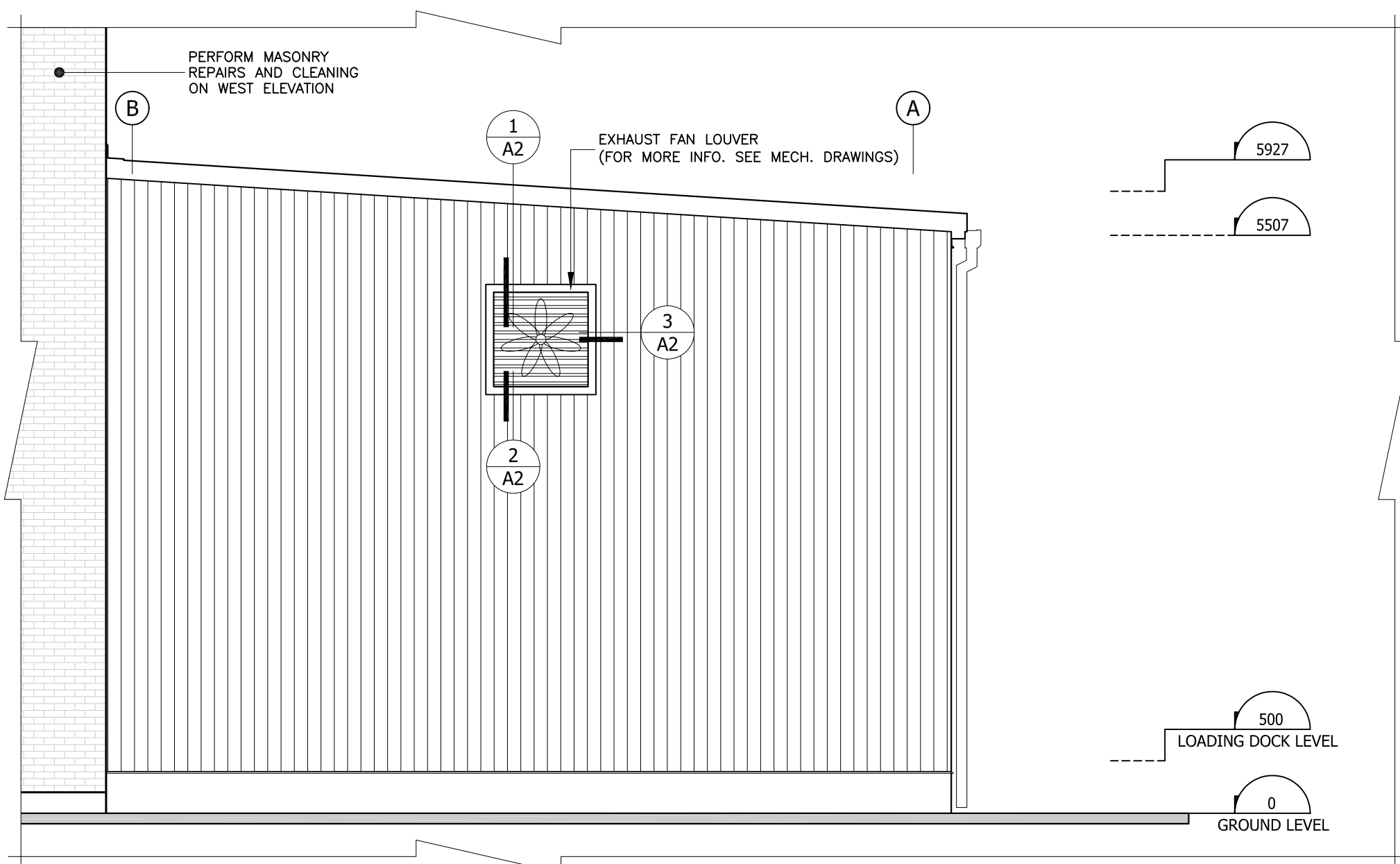


4 PLAN DETAIL - EXPANSION JOINT
Scale: 1:5



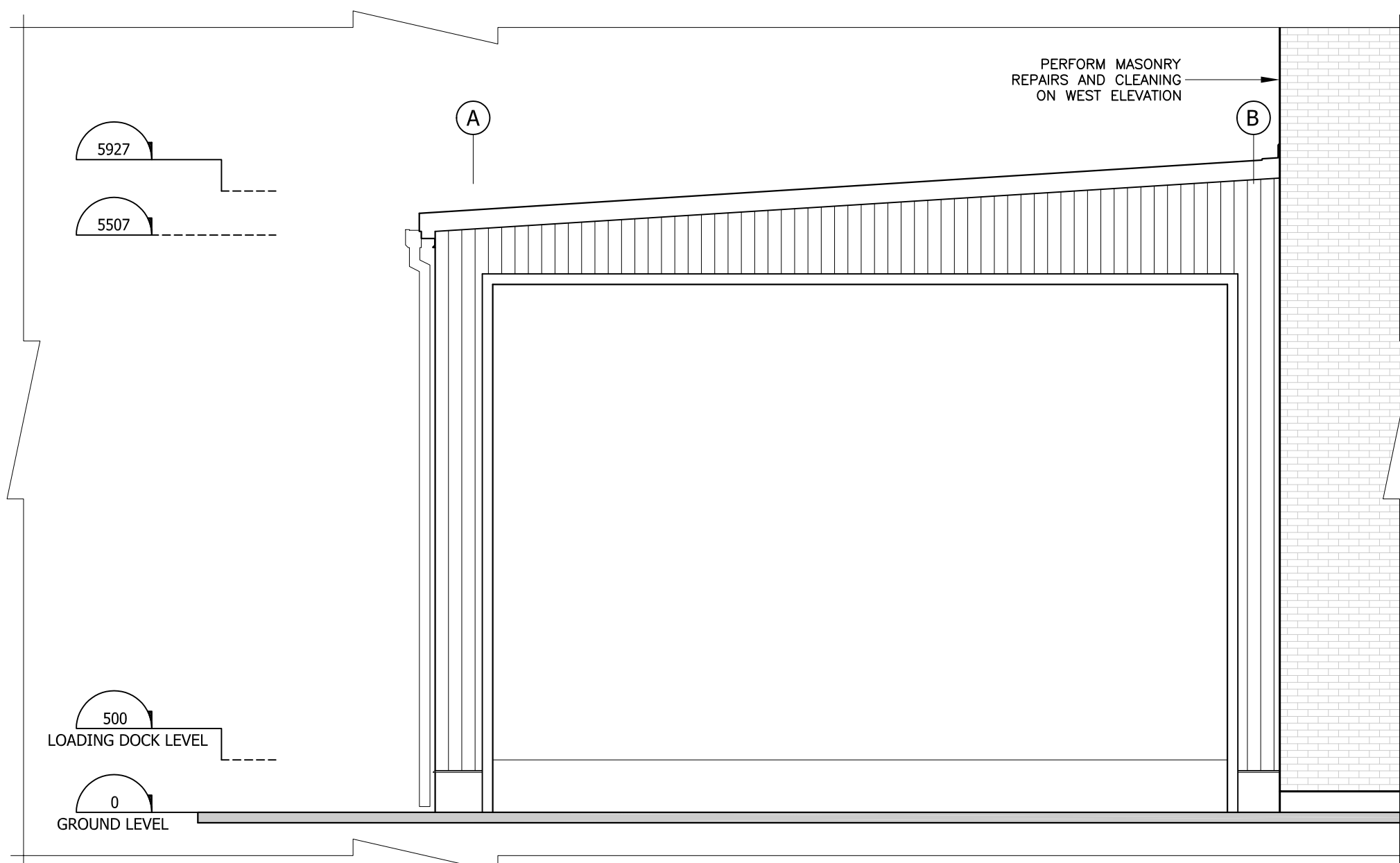
5 PLAN DETAIL - EXPANSION JOINT
Scale: 1:5

| SOLID WASTE MANAGEMENT SERVICES | | | |  SOLID WASTE MANAGEMENT SERVICES | | | | COMMISSIONERS TRANSFER STATION BUILDING UPGRADE 400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2 | | | | | | | | |
|--|--|--|--|---|--|---|--|---|---------------------------------------|---------------|-----------|--------------------|---------------|--------|--------------|------------------|
|  exp Services Inc. t: +1.905.793.9800 f: +1.905.793.0641 1595 clark Boulevard Brampton, ON L6T 4V1 Canada www.exp.com • BUILDINGS • EARTH & ENVIRONMENT • ENERGY • • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY • | | | | | |  | MATT KELIHER GENERAL MANAGER SOLID WASTE MANAGEMENT SERVICES | MATTHEW CASCHERA DIRECTOR INFRASTRUCTURE AND RESOURCE MANAGEMENT | LOADING DOCK FLOOR PLAN AND ELEVATION | | | | | | | |
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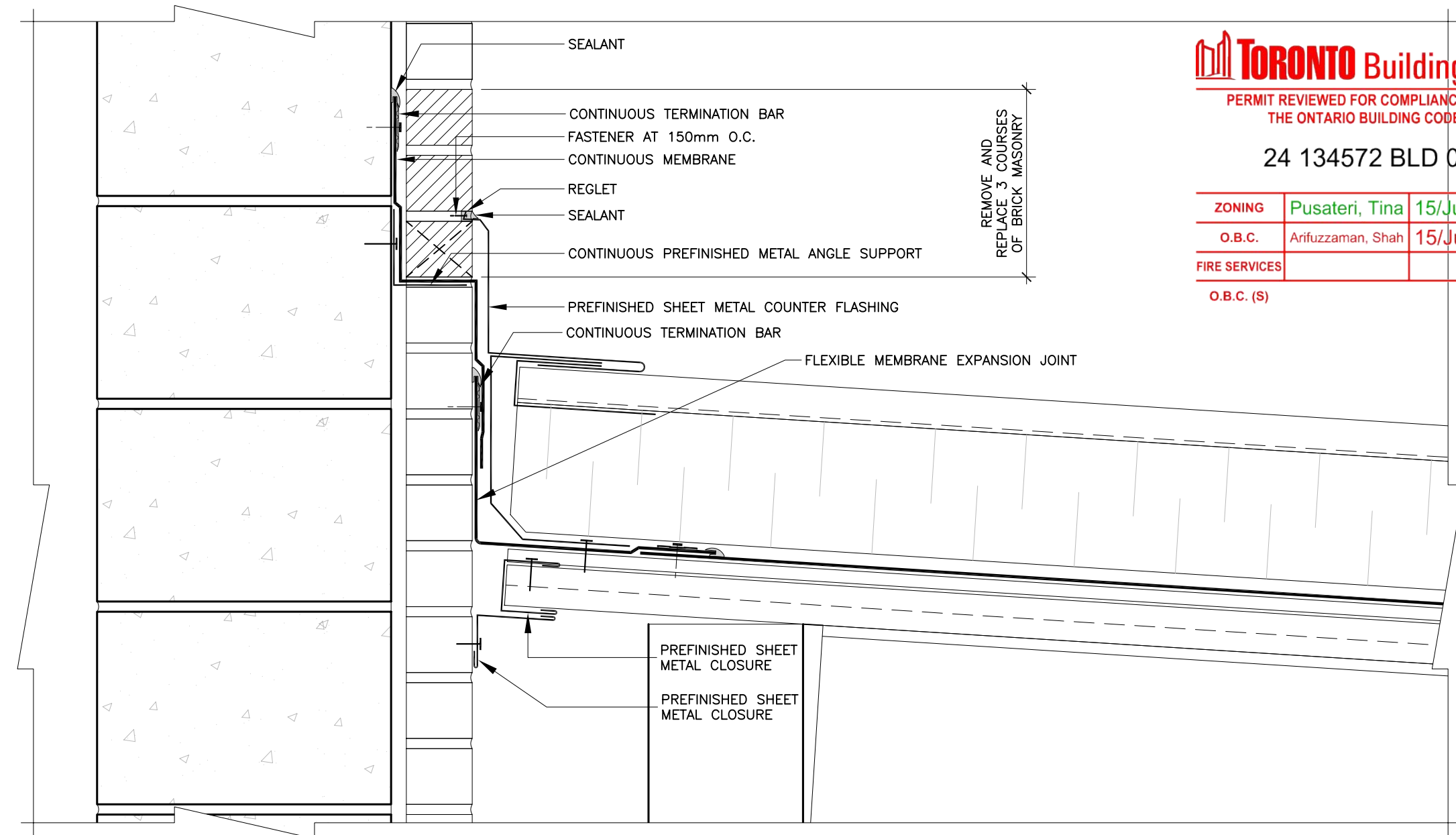
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Scale: 1:50



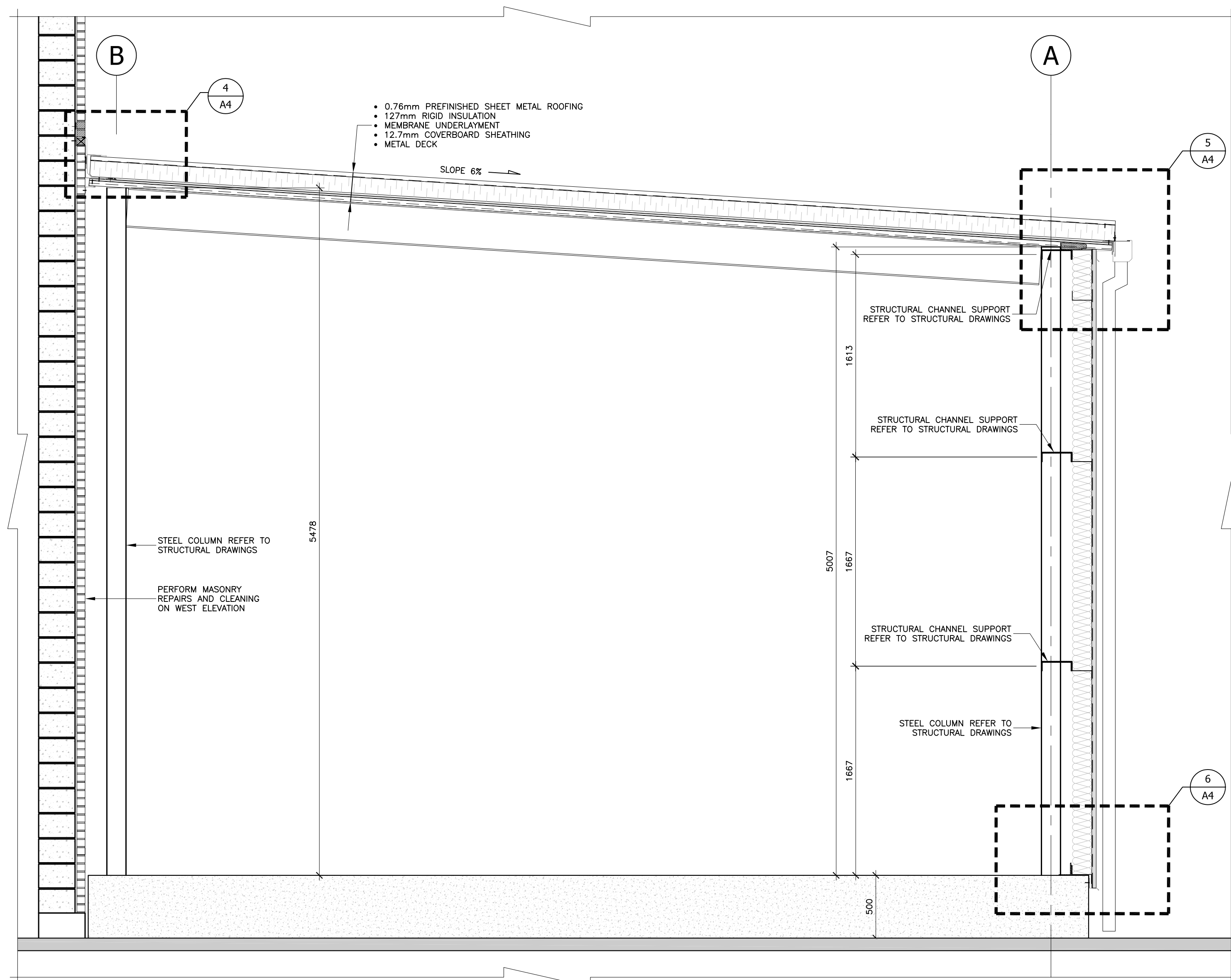
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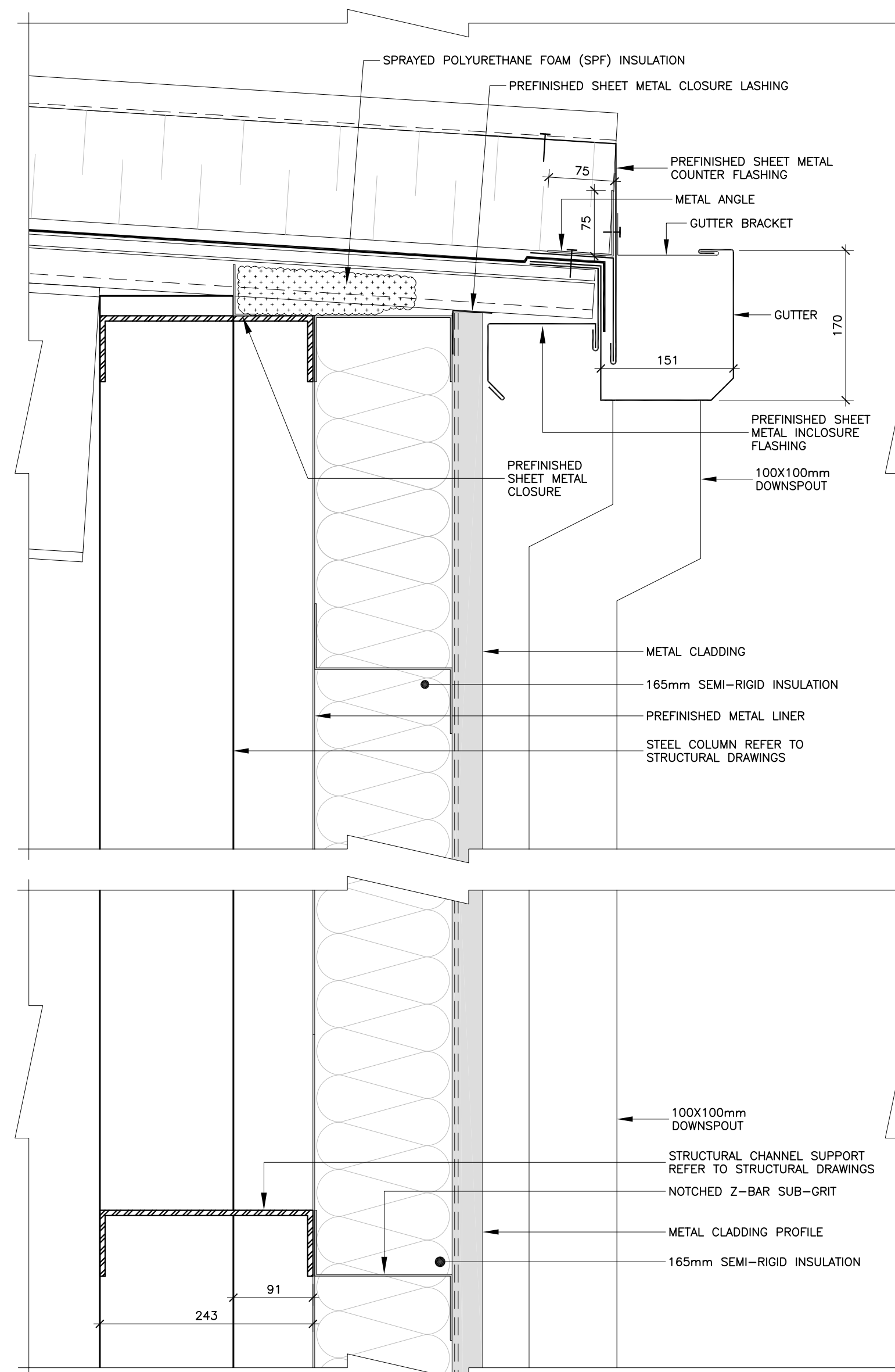
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Scale: 1:5



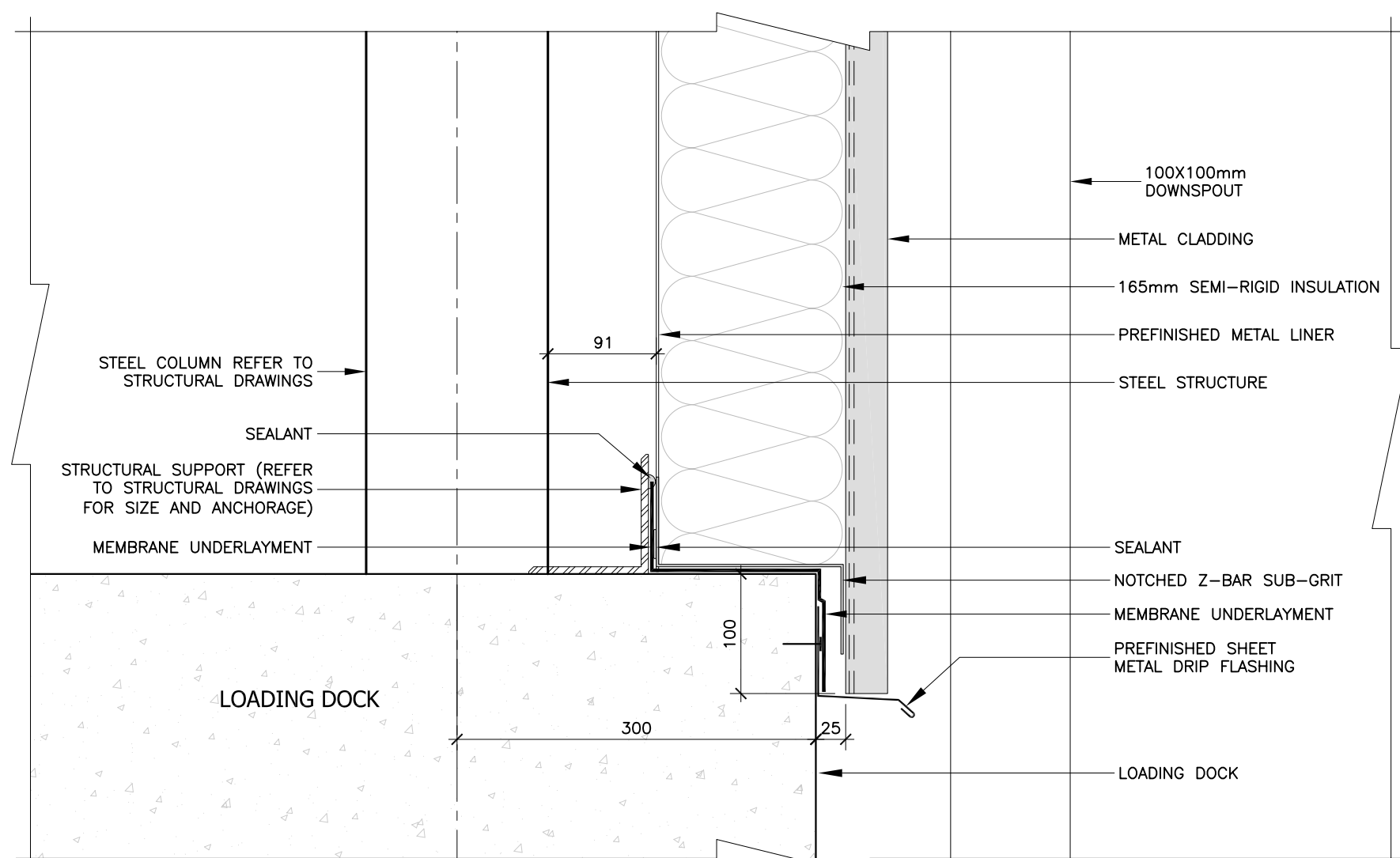
3 CROSS SECTION

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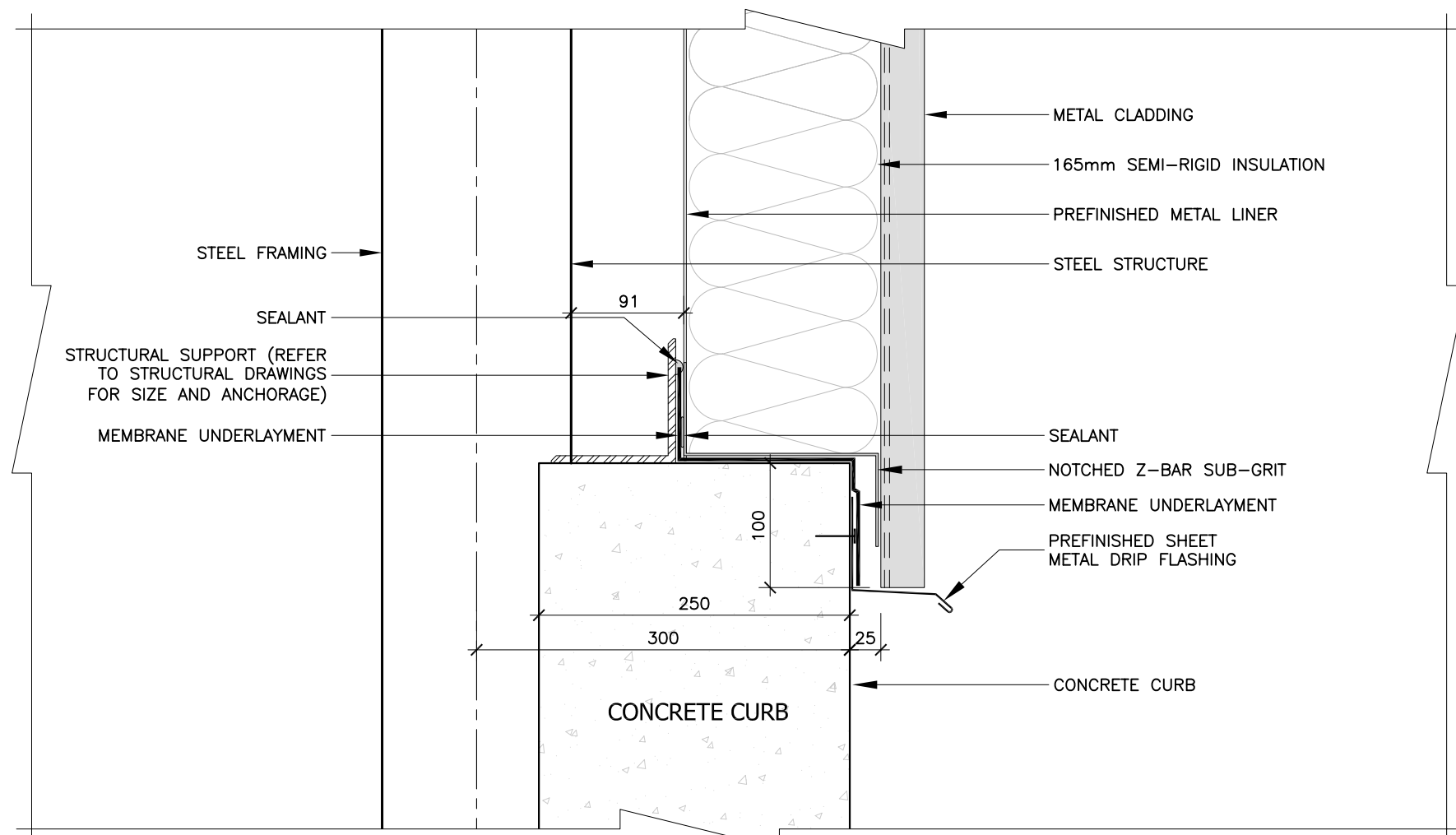
5 SECTION DETAIL

Scale: 1:5



6 SECTION DETAIL

Scale: 1:5



7 SECTION DETAIL

Scale: 1:5

SOLID WASTE MANAGEMENT SERVICES



BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

| No. | DATE | REVISIONS | INITIAL | SIGNED |
|-----|---------------|---|---------|--------|
| 5 | | | | |
| 4 | NOV. 16, 2023 | 100% DRAFT DESIGN SUBMISSION | PJP | |
| 3 | OCT. 20, 2023 | 70% DESIGN SUBMISSION - CLIENT COMMENTS | PJP | |
| 2 | OCT. 3, 2023 | 70% DESIGN SUBMISSION - CLIENT COMMENTS | PJP | |
| 1 | JULY 18/23 | 70% DESIGN SUBMISSION | PJP | |



SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND
RESOURCE MANAGEMENT

COMMISSIONERS TRANSFER STATION

BUILDING UPGRADE
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

ELEVATION, CROSS SECTION AND SECTION DETAILS

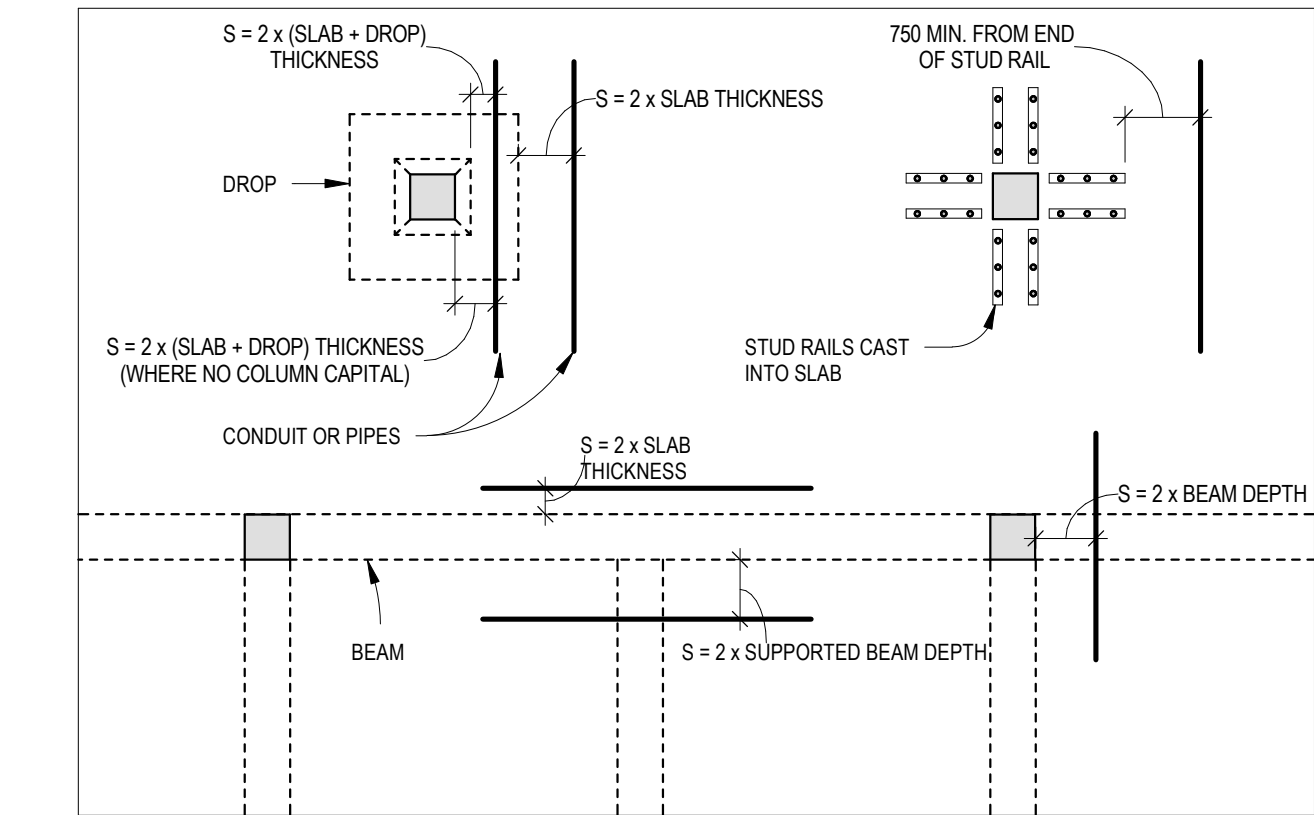
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|---------|---------------|-----------------|---------------|--------|--------|--------------|-----------------|
| DESIGN: | | DRAFTING: | A.M.S. | CHECK: | P.J.P. | CONTRACT No. | 23SW-IRM-026CDU |
| SCALE: | AS NOTED | DRAWING NUMBER: | 1601-2023-3-5 | A4 | | | |
| DATE: | JULY 18, 2023 | | | | | | |

| STRUCTURAL STEEL NOTES | | GN-006CS | CONCRETE & REINFORCING STEEL & FORMWORK | | GN-003CS |
|------------------------|---|----------|---|--|--|
| 1 | GENERAL | | 1 | GENERAL | |
| 1.1 | THE FOLLOWING REFERENCE STANDARDS SHALL GOVERN THE WORK OF THIS SECTION: | | 1.1 | THE FOLLOWING REFERENCE STANDARDS SHALL GOVERN THE WORK OF THIS SECTION: | |
| 1.1.1 | ASTM A108, SPECIFICATION FOR STEEL BAR, CARBON AND ALLOY, COLD FINISHED | | 1.1.1 | CSA A23.1, CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION | 3.7 |
| 1.1.2 | CSA S16, DESIGN OF STEEL STRUCTURES | | 1.1.2 | CSA A23.2, METHODS OF TEST FOR CONCRETE | 3.7.1 |
| 1.1.3 | CSA S136, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS | | 1.1.3 | CSA A3000, CEMENTITIOUS MATERIALS COMPENDIUM | |
| 1.1.4 | CSA W47.1, CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL | | 1.1.4 | ASTM A1064/A1064M STANDARD SPECIFICATION FOR CARBON-STEEL WIRE AND WELDED WIRE REINFORCEMENT, PLAIN AND DEFORMED, FOR CONCRETE | |
| 1.1.5 | CSA W59, WELDED STEEL CONSTRUCTION | | 1.1.5 | CSA C30.18, CARBON STEEL BARS FOR CONCRETE REINFORCEMENT | |
| 1.1.6 | CSA W178.1, CERTIFICATION OF WELDING INSPECTION ORGANIZATIONS | | 1.1.6 | CSA C30.18, CARBON STEEL BARS FOR CONCRETE REINFORCEMENT | |
| 1.1.7 | CSA W178.2, CERTIFICATION OF WELDING INSPECTORS | | 1.1.7 | CSA W186, WELDING OF REINFORCING BARS IN REINFORCED CONCRETE CONSTRUCTION | |
| 1.2 | DESIGN OF CONNECTIONS SHALL BE BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. | | 1.1.8 | ASTM D3963/D3963M STANDARD SPECIFICATION FOR FABRICATION AND JOBSITE HANDLING OF EPOXY-COATED STEEL REINFORCEMENT BARS | |
| 1.3 | DESIGN CRITERIA | | 1.1.9 | ACI 315, MANUAL OF STANDARD DRAWINGS FOR REINFORCED CONCRETE STRUCTURES | |
| 1.3.1 | AXIAL LOADED MEMBERS THAT MEET AT A JOINT SHALL HAVE THEIR CENTROIDAL AXES INTERSECT AT A COMMON POINT UNLESS SHOWN OTHERWISE. | | 1.1.10 | ACI 117, STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS AND COMMENTARY | |
| 1.3.2 | DESIGN AND DETAIL: ALL CONNECTIONS AS FLEXIBLE EXCEPT WHERE NOTED OTHERWISE ON THE DRAWINGS. CONNECTIONS MAY BE WELDED OR BOLTED. | | 1.1.11 | CSA S269.1, FALSEWORK AND FORMWORK | |
| 1.3.3 | PROVIDE CONNECTIONS ADEQUATE TO RESIST REACTION OF BEAM, WHEN IT IS LOADED TO MAXIMUM FLEXURAL CAPACITY UNDER UNIFORMLY DISTRIBUTED LOAD, UNLESS REACTION OR CONNECTION DETAIL IS SHOWN ON DRAWINGS. FOR COMPOSITE BEAM CONSTRUCTION, USE FLEXURAL CAPACITY OF COMPOSITE SECTION BASED ON 100 PERCENT SHEAR CONNECTION OF BEAM TO SLAB. | | 1.2 | SUBMITTALS | |
| 1.3.4 | WHERE MOMENT CONNECTIONS ARE CALLED FOR BUT DESIGN FORCES ARE NOT INDICATED, DESIGN MOMENT CONNECTION FOR THE FULL MOMENT CAPACITY OF THE WEAKER MEMBER JOINED. | | 1.2.1 | SUBMIT CONCRETE MIX DESIGNS | |
| 1.3.5 | FOR BOLTED CONNECTIONS USE SNUG TIGHT HIGH STRENGTH BOLTS, ASTM F3125/F3125M (A325 OR A490) EXCEPT USE PRETENSIONED HIGH STRENGTH BOLTS IN LOCATIONS SPECIFIED IN CSA-S16 CLAUSE 22.2.2 | | 1.2.2 | SUBMIT REINFORCING STEEL SHOP DRAWINGS | |
| | 1. SLIP CRITICAL CONNECTIONS WHERE SLIPPAGE CANNOT BE TOLERATED; | | | 1. PREPARE PLACING DRAWINGS AND BAR LISTS INDICATING REINFORCING, DOWELS, CONCRETE COVER, CONSTRUCTION JOINTS | |
| | 2. SHEAR CONNECTIONS PROPORTIONED IN ACCORDANCE WITH SEISMIC REQUIREMENTS; | 2 | PRODUCTS | | |
| | 3. ALL ELEMENTS RESISTING CRANE LOADS; | 2.1 | PLYWOOD: DOUGLAS FIR, MINIMUM THICKNESS 17 mm TO CSA O121, FINISHED ONE SIDE, FABRICATED SPECIALLY FOR USE AS CONCRETE FORM PANELS WITH SEALED EDGES | | |
| | 4. CONNECTIONS SUBJECT TO IMPACT OR CYCLIC LOADING; | 2.2 | ROUND COLUMN FIBRE FORMS: TO PRODUCE SMOOTH SURFACE WITHOUT FINIS | | |
| | 5. CONNECTIONS WHERE THE BOLTS ARE SUBJECT TO TENSILE LOADING; | 2.3 | VOIDFORM: HONEYCOMB CELLULAR CORE STRUCTURE MANUFACTURED FROM KRAFT FIBRE. | | |
| | 6. CONNECTIONS USING OVERSIZE OR LONG SLOTTED HOLES (UNLESS SPECIFICALLY DESIGNED TO ACCOMMODATE MOVEMENT) | 2.4 | REINFORCING BARS: TO CAN/CSA C30.18, GRADE 400W | | |
| 1.3.6 | PROVIDE CONNECTIONS FOR MEMBERS THAT ARE PART OF THE LATERAL LOAD RESISTING SYSTEM ADEQUATE TO RESIST FORCES SHOWN ON DRAWINGS, WHERE SEISMIC DESIGN GOVERNS, THE FORCES HAVE BEEN ADJUST TO MEET THE REQUIREMENTS OF CLAUSE 27. | 2.5 | WELDED WIRE FABRIC: TO ASTM A1064/A1064M AND IN FLAT SHEETS NOT ROLLS | 3.8 | MINIMUM REINFORCING FOR ANY SUSPENDED SLAB SHALL BE TEMPERATURE BARS BOTTOM EACH WAY AS SHOWN IN TYPICAL DETAIL C-006 TWO-WAY-SLABS. |
| 1.4 | SUBMITTALS | 2.6 | EPOXY COATED REINFORCEMENT: FROM MINISTRY OF TRANSPORTATION APPROVED SOURCES TO ASTM D3963/D3963M | 3.9 | SLAB-ON-GRADE |
| 1.4.1 | SUBMIT STRUCTURAL SHOP DRAWINGS. | 2.7 | CEMENTING MATERIALS | 3.9.1 | SEE FOUNDATION PLAN NOTES FOR BEARING CONDITIONS. |
| | 1. EACH SHOP DRAWING SUBMITTED SHALL BEAR THE SIGNATURE AND SEAL OF THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN. | 2.7.1 | PORTLAND CEMENT: TO CSA A3000 TYPE GU OR GUL | 3.9.2 | WHERE FLOOR DEPRESSIONS OCCUR MAINTAIN SLAB THICKNESS SPECIFIED ON THE FOUNDATION PLANS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND AREAS. |
| 2 | PRODUCTS | 2.7.2 | CEMENTITIOUS HYDRAULIC SLAG AND FLY ASH: TO CSA A3000 | 3.9.3 | EACH POUR SHALL BE CONTAINED BY A VERTICAL BULKHEAD OR ABUTTING CONSTRUCTION JOINT. REFER TO TYPICAL DETAILS FOR CONSTRUCTION JOINTS AND CONTROL JOINTS. |
| 2.1 | MATERIAL | 2.8 | AGGREGATE | 3.9.4 | DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR ON SUBGRADE CONTAINING FROZEN MATERIAL. ASCERTAIN THAT FORMS, REINFORCING STEEL AND ADJACENT CONCRETE SURFACES ARE ENTIRELY FREE OF FROST, SNOW AND ICE BEFORE PLACING CONCRETE. |
| 2.1.1 | PROVIDE NEW MATERIALS IN ACCORDANCE WITH REFERENCE STANDARDS, OF STRENGTH AND QUALITY NOTED IN GENERAL NOTES. | 2.8.1 | FINE AGGREGATE FOR SLABS ON GRADE: FINENESS MODULUS BETWEEN 2.6 AND 3.1 | 3.9.5 | BEFORE PLACING SLAB-ON-GRADE VERIFY THAT: |
| 2.1.2 | STUDS: ASTM A108 | 2.8.2 | COARSE AGGREGATE: 20 mm TO 5 mm UNLESS OTHERWISE SPECIFIED | | 1. SUBGRADE HAS BEEN COMPACTED TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT; |
| 2.1.3 | GALVANIZING: ASTM A123/A123M, STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS. | 2.9 | CORROSION INHIBITOR: CALCIUM NITRIDE MEETING THE REQUIREMENTS OF CSA S413, APPENDIX C | | 2. TRENCHES, HOLES ETC. THAT WERE DUG AFTER THE PREPARATION OF THE SUBGRADE HAVE BEEN FILLED WITH NEW GRANULAR MATERIAL AND COMPACTED TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT; |
| 2.1.4 | GALVANIZING: HOT-DIP TO ASTM A153 / A153M-16 STANDARD SPECIFICATION FOR ZINC COATINGS (HOT-DIP) ON IRON AND STEEL HARDWARE. | 2.10 | VAPOUR BARRIER FOR SLABS ON GRADE: POLYETHYLENE MEMBRANE, 0.25 MM THICK TO ASTM E1745 | 3 | REINFORCING STEEL IS PROPERLY CHAIRED AND HELD SECURELY IN PLACE. |
| 2.1.5 | PAINT: | 2.11 | CONTROL JOINT FILLER: SEMI-RIGID JOINT FILLER | 4 | ALL EQUIPMENT FOR THE FINISHING OF CONCRETE AND THE SAW CUTTING OF CONTROL JOINTS IS ON SITE AND WORKING PROPERLY; |
| | 1. INTERIOR: SHOP COAT FOR STEEL THAT WILL NOT RECEIVE A FINISH COAT. TO CISC/CPMA STANDARD 1-73A, A QUICK DRYING ONE-COAT PAINT FOR USE ON STRUCTURAL STEEL. | | CONTROL JOINT FILLER: BY EUCLOD CANADA INC., TORONTO, ON. | 5 | USE EARLY ENTRY SAW (SOFF-CUT, BY HUSQVARNA) COMMENCE SAWCUTTING AS SOON AS CONCRETE CAN SUPPORT WEIGHT OF SAW AND OPERATOR WITHOUT MARKING CONCRETE SURFACE AND WITHIN 2 HOURS OF COMPLETION OF FINAL FINISHING; |
| | 2. INTERIOR: PRIME PAINT: TO MEET THE REQUIREMENTS OF CISC/CPMA STANDARD 2-75, A QUICK DRYING PRIMER FOR USE ON STRUCTURAL STEEL. | 2.12 | LOADFLEX: BY SIKKA CANADA INC., MISSISSAUGA, ON. | 3.10 | FLOOR FINISH: HARD, SMOOTH, DENSE TROWELED SURFACE FREE FROM BLEMISHES. |
| | 3. EXTERIOR: ZINC-RICH PAINT READY MIX TO SPOC-PAINT 20 STANDARD | | PLANIBOND JF, BY MAPEI INC., BRAMPTON, ON. | 4 | FIELD QUALITY CONTROL |
| 3 | EXECUTION | | PREMIXED GROUT: DRYPACK NON-SHRINK NON-METALLIC | 4.1 | INSPECTION AND TESTING COMPANY RETAINED BY THE CONTRACTOR, SHALL PERFORM: |
| 3.1 | PROVIDE WELDED STIFFENER PLATES MINIMUM 10 mm THICK ON BOTH SIDES OF WEB OF BEAMS AT POINTS OF CONCENTRATED LOADS INCLUDING BEAMS SUPPORTING COLUMNS OR BEAMS SUPPORTED ON TOP OF COLUMNS. | 3.1 | | 4.1.1 | SAMPLING, INSPECTION AND TESTING IN ACCORDANCE WITH CSA S23.2 AND TO INCLUDE: |
| 3.2 | ALL EXPOSED WELDS SHALL BE CONTINUOUS AND GROUND SMOOTH. | 3.2 | ALL REINFORCEMENT SHALL BE SECURELY HELD IN PROPER POSITION WHILE PLACING CONCRETE. PROVIDE CHAIRS, TIES, SPACERS, ADDITIONAL SUPPORT BARS AND STIRRUPS AS MAY BE REQUIRED. | | 1. MAKING STANDARD SLUMP TESTS; |

