BLUFFER'S PARK
EAST WASHROOM

1 BRIMLEY ROAD SOUTH | SCARBOROUGH | ONTARIO | M1M 3W3

ISSUED FOR TENDER | 2025-04-11

ARCHITECT

DTAH ARCHITECTS LIMITED
425 ADELAIDE ST. WEST, SUITE 600
TORONTO, ONTARIO
M5V 3C1
T: 416 968 9479
F: 416 968 0687

DRAWING LIST

ARCHITECTURAL

A001	PROJECT INFORMATION
A002	ASSEMBLIES SCHEDULE
A003	SCHEDULES - DOORS, WINDOWS AND ROOM FINISH
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A201	GROUND FLOOR PLAN
A202	ROOF PLAN
A203	REFLECTED CEILING PLAN
A300	BUILDING ELEVATIONS - WEST BUILDING
A301	BUILDING ELEVATIONS - EAST BUILDING
A400	BUILDING SECTIONS - WEST BUILDING
A401	BUILDING SECTIONS - EAST BUILDING
A500	WALL SECTIONS - WEST BUILDING
A501	WALL SECTIONS - WEST BUILDING
A502	WALL SECTIONS - WEST BUILDING
A503	WALL SECTIONS - EAST BUILDING
A504	SECTION DETAILS - WEST BUILDING
A505	ROOF SECTION DETAILS - WEST BUILDING
A506	SECTION DETAILS - EAST BUILDING
A600	PLAN DETAILS - WEST BUILDING
A601	PLAN DETAILS - EAST BUILDING
A800	INTERIOR ELEVATIONS - WEST BUILDING
A801	INTERIOR ELEVATIONS - WEST BUILDING
A802	INTERIOR ELEVATIONS - WEST AND EAST BUILDINGS
A803	MISCELLANEOUS METALS
A804	MILLWORK DETAILS
A805	MILLWORK DETAILS (WASHROOMS)

STRUCTURAL

READ JONES CHRISTOFFERSEN LTD.
100 UNIVERSITY AVE
NORTH TOWER, SUITE 400
TORONTO, ONTARIO
M5J 1V6
T: 416-977-5335

DRAWING LIST

STRUCTURAL

S000	COVER
S001	GENERAL NOTES & TYPICAL DETAILS
S002	GENERAL NOTES & TYPICAL DETAILS
S003	GENERAL NOTES & TYPICAL DETAILS
S004	GENERAL NOTES & TYPICAL DETAILS
S005	GENERAL NOTES & TYPICAL DETAILS
S006	GENERAL NOTES & TYPICAL DETAILS
S007	GENERAL NOTES & TYPICAL DETAILS
S008	GENERAL NOTES & TYPICAL DETAILS
S009	GENERAL NOTES & TYPICAL DETAILS
S010	GENERAL NOTES & TYPICAL DETAILS
S011	GENERAL NOTES & TYPICAL DETAILS
S012	GENERAL NOTES & TYPICAL DETAILS
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S200C	GROUND FLOOR / FOUNDATION PLAN (EAST BUILDING) - PRELIMINARY GEOPIER LAYOUT
S200D	GROUND FLOOR / FOUNDATION PLAN (WEST BUILDING) - PRELIMINARY GEOPIER LAYOUT
S200E	GROUND FLOOR / FOUNDATION PART PLAN (BOARDWALK)
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S201	ROOF FRAMING PLAN
S201A	ROOF FRAMING PLAN(EAST BUILDING)
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S404	WALL ELEVATIONS - WEST BUILDING
S501	SECTIONS & DETAILS
S502	SECTIONS & DETAILS
S505	SECTIONS & DETAILS
S511	SECTIONS & DETAILS
S512	SECTIONS & DETAILS

MECHANICAL

INTROBA
380 WELLINGTON STREET WEST
TORONTO, ONTARIO
M5V 1E3
T: 416 488 4425

DRAWING LIST

MECHANICAL

M001	MECHANICAL LEGEND, DRAWING LIST, GENERAL NOTES
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M202	GROUND FLOOR PLAN - PLUMBING
M203	ROOF PLAN - HVAC
M204	ROOF PLAN - PLUMBING
M301	REFRIGERANT SCHEMATIC
M501	MECHANICAL SCHEDULES
M601	MECHANICAL SPECIFICATIONS

ELECTRICAL

INTROBA
380 WELLINGTON STREET WEST
TORONTO, ONTARIO
M5V 1E3
T: 416 488 4425

DRAWING LIST

ELECTRICAL

E001	ELECTRICAL LEGEND, DRAWING LIST, GENERAL NOTES
E100A	ELECTRICAL SITE PLAN - NORTH
E100B	ELECTRICAL SITE PLAN - SOUTH
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E401	ELECTRICAL SCHEDULES
E501	ELECTRICAL DETAILS
E601	ELECTRICAL SPECIFICATIONS

LANDSCAPE

DTAH
425 ADELAIDE ST. WEST, SUITE 600
TORONTO, ONTARIO
M5V 3C1
T: 416 968 9479
F: 416 968 0687

DRAWING LIST

LANDSCAPE

L-100	NOTES
L-101	DEMOLITION PLAN
L-102	DEMOLITION PLAN
L-200	LAYOUT AND MATERIAL PLAN
L-201	LAYOUT AND MATERIAL PLAN
L-300	GRADING PLAN
L-301	GRADING PLAN
L-400	PLANTING PLAN
L-401	PLANTING PLAN
L-500	LANDSCAPE DETAILS
L-501	LANDSCAPE DETAILS
L-502	LANDSCAPE DETAILS
L-503	LANDSCAPE DETAILS
L-504	LANDSCAPE DETAILS
L-505	LANDSCAPE DETAILS
L-506	LANDSCAPE DETAILS
L-507	LANDSCAPE DETAILS

CIVIL

R.V ANDERSON ASSOCIATES LIMITED
2001 SHEPPARD AVENUE EAST, SUITE 300
TORONTO, ONTARIO
M2J 4Z8
T: 416 497 8600
F: 855 833 4022

DRAWING LIST

CIVIL

C-1	GENERAL NOTES
C-2	GENERAL SITE SERVICING
C-3	SWM DETAILS AND CROSS-SECTIONS-1
C-4	SWM DETAILS AND CROSS-SECTIONS-2
C-5	SWM DETAILS AND CROSS-SECTIONS-3
C-6	EROSION AND SEDIMENT CONTROL PLAN-1
C-7	EROSION AND SEDIMENT CONTROL PLAN-2

GROUND IMPROVEMENTS - GEOPIER

GEOSOLV DESIGN + BUILD
120 VINYL COURT
WOODBRIDGE, ONTARIO
L4L 4A3
T: 905-226-2599
F: 905-226-2601

DRAWING LIST

GROUND IMPROVEMENTS - GEOPIER

1	GEOPIER DESIGN DRAWING NOTES AND DETAILS
2	GEOPIER DESIGN DRAWING NOTES AND DETAILS
3	GEOPIER DESIGN DRAWING EAST BLDG LAYOUT
4	GEOPIER DESIGN DRAWING WEST BLDG LAYOUT
5	GEOPIER DESIGN DRAWING SHOWERS LAYOUT
6	GEOPIER DESIGN DRAWING BOARDWALK LAYOUT
7	HELICAL PILE DRAWING LAYOUT
8	HELICAL PILE DRAWING LAYOUT

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TORONTO

Design/Criteria

Building Design Information

Folder No.

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District Offices

☐ Toronto and East York ☐ North York ☒ Scarborough ☐ Etobicoke York

The proposed new building or addition is designed in accordance with the following provisions of the Ontario Building Code, O. Reg. 332/12

Major Occupancy

Group/Division	Group A, Division 1	Group B, Division 1	Group C	Group D	Group E	Group F/ Division 3
OBC Reference				3.2.2.55		
Location				West Building		

For mixed uses, describe the use and/or attach layout: ☐ Layout attached ☐ Fire Schematic Layout[1] attached

Building Information

Building Area[2]: 394 m²	Mezzanine[4] area: 0 m² ☐ Open Mezzanine ☐ Closed Mezzanine		
Building Height[3]: 1 storey(s)	Number of streets[5]: 1 with 53.10 % perimeter within 15m of the street(s)		
Storeys below grade: 0 storey(s)	Firewalls required to separate buildings ☐ Yes ☒ No		
Public Corridors as per:	Interconnected floors/atrium ☐ Yes ☒ No as per:		
Corridors required for separation of exits ☐ Yes ☒ No	Perimeter exits as per OBC Sentence 3.4.2.5.(2) ☐ Yes ☑ No		
Cross-over floor(s) required ☐ Yes ☑ No	Provided on floor(s):		

Sprinklers

Sprinklers required ☐ Yes ☒ No as per:	Is the building sprinklered? ☐ Yes ☐ No
Sprinklers required in specific locations ☐ Yes ☐ No as per:	☐ Fully Sprinklered
Specific locations:	☐ Partially Sprinklered ☐ Roof Only ☐ Basement Only
Electrical Supervision required: ☐ Yes ☐ No as per:	☐ Other:

Fire Alarm System

Occupant Load (as per table 3.1.17.1.): 212	Occupant Load (if different from table 3.1.17.1.):
Note: A sign shall be posted if different from table 3.1.17.1.	
Fire alarm system required: ☐ Yes ☒ No	Voice Communication ☐ Yes ☐ No
Type of alarm system provided ☐ Single ☐ 2-Stage	
Standpipe and hose system required ☐ Yes ☒ No Hose Length:	
Standpipe and hose system provided ☐ Yes ☒ No	
Is this building a high building as defined in subsection 3.2.6.? ☐ Yes ☒ No	
State applicable Fire Safety measure(s) on the next page (reference SB-4)	

Continue on next page.

Design/Criteria

Building Design Information

Fire Separations/Resistance Ratings (FRR)

Building Code Reference No.: 3.2.2.55 or ☐ Table 9.10.8.1

Assembly	Required FRR	Proposed FRR	Construction Assembly	Assembly	Required FRR	Proposed FRR	Construction Assembly
Floor immediately above basement				Mezzanines			
Floor below ground level				Roof			
Other floor(s)				Public Corridors			

Construction Type: ☐ Combustible permitted ☐ Non-combustible required ☐ Both – used individually ☒ Both in combination

Barrier Free Requirements

☒ Building fully Barrier Free

☐ Building partially Barrier Free – Please Explain Below:

Equivalency

If this design is based on Equivalency/Part 10 or Part 11 please describe below or attach report.

☐ Report attached

Prepared By

Name of Architect / Professional Engineer / Designer	Telephone No.
Megan Torza	(416) 968-9479
Company Name	Fax No.
DTAH Architects Limited	

Megan Torza Digitally signed by Megan Torza Date: 2024.10.04 13:27:39 -04'00' | Megan Torza | 2024-10-04

Signature | Print Name | Date (yyyy-mm-dd)

Continue on next page.

Print | Reset Form

TORONTO

Design/Criteria

Building Design Information

Folder No.

Do not use this form for Retrofit Permits

District Offices

☐ Toronto and East York ☐ North York ☒ Scarborough ☐ Etobicoke York

The proposed new building or addition is designed in accordance with the following provisions of the Ontario Building Code, O. Reg. 332/12

Major Occupancy

Group/Division	Group A, Division 1	Group B, Division 1	Group C	Group D	Group E	Group F/ Division 1
OBC Reference						3.2.2.80
Location						East Building

For mixed uses, describe the use and/or attach layout: ☐ Layout attached ☐ Fire Schematic Layout[1] attached

Building Information

Building Area[2]: 144 m²	Mezzanine[4] area: 0 m² ☐ Open Mezzanine ☐ Closed Mezzanine		
Building Height[3]: 1 storey(s)	Number of streets[5]: 1 with 42.50 % perimeter within 15m of the street(s)		
Storeys below grade: 0 storey(s)	Firewalls required to separate buildings ☐ Yes ☒ No		
Public Corridors as per:	Interconnected floors/atrium ☐ Yes ☒ No as per:		
Corridors required for separation of exits ☐ Yes ☒ No	Perimeter exits as per OBC Sentence 3.4.2.5.(2) ☐ Yes ☒ No		
Cross-over floor(s) required ☐ Yes ☒ No	Provided on floor(s):		

Sprinklers

Sprinklers required ☐ Yes ☒ No as per:	Is the building sprinklered? ☐ Yes ☒ No
Sprinklers required in specific locations ☐ Yes ☒ No as per:	☐ Fully Sprinklered
Specific locations:	☐ Partially Sprinklered ☐ Roof Only ☐ Basement Only
Electrical Supervision required: ☐ Yes ☒ No as per:	☐ Other:

Fire Alarm System

Occupant Load (as per table 3.1.17.1.):	Occupant Load (if different from table 3.1.17.1.): 0 - 7 seasonal change rooms, no permanent occupancy
Note: A sign shall be posted if different from table 3.1.17.1.	
Fire alarm system required: ☐ Yes ☒ No	Voice Communication ☐ Yes ☒ No
Type of alarm system provided ☐ Single ☐ 2-Stage	
Standpipe and hose system required ☐ Yes ☒ No Hose Length:	
Standpipe and hose system provided ☐ Yes ☒ No	
Is this building a high building as defined in subsection 3.2.6.? ☐ Yes ☒ No	
State applicable Fire Safety measure(s) on the next page (reference SB-4)	

Continue on next page.

Design/Criteria

Building Design Information

Fire Separations/Resistance Ratings (FRR)

Building Code Reference No.: 3.2.2.80 or ☐ Table 9.10.8.1

Assembly	Required FRR	Proposed FRR	Construction Assembly	Assembly	Required FRR	Proposed FRR	Construction Assembly
Floor immediately above basement				Mezzanines			
Floor below ground level				Roof			
Other floor(s)				Public Corridors			

Construction Type: ☐ Combustible permitted ☐ Non-combustible required ☐ Both – used individually ☒ Both in combination

Barrier Free Requirements

☒ Building fully Barrier Free

☐ Building partially Barrier Free – Please Explain Below:

Equivalency

If this design is based on Equivalency/Part 10 or Part 11 please describe below or attach report.

☐ Report attached

Prepared By

Name of Architect / Professional Engineer / Designer	Telephone No.
Megan Torza	(416) 968-9479
Company Name	Fax No.
DTAH Architects Limited	

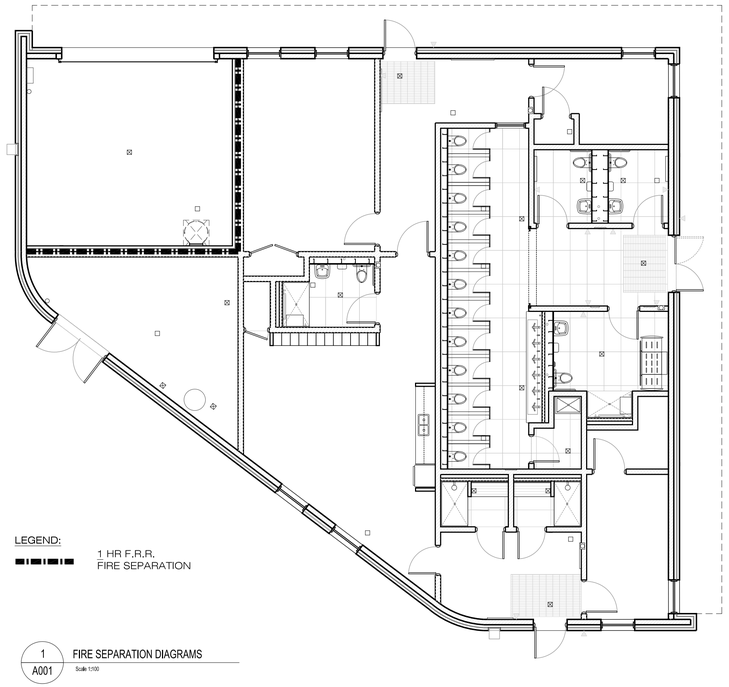
Megan Torza Digitally signed by Megan Torza Date: 2024.10.04 13:24:23 -04'00' | Megan Torza | 2024-10-04

Signature | Print Name | Date (yyyy-mm-dd)

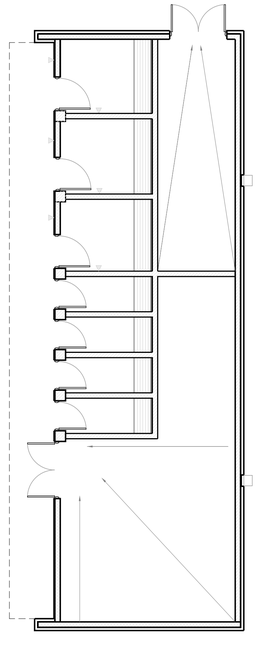
Continue on next page.

2 A001 WEST BUILDING INFORMATION SHEET
NTS

3 A001 EAST BUILDING INFORMATION SHEET
NTS



1 A001 FIRE SEPARATION DIAGRAMS
Scale: 1:100



No.	Date	Description
4	2025-04-11	Issued for Tender
3	2024-09-18	Issued for Building Permit
2	2023-01-31	Issued for 50% Costing
1	2022-07-29	Issued for Costing

Issue Record

dtah

DTAH Architects Limited
425 Adelaide St. W
Suite 600
Toronto, Ontario
M5V 3C1
T 416 968 7908
www.dtah.com

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

PROJECT INFORMATION

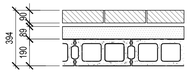
Print Date	2025-04-11
Scale	AS NOTED
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A001

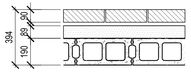
EXTERIOR WALL ASSEMBLIES

NOTES:

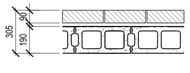
1. SEE PLANS AND ELEVATIONS FOR CLADDING LOCATIONS AND PATTERN



EX1 BRICK MASONRY EXTERIOR WALL TYPE (R-21 MIN.)
- 90mm MASONRY VENEER - LINEAR BRICK
- 25mm AIR SPACE
- THERMALLY-BROKEN STAINLESS STEEL BRICK TIES
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED

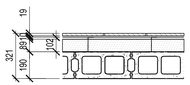


EX2 BRICK MASONRY EXTERIOR WALL TYPE (R-21 MIN.)
- 90mm MASONRY VENEER - GLAZED BRICK
- 25mm AIR SPACE
- THERMALLY-BROKEN STAINLESS STEEL BRICK TIES
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED

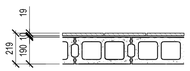


EX3 BRICK MASONRY EXTERIOR WALL TYPE - UNINSULATED
- 90mm MASONRY VENEER - LINEAR BRICK
- 25mm AIR SPACE
- STAINLESS STEEL BRICK TIES
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED

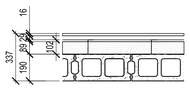
EX4 BRICK MASONRY EXTERIOR WALL TYPE - UNINSULATED
- 90mm MASONRY VENEER- GLAZED BRICK
- 25mm AIR SPACE
- STAINLESS STEEL BRICK TIES
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED



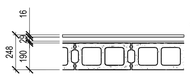
EX5 COMPOSITE PANEL EXTERIOR WALL TYPE (R-21 MIN.)
- 4 mm COMPOSITE PANEL CLADDING WITH CONCEALED FASTENERS
- 9 mm VENTILATION GAP
- 16 mm HORIZONTAL GALVANIZED STEEL SUB-GIRT SYSTEM @400 mm O.C
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- 102 mm VERTICAL GALVANIZED STEEL SUB-GIRT SYSTEM @400 mm O.C
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED



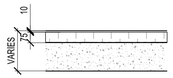
EX6 COMPOSITE PANEL EXTERIOR WALL TYPE - UNINSULATED
- 4 mm COMPOSITE PANEL CLADDING WITH CONCEALED FASTENERS
- 9 mm VENTILATION GAP
- 16 mm HORIZONTAL GALVANIZED STEEL SUB-GIRT SYSTEM @400 mm O.C
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED



EX7 WOOD CLAD EXTERIOR WALL TYPE (R-21 MIN.)
- 16mm PREFINISHED WOOD SIDING
- 29mm HORIZONTAL GALVANIZED STEEL SUB-GIRT SYSTEM @400 mm O.C
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- 102 mm VERTICAL GALVANIZED STEEL SUB-GIRT SYSTEM @400 mm O.C
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED

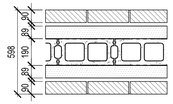


EX8 WOOD CLAD EXTERIOR WALL TYPE - UNINSULATED
- 16mm PREFINISHED WOOD SIDING
- 29mm HORIZONTAL GALVANIZED STEEL SUB-GIRT SYSTEM @ 400 mm O.C
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL, PAINTED



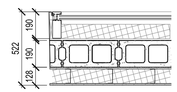
EX9 FOUNDATION WALL- INSULATED (R-15 MIN.)
- 10mm DRAINAGE BOARD
- BELOW GRADE: 75mm RIGID INSULATION (MIN. R-15)
- DAMP PROOFING MEMBRANE
- POURED IN PLACE CONCRETE FOUNDATION WALL (SEE STRUCTURAL)
- SANDBLAST (MEDIUM) EXPOSED VERTICAL SURFACES

EX10 FOUNDATION WALL- UNINSULATED
- 10mm DRAINAGE BOARD
- DAMP PROOFING MEMBRANE
- POURED IN PLACE CONCRETE FOUNDATION WALL (SEE STRUCTURAL)
- SANDBLAST (MEDIUM) EXPOSED VERTICAL SURFACES

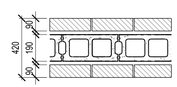


EX11 PARAPET WALL - LINEAR BRICK- INSULATED
- 90mm MASONRY VENEER - LINEAR BRICK
- 25mm AIR SPACE
- THERMALLY-BROKEN STAINLESS STEEL BRICK TIES
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL
- AIR BARRIER
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- THERMALLY-BROKEN STAINLESS STEEL BRICK TIES
- 25mm AIR SPACE
- 90mm MASONRY VENEER - LINEAR BRICK

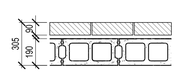
EX12 PARAPET WALL - LINEAR BRICK- INSULATED W/ METAL
- 90mm MASONRY VENEER - LINEAR BRICK
- 25mm AIR SPACE
- THERMALLY-BROKEN STAINLESS STEEL BRICK TIES
- 89mm CLOSED-CELL SPRAY FOAM INSULATION (MIN R-21)
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL
- AIR BARRIER
- 102mm STEEL STUDS @300 O.C
- CLOSED CELL POLYURETHANE SPRAY FOAM INSULATION (R-17)
- 13mm EXTERIOR GRADE PLYWOOD SHEATHING
- ROOF MEMBRANE LAP UP PARAPET
- PRE-FINISHED METAL FLASHING



EX13 PARAPET WALL - CURTAIN WALL- INSULATED
- ALUMINIUM CURTAIN WALL SYSTEM W/ INSULATED SPANDREL- SEE WINDOW SCHEDULE
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL
- AIR BARRIER
- 102mm STEEL STUDS @300 O.C
- CLOSED CELL POLYURETHANE SPRAY FOAM INSULATION (R-17)
- 13mm EXTERIOR GRADE PLYWOOD SHEATHING
- PRE-FINISHED METAL FLASHING



EX14 PARAPET WALL - LINEAR BRICK- UNINSULATED
- 90mm MASONRY VENEER- LINEAR BRICK
- 25mm AIR SPACE
- STAINLESS STEEL BRICK TIES
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL
- AIR BARRIER
- STAINLESS STEEL BRICK TIES
- 25mm AIR SPACE
- 90mm MASONRY VENEER - LINEAR BRICK



EX15 PARAPET WALL - LINEAR BRICK- UNINSULATED W/ METAL
- 90mm MASONRY VENEER- LINEAR BRICK
- 25mm AIR SPACE
- STAINLESS STEEL BRICK TIES
- AIR BARRIER
- 190mm CONCRETE BLOCK WALL
- AIR BARRIER
- ROOF MEMBRANE LAP UP PARAPET
- PRE-FINISHED METAL FLASHING

INTERIOR PARTITIONS

P1 CMU PARTITION WALL
- 190mm CONCRETE BLOCK WALL, PAINTED (CORNER UNITS AT ALL EXPOSED ENDS)

P2 STALL PARTITION WALL (2670 MM HIGH)
- 13mm PHENOLIC PANEL
- 92mm STEEL STUDS @300 o.c.
- 13mm PHENOLIC PANEL
- PROVIDE PHENOLIC CAP PLATE TO TOP OF WALL

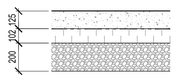
P2A MILLWORK WALLS
- 19mm BALTIC BIRCH PLYWOOD
- 92mm STEEL STUDS @300 o.c.
- 19mm BALTIC BIRCH PLYWOOD

P3 PLUMBING CHASE WALL - STUD
- TILE, SEE INTERIOR ELEVATIONS
- 16MM HIGH IMPACT GYPSUM BOARD | PROVIDE FULL HEIGHT CEMENT BACKER BOARD AT ALL TILE LOCATIONS
- 152mm METAL STUDS @400mm O/C
- 73mm AIR GAP (OR AS INDICATED)

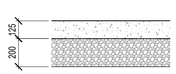
P4 SHOWER PARTITION WALL (2867 MM HIGH)
- 90mm CONCRETE BLOCK (FULL HEIGHT TILE CLADDING TO UNDERSIDE OF CEILING)
(CORNER UNITS AT ALL EXPOSED ENDS)

P5 PLUMBING CHASE WALL - BLOCK
- 90mm CONCRETE BLOCK, PAINTED
- 140mm AIR GAP (OR AS INDICATED)

FLOOR ASSEMBLIES

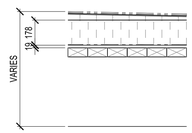


F1 CONCRETE SLAB ON GRADE FLOOR
- FLOOR FINISH (SEE ROOM FINISH SCHEDULE)
- 150mm CONCRETE SLAB ON GRADE, SEE STRUCT. DWGS.
- VAPOUR BARRIER
- 102mm RIGID INSULATION 1220mm FROM INSIDE OF PERIMETER FOUNDATION WALL (MIN R-20)
- 200mm GRANULAR BASE
- GROUND IMPROVEMENTS, SEE GEOPIER DESIGN DRAWING GP-D-2

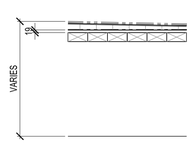


F2 CONCRETE SLAB ON GRADE FLOOR - UNINSULATED
- FLOOR FINISH (SEE ROOM FINISH SCHEDULE)
- 150mm CONCRETE SLAB ON GRADE, SEE STRUCT. DWGS.
- VAPOUR BARRIER
- PROTECTION BOARD
- 200mm GRANULAR BASE
- GROUND IMPROVEMENTS, SEE GEOPIER DESIGN DRAWING GP-D-1

ROOF ASSEMBLIES

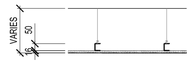


R1 MODIFIED BITUMEN ROOF ASSEMBLY (R-40 MIN.)
- MODIFIED BITUMEN CAP SHEET
- MODIFIED BITUMEN BASE SHEET
- RIGID COVER BOARD
- 75mm TAPERED INSULATION TO SLOPE TO DRAIN (2%min.)
- 178mm RIGID INSULATION BOARD (R-40 MIN.)
- AIR BARRIER
- 19mm PLYWOOD ROOF SHEATHING
- T+G WOOD ROOF DECKING, CLEAR SEALANT (SEE STRUCTURAL)
- WOOD ROOF FRAMING MEMBERS, CLEAR SEALANT (SEE STRUCTURAL)



R2 MODIFIED BITUMEN ROOF ASSEMBLY - UNINSULATED
- MODIFIED BITUMEN CAP SHEET
- MODIFIED BITUMEN BASE SHEET
- RIGID COVER BOARD
- 75mm TAPERED INSULATION TO SLOPE TO DRAIN (2%min.)
- AIR BARRIER
- 19mm PLYWOOD ROOF SHEATHING
- T+G WOOD ROOF DECKING, , CLEAR SEALANT (SEE STRUCTURAL)
- WOOD ROOF FRAMING MEMBERS, , CLEAR SEALANT (SEE STRUCTURAL)

CEILING ASSEMBLY



C1 SUSPENDED GYPSUM CEILING
- AIR SPACE WITH HANGERS FOR STRUCTURAL FRAMING, ELECTRICAL & MECHANICAL EQUIPMENT
- 50MM SUSPENDED GALVANIZED METAL CHANNEL SYSTEM
- 16MM GYPSUM CEILING BOARD

No.	Date	Description
6	2025-04-11	Issued for Tender
5	2024-09-18	Issued for Building Permit
4	2024-08-16	Issued for 100% Costing
3	2024-07-08	Issued for TRCA
2	2023-01-31	Issued for 50% Costing
1	2022-07-29	Issued for Costing

Issue Record

dtah

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Toronto, Ontario T 416 968 7908
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BLUFFER'S PARK EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

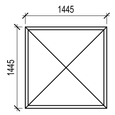
ASSEMBLIES SCHEDULE

Print Date	2025-04-11
Scale	AS NOTED
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A002

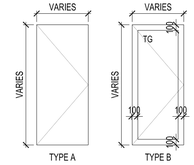
SKYLIGHT

GENERAL NOTES: DIMENSIONS ARE ROUGH OPENINGS AND ARE TO BE FIELD VERIFIED PRIOR TO SUBMITTAL OF SHOP DRAWINGS.



6 / A003 SKYLIGHT SCHEDULE
Scale: 1:50

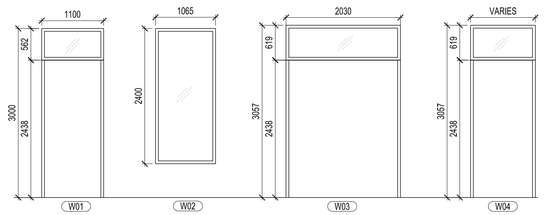
DOOR TYPES



5 / A003 DOOR TYPES
Scale: 1:50

DOOR FRAMES

GENERAL NOTES: DIMENSIONS ARE ROUGH OPENINGS AND ARE TO BE FIELD VERIFIED PRIOR TO SUBMITTAL OF SHOP DRAWINGS. PROVIDE CLOSURE PANELS, SILL EXTRUSIONS AND JAMB EXTRUSIONS AS REQUIRED.

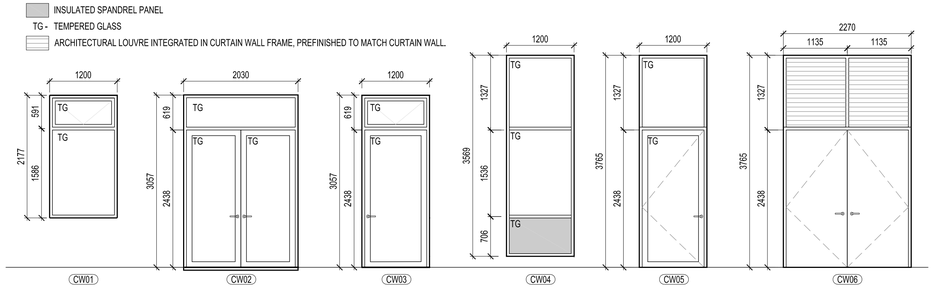


3 / A003 HM FRAME SCHEDULE
Scale: 1:50

CURTAIN WALL

GENERAL NOTES: DIMENSIONS ARE ROUGH OPENINGS AND ARE TO BE FIELD VERIFIED PRIOR TO SUBMITTAL OF SHOP DRAWINGS. PROVIDE CLOSURE PANELS, SILL EXTRUSIONS AND JAMB EXTRUSIONS AS REQUIRED.

INSULATED SPANDREL PANEL
TG - TEMPERED GLASS
ARCHITECTURAL LOUVRE INTEGRATED IN CURTAIN WALL FRAME, PREFINISHED TO MATCH CURTAIN WALL.



2 / A003 ALUMINIUM CURTAIN WALL SCHEDULE
Scale: 1:50

ROOM FINISH SCHEDULE

#	ROOM NAME	FLOOR MATERIAL	FLOOR COLOUR	FLOOR FINISH	BASE MATERIAL	WALLS MATERIAL	WALLS FINISH	WALL PAINT/TILE COLOUR NORTH	EAST	SOUTH	WEST	CEILING MATERIAL	CEILING FINISH	CEILING COLOUR	REMARKS
						WEST BUILDING									
101	HALL	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
102	MEETING ROOM	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
103	STORAGE	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	GWB	PT	WHITE	
104	GARAGE	CONC	-	TRAFFIC COATING	-	CB/ BRICK	PT	-	-	-	-	EXPOSED STR.	SEALED	CLEAR	TRAFFIC COATING ON CONCRETE FLOORING
105	UTILITY ROOM	CONC	-	SERVICE COATING	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	SERVICE COATING ON CONCRETE FLOORING
106	STAFF ROOM	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
107	STORAGE	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	GWB	PT	WHITE	
108	STAFF WR	TILE-1	-	-	TILE-2	TILE-2	-	TBD	TBD	TBD	TBD	GWB	PT	WHITE	ASSUME FULL HEIGHT TILE THROUGHOUT
109	HALL	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
110	SHOWER	TILE-1	-	-	TILE-2	TILE-2/ WD	-	TBD	TBD	TBD	TBD	GWB	PT	WHITE	ASSUME FULL HEIGHT TILE THROUGHOUT, EX. WOOD WALL TREATMENT ABOVE THE BENCH
111	SHOWER	TILE-1	-	-	TILE-2	TILE-2/ WD	-	TBD	TBD	TBD	TBD	GWB	PT	WHITE	ASSUME FULL HEIGHT TILE THROUGHOUT, EX. WOOD WALL TREATMENT ABOVE THE BENCH
112	OFFICE	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
113	STORAGE	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
114	WASHROOMS	TILE-1	-	-	TILE-1	CB/TILE-2/ PHENOLIC	PT/-/-	WHITE/TBD	WHITE/TBD	WHITE/TBD	WHITE/TBD	EXPOSED STR.	SEALED	CLEAR	REFER TO FLOOR PLAN FOR EXTENT OF WALL TILES
115	UNIV. WR	TILE-1	-	-	TILE-1	TILE-2	-	TBD	TBD	TBD	TBD	GWB	PT	WHITE	ASSUME FULL HEIGHT TILE THROUGHOUT
116	JANITOR	TILE-1	-	-	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
117	BF WASHROOM	TILE-1	-	-	TILE-1	TILE-2	-	TBD	TBD	TBD	TBD	GWB	PT	WHITE	ASSUME FULL HEIGHT TILE THROUGHOUT
118	BF WASHROOM	TILE-1	-	-	TILE-1	TILE-2	-	TBD	TBD	TBD	TBD	GWB	PT	WHITE	ASSUME FULL HEIGHT TILE THROUGHOUT
119	OFFICE	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
120	STORAGE	CONC	-	POLISHED	-	CB	PT	WHITE	WHITE	WHITE	WHITE	EXPOSED STR.	SEALED	CLEAR	
						EAST BUILDING									
201	BF CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
202	BF CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
203	BF CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
204	CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
205	CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
206	CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
207	CHANGEROOM	CONC	-	POLISHED	-	CB/ WD	PT/ -	WHITE	-	WHITE	WHITE	-	-	-	WOOD SLAT WALL CLADDING FROM BENCH TO COVE
208	STORAGE	CONC	-	TRAFFIC COATING	-	CB	PT	WHITE	WHITE	WHITE	WHITE	-	-	-	TRAFFIC COATING ON CONCRETE FLOORING
209	SEASONAL VEHICLE GARAGE	CONC	-	TRAFFIC COATING	-	CB	PT	WHITE	WHITE	WHITE	WHITE	-	-	-	TRAFFIC COATING ON CONCRETE FLOORING

MATERIAL LEGEND:

TILE
- TILE-1 600 X 1200 mm
- TILE-2 147 X 147 mm
- ALIGN TILE JOINTS ON WALL WITH TILE FLOOR JOINTS WHENEVER POSSIBLE

CONC POURED IN PLACE CONCRETE - REFER STRUCTURAL DRAWINGS
CB CONCRETE BLOCK
GWB GYPSUM WALL BOARD
PHENOLIC FUNDERMAX
PT PAINT
CONC POURED IN PLACE CONCRETE (REFER TO STRUCTURAL)
WD COMPOSITE WOOD DECKING

4 / A003 ROOM FINISH SCHEDULE
Scale: NTS

DOOR SCHEDULE

#	ROOM NAME	SIZE	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME TYPE	FRAME FINISH	THRESHOLD	WEATHER-STRIPPING	U/L LABEL	DOOR CLOSURE	PANIC HARDWARE	DOOR OPERATOR	HARDWARE	REMARKS
							WEST BUILDING									
D101A	HALL	1100 x 2428 x 45	B	ALUM	-	ALUM	A	-	x	x		x	x	x	STOREROOM	
D101B	HALL	1100 x 2428 x 45	B	HM	PT	HM	A	PT				x			CLASSROOM	
D102	MEETING ROOM	1100 x 2428 x 45	B	HM	PT	HM	A	PT				x			PASSAGE	
D103	STORAGE	2 (815 x 2218 x 45)	A	HM	PT	HM	A	PT				x			STOREROOM	HM FRAME #W04
D104	GARAGE	5300 x 3018 x 45	-	-	-	-	-	-							-	MOTORIZED OVERHEAD INSULATED COILING DOOR
D105	UTILITY ROOM	2 (1100 x 2428 x 45)	A	ALUM	-	ALUM	A	-	x	x		x			STOREROOM	
D106	STAFF	965 x 2428 x 45	B	HM	PT	HM	A	PT				x			CLASSROOM	
D107	STORAGE	815 x 2428 x 45	A	HM	PT	HM	A	PT				x			STOREROOM	
D108	STAFF WASHROOM	1010 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	
D109	HALL	1100 x 2428 x 45	B	ALUM	-	ALUM	A	-	x	x		x	x	x	STOREROOM	
D110	SHOWER	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	
D111	SHOWER	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	
D112	OFFICE	1100 x 2428 x 45	B	HM	PT	HM	A	PT				x			STOREROOM	
D113	STORAGE	1100 x 2218 x 45	A	HM	PT	HM	A	PT				x			STOREROOM	25 MM UNDERCUT FOR VENTILATION
D114	WASHROOMS	2 (965 x 2428 x 45)	B	ALUM	-	ALUM	A	-	x	x		x	x	x	PASSAGE	W/ BOLT + TOP/ BOTTOM CATCH
D115	UNIV. WASHROOM	1010 x 2428 x 45	A	HM	PT	HM	A	PT				x		x	PRIVACY	HM FRAME #W01
D116	JANITOR	915 x 2218 x 45	A	HM	PT	HM	A	PT		x		x			STOREROOM	
D117	BF WASHROOM	1010 x 2428 x 45	A	HM	PT	HM	A	PT				x		x	PRIVACY	HM FRAME #W01
D118	BF WASHROOM	1010 x 2428 x 45	A	HM	PT	HM	A	PT				x		x	PRIVACY	HM FRAME #W01
D119	OFFICE	1100 x 2428 x 45	B	HM	PT	HM	A	PT				x			STOREROOM	
D120	STORAGE	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			STOREROOM	
							EAST BUILDING									
D201	BF CHANGEROOM	1100 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D202	BF CHANGEROOM	1100 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D203	BF CHANGEROOM	1100 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D204	CHANGEROOM	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D205	CHANGEROOM	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D206	CHANGEROOM	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D207	CHANGEROOM	965 x 2428 x 45	A	HM	PT	HM	A	PT				x			PRIVACY	HM FRAME #W04, 50 MM UNDERCUT FOR VENTILATION
D208	STORAGE	2 (965 x 2428 x 45)	A	HM	PT	HM	A	PT				x			STOREROOM	HM FRAME #W03, 50 MM UNDERCUT FOR VENTILATION
D209	SEASONAL VEHICLE GARAGE	2 (965 x 2428 x 45)	A	HM	PT	HM	A	PT				x			STOREROOM	50 MM UNDERCUT FOR VENTILATION

1 / A003 DOOR SCHEDULE
Scale: NTS

No.	Date	Description
4	2025-04-11	Issued for Tender
3	2024-09-18	Issued for Building Permit
2	2024-08-16	Issued for 100% Costing
1	2023-01-31	Issued for 50% Costing

Issue Record

dtah
DTAH Architects Limited
425 Adelaide St. W
Suite 600
Toronto, Ontario
M5V 3C1
T 416 968 7908
www.dtah.com

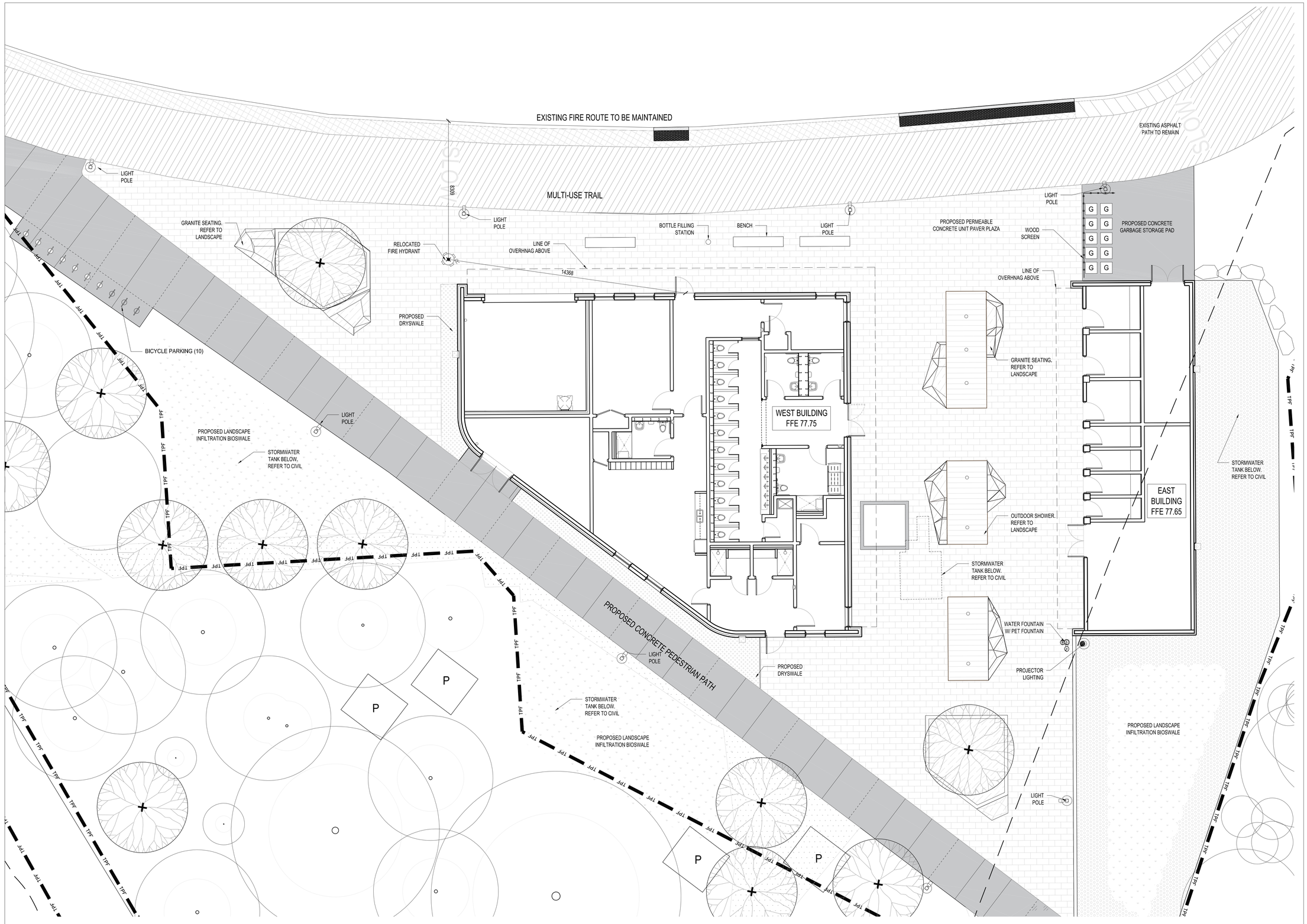
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

SCHEDULES- DOORS, WINDOWS AND ROOM FINISH

Print Date	2025-04-11
Scale	AS NOTED
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A003



CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR CHECKING ALL DIMENSIONS AND CONDITIONS ON THE JOB.

DO NOT SCALE DRAWINGS.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

No.	Date	Description
5	2025-04-11	Issued for Tender
4	2024-09-18	Issued for Building Permit
3	2024-08-16	Issued for 100% Costing
2	2024-07-08	Issued for TRCA
1	2023-01-31	Issued for 50% Costing

Issue Record

dtah
DTAH Architects Limited
425 Adelaide St. W
Suite 600
Toronto, Ontario
M5V 3C1
T 416 968 7908
www.dtah.com

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

SITE PLAN

Print Date	2025-04-11
Scale	1:100
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A100

PLAN SHOWING TOPOGRAPHY FOR

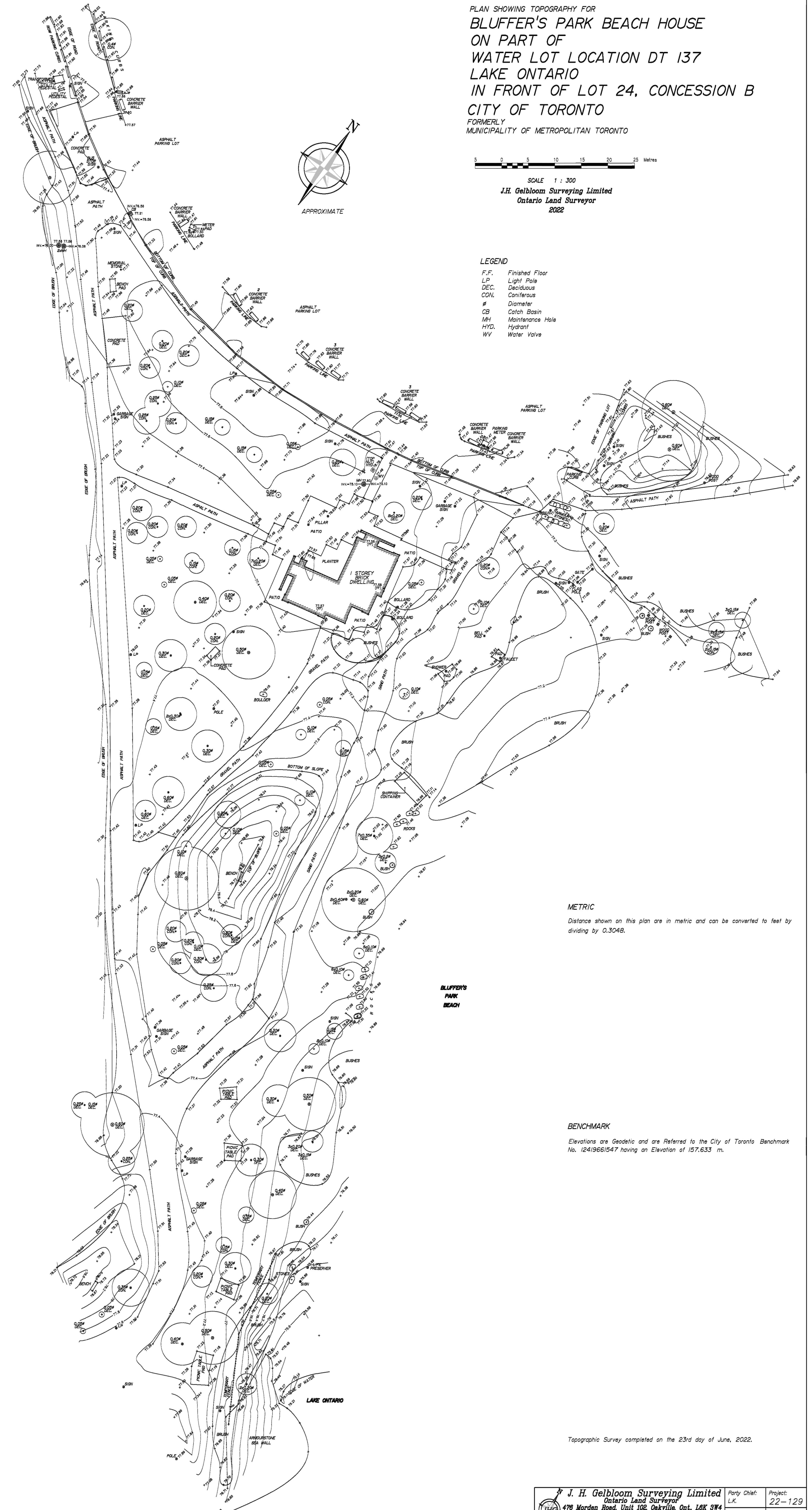
BLUFFER'S PARK BEACH HOUSE
ON PART OF
WATER LOT LOCATION DT 137
LAKE ONTARIO
IN FRONT OF LOT 24, CONCESSION B
CITY OF TORONTO

FORMERLY
MUNICIPALITY OF METROPOLITAN TORONTO

5 0 5 10 15 20 25 Metres

SCALE 1 : 300

J.H. Gelbloom Surveying Limited
Ontario Land Surveyor
2022



LEGEND

F.F.	Finished Floor
LP	Light Pole
DEC.	Deciduous
CON.	Coniferous
ø	Diameter
CB	Catch Basin
MH	Maintenance Hole
HYD.	Hydrant
WV	Water Valve

METRIC

Distance shown on this plan are in metric and can be converted to feet by dividing by 0.3048.

BENCHMARK

Elevations are Geodetic and are Referred to the City of Toronto Benchmark No. 12419661547 having an Elevation of 157.633 m.

Topographic Survey completed on the 23rd day of June, 2022.

J. H. Gelbloom Surveying Limited
Ontario Land Surveyor
476 Morden Road, Unit 102, Oakville, Ont., L6K 3W4
office@jhgsurveying.ca
Phone:(905) 338-8210 Fax:(905) 338-9446

Party Chief: L.K.	Project: 22–129	
Drawn By: R.H.	Checked By: A.M.	

A101

1 A102 CONTEXT PLAN
Scale 1:1500

2 A102 CONTEXT PLAN
Scale 1:1000

No.	Date	Description
2	2025-04-11	Issued for Tender
1	2025-02-12	Issued for Building Permit

Issue Record

dtah

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N

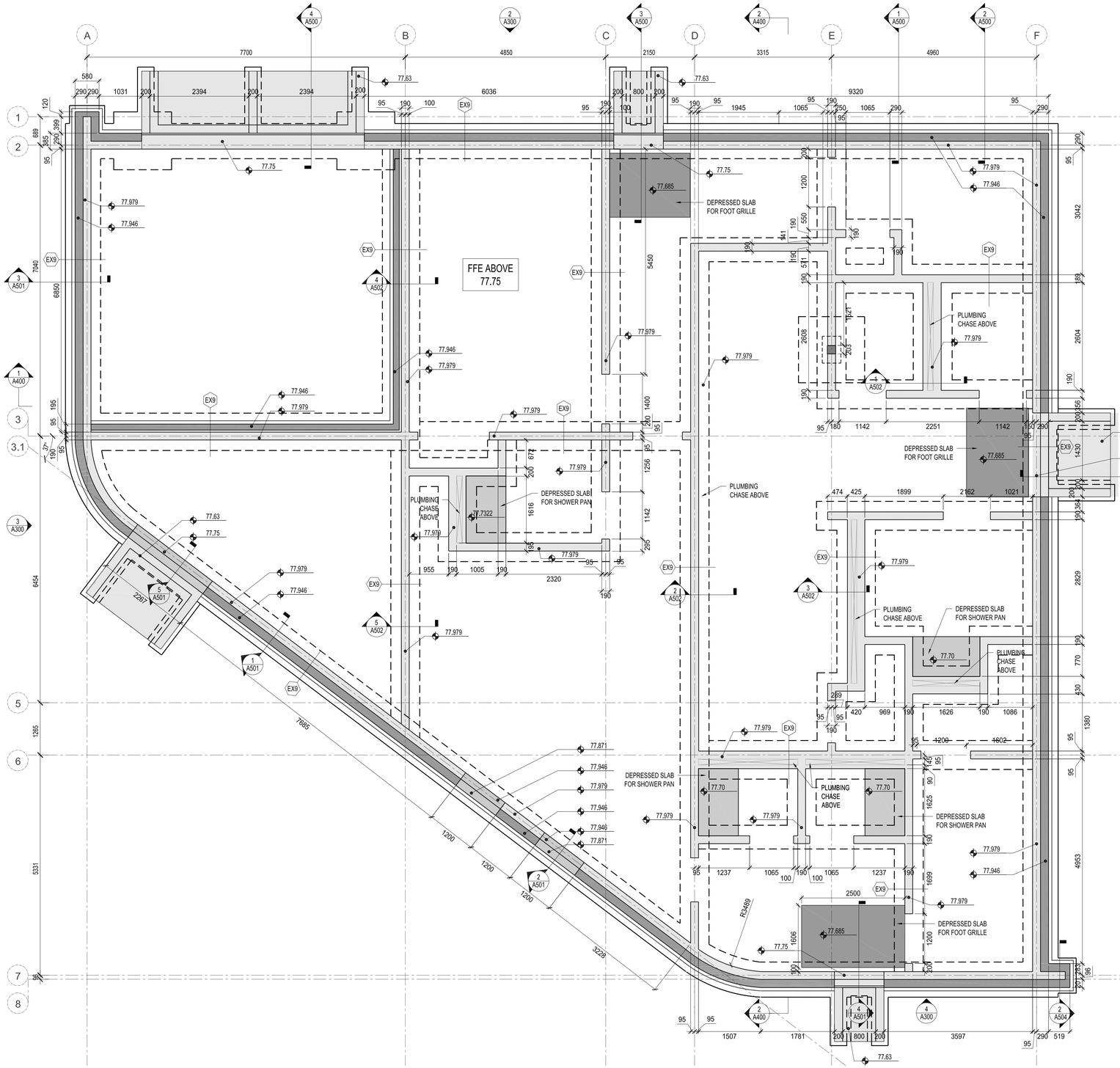
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