[illegible]

EMBEDDED CONDUITS AND PIPES IN CONCRETE SLAB (NON-PARKING STRUCTURES)

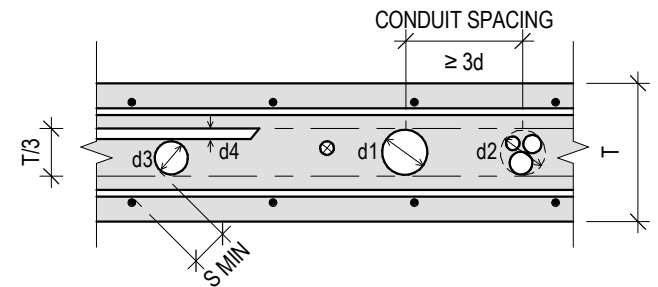
C-026



PLAN

NOTES:

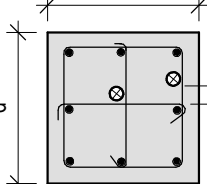
- PLACE CONDUITS AND PIPES IN CONCRETE SLABS AND WALLS IN ACCORDANCE WITH CSA STANDARD A23.1 CLAUSE 6.7.5.
- DO NOT RUN CONDUITS LONGITUDINALLY IN A BEAM WITHOUT STRUCTURAL CONSULTANT'S APPROVAL.
- PASS CONDUITS THROUGH A BEAM AT RIGHT ANGLES TO THE SPAN OF THE BEAM.
- DO NOT PLACE CONDUITS CLOSER THAN SPACING 'S', AS DEFINED ABOVE, FROM COLUMNS, DROPS, AND BEAMS.



SLAB

NOTES:

- OUTSIDE DIAMETER OF ONE CONDUIT (d1) OR BUNDLE OF CONDUITS (d2) OR CROSSING CONDUITS (d3+d4) SHALL NOT EXCEED T/3.
- PLACE CONDUITS IN MIDDLE THIRD OF SLAB THICKNESS. PROVIDE ADDITIONAL CHAIRS FOR CONDUITS AS REQUIRED.
- DO NOT ALLOW CONDUIT TO LAY DIRECTLY ON REINFORCING STEEL. SECURE CONDUITS IN PLACE TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.
- PLACE CONDUIT MINIMUM 3d APART WHERE d EQUALS LARGER OF ADJACENT PARALLEL CONDUIT DIAMETERS.
- PLACE CONDUIT GREATER THAN 1.4 dφ AND 30 (1 1/4"), S MIN. FROM ADJACENT PARALLEL REINFORCING BARS.



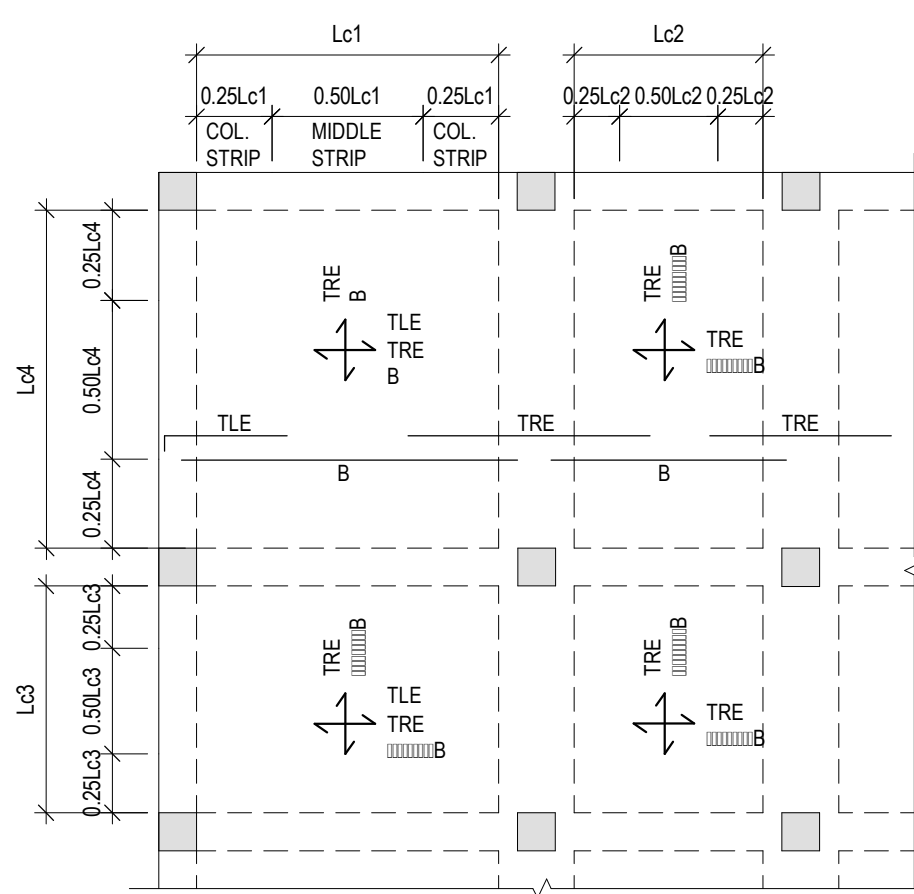
CONCRETE COLUMN

NOTES:

- TOTAL AREA OF CONDUITS SHALL NOT EXCEED 1% OF THE GROSS AREA OF COLUMN (b x d).
- SECURE CONDUITS TO COLUMN TIES TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE. PLACE CONDUIT GREATER THAN 1.4 dφ AND 30 (1 1/4"), S MIN. FROM ADJACENT PARALLEL REINFORCING BARS.

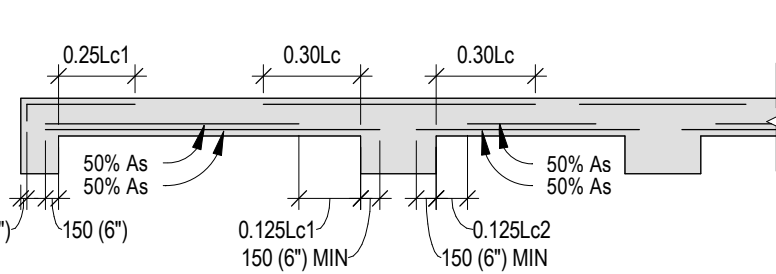
TWO-WAY SLAB SYSTEM (CONFORMING TO CSA A23.3 ANNEX B)

C-006



NOTES:

- PROVIDE MINIMUM 2-15M SPACER BARS SUPPORTED BY CHAIRS AT 1800 (6'-0") MAXIMUM FOR TOP BARS. PROVIDE CHAIRS IN ACCORDANCE WITH REINFORCED STEEL MANUAL OF STANDARD PRACTICE.
- AREAS OF STEEL GIVEN ON PLAN ARE REINFORCEMENT WITHIN MIDDLE STRIPS. SEE PLAN FOR ORDER OF PLACING REINFORCING STEEL.
- EXCEPT FOR TOP BARS, AREA OF REINFORCEMENT IN COLUMN STRIPS MAY BE REDUCED TO 75% OF MIDDLE STRIP REINFORCEMENT BUT NOT LESS THAN THAT REQUIRED FOR TEMPERATURE REINFORCEMENT NOR SPACED AT MORE THAN 3 TIMES SLAB THICKNESS OR 450 (18").
- AT OUTER EDGE, EXTEND TOP BARS TO 75 (3") OF OUTER EDGE OF CONSTRUCTION AND TERMINATE IN STANDARD 90 DEGREE HOOK. WHERE BEAM DEPTH DOES NOT ACCOMMODATE 90 DEGREE HOOK, USE 180 DEGREE HOOK.
- EXTEND TOP STEEL 900 (36") INTO ADJACENT BUT DISCONTINUOUS SLAB UNLESS NOTED OTHERWISE ON PLAN.
- AT DISCONTINUOUS EDGE, EXTEND BOTTOM BARS MINIMUM 150 (6") INTO SUPPORT. WHERE STRAIGHT EMBEDMENT IS NOT POSSIBLE, PROVIDE STANDARD 90 DEGREE HOOK LAID FLAT. AT SPANDREL BEAMS WIDER THAN SUPPORT COLUMN, EXTEND ALTERNATE BOTTOM BARS TO 75 (3") OF OUTER EDGE.
- PROVIDE ADDITIONAL TOP AND BOTTOM REINFORCEMENT AS REQUIRED AT EXTERIOR CORNERS AND EDGES WHERE SUPPORT WALLS OR STIFF BEAMS INTERSECT. SEE TYPICAL DETAIL C-009.
- DIMENSIONS ARE MILLIMETRES, EXCEPT DIMENSIONS IN BRACKETS ARE INCHES.



- Lc is GREATER OF TWO ADJACENT SPANS
- ALTERNATE LONG AND SHORT BOTTOM BARS

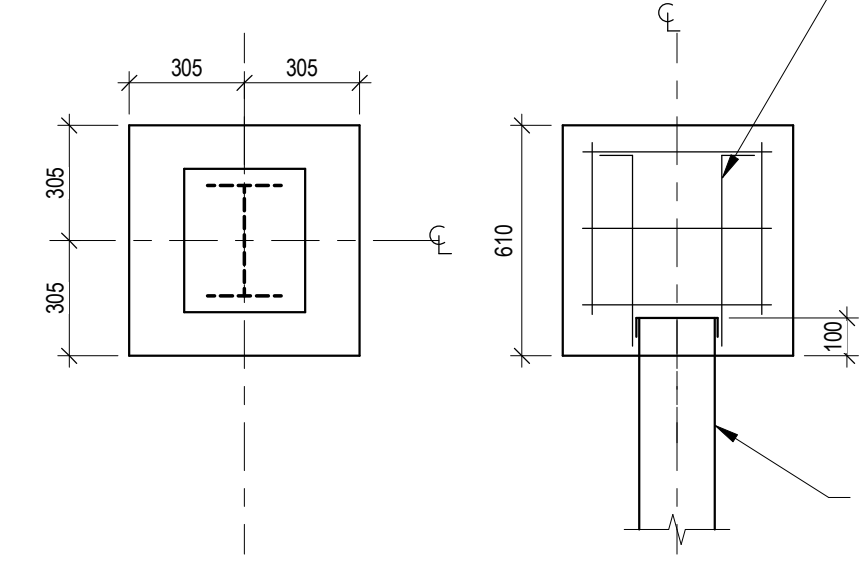
MINIMUM CONCRETE COVER TO LONGITUDINAL REINFORCEMENT

C-002

| ELEMENT | BAR SIZE | EXPOSURE CLASS | | | | | | | | | | | | | | | | | |
|--|--|-------------------|----|----|---|---|----|--------------------|----|----|---|----|--|-------------------------------|-----|-----|--|--|--|
| | | N, N-CF | | | | | | F-1, F-2, S-1, S-2 | | | | | | C-XL, C-1, C-3, A-1, A-2, A-3 | | | | | |
| | | FIRE RATING (HRS) | | | | | | | | | | | | | | | | | |
| | | ≤2 | | | 3 | 4 | ≤2 | | | 3 | 4 | ≤2 | | | 3 | 4 | | | |
| SLABS (TOP) NON-PARKING STRUCTURE | ≤25M | 30 | | | | | | 40 | | | | | | 60 | | | | | |
| | 30M | 30 | | | | | | 45 | | | | | | 60 | | | | | |
| | 35M | 35 | | | | | | 55 | | | | | | 70 | | | | | |
| SLABS (BOTTOM) NON- PARKING STRUCTURE AND WALLS EXPOSED TO FIRE ON ONE SIDE ONLY | ≤25M | 25 | 35 | 40 | | | | 40 | | | | | | | 60 | | | | |
| | 30M | 30 | 35 | 40 | | | | 45 | | | | | | | 60 | | | | |
| | 35M | 35 | 35 | 40 | | | | 55 | | | | | | | 70 | | | | |
| | ≤30M | 50 | | | | | | 50 | | | | | | 60 | | | | | |
| | 35M | 50 | | | | | | 55 | | | | | | 70 | | | | | |
| BEAMS | 45M | 50 | | | | | | 70 | | | | | | 90 | | | | | |
| | ≤30M | 50 | 50 | 65 | | | | 50 | 50 | 65 | | | | 60 | 60 | 65 | | | |
| | 35M | 50 | 50 | 65 | | | | 55 | 55 | 65 | | | | 70 | 70 | 70 | | | |
| COLUMNS AND WALLS POTENTIALLY EXPOSED TO FIRE SIMULTANEOUSLY ON BOTH FACES | 45M | 50 | 50 | 65 | | | | 75 | 70 | 70 | | | | 90 | 90 | 90 | | | |
| | 55M | 55 | 55 | 65 | | | | 85 | 85 | 85 | | | | 110 | 110 | 110 | | | |
| | ≤35M | 75 | | | | | | 75 | | | | | | 75 | | | | | |
| | MEMBERS CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH | ≤35M | 75 | | | | | | 75 | | | | | | 75 | | | | |

DRIVEN PILE CAP SCHEDULE

PILE CAP "PC1"



REINF.: 4-10M VERT.
3-10M TIES
PILE CAP DEAD LOAD=13.6kN

TENSION DEVELOPMENT LENGTH AND TENSION LAP SPLICES (Fy=400 MPa AND 500 MPa)

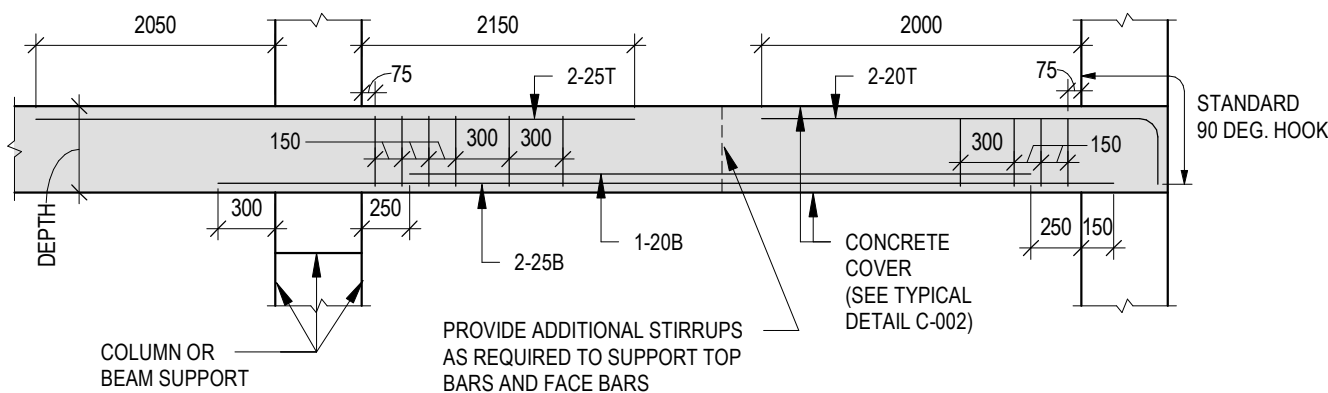
C-017

| CONCRETE | 25 MPa | | 30 MPa | | 35 MPa | | 40 MPa | | 45 MPa | | 50 MPa | | CONCRETE |
|-------------------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|----------|
| SPLICE | CLASS A OR Ld | CLASS B = 1.3*Ld | CLASS A OR Ld | CLASS B = 1.3*Ld | CLASS A OR Ld | CLASS B = 1.3*Ld | CLASS A OR Ld | CLASS B = 1.3*Ld | CLASS A OR Ld | CLASS B = 1.3*Ld | CLASS A OR Ld | CLASS B = 1.3*Ld | SPLICE |
| UNCOATED, OTHER THAN TOP BARS | | | | | | | | | | | | | |
| 10M | 300 (12) | 380 (15) | 300 (12) | 350 (14) | 300 (12) | 320 (13) | 300 (12) | 300 (12) | 300 (12) | 300 (12) | 300 (12) | 300 (12) | 10M |
| 15M | 440 (18) | 570 (23) | 400 (16) | 520 (21) | 370 (15) | 480 (19) | 350 (14) | 450 (18) | 330 (13) | 420 (17) | 310 (12) | 400 (16) | 15M |
| 20M | 580 (23) | 750 (30) | 530 (21) | 690 (28) | 490 (20) | 640 (26) | 460 (19) | 600 (24) | 430 (17) | 560 (23) | 410 (16) | 530 (21) | 20M |
| 25M | 900 (36) | 1170 (47) | 830 (33) | 1070 (43) | 760 (30) | 990 (39) | 720 (29) | 930 (37) | 670 (27) | 880 (35) | 640 (26) | 830 (33) | 25M |
| 30M | 1080 (43) | 1410 (56) | 990 (39) | 1290 (51) | 920 (37) | 1190 (47) | 860 (34) | 1110 (44) | 810 (32) | 1050 (42) | 770 (31) | 1000 (40) | 30M |
| 35M | 1260 (50) | 1640 (65) | 1150 (46) | 1500 (60) | 1070 (43) | 1390 (55) | 1000 (40) | 1300 (52) | 940 (38) | 1220 (49) | 890 (36) | 1160 (46) | 35M |
| UNCOATED, TOP BARS | | | | | | | | | | | | | |
| 10M | 380 (15) | 490 (20) | 350 (14) | 450 (18) | 320 (13) | 420 (17) | 300 (12) | 390 (16) | 300 (12) | 370 (15) | 300 (12) | 350 (14) | 10M |
| 15M | 570 (23) | 730 (29) | 520 (21) | 670 (27) | 480 (19) | 620 (25) | 450 (18) | 580 (23) | 420 (17) | 550 (22) | 400 (16) | 520 (21) | 15M |
| 20M | 750 (30) | 980 (39) | 690 (28) | 890 (36) | 640 (26) | 830 (33) | 600 (24) | 770 (31) | 560 (23) | 730 (29) | 530 (21) | 690 (28) | 20M |
| 25M | 1170 (47) | 1530 (61) | 1070 (43) | 1390 (55) | 990 (39) | 1290 (51) | 930 (37) | 1210 (48) | 880 (35) | 1140 (45) | 830 (33) | 1080 (43) | 25M |
| 30M | 1410 (56) | 1830 (73) | 1290 (51) | 1670 (66) | 1190 (47) | 1550 (62) | 1110 (44) | 1450 (58) | 1050 (42) | 1360 (54) | 1000 (40) | 1290 (51) | 30M |
| 35M | 1640 (65) | 2130 (84) | 1500 (60) | 1950 (77) | 1390 (55) | 1800 (71) | 1300 (52) | 1690 (67) | 1220 (49) | 1590 (63) | 1160 (46) | 1510 (60) | 35M |

- USE TABULATED TENSION LAP SPLICE LENGTHS UNLESS NOTED OTHERWISE ON DRAWINGS.
- TENSION DEVELOPMENT LENGTHS, Ld DENOTED AS TENSION LAP SPLICE CLASS A.
- TOP BARS ARE BARS WITH MORE THAN 300 (12") OF CONCRETE BELOW.
- CLEAR COVER NOT LESS THAN dφ. CLEAR SPACING NOT LESS THAN 1.4 dφ.
- FOR REINFORCEMENT WITH Fy = 500 MPa, INCREASE TABULATED LENGTHS BY 25%.
- FOR STRUCTURAL LOW-DENSITY CONCRETE, INCREASE TABULATED LENGTHS BY 30%.
- FOR STRUCTURAL SEMI-LOW DENSITY CONCRETE, INCREASE TABULATED LENGTHS BY 20%.
- DIMENSIONS ARE MILLIMETRES, EXCEPT DIMENSIONS IN BRACKETS ARE INCHES.

CONCRETE BEAM

| BEAM SCHEDULE | | | | | | | | | | | | | |
|---------------|-----------|---------------|-----|---|---------|------|----|---------|----|------|---------|----|----|
| BEAM MARK | BEAM SIZE | REINFORCEMENT | | | SUPPORT | | | SUPPORT | | | REMARKS | | |
| | | TOP/BOT | NO. | SIZE | LAYER | mm | mm | mm | mm | mm | mm | mm | mm |
| BM 101 SE | 350x600 | TOP | 2 | 25 | TUL | 2050 | | 2150 | | | | | |
| | | TOP | 2 | 20 | TUL | | | | | 2000 | | | |
| | | BOT | 1 | 20 | BUL | | | 250 | | 250 | | | |
| | | BOT | 2 | 25 | BLL | 300 | | | | 150 | | | |
| STIRR | LE | 10 | SC | 1@75, 3@150, 2@300 | | | | | | | | | |
| STIRR | RE | 10 | SC | 1@75, 2@150, 1@300 | | | | | | | | | |
| HANGER | | 15 | SC | 9 PLACED IN SUPPORTING BEAM (SEE TYP. DETAIL C-011 CONC. BEAM HANGER STIRR) | | | | | | | | | |



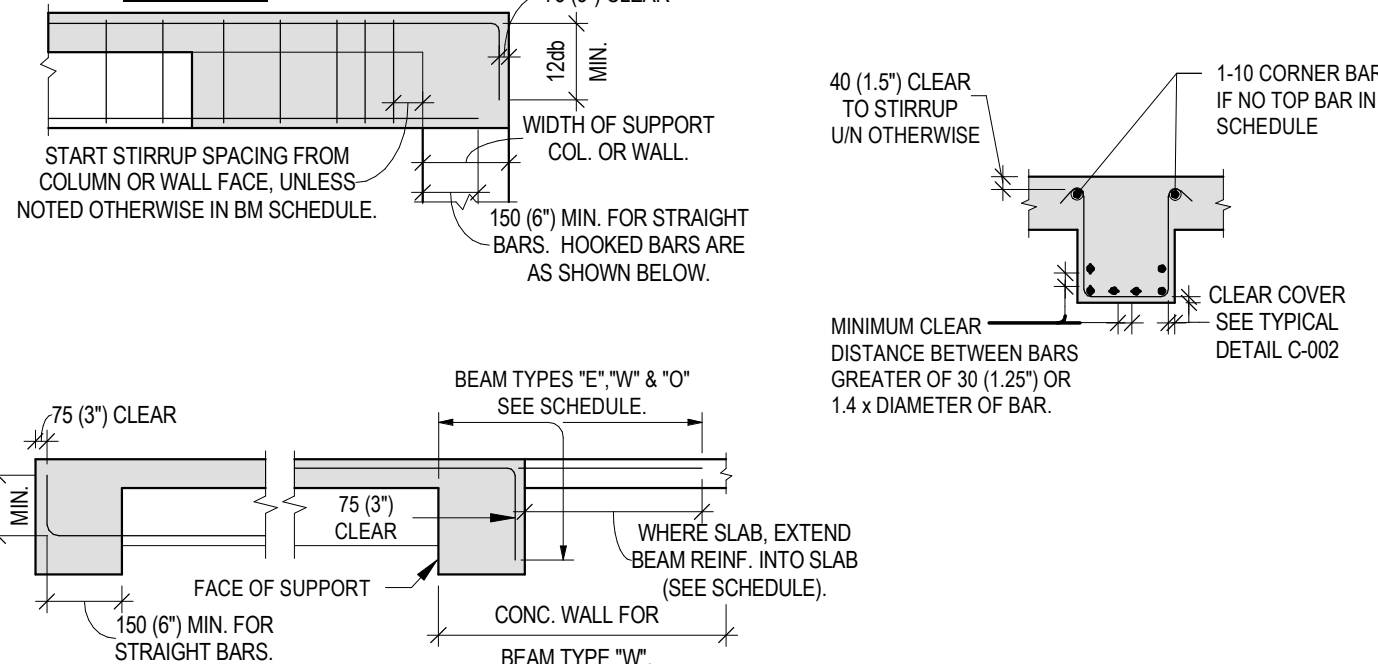
SAMPLE BEAM 101 - 350 x 600 (WIDTH x DEPTH)

BEAM SUPPORT TYPES
W=WALL
E=EXTERIOR
S=SLAB BEYOND
C=CONTINUOUS
O=NO SUPPORT

DETAIL OF BEAM SCHEDULE

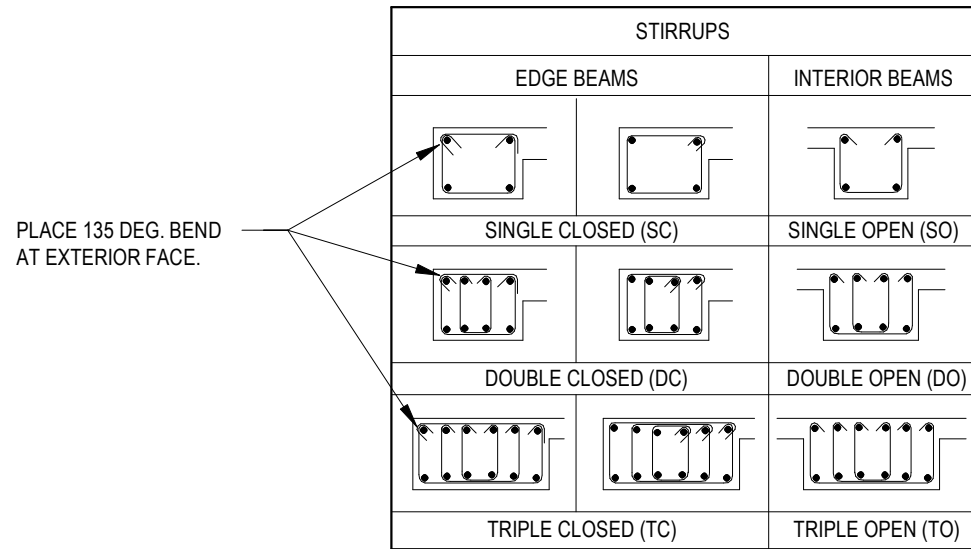
- DIMENSIONS ARE GIVEN LOOKING AT PLAN FROM BOTTOM OR RIGHT HAND BORDER. SEE "BEAM SUPPORT TYPES" FOR CONDITIONS AT SUPPORT. STIRRUP SPACING GIVEN STARTING FROM FACE OF SUPPORT.
- FIRST LETTER IN SCHEDULE INDICATES CONDITION AT LEFT SUPPORT, SECOND LETTER RIGHT SUPPORT. EXAMPLE IS IN METRIC UNITS. SIMILAR DETAILS APPLY TO IMPERIALLY SCHEDULED BEAMS.
- WHERE "150" SHOWN IN SCHEDULE, PROVIDE TENSION LAP SPLICE AT MID SPAN FOR TOP BARS AND AT FACE OF SUPPORT FOR BOTTOM BARS, UNLESS NOTED OTHERWISE.
- WHERE "1L" SHOWN IN SCHEDULE, LOWER INDICATED TOP BARS BELOW THE TOP BARS SPECIFIED IN CROSS BEAM.

BAR PLACING DETAILS



DETAIL OF BARS AT SUPPORT (DISCONTINUOUS EDGE)

- AT DISCONTINUOUS EDGE EXTEND TOP BARS TO 75 (3") OF OUTER EDGE OF SUPPORT AND TERMINATE IN STANDARD 90 DEGREE HOOK.
- WHERE BEAM DEPTH WILL NOT ACCOMMODATE 90 DEGREE HOOK USE STANDARD 180 DEGREE HOOK.
- BEAM SUPPORT TYPE "W" - TOP BARS EXTEND INTO CONCRETE WALL.
- DIMENSIONS ARE MILLIMETRES, EXCEPT DIMENSIONS IN BRACKETS ARE INCHES.



PLACE 135 DEG. BEND AT EXTERIOR FACE.

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES
400 COMMISSIONERS STREET, TORONTO, ONTARIO M4M 3K2

SCHEDULES

| | | | | |
|---------|-----------------|---------------|--------------|------------------|
| DESIGN: | DRAFTING: | CHECK: | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | DRAWING NUMBER: | 1601-2023-3-8 | S3 | |
| DATE: | | | | |

RECEIVED 15/Jul/2024

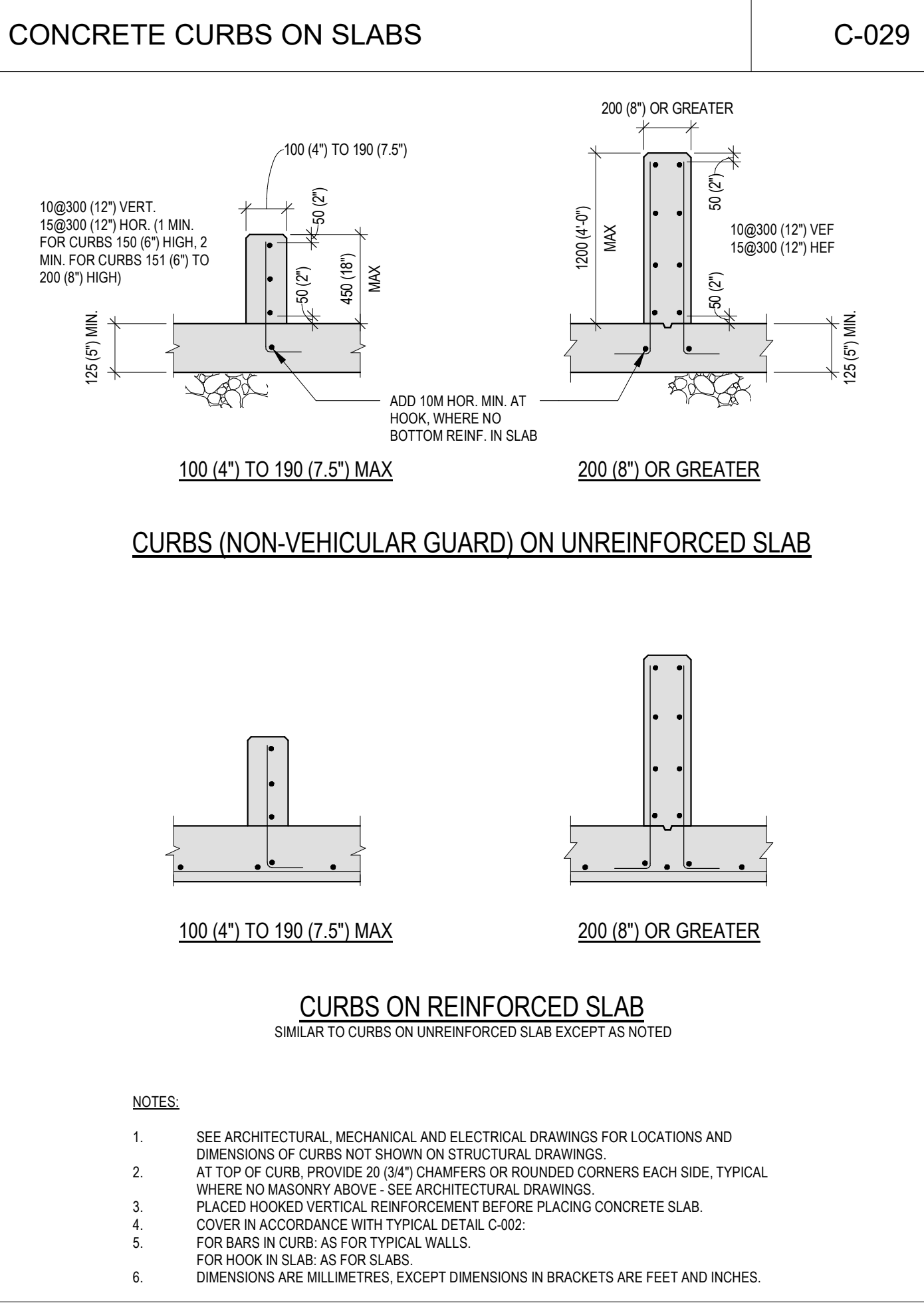
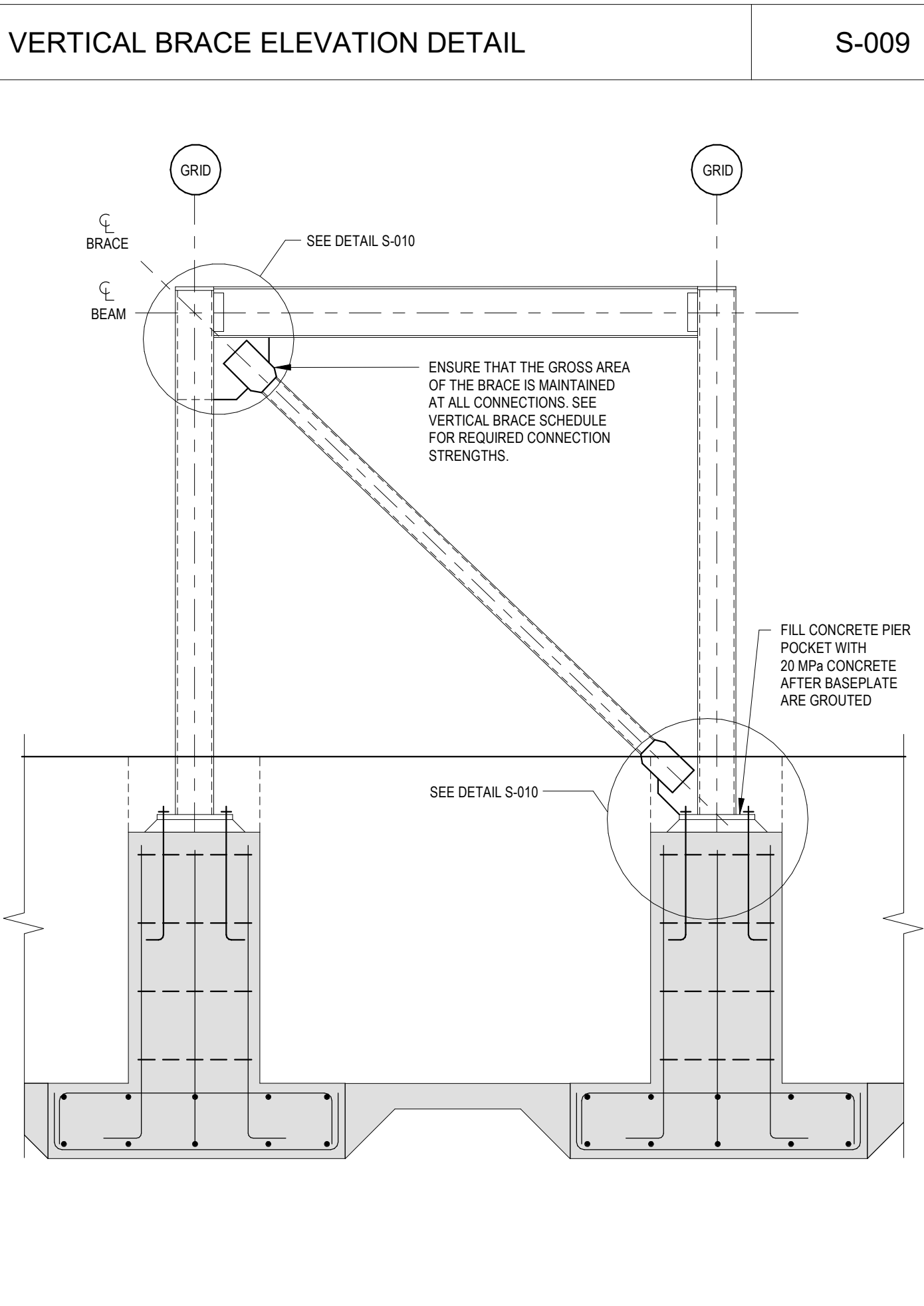
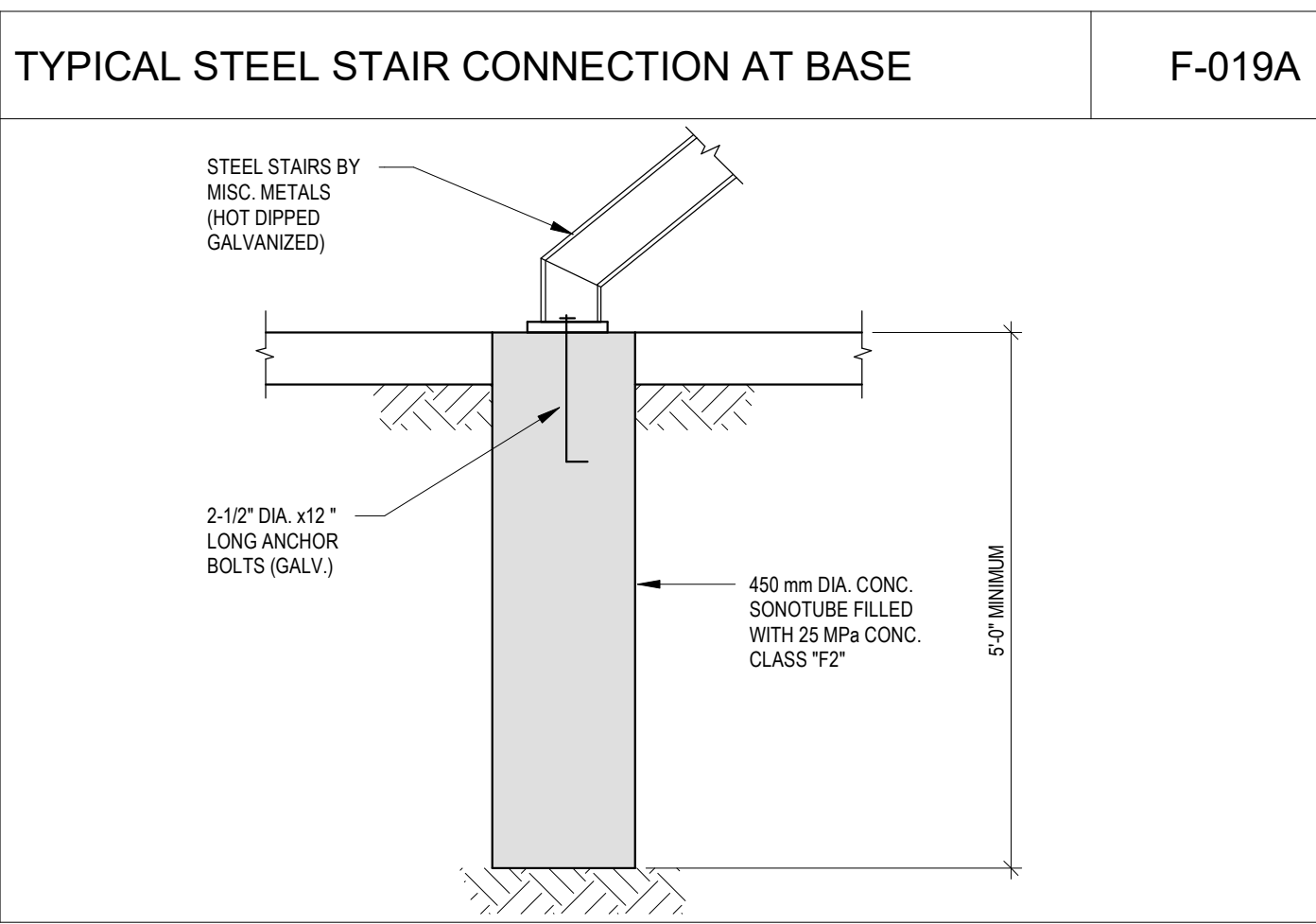
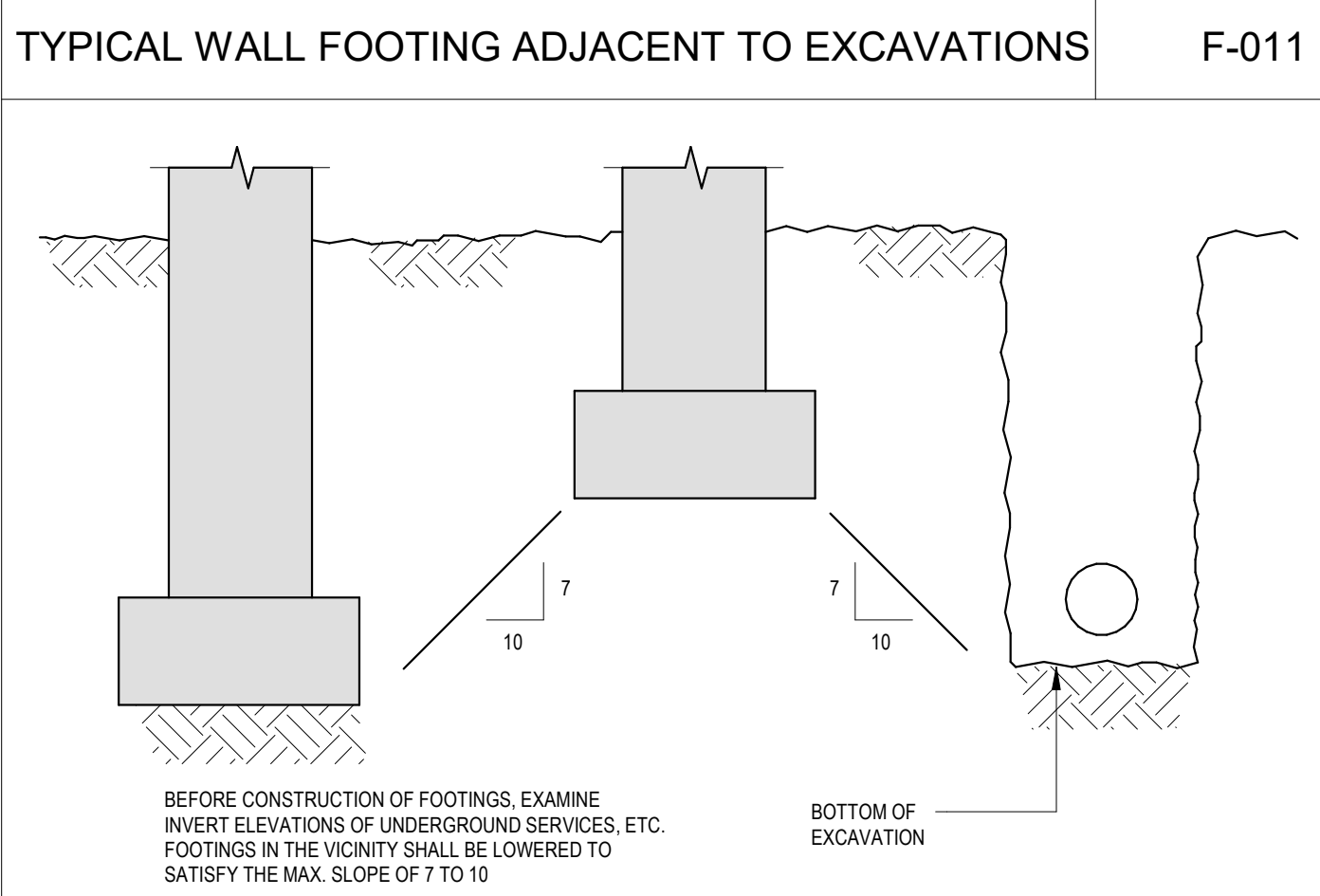
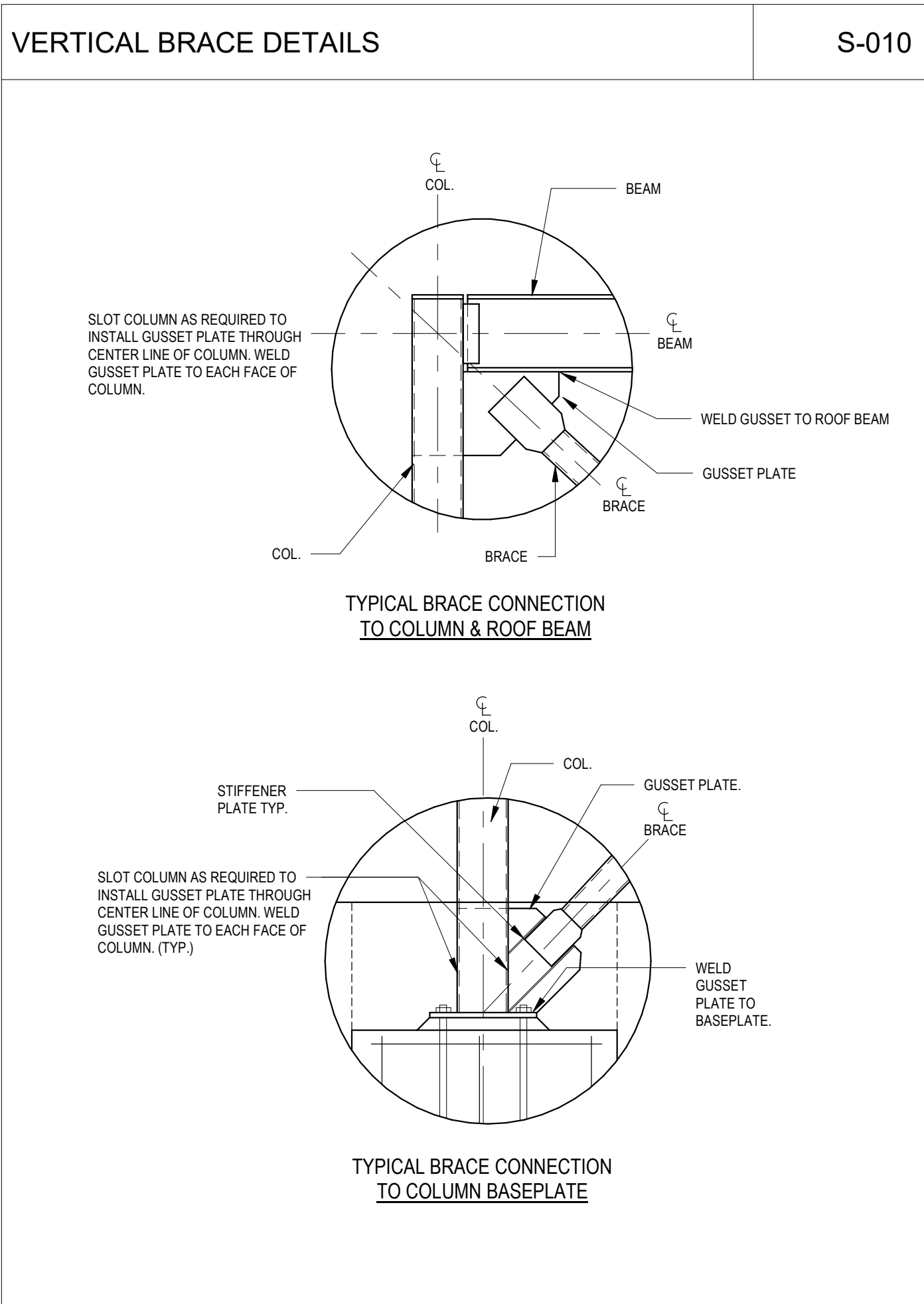


SOLID WASTE MANAGEMENT SERVICES



MATT KELHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT
SERVICES

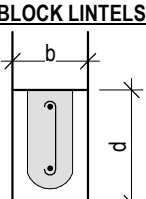
MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND RESOURCE
MANAGEMENT



LINTEL SCHEDULE AND NOTES

M-002

NON-LOAD BEARING PARTITIONS


| BLOCK LINTELS | MAX CLEAR SPAN | 140 BLOCK | | 190 BLOCK | | 240 BLOCK | | 290 BLOCK | |
|---|----------------|------------------|-----|-----------|----------|-----------|----------|-----------|----------|
| | | b | d | REBAR | STIRRUPS | b | d | REBAR | STIRRUPS |
|  | UP TO 1200 | 140 | 190 | 1-10 T&B | 190 | 190 | 1-10 T&B | 240 | 190 |
| | 1201 TO 1800 | 140 | 390 | 1-10 T&B | 190 | 390 | 1-15 T&B | 240 | 390 |
| | 1801 TO 2300 | 140 | 390 | 1-15 T&B | 190 | 390 | 1-20 T&B | 10@200 | 240 |
| | > 2300 | USE STEEL LINTEL | | | | | | | |

NOTES:

- CONCRETE FILL: 20 MPa MIN. STRENGTH WITH 150 SLUMP
- BEARING LENGTH: 200 MIN. AT EACH END.

STEEL LINTELS

| MAX CLEAR SPAN | 140 BLOCK | | 190 BLOCK | | 240 BLOCK | | 290 BLOCK | |
|----------------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|
| | BEAM | PLATE | BEAM | PLATE | BEAM | PLATE | BEAM | PLATE |
| 2300 TO 2600 | S200x27 | 130x10 | S200x27 | 180x10 | S200x27 | 230x10 | S200x27 | 280x10 |

| | |
|---|--------|
|  | NOTES: |
|---|--------|

- BEARING LENGTH: 150 MIN. EACH END. BEAR PLATE ON BUTTER COAT OF CEMENT MORTAR EACH END.

BRICK AND BLOCK WYTHES

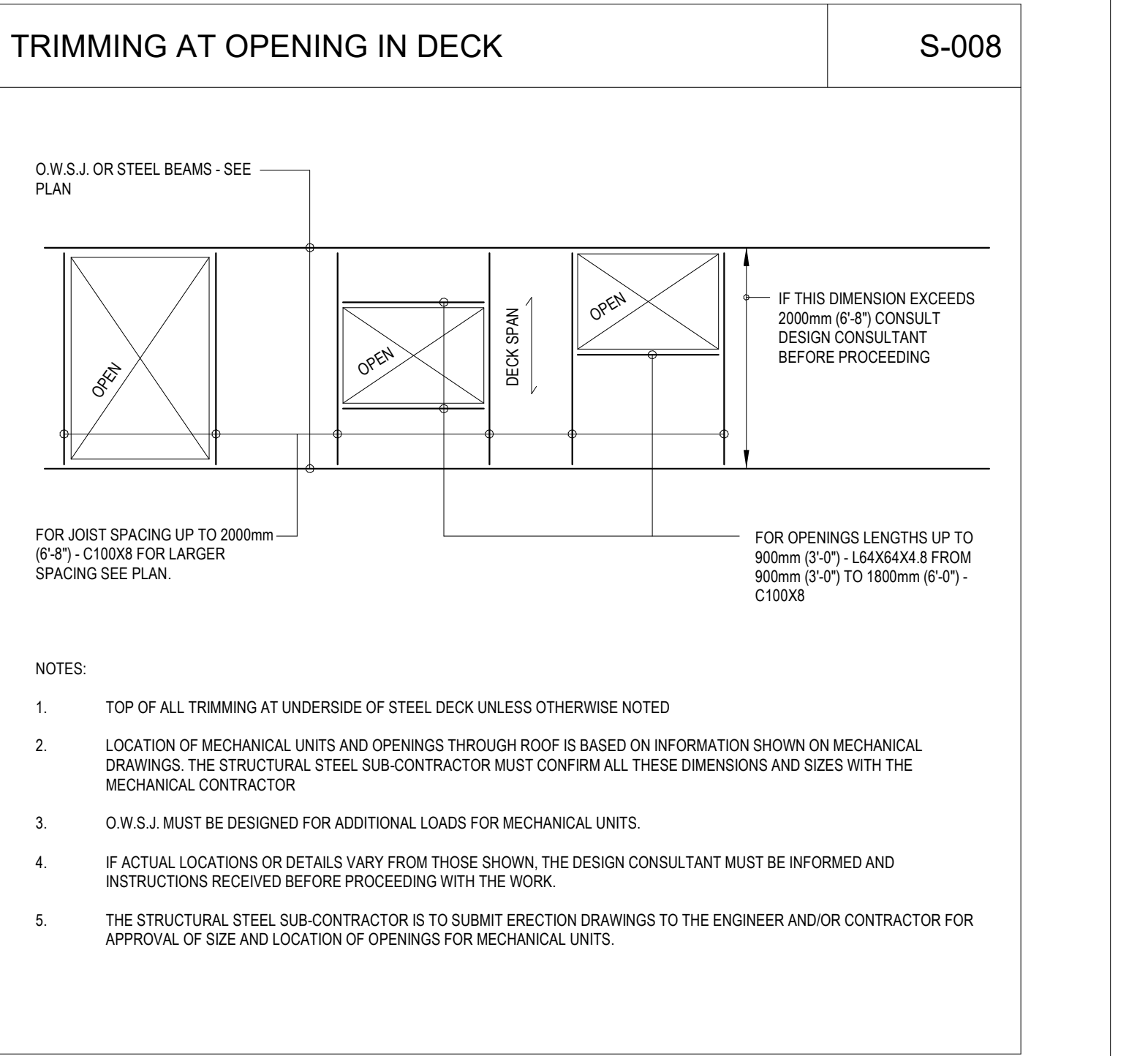
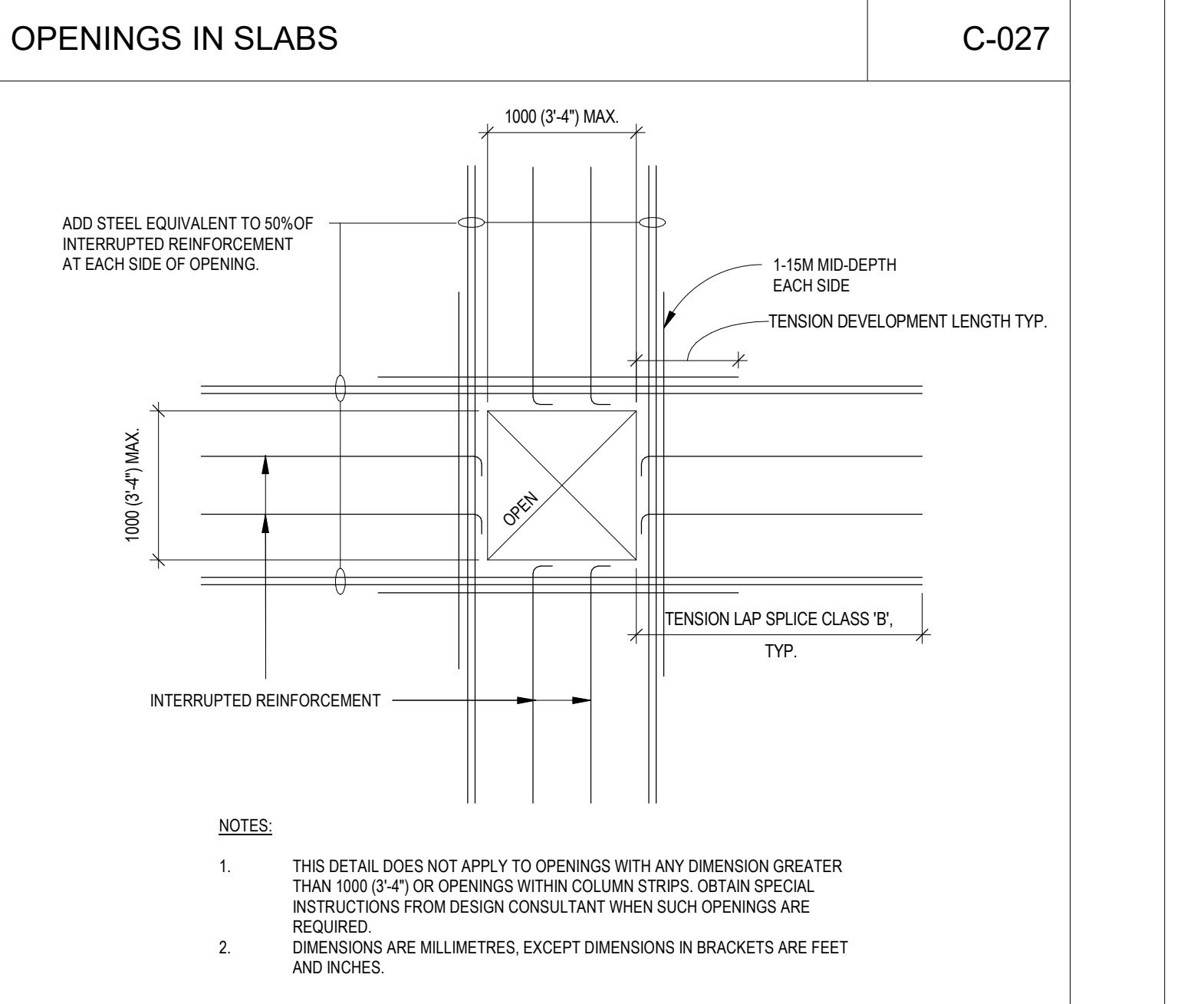
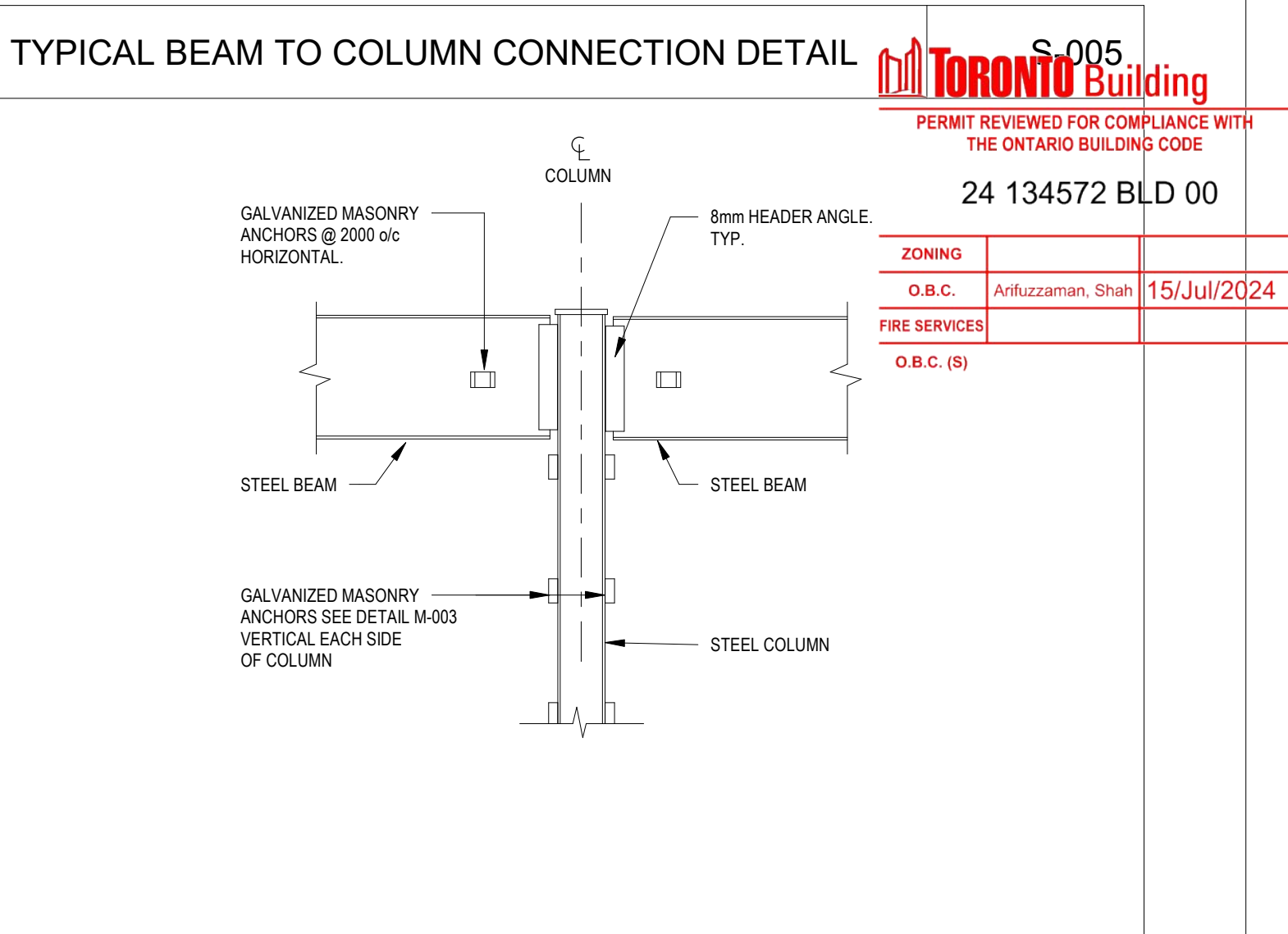
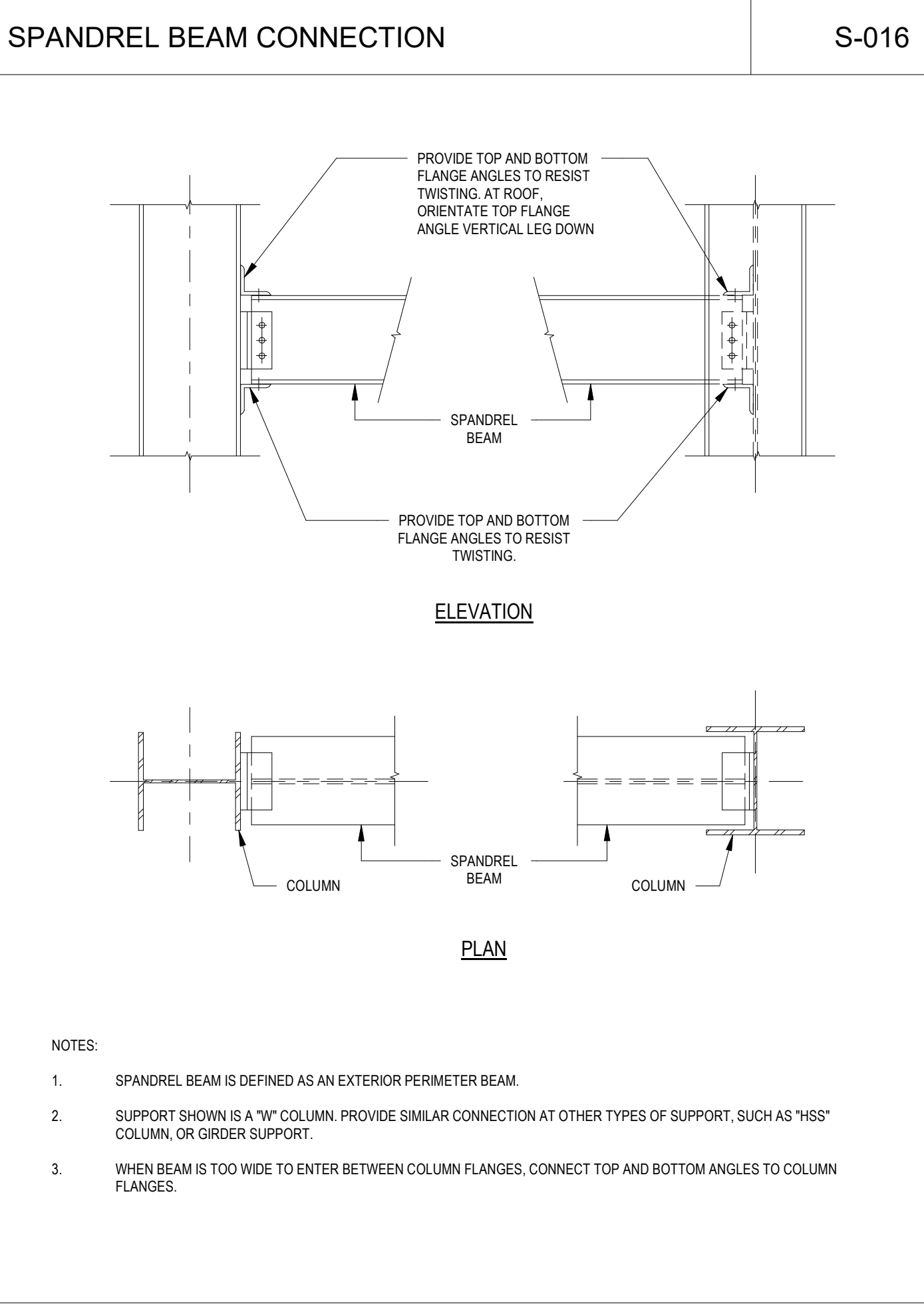
| MAX CLEAR SPAN | 1-100 THICK WYTH | | 2-100 THICK WYTH | | 3-100 THICK WYTH | | 4-100 THICK WYTH | | 5-100 THICK WYTH | |
|----------------|------------------|--------------|------------------|-------------|------------------|--------------|------------------|--------------|------------------|--|
| | UP TO 1500 | 1501 TO 2300 | 2301 TO 2800 | UP TO 1500 | 1501 TO 2300 | 2301 TO 2800 | UP TO 1500 | 1501 TO 2300 | 2301 TO 2800 | |
| | L 89x89x7 9 | L 127x89x7 9 | L 152x89x7 9 | L 89x89x7 9 | L 127x89x7 9 | L 152x89x7 9 | L 89x89x7 9 | L 127x89x7 9 | L 152x89x7 9 | |

NOTES:

- LONG LEGS VERTICAL
- BEARING LENGTH 150 MIN. EACH END. SET STEEL ANGLE LINTELS WITH ENDS WRAPPED WITH 6mm POLYETHYLENE SHEET ON 10GA. GALV. STEEL PLATES ON MASONRY EA. END.
- CONNECT ANGLES BACK TO BACK AT 800 o/c BY WELDING
- OR BOLTING ANGLES GREATER THAN 1800 LONG. USE 16 DIA. BOLTS
- FOR LOCATIONS & SIZES OF OPENINGS. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.

LINTEL CONNECTION TO CONCRETE OR STEEL STRUCTURE

1L-152x102x7 9 LLV WITH 2-20M (3/4") ANCHOR RODS + 40x4x300 (1 1/2" x 3/16"x12") STRAP ANCHORS WELDED TO ANGLE (STRAP ANCHORS FOR MASONRY LINTELS ONLY) FOR CONNECTION TO EXISTING CONC. STRUCTURES USE 2-20M (3/4") HIT/LI KWIK BOLT 3. FOR CONNECTION TO STEEL STRUCTURE USE 6 (1/4") WELD



| | | | | | |
|-----|------------|------------------------|---------|--------|--|
| 3 | | | | | |
| 2 | 2023.10.27 | ISSUED FOR 100% REVIEW | | | |
| 1 | 2023.10.20 | REISSUED FOR 70% CD | | | |
| No. | DATE | REVISIONS | INITIAL | SIGNED | |



SOLID WASTE MANAGEMENT SERVICES

MATT KELHER
GENERAL MANAGER
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MANAGEMENT

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES
400 COMMISSIONERS STREET, TORONTO, ONTARIO M4M 3K2

TYPICAL DETAILS

| | | | | | | | |
|---------|--|-----------|--|--------|--|-----------------|------------------|
| DESIGN: | | DRAFTING: | | CHECK: | | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | | | | | | DRAWING NUMBER: | 1601-2023-3-9 |
| DATE: | | | | | | | S4 |

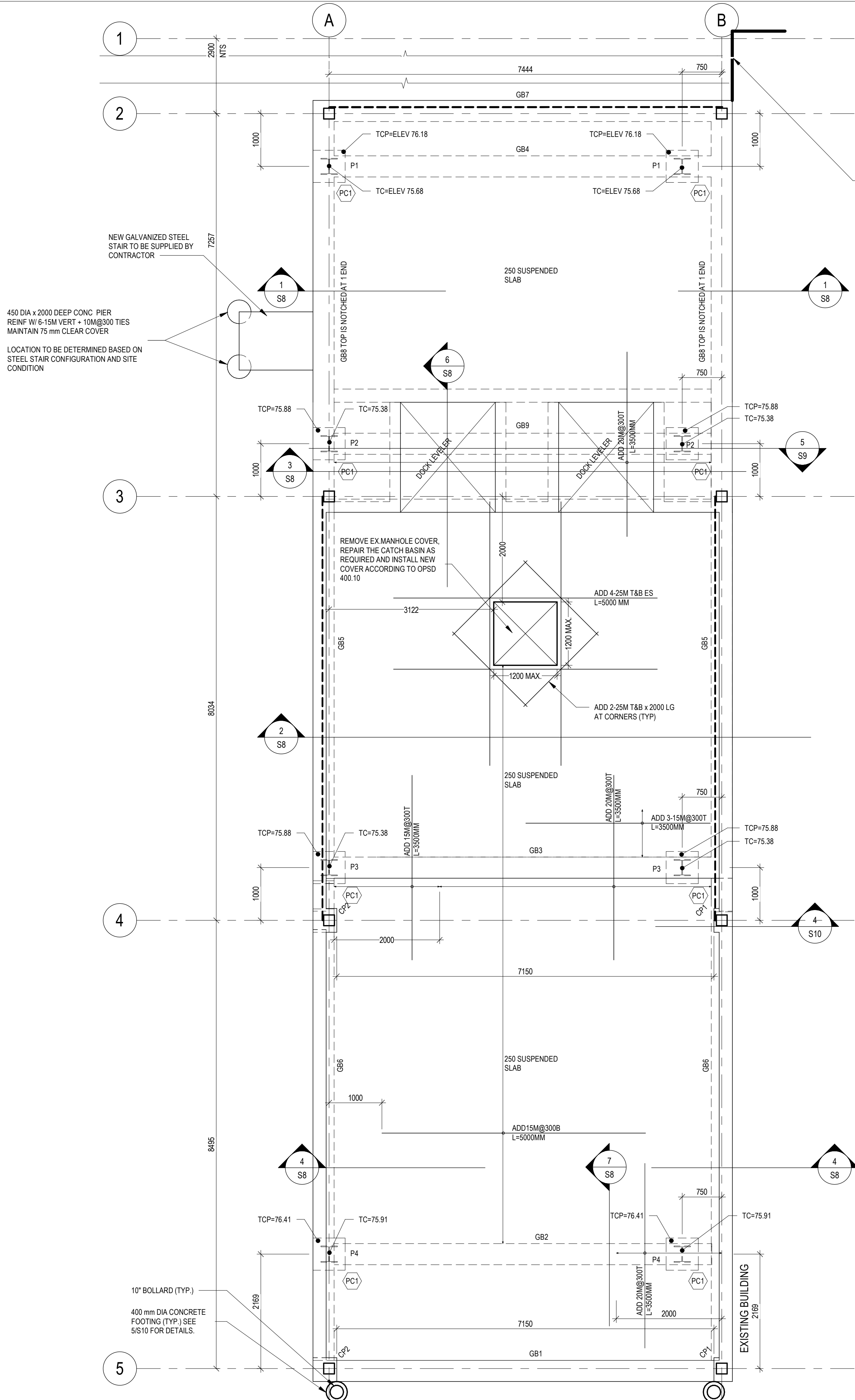
| CONCRETE GRADE BEAM SCHEDULE | | | | | | | | | | | | | | | | | | |
|------------------------------|----------------------------------|-----------------------|---|------|----------|----------------|--------------|----------------|----------------|----------------|---------------|----------------|--|------|--|------|---------|--|
| BEAM MARK | CONCRETE | | REINFORCEMENT | | | | | | | | | | REMARKS | | | | | |
| | SIZE (WIDTH X DEPTH) | SHAPE (SHADED) | LONGITUDINAL BARS | | | | | | | | STIRRUPS | | | | COMPRESSIVE STRENGTH OF CONCRETE: 35 MPa CLASS C1 AT 28 DAYS YIELD STRENGTH FOR LONGITUDINAL BARS: 400 MPa FOR STIRRUPS: 400 MPa TO CSA SPEC. G30.12-M1977 | | | |
| | | | LOCATIONS: T = TOP M = MIDDLE B = BOTTOM UL = UPPER LAYER LL = LOWER LAYER | | | $\frac{1}{2}L$ | LEFT SUPPORT | L | | | RIGHT SUPPORT | $\frac{1}{2}L$ | LOCATION: L = LEFT END R = RIGHT END TH = THROUGH OUT REM = REMAINDER EE = EACH END | | | | | |
| | | | No. | SIZE | LOCATION | | | $\frac{1}{4}L$ | $\frac{1}{4}L$ | $\frac{1}{4}L$ | | | $\frac{1}{4}L$ | SIZE | | TYPE | SPACING | LOCATION |
| | | | | | | | | | | | | | | | | | | |
| GB1 | 400 x 750 | | 3 | 20 | T | | | | | | | | | 10 | | @150 | TH | FOR CONTINUOUS BEAM, CONTINUE TOP REINFORCEMENT OVER SUPPORT TYPICAL FOR ALL GRADE BEAMS |
| GB2 | 400 x 750 cantil. one end | | 3 | 35 | T | | | | | | | | | 15 | | @150 | REM | LENGTH=2500MM FROM GRID B |
| | | | 8 | 15 | M | | | | | | | | | 15 | | @100 | R | |
| | | | 3 | 35 | B | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| GB3 | 400 x 750 cantil. one end | | 3 | 30 | T | | | | | | | | | 15 | | @100 | R | LENGTH=2500MM FROM GRID B |
| | | | 8 | 15 | M | | | | | | | | | 15 | | @350 | REM | |
| | | | 3 | 35 | B | | | | | | | | | | | | | |
| GB4 | 400 x 1700 cantil. one end | | 4 | 20 | T | | | | | | | | | 15 | | @300 | TH | |
| | | | 28 | 15 | M | | | | | | | | | | | | | |
| | | | 4 | 25 | B | | | | | | | | | | | | | |
| GB5 | 400 x 750 | | 3 | 25 | T | | | | | | | | | 15 | | @100 | R | LENGTH=1500MM FROM GRID 3 |
| | | | 8 | 15 | M | | | | | | | | | 15 | | @200 | REM | |
| | | | 3 | 25 | B | | | | | | | | | | | | | |
| GB6 | 400 x 750 | | 3 | 20 | T | | | | | | | | | 10 | | @200 | TH | |
| | | | 8 | 15 | M | | | | | | | | | | | | | |
| | | | 3 | 20 | B | | | | | | | | | | | | | |
| GB7 | 400 x 1700 | | 3 | 20 | T | | | | | | | | | 10 | | @550 | TH | |
| | | | 28 | 15 | M | | | | | | | | | | | | | |
| | | | 3 | 20 | B | | | | | | | | | | | | | |
| GB8 | 400 x 1700 | | 3 | 25 | T | | | | | | | | | 10 | | @200 | TH | |
| | | | 28 | 15 | M | | | | | | | | | | | | | |
| | | | 3 | 20 | B | | | | | | | | | | | | | |
| GB9 | 400 x 1500 cantil. one end | | 3 | 25 | T | | | | | | | | | 15 | | @150 | R | LENGTH=2500MM FROM GRID B |
| | | | 26 | 15 | M | | | | | | | | | 15 | | @350 | REM | |
| | | | 3 | 25 | B | | | | | | | | | | | | | |

| PILE SCHEDULE | | | | | |
|---------------|-------------|-------------------|------------------------|--------------------|--------------|
| Pile # | Verticality | Pile Lgth. (m) | Factored ULS | | Pile Section |
| | | | Compression Load kN | Tension Load kN | |
| P1 | Vert. | 14.68 | 1600 | 0 | HP 310x110 |
| P2 | Vert. | 14.38 | 1600 | 0 | HP 310x110 |
| P3 | Vert. | 14.38 | 1600 | 0 | HP 310x110 |
| P4 | Vert. | 14.91 | 1600 | 0 | HP 310x110 |

| SLAB NOTES | | | | | |
|--|---------------------------------|---------------------------------|----------------|--------------------------|--|
| SLAB THICKNESS | REINFORCEMENT | | | | |
| | PRIMARY TOP BARS | PRIMARY BOTTOM BARS | INTEGRITY BARS | ADDITIONAL REINFORCEMENT | REMARKS |
| 250 SUSPENDED SLAB | 20M@300 EACH WAY CONTINUOUS MAT | 20M@300 EACH WAY CONTINUOUS MAT | | SEE PLAN | REINFORCEMENT SHOWN ON PLAN IS ADDITIONAL TO PRIMARY REINFORCEMENT |
| <div><div></div><div>TUL = TOP UPPER LAYER TLL = TOP LOWER LAYER BUL = BOTTOM UPPER LAYER BLL = BOTTOM LOWER LAYER</div></div> | | | | | |

| PIER SCHEDULE | | | |
|---------------|--------------------|--------------|---------|
| MARK | SIZE | VERT. REINF. | TIES |
| CP1 | 450 x 350 x VARIES | 4-20M | 10M@100 |
| CP2 | 450 x 450 x VARIES | 4-20M | 10M@100 |

NOTE:
EXISTING CONDITIONS AS SHOWN ON THE STRUCTURAL DRAWINGS ARE BASED UPON THE INFORMATION AVAILABLE AT THE TIME THAT DRAWINGS WERE PREPARED. THE CONTRACTOR IS TO VERIFY EXISTING CONDITIONS AND REPORT ANY VARIATIONS TO THE CONTRACT ADMINISTRATOR. THE CONTRACTOR IS TO WAIT FOR FURTHER INSTRUCTION PRIOR TO PROCEEDING WITH THE WORK.