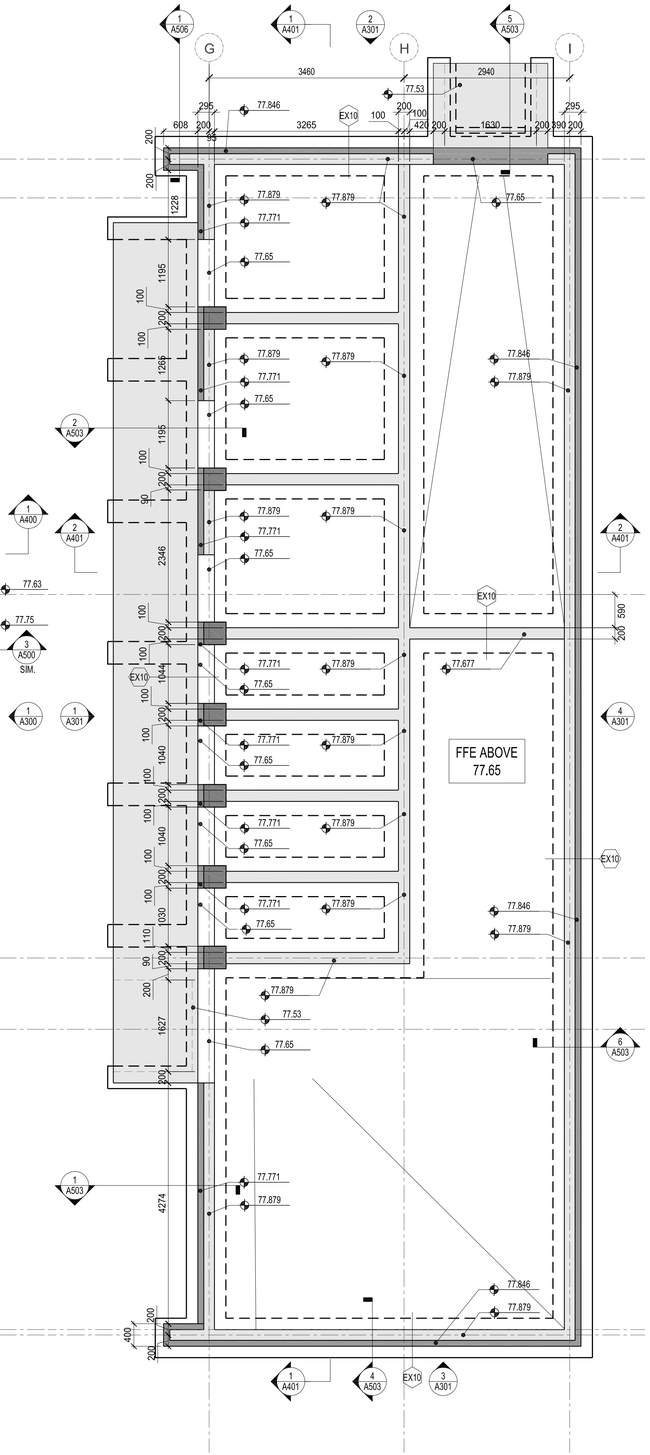
CONTEXT PLAN

Print Date	2025-04-11
Scale	AS NOTED
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A102



1 A200 FOUNDATION PLAN - WEST BUILDING
Scale 1:50



2 A200 FOUNDATION PLAN - EAST BUILDING
Scale 1:50

No.	Date	Description
5	2025-04-11	Issued for Tender
4	2024-09-18	Issued for Building Permit
3	2024-08-16	Issued for 100% Costing
2	2024-07-08	Issued for TRCA
1	2023-01-31	Issued for 50% Costing

Issue Record

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425 Adelaide St. W
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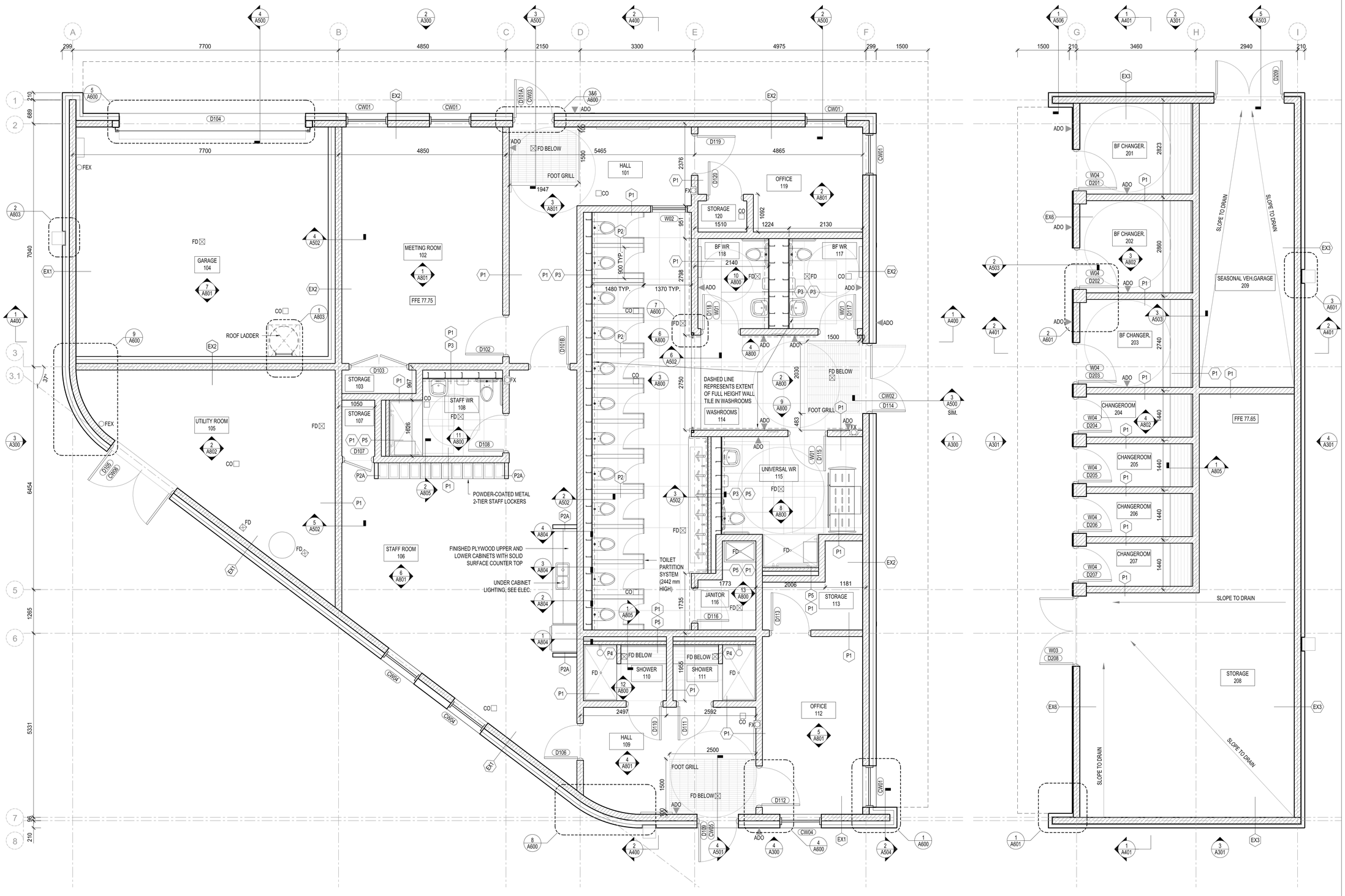
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

FOUNDATION PLAN

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A200



1 A201 GROUND FLOOR PLAN - WEST BUILDING
Scale 1:50

2 A201 GROUND FLOOR PLAN - EAST BUILDING
Scale 1:50

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LEGEND

FD ☒ FLOOR DRAIN, REFER TO MECHANICAL DWGS

CO ○ CLEAN-OUT, REFER TO MECHANICAL DWGS

FX ▭ RECESSED FIRE EXTINGUISHER, REFER TO MECHANICAL DWGS

FEX ○ SURFACE-MOUNTED FIRE EXTINGUISHER, REFER TO MECHANICAL DWGS

No.	Date	Description
6	2025-04-11	Issued for Tender
5	2024-09-18	Issued for Building Permit
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3	2024-07-08	Issued for TRCA
2	2023-01-31	Issued for 50% Costing
1	2022-07-29	Issued for Costing

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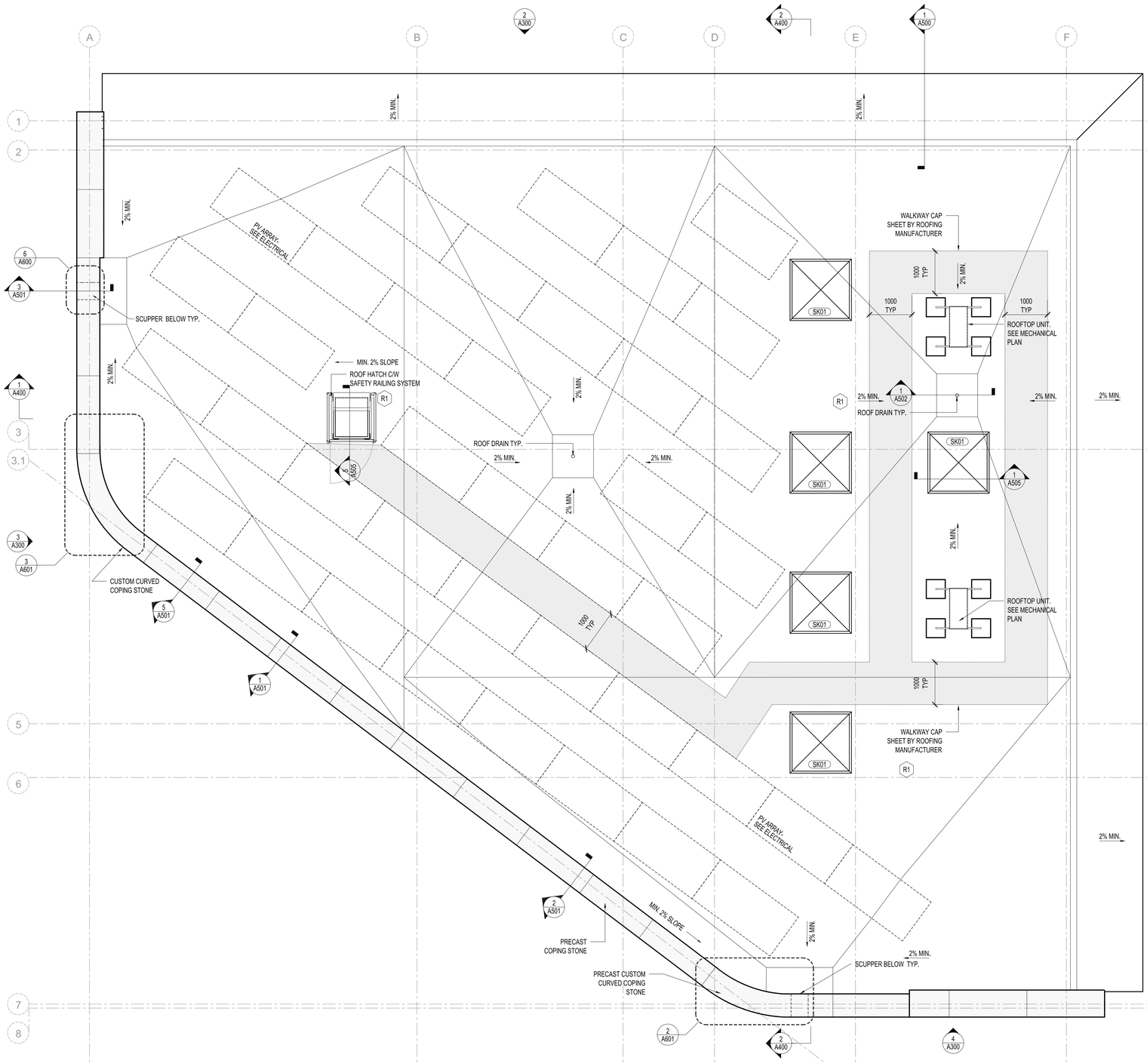
Drawing Title

GROUND FLOOR PLAN

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A201



1 ROOF PLAN - WEST BUILDING
A202 Scale 1:50

2 ROOF PLAN - EAST BUILDING
A202 Scale 1:50

No.	Date	Description
5	2025-04-11	Issued for Tender
4	2024-09-18	Issued for Building Permit
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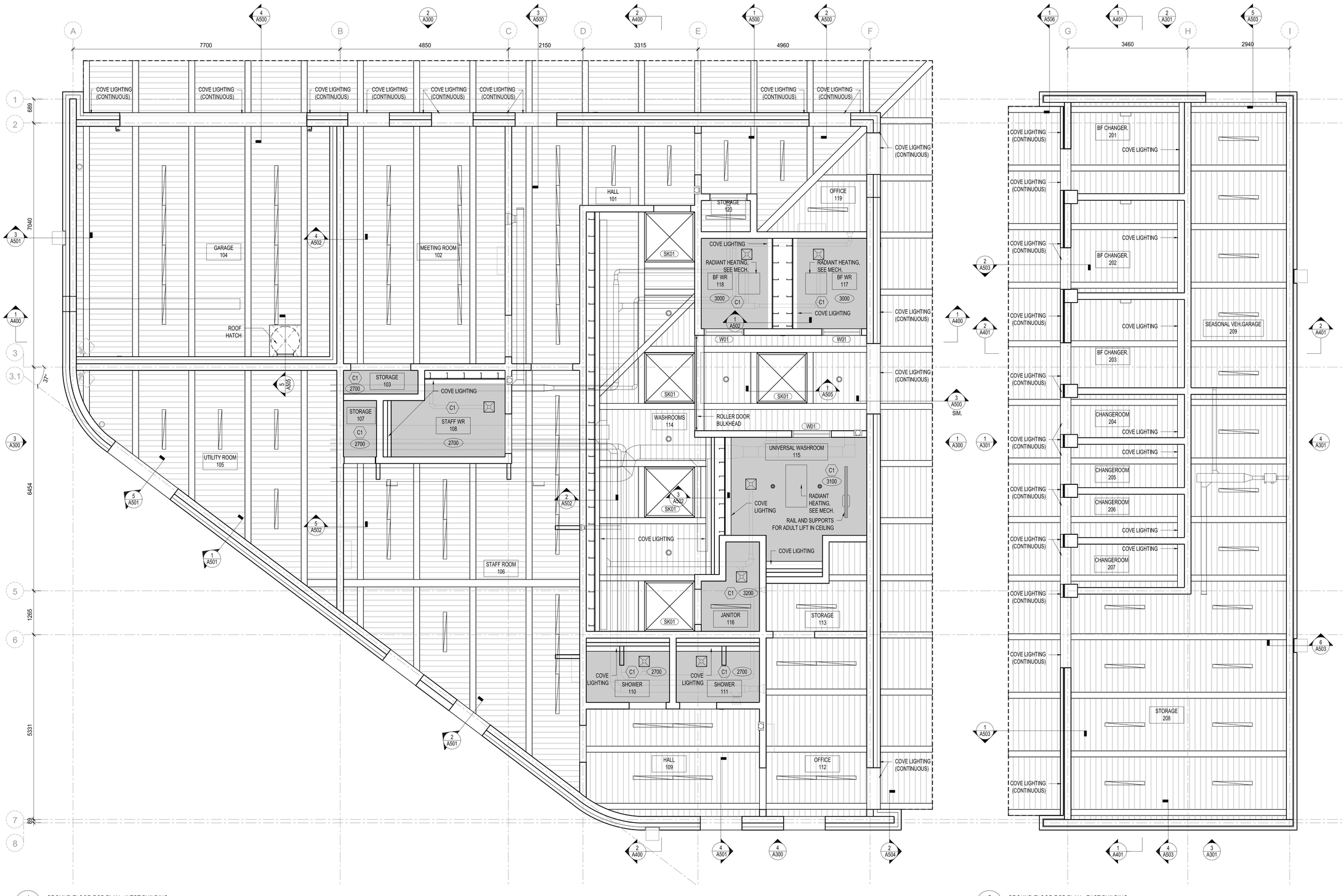
Drawing Title

ROOF PLAN

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A202



1 / A203 GROUND FLOOR RCP PLAN - WEST BUILDING
Scale 1:50

2 / A203 GROUND FLOOR RCP PLAN - EAST BUILDING
Scale 1:50

No.	Date	Description
5	2025-04-11	Issued for Tender
4	2024-09-18	Issued for Building Permit
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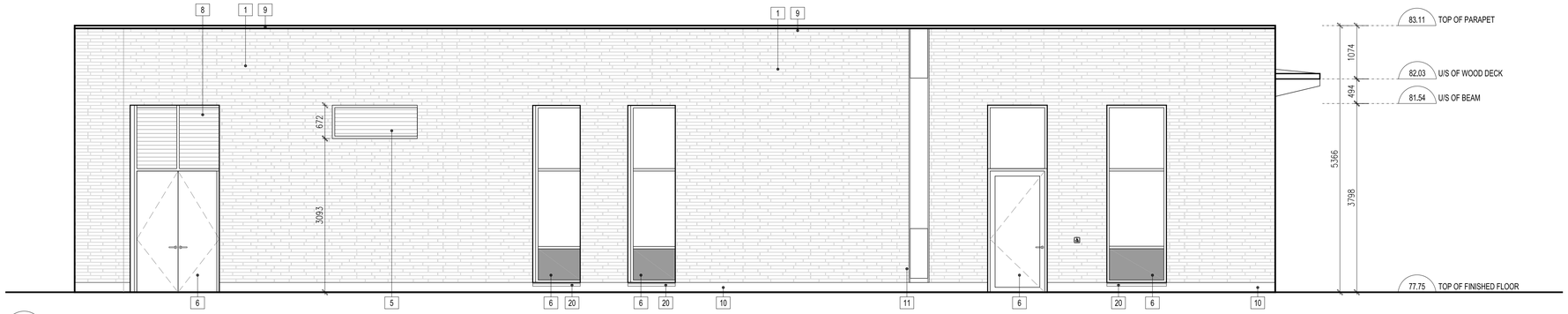
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

REFLECTED CEILING PLAN

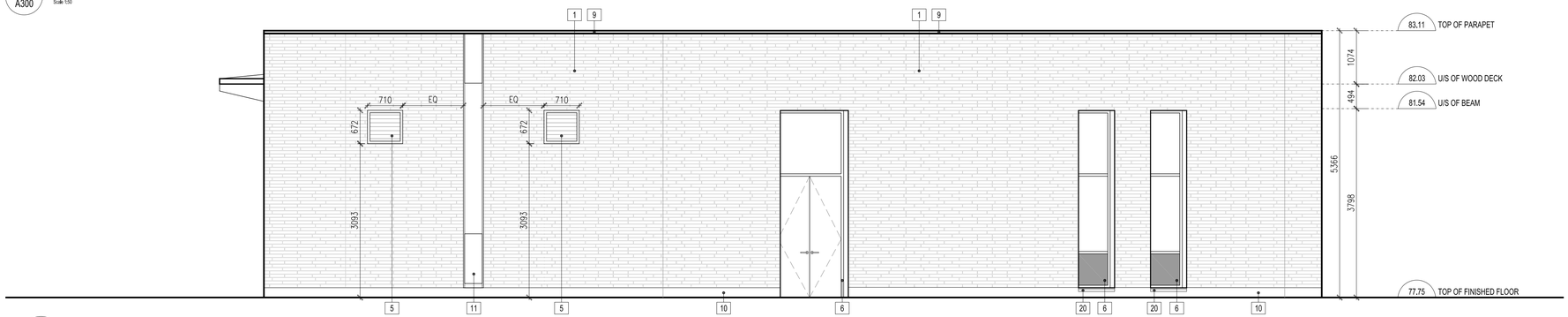
Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A203



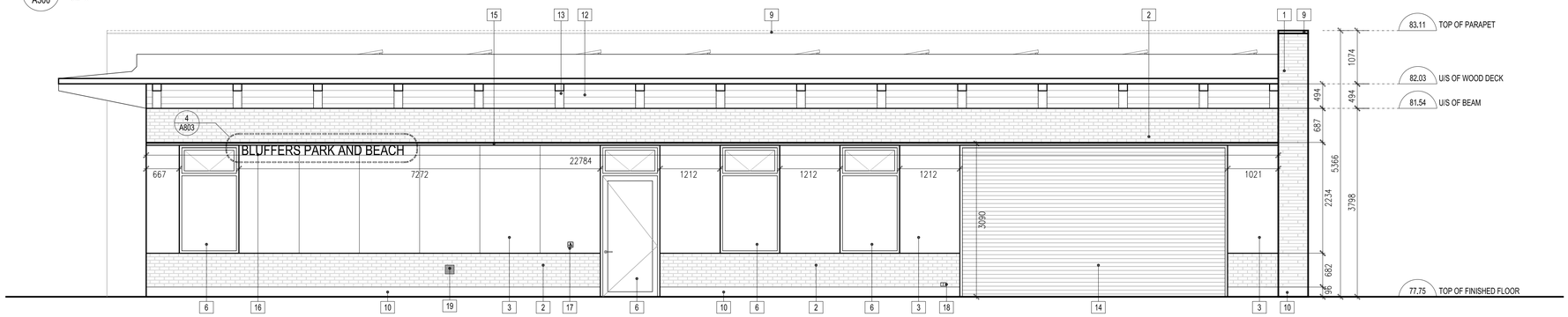
4 / A300 WEST BUILDING - SOUTH ELEVATION

Scale 1:50



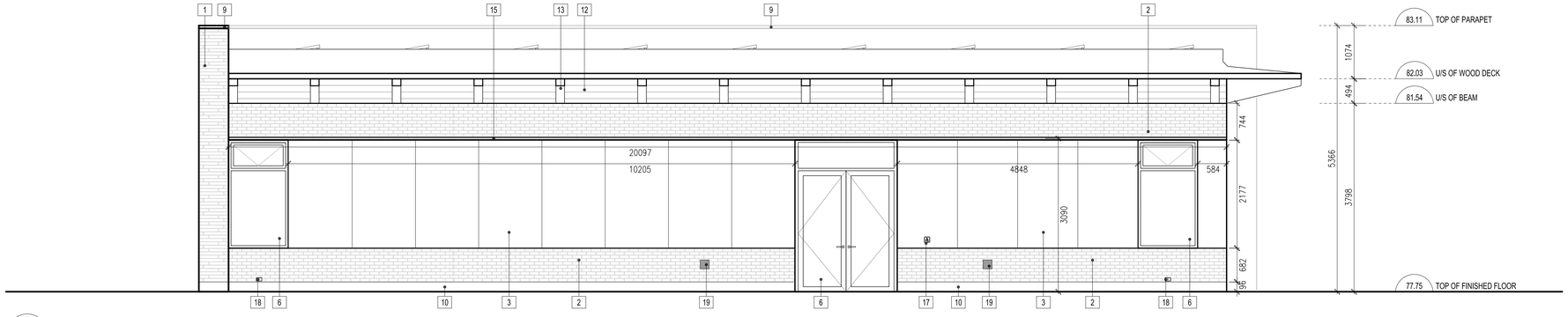
3 / A300 WEST BUILDING - WEST ELEVATION

Scale 1:50



2 / A300 WEST BUILDING - NORTH ELEVATION

Scale 1:50



1 / A300 WEST BUILDING - EAST ELEVATION

Scale 1:50

LEGEND

1. LINEAR MASONRY VENEER
2. GLAZED BRICK VENEER
3. METAL COMPOSITE PANEL
4. RESERVED
5. MECHANICAL LOUVER- PAINTED TO MATCH ADJACENT WALL MATERIAL
6. ALUMINUM CURTAIN WALL
7. HM DOOR
8. VENTILATION LOUVER- INTEGRATED INTO FRAME AND COLOUR MATCHED
9. PRECAST COPING
10. CONCRETE FOUNDATION WALL- MEDIUM – SANDBLAST
11. SCUPPER + DRAINAGE TROUGH
12. WOOD SIDING
13. GLULAM ROOF BEAM
14. OVERHEAD DOOR
15. LIGHT FIXTURE
16. FIXED SIGNAGE
17. DOOR OPERATOR PUSH BUTTON
18. ELECTRICAL OUTLET
19. HOSEBIB
20. PRECAST MASONRY SILL

No.	Date	Description
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Issue Record

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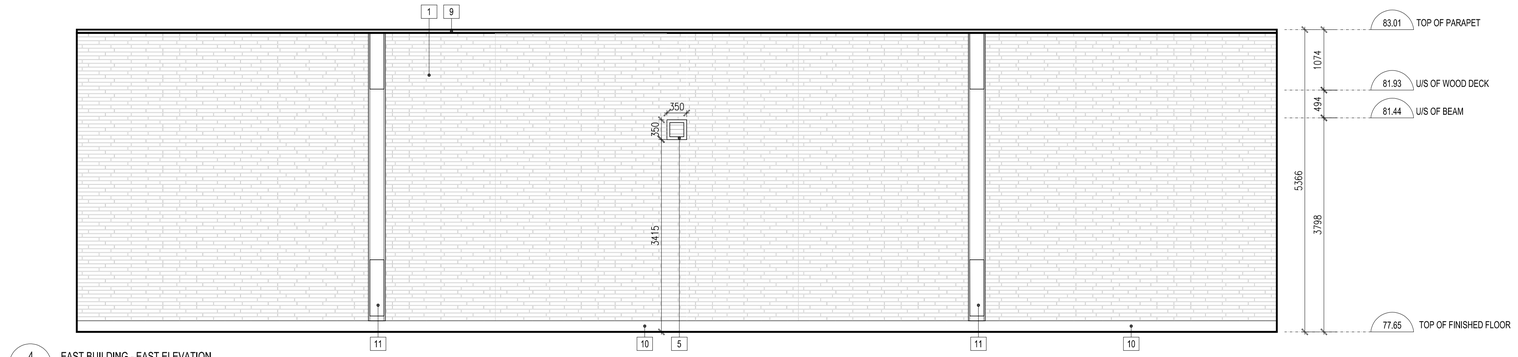
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

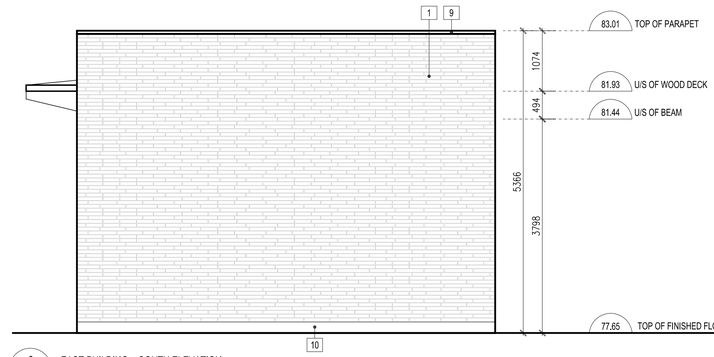
BUILDING ELEVATIONS
WEST BUILDING

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

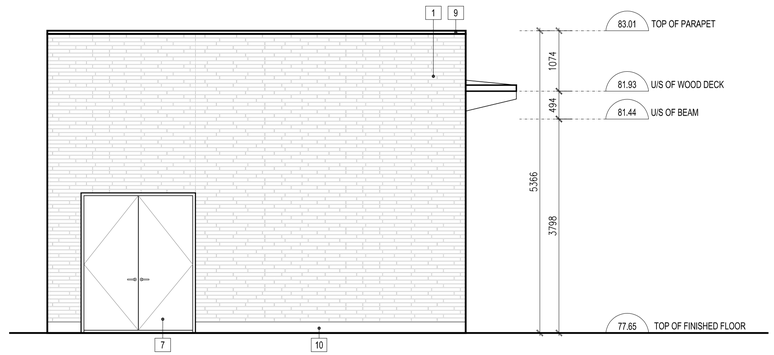
A300



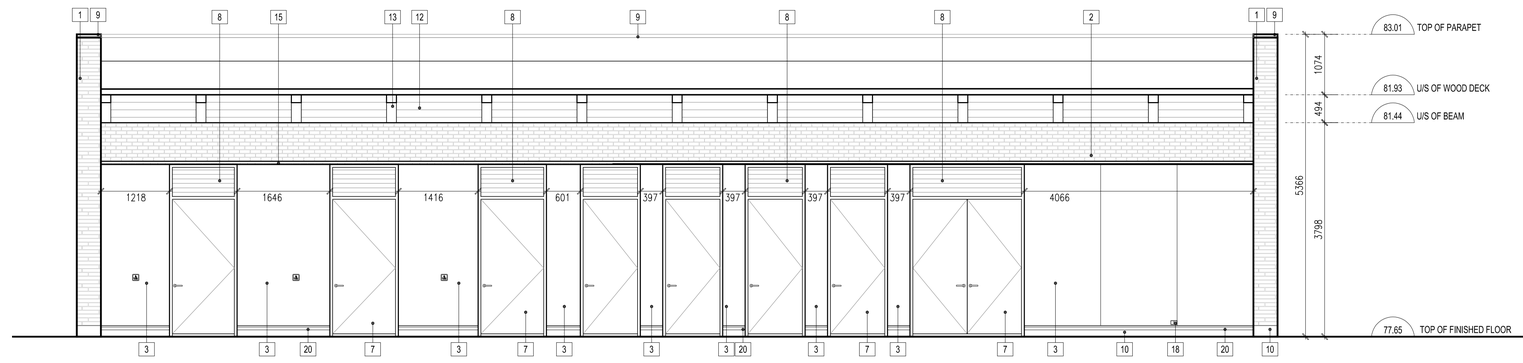
4 / A301 EAST BUILDING - EAST ELEVATION
Scale 1:50



3 / A301 EAST BUILDING - SOUTH ELEVATION
Scale 1:50



2 / A301 EAST BUILDING - NORTH ELEVATION
Scale 1:50



1 / A301 EAST BUILDING - WEST ELEVATION
Scale 1:50

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LEGEND

1. LINEAR MASONRY VENEER
2. GLAZED BRICK VENEER
3. METAL COMPOSITE PANEL
4. RESERVED
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Issue Record

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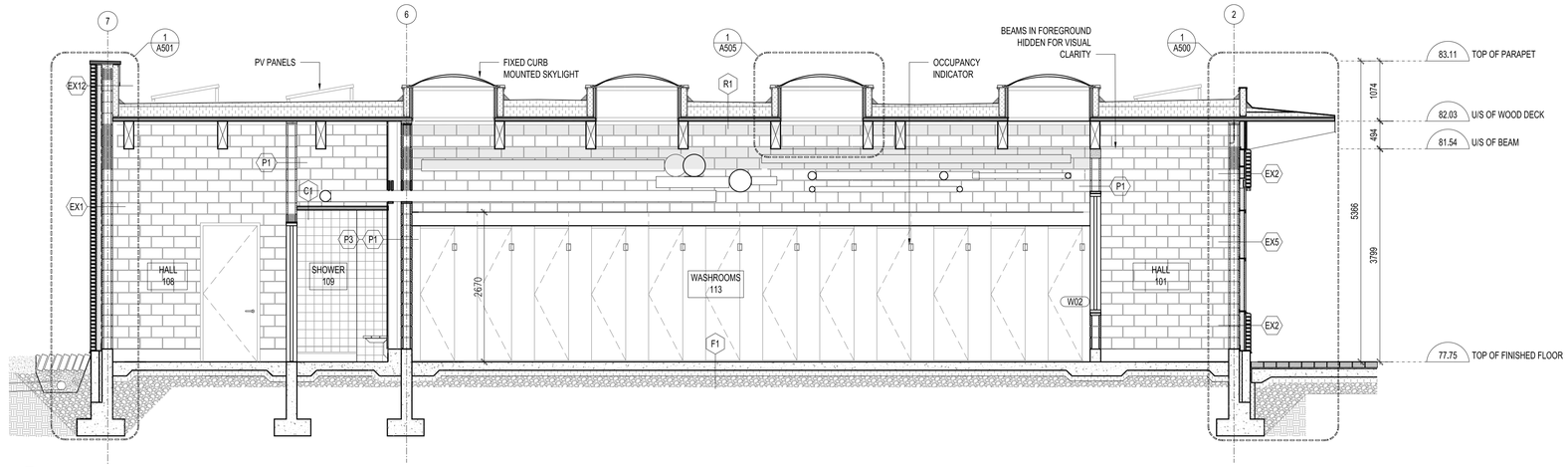
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

BUILDING ELEVATIONS
EAST BUILDING

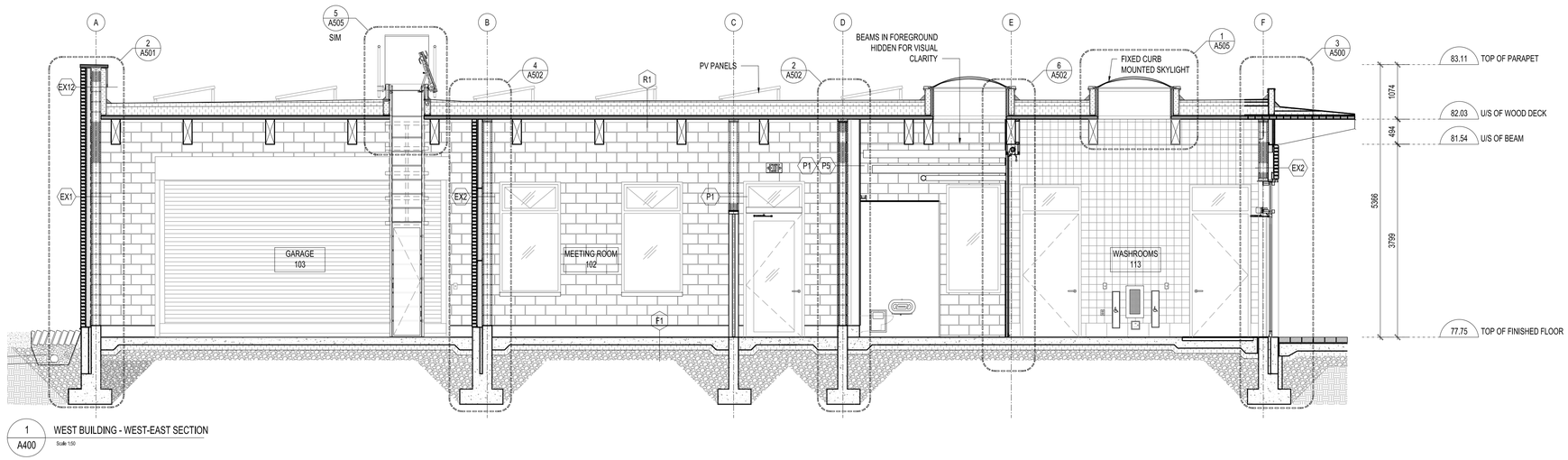
Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A301



2 A400 WEST BUILDING - NORTH-SOUTH SECTION

Scale 1:50



1 A400 WEST BUILDING - WEST-EAST SECTION

Scale 1:50

No.	Date	Description
6	2025-04-11	Issued for Tender
5	2024-09-18	Issued for Building Permit
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1	2022-07-31	Issued for costing

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1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

BUILDING SECTIONS-
WEST BUILDING

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A400

No.	Date	Description
6	2025-04-11	Issued for Tender
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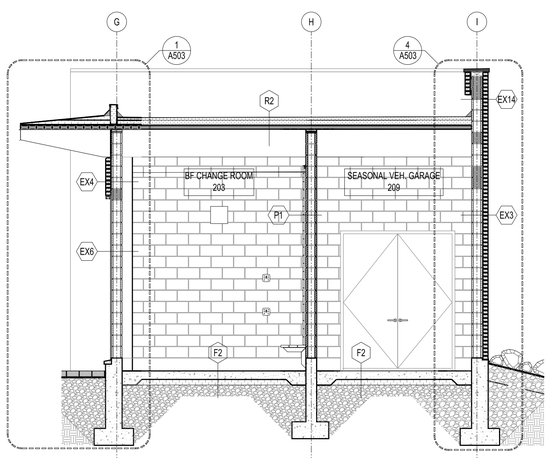
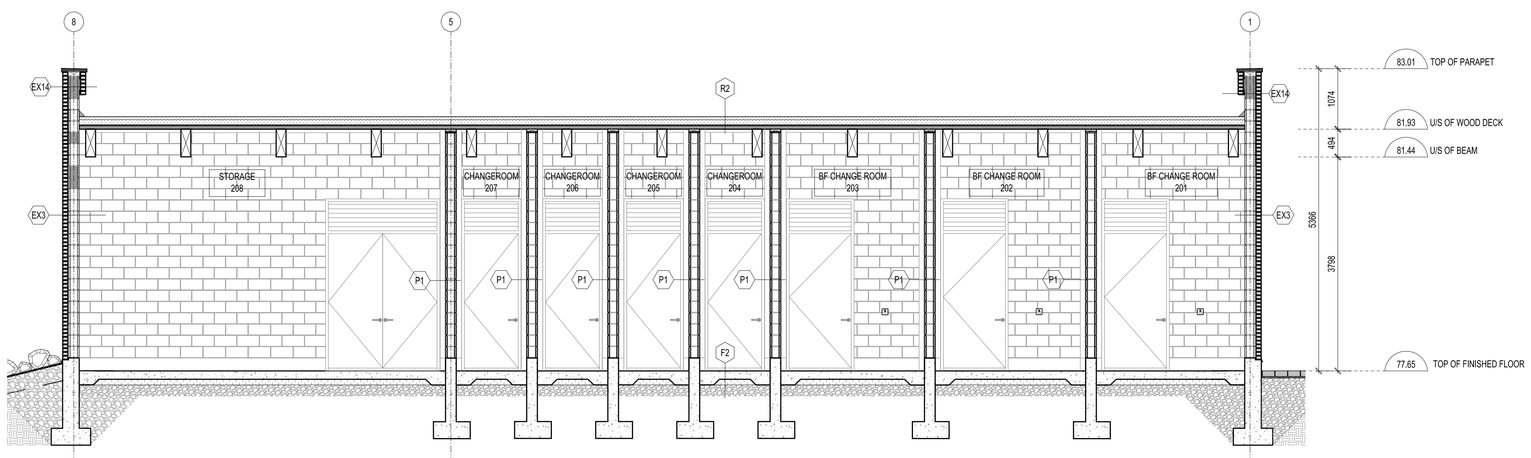
Issue Record



2 A401 EAST BUILDING - WEST-EAST SECTION
Scale 1:50



1 A401 EAST BUILDING - NORTH-SOUTH SECTION
Scale 1:50

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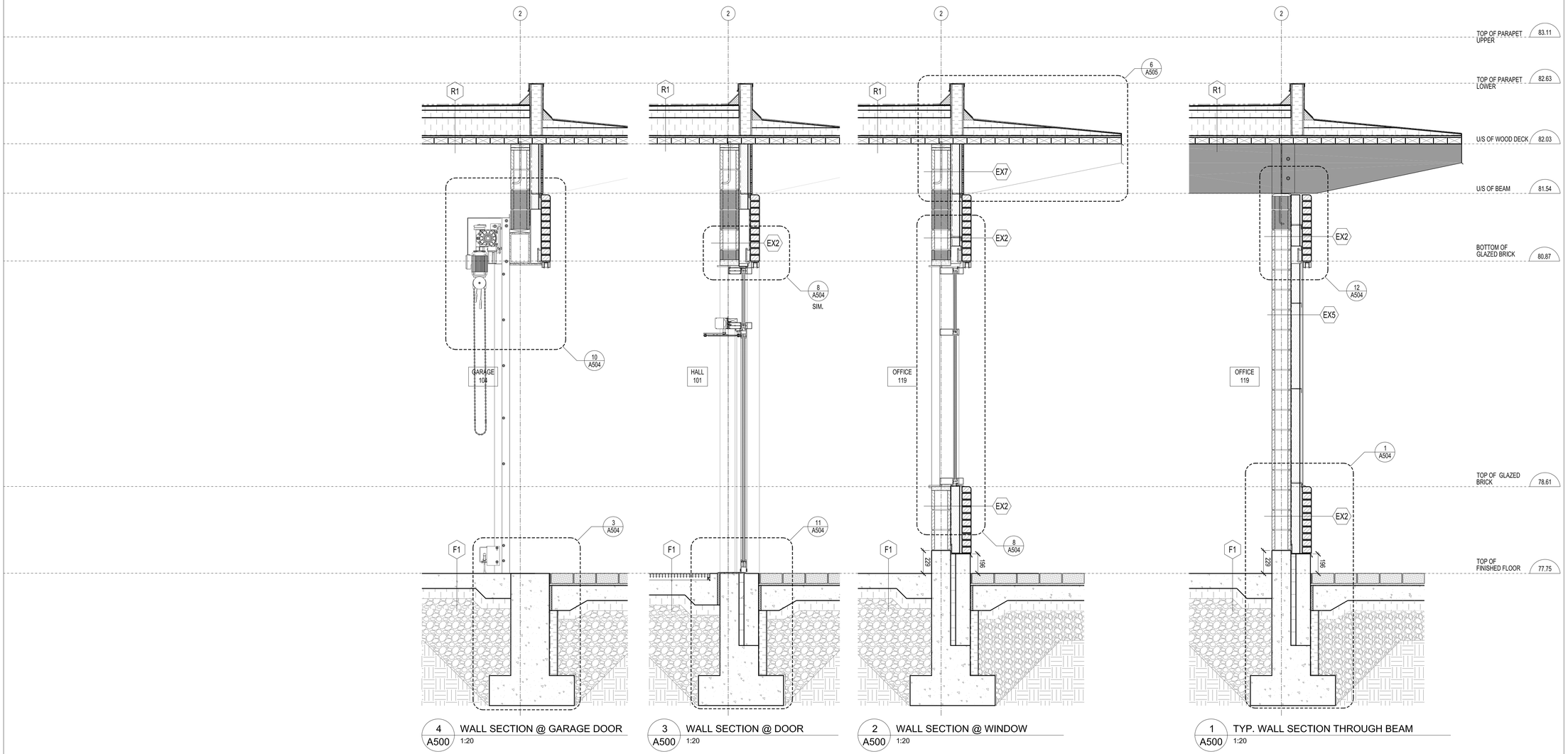
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

BUILDING SECTIONS-
EAST BUILDING

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A401



4 A500 WALL SECTION @ GARAGE DOOR 1:20

3 A500 WALL SECTION @ DOOR 1:20

2 A500 WALL SECTION @ WINDOW 1:20

1 A500 TYP. WALL SECTION THROUGH BEAM 1:20

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No.	Date	Description
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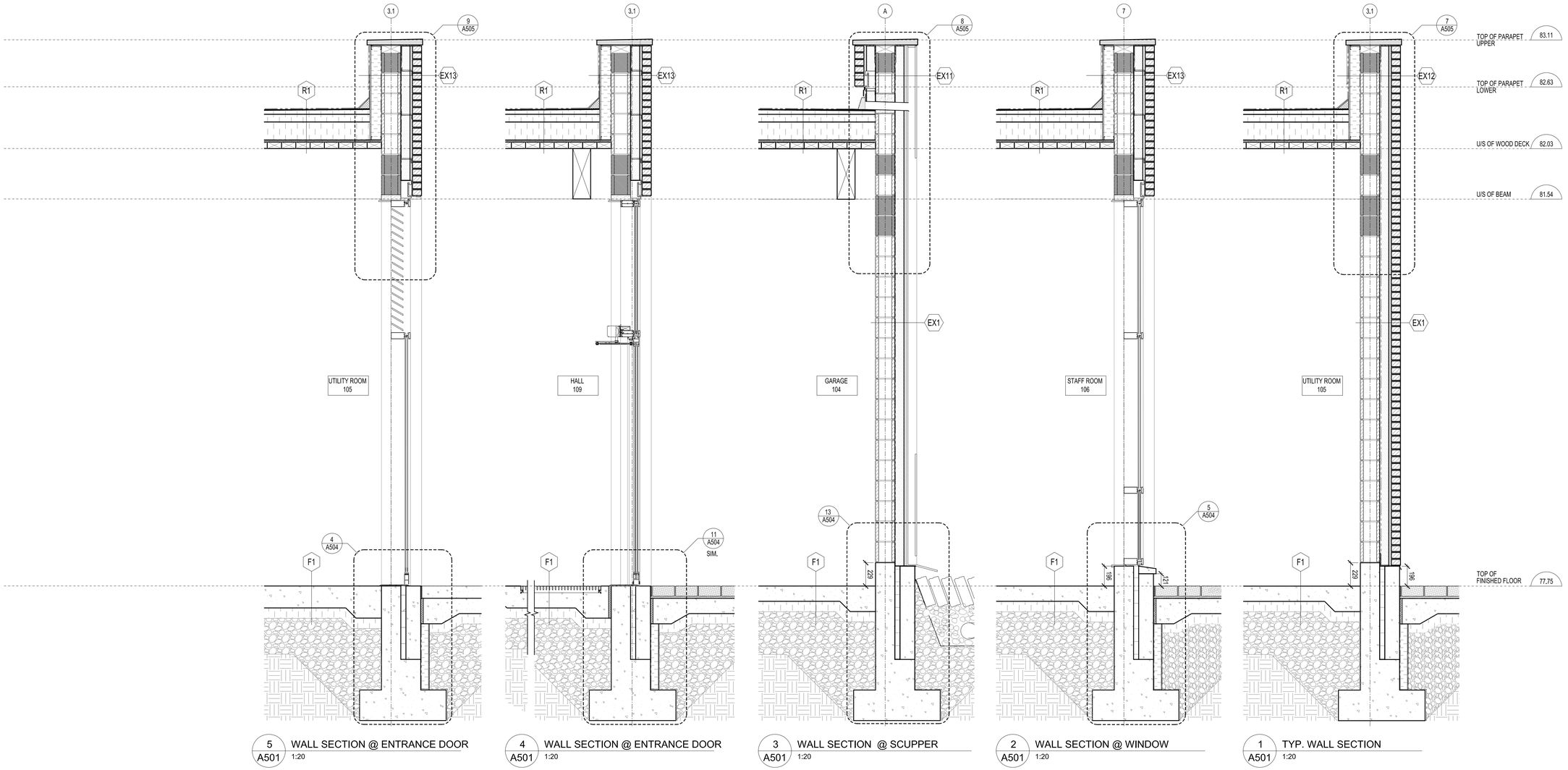
Scarborough, Toronto, ON

Drawing Title

WALL SECTIONS
WEST BUILDING

Print Date	2025-04-11
Scale	1:20
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A500



5 A501 WALL SECTION @ ENTRANCE DOOR 1:20

4 A501 WALL SECTION @ ENTRANCE DOOR 1:20

3 A501 WALL SECTION @ SCUPPER 1:20

2 A501 WALL SECTION @ WINDOW 1:20

1 A501 TYP. WALL SECTION 1:20

No.	Date	Description
4	2025-04-11	Issued for Tender
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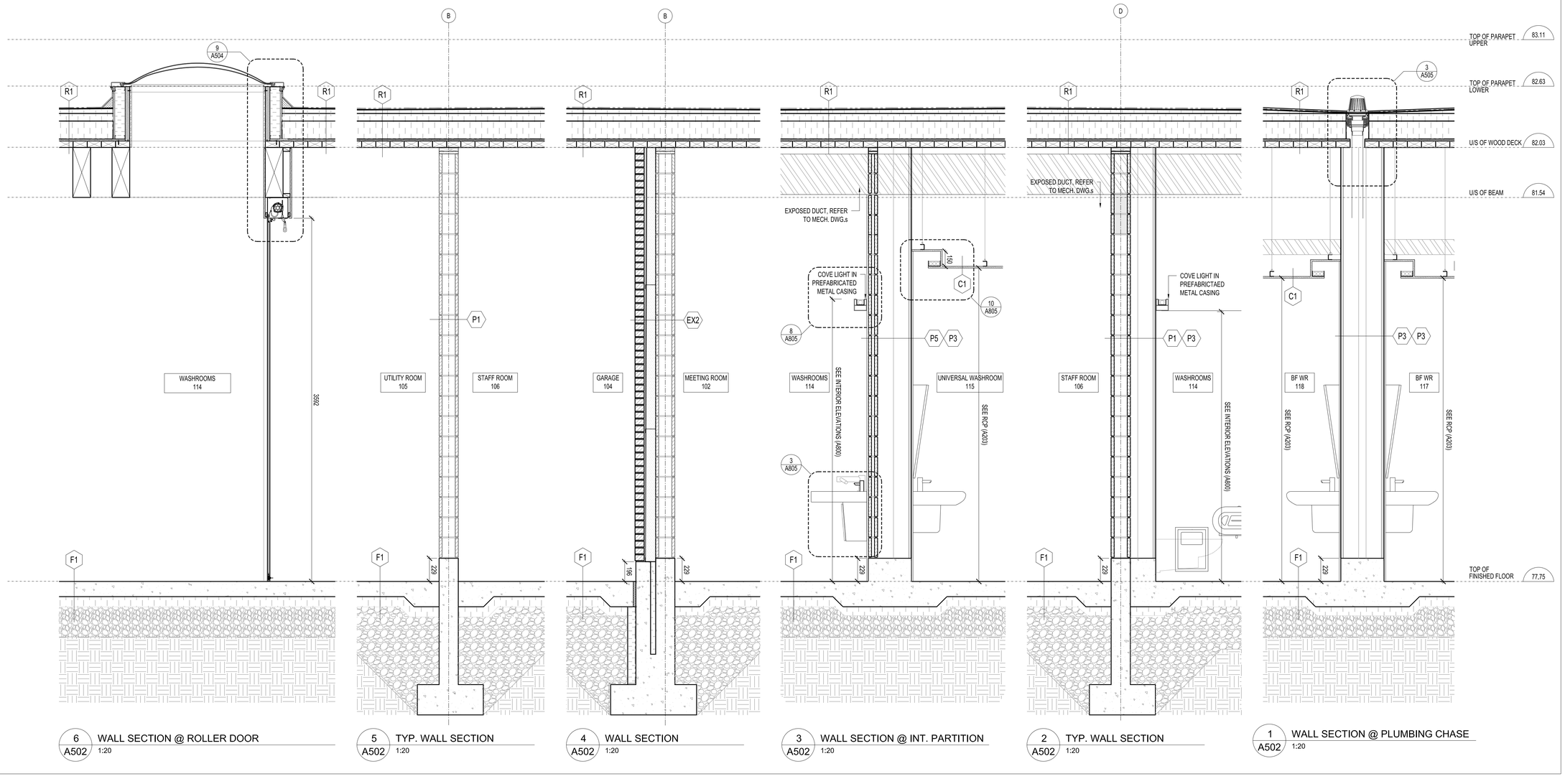
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

WALL SECTIONS
WEST BUILDING

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A501



6 A502 WALL SECTION @ ROLLER DOOR 1:20

5 A502 TYP. WALL SECTION 1:20

4 A502 WALL SECTION 1:20

3 A502 WALL SECTION @ INT. PARTITION 1:20

2 A502 TYP. WALL SECTION 1:20

1 A502 WALL SECTION @ PLUMBING CHASE 1:20

No.	Date	Description
4	2025-04-11	Issued for Tender
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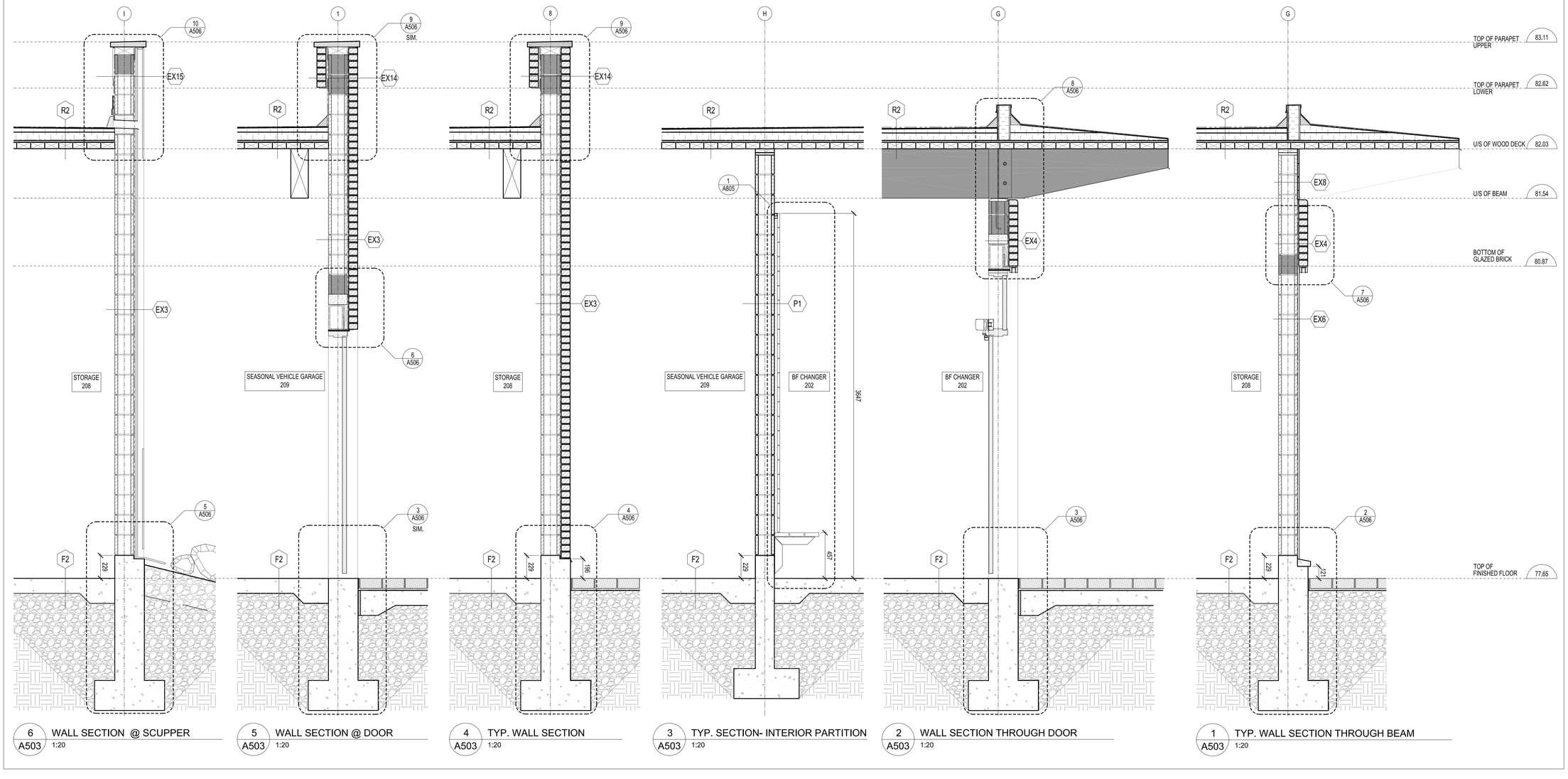
Drawing Title

WALL SECTIONS
WEST BUILDING

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A502



6 A503 WALL SECTION @ SCUPPER 1:20

5 A503 WALL SECTION @ DOOR 1:20

4 A503 TYP. WALL SECTION 1:20

3 A503 TYP. SECTION- INTERIOR PARTITION 1:20

2 A503 WALL SECTION THROUGH DOOR 1:20

1 A503 TYP. WALL SECTION THROUGH BEAM 1:20

4	2025-04-11	Issued for Tender
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1	2023-01-31	Issued for 50% Costing
No.	*Date*	*Description*