NEW GALVANIZED LINTEL
SEE MECH DRAWINGS FOR
LENGTH AND EXACT
LOCATION. SEE TYPICAL
LINTEL SCHEDULE.
SITE VERIFY EXISTING WALL
CONSTRUCTION (ASSUMED
TO BE 100 BRICK VENEER,
AND 250 MASONRY WALL
CONSTRUCTION).

CONTRACTOR TO DESIGN
PROVIDE SHORING/BRACING
AS REQUIRED TO INSTALL
LINTEL.

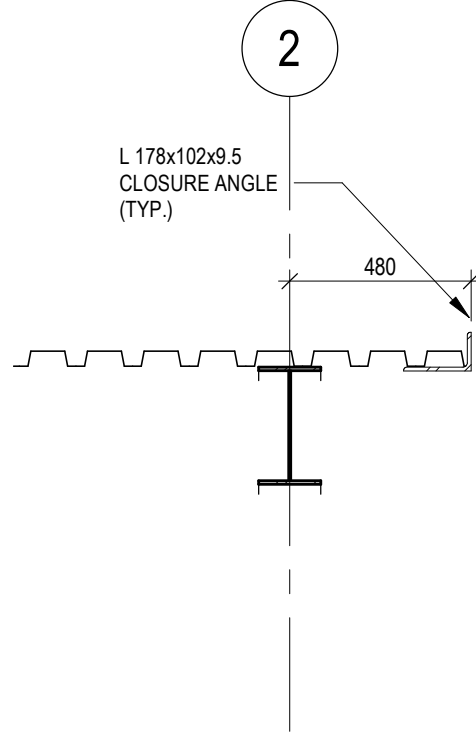
FOUNDATION FRAMING PLAN

1 : 50

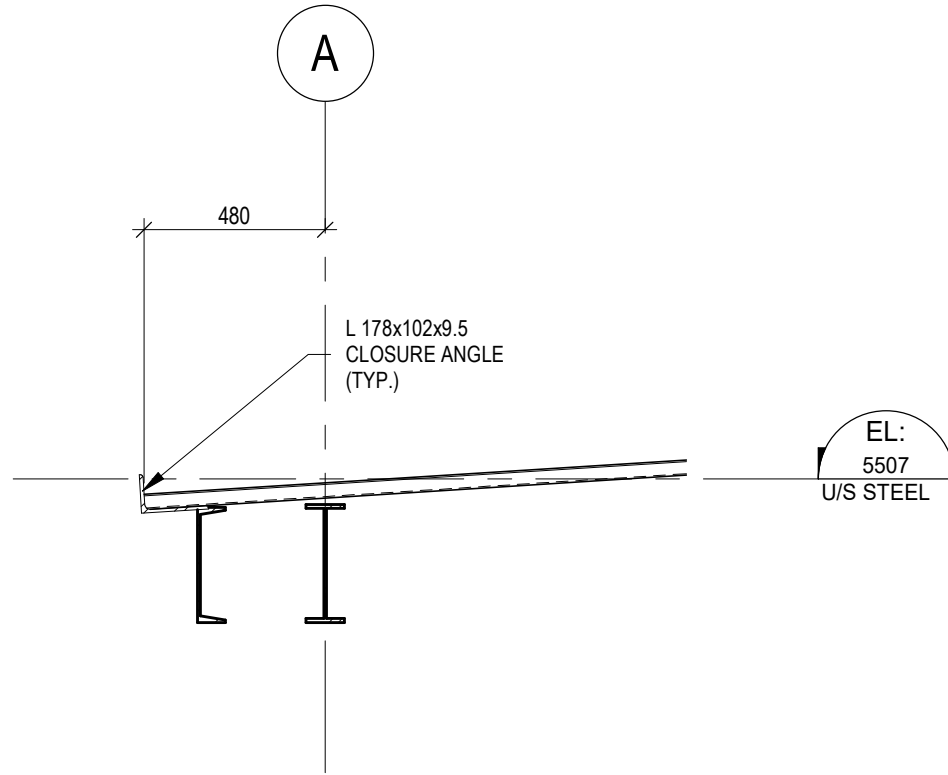
FOUNDATION NOTES (DRIVEN PILES)

- FINISHED DRIVEN PILES AT ELEVATION 75.52 m EXCEPT AS CROSSED AND NOTED.
- BOTTOM OF DRIVEN PILES AT ELEVATION 61-62m UNLESS NOTED OTHERWISE ON PLAN AS 'BC'.
- TOP OF DRIVEN PILES AT ELEVATION NOTED ON PLAN AS 'TCP'.
- TOP OF DRIVEN PILE CAPS AT ELEVATION NOTED ON PLAN AS 'TCP'.
- CARRY DRIVEN PILES DOWN TO NATURAL UNDISTURBED SOIL OF BEARING CAPACITY:
ULTIMATE LIMIT STATES (ULS): 1800 kN
- DRIVEN PILE ELEVATION AND BEARING VALUE OF SOIL UNDER DRIVEN PILE AND SLAB ON GRADE ARE BASED ON INFORMATION AVAILABLE AT THE TIME DRAWINGS ARE ISSUED. REFER TO GEOTECHNICAL INVESTIGATION PREPARED BY EXP Services Inc. REPORT ADJUSTMENTS NECESSARY DUE TO ACTUAL CONDITIONS TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
- BEFORE PLACING SLAB ON GRADE VERIFY THAT BEARING CAPACITY OF SUBGRADE AND COMPACTION OF SUB-BASE ARE ADEQUATE TO SUPPORT 25 kPa UNIFORMLY DISTRIBUTED LOAD ON SLAB ON GRADE WITHOUT SIGNIFICANT DIFFERENTIAL SETTLEMENT BETWEEN SLAB AND BUILDING FOUNDATIONS.
- CENTRE DRIVEN PILES UNDER COLUMNS UNLESS OTHERWISE NOTED ON PLANS.
- CONCRETE PROPERTIES: SEE SCHEDULE OF CONCRETE PROPERTIES ON DRAWING S-03.
- PROVIDE THE FOLLOWING DOWELS FROM DRIVEN PILES INTO GRADE BEAMS AND PIERS ABOVE UNLESS NOTED OTHERWISE:
6-15M BARS 900 LONG TO GRADE BEAMS
6-15M BARS 900 LONG TO PIERS
- SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR DEPRESSIONS IN SLAB ON GRADE. MAINTAIN SLAB THICKNESS SPECIFIED ON PLAN.
- SEE GENERAL NOTES AND TYPICAL DETAILS ON DRAWING S-01 - S-04.
- ALL FORCES NOTED ARE IN kN. FORCES ARE FACTORED ULS
- FORCES NOTED AS C ARE COMPRESSION. T ARE TENSION.
- ALL FORCES SHOWN ON DRAWING ARE APPLIED AT TOP OF PILE.
- PILE CAPS ARE 610mm DEEP TYPICAL
- PILE STEEL GRADE 240 MPa MIN.
- NON-CORROSIVE SOIL CONDITION ASSUMED. NOTIFY CONSULTANT IF CORROSIVE SOIL CONDITION IDENTIFIED.
- ALL INCLINED PILES ARE TO BE 4V-1H
- ALL PILE SPLICES TO BE FULL CAPACITY SPLICES CAPABLE OF DEVELOPING THE FULL AXIAL TENSION, AXIAL COMPRESSION AND FLEXURAL COMPACTY OF THE SECTION.
- THESE PILES SHOULD REACH PRACTICAL REFUSAL AT ABOUT 1 TO 2 m BELOW ROCK SURFACE, OR ABOUT ELEV 61 TO 62 m.
- WHERE THE SURFACE OF THE ROCK IS HIGHLY WEATHERED, THE PILES MAY PENETRATE DEEPER INTO THE ROCK.
- THE PILES SHOULD BE INSTALLED AS DISCUSSED IN SECTION 5.2.4 OF THE EXP'S GEOTECHNICAL REPORT. THE PILE TYPES NOTED IN THE GEOTECHNICAL REPORT WERE FOR REFERENCE ONLY. PILES TO BE INSTALLED SHOULD BE AS SHOWN IN THE DRAWINGS.
- IN ADDITION, ALL PILES SHOULD BE RE-TAPPED ONE DAY AFTER INITIAL INSTALLATION, TO SEE IF RELAXATION HAS OCCURRED.
- PILES THAT SHOW RELAXATION SHOULD BE RE-DRIVEN TO THE REQUIRED SET CRITERION.

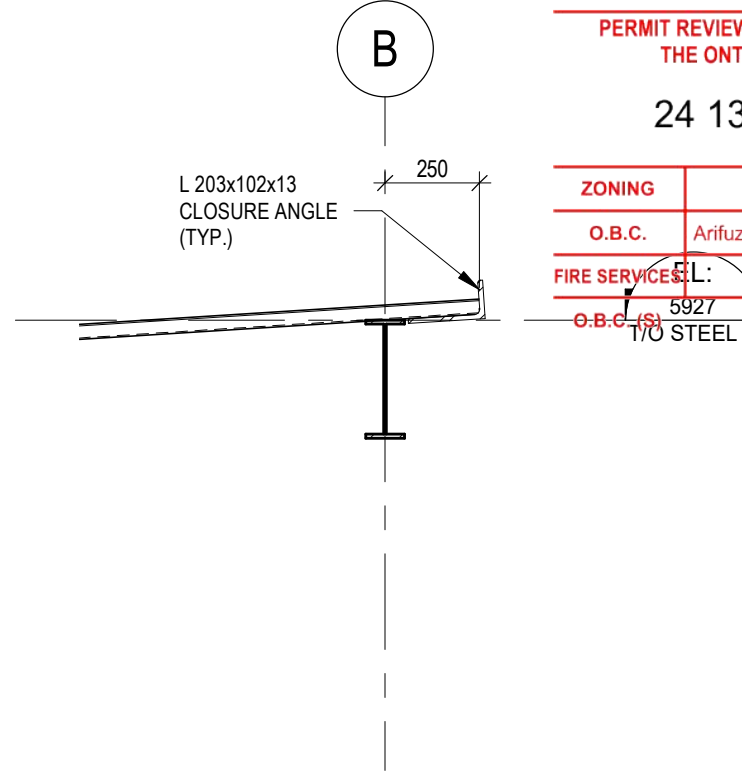
| ZONING | | |
|--------------|-------------------|-------------|
| O.B.C. | Arifuzzaman, Shah | 15/Jul/2024 |
| FIRE SERVICE | L | |
| O.B.C. | 5927 | |
| | 170 STEEL | |



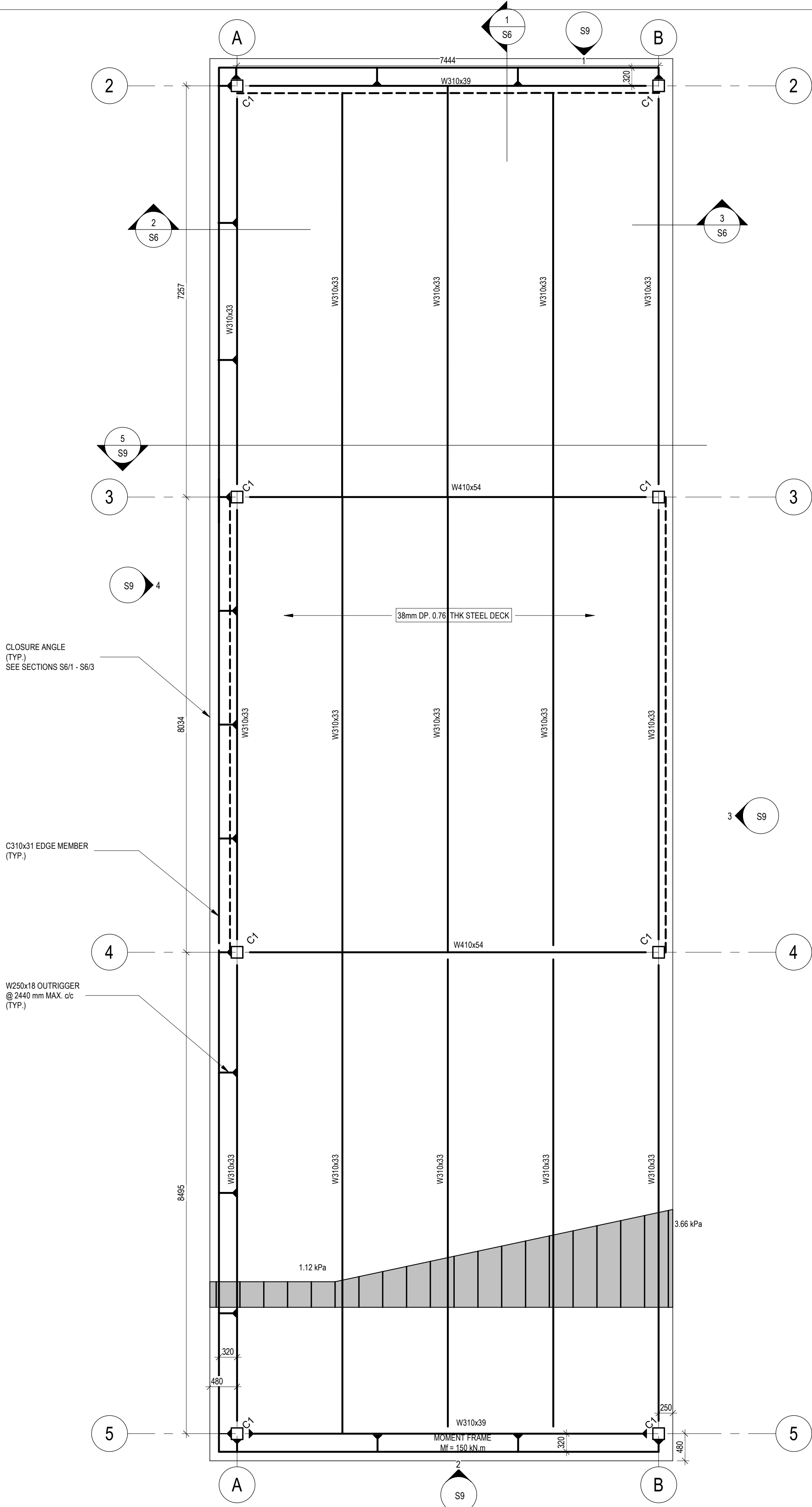
SECTION 1
1 : 20



SECTION 2
1 : 20



SECTION 3
1 : 20



| STEEL COLUMN SCHEDULE | |
|-----------------------|-----------------|
| MARK | TYPE |
| C1 | HSS 203x203x6.4 |

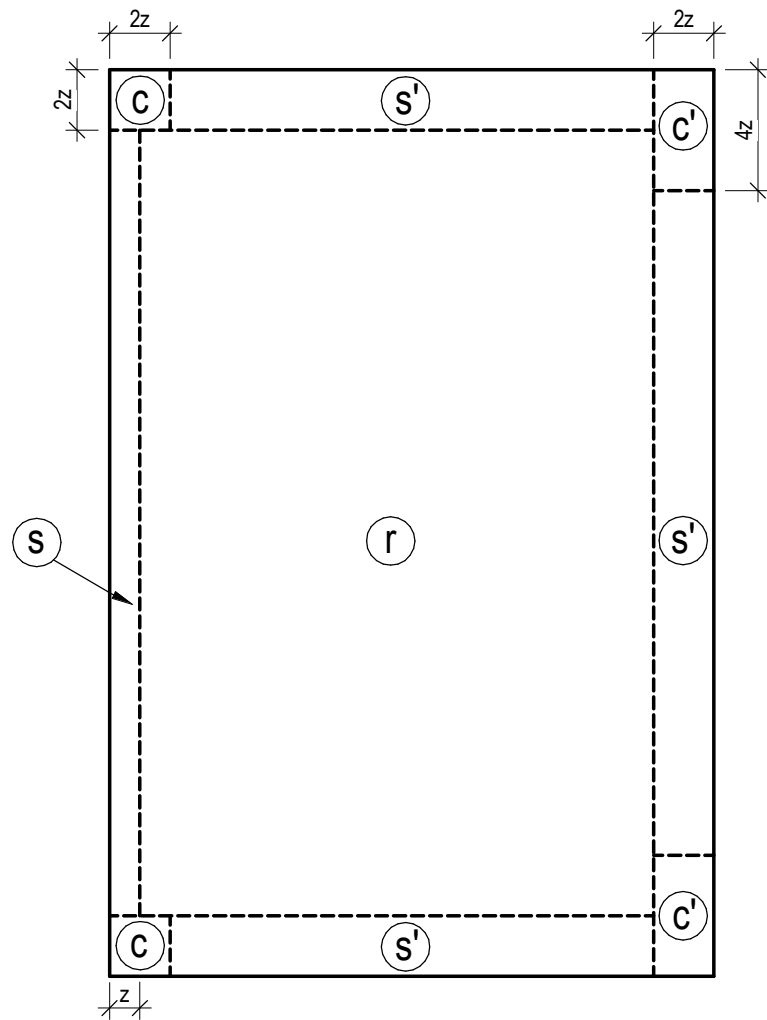
ROOF FRAMING PLAN
1 : 50

ROOF FRAMING PLAN NOTES

- LOADING:
SUPERIMPOSED DEAD LOAD
ROOFTOP EQUIPMENT = SEE PLAN
ROOFING + CEILING + MECH/ELECT ALLOWANCE = 1 kPa

LIVE LOAD = 1.0 kPa
SNOW LOAD = 1.12 kPa PLUS ACCUMULATED SNOW LOAD NOTED ON PLAN
RAIN LOAD = 0.4 kPa

LIVE LOAD, SNOW LOADS AND RAIN LOAD NEED NOT BE CONSIDERED SIMULTANEOUSLY
- "Wd" FOR ROOF DECK DENOTES SUPERIMPOSED DEAD LOAD IN kPa. DESIGN DECK FOR Wd, LIVE LOAD, SNOW LOADS, RAIN LOAD, CONCENTRATED LOAD REQUIRED BY OBC AND WIND UPLIFT GIVEN IN SPECIFICATIONS. DEAD LOAD FOR UPLIFT CALCULATION IS SHOWN IN PARENTHESES.
- PIPES, DUCTWORK, ELECTRICAL CABLES, CEILING ETC. SHALL NOT BE HUNG FROM FLOOR ROOF DECK. ALL HANGERS SHALL BE HUNG FROM THE TOP CHORD OF JOISTS OR BEAMS.
- STEEL DECK IS DESIGNED TO ACT AS A DIAPHRAGM. REFER TO ROOF DIAPHRAGM DETAILS ON DRAWING S-11.
- * DENOTES FULL MOMENT CONNECTION.
- SEE GENERAL NOTES AND TYPICAL DETAILS ON DRAWING S-01 TO S-05.



| ROOF AREA | WIND LOAD |
|-------------------|-----------|
| END ZONE WIDTH, z | 1 M |
| CORNER (C) | -3.6 kPa |
| CORNER (C) | -2.8 kPa |
| EDGE (S) | -2.3 kPa |
| EDGE (S') | -2.5 kPa |
| FIELD (R) | -1.9 kPa |

| | | | | |
|-----|------------|------------------------|---------|--------|
| 3 | 2023.10.27 | ISSUED FOR 100% REVIEW | | |
| 1 | 2023.10.20 | REISSUED FOR 70% CD | | |
| No. | DATE | REVISIONS | INITIAL | SIGNED |



SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT
SERVICES

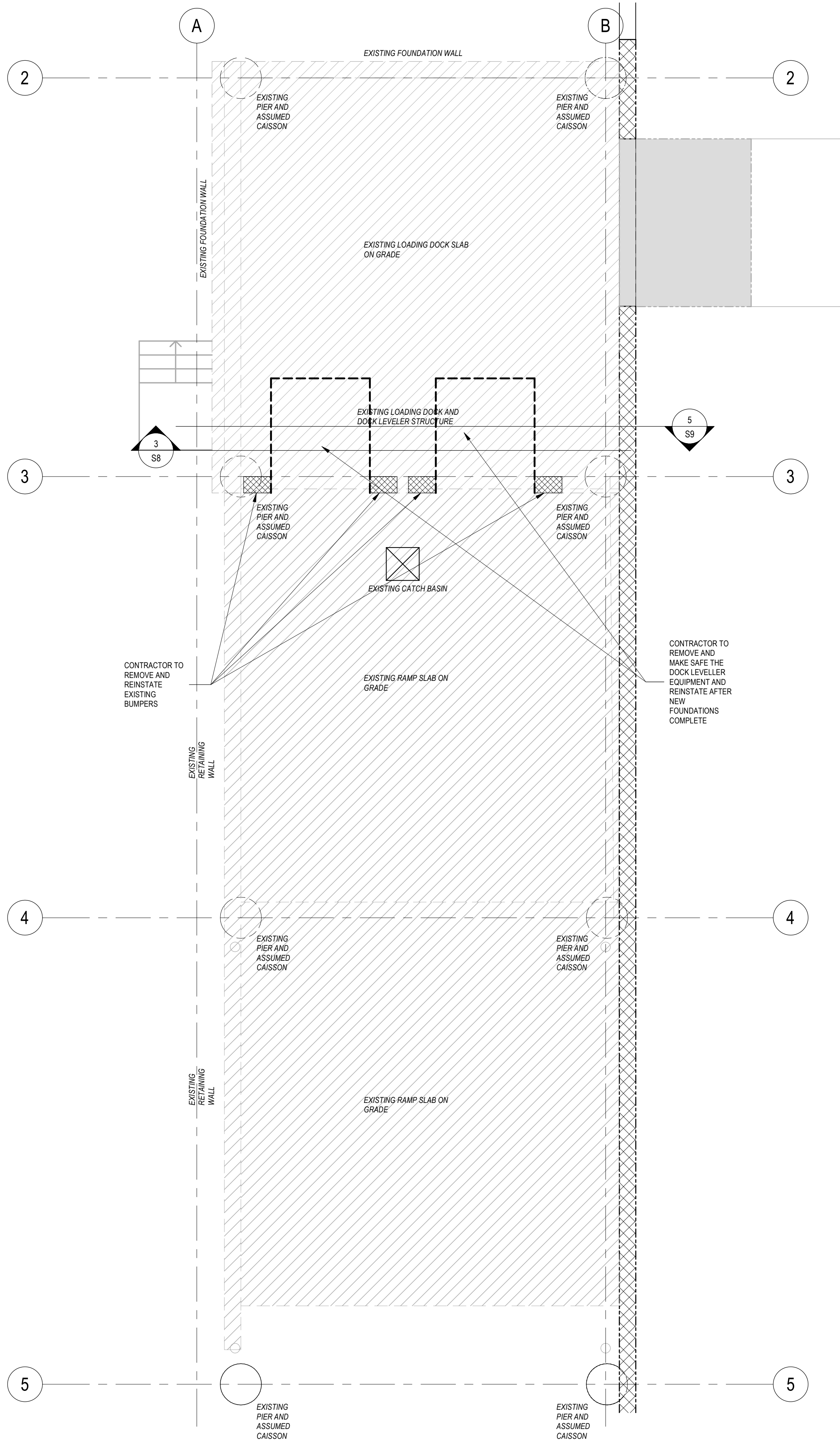
MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND RESOURCE
MANAGEMENT

COMMISSIONERS TRANSFER STATION

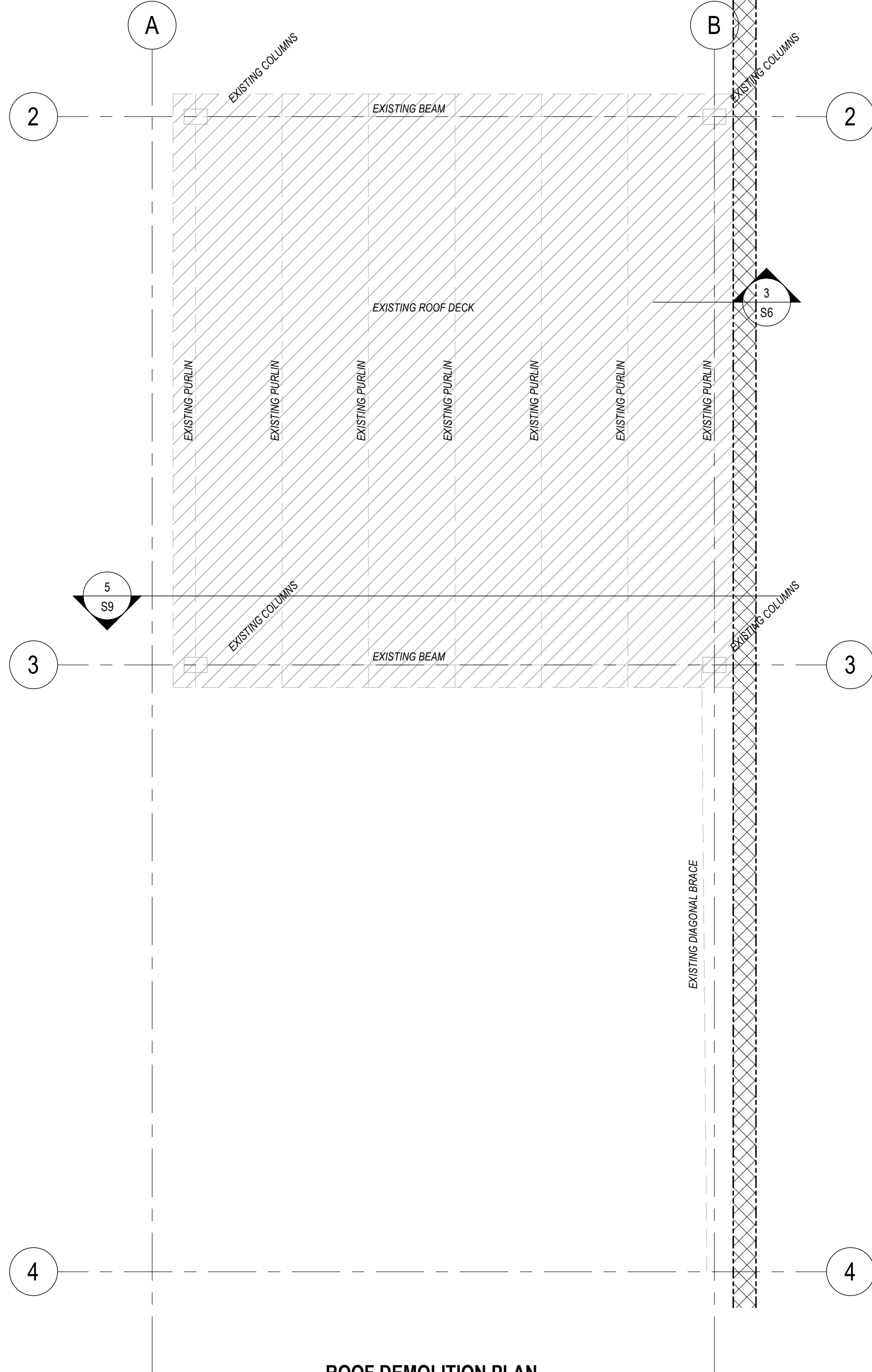
BUILDING UPGRADES
400 COMMISSIONERS STREET, TORONTO, ONTARIO M4M 3K2

ROOF FRAMING PLAN

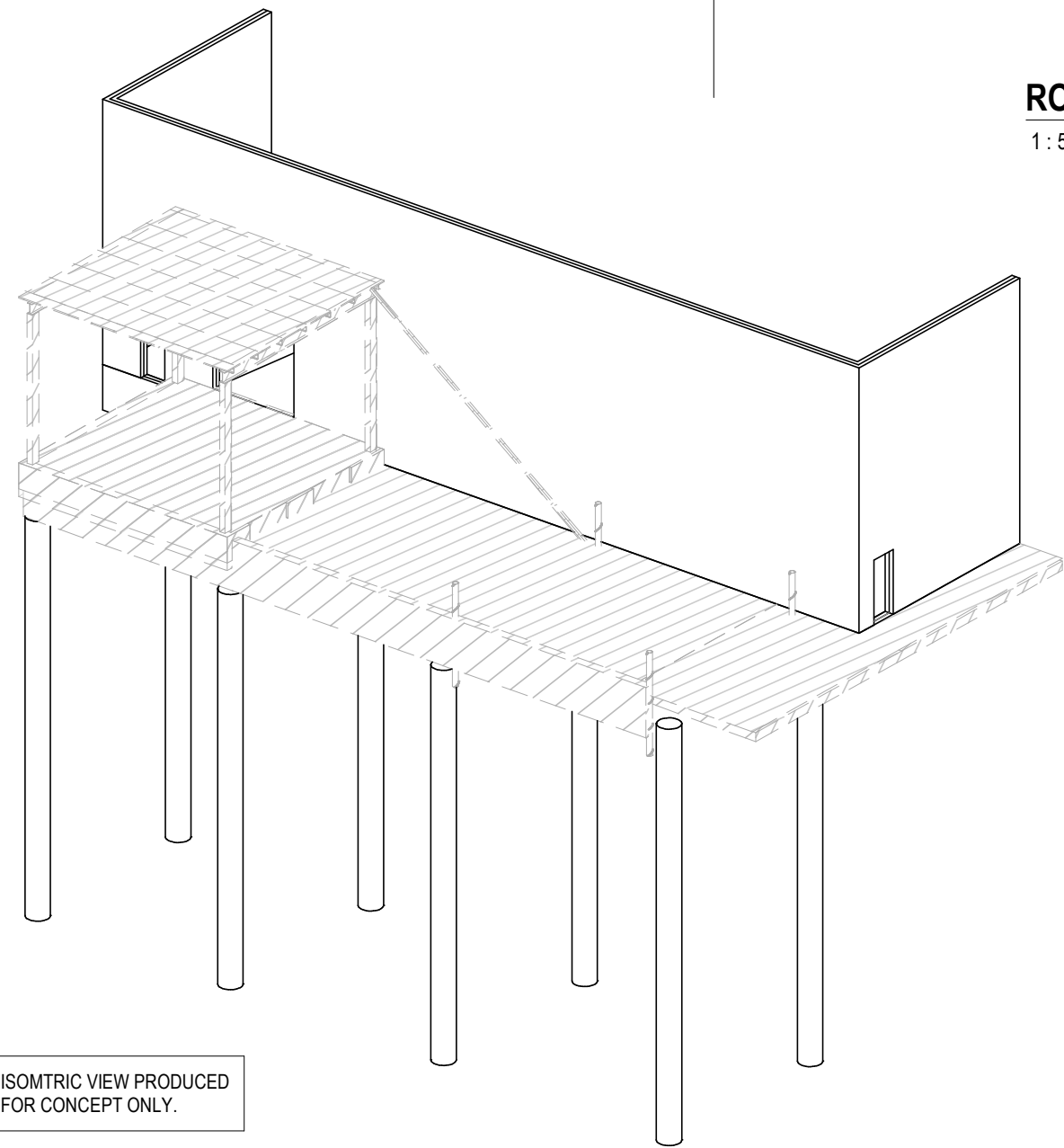
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|---------|--|-----------|--|-----------------|--|----------------|------------------|
| DESIGN: | | DRAFTING: | | CHECK: | | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | | | | DRAWING NUMBER: | | 1601-2023-3-11 | S6 |
| DATE: | | | | | | | |



FOUNDATION DEMOLITION PLAN
1:50



ROOF DEMOLITION PLAN
1:50



ISOMETRIC VIEW PRODUCED
FOR CONCEPT ONLY.

DEMOLITION GENERAL NOTES

- ADEQUATE CARE IS TO BE USED DURING DEMOLITION TO PREVENT DAMAGE TO MATERIALS AND SERVICES. MAKE GOOD ANY DAMAGE TO EXISTING REMAINING STRUCTURE AT NO ADDITIONAL COST TO OWNER.
- PROVIDE ADEQUATE SHORING AND REINFORCING OF EXISTING STRUCTURE AT ALL LEVELS TO EXISTING STRUCTURE BEFORE COMMENCING ANY DEMOLITION WORK.
- VERIFY ALL EXISTING STRUCTURAL MEMBERS ON SITE BEFORE DEMOLITION. REPORT ANY DISCREPANCIES TO CONTRACT ADMINISTRATOR IMMEDIATELY FOR ADVICE.
- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING BEFORE AND DURING STRUCTURAL DEMOLITION.
- PROVIDE DEMOLITION REPORT FROM DEMOLITION CONTRACTOR PRIOR TO STARTING DEMOLITION WORK.
- DEMOLITION CONTRACTOR TO REVIEW EXISTING STRUCTURAL DRAWING: 1601-2023-3-12-S7 FOR MORE INFORMATION.
- ALL EXISTING METAL WALLS, BEAMS, COLUMNS, ROOFING, STAIRS, ETC., TO BE DEMOLISHED / REMOVED AND DISPOSED OF BY THE CONTRACTOR.

| | | | | |
|-----|------------|------------------------|---------|--------|
| 3 | 2023.10.27 | ISSUED FOR 100% REVIEW | | |
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| No. | DATE | REVISIONS | INITIAL | SIGNED |



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GENERAL MANAGER
SOLID WASTE MANAGEMENT
SERVICES

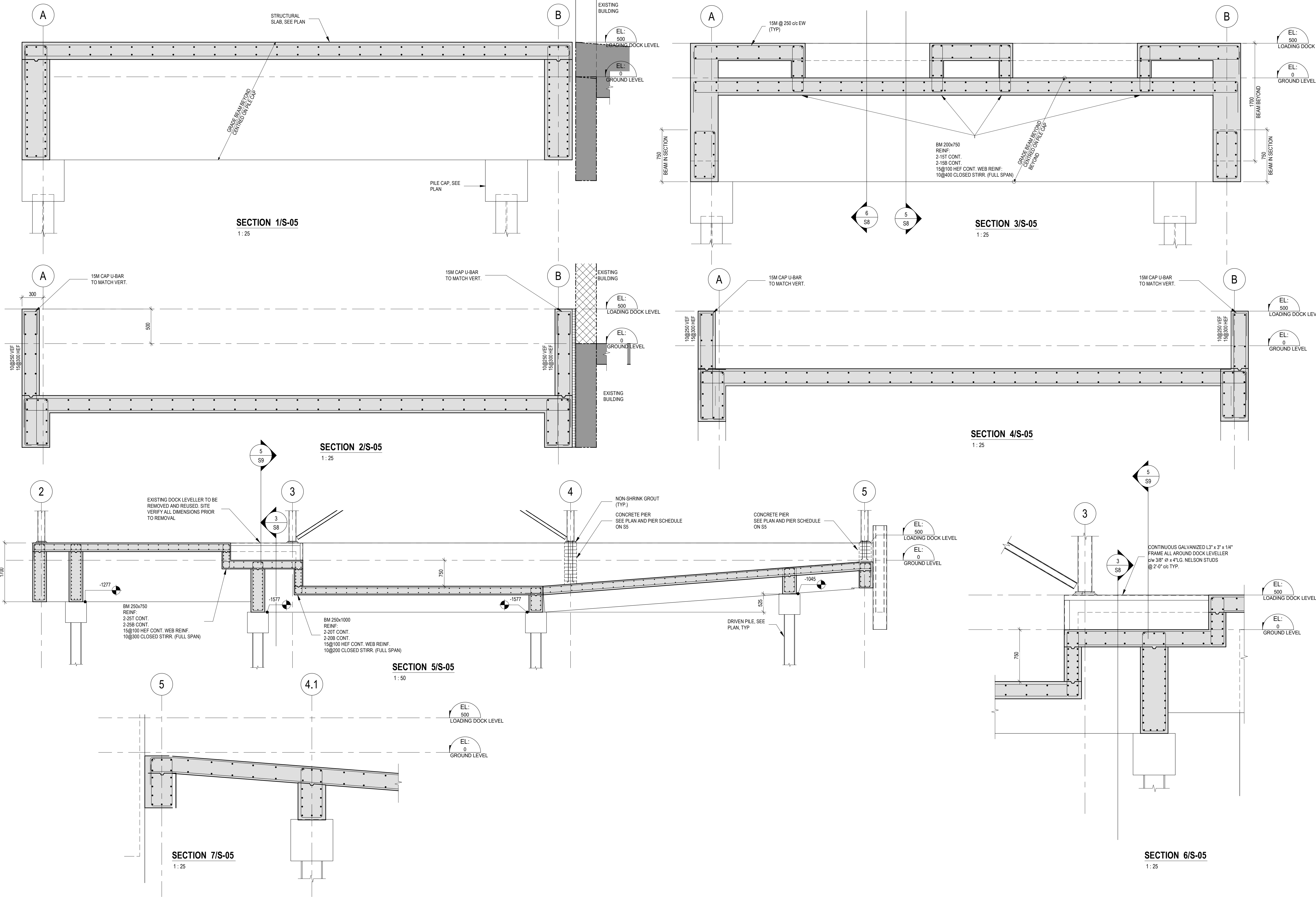
MATTHEW CASCHERA
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INFRASTRUCTURE AND RESOURCE
MANAGEMENT

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES
400 COMMISSIONERS STREET, TORONTO, ONTARIO M4M 3K2

DEMOLITION PLAN

| | | | | | | | |
|---------|--|-----------|--|-----------------|--|----------------|------------------|
| DESIGN: | | DRAFTING: | | CHECK: | | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | | | | DRAWING NUMBER: | | 1601-2023-3-12 | S7 |
| DATE: | | | | | | | |



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| 3 | | | | | |
| 2 | 2023.10.27 | ISSUED FOR 100% REVIEW | | | |
| 1 | 2023.10.20 | REISSUED FOR 70% CD | | | |
| No. | DATE | REVISIONS | INITIAL | SIGNED | |



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MATT KELHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT
SERVICES

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MANAGEMENT

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES
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FOUNDATION SECTIONS

| | | | | | | | |
|---------|--|-----------|--|-----------------|--|--------------|------------------|
| DESIGN: | | DRAFTING: | | CHECK: | | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | | | | DRAWING NUMBER: | | | |
| DATE: | | | | | | | |

1601-2023-3-13 S8
RECEIVED 15/Jul/2024





CONCRETE JERSEY BARRIERS

**TRAFFIC CONTROL
AREA DURING
FOUNDATION WORK**

CONTRACTOR TO PROVIDE TEMPORARY MOBILE
RAMP PRIOR TO STARTING CONSTRUCTION.
DURA-RAMP MODEL NO. DR-M30 OR APPROVED
EQUAL. RAMP TO BE TURNED OVER TO CITY OF
TORONTO AFTER CONSTRUCTION FOR THEIR
FUTURE USE.