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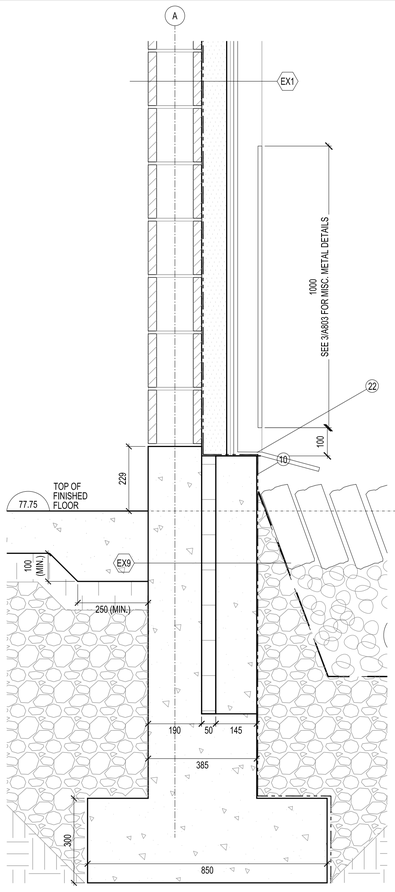
Drawing Title

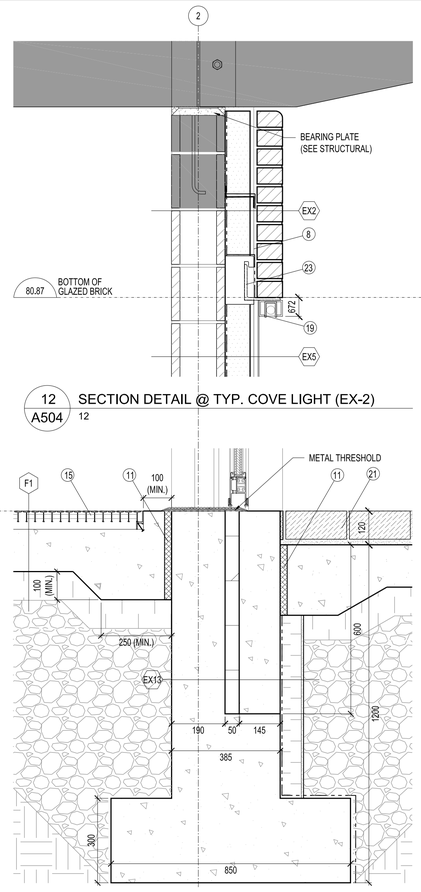
WALL SECTIONS
EAST BUILDING

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A503

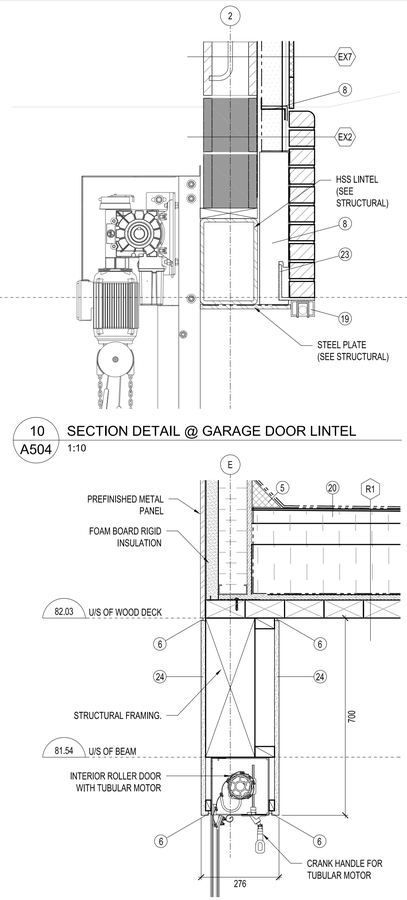


13 A504 SECTION DETAIL @ SCUPPER
1:10



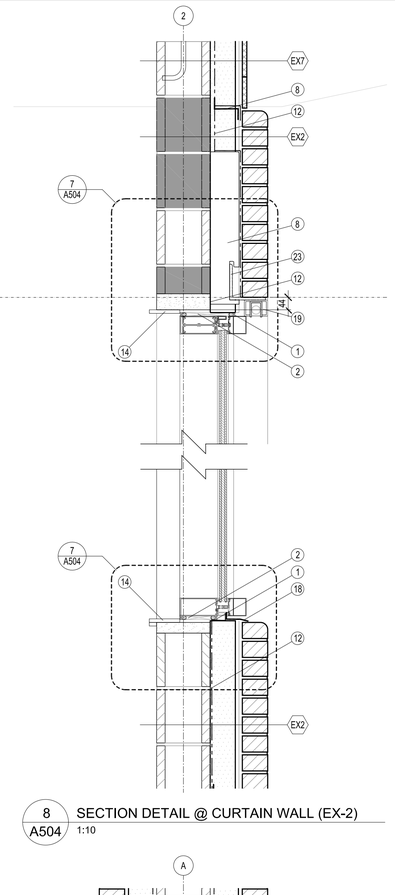
12 A504 SECTION DETAIL @ TYP. COVE LIGHT (EX-2)
12

11 A504 SECTION DETAIL @ DOOR
1:10

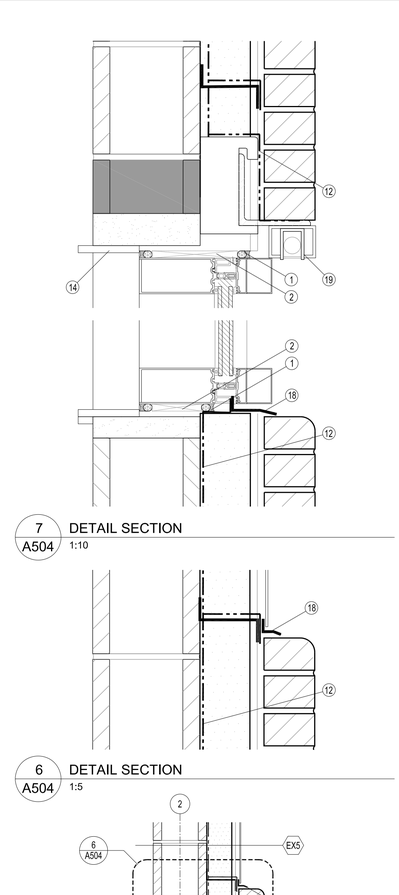


10 A504 SECTION DETAIL @ GARAGE DOOR LINTEL
1:10

9 A504 SECTION DETAIL @ INTERIOR ROLLER DOOR
1:10

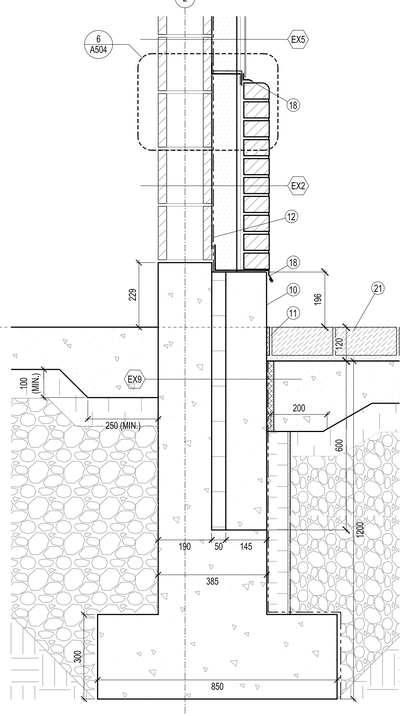


8 A504 SECTION DETAIL @ CURTAIN WALL (EX-2)
1:10



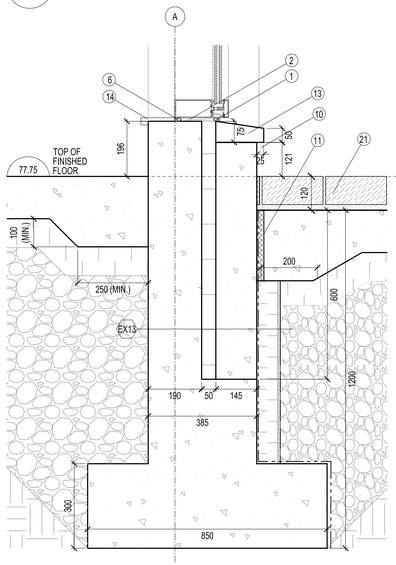
7 A504 DETAIL SECTION
1:10

6 A504 DETAIL SECTION
1:5

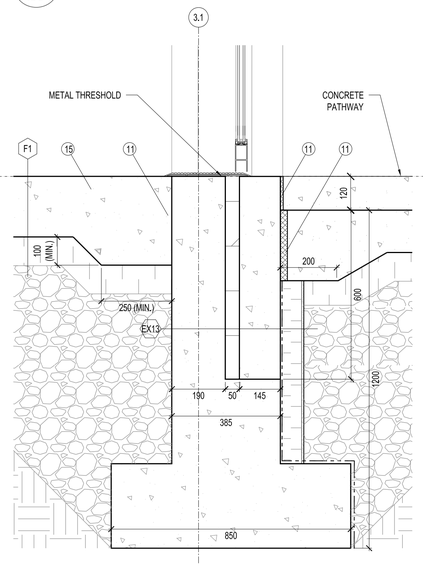


2 A504 SECTION DETAIL @ GARAGE DOOR LINTEL
1:10

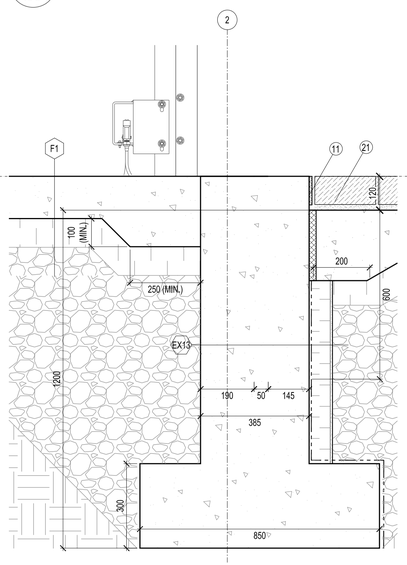
1 A504 SECTION DETAIL @EX-5 & EX-2 FOUNDATION TYP.
1:10



5 A504 DETAIL @ CURTAINWALL (EX-13)
1:10



4 A504 SECTION DETAIL @ UTILITY ROOM DOOR
1:10



3 A504 SECTION DETAIL @ GARAGE DOOR
1:10

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR CHECKING ALL DIMENSIONS AND CONDITIONS ON THE JOB.

DO NOT SCALE DRAWINGS.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

LEGEND

1. SEALANT & BACKER ROD
2. BLOCKING
3. PLYWOOD
4. PREFINISHED METAL FLASHING C/W DRIP EDGE & STARTER CLEAT
5. CONTINUOUS FIBRE CANT STRIP
6. CAULKING
7. PHOTOVOLTAIC PANELS ON BALLASTED BASE
8. Z-GIRT
9. ROOF DRAIN
10. CONCRETE FOUNDATION WALL, SANDBLASTED FINISH AT EXPOSED AREAS
11. EXPANSION JOINT
12. AIR BARRIER, LAP AND SEAL AT JAMBS, TYP.
13. MASONRY SILL
14. SOLID SURFACING WINDOW SILL / HEAD
15. FOOT GRILLE
16. PREFABRICATED CURB FOR ROOFTOP MECHANICAL EQUIPMENT
17. THRU-WALL FLASHING
18. HEAD FLASHING
19. EXTERIOR COVE LIGHT FIXTURE IN PREFABRICATED METAL CASING
20. TAPERED INSULATION
21. CONCRETE UNIT PAVERS
22. CUSTOM FABRICATED STEEL SCUPPER
23. SHELF ANGLE
24. 16mm DRYWALL

No.	Date	Description
3	2025-04-11	Issued for Tender
2	2024-09-18	Issued for Building Permit
1	2024-08-16	Issued for 100% Costing

Issue Record

dtah
DTAH Architects Limited
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Toronto, Ontario
M5V 3C1
T 416 968 7908
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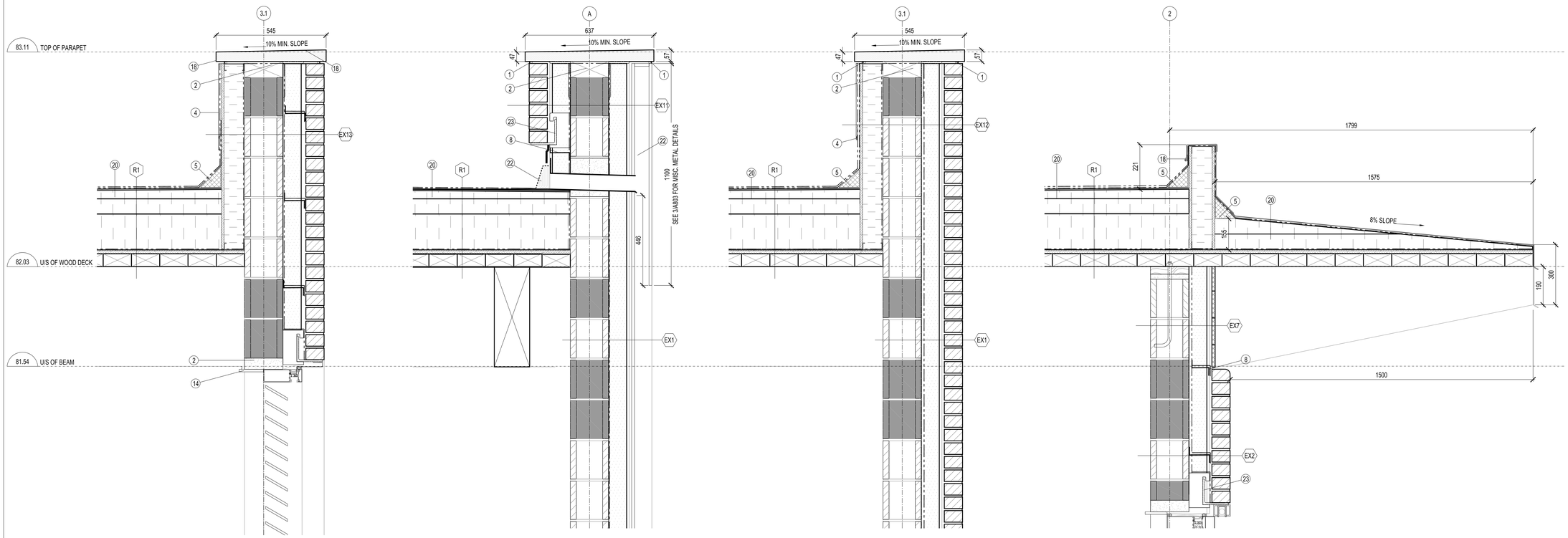
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

SECTION DETAILS
WEST BUILDING

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A504

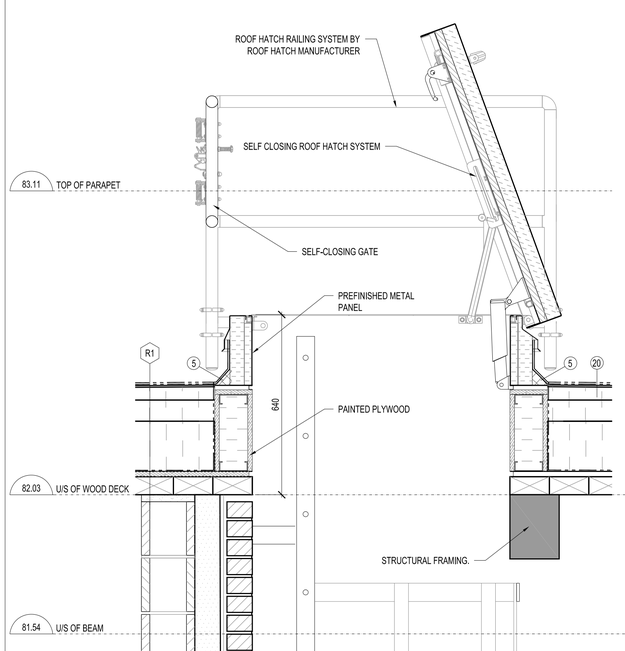


9 A505 SECTION DETAIL @ PARAPET (EX-13) TYP.
1:10

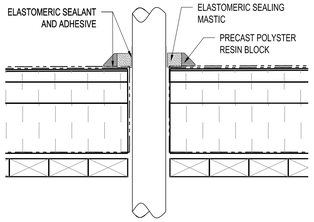
8 A505 SECTION DETAIL @ PARAPET (EX-11) W/SCUPPER
1:10

7 A505 SECTION DETAIL @ PARAPET (EX-12) TYP.
1:10

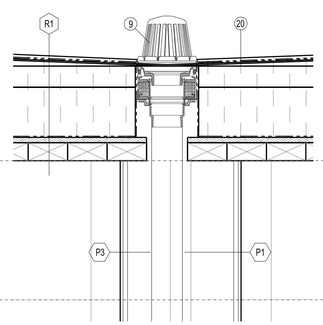
6 A505 SECTION DETAIL @ PARAPET AND ROOF OVERHANG - TYPICAL
1:10



5 A505 SECTION DETAIL @ ROOF HATCH
1:10



4 A505 CONDUIT PENETRATION DETAIL TYP.
1:10



3 A505 SECTION DETAIL @ ROOF DRAIN
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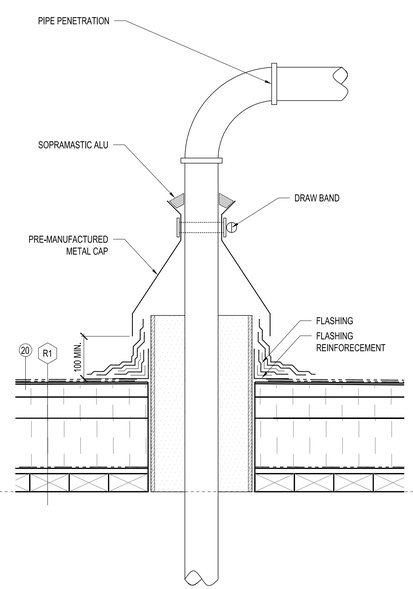
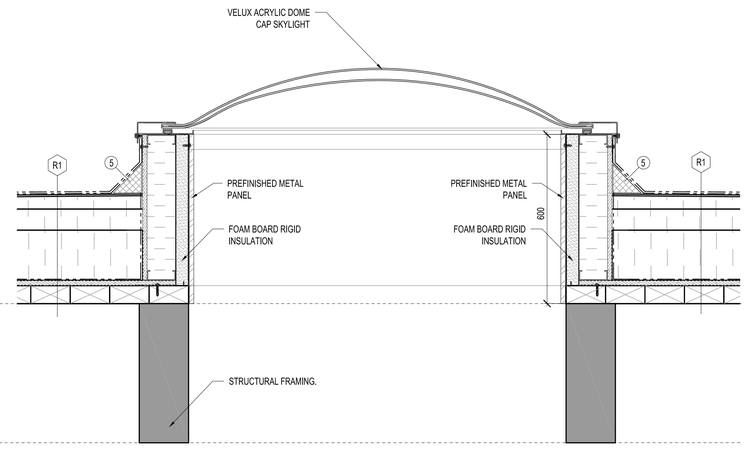


2 A505 SECTION DETAIL @ PITCH POCKET - TYPICAL
1:10



1 A505 SECTION DETAIL @ SKYLIGHT- TYPICAL
1:10

LEGEND

1. SEALANT & BACKER ROD
2. BLOCKING
3. PLYWOOD
4. PREFINISHED METAL FLASHING C/W DRIP EDGE & STARTER CLEAT
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6. CAULKING
7. PHOTOVOLTAIC PANELS ON BALLASTED BASE
8. Z-GIRT
9. ROOF DRAIN
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12. AIR BARRIER, LAP AND SEAL AT JAMBS, TYP.
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21. CONCRETE UNIT PAVERS
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24. 16mm DRYWALL

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Drawing Title

ROOF SECTION DETAILS
WEST BUILDING

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
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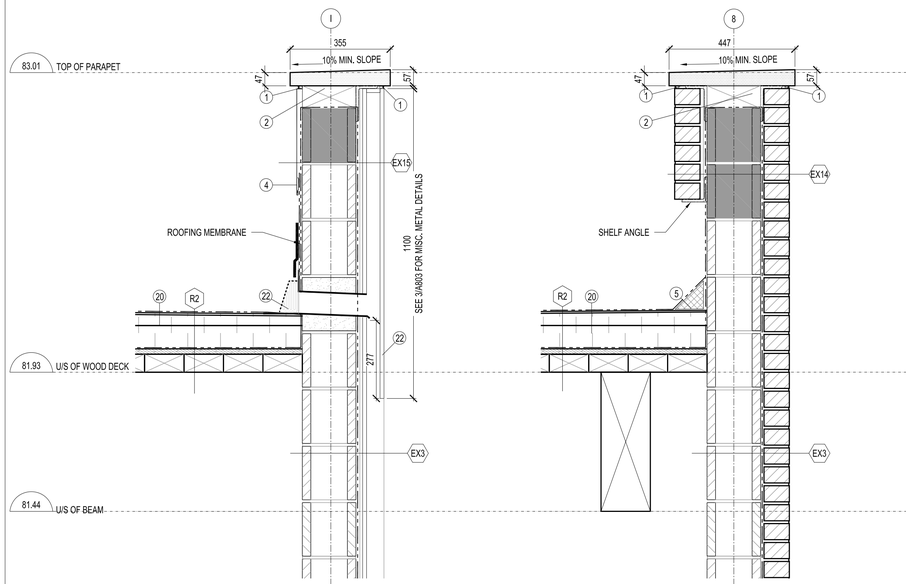
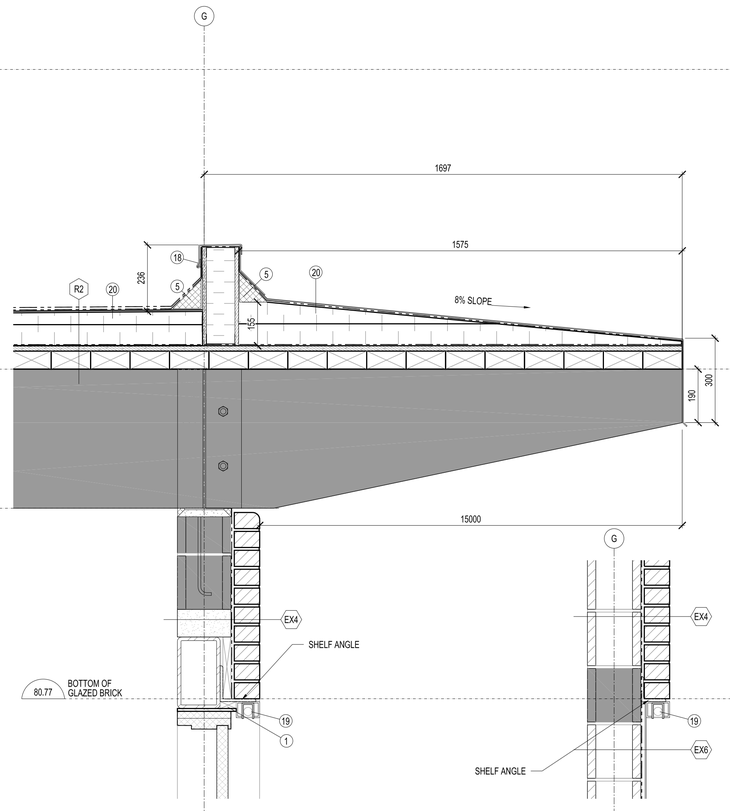
A505



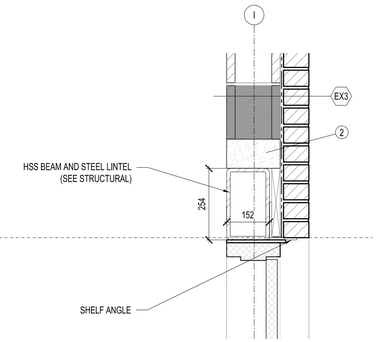
10 A506 SECTION DETAIL @ PARAPET (EX-15) W/ SCUPPER
1:10

9 A506 SECTION DETAIL @ PARAPET (EX-14) TYP.
1:10

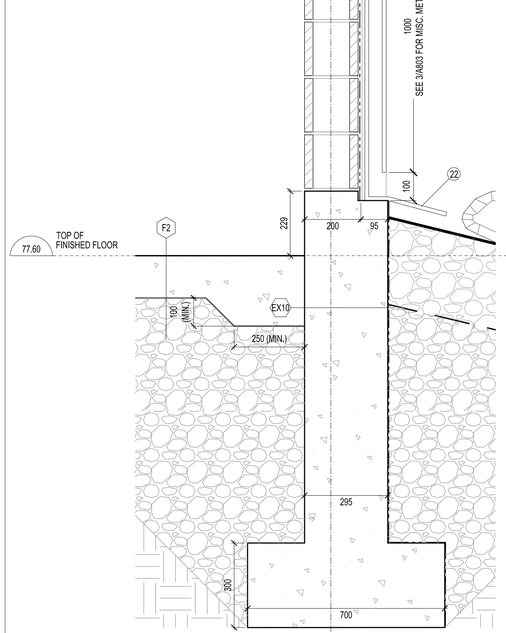


8 A506 SECTION DETAIL @ HM DOOR HEAD
1:10

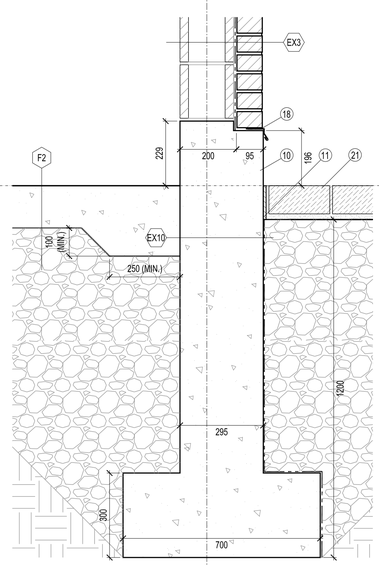
7 A506 SECTION DETAIL @ COVE LIGHT (EX-4)
1:10



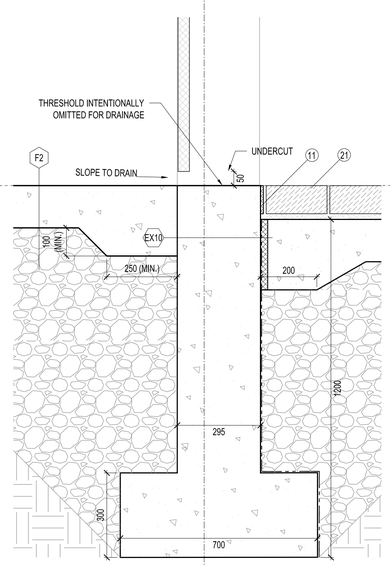
6 A506 SECTION DETAIL @ GARAGE DOOR LINTEL
1:10



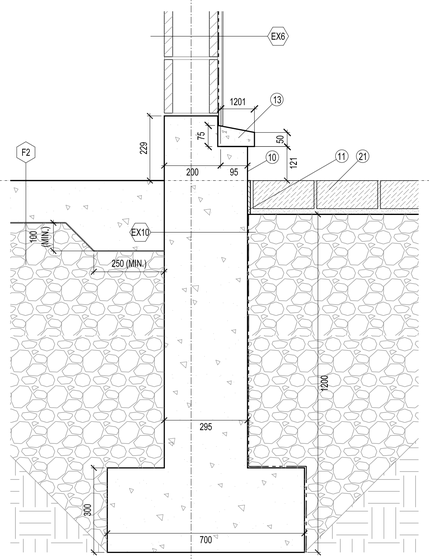
5 A506 SECTION DETAIL @ SCUPPER (EX-3) TYP.
1:10