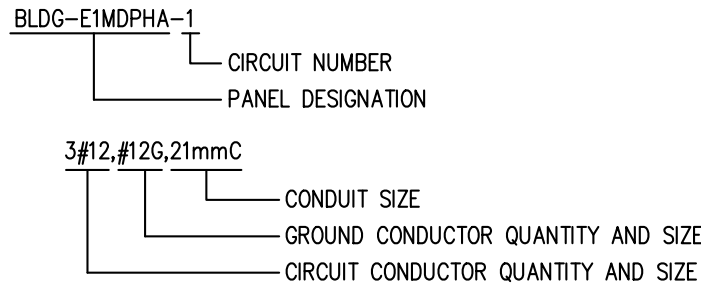
NTS

NOTE: THE CONSTRUCTION STAGING PLAN IS CONCEPTUAL ONLY. THE CONTRACTOR TO SUBMIT THEIR STAGING PLAN TO THE APPROVAL OF CONTRACT ADMINISTRATOR AND OWNER AFTER COORDINATION WITH THE TRANSFER STATION OPERATIONS TEAM.

[illegible]

| | | |
|---------------|-------------------|-------------|
| ZONING | | |
| O.B.C. | Arifuzzaman, Shah | 15/Jul/2024 |
| FIRE SERVICES | | |
| O.B.C. (S) | | |

CIRCUITING



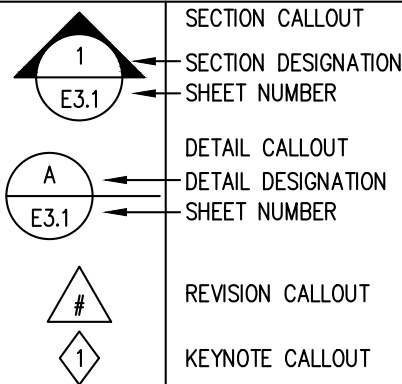
Maintain adequate Fire Alarm system coverage per OBC 3.2.4 and CAN/ULC-S524 requirements

New fire alarm components shall be compatible with remaining devices. Upon completion of work all existing ancillary systems, devices, smoke control and exhaust systems shall be reconnected and shall function and operate as originally designed to operate.

GENERAL NOTES

- ALL DRAWINGS ARE DIAGRAMMATIC ONLY. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR DIMENSIONS, EXACT LOCATIONS AND MOUNTING HEIGHTS OF DEVICES AND EQUIPMENT.
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER DRAWINGS, INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND EQUIPMENT DRAWINGS.
- ALL EXISTING ELECTRICAL SYSTEMS, INCLUDING BUT NOT LIMITED TO EQUIPMENT DEVICES AND CONNECTIONS, SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
- DURING CONSTRUCTION IF REQUIRED/IMPACTED BY OTHER WORKS, CONTRACTOR TO TEMPORARILY REMOVE/RELOCATE ELECTRICAL SYSTEMS AND/OR PROVIDE TEMPORARY CONNECTIONS ON SITE TO ALLOW OTHERS' WORKS.
- EXISTING ELECTRICAL SYSTEM NOT WITHIN SCOPE OF WORK ARE TO REMAIN FUNCTIONAL DURING THE CONSTRUCTION.
- MAINTAIN EXISTING FIRE ALARM, EXIT SIGNS AND EMERGENCY LIGHTS IN FULL OPERATION DURING THE ENTIRE CONSTRUCTION STAGE. WHERE DISRUPTION TO LIFE SAFETY SYSTEM ARE REQUIRED, REPORT TO CONTRACT ADMINISTRATOR. PROVIDE CONTINUOUS MONITORING DURING SHUT DOWN PERIOD AND ENSURE THAT ALL SYSTEMS ARE REACTIVATED PRIOR TO LEAVING THE SITE AT THE END OF EACH WORKING DAY.
- ALL OPENINGS, IF APPLICABLE, SHALL BE SEALED WITH APPROVED FIRE STOP MATERIAL. ANY FIREPROOFING MATERIAL REMOVED WILL BE REPLACED WITH A SUITABLE AND APPROVED FIREPROOFING MATERIAL AND SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS TO APPLICABLE BUILDING AND FIRE CODES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REFINISHING OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF THIS PROJECT. SHOULD ANY EXISTING SYSTEM BE DAMAGED, MAKE FULL REPAIR/REPLACES WITHOUT EXTRA COST, AND TO THE SATISFACTION OF THE OWNER. ASSET TAGGING WILL ALSO BE REQUIRED AS PER SVWS STANDARDS.
- CONTRACTOR TO PROVIDE WRITTEN NOTICE TO OWNER FOR ANY SHUTDOWN REQUIRED. MINIMUM FIVE(S) WORKING DAYS NOTICE SHALL BE PROVIDED.
- CONTRACTOR IS RESPONSIBLE FOR STORAGE AND PROTECTION OF ALL EXISTING ITEMS WHICH WILL BE RELOCATED/REUSED IN THIS PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND DISTRIBUTION OF TEMPORARY POWER AND LIGHTING WITHIN THE PREMISES DURING THE CONSTRUCTION PERIOD. EXPOSED ELECTRICAL CORDS OUTSIDE THE LEASED PREMISES SHALL NOT BE PERMITTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL THE WORK WITH ALL OTHER TRADES, CONSULTANTS, AND THE OWNER. ALL WORK SHALL BE SCHEDULED AND CARRIED OUT BY THE CONTRACTOR IN A MANNER TO ENSURE CONTINUED AND NON-INTERRUPTED OPERATION OF EXISTING FACILITY.
- CONTRACTOR SHALL IDENTIFY AND LABEL CLEARLY ALL CIRCUITS, WIRING, SERVICES, JUNCTION BOXES, PULLBOXES, DEVICES AND EQUIPMENT INSTALLED AND CONNECTED UNDER THE SCOPE OF WORK OF THIS PROJECT. IDENTIFICATION SHALL BE AS PER OWNER'S REQUIREMENTS AND ALL MARKINGS SHALL BE OF NON-ERASEABLE LAMACOID TYPE. COORDINATE ALL LABELING WITH THE OWNER AND CONSULTANT.
- CONTRACTOR TO INCLUDE FOR PAYMENT OF REQUIRED PERMITS, FEES, LICENSES, CERTIFICATES OF INSPECTION ETC, IF REQUIRED.
- CONTRACTOR TO REPORT BACK TO THE CONTRACT ADMINISTRATOR AND OWNER ON ANY ELECTRICAL AND COMMUNICATION SYSTEM FAILURES THAT OCCUR DURING THE CONSTRUCTION PHASE.
- PHASING AND SCHEDULING OF THE WORK IS REQUIRED IN ORDER TO MAINTAIN EXISTING BUILDING OPERATIONS. INCLUDE COSTS FOR "OFF-HOURS" WORK. REFER TO PHASING SEQUENCE AND COORDINATE ALL WORK.
- EXISTING LUMINAIRES TO REMAIN UNLESS OTHERWISE NOTED. REMOVE AND REINSTALL LIGHTING AT SAME LOCATIONS IF IMPACTED BY THE DEMOLITION WORK. PROVIDE NEW SUPPORT CHAIN FOR ALL AFFECTED LUMINAIRES. SUPPORT ALL LUMINAIRES DIRECTLY TO CEILING SLAB STRUCTURE, NOT TO CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, ROOF DECK, ETC.
- FOR ALL LUMINAIRES THAT EXCEED 150V SHOWN, SUPPLY AND INSTALL NEW LUMINAIRES DISCONNECT THAT COMPLY WITH RECOMMENDATION SPECIFIED IN THE ONTARIO ELECTRICAL SAFETY CODE, RULE 30-308(4). ALL NEW RELOCATED FIXTURES (THAT EXCEED 150V) SHALL BE MARKED IN A CONSPICUOUS LEGIBLE AND PERMANENT MANNER ADJACENT TO THE CONNECTING MEANS, IDENTIFYING THE SPECIFIC PURPOSES.

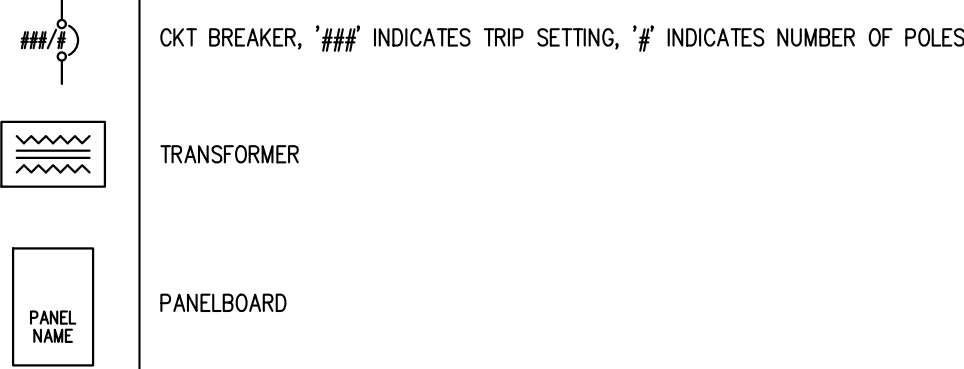
TAGS AND CALL OUT SYMBOLS



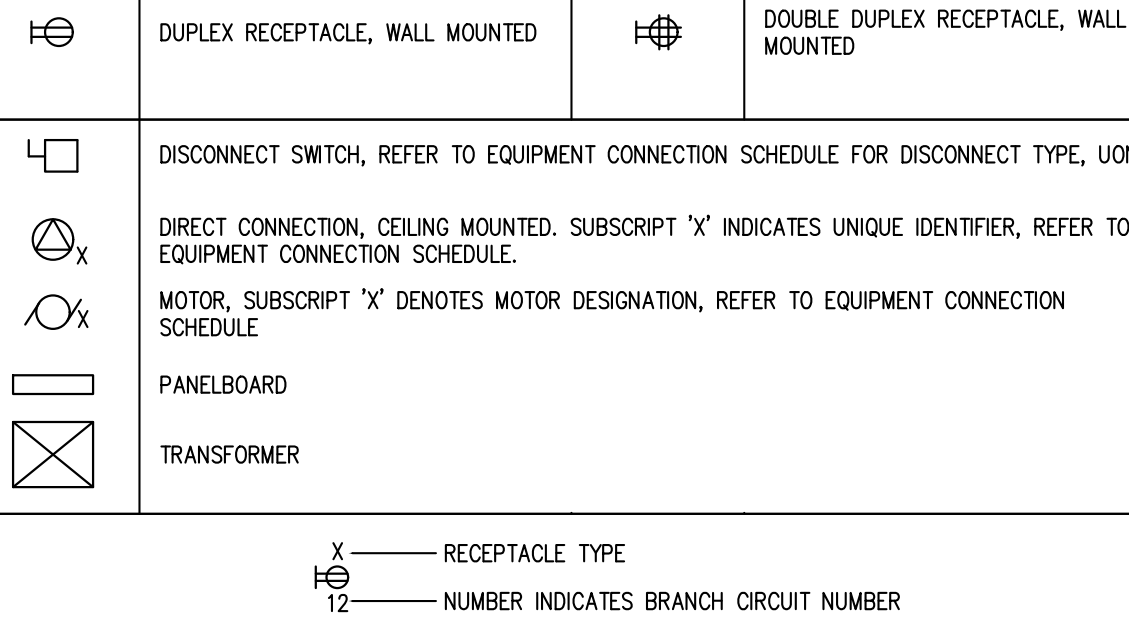
ABBREVIATIONS

| | | | |
|------|----------------------------------|-----|----------------------|
| A | ANALOG | MCB | MAIN CIRCUIT BREAKER |
| AFCI | ARC FAULT CIRCUIT INTERRUPTOR | MCC | MOTOR CONTROL CENTER |
| AFF | ABOVE FINISHED FLOOR | MD | MOTORIZED DAMPER |
| ATS | AUTOMATIC TRANSFER SWITCH | MH | MOUNTING HEIGHT |
| CK | CLOCK HANGER | NC | NORMALLY CLOSED |
| CL | CEILING MOUNTED | NO | NORMALLY OPEN |
| EMT | ELECTRICAL METALLIC TUBING | OC | OVER THE COUNTER |
| EP | EXPLOSION PROOF | PTZ | PAN, TILT, ZOOM |
| F | FURNITURE OR MILLWORK MOUNTED | ST | SHUNT TRIP |
| FL | FLOOR MOUNTED | TP | TAMPER PROOF |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER | WP | WEATHER PROOF |
| GFI | GROUND FAULT INTERRUPTER | UH | UNIT HEATER |
| EF | EXHAUST FAN | WL | WEATHER LOUVRE |

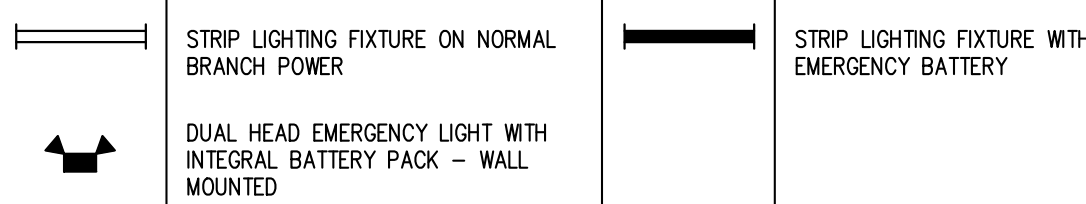
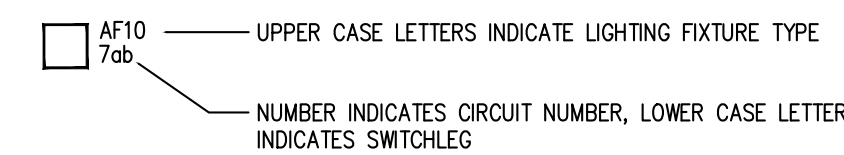
POWER SINGLE LINE DIAGRAM SYMBOLS



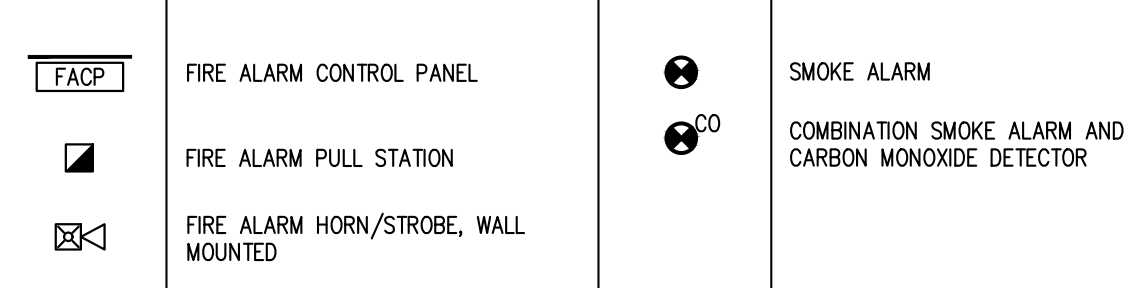
POWER DISTRIBUTION AND SMALL POWER



LIGHTING, LIGHTNG SWITCHING & CONTROLS



FIRE ALARM SYSTEM



DEMOLITION

| | |
|--------|--|
| < R > | EXISTING TO BE REMOVED |
| < RL > | EXISTING TO BE RELOCATED |
| < RR > | EXISTING TO BE REMOVED AND REINSTALLED AT HIGHER ELEVATION |
| < EX > | EXISTING TO REMAIN |
| < NL > | EXISTING - NEW LOCATION |
| ----- | DEMOLITION CONDUIT |
| ----- | DEMOLITION EQUIPMENT |
| ----- | EXISTING TO REMAIN CONDUIT |
| ----- | EXISTING TO REMAIN EQUIPMENT |

SOLID WASTE MANAGEMENT SERVICES



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| | | |
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| 4 | | |
| 3 | NOV 20/23 | 100% DESIGN SUBMISSION |
| 2 | OCT 28/23 | REISSUED 70% DESIGN SUBMISSION |
| 1 | JULY 18/23 | 70% DESIGN SUBMISSION |

| No. | DATE | REVISIONS |
|-----|------|-----------|
|-----|------|-----------|

INITIAL

SIGNED



SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND
RESOURCE MANAGEMENT

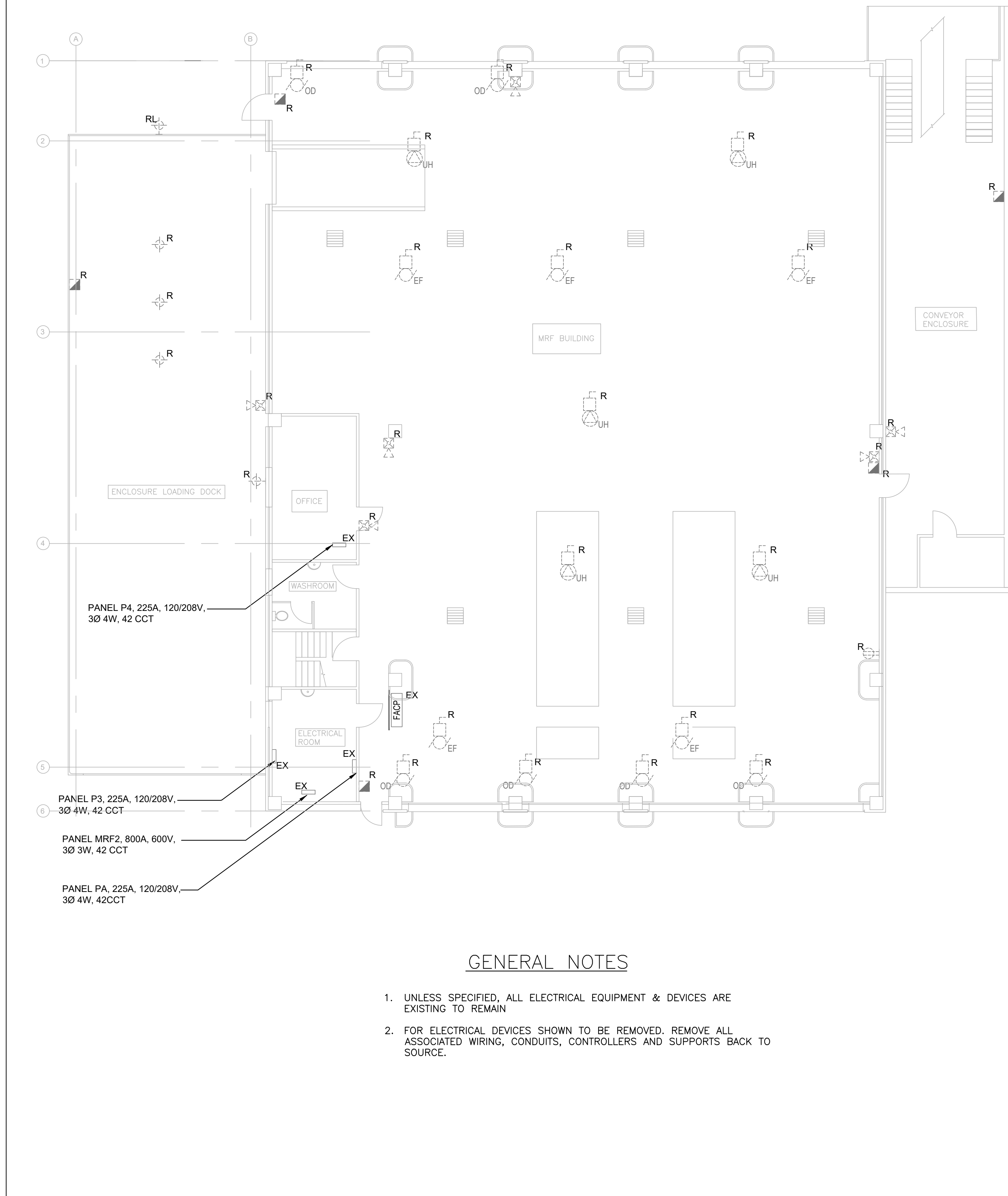
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MRF IMPROVEMENTS
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

GENERAL NOTES AND ABBREVIATIONS

| | | | | | | | |
|---------|---------------|-----------|----|-----------------|----------------|--------------|------------------|
| DESIGN: | CC | DRAFTING: | CC | CHECK: | DL | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | AS NOTED | | | DRAWING NUMBER: | 1601-2023-3-17 | | |
| DATE: | JULY 18, 2023 | | | | E1 | | |

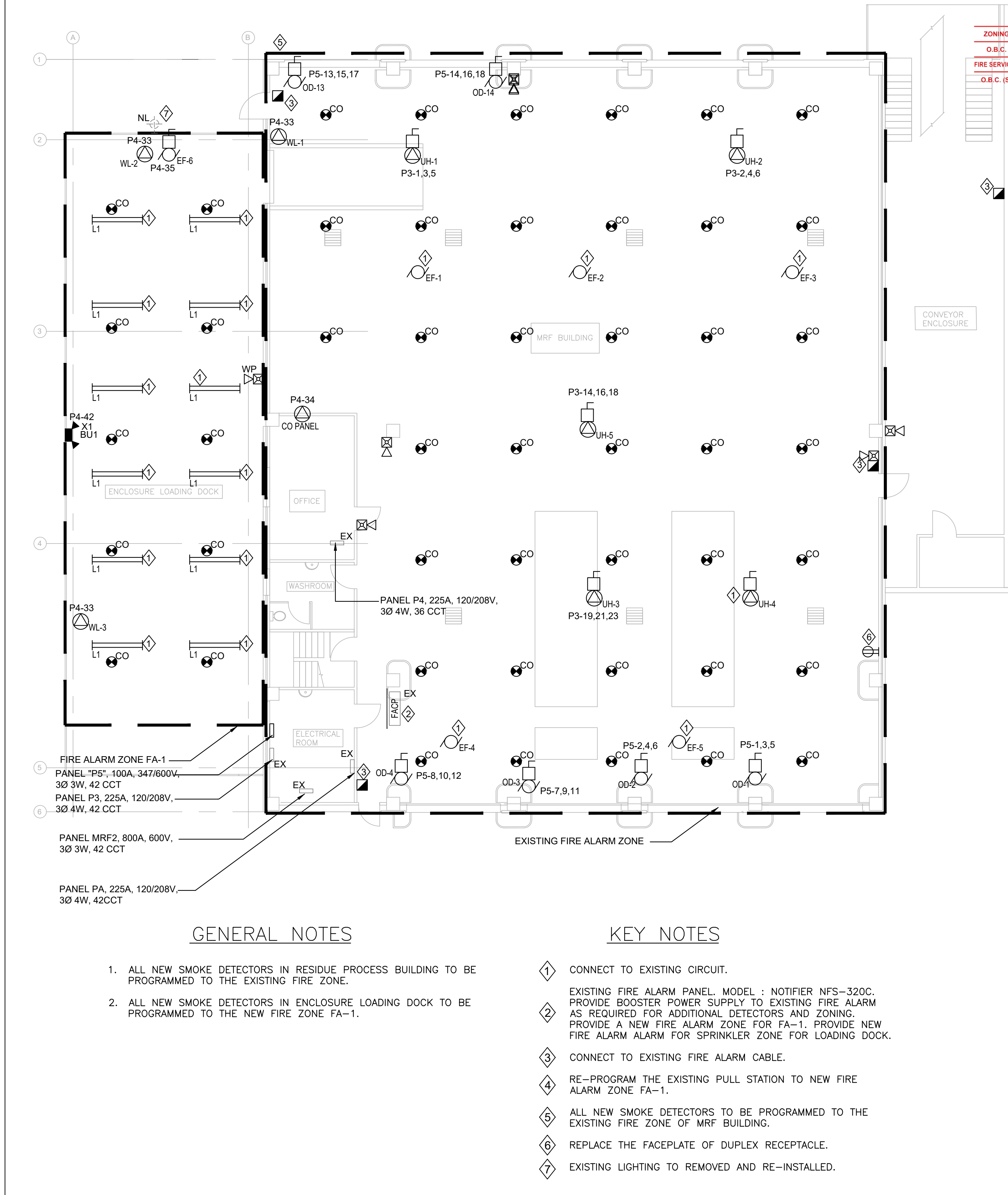
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| ZONING | | |
| O.B.C. | Amfuzzaman, Shah | 15/Jul/2024 |
| FIRE SERVICES | | |
| O.B.C. (S) | | |



GENERAL NOTES

- UNLESS SPECIFIED, ALL ELECTRICAL EQUIPMENT & DEVICES ARE EXISTING TO REMAIN
- FOR ELECTRICAL DEVICES SHOWN TO BE REMOVED, REMOVE ALL ASSOCIATED WIRING, CONDUITS, CONTROLLERS AND SUPPORTS BACK TO SOURCE.

GROUND FLOOR PLAN
ELECTRICAL DEMOLITION PLAN
1
E-02
1:100



GENERAL NOTES

- ALL NEW SMOKE DETECTORS IN RESIDUE PROCESS BUILDING TO BE PROGRAMMED TO THE EXISTING FIRE ZONE.
- ALL NEW SMOKE DETECTORS IN ENCLOSURE LOADING DOCK TO BE PROGRAMMED TO THE NEW FIRE ZONE FA-1.

KEY NOTES

- CONNECT TO EXISTING CIRCUIT.
- EXISTING FIRE ALARM PANEL. MODEL : NOTIFIER NFS-320C. PROVIDE BOOSTER POWER SUPPLY TO EXISTING FIRE ALARM AS REQUIRED FOR ADDITIONAL DETECTORS AND ZONING. PROVIDE A NEW FIRE ALARM ZONE FOR FA-1. PROVIDE NEW FIRE ALARM ALARM FOR SPRINKLER ZONE FOR LOADING DOCK.
- CONNECT TO EXISTING FIRE ALARM CABLE.
- RE-PROGRAM THE EXISTING PULL STATION TO NEW FIRE ALARM ZONE FA-1.
- ALL NEW SMOKE DETECTORS TO BE PROGRAMMED TO THE EXISTING FIRE ZONE OF MRF BUILDING.
- REPLACE THE FACEPLATE OF DUPLEX RECEPTACLE.
- EXISTING LIGHTING TO REMOVED AND RE-INSTALLED.

GROUND FLOOR PLAN
ELECTRICAL NEW PLAN
2
E-02
1:100

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| 1 | JULY 18/23 | 70% DESIGN SUBMISSION | | CC |



SOLID WASTE MANAGEMENT SERVICES

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SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA
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INFRASTRUCTURE AND
RESOURCE MANAGEMENT

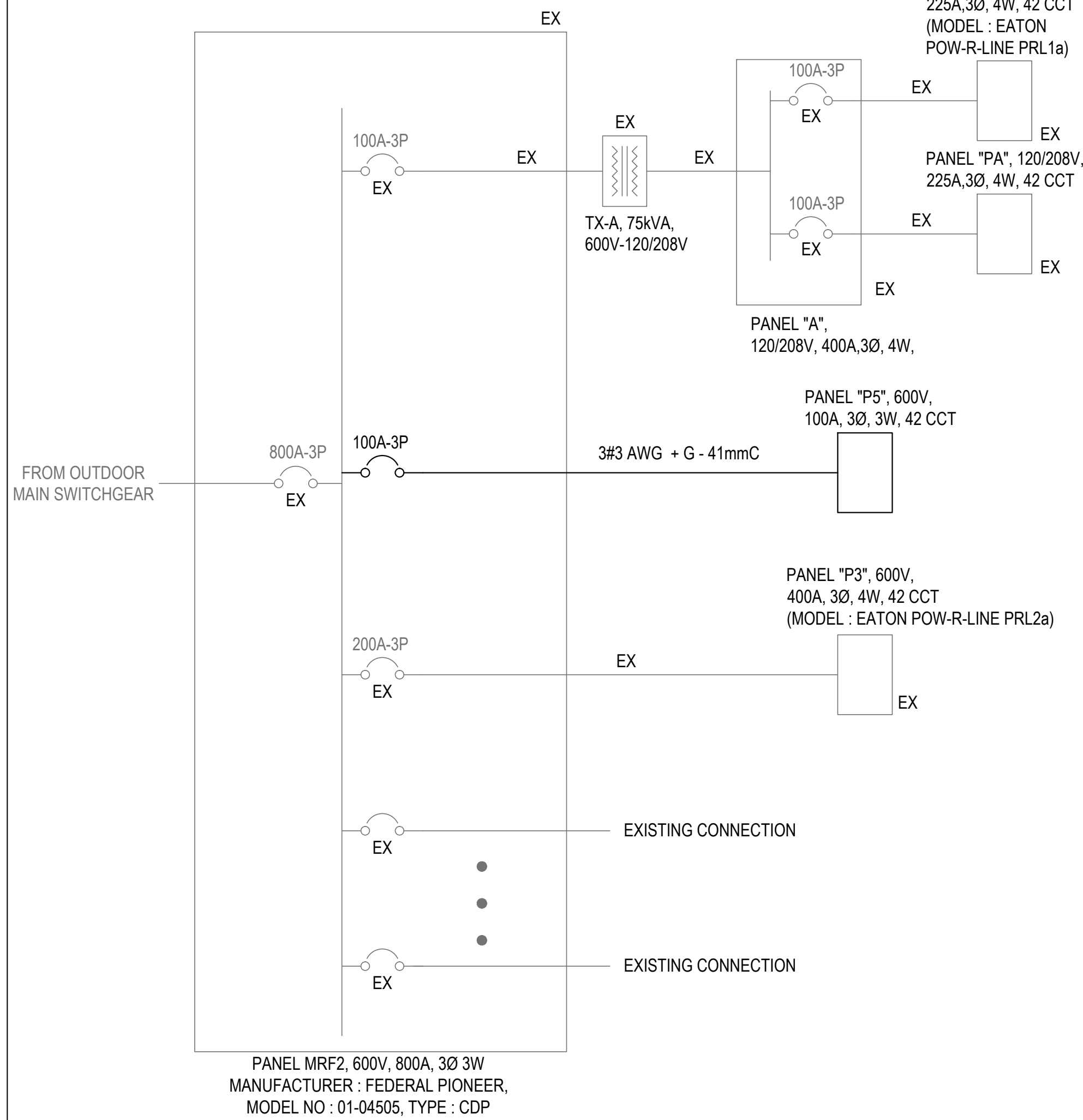
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MRF IMPROVEMENTS
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GROUND FLOOR PLAN - ELECTRICAL DEMO & NEW PLAN

| | | | | | | | |
|---------|---------------|-----------|-----------------|--------|----------------|--------------|------------------|
| DESIGN: | CC | DRAFTING: | CC | CHECK: | DL | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | AS NOTED | | DRAWING NUMBER: | | 1601-2023-3-18 | | |
| DATE: | JULY 18, 2023 | | | | E2 | | |

ELECTRICAL SINGLE LINE DIAGRAM



LUMINAIRES SCHEDULE

| TYPE | BASE MANUFACTURER (AS SPECIFIED) | CATALOGUE NUMBER | CEILING MOUNTED | | WALL MOUNTED | | UNDER-CABINET | WATTAGE | COLOUR TEMP. | VOLTAGE | | REMARKS |
|------|--|------------------|--------------------|----------|-----------------|---------|---------------|--------------------|-----------------|---------|------|---|
| | | | SURFACE | RECESSED | SUSPENDED | SURFACE | RECESSED | | | 120V | 347V | |
| L1 | PEERLUX | AP4-4-50-40K-P5 | • | | | | | 37W 5000 LUMENS | 3500K | • | | |
| X1 | READY-LITE | RHP-1275-2-L10 | | | • | | | 20W | | • | | REMOTE HEAD WITH BUILT-IN 30 MINUTES BATTERY UNIT BU1, 120V AC INPUT, 12V OUTPUT, 75W WATTAGE |

MECHANICAL SCHEDULE(FOR REFERENCE ONLY)

JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE

JOB No. BRM-22028009-A0

MECHANICAL SCHEDULE – ELECTRIC UNIT HEATER SCHEDULE

| DWG. DESIG-NATION | MODEL | DUCT SIZE | CFM | KW | VOLT/Ø | STAGES | REMARKS |
|-------------------|---------------|-----------|------|-----|--------|--------|---|
| UH-1 | CHROMALOX HVH | – | 1500 | 20 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-2 | CHROMALOX HVH | – | 1500 | 20 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-3 | CHROMALOX HVH | – | 1500 | 20 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-4 | CHROMALOX HVH | – | 850 | 7.5 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-5 | CHROMALOX HVH | – | 850 | 7.5 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| | | | | | | | |
| | | | | | | | |

JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE

JOB No. BRM-22028009-A0

MECHANICAL SCHEDULE – FANS

| FAN No. | SYSTEM AND FAN LABEL | SPEC TYPE | MODEL | SIZE | CFM ESP "W.G. | RPM ARR | HP VAC/Ø | REMARKS |
|--|------------------------|-----------|------------|----------|---------------|---------|-----------|----------------------|
| EF-1 | MEF BUILDING EXHAUST | ADF | COOK ACRUB | 150 RH3B | 950 0.50 | 1300 | 1/4 120/1 | INTERCONNECT TO WL-1 |
| EF-2 | MEF BUILDING EXHAUST | ADF | COOK ACRUB | 150 RH3B | 950 0.50 | 1300 | 1/4 120/1 | INTERCONNECT TO WL-1 |
| EF-3 | MEF BUILDING EXHAUST | ADF | COOK ACRUB | 150 RH3B | 950 0.50 | 1300 | 1/4 120/1 | INTERCONNECT TO WL-1 |
| EF-4 | MEF BUILDING EXHAUST | ADF | COOK ACRUB | 150 R4B | 1900 0.50 | 1200 | 1/3 120/1 | INTERCONNECT TO WL-1 |
| EF-5 | MEF BUILDING EXHAUST | ADF | COOK ACRUB | 150 R4B | 1900 0.50 | 1200 | 1/3 120/1 | INTERCONNECT TO WL-1 |
| EF-6 | ENCLOSURE LOADING DOCK | PF | COOK AWD | 20 A17D | 1700 0.50 | 1700 | 1/4 120/1 | INTERCONNECT TO WL-2 |
| | | | | | | | | |
| NOTE 1. USE HIGH EFFICIENCY MOTORS. SEE SECTION 15010. | | | | | | | | |

REMARK: THIS SCHEDULE IS FOR REFERENCE ONLY. PLEASE REFER TO MECHANICAL DRAWINGS FOR EXACT INFORMATION.