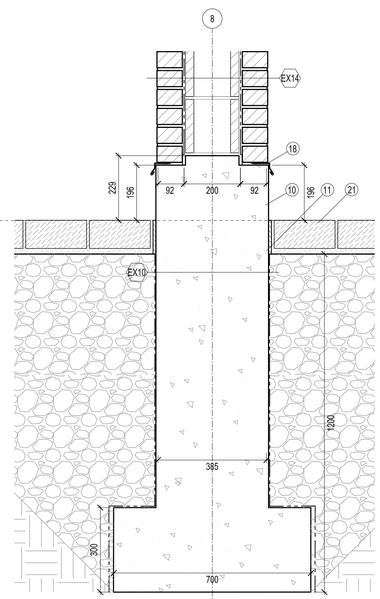
4 A506 SECTION DETAIL @ EX-3 FOUNDATION TYP.
1:10



3 A506 SECTION DETAIL @ HM DOOR (EX-4) TYP.
1:10



2 A506 SECTION DETAIL @ HM DOOR (EX-4) TYP.
1:10



1 A506 SECTION DETAIL @ HM DOOR (EX-4) TYP.
1:10

LEGEND

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Drawing Title

SECTION DETAILS
EAST BUILDING

Print Date	2025-04-11
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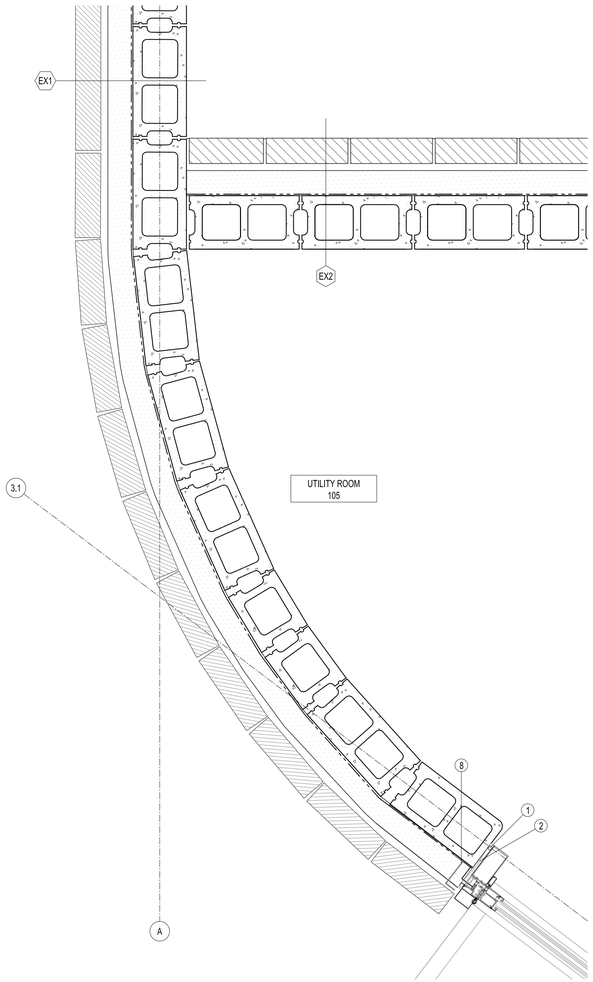
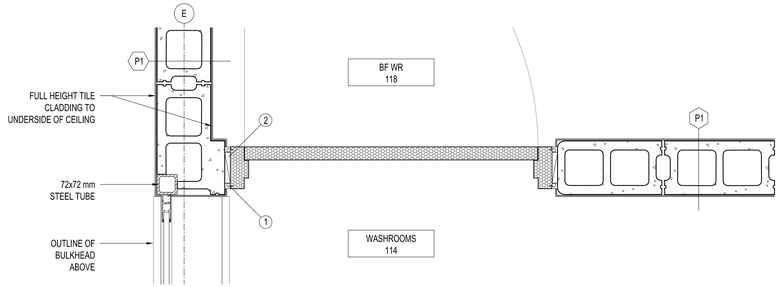
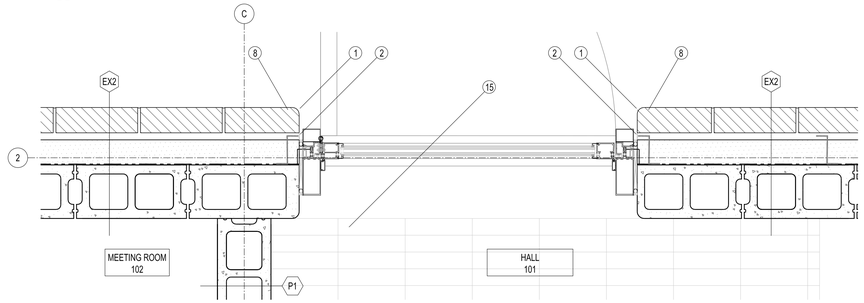
A506



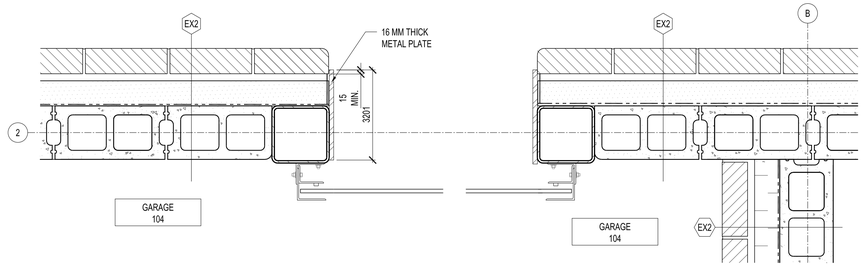
9 A600 PLAN DETAIL @ CURVED WALL AND CURTAIN WALL DOOR D105
1:10



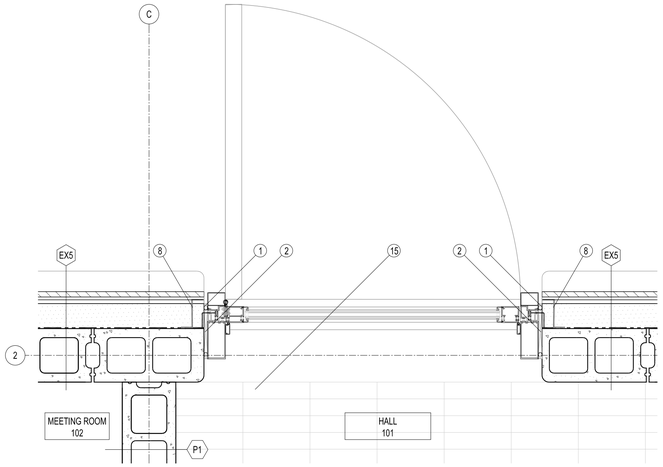
7 A600 PLAN DETAIL @ INTERIOR ROLLER DOOR
1:10



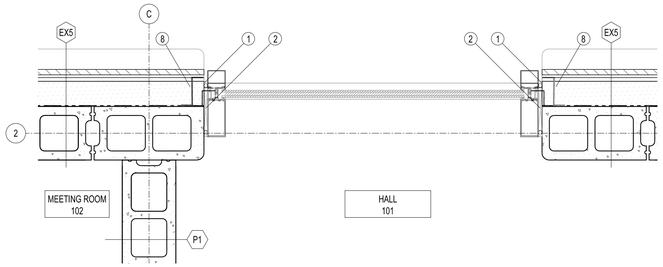
6 A600 PLAN DETAIL @ CURTAIN WALL DOOR D101A - GLAZED BRICK VENEER
1:10



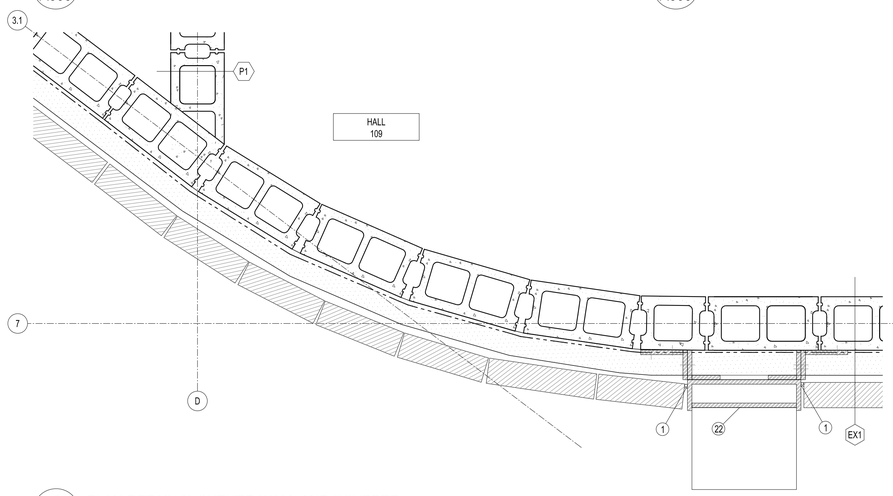
5 A600 PLAN DETAIL @ OVERHEAD GARAGE DOOR D104
1:10



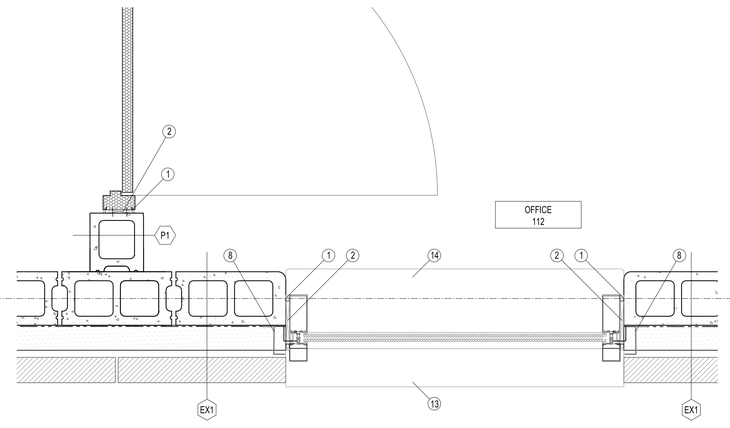
3 A600 PLAN DETAIL @ CURTAIN WALL DOOR D101A - METAL COMPOSITE PANEL
1:10



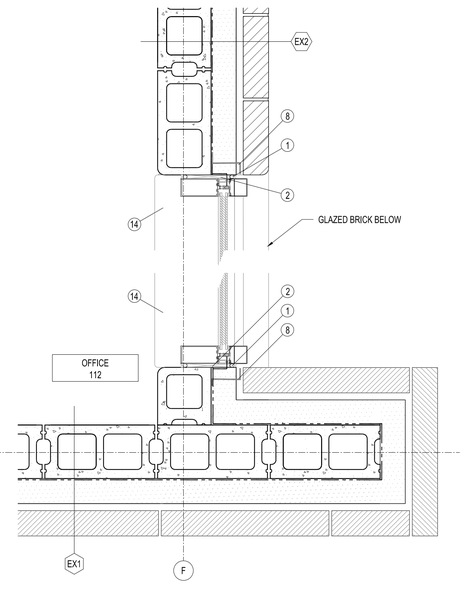
2 A600 PLAN DETAIL @ CURTAIN WALL CW03 - METAL COMPOSITE PANEL
1:10



8 A600 PLAN DETAIL @ CURVED WALL AND SCUPPER
1:10



4 A600 PLAN DETAIL @ CURTAIN WALL CW04 & HM DOOR D112
1:10



1 A600 PLAN DETAIL @ CURTAIN WALL CW01
1:10

LEGEND

1. SEALANT & BACKER ROD
2. BLOCKING
3. PLYWOOD
4. PREFINISHED METAL FLASHING C/W DRIP EDGE & STARTER CLEAT
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18. HEAD FLASHING
19. EXTERIOR COVE LIGHT FIXTURE
20. TAPERED INSULATION
21. CONCRETE UNIT PAVERS
22. PREFABRICATED METAL SCUPPER. SEE MISCELLANEOUS METALS A-803 FOR DETAIL

No.	Date	Description
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1	2022-07-29	Issued for Costing

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Drawing Title

PLAN DETAILS
WEST BUILDING

Print Date	2025-04-11
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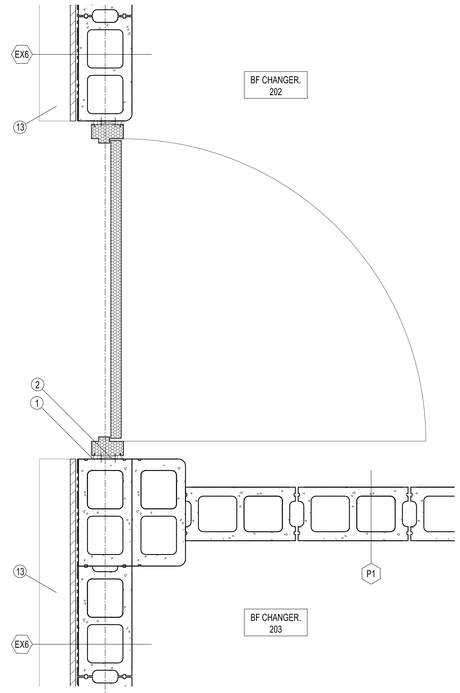
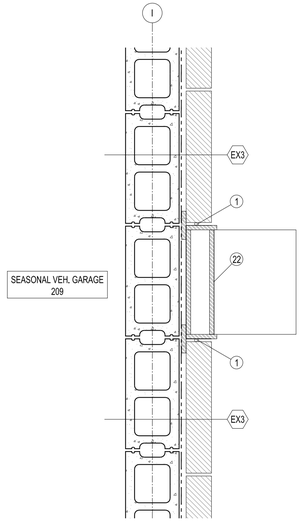
Checked by	MT

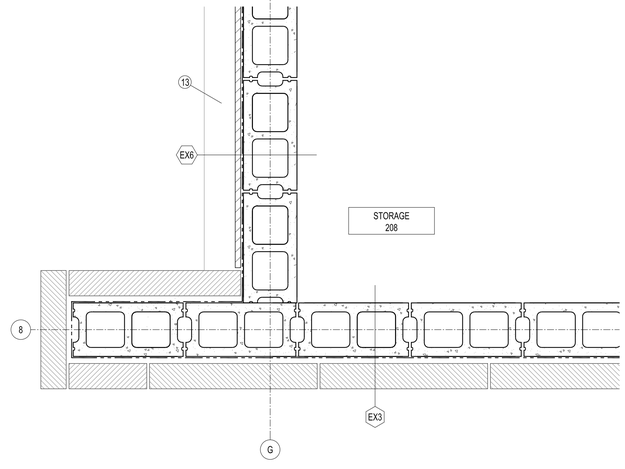
A600



2 A601 PLAN DETAIL @ HM DOOR D202 (TYP.)
1:10



3 A601 PLAN DETAIL @ SCUPPER
1:10



1 A601 PLAN DETAIL @ CORNER TRANSITION
1:10

LEGEND

1. SEALANT & BACKER ROD
2. BLOCKING
3. PLYWOOD
4. PREFINISHED METAL FLASHING C/W DRIP EDGE & STARTER CLEAT
5. CONTINUOUS FIBRE CANT STRIP
6. SEMI-RIGID INSULATION
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PLAN DETAILS
EAST BUILDING

Print Date	2025-04-11
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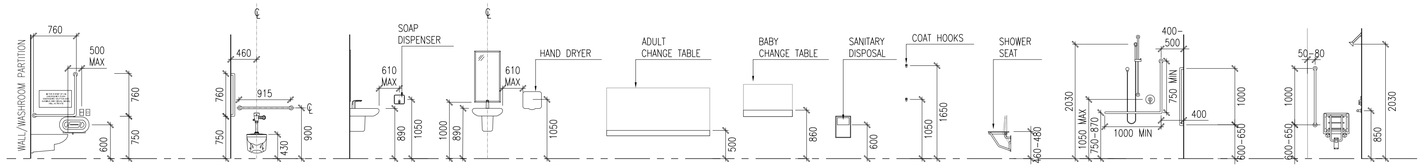
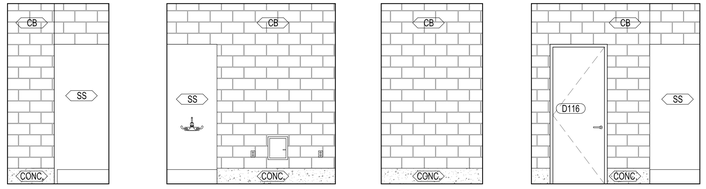
Checked by	MT

A601

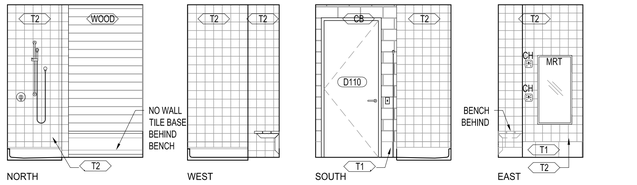


NOTES:
1. PROVIDE BLOCKING AS REQUIRED FOR ALL WALL-MOUNTED ACCESSORIES

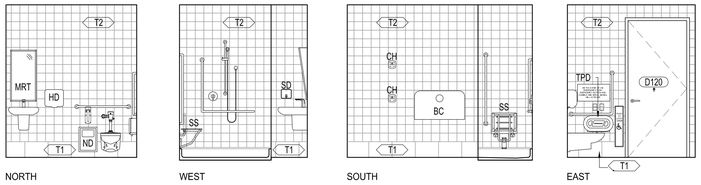
14 / A800 — TYPICAL MOUNTING HEIGHTS
Scale 1:50



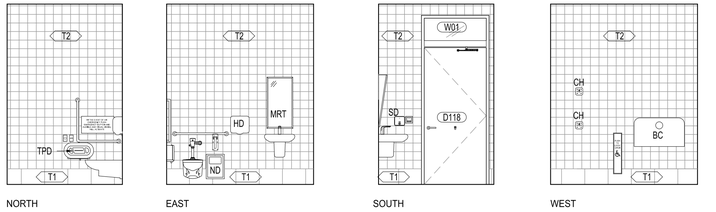
13 / A800 — 116 JANITOR
Scale 1:50



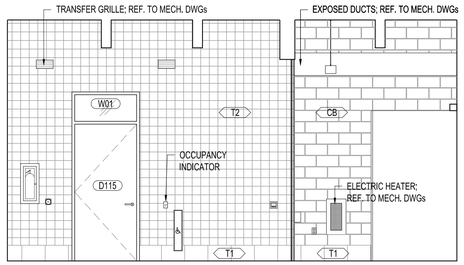
12 / A800 — 110 SHOWER | TYPICAL
Scale 1:50



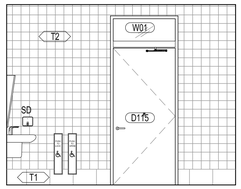
11 / A800 — 108 STAFF WASHROOM
Scale 1:50



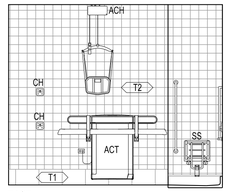
10 / A800 — 118 BARRIER FREE WR | TYPICAL
Scale 1:50

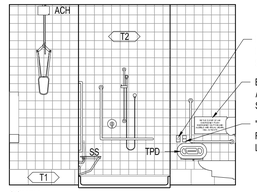


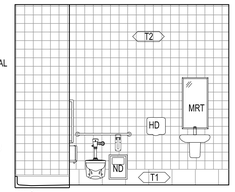
9 / A800 — 114 WASHROOM- NORTH
Scale 1:50

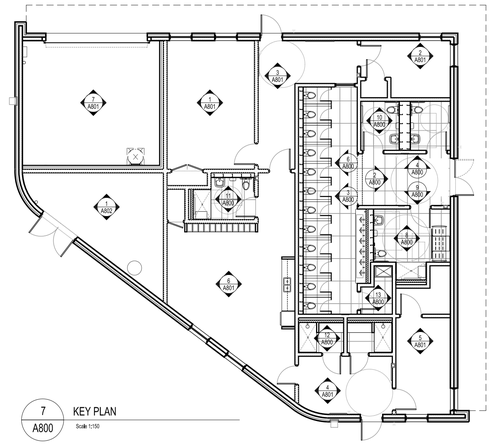


8 / A800 — 115 UNIVERSAL WASHROOM
Scale 1:50

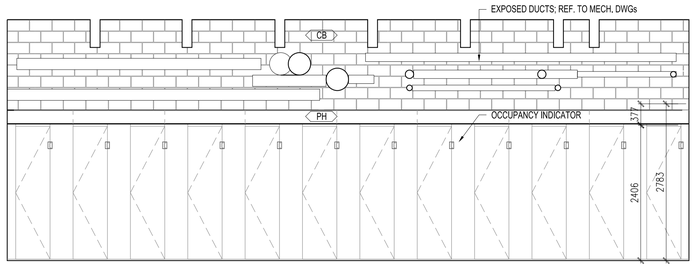




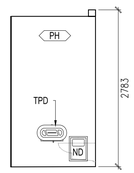




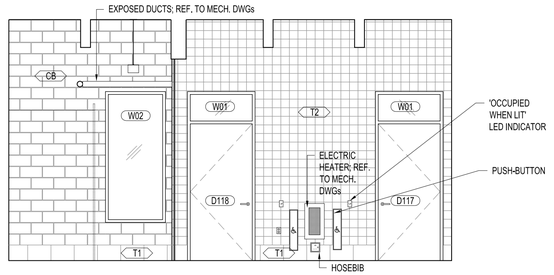
7 / A800 — KEY PLAN
Scale 1:150



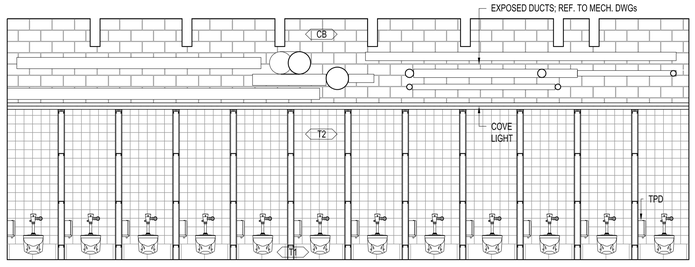
6 / A800 — 114 WASHROOM- WEST
Scale 1:50



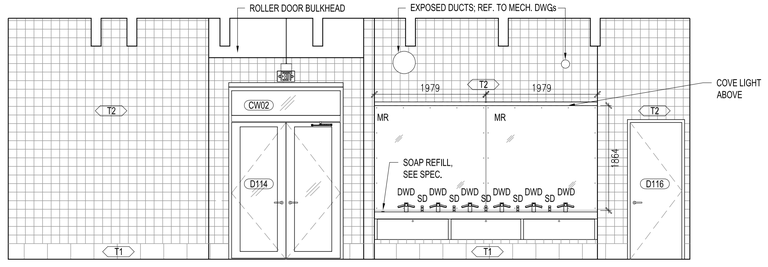
5 / A800 — 114 WASHROOM STALL
Scale 1:50



4 / A800 — 114 WASHROOM- SOUTH
Scale 1:50



3 / A800 — 114 WASHROOM- WEST
Scale 1:50



2 / A800 — 114 WASHROOM- EAST
Scale 1:50

WC ACCESSORY SCHEDULE

LABEL	DESCRIPTION	SPEC	COLOUR
TPD	TOILET PAPER DISPENSER	BOBRICK SURFACE-MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER	STAINLESS STEEL
MR	MIRROR	CUSTOM MADE POLISHED STAINLESS STEEL MIRROR ABOVE SINKS	STAINLESS STEEL
MRT	MIRROR FIXED POSITION TILT	BOBRICK B-293 2436 FIXED POSITION TILT MIRROR	STAINLESS STEEL
HD	HAND DRYER	XLERATOR ECO HAND DRYER	STAINLESS STEEL
SD	SOAP DISPENSER	BOBRICK CONTURA B-4112 SERIES SURFACE-MOUNTED SOAP DISPENSER	STAINLESS STEEL
BC	BABY CHANGING STATION	KOALA KARE HORIZONTAL STAINLESS STEEL WALL MOUNTED BABY CHANGE TABLE	STAINLESS STEEL
ND	SANITARY NAPKIN DISPOSAL	BOBRICK B-353 RECESSED SANITARY NAPKIN DISPOSAL	STAINLESS STEEL
GB	GRAB BARS	REF. TO SPEC IN MASTER PRODUCT LIST	STAINLESS STEEL
CH	COAT HOOK- SINGLE HOOK	BOBRICK B983 VANDAL-RESISTANT CLOTHES HOOK	STAINLESS STEEL
ACT	ADULT CHANGE TABLE	MAX- ABILITY PRESSALIT CARE 3000 HEIGHT ADJUSTABLE CHANGING TABLE	---
ACH	ADULT CHANGE TABLE CEILING HOIST	GULDMANN, GH3 - PROFESSIONAL CEILING HOIST AND ACCESSORIES	WHITE
SS	SHOWER SEAT	BOBRICK SOLID PHENOLIC FOLDING SHOWER/DRESSING AREA SEAT, B-5191	PHENOLIC
ASD	AUTOMATIC SOAP DISPENSER	EZFILL AUTOMATIC DECK MOUNTED SOAP DISPENSER	STAINLESS STEEL
DWD	DYSON WASH/DRY FIXTURE	DYSON AIRBLADE™ WASH + DRY 247659-01	STAINLESS STEEL

1 / A800 — TOILET FIXTURES SCHEDULE
Scale: NTS

LEGEND
T1- FLOOR TILE
T2 - WALL TILE
WD- COMPOSITE WOOD PAINTED SLAT
CB - CONCRETE BLOCK
CONC - FOUNDATION WALL
GWB - GYPSUM WALL BOARD
PH - PHENOLIC
SS - STAINLESS STEEL
SSB - STAINLESS STEEL BASE BOARD
GBV- GLAZED BRICK VENEER
AP- ACCESS PANEL. SEE MECHANICAL
WOOD - WOOD PANEL

No.	Date	Description
4	2025-04-11	Issued for Tender
3	2024-09-18	Issued for Building Permit
2	2024-08-16	Issued for 100% Costing
1	2023-01-31	Issued for 50% Costing

Issue Record

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DTAH Architects Limited
425 Adelaide St. W
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N

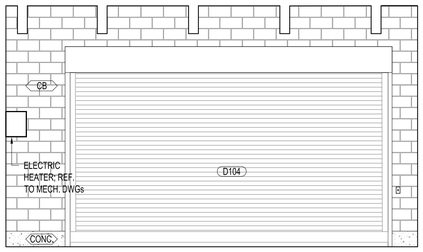
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

INTERIOR ELEVATIONS
WEST BUILDING

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A800



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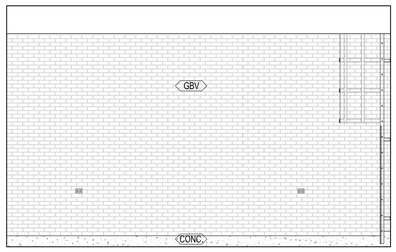

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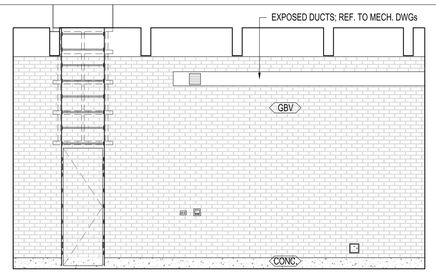