PANEL SCHEDULES

| Existing Panel P3 | | | | | | | | | |
|--|-----------------|---------|-----|----------|-----|----------------|----------------------|-------|--|
| LOCATION: | Electrical room | VOLTS: | | 347/600V | | A.I.C. RATING: | | | |
| SUPPLY FROM: | Panel MRF2 | PHASES: | | 3Ø | | MAIN TYPE: | | | |
| MOUNTING: | SURFACE | WIRES: | | 4W | | MAINS RATING: | | 400 A | |
| ENCLOSURE: | | | | | | MCB RATING: | | N/A | |
| DESCRIPTION | | BKR | CCT | | CCT | BKR | DESCRIPTION | | |
| 20kW Heater(UH-1)* | | 30 A | 1 | A | 2 | 20 A | Existing Circuit | | |
| | | | 3 | B | 4 | | | | |
| | | | 5 | C | 6 | | | | |
| 20kW Heater(UH-2)* | | 30 A | 7 | A | 8 | 15 A | Existing Circuit | | |
| | | | 9 | B | 10 | | | | |
| | | | 11 | C | 12 | | | | |
| Existing Circuit | | 15 A | 13 | A | 14 | 15 A | 7.5kW Heater(UH-5)** | | |
| | | | 15 | B | 16 | | | | |
| | | | 17 | C | 18 | | | | |
| 20kW Heater(UH-3)* | | 30 A | 19 | A | 20 | 15 A | 7.5kW Heater(UH-4)** | | |
| | | | 21 | B | 22 | | | | |
| | | | 23 | C | 24 | | | | |
| Space | | | 25 | A | 26 | | Space | | |
| Space | | | 27 | B | 28 | | Space | | |
| Space | | | 29 | C | 30 | | Space | | |
| Space | | | 31 | A | 32 | | Space | | |
| Space | | | 33 | B | 34 | | Space | | |
| Space | | | 35 | C | 36 | | Space | | |
| Space | | | 37 | A | 38 | | Space | | |
| Space | | | 39 | B | 40 | | Space | | |
| Space | | | 41 | C | 42 | | Space | | |
| NOTES: | | | | | | | | | |
| *: Remove existing breaker and install new breaker, rating as shown. | | | | | | | | | |
| **: Existing breaker to be kept and re-use. | | | | | | | | | |

| Existing Panel P4 | | | | | | | | | |
|--|---------|---------|-----|----------|----------------|------|---------------------------------|--|--|
| LOCATION: | Office | VOLTS: | | 120/208V | A.I.C. RATING: | | | | |
| SUPPLY FROM: | Panel A | PHASES: | | 3Ø | MAIN TYPE: | | | | |
| MOUNTING: | SURFACE | WIRES: | | 4W | MAINS RATING: | | 225 A | | |
| ENCLOSURE: | | | | | MCB RATING: | | N/A | | |
| DESCRIPTION | | BKR | CCT | | CCT | BKR | DESCRIPTION | | |
| Existing Circuit | | | 1 | A | 2 | | Existing Circuit | | |
| Existing Circuit | | | 3 | B | 4 | | Existing Circuit | | |
| Existing Circuit | | | 5 | C | 6 | | Existing Circuit | | |
| Existing Circuit | | | 7 | A | 8 | | Existing Circuit | | |
| Existing Circuit | | | 9 | B | 10 | | Existing Circuit | | |
| Existing Circuit | | | 11 | C | 12 | | Existing Circuit | | |
| North west roof exhaust fan** | | 15 A | 13 | A | 14 | | Existing Circuit | | |
| North middle roof exhaust fan** | | 15 A | 15 | B | 16 | | Existing Circuit | | |
| North east roof exhaust fan** | | 15 A | 17 | C | 18 | 15 A | Screen floor roof exhaust fan** | | |
| Existing Circuit | | | 19 | A | 20 | 15 A | South roof exhaust fan** | | |
| Existing Circuit | | | 21 | B | 22 | | Existing Circuit | | |
| Existing Circuit | | | 23 | C | 24 | | Existing Circuit | | |
| Existing Circuit | | | 25 | A | 26 | | Existing Circuit | | |
| Existing Circuit | | | 27 | B | 28 | | Existing Circuit | | |
| Existing Circuit | | | 29 | C | 30 | | Existing Circuit | | |
| Existing Circuit | | | 31 | A | 32 | | Existing Circuit | | |
| Existing Circuit | | | 33 | B | 34 | | Existing Circuit | | |
| Existing Circuit | | | 35 | C | 36 | | Existing Circuit | | |
| Existing Circuit | | | 37 | A | 38 | | Existing Circuit | | |
| Motorized Dampers* | | 15 A | 39 | B | 40 | 15 A | CO2 Panel* | | |
| EF-6* | | 15 A | 41 | C | 42 | 15 A | REMOTE HEAD* | | |
| NOTES: | | | | | | | | | |
| *: Provide a new breaker, rating as shown. | | | | | | | | | |
| **: Existing breakers for exhaust fans to be re-used, contractor shall verify on-site. | | | | | | | | | |

| New Panel P5 | | | | | | | | | |
|----------------------|-----------------|-----|-----|---------|----------|------|----------------------|-------|--|
| LOCATION: | Electrical room | | | VOLTS: | 347/600V | | A.I.C. RATING: | | |
| SUPPLY FROM: | Panel MRF2 | | | PHASES: | 3Ø | | MAIN TYPE: | | |
| MOUNTING: | SURFACE | | | WIRES: | 4W | | MAINS RATING: | 100 A | |
| ENCLOSURE: | | | | | | | MCB RATING: | N/A | |
| DESCRIPTION | | BKR | CCT | | CCT | BKR | DESCRIPTION | | |
| Overhead door(OD-1) | 15 A | | 1 | A | 2 | 15 A | Overhead door(OD-2) | | |
| | | | 3 | B | 4 | | | | |
| | | | 5 | C | 6 | | | | |
| Overhead door(OD-3) | 15 A | | 7 | A | 8 | 15 A | Overhead door(OD-4) | | |
| | | | 9 | B | 10 | | | | |
| | | | 11 | C | 12 | | | | |
| Overhead door(OD-13) | 15 A | | 13 | A | 14 | 15 A | Overhead door(OD-14) | | |
| | | | 15 | B | 16 | | | | |
| | | | 17 | C | 18 | | | | |
| SPACE | | | 19 | A | 20 | | SPACE | | |
| SPACE | | | 21 | B | 22 | | SPACE | | |
| SPACE | | | 23 | C | 24 | | SPACE | | |
| SPACE | | | 25 | A | 26 | | SPACE | | |
| SPACE | | | 27 | B | 28 | | SPACE | | |
| SPACE | | | 29 | C | 30 | | SPACE | | |
| SPACE | | | 31 | A | 32 | | SPACE | | |
| SPACE | | | 33 | B | 34 | | SPACE | | |
| SPACE | | | 35 | C | 36 | | SPACE | | |
| SPACE | | | 37 | A | 38 | | SPACE | | |
| SPACE | | | 39 | B | 40 | | SPACE | | |
| SPACE | | | 41 | C | 42 | | SPACE | | |
| NOTES: | | | | | | | | | |

SOLID WASTE MANAGEMENT SERVICES



- BUILDINGS
- EARTH & ENVIRONMENT
- ENERGY
- INDUSTRIAL
- INFRASTRUCTURE
- SUSTAINABILITY



SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND
RESOURCE MANAGEMENT

COMMISSIONERS TRANSFER STATION

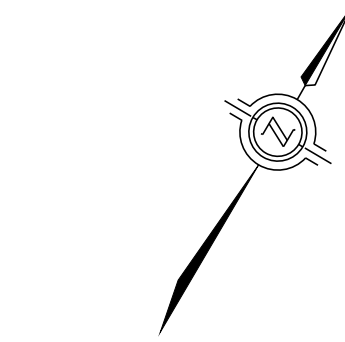
MRF IMPROVEMENTS
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

ELECTRICAL SINGLE LINE DIAGRAM, LUMINAIRES, MECHANICAL AND PANEL SCHEDULES

| | | | | | | | |
|---------|---------------|-----------|----|--------------------|----------------|-------------------------------|----|
| DESIGN: | CC | DRAFTING: | CC | CHECK: | DL | CONTRACT No. 23SWM-IRM-026CDU | |
| SCALE: | AS NOTED | | | DRAWING NUMBER: | 1601-2023-3-19 | | E3 |
| DATE: | JULY 18, 2023 | | | | | | |

ELECTRICAL SPECIFICATIONS

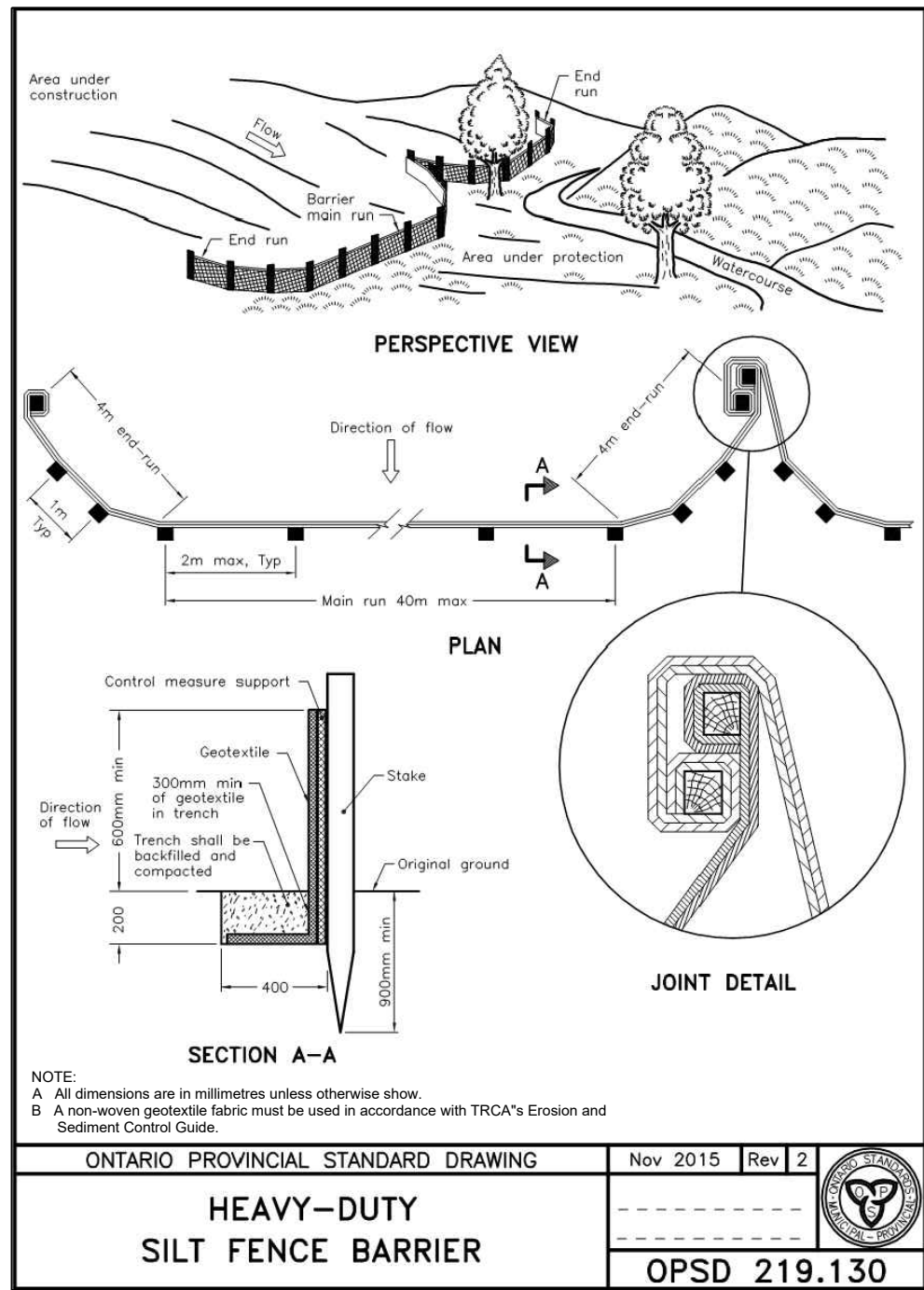
| | | | | | | | | | | | | | |
|-------|-----------------------------------|---|--|---|--|--|--|---|--|---|--|--|--|
| 1.1. | SCOPE OF WORK | ADMINISTRATOR . ALL SUBMITTED DRAWINGS SHALL BE OF THE SAME QUALITY AS ORIGINAL DRAWINGS. | | VOLTS, UNLESS OTHERWISE NOTED. | | EQUIP PANELBOARDS WITH SUITABLE LUGS OR PROVISIONS TO ACCOMMODATE MAIN AND BRANCH CONDUCTORS SCHEDULED. | | PROTECTIVE DEVICES BEING INSTALLED IN DISTRIBUTION SYSTEM PROVIDE SATISFACTORY COORDINATION. | | CERTIFICATION WORK, SUBJECT TO CONDITIONS HEREIN, MUST BE COMPLETED AND APPROVAL OF CONTRACT ADMINISTRATOR . PERMIT REVIEWED FOR COMPLIANCE WITH THE OBC. | | | |
| | | 11.4. UPDATE OWNER'S DISTRIBUTION RISER DIAGRAMS POSTED IN ELECTRICAL ROOMS. | | 15.8. COLOUR CODE CONDUCTORS THROUGHOUT TO IDENTIFY PHASES, NEUTRALS AND GROUND BY MEANS OF SELF-LAMINATING COLOURED TAPE, COLOURED CONDUCTOR INSULATION, OR PROPERLY SECURED COLOURED PLASTIC DISCS. COLOURS, UNLESS OTHERWISE NOTED, TO BE AS FOLLOWS: 15.8.1. PHASE A – RED; 15.8.2. PHASE B – BLACK; 15.8.3. PHASE C – BLUE; 15.8.4. GROUND – GREEN; 15.8.5. NEUTRAL – WHITE; 15.8.6. CONTROL – ORANGE; 15.9. USE 300V RATING FOR FIRE ALARM, SECURITY AND OTHER LOW VOLTAGE CIRCUITS. 600V RATING FOR 120/208V CIRCUITS, 1000V RATING FOR 347/600V CIRCUITS. | | 20.7. EQUIP PANELBOARDS WITH SUITABLE LUGS OR PROVISIONS TO ACCOMMODATE MAIN AND BRANCH CONDUCTORS SCHEDULED. 20.8. GROUND AND BOND EQUIPMENT AS PER LOCAL GOVERNING ELECTRICAL CODE AND INSPECTION AUTHORITY REQUIREMENTS. REFER ALSO REQUIREMENTS OF SECTION ENTITLED – GROUNDING AND BONDING. 20.9. IDENTIFY PANELBOARD BREAKERS IN A PERMANENT MANNER, AND COMPLETE TYPED PANELBOARD CIRCUIT DIRECTORIES IDENTIFYING CIRCUIT NUMBER AND TYPE AND LOCATION OF LOADS SUPPLIED FROM EACH BREAKER TO CONTRACT ADMINISTRATOR 'S APPROVAL. 20.10. INCLUDE FOR SPACES FOR FUTURE BREAKERS, SPARE BREAKERS AND ADDITIONAL BREAKERS FOR MISCELLANEOUS MECHANICAL LOADS ARE INCLUDED AS PER SCHEDULES AND AS SPECIFIED. | | 23.2.6.6. DOCUMENT TESTING, COORDINATION STUDY AND ARC FLASH ANALYSIS IN A REPORT SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PLACE OF WORK AND AUTHORIZED BY TESTING COMPANY. INCLUDE FOR MINIMUM 3 HARD COPIES AND ELECTRONIC COPY OF REPORT TO BE SUBMITTED TO CONTRACT ADMINISTRATOR FOR REVIEW. REPORT TO INCLUDE TEST RESULTS WITH PROPERLY PLOTTED CURVES, IDENTIFIED TROUBLE AREAS OF COORDINATION, EXTENSIVE COMMENTS REGARDING TEST RESULTS AND RECOMMENDATIONS ON BEST COURSE OF REMEDIAL ACTION. | | 25.6. TEST AND VERIFY THAT AUDIBLE SIGNALS ARE AT LEAST 5 DB(A) ABOVE LOCAL FIRE AUTHORITY AND THAT BATTERIES OF SUFFICIENT CAPACITY AS PER OBC. PROVIDE CERTIFICATE OF LIABILITY INSURANCE REGISTERED FOR THIS PROJECT TO SHOW SATISFACTORY PROOF OF MANUFACTURER'S AND TESTING COMPANY'S LIABILITY COVERAGE FOR BOTH HIS PRODUCT AND PERSONNEL. CONDUCT WORK IN ACCORDANCE WITH LATEST EDITIONS OF CAN/ULC 5524, 5534, 536, 5537, S1001-11 AND OBC 2012. RE-TESTING TO BE CONDUCTED IN PRESENCE OF OWNER AND/OR CONTRACT ADMINISTRATOR. | | | |
| 2. | EXAMINATION OF SITE AND DOCUMENTS | 2.1. PRIOR TO SUBMITTING BID, CAREFULLY EXAMINE CONDITIONS AT SITE WHICH WILL OR MAY AFFECT WORK, DRAWINGS, AND SPECIFICATIONS, AND BECOME FAMILIAR WITH BUILDING CONSTRUCTION, FINISHES AND OTHER WORK ASSOCIATED WITH WORK IN ORDER THAT BID INCLUDES FOR EVERYTHING NECESSARY FOR COMPLETION OF WORK. | | 12.1. SPECIAL RECEPTACLES AND SWITCHES; 12.2. DISTRIBUTION EQUIPMENT; 12.3. LUMINAIRES; 12.4. EXIT SIGN; 12.2. PROPERLY IDENTIFY SHOP DRAWINGS FOR REVIEW AND SHOW IN DETAIL EQUIPMENT AND MATERIALS. ENDORSE EACH DRAWING, INCLUDE COMPANY NAME AND SUBMITTAL DATE. PROVIDE MANUALS AS INDEXED, IDENTIFIED HARD COVER 3-RING BINDERS COMPLETE WITH: 12.2.1. TITLE SHEET AND LIST OF CONTENTS; 12.2.2. A COPY OF EACH "REVIEWED" SHOP DRAWING; 12.2.3. EXPLANATIONS OF OPERATING PRINCIPLES AND SEQUENCES; 12.2.4. PART LISTS WITH NUMBERS; 12.2.5. RECOMMEND MAINTENANCE PRACTICES AND PRECAUTIONS; 12.2.6. COPIES OF INSPECTION CERTIFICATES ISSUED BY GOVERNING AUTHORITIES; 12.2.7. WIRING AND CONNECTION DIAGRAMS; 12.2.8. COPIES OF ADDITIONAL AND REVISED PANELBOARD DIRECTORIES. 12.2.9. PROVIDE 2 SETS OF MANUALS. | | 16.1. OUTLET BOXES: PROVIDE CSA APPROVED STAMPED GALVANIZED STEEL OUTLET BOX FOR EACH LUMINAIRE, FIRE ALARM DEVICE, ETC. REFER TO DRAWINGS FOR LOCATIONS OF OUTLETS. CONFIRM EXACT LOCATION PRIOR TO ROUGHING-IN. BOXES FOR RIGID STEEL CONDUITS SHALL BE CAST FS/FD TYPES. 16.2. PULLBOXES AND JUNCTION BOXES: PROVIDE GALVANIZED OR PRIME COATPLATED STEEL, SUITABLE IN RESPECTS FOR APPLICATION AND COMPLETE WITH SCREW OR OR HINGED COVERS AS REQUIRED, AND CONNECTORS SUITABLE FOR CONNECTED CONDUIT. 16.3. PROVIDE PULLBOXES AND JUNCTION BOXES WHEREVER NECESSARY TO FACILITATE CONDUCTOR/CONDUIT INSTALLATIONS. GENERALLY, PROVIDE CONDUIT RUNS EXCEEDING 100' (30 m) IN LENGTH, OR WITH MORE THAN 3 – 90 DEGREE BENDS WITH PULLBOX INSTALLED AT CONVENIENT AND SUITABLE INTERMEDIATE ACCESSIBLE LOCATION. PROVIDE JUNCTION BOXES AND PULLBOXES SIZED IN ACCORDANCE WITH CODE TO SUIT NUMBER AND SIZE OF CONDUITS AND CONDUCTORS. BOXES MUST BE ACCESSIBLE AFTER WORK IS COMPLETE. 16.4. SIZE, ARRANGEMENT AND TYPE OF BOXES MUST BE SUITABLE FOR APPLICATION. CLEARLY IDENTIFY MAIN PULL AND/OR JUNCTION BOXES BY SPRAY PAINTING COVERS AGREED UPON WITH OWNER AND SHALL BE CONFORMED ON SITE. WHEN REQUIRED, SUPPLY ACCESS DOORS OF MINIMUM NO. 12 GAUGE, PRIME COATED STEEL COMPLETE WITH HINGES AND FRAMES TO GIVE ACCESS TO BOXES AND CONDUCTOR JOINTS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR, BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION. CONFIRM FINISHES WITH OWNER. | | 21.1. THE DISCONNECT SWITCHES SHALL HAVE THE OPERATING HANDLE INTERLOCKED WITH THE SWITCH COVER SO THAT IT CAN ONLY BE OPENED WHEN THE SWITCH IS IN THE "OFF" POSITION, AND THE HANDLE CANNOT BE PUT IN THE "ON" POSITION UNLESS THE COVER IS CLOSED. 21.2. THE FUSED SWITCHES SHALL HAVE STEEL REINFORCED CLIPS AND FUSES SHALL BE EASILY REMOVABLE WHEN THE SWITCH IS IN THE "OFF" POSITION. 21.3. SWITCHES SHALL HAVE AMPLE GUTTER SPACE FOR TOP OR BOTTOM WIRING AND SHALL HAVE FULLY VISIBLE BLADES WHEN IN THE "OFF" POSITION. QUICK-MAKE, QUICK-BREAK, MECHANISM AND BE HORSE-POWER RATED. 21.4. SWITCHES USED OUTDOORS SHALL BE IN A WEATHERPROOF ENCLOSURE. SWITCHES USED INDOORS SHALL BE SPRINKLER PROOF, NEMA 3R. 21.5. SWITCHES SHALL HAVE PROVISION FOR PADLOCKING IN THE "OFF" POSITION AND INTERLOCK DEFEAT. 21.6. ALL MOTORS SHALL BE PROVIDED WITH A DISCONNECT SWITCH UNLESS OTHERWISE NOTED. | | 23.3. SHOCK AND ARC FLASH PROTECTION 23.3.1. PROVIDE FOR ELECTRIC SHOCK AND ARC FLASH PROTECTION AS REQUIRED BY LOCAL GOVERNING ELECTRICAL CODE AND LOCAL GOVERNING AUTHORITIES. SCOPE OF WORK TO BE FOR ADDITIONAL AND REVISED EQUIPMENT AND FIRST LEVEL OF USE OF STREAM DEVICES. 23.3.2. DETERMINE SEVERITY OF POTENTIAL EXPOSURE, PLANNING SAFE WORK PRACTICES AND SELECTING PERSONAL PROTECTIVE EQUIPMENT UNDER GENERAL GUIDELINES OF GOVERNING EDITION OF CSA 2462. 23.3.3. DESIGN SAFETY SIGNS AND LABELS FOR APPLICATIONS TO EQUIPMENT UNDER GENERAL GUIDELINES OF ANSI Z535.4. 23.3.4. DETERMINE ARC FLASH HAZARD DISTANCE AND INCIDENT ENERGY THAT WORKERS MAY BE EXPOSED TO FROM ELECTRICAL EQUIPMENT UNDER GENERAL GUIDELINES OF IEEE 1584. 23.3.5. INCORPORATE DOCUMENTATION WITH DISTRIBUTION SYSTEM AND COORDINATION STUDY REPORT. 23.3.6. PROVIDE LABELS AS REQUIRED ON EQUIPMENT, MEETING APPLICABLE STANDARDS AND CODES TO SATISFACTION OF CONTRACT ADMINISTRATOR . | | 25.7. PROVIDE TO CONTRACT ADMINISTRATOR MINIMUM 3 COPIES OF TEST REPORT WITH DETAILED SCHEDULES OF TESTED DEVICES. REPORTS SHALL BE SIGNED BY AUTHORIZED CERTIFIED TESTING TECHNICIAN. A DIGITAL COPY OF THE REPORT SHALL ALSO BE PROVIDED IN COMPATIBLE FORMAT CONFORMED WITH CONTRACT ADMINISTRATOR. | |
| | | 3.1. PAY FOR AND OBTAIN PERMITS TO COMPLETE WORK. WHEN WORK IS COMPLETE, SUPPLY AND TURN OVER INSPECTION CERTIFICATES FROM GOVERNING AUTHORITIES TO CONTRACT ADMINISTRATOR . PAY FEES AND CHARGES LEVIED BY MUNICIPALITY AND OTHER GOVERNING AUTHORITIES FOR PERMITS, INSPECTIONS AND CERTIFICATES. KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC., ON JOB SITE. | | 13.1. INSTALL CONDUIT AND CONDUCTORS CONCEALED TO DEGREE MADE POSSIBLE BY FINISHES AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH CEC AND LOCAL GOVERNING AUTHORITIES. PLAN AND COORDINATE LOCATIONS AND ROUTING OF SERVICES, WITH TRADES PRIOR TO INSTALLATION. IN AREAS WHERE A MULTIPLICITY OF SERVICES OCCURS, PREPARE DETAIL DRAWINGS AND SUBMIT TO CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO START OF AFFECTED WORK. 13.2. WHERE CONDUIT AND/OR CONDUCTORS ARE EXPOSED, ARRANGE SAME TO AVOID INTERFERENCE WITH OTHER WORK AND PARALLEL TO BUILDING LINES.WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUIT AND/OR CONDUCTORS WITHIN 6" (150 mm) OF "HOT" PIPES OR EQUIPMENT UNLESS CONDUIT AND/OR CONDUCTORS ARE ASSOCIATED WITH EQUIPMENT. INDEPENDENTLY RUN CONDUIT AND CONDUCTORS MUST BE SUPPORTED FROM THE CEILING/WALL STRUCTURE, NOT FROM CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, ETC. 13.3. IDENTIFY CONDUIT RUNS. (I.E.: TAG BOTH ENDS OF CONDUIT RUNS). 13.4. AT NO EXTRA COST, ALLOW FOR FINAL RELOCATIONS OF DEVICES UP TO 10' (3M) TO SUIT FINAL COORDINATED DEVICE LOCATIONS, PRIOR TO INSTALLATION OF WALL COVERINGS. | | 17.1. PROVIDE CSA APPROVED, HEAVY DUTY, SPECIFICATION GRADE, 347V, WHITE ROCKING STYLE LOW VOLTAGE SWITCHES THAT SHALL BE COMPATIBLE WITH THE EXISTING BASE BUILDING LIGHTING CONTROL SYSTEM. 17.2. PROVIDE CSA APPROVED HEAVY DUTY, PREMIUM QUALITY DUPLEX CONSTRUCTION U-GROUND, 15A-125V, 3W AND EQUAL TO HUBBELL SPECIFICATION GRADE RECEPTACLES. DEVICES SHALL BE BACK AND SIDE WIRED. PROVIDE IMPACT RESISTANT THERMOPLASTIC FACEPLATES WITH MATCHING SCREWS. CONFIRM TYPE AND FINISH OF DEVICES WITH CONTRACT ADMINISTRATOR OR/AND OWNER PRIOR TO ORDERING. THESE TYPE AND FINISH SHOULD BE SPECIFIED AND OF STANDARD MATERIALS/COLOURS. | | 22.1. PROVIDE REQUIRED GROUNDING AND BONDING WORK IN ACCORDANCE WITH DRAWINGS, LOCAL GOVERNING ELECTRICAL AUTHORITY, GOVERNING AUTHORITIES HAVING JURISDICTION AND LOCAL GOVERNING ELECTRICAL INSPECTION AUTHORITY. PROVIDE LOCAL GOVERNING ELECTRICAL UTILITY'S GROUNDING REQUIREMENTS FOR STATIONS, VAULTS AND ELECTRICAL ROOMS, AS APPLICABLE. CONFIRM REQUIREMENTS WITH LOCAL GOVERNING ELECTRICAL UTILITY. 22.2. GROUND AND BOND OTHER EQUIPMENT SUCH AS TRANSFORMERS, SWITCHBOARDS, PANELBOARDS, AND SIMILAR METAL WORK TO PERIMETER GROUND BUS. PROVIDE MINIMUM NO. 3/0 INSULATED GROUND WIRE FROM GROUND BUS IN ELECTRICAL ROOMS TO SWITCHBOARDS, TRANSFORMERS, STRUCTURE, FLOOR, ETC. | | 24.1. PROVIDE LUMINAIRES AS NOTED ON LUMINAIRE SCHEDULE, COMPLETE WITH ELECTRONIC BALLASTS. CONFIRM FINISHES WITH CONTRACT ADMINISTRATOR AND OWNER PRIOR TO ORDERING. 24.2. LED LAMPS SHALL BE CSA APPROVED AND ULC LISTED AND LABELLED. 24.3. LEDS HAVE THE MOST ADVANCED AND TECHNICALLY PROVEN AND SUCCESSFULLY TESTED LED TECHNOLOGY AT THE TIME OF INSTALLATION. 24.4. LED FEATURES TO INCLUDE: 24.4.1. LEDS TO BE SELECTED FROM SAME COLOUR BIN SIZE FOR CONSISTENCY AND CHROMATICITY AND MEET ANSI C78 377A AS A MINIMUM. 24.4.2. GENERALLY, COLOUR TEMPERATURE RANGE TO BE FROM 2700K TO 6500K; SPECIFIC TEMPERATURE REQUIREMENTS TO BE IDENTIFIED ON LUMINAIRE SCHEDULE. | | 26.1.1. AS-BUILT DRAWINGS COMPLETE WITH CAD FILE DRAWINGS; ENSURE MAIN BRANCH CONDUITS, JUNCTION BOXES, AND ASSOCIATED ARE SHOWN ON AS BUILT DRAWINGS. | |
| 5.1. | NOISE CONTROL | WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY CONTRACT ADMINISTRATOR . COORDINATE WORK WITH TRADES TO MINIMIZE NOISE DISTURBANCES. | | 13.5. GENERALLY, CONDUCTORS AND CONDUIT ARE SIZED ON DRAWINGS, BUT IN ABSENCE OF DIRECTOR IN TYPE AND SIZING, TYPE AND SIZE REQUIRED QUANTITY IN ACCORDANCE WITH THE INTENDED APPLICATION, TO APPLICABLE OESC REQUIREMENTS. SIZES WHERE SHOWN, ARE MINIMUM SIZES AND SHALL NOT BE REDUCED UNLESS APPROVED BY CONTRACT ADMINISTRATOR. | | 18.1. PROVIDE PROPER FASTENERS AND SIMILAR HARDWARE REQUIRED FOR CONDUIT, CONDUCTORS, AND FOR EQUIPMENT HANGER AND/OR SUPPORT MATERIAL UNLESS OTHERWISE NOTED. EXPLOSIVE POWDER ACTUATED FASTENERS WILL NOT BE PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR THEIR USE AND TYPE HAS BEEN OBTAINED FROM CONTRACT ADMINISTRATOR . UNDER NO CIRCUMSTANCES USE CEILING SUSPENSION HANGERS OR GIBBS FOR SUSPENSION OF CONDUIT AND CONDUCTORS. | | 23.1. GENERAL 23.1.1. IN ADDITION TO TESTS REQUIRED BY GOVERNING AUTHORITIES AND REGULATIONS, TEST WORK TO ENSURE THERE ARE NO GROUNDS OR CROSSES. ENSURE DEVICES ARE COMMISSIONED AND OPERABLE. CONNECT CIRCUITS TO PANELBOARDS SO AS TO BALANCE ACTUAL LOADS (WATTAGE) WITHIN 5% IF REQUIRED, TRANSPOSE CIRCUITS WHEN WORK IS COMPLETE TO MEET THIS REQUIREMENT. | | 24.5.1. PERATE FROM 60 HZ INPUT SOURCE OF 120 OR 347 VAC WITH SUSTAINED VARIATIONS OF ± 10% (VOLTAGE AND FREQUENCY) WITH NO DAMAGE TO DRIVER; | | | |
| | | 6.1. DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIAL RESULTING FROM WORK ON DAILY BASIS. AFTER COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER. | | 13.6. CONDUCTORS IN PLenum SPACES AND IN RAISED FLOOR TYPE CONNECTORS WITH INSULATED THROATS, AND CONCRETE TIGHT WHERE REQUIRED. 14.1. PROVIDE CONDUIT FOR CONDUCTORS. INTERIOR CONDUIT TO BE EMT (THINWALL) GALVANIZED, ELECTRICAL METALLIC TUBING TO CSA C22.2 NO. 83, COMPLETE WITH FACTORY MADE BENDS WHERE SITE BENDING IS NOT POSSIBLE, AND JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS WITH INSULATED THROATS, AND CONCRETE TIGHT WHERE REQUIRED. 14.2. FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND TRANSFORMERS (MINIMUM LENGTH 18" [450 mm], MAXIMUM LENGTH 24" [600 mm]) WITH 180 DEGREE LOOP WHERE POSSIBLE), PROVIDE GALVANIZED STEEL FLEXIBLE LIQUID-TIGHT METALLIC CONDUIT TO CSA C22.2 NO. 56, COMPLETE WITH IDEAL "STEEL TOUGH" LIQUID TIGHT FLEXIBLE CONDUIT CONNECTORS AT TERMINATIONS. 14.3. FOR EXTERIOR LOCATIONS, PROVIDE CSA APPROVED AND LABELLED, FT-4 RATED, RIGID PLASTIC (PVC) CONDUIT COMPLETE WITH SITE MADE HEAT GUN BENDS ON CONDUIT TO 50 MM (2") DIAMETER. FACTORY MADE ELBOWS GUN CONDUIT LARGER THAN 50 MM (2") DIAMETER, SOLVENT WELD JOINTS, FACTORY MADE EXPANSION JOINTS WHERE REQUIRED, AND TERMINATIONS MADE WITH PROPER AND SUITABLE CONNECTORS AND ADAPTORS. 14.4. SUPPORT AND SECURE CONDUIT AT SPACING IN ACCORDANCE WITH CODE REQUIREMENTS BY MEANS OF GALVANIZED PIPE STRAPS, CONDUIT CLIPS, RING BOLT TYPE HANGERS, OR BY OTHER PROPER MANUFACTURED DEVICES. PROVIDE CONDUIT FITTINGS CONSTRUCTED OF SAME MATERIALS AS CONDUIT AND SUITABLE FOR APPLICATION. SQUARE AND PROPERLY REAR ENDS OF SITE CUT CONDUIT. GENERALLY, CONDUIT IS SIZED ON DRAWINGS. SIZE CONDUIT NOT SIZED ON DRAWINGS IN ACCORDANCE WITH CODE. BEND CONDUIT AT FULL CONDUIT DIAMETER WITH NO KINKING AND NO FLAKING OR CRACKING OF FINISHES. 14.5. PROVIDE COOPER B-LINE "DURA-BLOK" SERIES ROOFTOP SUPPORT SYSTEMS FOR CONDUIT RUNS ON ROOF. INSTALL ROOFTOP SUPPORT SYSTEM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS TO SUIT TYPE OF RACEWAY AND ROOFING MATERIALS. USE PROPERLY SIZED CLAMPS TO SUITE CONDUIT SIZES. ENSURE THAT INSTALLATION AND USE OF SYSTEM DOES NOT INVALIDATE ROOF WARRANTY. | | 19.1. FOR EACH PHASE OF ELECTRICAL DISTRIBUTION EQUIPMENT FROM ELECTRICAL SOURCE OF SUPPLY UP TO AND INCLUDING PANELBOARDS, PROVIDE ENGRAVED LAMACOID IDENTIFICATION NAMEPLATES SECURED TO APPARATUS WITH STAINLESS STEEL SCREWS, WORDING TO INDICATE SOURCE OF ELECTRICAL SUPPLY AND SIZED TO SUIT EQUIPMENT FOR WHICH IT IS PROVIDED. REFER TO CITY'S ASSET TAGGING STANDARD IN THE TENDER PACKAGE | | 23.2.2. PREPARE COORDINATION STUDY AND SHORT CIRCUIT CALCULATIONS (AVAILABLE FAULT CURRENTS) OF SYSTEM. PERFORM WORK TO STANDARDS OF APPLICABLE LOCAL GOVERNING AUTHORITIES, LOCAL ELECTRICAL INSPECTION AUTHORITY AND CSA STANDARDS. | | 24.5.2. OUTPUT REGULATED TO ±5% ACROSS LOAD RANGE; 24.5.3. POWER FACTOR GREATER THAN 0.90; 24.5.4. TOTAL HARMONIC DISTORTION LESS THAN 20%; 24.5.5. CLASS A SOUND RATING; 24.5.6. COMPLY WITH ANSI C62.41 CATEGORY A FOR TRANSIENT PROTECTION. 24.5.7. LAMP CURRENT CREST FACTOR NOT GREATER THAN 1.7; 24.5.8. FREQUENCY OF OPERATION BETWEEN 20 KHZ MINIMUM TO 60 KHZ MAXIMUM, BUT NOT BETWEEN 30 KHZ AND 42 KHZ; LAMPS SHALL OPERATE WITHOUT VISIBLE FLICKER; | | | |
| 9.1. | PRODUCTS | PRODUCTS LISTED AND/OR SPECIFIED ON CONTRACT DOCUMENTS ARE SELECTED TO ESTABLISH DESIGN STANDARDS. IN MOST CASES, ACCEPTABLE MANUFACTURERS ARE LISTED. BASE YOUR BID PRICE ON BASE SPECIFIED PRODUCTS OR PRODUCTS SUPPLIED FROM ACCEPTABLE MANUFACTURERS. ENSURE PRODUCTS SUPPLIED FROM MANUFACTURERS OTHER THAN BASE SPECIFIED MANUFACTURERS ARE EQUIVALENT TO SPECIFIED PRODUCTS. CHANGES TO MANUFACTURERS OF PRODUCTS MAY BE PROPOSED TO CONTRACT ADMINISTRATOR FOR ACCEPTANCE PRIOR TO CLOSING OF BIDS, LISTING IN EACH CASE CORRESPONDING CREDIT. CONTRACT ADMINISTRATOR HAS SOLE DISCRETION IN ACCEPTING ANY PROPOSED SUBSTITUTION. INCLUDE IN BID PRICE ANY ADDITIONAL COSTS FOR CHANGES TO ASSOCIATED OR ADJACENT WORK RESULTING FROM PROVISION OF PRODUCTS SUPPLIED BY MANUFACTURER OTHER THAN BASE SPECIFIED MANUFACTURER. ANY PROPOSED CHANGES INITIATED BY CONTRACTOR AFTER AWARD OF CONTRACT MAY BE CONSIDERED BY THE CONTRACT ADMINISTRATOR AT CONTRACT ADMINISTRATOR 'S DISCRETION, WITH COSTS FOR SUCH CHANGES IF APPROVED BY CONTRACT ADMINISTRATOR , AND COSTS OF SUCH REVIEW BY THE CONTRACT ADMINISTRATOR TO BE PAID FOR BY THE CONTRACTOR. | | 15.1. PROVIDE CONDUCTORS. WIRE SHALL BE INSTALLED IN CONDUIT. REFER TO DRAWINGS FOR SIZING OF CONDUCTORS. GENERALLY, BRANCH CIRCUIT CONDUCTOR SIZES ARE INDICATED ON DRAWINGS. SUCH SIZES ARE MINIMUM REQUIREMENTS AND MUST BE INCREASED TO SUIT LENGTH OF RUN AND VOLTAGE DROP IN ACCORDANCE WITH SCHEDULE OBTAINED FROM CONTRACT ADMINISTRATOR . CONDUCTORS NOT SIZED ON DRAWINGS SHALL BE SIZED IN ACCORDANCE WITH CODE. PROVIDE CABLE SUPPORT SYSTEM ACCESSORIES WHICH ARE NOT SPECIFIED HEREIN OR SHOWN ON DRAWINGS BUT ARE REQUIRED FOR PROPER INSTALLATION. 15.2. INTERIOR CONDUCTORS TO BE "RW90" SINGLE CONDUCTOR TO CSA C22.2 NO. 38, 600/1000 VOLTS, MAXIMUM 90C (194T) CONDUCTOR TEMPERATURE, -40C (-40T) MINIMUM INSTALLATION TEMPERATURE, X-LINK POLYETHYLENE (XLPE) INSULATION, COLOUR CODED. 15.3. EXTERIOR CONDUCTORS SHALL BE "RWU90" SINGLE CERTIFIED, SINGLE COPPER CONDUCTOR TO CSA C22.2 NO. 38, MAXIMUM 90C (194T) CONDUCTOR TEMPERATURE, -40C (-40T) MINIMUM INSTALLATION TEMPERATURE, EXTRA THICKNESS X-LINK POLYETHYLENE (XLPE) INSULATION SUITABLE FOR WET AND BURIED INSTALLATIONS, COLOUR CODED. 15.4. DO NOT USE "BX" TYPE CABLEING, ALL CIRCUITS SHALL BE CONDUCTORS IN CONDUIT. 15.5. CONDUCTORS UP TO AND INCLUDING NO. 10 AWG SHALL BE SOLID. CONDUCTORS IN SIZES LARGER THAN NO. 10 AWG SHALL BE STRANDED. PROVIDE CONDUCTORS CONSTRUCTED OF 98% CONDUCTIVE COPPER AND APPROVED FOR 600V. PROVIDE IDI ELECTRIC "IDEAL" NO. 451, NO. 452 AND NO. 453 "WING-NUT" CSA CERTIFIED 600V RATED PRESSURE TUBE CONNECTORS. 15.6. WHEN PULLING WIRES INTO CONDUIT, USE IDI ELECTRIC "IDEAL YELLOW 77" LUBRICANT. ENSURE WIRES ARE KEPT STRAIGHT AND ARE NOT TWISTED OR ABRAISED. 15.7. DO NOT USE CONDUCTORS SMALLER THAN NO. 12 AWG IN SYSTEMS OVER 30 | | 20.1. EATON (CUTLER-HAMMER), "POW-R-LINE" SERIES, FACTORY ASSEMBLED DEAD FRONT PANELBOARDS AS PER SCHEDULES, MANUFACTURED TO CSA STANDARD C22.2 NO. 29 AND LOCAL GOVERNING ELECTRICAL CODE, AND DESIGNED FOR SEQUENCE PHASE CONNECTION OF BRANCH CIRCUIT BREAKERS. 20.2. PANELBOARDS TO BE EQUIPPED WITH ONE (1) CONTINUOUS BUS BAR PER PHASE. EACH BUS BAR TO HAVE SEQUENTIALLY PHASED BRANCH CIRCUIT CONNECTORS LIMITED TO BOLT-ON BRANCH CIRCUIT BREAKERS. BUSSING TO BE FULLY RATED AND OF PLATED COPPER CONSTRUCTION. 20.3. PANELBOARDS ARE TO BE COMPLETE WITH: 20.3.1. NEMA 2, BOX CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH REMOVABLE BOX ENDS, WIRING GUTTER SPACE ON SIDES; CONDUIT ENTRIES SEALED WATER-TIGHT; 20.3.2. DEAD-FRONT CONSTRUCTION TO SHIELD USER FROM ENERGIZED PARTS; ENCLOSURE CONSTRUCTED OF CODE GAUGE, HOT ZINC DIPPED GALVANIZED STEEL CONSTRUCTED IN ACCORDANCE WITH UL 50 REQUIREMENTS; TRIM FOR FLUSH OR SURFACE WALL MOUNTING AS SHOWN; FRONT PANEL TO NOT BE REMOVABLE WITH THE DOOR LOCKED; 20.3.4. HINGED DOOR WITH CONCEALED FASTENERS, CONCEALED HINGE, CHROME PLATED DOOR LATCH AND KEYED ALIKE LOCK WITH KEY. 20.3.5. A STEEL FRAME HOLDER AND CIRCUIT DIRECTORY CARD PROTECTED BY CLEAR ACETATE AND SECURED TO BACK OF DOOR, AND MYLAR CIRCUIT BREAKER IDENTIFICATION STRIPS; 20.3.6. DRIP SHIELD FOR SURFACE MOUNTED PANELBOARDS; 20.3.7. COPPER NEUTRAL BARS; 20.3.8. 200% SIZED NEUTRALS FOR PANELS EQUIPPED WITH SPD UNITS AND FOR PANELS AS SCHEDULED; 20.3.9. SOLIDLY BONDED EQUIPMENT COPPER GROUND BAR; 20.3.10. HIGH STRENGTH, SET SCREW TYPE, ANTI-TURNING WIRE CONNECTORS; 20.3.11. CURRENT-CARRYING PARTS BE INSULATED FROM GROUND AND PHASE-TO-PHASE BY HIGH DIELECTRIC STRENGTH THERMOPLASTIC; FILLER PLATES COVERING UNUSED MOUNTING SPACE; 20.3.13. NON-AUTOMATIC AND AUTOMATIC MAIN BREAKER TO FUNCTION AS AN ISOLATING SWITCH, WHERE SHOWN AND AS REQUIRED; 20.4. PANELS, DOORS AND TRIM ARE TO BE FACTORY PAINTED WITH ANSI GREY ENAMEL FINISH. RECESSED BACKBOXES (TUBS) NEED NOT BE FINISHED PAINTED. PROVIDE FACTORY ASSEMBLED BRANCH CIRCUIT PANELBOARDS AND INSTALL INTO LOCATIONS AND CONNECT COMPLETE. ENSURE ADEQUATE CLEARANCE IS PROVIDED AS PER CODE REQUIREMENTS AND AS REQUIRED FOR ACCESS FOR OPERATION AND MAINTENANCE. LOAD PANELS WITH BREAKERS AS SCHEDULED. SUPPORT CABINETS AND ENCLOSURES INDEPENDENT OF CONNECTING CONDUIT, AND ACCURATELY INSTALL WITH REFERENCE TO WALL FINISHES. | | 23.2.3. REVIEW AND SURVEY EXISTING SYSTEMS AND/OR OBTAIN WHERE AVAILABLE, COORDINATION STUDY OF EXISTING SYSTEMS TO USE IN DETERMINING BEST COORDINATION FOR ADDITIONAL AND REVISED EQUIPMENT WITH EXISTING SYSTEMS. WHERE EXISTING STUDIES ARE NOT AVAILABLE, SURVEY EXISTING SYSTEMS AND PREPARE ADDITIONAL COORDINATION STUDIES AS REQUIRED TO PROVIDE A FULL AND PROPER COORDINATION OF ENTIRE EXISTING, REVISED AND ADDITIONAL SYSTEMS. 23.2.4. SUBMIT COORDINATION STUDY AND SHORT CIRCUIT CALCULATIONS REPORTS AS PART OF SHOP DRAWING SUBMISSION AS REQUIRED. ENSURE THAT RESULTS AND CONTRACT ADMINISTRATOR 'S REVIEWED COMMENTS FROM THESE REPORTS ARE INCORPORATED INTO ELECTRICAL DISTRIBUTION EQUIPMENT SHOP DRAWINGS. 23.2.5. PROTECTIVE SYSTEM DEVICES HAVE BEEN SELECTED SUCH THAT PROTECTION IS ADEQUATE AND GOOD COORDINATION IS POSSIBLE, HOWEVER, SINCE DIFFERENCES DO EXIST BETWEEN MANUFACTURERS, SOME CHANGES IN TRIP RATINGS OR RELAY SETTINGS MAY BE NECESSARY AND ARE TO BE CARRIED OUT. OBTAIN LOCAL ELECTRICAL UTILITY INFORMATION ON THEIR PROTECTIVE DEVICES AND INCLUDE REQUIREMENTS AS NECESSARY. | | 24.6. ALL LUMINAIRES SHALL HAVE A 5-YEAR FULL REPLACEMENT PARTS AND LABOUR INCLUDED WARRANTY. 24.7. THOROUGHLY REVIEW CEILING TYPES, FINISHES AND CONSTRUCTION DETAILS BEFORE PLACING LUMINAIRE ORDERS AND ENSURE REQUIRED MOUNTING ASSEMBLIES, RINGS AND SIMILAR FEATURES ARE INCLUDED. INCLUDE FOR ASSEMBLY, MOUNTING AND ADJUSTING OF LUMINAIRES, COMPLETE WITH WIRING, CONNECTIONS, HANGERS, ALUMINUM, BOX COVERS AND ACCESSORIES FOR COMPLETE, SAFE, FULLY OPERATIONAL ASSEMBLY. CAREFULLY COORDINATE LUMINAIRE INSTALLATION WITH WORK OF OTHER TRADES TO ENSURE NECESSARY RECESSING DEPTHS AND MOUNTING SPACES ARE PROVIDED. INSTALL LUMINAIRES IN ACCORDANCE WITH APPLICABLE ARCHITECTURAL REFLECTED CEILING PLANS AND/OR WALL ELEVATIONS. CONFIRM LUMINAIRE LOCATIONS PRIOR TO ROUGHING-IN. | | | |
| | | 10.1. WARRANTY WORK TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR 2 YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONTRACT ADMINISTRATOR . REPAIR AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR IN WORK WITHIN WARRANTY PERIOD, OWNER'S WEAR AND TEAR AND WILFUL DAMAGE BY, OR CARELESSNESS OF, OWNER'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL EXPENSE TO OWNER. WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDES REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS. | | 20.5. CONNECTORS 20.6. WHEN PULLING WIRES INTO CONDUIT, USE IDI ELECTRIC "IDEAL YELLOW 77" LUBRICANT. ENSURE WIRES ARE KEPT STRAIGHT AND ARE NOT TWISTED OR ABRAISED. 20.7. EQUIP PANELBOARDS WITH SUITABLE LUGS OR PROVISIONS TO ACCOMMODATE MAIN AND BRANCH CONDUCTORS SCHEDULED. 20.8. GROUND AND BOND EQUIPMENT AS PER LOCAL GOVERNING ELECTRICAL CODE AND INSPECTION AUTHORITY REQUIREMENTS. REFER ALSO REQUIREMENTS OF SECTION ENTITLED – GROUNDING AND BONDING. 20.9. IDENTIFY PANELBOARD BREAKERS IN A PERMANENT MANNER, AND COMPLETE TYPED PANELBOARD CIRCUIT DIRECTORIES IDENTIFYING CIRCUIT NUMBER AND TYPE AND LOCATION OF LOADS SUPPLIED FROM EACH BREAKER TO CONTRACT ADMINISTRATOR 'S APPROVAL. 20.10. INCLUDE FOR SPACES FOR FUTURE BREAKERS, SPARE BREAKERS AND ADDITIONAL BREAKERS FOR MISCELLANEOUS MECHANICAL LOADS ARE INCLUDED AS PER SCHEDULES AND AS SPECIFIED. | | 23.2.6.1. PREPARE A SET OF COORDINATION CURVES ON K.E. NO. 336E TIME CURRENT CHARACTERISTIC GRAPH PAPER; 23.2.6.2. THIS IS TO BE ACCOMPANIED BY SUPPORTING SYMMETRICAL AS WELL AS ASYMMETRICAL FAULT CURRENT CALCULATION DATA WITH TABULATIONS TO VERIFY PROTECTION OF VARIOUS ELEMENTS OF SYSTEMS UNDER MAXIMUM AND MINIMUM FAULT CONDITIONS AT VARIOUS POINTS IN SYSTEMS. 23.2.6.3. PLOT TIME-CURRENT CHARACTERISTIC CURVES FOR FOLLOWING: 23.2.6.3.1. MAIN AND FEEDER PROTECTIVE DEVICES AT VOLTAGE LEVELS USED IN DISTRIBUTION SYSTEM; 23.2.6.3.2. PROTECTIVE DEVICES ASSOCIATED WITH LARGEST MOTOR IN EACH METERED AREA AT THE POINT OF CONNECTION TO THE MAIN AND LARGEST MOTOR IN EACH DISTRIBUTION PANEL; 23.2.6.3.3. MOTOR GENERATOR PROTECTIVE DEVICES, DAMAGE CURVES AND CURRENT DECREMENT CURVES. 23.2.6.4. COOPERATE WITH AND OBTAIN FROM OTHER MANUFACTURERS A LIST OF EQUIPMENT REQUIRING PROTECTIVE DEVICES TO BE USED IN DISTRIBUTION SYSTEM AND PREPARE COORDINATION CURVES AS SOON AS POSSIBLE. BE RESPONSIBLE, ALONG WITH OTHER MANUFACTURERS' EQUIPMENT CONNECTED TO DISTRIBUTION SYSTEM, TO ENSURE THAT PROPER CONTROL AND PROTECTIVE DEVICES ARE SELECTED SUCH THAT THEY COORDINATE WITH PROTECTIVE DEVICES. 23.2.6.5. IT IS RESPONSIBILITY OF EQUIPMENT MANUFACTURERS TO EXAMINE PLANS AND SPECIFICATIONS TO ENSURE THAT RELAYS AND | | 25.2. ADDITIONAL DEVICES SHALL MATCH BASE BUILDING STANDARDS. INCLUDE REQUIRED ACCESSORIES FOR PROPER OPERATION AND INSTALLATION. RE-PROGRAM SYSTEM TO ACCOMMODATE ADDITIONS AND MODIFICATIONS. RE-BURN SOFTWARE AS REQUIRED BY LOCAL FIRE AUTHORITY. MODIFY ANNUNCIATORS AS REQUIRED TO INCORPORATE ALL REVISIONS AND ADDITIONS. AUDIBLE DEVICES SHALL BE PROVIDED AND ADJUSTED TO SOUND AT LEVELS AS PER LOCAL FIRE AUTHORITY REQUIREMENTS. PROVIDE ADDITIONAL DEVICES AS REQUIRED TO ACHIEVE SOUND LEVEL STANDARDS. | | | | | |
| 11.1. | RECORD DRAWINGS (AS-BUILTS) | DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED ON A CAD SYSTEM. THE SOFTWARE USED IS AUTOCAD RELEASE 2010. COPIES OF DRAWINGS ON DISKS FOR USE IN PREPARING AS-BUILTS, MAY BE REQUESTED FROM CONTRACT ADMINISTRATOR. | | 20.3.2. DEAD-FRONT CONSTRUCTION TO SHIELD USER FROM ENERGIZED PARTS; ENCLOSURE CONSTRUCTED OF CODE GAUGE, HOT ZINC DIPPED GALVANIZED STEEL CONSTRUCTED IN ACCORDANCE WITH UL 50 REQUIREMENTS; TRIM FOR FLUSH OR SURFACE WALL MOUNTING AS SHOWN; FRONT PANEL TO NOT BE REMOVABLE WITH THE DOOR LOCKED; 20.3.4. HINGED DOOR WITH CONCEALED FASTENERS, CONCEALED HINGE, CHROME PLATED DOOR LATCH AND KEYED ALIKE LOCK WITH KEY. 20.3.5. A STEEL FRAME HOLDER AND CIRCUIT DIRECTORY CARD PROTECTED BY CLEAR ACETATE AND SECURED TO BACK OF DOOR, AND MYLAR CIRCUIT BREAKER IDENTIFICATION STRIPS; 20.3.6. DRIP SHIELD FOR SURFACE MOUNTED PANELBOARDS; 20.3.7. COPPER NEUTRAL BARS; 20.3.8. 200% SIZED NEUTRALS FOR PANELS EQUIPPED WITH SPD UNITS AND FOR PANELS AS SCHEDULED; 20.3.9. SOLIDLY BONDED EQUIPMENT COPPER GROUND BAR; 20.3.10. HIGH STRENGTH, SET SCREW TYPE, ANTI-TURNING WIRE CONNECTORS; 20.3.11. CURRENT-CARRYING PARTS BE INSULATED FROM GROUND AND PHASE-TO-PHASE BY HIGH DIELECTRIC STRENGTH THERMOPLASTIC; FILLER PLATES COVERING UNUSED MOUNTING SPACE; 20.3.13. NON-AUTOMATIC AND AUTOMATIC MAIN BREAKER TO FUNCTION AS AN ISOLATING SWITCH, WHERE SHOWN AND AS REQUIRED; 20.4. PANELS, DOORS AND TRIM ARE TO BE FACTORY PAINTED WITH ANSI GREY ENAMEL FINISH. RECESSED BACKBOXES (TUBS) NEED NOT BE FINISHED PAINTED. PROVIDE FACTORY ASSEMBLED BRANCH CIRCUIT PANELBOARDS AND INSTALL INTO LOCATIONS AND CONNECT COMPLETE. ENSURE ADEQUATE CLEARANCE IS PROVIDED AS PER CODE REQUIREMENTS AND AS REQUIRED FOR ACCESS FOR OPERATION AND MAINTENANCE. LOAD PANELS WITH BREAKERS AS SCHEDULED. SUPPORT CABINETS AND ENCLOSURES INDEPENDENT OF CONNECTING CONDUIT, AND ACCURATELY INSTALL WITH REFERENCE TO WALL FINISHES. | | 23.2.6.2. THIS IS TO BE ACCOMPANIED BY SUPPORTING SYMMETRICAL AS WELL AS ASYMMETRICAL FAULT CURRENT CALCULATION DATA WITH TABULATIONS TO VERIFY PROTECTION OF VARIOUS ELEMENTS OF SYSTEMS UNDER MAXIMUM AND MINIMUM FAULT CONDITIONS AT VARIOUS POINTS IN SYSTEMS. 23.2.6.3. PLOT TIME-CURRENT CHARACTERISTIC CURVES FOR FOLLOWING: 23.2.6.3.1. MAIN AND FEEDER PROTECTIVE DEVICES AT VOLTAGE LEVELS USED IN DISTRIBUTION SYSTEM; 23.2.6.3.2. PROTECTIVE DEVICES ASSOCIATED WITH LARGEST MOTOR IN EACH METERED AREA AT THE POINT OF CONNECTION TO THE MAIN | | | | | | | |






MUD MAT

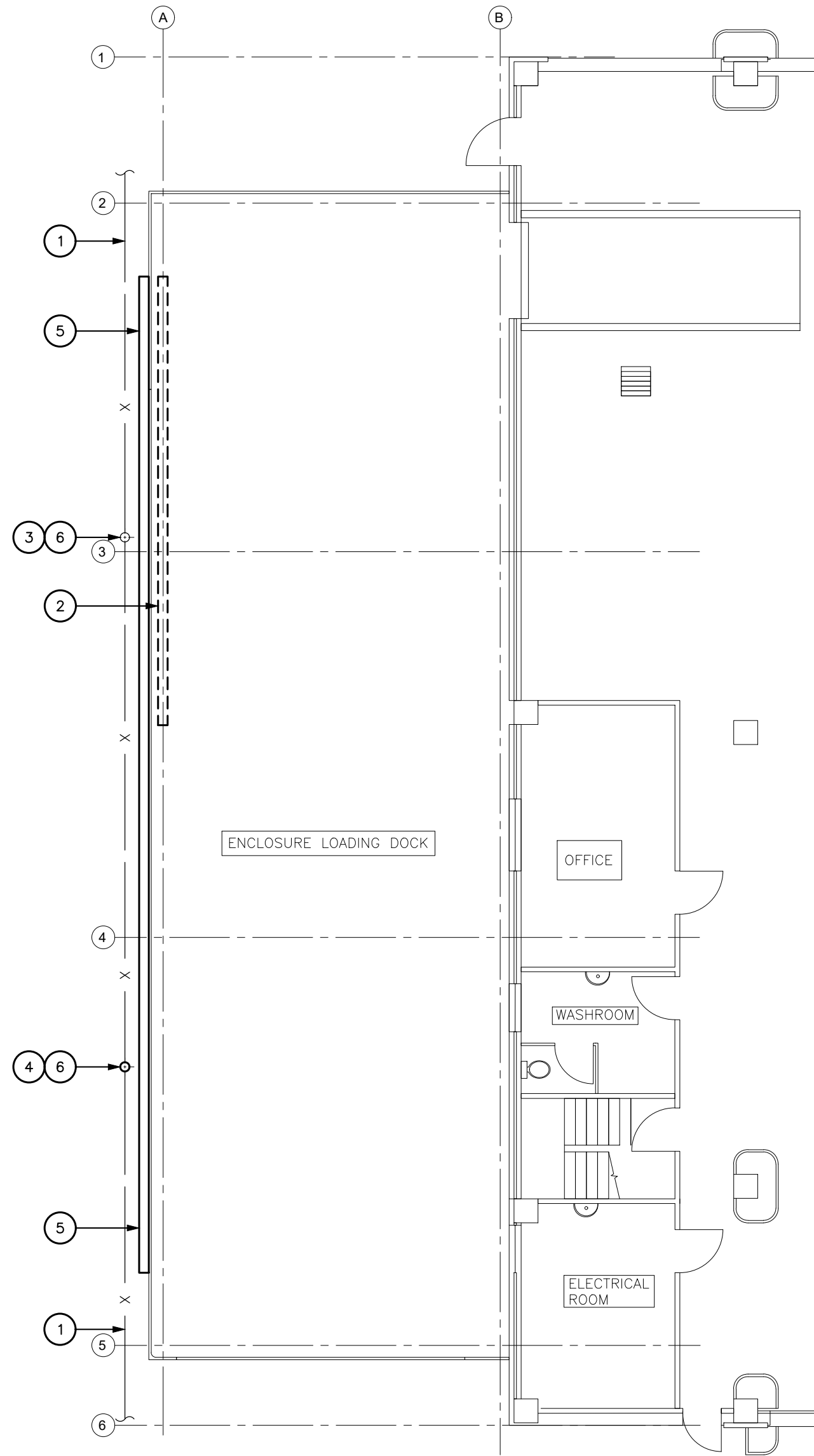
SILT FENCE

- EROSION AND SEDIMENT CONTROL (ESC) MEASURES WILL BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING THE CONSTRUCTION PHASES, TO PREVENT ENTRY OF SEDIMENT INTO THE WATER. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OF THE INSPECTION.
2. DISTURBED AREAS WILL BE MINIMIZED TO THE EXTENT POSSIBLE, AND TEMPORARILY OR PERMANENTLY STABILIZED OR RESTORED AS THE WORK PROGRESSES.
3. ARE THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LOADED RUNOFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE IN PREVENTING THE RELEASE OF A DELETERIOUS SUBSTANCE, INCLUDING SEDIMENT, THEN ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE POTENTIAL ECOLOGICAL IMPACTS. TRCA ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USED, AS NECESSARY.
4. AN ENVIRONMENTAL MONITOR WILL ATTEND THE SITE TO INSPECT ALL NEW CONTROLS IMMEDIATELY AFTER INSTALLATION. INSPECTION OF ESC MEASURES TO BE WILL OCCUR, AT MINIMUM:
 - ☐ ON A WEEKLY BASIS;
 - ☐ PRIOR TO SIGNIFICANT RAINFALL EVENTS (MINIMUM PREDICTED 25MM OVER 24 HOURS);
 - ☐ AFTER EVERY RAINFALL/SNOWMELT EVENT; AND
 - ☐ DAILY DURING EXTENDED RAINFALL PERIODS.INSPECTIONS WILL FOCUS ON MEASURES RELATED TO EROSION AND SEDIMENT CONTROLS, DEWATERING OR UNWATERING, RESTORATION AND IN- OR NEAR-WATER WORKS. SHOULD CONCERNS ARISE ON SITE THE ENVIRONMENTAL MONITOR WILL CONTACT THE TRCA ENFORCEMENT OFFICER AS WELL AS THE PROPONENT.
5. ALL ACTIVITIES, INCLUDING MAINTENANCE PROCEDURES, WILL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO THE WATER. VEHICULAR REFUELING AND MAINTENANCE WILL BE CONDUCTED A MINIMUM OF 30 METRES FROM THE WATER.
6. ALL GRASSES WITHIN THE REGULATORY FLOOD PLAIN WILL BE MAINTAINED OR MATCHED.
7. THE PROPONENT/CONTRACTOR SHALL MONITOR THE WEATHER SEVERAL DAYS IN ADVANCE OF THE ONSET OF THE PROJECT TO ENSURE THAT THE WORKS WILL BE COMPLETED DURING FAVOURABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGIONAL STORM FLOOD PLAN THAT WOULD HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW, E.G., FUEL TANKS, PORTA POTTIES, MACHINERY, EQUIPMENT, CONSTRUCTION MATERIALS, ETC.
8. PLEASE NOTIFY THE FOLLOWING CONTACTS 48 HOURS PRIOR TO COMMENCING CONSTRUCTION: TRCA ENFORCEMENT (T: 437-880-2124, E: INSPECTIONS@trca.ca) AND TRCA INFRASTRUCTURE PLANNING AND PERMITS AT (T: 416-667-6280, E: INFRASTRUCTUREPLANNING@PERMITS.TRCA.CA). PLEASE ENSURE YOU QUOTE THE CFN OR PERMIT NUMBER IN YOUR NOTIFICATION.
9. AN ENVIRONMENTAL MONITOR WILL BE ON SITE, AND PROVIDE ADVICE, TO ENSURE THAT ACTIVITIES THAT COULD HAVE A NEGATIVE IMPACT TO THE NATURAL ENVIRONMENT ARE EFFECTIVELY MITIGATED AS CONSTRUCTION PROCEEDS. THE ENVIRONMENTAL MONITOR SHALL NOTIFY THE TRCA ENFORCEMENT OFFICER AND PROJECT MANAGER IF ISSUES ARISE.



1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED.
2. ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.
3. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM CATCH BASINS AND CATCH BASIN MANHOLES.
4. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS THE PROJECT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
5. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RE-STABILIZED.
6. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE CONTRACT ADMINISTRATOR.
7. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.
8. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL AND HAVE APPROPRIATE EQUIPMENT ON THE SITE TO IMPLEMENT DUST CONTROL MEASURES AT THE DISCRETION OF THE CONTRACT ADMINISTRATOR.

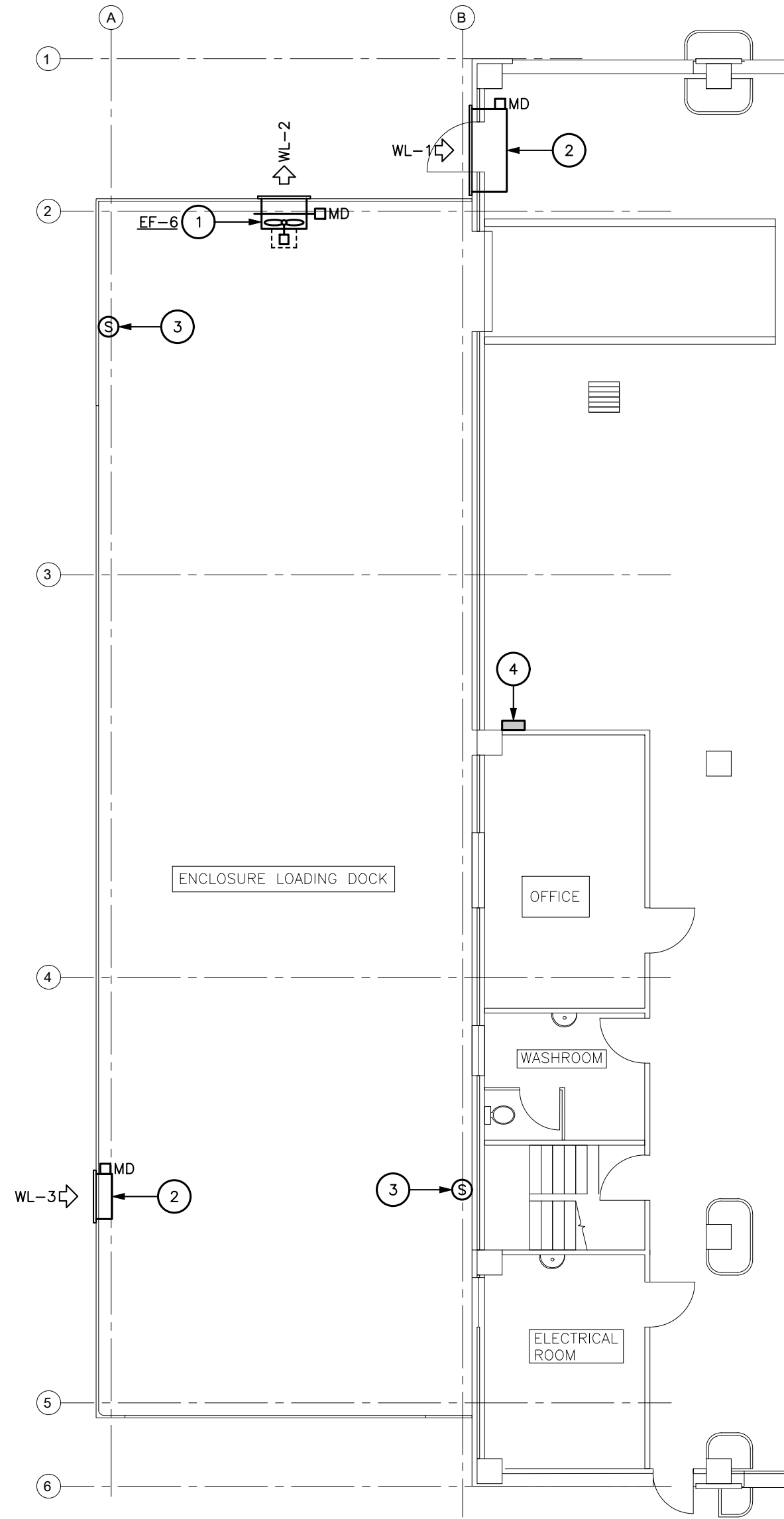
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| SOLID WASTE MANAGEMENT SERVICES | | | | | |  SOLID WASTE MANAGEMENT SERVICES | | | | COMMISSIONERS TRANSFER STATION MRF BUILDING UPGRADES 400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2 | | | |
|  exp Services Inc. L: +1 905.793.9800 F: +1 905.793.0641 1595 Clark Boulevard Brampton, ON L6T 4V1 Canada www.exp.com <div> • BUILDINGS • EARTH & ENVIRONMENT • ENERGY • • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY • </div> | | | | | |  <div> MATT KELHER GENERAL MANAGER SOLID WASTE MANAGEMENT SERVICES </div> <div> MATTHEW CASCHERA DIRECTOR INFRASTRUCTURE AND RESOURCE MANAGEMENT </div> | | | | EROSION AND SEDIMENT CONTROL PLAN | | | |
| | | 3 | | | | | | | | DESIGN: JK | DRAFTING: JK | CHECK: JS | CONTRACT No. 23SWM-IRM-026CDU |
| | | 2 | FEB. 12/2024 | ISSUED FOR TENDER | | | | | | SCALE: 1:150 | | DRAWING NUMBER: 1601-2023-3-24 | ESC1 |
| | | 1 | NOV. 29/2024 | ISSUED FOR REVIEW | | | | | | DATE: FEBRUARY 12, 2024 | | | |
| | | No. | DATE | REVISIONS | INITIAL | SIGNED | | | | | | | |



**PART GROUND FLOOR
PLAN – PLUMBING**
SCALE – 1:100
0 1 2 3 4 5 6 7 8 9 10
BAR SCALE – 1:100

DRAWING NOTES

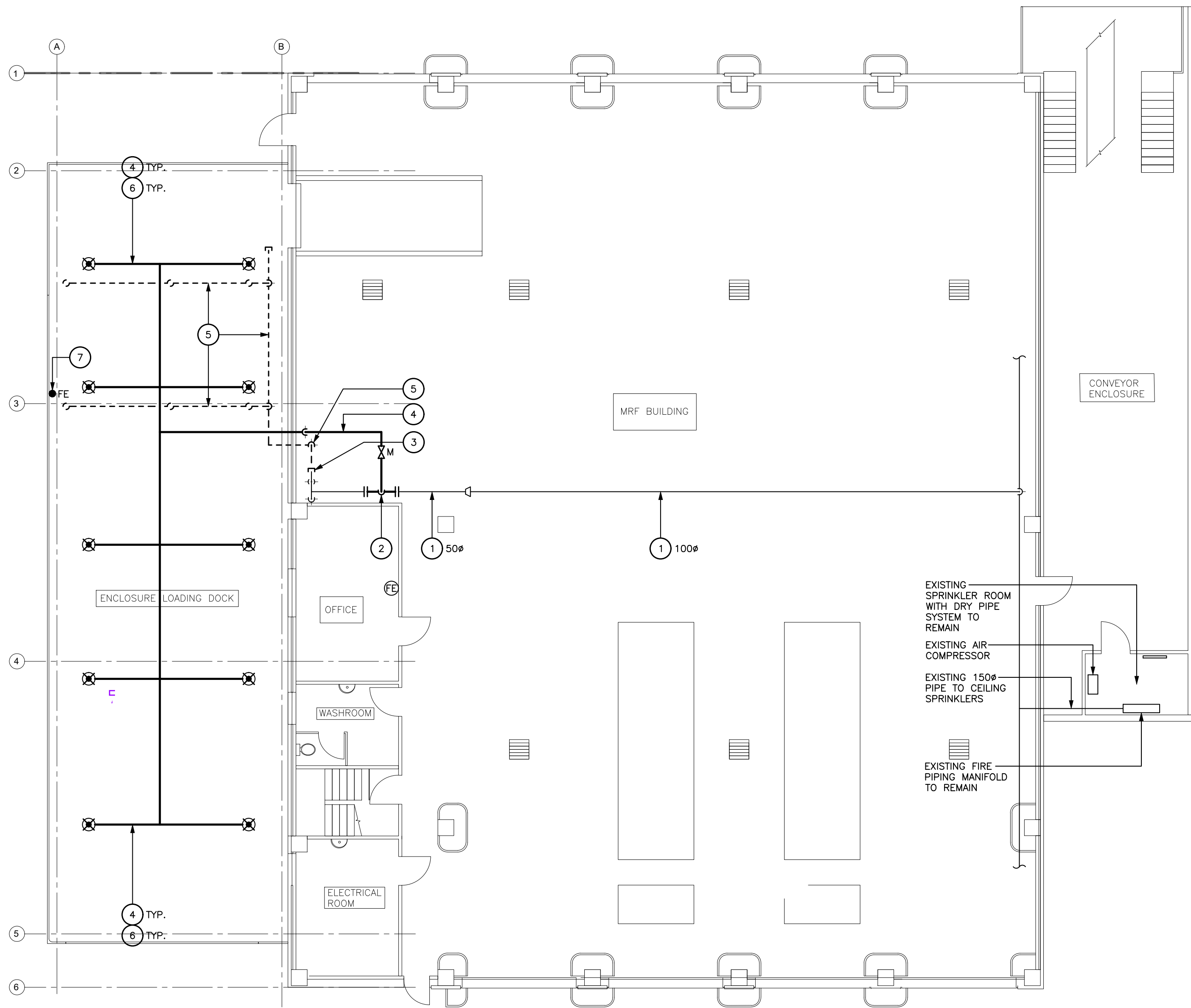
- EXISTING BURIED STORM SEWER TO REMAIN.
- EXISTING ROOF GUTTER AND ASSOCIATED RAINWATER LEADERS TO BE REMOVED FROM SITE.
- EXISTING STORM WATER PIPE RISER TO REMAIN AND BE USED IN THE NEW ROOF GUTTER SYSTEM.
- SUPPLY AND INSTALL NEW STORM WATER PIPE RISER TO CONNECT TO NEW ROOF GUTTER SYSTEM AND EXISTING BURIED STORM SEWER.
- SUPPLY AND INSTALL NEW 200mm WIDE ALUMINUM ROOF GUTTER, SECURED TO ROOF FACIA. COLOUR TO MATCH WALL CLADDING.
- SUPPLY AND INSTALL NEW 100mm x 100mm ALUMINUM RAINWATER LEADER BY GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWING A4



**PART GROUND FLOOR
PLAN – VENTILATION**
SCALE – 1:100
0 1 2 3 4 5 6 7 8 9 10
BAR SCALE – 1:100

DRAWING NOTES

- SUPPLY AND INSTALL NEW EXHAUST AIR LOUVER AT HIGH LEVEL. LOUVER TO BE COMPLETE WITH 900mm x 900mm x 600mm DEEP SHEET METAL EXHAUST PLENUM COMPLETE WITH MOTORIZED DAMPER AND 600mm x 300mm ACCESS DOOR. FLOOR OF PLENUM TO SLOPE DOWN TO LOUVER. PLENUM TO BE COMPLETE WITH ACOUSTIC DUCT LINING. UNDERSIDE OF PLENUM TO BE 4300mm ABOVE FINISHED LOADING DOCK FLOOR.
- SUPPLY AND INSTALL NEW INTAKE SUPPLY AIR MOTORIZED LOUVER AT HIGH LEVEL. UNDERSIDE OF LOUVER TO BE 4800mm ABOVE FINISHED GRADE.
- CO/NO₂ SENSOR TO BE MOUNTED EXPOSED ON WALL.
- CO/NO₂ GAS DETECTOR PANEL TO BE MOUNTED ON WALL. UNDERSIDE OF PANEL TO BE APPROXIMATELY 1500mm ABOVE FINISHED FLOOR.



**PART GROUND FLOOR
PLAN – SPRINKLERS**
SCALE – 1:100
0 1 2 3 4 5 6 7 8 9 10
BAR SCALE – 1:100

DRAWING NOTES

- EXISTING SPRINKLER PIPE TO REMAIN.
- CONNECT NEW SPRINKLER PIPE TO EXISTING SPRINKLER PIPE SYSTEM.
- SUPPLY AND INSTALL NEW CAPPED END CONNECTION.
- NEW SPRINKLER PIPE TO RUN EXPOSED AT HIGH LEVEL HUNG FROM EXISTING ROOF STRUCTURE.
- PORTION OF EXISTING SPRINKLER PIPE TO BE REMOVED FROM SITE.
- NEW SPRINKLER PIPE TO BE GALVANIZED SCHEDULE 40 STEEL PIPE.
- NEW FIRE EXTINGUISHER TO BE MOUNTED EXPOSED ON WALL COMPLETE WITH WALL BRACKET.