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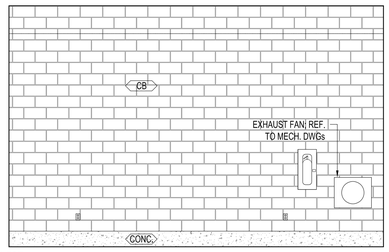
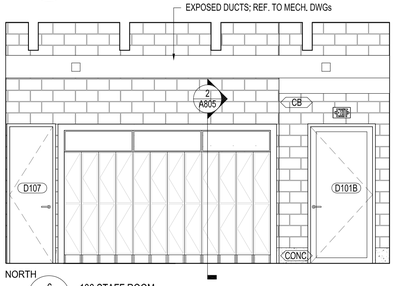


WEST

7 / A801 — 104 GARAGE
Scale 1:50



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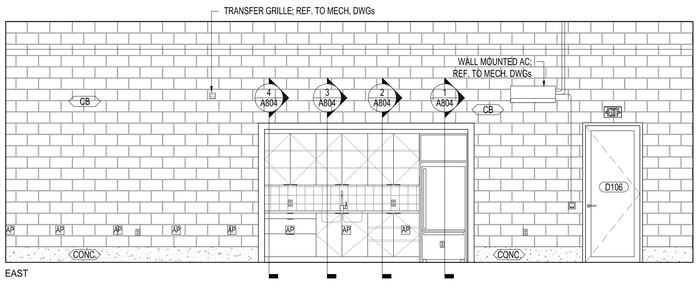

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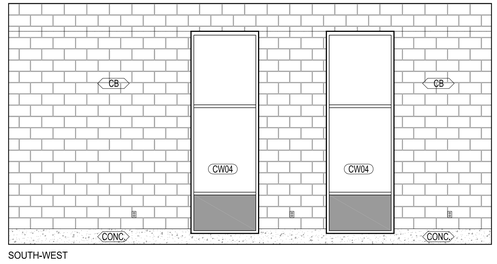
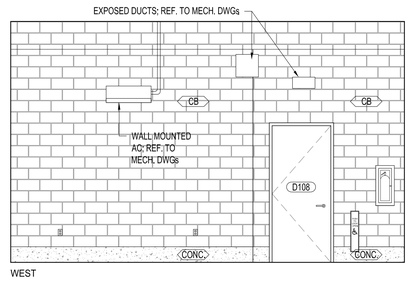
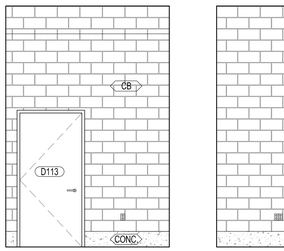


SOUTH-WEST



WEST

6 / A801 — 106 STAFF ROOM
Scale 1:50



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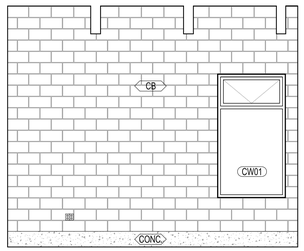

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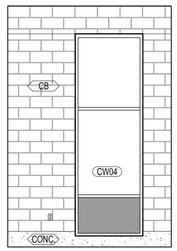

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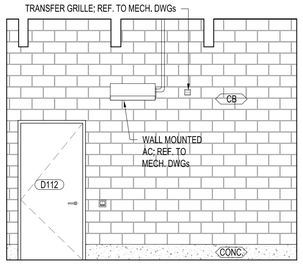
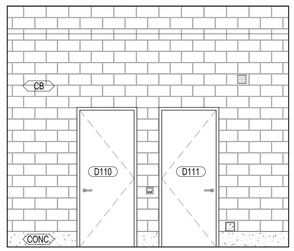


WEST

5 / A801 — 112 OFFICE
Scale 1:50



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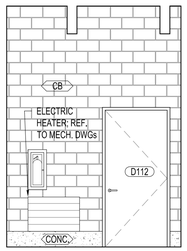

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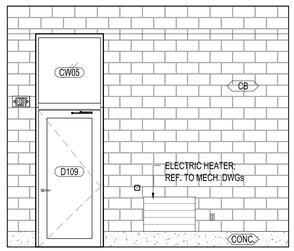

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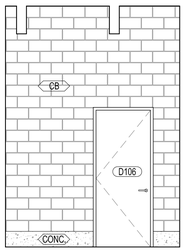
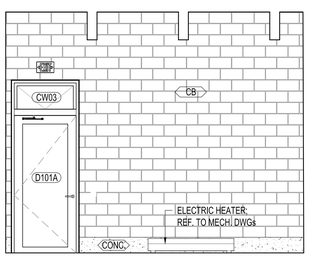


WEST

4 / A801 — 109 HALL
Scale 1:50



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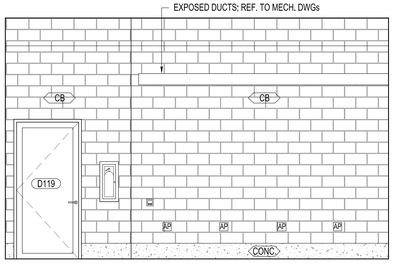

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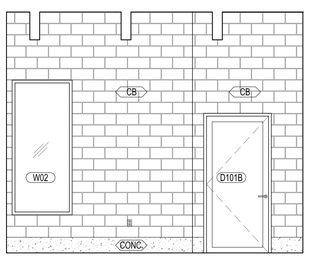

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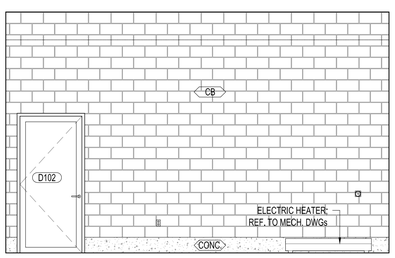

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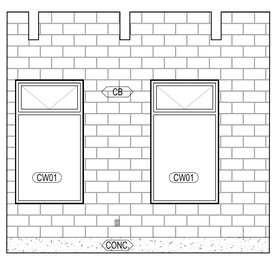

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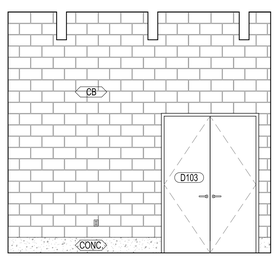
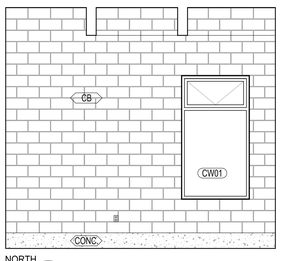


SOUTH

3 / A801 — 101 HALL
Scale 1:50



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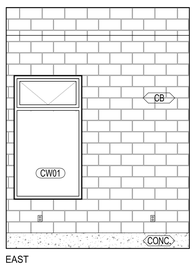

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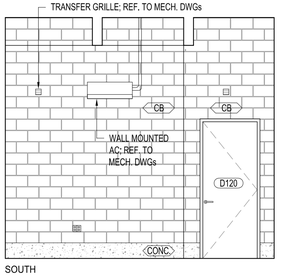

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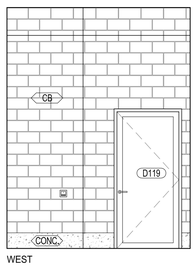
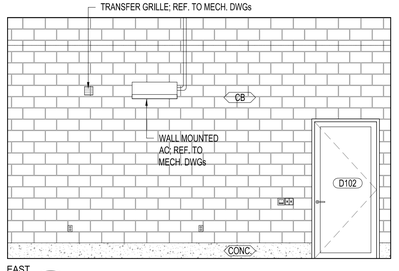


WEST

2 / A801 — 119 OFFICE
Scale 1:50



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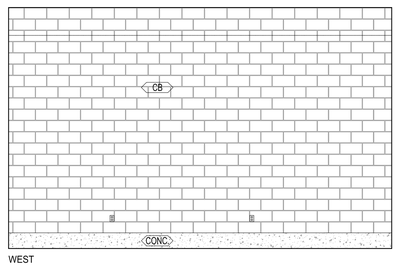


WEST

1 / A801 — 102 MEETING ROOM
Scale 1:50

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR CHECKING ALL DIMENSIONS AND CONDITIONS ON THE JOB.

DO NOT SCALE DRAWINGS.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

LEGEND
T1- FLOOR TILE
T2 - WALL TILE
WD- COMPOSITE WOOD PAINTED SLAT
CB - CONCRETE BLOCK
CONC - FOUNDATION WALL
GWB - GYPSUM WALL BOARD
PH - PHENOLIC
SS - STAINLESS STEEL
SSB - STAINLESS STEEL BASE BOARD
GBV- GLAZED BRICK VENEER
AP- ACCESS PANEL. SEE MECHANICAL
WOOD - WOOD PANEL

No.	Date	Description
3	2025-04-11	Issued for Tender
2	2024-09-18	Issued for Building Permit
1	2024-08-16	Issued for 100% Costing

Issue Record

dtah
DTAH Architects Limited
425 Adelaide St. W
Suite 600
Toronto, Ontario
M5V 3C1
T 416 968 7908
www.dtah.com

N

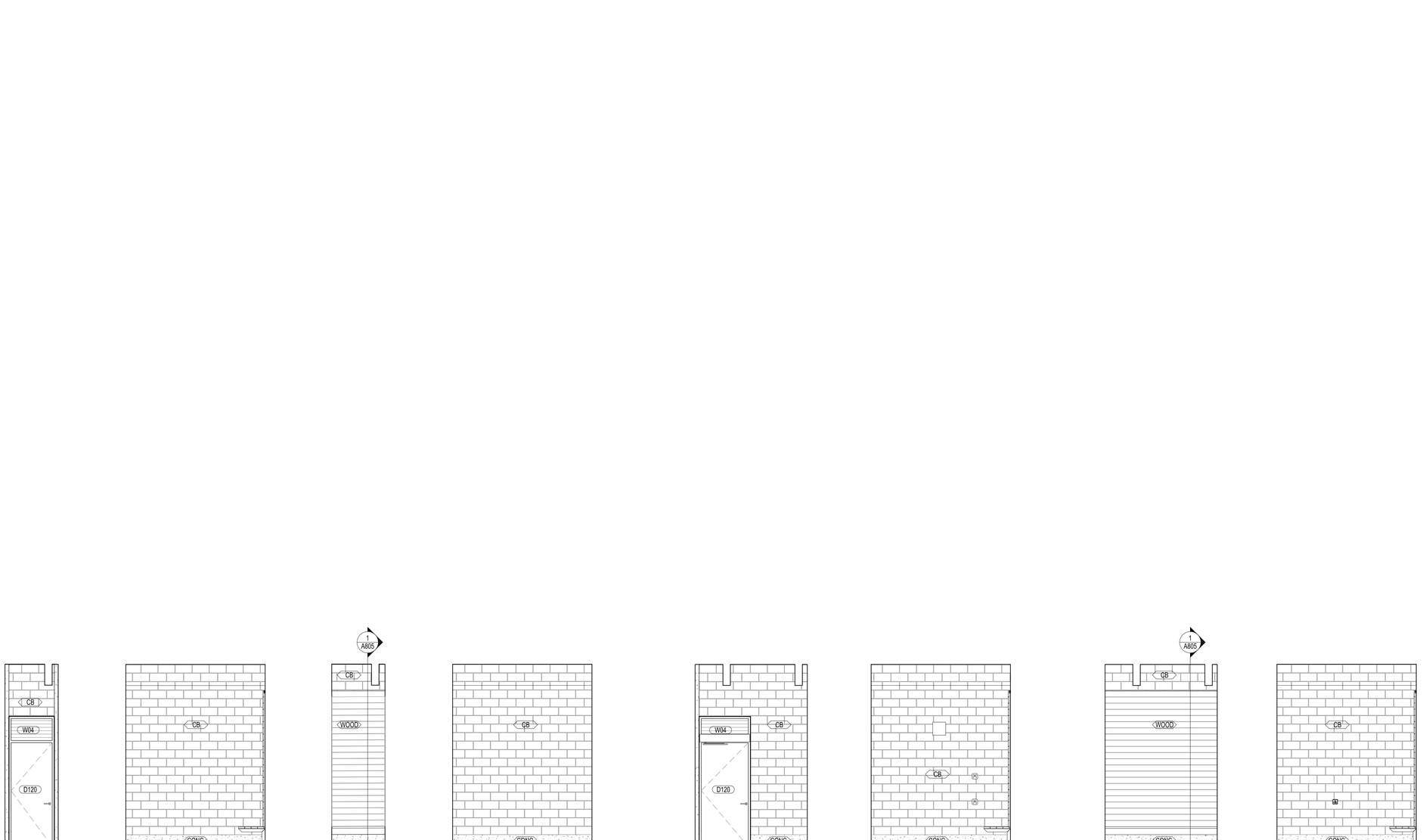
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

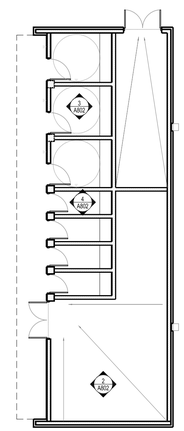
Drawing Title

INTERIOR ELEVATIONS
WEST BUILDING

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A801





1 / A802 KEY PLAN- EAST BUILDING
Scale 1:150

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR CHECKING ALL DIMENSIONS AND CONDITIONS ON THE JOB.

DO NOT SCALE DRAWINGS.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

LEGEND

T1- FLOOR TILE
T2 - WALL TILE
WD- COMPOSITE WOOD PAINTED SLAT
CB - CONCRETE BLOCK
CONC - FOUNDATION WALL
GWB - GYPSUM WALL BOARD
PH - PHENOLIC
SS - STAINLESS STEEL
SSB - STAINLESS STEEL BASE BOARD
GBV- GLAZED BRICK VENEER
AP- ACCESS PANEL. SEE MECHANICAL
WOOD - WOOD PANEL

No.	Date	Description
4	2025-04-11	Issued for Tender
3	2024-09-18	Issued for Building Permit
2	2024-08-16	Issued for 100% Costing
1	2023-01-31	Issued for 50% Costing

Issue Record

DTAH Architects Limited
425 Adelaide St. W
Suite 600
Toronto, Ontario
M5V 3C1
T 416 968 7908
www.dtah.com

N

BLUFFER'S PARK EAST WASHROOM

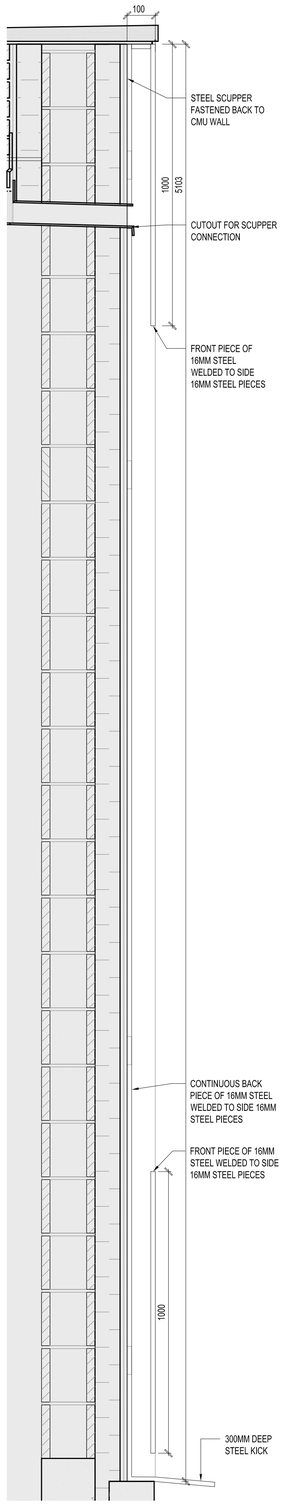
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

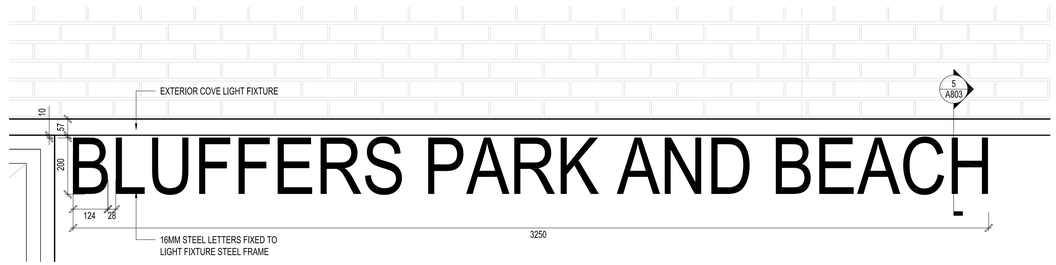
INTERIOR ELEVATIONS EAST AND WEST BUILDINGS

Print Date	2025-04-11
Scale	1:50
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

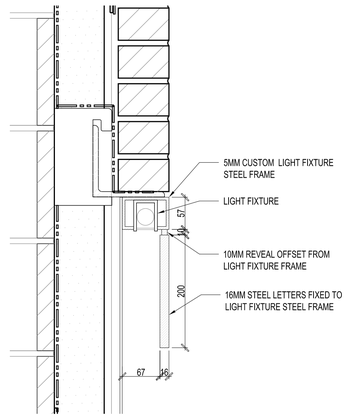
A802



3 A803 SCUPPER SECTION
Scale: 1:10



4 A803 FRONT ELEVATION - BLUFFERS SIGN
Scale: 1:10



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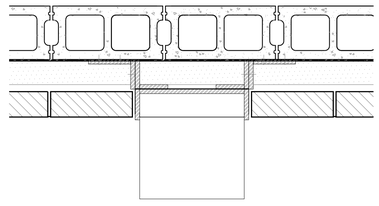

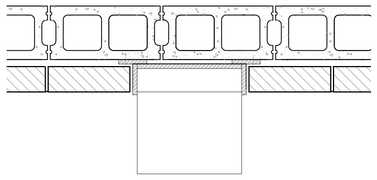

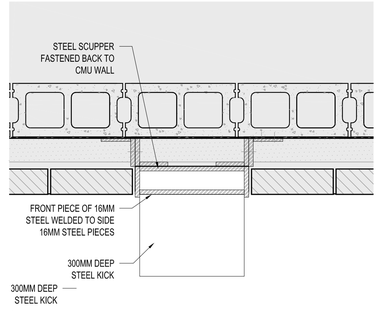

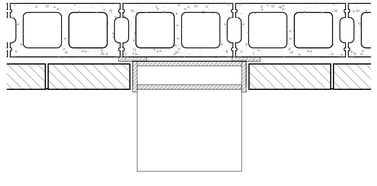

2 A803 SCUPPER PLAN-SECTION
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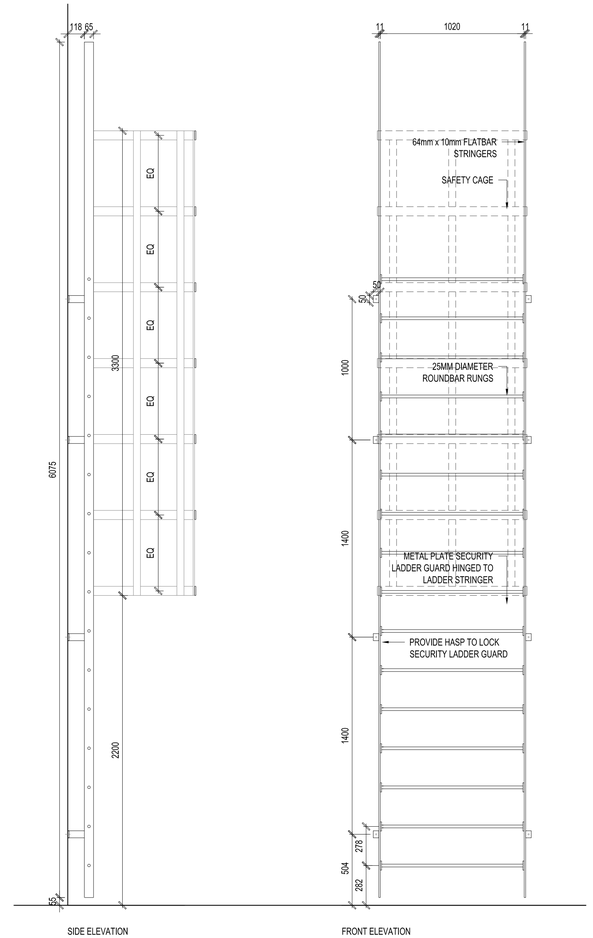

1 A803 ROOF LADDER
Scale: 1:20

No.	Date	Description
4	2025-04-11	Issued for Tender
3	2024-09-18	Issued for Building Permit
2	2024-08-16	Issued for 100% Costing
1	2023-01-31	Issued for 50% Costing

Issue Record

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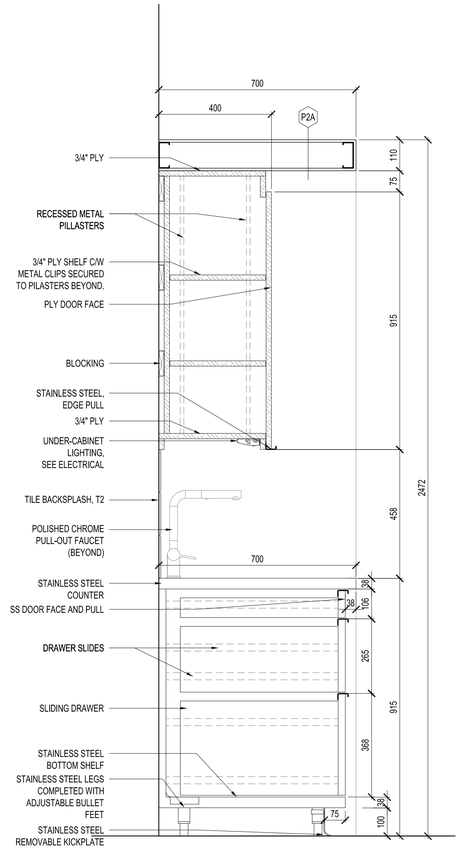
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MISCELLANEOUS METALS

Print Date	2025-04-11
Scale	AS NOTED
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A803



4 / A804 STAFF ROOM MILLWORK W/ SLIDING DRAWERS
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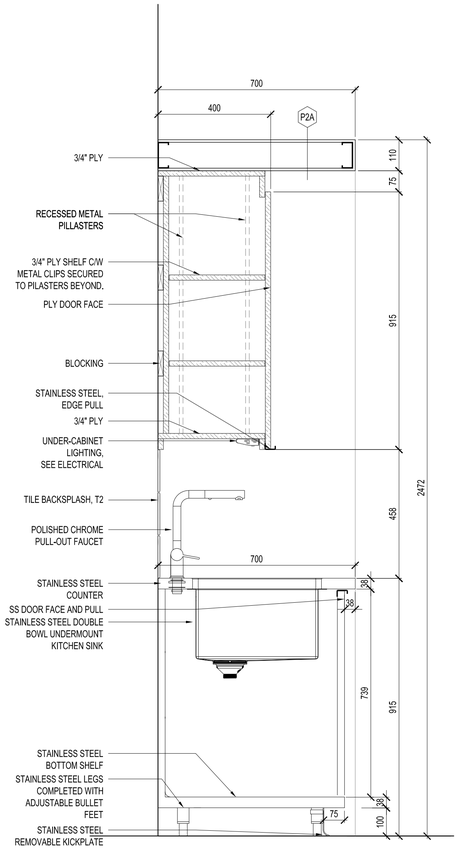

3 / A804 STAFF ROOM MILLWORK W/ SINK
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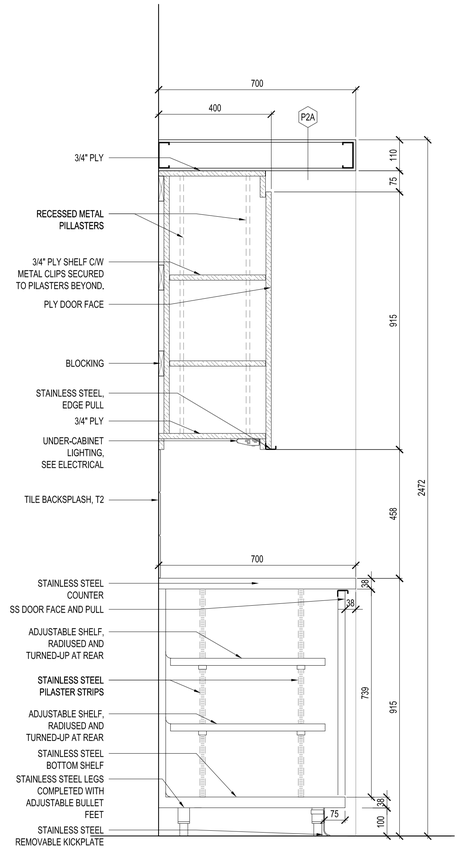

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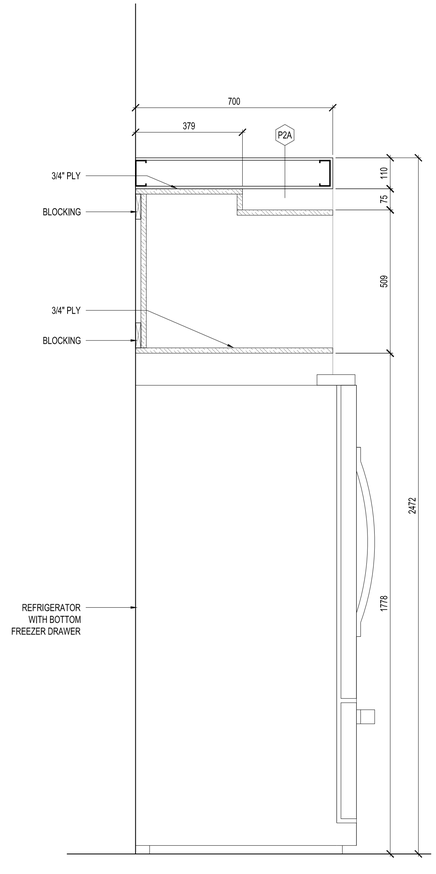

1 / A804 STAFF ROOM MILLWORK W/ REFRIGERATOR
Scale: 1:10

No.	Date	Description
3	2025-04-11	Issued for Tender
2	2024-09-18	Issued for Building Permit
1	2024-08-16	Issued for 100% Costing

Issue Record

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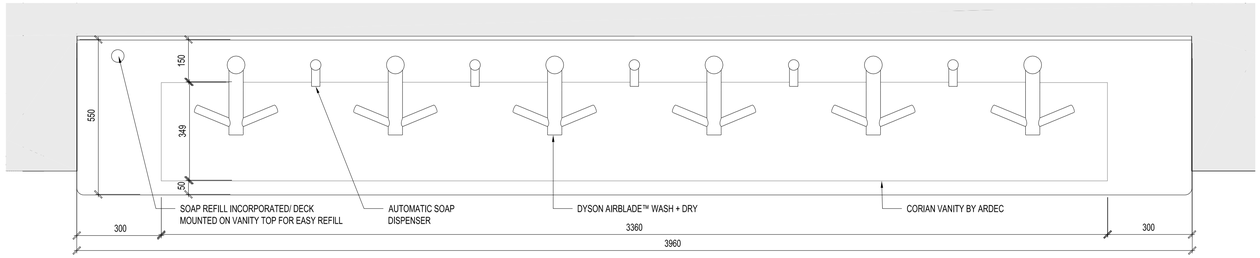
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