Add or relocate sprinkler heads to provide sufficient coverage per NFPA-13

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| 4 | JAN 10/24 | ISSUED FOR FINAL APPROVAL | | | MWW |
| 3 | NOV 20/23 | 100% DESIGN SUBMISSION | | | MWW |
| 2 | OCT 26/23 | REISSUED 70% DESIGN SUBMISSION | | | MWW |
| 1 | JULY 18/23 | 70% DESIGN SUBMISSION | | | MWW |
| No. | DATE | REVISIONS | INITIAL | SIGNED | |



SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER
GENERAL MANAGER
SOLID WASTE MANAGEMENT SERVICES

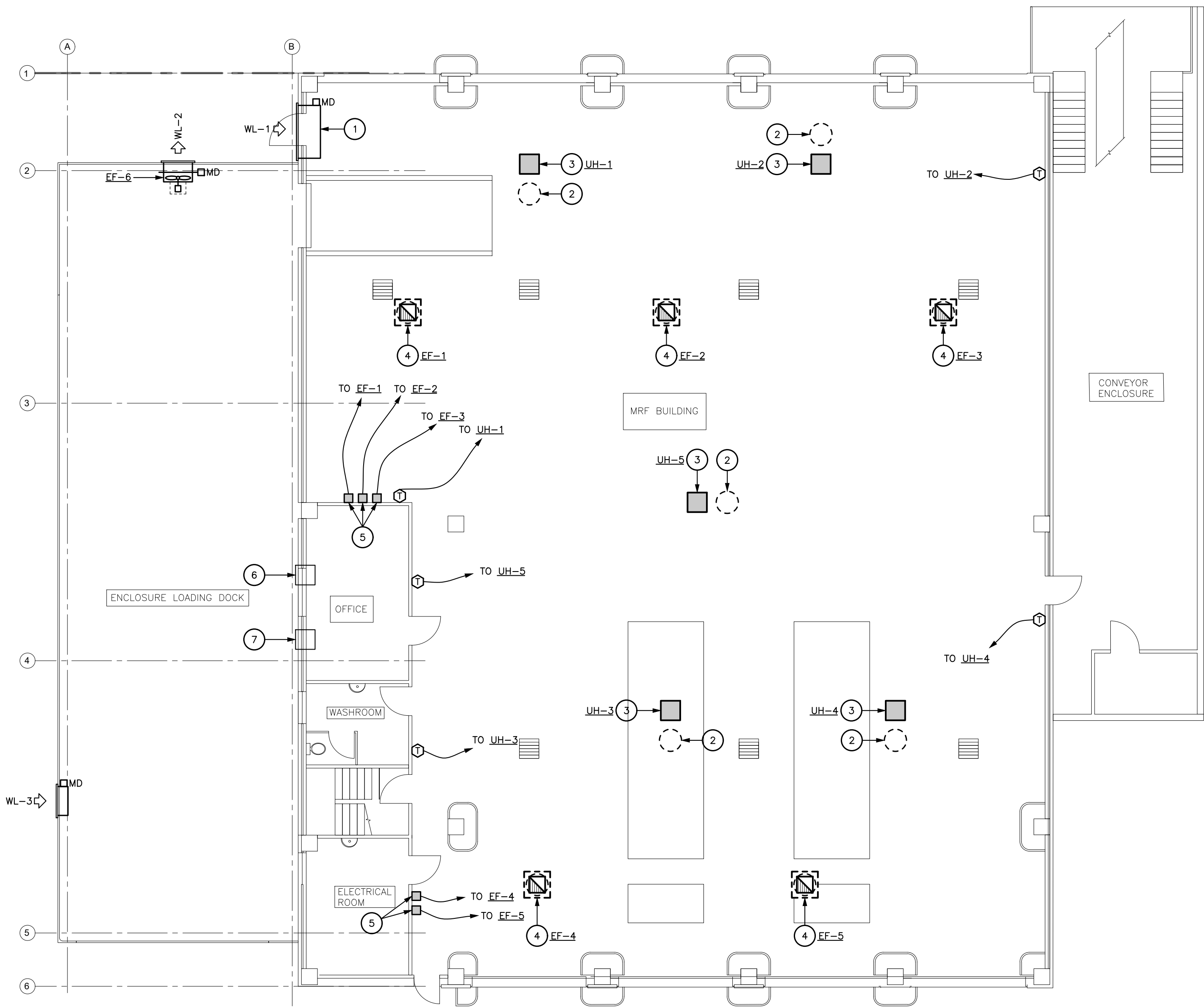
MATTHEW CASCHERA
DIRECTOR
INFRASTRUCTURE AND
RESOURCE MANAGEMENT

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

PART GROUND FLOOR PLANS - PLUMBING, VENTILATION AND SPRINKLERS

| | | | | | | | |
|---------|---------------|-----------|-----|--------|-----------------|----------------|------------------|
| DESIGN: | EK | DRAFTING: | DGC | CHECK: | MWW | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | AS NOTED | | | | DRAWING NUMBER: | 1601-2023-3-21 | M1 |
| DATE: | JULY 18, 2023 | | | | | | |



**PART GROUND FLOOR PLAN –
HEATING AND VENTILATION**

SCALE – 1:100



DRAWING NOTES

- 1 SUPPLY AND INSTALL NEW RELIEF AIR MOTORIZED LOUVRE IN EXISTING WALL ABOVE EXISTING DOOR. TOP OF LOUVRE TO MATCH LOUVRE WL-2 SERVING LOADING DOCK.
- 2 EXISTING ELECTRIC UNIT HEATER COMPLETE WITH ACCESSORIES TO BE REMOVED FROM SITE.
- 3 SUPPLY AND INSTALL NEW ELECTRIC UNIT HEATER AT HIGH LEVEL HUNG FROM EXISTING ROOF STRUCTURE. NEW HEATER TO BE IN SAME LOCATION AS THE EXISTING HEATER BEING REMOVED FROM THE SITE. SUPPLY AND INSTALL ADDITIONAL STEEL MEMBERS AS REQUIRED FOR NEW INSTALLATION.
- 4 REMOVE EXISTING OUTDOOR ROOF MOUNTED EXHAUST FAN AND ALL ACCESSORIES AND REPLACE WITH NEW FAN TO MATCH EXISTING CAPACITY AND DIMENSIONS. FIELD VERIFY NEW OUTDOOR ROOF EXHAUST FAN WILL FIT ONTO EXISTING CURB AND ROOF OPENING.
- 5 EXISTING EXHAUST FAN STARTER TO BE REPLACED WITH NEW MANUAL STARTER. SEE ELECTRICAL DRAWINGS.
- 6 EXISTING WINDOW AIR CONDITIONING UNIT AT LOW LEVEL TO REMAIN.
- 7 EXISTING WALL AIR CONDITIONING UNIT AT HIGH LEVEL TO REMAIN.

| JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE | | | | | | | | |
|--|----------------------------------|-----------|------------|----------|---------------|---------|-----------|----------------------|
| JOB No. BRM-22028009-A0 | | | | | | | | |
| MECHANICAL SCHEDULE – FANS | | | | | | | | |
| FAN No. | SYSTEM AND FAN LABEL | SPEC TYPE | MODEL | SIZE | CFM ESP "W.G. | RPM ARR | HP VAC/Ø | REMARKS |
| EF-1 | RESIDUE PROCESS BUILDING EXHAUST | ADF | COOK ACRUB | 150 RH3B | 950 0.50 | 1300 | 1/4 120/1 | INTERCONNECT TO WL-1 |
| EF-2 | RESIDUE PROCESS BUILDING EXHAUST | ADF | COOK ACRUB | 150 RH3B | 950 0.50 | 1300 | 1/4 120/1 | INTERCONNECT TO WL-1 |
| EF-3 | RESIDUE PROCESS BUILDING EXHAUST | ADF | COOK ACRUB | 150 RH3B | 950 0.50 | 1300 | 1/4 120/1 | INTERCONNECT TO WL-1 |
| EF-4 | RESIDUE PROCESS BUILDING EXHAUST | ADF | COOK ACRUB | 150 R4B | 1900 0.50 | 1200 | 1/3 120/1 | INTERCONNECT TO WL-1 |
| EF-5 | RESIDUE PROCESS BUILDING EXHAUST | ADF | COOK ACRUB | 150 R4B | 1900 0.50 | 1200 | 1/3 120/1 | INTERCONNECT TO WL-1 |
| EF-6 | ENCLOSURE LOADING DOCK | PF | COOK AWD | 20 A17D | 1700 0.50 | 1700 | 1/4 120/1 | INTERCONNECT TO WL-2 |
| NOTE 1. USE HIGH EFFICIENCY MOTORS. SEE SECTION 15010. | | | | | | | | |

| JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE | | | | | | | |
|---|---------------|-----------|------|-----|--------|--------|--------------------------------------|
| JOB No. BRM-22028009-A0 | | | | | | | |
| MECHANICAL SCHEDULE – ELECTRIC UNIT HEATER SCHEDULE | | | | | | | |
| DWG. DESIG-NATION | MODEL | DUCT SIZE | CFM | KW | VOLT/Ø | STAGES | REMARKS |
| UH-1 | CHROMALOX HVH | – | 1500 | 20 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-2 | CHROMALOX HVH | – | 1500 | 20 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-3 | CHROMALOX HVH | – | 1500 | 20 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-4 | CHROMALOX HVH | – | 850 | 7.5 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| UH-5 | CHROMALOX HVH | – | 850 | 7.5 | 575/3 | – | VERTICAL THROW. HUNG FROM STRUCTURE. |
| | | | | | | | |

| JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE | | | |
|---|-----------|------------------------|-------------------------------|
| JOB No. BRM-22028009-A0 | | | |
| MECHANICAL SCHEDULE – LOUVRES | | | |
| DWG. DESIG-NATION | MODEL NO. | WIDTH(MM) X HEIGHT(MM) | REMARKS |
| WL-1 | CS 4830 | 1800 x 1200 | COLOUR TO MATCH WALL CLADDING |
| WL-2 | CS A4097 | 900 x 900 | COLOUR TO MATCH WALL CLADDING |
| WL-3 | CS 4830 | 900 x 900 | COLOUR TO MATCH WALL CLADDING |
| | | | |

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| ZONING | | |
| O.B.C. | | |
| FIRE SERVICES | | |
| O.B.C. (S) | | |

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RESOURCE MANAGEMENT

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

PART GROUND FLOOR PLAN - HEATING AND VENTILATION, MECHANICAL SCHEDULES

| | | | | | | | |
|---------|---------------|-----------|-----|-----------------|----------------|--------------|------------------|
| DESIGN: | EK | DRAFTING: | DGC | CHECK: | MWW | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | AS NOTED | | | DRAWING NUMBER: | 1601-2023-3-22 | | |
| DATE: | JULY 18, 2023 | | | | M2 | | |

MECHANICAL SPECIFICATIONS

1. GENERAL CONDITIONS
1. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, THE ONTARIO WATER RESOURCES ACT, THE MINISTRY OF LABOUR, THE CITY OF TORONTO, THE ONTARIO GAS CODE, AND ALL CODES HAVING JURISDICTION, WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS.
2. SCOPE OF WORK: ALL LABOUR, MATERIALS, EQUIPMENT, FEES, PERMITS AND CHARGES TO PERFORM THE OPERATIONS FOR THE COMPLETE INSTALLATION OF THE PLUMBING, GAS HEATING, VENTILATING AND SHEETMETAL WORK AND SPRINKLERS (DRY SYSTEM), AS INDICATED ON THE DRAWINGS.
3. SLEEVES, CUTTING & PATCHING:
1. INSTALL SLEEVES AND FRAMES FOR PIPING, DUCTS, FANS, AND SIMILAR EQUIPMENT TO BE BUILT INTO THE BUILDING AS THE CONSTRUCTION PROGRESSES. IF THESE ARE NOT INSTALLED AT THE TIME OF CONSTRUCTION, THE COST OF CUTTING AND PATCHING AT A LATER DATE, WILL BE AT THE EXPENSE OF THIS CONTRACTOR.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE CUTTING AND PATCHING OF ALL HOLES AND OPENINGS UP TO AND INCLUDING 6" (150 mm) DIAMETER.
3. THE CONTRACTOR IS TO LOCATE THE EXACT POSITIONS AND DIMENSIONS OF LARGER OPENINGS FOR CUTTING.
4. EXTENT OF THE WORK:
1. THE CONTRACT INCLUDES ALL DRAINAGE LINES, PRESSURE PIPING, NATURAL GAS SYSTEMS, AND SPRINKLERS AS SHOWN AND AS NOTED IN DRAWINGS.
2. THE SHEET METAL WORK INCLUDES ALL SHEETMETAL SYSTEMS, FANS, CONTROLS, LOUVRES, DAMPERS AND ASSOCIATED VENTS AND FLASHINGS.
5. BALANCING, IDENTIFICATION & START-UP
1. IDENTIFICATION IS TO BE CARRIED OUT BY THE RESPECTIVE TRADE WITH NAME TAGS IDENTIFYING THE USE OR SERVICE OF ALL MAIN VALVES.
2. CLEAN ALL EQUIPMENT AND OTHER INSTALLATIONS.
3. PROVIDE MAINTENANCE INSTRUCTIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE TWO (2) BOUND COPIES OF THE AIR BALANCING REPORT TO THE CONTRACT ADMINISTRATOR.
5. AIR BALANCING SHALL BE DONE BY A PROFESSIONAL TESTING AND BALANCING FIRM. THE AIR BALANCING REPORT SHALL SHOW THE QUANTITIES, VELOCITIES AND AREA OF EACH OUTLET, TYPE AND MODEL, NUMBER OF FANS AND MOTORS INSTALLED, ACTUAL AIR DELIVERED BY THE FAN WITH TOTAL STATIC PRESSURE AND VOLTAGE DRAWN BY THE MOTORS. ADJUST AND RETEST TO THE SYSTEMS TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
6. SUBMIT TWO (2) COPIES OF MANUFACTURER MAINTENANCE MANUALS TO THE OWNER FOR ALL NEW EQUIPMENT.
6. VISIT JOB SITE: THE CONTRACTOR SHALL VISIT THE JOB SITE AND EXAMINE ALL EXISTING CONDITIONS WHICH AFFECT THE WORK.
7. CO-ORDINATION: CO-ORDINATE WITH OTHER TRADES REGARDING THE LOCATION OF EQUIPMENT, CONTROL DEVICES, PIPING, AND DUCTWORK. THIS INCLUDES SUPPLYING WIRING DIAGRAMS TO THE ELECTRICAL TRADE FOR CONNECTIONS.
8. GUARANTEE:
1. GUARANTEE IN WRITING FOR THE MATERIAL AND WORKMANSHIP INCLUDING THE MANUFACTURER'S GUARANTEE FOR THE PERIOD OF TWO (2) YEAR FROM THE DATE OF ACCEPTANCE.
2. CERTIFY IN WRITING FOR ALL WORK COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS. SUBMIT AS-BUILT DRAWINGS SHOWING REVISIONS MADE.
9. CO-OPERATION OF TRADES: THE PRIME MECHANICAL CONTRACTOR IS TO CO-OPERATE WITH ALL OTHER TRADES ON THE JOB SO THAT ALL EQUIPMENT CAN BE SATISFACTORILY INSTALLED, AND SO THAT NO DELAY IS CAUSED TO ANY OTHER TRADE. ANY REWORKING OF INSTALLED EQUIPMENT, PIPING, OR DUCTING TO ACCOMMODATE THE INSTALLATION OF OTHER TRADES WORK SHALL BE PERFORMED AT NO EXTRA COST.
10. WARRANTY:
1. THE CONTRACTOR TO WARRANT PRODUCTS AND EXECUTION OF WORK UNDER THIS DIVISION AGAINST DEFECTS OF MATERIAL AND WORKMANSHIP FOR TWO (2) FULL YEARS AFTER DATE OF SUBSTANTIAL PERFORMANCE.
2. REPAIR DEFECTS THAT ARE DISCOVERED OR DEVELOP DURING THIS PERIOD AND MAKE GOOD ANY RESULTING DAMAGE TO EQUIPMENT OR BUILDING. REPAIRS TO BE CARRIED OUT AT NO COST TO OWNER.
3. PROVIDE EXTENDED WARRANTIES WHERE INDICATED IN OTHER SECTIONS OF THIS DIVISION. EXTENDED WARRANTIES TO COMMENCE ON TERMINATION OF THE STANDARD TWO YEAR WARRANTY AND TO BE AN EXTENSION OF THESE SAME PROVISIONS.
11. EXISTING SERVICES
1. WHERE WORK INVOLVES BREAKING INTO OR CONNECTING EXISTING SERVICES, CARRY OUT WORK AT TIMES DIRECTED BY GOVERNING AUTHORITIES, WITH MINIMUM OF DISTURBANCE TO THE PREMISES AND ITS OPERATION.
2. BEFORE COMMENCING WORK, ESTABLISH LOCATION AND EXTENT OF SERVICE LINES IN AREA OF WORK AND NOTIFY CONSULTANT OF FINDING.
3. WHERE UNKNOWN SERVICES ARE ENCOUNTERED, IMMEDIATELY ADVISE CONSULTANT AND CONFIRM FINDINGS IN WRITING.
4. REMOVE ABANDONED SERVICE LINES. CAP OR OTHERWISE SEAL LINES AT CUT-OFF POINTS, IN MANNER APPROVED BY AUTHORITIES HAVING JURISDICTION OVER SERVICE.
5. RECORD LOCATIONS OF MAINTAINED, RE-ROUTED AND ABANDONED SERVICE LINES. THE CONTRACTOR SHALL PROVIDE WITH ALL NECESSARY DIMENSIONS REQUIRED TO ACCURATELY LOCATE THOSE SERVICES.
6. WHERE THE LOCATION OF ANY OF THESE UTILITIES HAS BEEN SHOWN ON THE PLANS, SUCH INFORMATION IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS, IMMEDIATELY AFTER THEY MOVE ON THE SITE. IF FOR ANY REASON THE INFORMATION OBTAINED NECESSITATES CHANGES IN PROCEDURES OR DESIGN, THEY MUST ADVISE THE CONSULTANT AT ONCE. IF THIS VERIFICATION OF EXISTING CONDITIONS IS NOT DONE AT THE OUTSET AND ANY PROBLEMS ARISE, THE RESPONSIBILITY FOR SAME IS ENTIRELY THIS CONTRACTOR'S.
7. WHERE IT IS NECESSARY TO TEMPORARILY SHUT DOWN EQUIPMENT OR SERVICES SERVING ESSENTIAL AREAS, THIS CONTRACTOR SHALL INCLUDE PREMIUM COSTS TO ENSURE THE WORK FORCE IS SCHEDULED FOR "ROUND THE CLOCK" OPERATION IN ORDER TO MINIMIZE DISRUPTION AND EQUIPMENT DOWNTIME. NO ADDITIONAL COST SHALL BE PAID FOR THIS
12. PLACING IN OPERATION
1. PRIOR TO ACCEPTANCE AND ON COMPLETION OF WORK MAKE A COMPLETE OPERATIONAL TEST OF SYSTEMS AND WORK CARRIED OUT BY THIS CONTRACTOR.
2. BALANCING WILL BE CARRIED OUT AND SYSTEMS SET TO DESIGNED VALUES, AND A REPORT OF FINAL ACTUAL PERFORMANCE OF ALL EQUIPMENT AND BALANCING FOR FINAL SPACE CONDITIONS ON COOLING AND HEATING TO BE CARRIED OUT WHEN RELATIVE CLIMATIC CONDITIONS EXIST.
3. DURING THE TWO (2) YEAR GUARANTEE PERIOD, MAINTAIN ALL EQUIPMENT INSTALLED AS PART OF THIS DIVISION. THIS AGREEMENT SHALL BE PART OF THE WRITTEN GUARANTEE. THIS WORK SHALL BE CARRIED OUT IN THE PRESENCE OF THE BUILDING CUSTODIAN, AND A LETTER SHALL BE SENT TO THE CONSULTANT STATING THAT THIS WORK WAS CARRIED OUT. FOUR (4) MAINTENANCE INSPECTIONS MUST BE CARRIED OUT BY THE CONTRACTOR DURING THIS TWO (2) YEAR PERIOD (SIX MONTHS, TWELVE MONTH, EIGHTEEN MONTHS, AND TWENTY FOUR MONTHS AFTER SUBSTANTIAL COMPLETION LETTER ISSUED). SUBMIT WRITTEN REPORT TO OWNER AND CONSULTANT AFTER EACH INSPECTION.
13. CLEAN-UP: AVOID ACCUMULATION OF SCRAP AND DEBRIS RESULTING FROM THE WORKS AND AT ALL TIMES HELP MAINTAIN THE WORKING SITE IN A NEAT AND CLEAN CONDITION. ON COMPLETION OF THE CONTRACT, REMOVE ALL SCRAP AND DEBRIS RESULTING FROM THE WORKS AND CLEAN ALL EQUIPMENT INSTALLED.
14. START-UP SERVICE:
1. PROVIDE SERVICES OF A QUALIFIED TECHNICIAN RESPONSIBLE FOR ASSISTING THE OWNER'S STAFF IN BECOMING FAMILIAR WITH OPERATING OF SYSTEMS, CO-ORDINATING WORK OF CONTROL MANUFACTURER, ACTING ON ANY COMPLAINTS FROM THE OWNERS, OR CONSULTANT REGARDING OPERATION OF ANY OF THE SYSTEMS, INSTALLED UNDER THIS DIVISION.
2. PROVIDE START-UP OF MAJOR PIECES OF MECHANICAL EQUIPMENT OR SYSTEMS, BY REPRESENTATIVE OF EQUIPMENT, MANUFACTURER OR PERSON QUALIFIED AND RECOGNIZED BY THE EQUIPMENT MANUFACTURER.
3. SUBMIT START-UP REPORTS ON ALL MECHANICAL EQUIPMENT AND SYSTEMS VERIFYING CORRECT INSTALLATION AND OPERATING PARAMETERS IN ALL MODES OF OPERATION. INCLUDE SERVICE REPORTS IN OPERATING AND MAINTENANCE MANUALS.
4. NOTIFY CONSULTANT PRIOR TO START-UP ON ANY PIECE OF MECHANICAL EQUIPMENT OR SYSTEM. DEMONSTRATE OPERATION OF ALL OR ANY MECHANICAL SYSTEM OR EQUIPMENT AS DIRECTED BY THE CONSULTANT IN HIS PRESENCE.
15. TSSA INSPECTION: THE CONTRACTOR SHALL PAY ALL FEES AND SITE VISITS IN CONNECTION WITH TSSA INSPECTION FOR ALL SERVICES.

16. FIRE STOPPING:
1. THE CONTRACTOR IS RESPONSIBLE FOR ALL FIRE STOPPING RELATED TO THE MECHANICAL WORK INCLUDING, BUT NOT LIMITED TO, THE NEW DUCTWORK, NEW PIPING AND CONTROL WIRING.
2. PROVIDE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES.
3. COMPLY WITH THE REQUIREMENTS OF CAN4-S115-M35, AND DO NOT EXCEED OPENING SIZED FOR WHICH THEY HAVE BEEN TESTED.
4. SYSTEMS TO HAVE AN FIRE-RESISTANCE RATING NOT LESS THAN THE FIRE PROTECTION RATING REQUIRED FOR CLOSURES IN A FIRE SEPARATION.
5. THE FIRE STOPPING MATERIALS ARE NOT TO SHRINK, SLUMP OR SAG AND TO BE FREE OF ASBESTOS, HALOGENS AND VOLATILE SOLVENTS.
6. FIRESTOPPING MATERIALS ARE TO CONSIST OF A COMPONENT SEALANT APPLIED WITH A CONVENTIONAL CAULKING GUN AND TROWEL.
7. FIRE STOP MATERIALS ARE TO BE CAPABLE OF RECEIVING FINISH MATERIALS IN THOSE AREAS WHICH ARE EXPOSED AND SCHEDULED TO RECEIVE FINISHES.
8. ACCEPTABLE PRODUCTS:
1. PYRESLEEVE INDUSTRIES INC.
2. GENERAL ELECTRIC PENSIL FIRESTOP SYSTEMS
3. INTERNATIONAL PROTECTIVE COATINGS CORP.
4. RECTORSEAL CORPORATION (METACAULK)
5. 3M FIRE PROTECTION SYSTEMS
17. SHOP DRAWINGS:
1. SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS FOR REVIEW FOR THE FOLLOWING:
1. GAS DETECTOR
2. ELECTRICAL UNIT HEATERS
3. FANS
4. SPRINKLER HEADS
2. SITE SERVICES
1. EXCAVATION, TRENCHING, BACKFILLING & BEDDING:
1. EXCAVATION SHALL BE PROTECTED WITH FENCING, TIMBER SHEETING, BRACING OR SHORING AS REQUIRED BY THE ONTARIO HEALTH AND SAFETY ACT AND REGULATIONS LATEST ADDITION. PROVIDE ADEQUATE TEMPORARY CROSS-OVERS FOR PEDESTRIAN AND VEHICULAR TRAFFIC, INCLUDING GUARD RAILS, LAMPS AND FLAGS AS DIRECTED.
2. ALL PIPING AND EQUIPMENT SHALL HAVE ADEQUATE BEDDING. TRENCHES SHALL BE EXCAVATED 6" (150mm) BELOW THE INTENDED GRADE OF THE PIPING. THE PIPING SHALL BE BEDDED IN A GRANULAR "A" MATERIAL, BACKFILLED BY HAND FROM THE CENTRE LINE OF THE PIPE TO 6" (150 mm) LAYERS BY TAMPING. THE SUBGRADE BENEATH THE PIPE SHALL BE WITHIN 1/4" (6 mm) OF A STRAIGHT LINE BETWEEN JOINTS. BELL HOLES SHALL BE MADE AT EACH JOINT TO PERMIT THE JOINT TO BE PROPERLY MADE. DEBRIS IS TO BE KEPT OUT. NO BACKFILL IS PERMITTED UNTIL THE TEST IS WITNESSED. BEDDING SHALL BE COMPACTED TO 95% MODIFIED PROCTOR TEST (AS PER ITEM BELOW).
3. OUTSIDE THE BUILDING, BACKFILLING IN UNPAVED AREAS SHALL BE DONE WITH LOOSE EARTH, FREE FROM ROCKS, DEBRIS, CINDERS, OR OTHER NON-CORROSIVE MATERIALS IN LAYERS NOT EXCEEDING 12" (300 mm) IN THICKNESS, COMPACTED TO 95% STANDARD PROCTOR DENSITY.
2. MATERIALS:
1. PIPE MATERIALS:
1. STORM SEWERS: CONCRETE PIPE WITH CEMENT OR RUBBER COUPLERS TO CSA A257.
3. PLUMBING & DRAINAGE
1. PIPE MATERIALS:
1. ALL BURIED DRAINAGE PIPING:
1. CLASS 4000 CAST IRON SHALL BE CERTIFIED TO CAN/CSA B70-M91 — MECHANICAL JOINT.
2. DOWY PLASTIC PIPE ABA AND SOLVENT WELD, 4" (100 mm) AND SMALLER.
3. PVC SDR, 6" (150 mm) AND LARGER.
2. FIRE EXTINGUISHERS:
1. SUPPLY AND INSTALL FULLY CHARGED NATIONAL FIRE EQUIPMENT LIMITED ABC-050 MULTI-PURPOSE DRY CHEMICAL FIRE EXTINGUISHERS WITH A 2A-10BC RATING COMPLETE WITH WALL BRACKET — DESIGNATED FE.
4. SPRINKLERS
1. INSTALLATION SHALL COMPLY WITH THE BUILDING DEPARTMENT, FIRE DEPARTMENT, CUJA, OR NFPA PAMPHLET #13 AND NATIONAL BUILDING CODE, SECTION BUILDING SERVICES, FIRE PROTECTION.
2. PIPING FOR EXTENDED SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED, DESIGNED AND SUBMITTED TO APPROVING AGENCIES BY THE TRADE RESPONSIBLE FOR THE INSTALLATION.
3. SPRINKLER HEADS:
1. SPRINKLER HEADS TO BE PENDANT VIKING VK329 MICROMATIC CHROME TYPE, WITH STANDARD BULB RATED AT 155 DEG F (68 DEG C) UNLESS NOTED OTHERWISE. USE HIGH TEMPERATURE HEADS AT HEATERS TO NFPA STANDARDS.
2. SPRINKLER HEADS IN AREAS WITH AN 8'-0" (2400 mm) OR LESS CEILING HEIGHT, SHALL HAVE VIKING VK430-HP HEADS COMPLETE WITH ROUND FLAT CEILING PLATE COVER INSTALLED FLUSH TO FINISHED CEILING. COLOUR OF CEILING PLATE TO MATCH CEILING.
3. NOTE: PROVIDE SPRINKLER CABINET CONTAINING TEN (10) ADDITIONAL HEADS AND SPRINKLER WRENCH.
4. PIPE & FITTINGS:
1. PIPING TO BE ASTM-A-53 LIGHTWALL STEEL PIPE SCHEDULE 40 BLACK STEEL PIPE, GROOVED TO STANDARD ROLL GROOVING SPECIFICATION, COMPLETE WITH APPROVED AND LISTED MECHANICAL COUPLINGS AND FITTINGS.
2. ALL VALVES SHALL BE UNDERWRITERS' LABORATORIES OF CANADA (ULC) APPROVED, COMPLETE WITH MONITORING SWITCHES.
3. VALVES SHALL BE ALL BRASS UP TO AND INCLUDING 2" (50 mm) SIZE. LARGER SIZES SHALL BE IRON BODY. VALVES OVER 2-1/2" (65 mm) DIAMETER ARE TO HAVE GEAR OPERATORS.
5. TESTS & GUARANTEE:
1. TEST, ADJUST AND CERTIFY SPRINKLER SYSTEM AFTER COMPLETION OF WORK.
2. FURNISH TO THE OWNER, A WRITTEN GUARANTEE COVERING MATERIALS AND WORKMANSHIP, AS PER THE GENERAL CONDITIONS.
5. AIR DISTRIBUTION
1. ALL DUCTWORK TO 2" (500 PA) MAXIMUM STATIC PRESSURE SHALL BE FABRICATED TO SMACNA DUCT CONSTRUCTION STANDARDS, SECTION NO. 1, AND AS FOLLOWS:
2. MATERIAL & THICKNESS:
1. DUCTWORK SHALL BE FABRICATED FROM BEST QUALITY LOCK-FORMING GALVANIZED STEEL SHEETS, OF THE FOLLOWING THICKNESS.
- | SIZE OF DUCT IN WIDTH OR DEPTH | GAUGE OF SHEET STEEL |
|---------------------------------|----------------------|
| 12" (300 mm) OR LESS | NO. 26 U.S. |
| 13" TO 30" (325 mm TO 750 mm) | NO. 24 U.S. |
| 31" TO 48" (775 mm TO 1200 mm) | NO. 22 U.S. |
| 49" TO 84" (1225 mm TO 2130 mm) | NO. 20 U.S. |
3. CONSTRUCTION:
1. LONGITUDINAL SEAMS SHALL BE MADE WITH PITTSBURGH LOCK OR BUTTON PUNCH SEAMS IN ALL SIZES. ALL DUCTWORK SHALL BE CROSS-BROKEN OR BEADED 12" (300 mm) O.C. FOR RIGIDITY.
4. EXHAUST FANS:
1. SUPPLY AND INSTALL THE FOLLOWING EXHAUST AND RECIRCULATING FANS OF THE SIZE, TYPE, MODEL AND DESIGNATION CONTAINED IN THE FAN SCHEDULE. ACCESSORIES LISTED IN THE SPECIFICATIONS APPLY TO ALL FANS OF THE SAME DESIGNATION. SPECIAL ACCESSORIES FOR INDIVIDUAL FANS ARE DESIGNATED ON THE FAN SCHEDULE.
2. SOUND LEVEL PERFORMANCE AND FAN CURVES SHALL BE INCLUDED WITH SUBMITTAL SHOP DRAWINGS.
3. SUSPEND FANS FROM STRUCTURE THROUGH VIBRATION ISOLATORS AND CONNECT TO DUCTWORK THROUGH FLEXIBLE DUCT CONNECTIONS. MOUNT FAN IN PLACE WITH BACKDRAFT DAMPERS AND GASKET SEALS. PROVIDE SEISMIC BRACING AS REQUIRED.
4. POWER WIRING FOR FANS IS BY ELECTRICAL CONTRACTOR
5. CONTROL WIRING IS BY MECHANICAL CONTRACTOR
6. PANEL-TYPE PROPELLER FANS — TYPE PF
1. PANEL SHALL BE MANUFACTURED OF HEAVY GAUGE STEEL WITH SPUN VENTURI INLET AND WELDED CORNERS.
2. PROPELLER BLADES SHALL BE STATICALLY AND DYNAMICALLY BALANCED.
3. BELT DRIVE MOTOR SHALL BE MOUNTED ON A BRACKET ATTACHED TO THE PANEL WITH BELT DRIVE AND SHAFTS.
4. ACCESSORIES SHALL INCLUDE BACKDRAFT DAMPER, AND WALL MOUNT BOX MOTOR SIDE GUARD, FAN SIDE GUARD.
5. DESIGN IS BASED ON COOK
6. ACCEPTABLE PRODUCTS:
1. GREENHECK
2. PENN VENTILATOR
3. COOK
7. ALUMINUM DOME FANS — TYPE ADF
1. SUPPLY AND INSTALL ALUMINUM DOME FAN OF SIZE LISTED IN THE SCHEDULE.
2. FANS SHALL BE MANUFACTURED OF ALUMINUM COMPLETE WITH STANDARD FEATURES:
1. CENTRIFUGAL WHEEL
2. V-BELT DRIVE WITH 1750 RPM MOTORS OR DIRECT-DRIVE MOTOR
3. REMOVABLE TOP FOR ACCESS TO FAN AND MOTOR
4. CURB CAP AND VIBRATION ISOLATION
5. ACCESSORIES SHALL INCLUDE:
1. BACKDRAFT DAMPER
2. BIRDGUARD
3. 18" (450 MM) HIGH PRE-FABRICATED ROOF CURB (SOUND CURB)
4. DESIGN IS BASED ON COOK
5. ACCEPTABLE PRODUCTS:
1. PENN VENTILATOR
2. COOK
3. GREENHECK
5. MOTORIZED WEATHER LOUVRE — DESIGNATED MWL
1. ALL BLADES SHALL BE STORM TYPE, CENTRE PIVOTED WITH REINFORCING BOSSES AND HAVE A 1/2" (15 MM) DIAMETER PINION OPERATING IN A SELF-LUBRICATING NYLON BEARING. LOUVRE BLADES SHALL HAVE VINYL GASKET TO EFFECT POSITIVE CLOSURE. MOTORIZED LOUVRE SHALL BE FACTORY CONSTRUCTED OF SIZE LISTED IN THE LOUVRE SCHEDULE.
2. LOUVRE BLADES SHALL OPERATE BY A CONCEALED DRIVE ARM AT EACH JAMB AND BE COMPLETE WITH 110 VOLT ELECTRIC MOTOR.
3. ALL LOUVRES FURNISHED WITH 1/2" (15 MM) MESH, .063" (1.6 MM) DIAMETER WIRE SECURED TO THE EXTRUDED ALUMINUM FRAME AND SILL EXTENSION.
4. FINISH TO BE KYNAR 500 OF A COLOUR SELECTED BY THE CONSULTANT AND/OWNER.
5. ACCEPTABLE PRODUCTS:
1. E. H. PRICE
2. CONSTRUCTION SPECIALTIES
3. RUSKIN
6. GAS DETECTION SYSTEM
1. SUPPLY GAS DETECTION SYSTEMS AS DESCRIBED HEREIN. SPECIFICATION IS BASED ON CRITICAL ENVIRONMENT TECHNOLOGIES.
2. ACCEPTABLE PRODUCTS:
1. CRITICAL ENVIRONMENT TECHNOLOGIES, AS SUPPLIED BY O'DELL ASSOCIATES, 905-681-3901
2. VULCAN
3. MSA CANADA
3. LOADING DOCK MULTI-ZONE SYSTEM — DESIGNATED GDS-1
1. PROGRAMMABLE DIGITAL CONTROLLER: SUPPLY A PROGRAMMABLE, DIGITAL, FOUR (4) CHANNEL, CONTROLLER EQUAL TO CRITICAL ENVIRONMENT TECHNOLOGIES, MODEL FCS-4-M-L, CONTAINING THE FOLLOWING:
1. 120 VAC/60 HZ POWER REQUIREMENT
2. PROVIDES 24 VDC POWER TO TRANSMITTERS
3. FOUR (4) 4-20 MA INPUTS FROM ANALOG TRANSMITTERS
4. EIGHT (8) INPUTS FROM DIGITAL TRANSMITTERS
5. EIGHT (8) PROGRAMMABLE RELAY OUTPUTS RATED 5A @ 240 VAC
6. EXTENSIVE ZONING CAPABILITIES
7. PROGRAMMABLE ALARM TIME DELAYS AND MINIMUM FAN RUN TIMES
8. LCD DISPLAY OF GAS CONCENTRATION AND ALARM STATUS
9. LED ALARM INDICATION (FAULT, LOW, MED, HIGH)
10. AUDIBLE ALARM RATED 90 DB @ 10 FEET
11. ACKNOWLEDGE/SILENCE BUTTON
12. COMPLETELY FIELD PROGRAMMABLE
13. AUTOMATED CALIBRATION MAINTENANCE. ONE PUSHBUTTON ACHIEVES "AUTO ZERO" AND "AUTO SPAN"
14. DIGITAL PUSHBUTTON SELECTION OF CALIBRATION GAS CONCENTRATION
15. CSA/UL AND CE CERTIFICATIONS
16. STROBE ALARM LIGHT
2. TWO (2) SET MODEL GDS-D-CO-NO2 GAS SENSOR/TRANSMITTER:
1. 4-20 MA ANALOGUE OR 0 TO 10 VDC OUTPUT SIGNALS
2. COMPLETE WITH OPTIONAL PROTECTIVE GUARD
3. FACTORY CALIBRATED TO A RANGE OF 0 TO 200 PPM
4. COMMUNICATES DIGITALLY WITH PDC PANEL ON 4-WIRE DAISY CHAIN NETWORK
3. INSTALLATION OF ALL CONTROL WIRING OF ALL SENSORS IS BY MECHANICAL CONTRACTOR
4. POWER WIRING TO CONTROLLER BY ELECTRICAL CONTRACTOR
5. SENSOR DETECTION SUPPLIER SHALL CALIBRATE, PROGRAM AND TEST ALL EIGHT (8) SENSORS AND BOTH CONTROLLERS. PROVIDE COMPLETE START-UP REPORT TO CONSULTANT. ASSIST ELECTRICAL CONTRACTOR IN WIRING OF SENSORS.
6. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REGULATIONS.
7. CHECK FINAL LOCATION WITH CONSULTANT, IF DIFFERENT FROM INDICATED LOCATION, PRIOR TO INSTALLATION. SHOULD DEVIATIONS BEYOND ALLOWABLE TOLERANCES ARISE FOLLOW CONSULTANT'S DIRECTIVE.
8. PROVIDE FOR TESTING AND COMMISSIONING TO DEMONSTRATE OPERATION TO SATISFACTION OF CONTRACT ADMINISTRATOR.
9. START-UP COMMISSIONING AND CALIBRATION MUST BE CONDUCTED BY PERSONNEL AUTHORIZED BY CRITICAL ENVIRONMENT TECHNOLOGIES. REPORT SHALL BE PROVIDED.
10. PROVIDE START-UP REPORT TO CONTRACT ADMINISTRATOR
7. ELECTRIC UNIT HEATERS
1. UNIT TO BE VERTICAL FLOW (DOWN DISCHARGE), HUNG FROM EXISTING ROOF STRUCTURE.
2. CABINET TO BE 18 GAUGE STEEL COMPLETE WITH PHOSPHATE UNDERCOAT FOR CORROSION RESISTANCE. FINISH IS A TWO-TONE GRAY POLYESTER POWDER COAT.
3. LOUVRES SHALL BE INDIVIDUALLY ADJUSTABLE.
4. HEATING ELEMENTS SHALL BE CORROSION-RESISTANT STEEL FINS, FURNACE BRAZED TO A TUBULAR HEATING ELEMENT ASSEMBLY ASSURING LONG LIFE AND SUPERIOR HEAT TRANSFER.
5. FAN MOTOR SHALL BE TOTALLY ENCLOSED AND RATED FOR CONTINUOUS DUTY WITH BUILT-IN THERMOSTAT CUT-OUT AND SHALL OPERATE ON THE SAME VOLTAGE AS THE HEATING CIRCUIT.
6. FAN SHALL BE PULL-THROUGH ACROSS HEATING ELEMENT.
7. UNIT SHALL BE COMPLETE WITH:
1. INTEGRAL 24V CONTROL TRANSFORMER
2. HEAVY DUTY MAGNETIC CONTACTORS
3. LINEAR THERMAL CUT-OUTS
4. THERMOSTAT KIT
5. DISCONNECT SWITCH KIT
8. DESIGN IS BASED ON CHROMALOX
9. ACCEPTABLE PRODUCTS
1. CHROMALOX
2. TRAN
3. P.M. WRIGHT
4. OUELLET

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| FIRE SERVICES | | |
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6. TEMPERATURE CONTROLS
1. GENERAL:
1. THE SUB-CRONTACTOR UNDER THIS HEADING SHALL FURNISH ALL MATERIALS, EQUIPMENT AND SUPERVISION FOR THE PROPER INSTALLATION OF A SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS. THIS INCLUDES ALL THERMOSTATS, RELAYS, AND VALVES.
2. APPROVED CONTRACTORS:
1. LANDIS & STAefa
2. HONEYWELL
3. JOHNSON
3. SERVICE AND GUARANTEE:
1. THE CONTROL SYSTEM SPECIFIED HEREIN SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS UNDER NORMAL USE AND SERVICE. IF WITHIN TWENTY FOUR (24) MONTHS FROM THE DATE OF ACCEPTANCE BY THE OWNER, ANY OF THE EQUIPMENT HEREIN SPECIFIED IS PROVED TO BE DEFECTIVE IN WORKMANSHIP OR MATERIAL, IT WILL BE REPLACED AT NO COST TO THE OWNER.
2. AFTER COMPLETION OF THE ORIGINAL TEST OF THE INSTALLATION AND ACCEPTANCE BY THE CONTRACT ADMINISTRATOR AND OWNER, PROVIDE ANY SERVICE INCIDENTAL TO THE PROPER PERFORMANCE OF THE TEMPERATURE CONTROL SYSTEM UNDER GUARANTEE OUTLINE ABOVE FOR THE PERIOD OF TWO (2) YEAR.
3. AFTER COMPLETION OF THE INSTALLATION, REGULATE AND ADJUST ALL THERMOSTATS, CONTROL VALVES, MOTORS AND OTHER EQUIPMENT, AND PLACE THEM IN COMPLETE OPERATING CONDITION, SUBJECT TO THE APPROVAL OF THE CONSULTANT.
2. THERMOSTATS:
1. THERMOSTATS: INSTALL WALL MOUNTED THERMOSTAT AT 5'-6" (1675 MM) ABOVE FLOOR WHERE INDICATED ON THE DRAWING. THERMOSTAT SHALL BE COMPLETE WITH AN INSULATED SUB-BASE REQUIRED WHERE THERMOSTATS ARE LOCATED ON EXTERIOR WALLS.
3. MECHANICAL SEQUENCE OF OPERATIONS
1. EXHAUST FAN EF-1,2,3,4,5 / WALL LOUVER WL-1:
1. MECHANICAL CONTRACTOR TO INTERLOCK EACH OF EF-1,2,3,4 & 5 TO WALL LOUVER WL-1 SO THAT WL-1 OPENS WHEN ANY OF THE EXHAUST FANS ARE OPERATING.
2. WL-1 IS CLOSED IF NO EXHAUST FANS ARE OPERATING
2. EXHAUST FAN EF-6:
1. MECHANICAL CONTRACTOR TO INSTALL AND WIRE GAS SENSORS TO GAS DETECTOR.
2. MECHANICAL CONTRACTOR SHALL INTERLOCK EF-6, WL-2 AND WL-3 TO GAS DETECTOR. WHEN THE GAS DETECTOR DETECTS ANY UNSAFE CONDITION ABOVE 50PPM CO, EF-6 STARTS AND WL-2 & WL-3 OPENS. WHEN THE GAS DETECTOR SENSOR CO LEVELS BELOW 50 PPM, EF-6 STOPS AND WL-2 & WL-3 CLOSE.

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| 5 | | | | | |
| 4 | JAN 10/24 | ISSUED FOR FINAL APPROVAL | | | MWW |
| 3 | NOV 20/23 | 100% DESIGN SUBMISSION | | | MWW |
| 2 | OCT 26/23 | REISSUED 70% DESIGN SUBMISSION | | | MWW |
| 1 | JULY 18/23 | 70% DESIGN SUBMISSION | | | MWW |
| No. | DATE | REVISIONS | | INITIAL | SIGNED |



SOLID WASTE MANAGEMENT SERVICES



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MECHANICAL SPECIFICATIONS

| | | | | | | | |
|---------|----|---------------|-----|-----------------|-----|----------------|------------------|
| DESIGN: | EK | DRAFTING: | DGC | CHECK: | MWW | CONTRACT No. | 23SWM-IRM-026CDU |
| SCALE: | | AS NOTED | | DRAWING NUMBER: | | 1601-2023-3-23 | M3 |
| DATE: | | JULY 18, 2023 | | | | | |