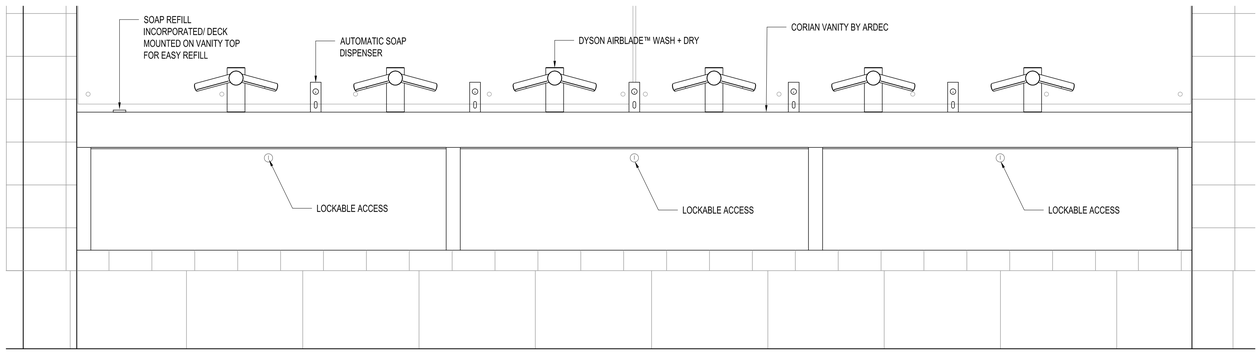
MILLWORK DETAILS

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

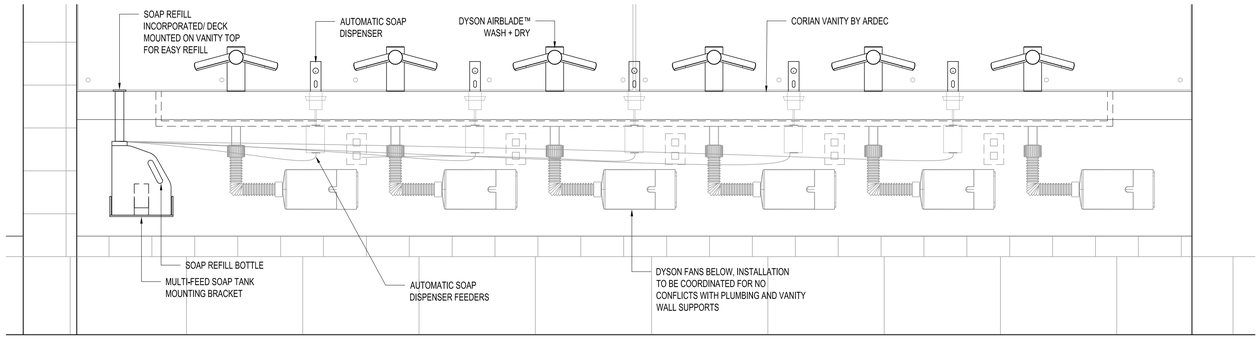
A804



9 A805 WASHROOM VANITY PLAN VIEW
Scale: 1:10

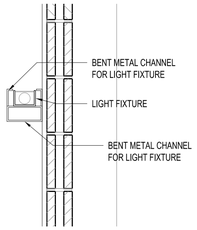


11 A805 WASHROOM VANITY ELEVATION
Scale: 1:10

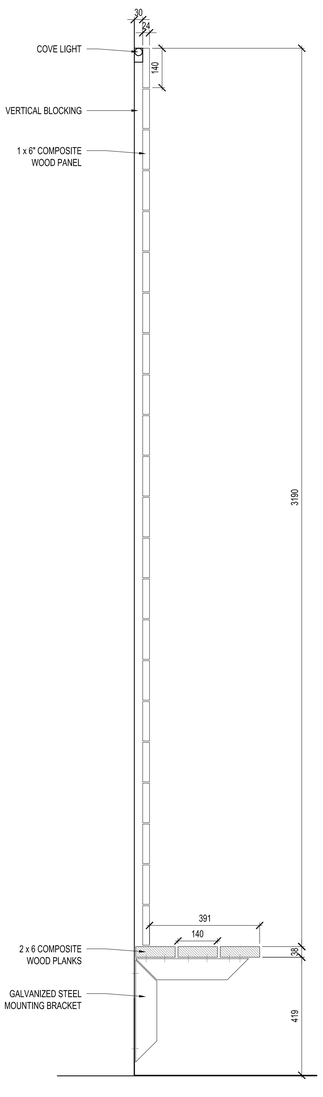


7 A805 WASHROOM VANITY ELEVATION-SECTION
Scale: 1:10

10 A805 WASHROOM COVE LIGHT DETAIL B
Scale: 1:10

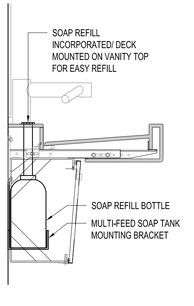


8 A805 WASHROOM COVE LIGHT DETAIL A
Scale: 1:10



2 A805 STAFF ROOM MILLWORK W/ TWO-TIER LOCKER
Scale: 1:10

1 A805 CHANGE ROOM / SHOWER MILLWORK
Scale: 1:10



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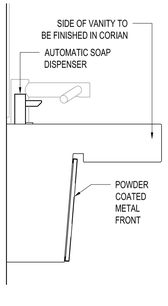

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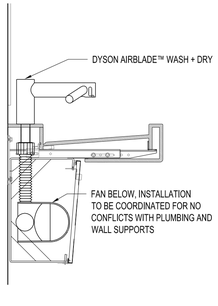

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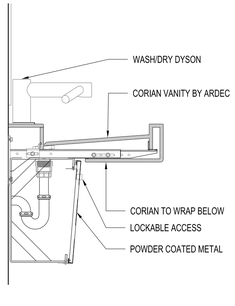

3 A805 WASHROOM SINK MILLWORK A
Scale: 1:10

No.	Date	Description
3	2025-04-11	Issued for Tender
2	2024-09-18	Issued for Building Permit
1	2024-08-16	Issued for 100% Costing

Issue Record

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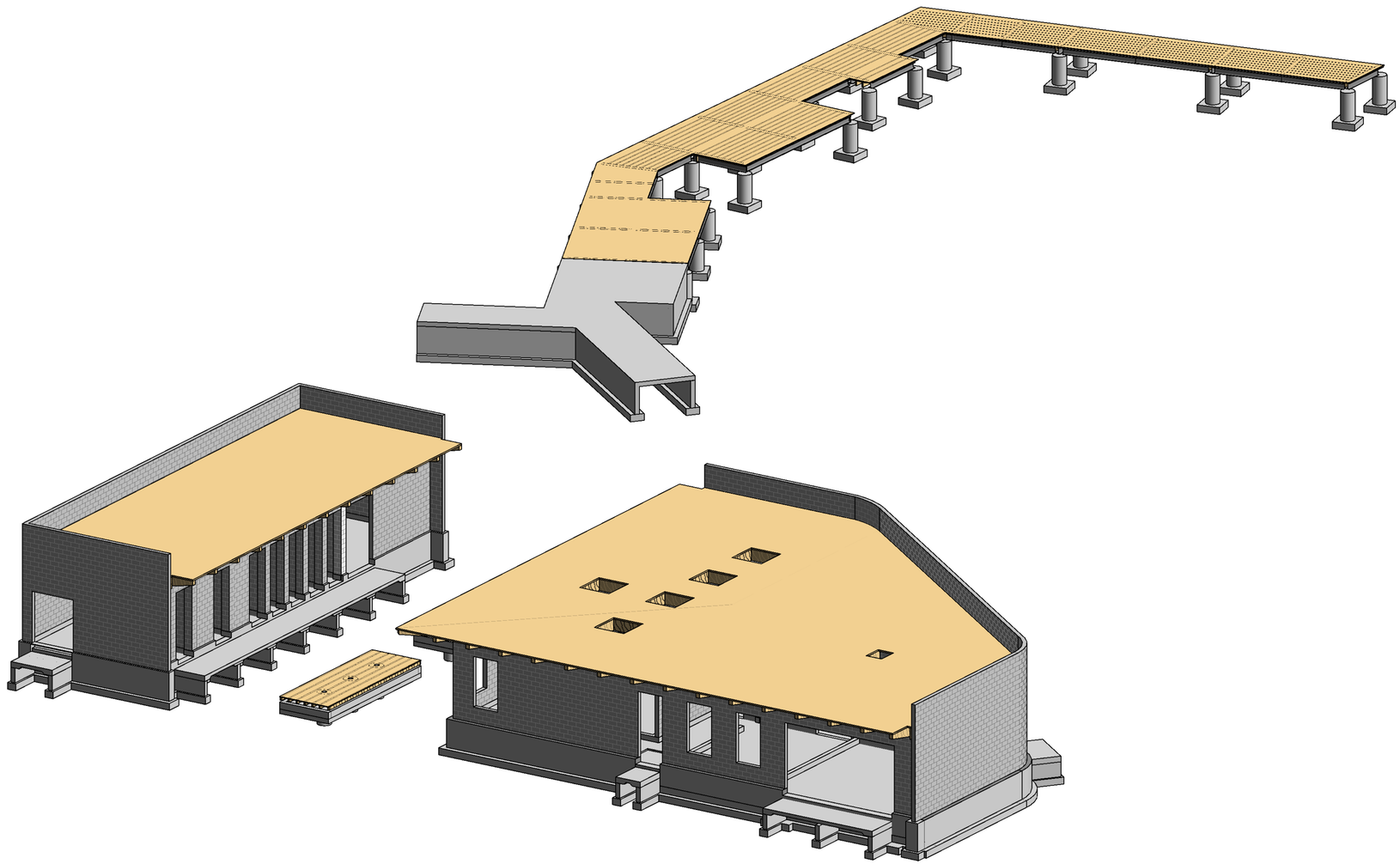
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MILLWORK DETAILS (WASHROOMS)

Print Date	2025-04-11
Scale	1:10
Project No.	21-029
Drawn by	SS/NP/RM
Checked by	MT

A805



3D VIEW
N.T.S.

BLUFFER'S PARK EAST WASHROOM

TOR.130977.0001

1 Brimley Road South, Scarborough, Toronto, ON

ISSUED FOR TENDER

STRUCTURAL DRAWING LIST

3D MODEL NOTE

STRUCTURAL ELEMENTS AND THEIR CONFIGURATION DETAILS ARE NOT PRESENTED IN THE 3D MODEL VIEW FOR TENDERING OR CONSTRUCTION PURPOSES AND ARE FOR INFORMATION ONLY.

rjc Creative Thinking Practical Results

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Engineers
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Drawing Notes

1. All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. ("RJC") and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.
2. These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as base drawings for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings.
3. Use of these drawings is limited to that identified in the Issued/Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Issued/Revision column, and then only for the parts noted. The drawings shall not be used for "pricing" / "costing" or "tender" unless so indicated in the Issued/Revisions column. "Pricing" or "Costing" drawings are not complete and any prices based on such drawings must allow for this.

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2025-01-29	CLARIFICATIONS TO CITY COMMENTS
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

COVER

Print Date 2025-04-14 4:25:43 PM
Scale 1 : 1
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number **S000**
Revision **4**

DELEGATED DESIGN OF PRIMARY STRUCTURE COMPONENTS

1. THE CONTRACTOR SHALL ENGAGE A SPECIALTY ENGINEER FOR THE DESIGN OF REQUIRED STRUCTURAL ELEMENTS AND REQUIRED STRUCTURAL CONNECTIONS NOT INDICATED IN THE DRAWINGS.

2. STRUCTURAL COMPONENTS REQUIRING DESIGN COMPLETED BY THE CONTRACTOR'S SPECIALTY ENGINEER INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

   A. STRUCTURAL STEEL CONNECTIONS
   B. STEEL DECK
   C. OPEN WEB STEEL JOISTS AND JOIST GIRDERS
   D. COLD FORMED LIGHTWEIGHT STEEL FRAMING
   E. MISCELLANEOUS STEEL
   F. MORTAR, GROUT AND CONCRETE MIX DESIGNS
   G. PRECAST SLABS, BEAMS, GIRDERS, COLUMNS, INCLUDING CONNECTIONS
   H. POST-TENSIONED SYSTEMS (SEE P/T GENERAL NOTES)
   I. PRE-FABRICATED WOOD I-JOISTS
   J. GLUE-LAMINATED AND STRUCTURAL COMPOSITE LUMBER MEMBERS INCLUDING WOOD-TO-WOOD CONNECTIONS

3. DESIGNS PRODUCED BY THE SPECIALTY ENGINEER SHALL CONSIDER STRENGTH, STABILITY, SERVICEABILITY AND INTEGRITY REQUIREMENTS UNDER GRAVITY AND SEISMIC LOADING AND THE DURABILITY FOR PREVAILING ENVIRONMENTAL AND EXPOSURE CONDITIONS. ALL DESIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF APPLICABLE DESIGN CODES AND ALL OTHER DESIGN REQUIREMENTS INDICATED IN THE DRAWINGS AND SPECIFICATIONS. DESIGNS SHALL INCLUDE SUITABLE LETTERS OF ASSURANCE.

4. DESIGN OF COMPONENTS AND CONNECTIONS THAT RELY ON SUPPORT BY THE PRIMARY STRUCTURE DESIGNED BY RJC OR COMPONENTS DESIGNED BY OTHER SPECIALTY ENGINEERS MUST CLEARLY INDICATE THE MEANS AND METHOD OF ATTACHMENT AND THE MAGNITUDE OF ALL FORCES (SPECIFIED AND FACTORED) THAT THE PRIMARY STRUCTURE MUST WITHSTAND. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD MAY REQUIRE REVISION TO THE METHOD OF CONNECTION WITH REDESIGN BY THE SPECIALTY ENGINEER.

5. SPECIALTY ENGINEERS ENGAGED BY THE CONTRACTOR SHALL BE REGISTERED AS PROFESSIONAL ENGINEERS IN THE PROVINCE OF ONTARIO AND ALL SUBMITTALS OR SHOP DRAWINGS PREPARED BY OR UNDER THE SUPERVISION OF THIS ENGINEER SHALL BE SIGNED. UNSEALED PROGRESS DOCUMENTS WILL BE REJECTED BY RJC WITHOUT REVIEW UNLESS PRIOR AGREEMENT IS OBTAINED.

6. WHERE STRUCTURAL COMPONENTS OR CONNECTIONS DESIGNED BY THE SPECIALTY ENGINEER ARE TO BE FABRICATED IN A DIFFERENT JURISDICTION, THE SPECIALTY ENGINEER SHALL SUBMIT A SEALED LETTER CONFIRMING PROOF OF PROFESSIONAL REGISTRATION IN THE JURISIDICTION OF FABRICATION.

7. THE SPECIALTY ENGINEER RESPONSIBLE FOR THE DESIGN IS ALSO RESPONSIBLE FOR REVIEW OF FABRICATION, INSTALLATION AND APPLICABLE TESTING REPORTS. UPON COMPLETION OF THE WORK, SUBMIT SCHEDULE S-B's AND S-C's TO THE ENGINEER OF RECORD.

8. REFER TO THE DRAWINGS AND SPECIFICATIONS FOR OTHER REQUIREMENTS.

SHOP DRAWINGS

1. AS PART OF OUR CONSTRUCTION PHASE SERVICES, RJC WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON RJC'S DRAWINGS BY MEANS OF APPROPRIATE RATIONAL SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS.

2. REVIEW OF SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAILED DESIGN INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS AND FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DRAWINGS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS, TECHNIQUES FOR CONSTRUCTION AND INSTALLATION, AND FOR CO-ORDINATION OF THE WORK OF ALL SUB-TRADES.

3. FOR SPECIFIC SHOP DRAWING SUBMITTAL REQUIREMENTS, SEE APPROPRIATE MATERIAL SECTIONS AND THE SPECIFICATIONS.

4. SHOP DRAWINGS SHALL BE COMPLETE AND INCLUDE ANY REQUIRED SEALS FROM A PROFESSIONAL ENGINEER REGISTERED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED PRIOR TO SUBMISSION.

5. ALL SHOP DRAWINGS COMPRISING A REVISED SUBMISSION SHALL INDICATE THE REVISED CONTENT BY MEANS OF CLOUDING OR OTHER SUITABLE MARKINGS.

DESIGN LOADS

1. FLOOR LOADING:

   FLOOR PLAN LOADING IS SHOWN ON PLANS.

   STRUCTURAL DEAD LOADS (D.L.) ARE DUE TO THE WEIGHT OF THE STRUCTURE ITSELF. THEY VARY WITH THE STRUCTURAL SYSTEM AND INCLUDE CONCRETE TOPPINGS ON STEEL DECK.

   LIVE LOADS HAVE BEEN REDUCED FOLLOWING THE PROVISIONS SET FORTH IN CLAUSE 4.1.5.8 IN THE ONTARIO BUILDING CODE 2012 O.REG 88/19 FOR THE PURPOSE OF DESIGNING COLUMNS, WALLS, TRANSFER BEAMS, TRANSFER SLABS, AND FOUNDATIONS.

2. CLADDING LOADS:

   A. CURTAIN AND WINDOW WALL - 1.0 kPa VERTICAL SURFACE
   B. GRANITE (32mm) CLADDING IN ALUMINUM CURTAIN WALL FRAME - 2.0 kPa VERTICAL SURFACE
   C. BRICK ON METAL STUD - 2.5 kPa VERTICAL SURFACE
   D. PRECAST WITH WINDOWS (45%) - 3.0 kPa VERTICAL SURFACE

3. SPECIFIED CONCENTRATED LOADS ARE AS FOLLOWS U.N.O. ON PLAN:

   A. ROOFS ---------- 1.3 kN
   B. FLOOR OF CLASSROOMS---------- 4.5 kN
   C. FLOORS - OFFICES, HOSPITALS, STAGES, MANUFACTURING BUILDINGS, RETAIL ---------- 9 kN
   D. FLOORS - PARKING ---------- 18 kN
   E. LOADING DOCKS AND SUSPENDED PLAZAS WITH FIRE TRUCK ACCESS (TANDEM AXLE LOADS) --------- 256 kN
   F. LOADING DOCKS AND SUSPENDED PLAZA SLABS WITHOUT FIRE TRUCK ACCESS---------- 54 kN

4. RAIN PONDING LOADS ON ROOFS ARE BASED ON ROOF SLOPES, PARAPET HEIGHTS AND SCUPPER LOCATIONS SHOWN ON ARCHITECTURAL DRAWINGS. DEPTH OF PONDING ASSUMES THAT ALL ROOF DRAINS ARE ACCIDENTALLY PLUGGED FOR A MAXIMUM PERIOD OF 24 HOURS, UNLESS NOTED OTHERWISE.

   ONE DAY RAIN, (1/50) = mm

5. LATERAL LOADS ON FOUNDATION WALLS.

   A. FOUNDATION WALLS RETAINING EARTH ARE DESIGNED TO RESIST A HORIZONTAL PRESSURE AT ANY DEPTH PER THE GEOTECHNICAL REPORT BASED ON FOLLOWING:

      EARTHQUAKE SOIL PRESSURE----------: PE = N/A
      SOIL PRESSURE COEFFICIENT----------: K = 0.5
      DEPTH BELOW GROUND WATER LEVEL-----: Hw = 0 (Free draining)
      DRY UNIT WEIGHT OF SOIL----------: q = 21.0 kN/m^3
      SURFACE SURCHARGE----------: q = 12 kPa

   B. THE SUBSTRUCTURE HAS BEEN DESIGNED TO RESIST UNBALANCED SOIL PRESSURE ACTING ON FOUNDATION WALLS AND RESISTED BY THE SHEAR WALLS AND FOUNDATION WALLS. THE UNBALANCED SOIL PRESSURE HAS BEEN CALCULATED BASED ON THE SOILS REPORT, AND IT IS A CONSEQUENCE OF:

      - FINISHED GRADE ELEVATION
      - SLOPING GRADE
      - EXPANSION JOINTS
      - EXISTING BASEMENTS ON SURROUNDING PROPERTIES.

   C. DO NOT BACKFILL WALLS UNTIL LATERALLY SUPPORTED BY COMPLETED FLOOR AND/ OR ROOF STRUCTURE.

6. WATER TABLE: THIS BUILDING IS NOT DESIGNED AS A TANKED STRUCTURE.

7. LOADS TO EXISTING STRUCTURES:

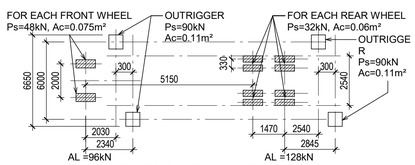
   A. FOUNDATION SURCHARGE
   B. SNOW DRIFTING

DESIGN LOADS - TRUCK LOADS

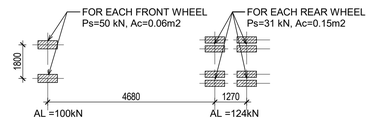
1. TRUCK LOADS:

   AREAS ACCESSIBLE TO FIRE TRUCKS INDICATED ON THE PLANS. THESE AREAS HAVE BEEN DESIGNED FOR THE LOADING SHOWN BELOW, OR LL=12.0 kPa UNIFORM LOAD U.N.O.:

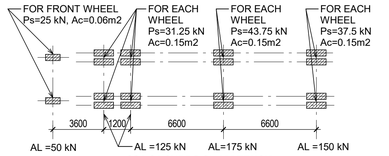
   NOTE: USE 1.3 FACTOR FOR IMPACT LOAD EFFECT. Ps=SERVICE LOAD, Ac=CONTACT AREA, AL=AXLE LOAD



FIRE TRUCK SERVICE WHEEL LOADS



GARBAGE TRUCK SERVICE WHEEL LOADS



CSA S6 CHBDC CL-625 TRUCK SERVICE WHEEL LOADS

ABBREVIATIONS

ACCOM. -- ACCOMMODATE
AESS ------ ARCHITECTURALY EXPOSED STRUCTURAL STEEL
Af ---------- FACTORED AXIAL FORCE
ALT. ------- ALTERNATE
ALUM. ----- ALUMINUM
A.R. -------- ANCHOR ROD
ARCH. ----- ARCHITECTURAL
B.C.E. ----- BOTTOM CHORD EXTENSION
B.E.W. ---- BOTTOM EACH WAY
B.L.L. ------ BOTTOM LOWER LAYER
B.L.W. ---- BOTTOM LONG WAY
BM. -------- BEAM
BOT. ------- BOTTOM
B.S.W. ---- BOTTOM SHORT WAY
B.U.L. ------ BOTTOM UPPER LAYER
B.W. ------- BOTH WAYS
C.A. -------- COLUMN ABOVE
CANT. ----- CANTILEVER
C.B. -------- COLUMN BELOW
CBM -------- COUPLING BEAM
Cf ---------- FACTORED AXIAL COMPRESSION FORCE
C.I.P. ------ CAST IN PLACE
C.J. -------- CONTROL JOINT
CL. -------- CENTER LINE
CLR. ------- CLEAR
COL. ------- COLUMN
CONC. ----- CONCRETE
CONT. ----- CONTINUOUS
C.P. -------- COMPLETE PENETRATION
CTRS. ------ CENTERS
C/W -------- COMPLETE WITH
DBM -------- DIVIDER BEAM
DET. -------- DETAIL
D.L. -------- DEAD LOAD
D.O. -------- DO OVER - (DITTO)
DP. -------- DEEP (E.G. DEPTH OF BEAM)
D.T.S. ------ DEPTH TO SUIT
DWG. ------ DRAWING
DWLS. ----- DOWELS
EA. -------- EACH
E.E. -------- EACH END
E.F. -------- EACH FACE
EL. -------- ELEVATION
ELEV. ------ ELEVATOR
ELEC. ------ ELECTRICAL
EQ. -------- EQUAL
E.S. -------- EACH SIDE
E.W. -------- EACH WAY
EXIST. ----- EXISTING
EXP. JT. --- EXPANSION JOINT
EXT. -------- EXTERIOR
F.D. -------- FLOOR DRAIN
F.F. -------- FAR FACE
F.S. -------- FAR SIDE
FTG. -------- FOOTING
GA. -------- GAUGE
GALV. ------ GALVANIZED
G.L. -------- GRID LINE
GR. BM ---- GRADE BEAM
G.W.B. ----- GYPSUM WALL BOARD
H., HORIZ. HORIZONTAL
H.I.E. ------ HOOK ONE END
H.2.E. ------ HOOK TWO ENDS
H&V -------- HORIZONTAL AND VERTICAL
H.D.G. ----- HOT-DIP GALVANIZED
Hf ---------- FACTORED HORIZONTAL FORCE
H.P. -------- HIGH POINT
H.S.C. ------ HORIZONTALLY SLOTTED CONNECTION
HT. -------- HEIGHT
I.F. -------- INSIDE FACE
INT. -------- INTERIOR
JT. -------- JOINT
LG. -------- LONG
L.L. -------- LIVE LOAD
L.L.B.B. ---- LONG LEGS BACK TO BACK
L.L.H. ------ LONG LEG HORIZONTAL
L.L.V. ------ LONG LEG VERTICAL
L.P. -------- LOW POINT
L.S.H. ------ LONG SIDE HORIZONTAL
L.S.V. ------ LONG SIDE VERTICAL
L.T.S. ------ LENGTH TO SUIT
L.V. -------- LENGTH VARIES
L.W. -------- LONG WAY
MANUF. ---- MANUFACTURED
MAX. ------ MAXIMUM
MECH. ----- MECHANICAL
Mf ---------- FACTORED MOMENT
Mfx --------- STRONG AXIS BENDING MOMENT
Mfy --------- WEAK AXIS BENDING MOMENT
MIN. -------- MINIMUM
Mtf --------- FACTORED TORSION
N.F. -------- NEAR FACE
N.I.C. ------ NOT IN CONTRACT
N.S. -------- NEAR SIDE
N.T.S. ------ NOT TO SCALE
O.C. -------- ON CENTER
O/C -------- ON CENTER
O.F. -------- OUTSIDE FACE
OPP. -------- OPPOSITE
O.W.S.J. --- OPEN WEB STEEL JOIST
Pf ---------- FACTORED POINT LOAD
P.P. -------- PARTIAL PENETRATION
P/T -------- POST-TENSIONING
R.D. -------- ROOF DRAIN
REQ'D ------ REQUIRED
R.O. -------- ROUGH OPENING
RTN. ------- RETURN
R/W -------- REINFORCED WITH
R.W.L. ------ RAIN WATER LEADER
S.A.M. ------ SELF-ADHERED MEMBRANE
S.D.F. ------ STEP DOWN FOOTING
S.D.L. ------ SUPERIMPOSED DEAD LOAD
SIM. -------- SIMILAR
S.L. -------- SNOW LOAD
S.L.B.B. ---- SHORT LEGS BACK TO BACK
SLS --------- SERVICEABILITY LIMIT STATE
SOG. ------- SLAB ON GRADE
SPEC. ------ SPECIFICATIONS
SR ---------- HEADED STUD ASSEMBLY
S.S. -------- STAINLESS STEEL
S.S.T. ------ SIMPSON STRONG-TIE
ST. -------- STAGGER
STAG. ------ STAGGER
STIR. ------ STIRRUP
STL. -------- STEEL
S.W. -------- SHORT WAY
SYM. -------- SYMMETRICAL
T&B --------- TOP AND BOTTOM
T&C --------- TENSION AND COMPRESSION
T&G --------- TONGUE AND GROOVE
T.D.C. ------ TRAFFIC DECK COATING
T.E.W. ------ TOP EACH WAY
Tf ---------- FACTORED AXIAL TENSION FORCE
THK. -------- THICK
THRU ------ THROUGH
T.J. -------- TIE JOIST
T.L.L. ------ TOP LOWER LAYER
T.O. -------- TOP OF
T.O.C. ------ TOP OF CONCRETE
T.O.F. ------ TOP OF FOUNDATION
T.O.S. ------ TOP OF SLAB
T.O.S.S. --- TOP OF STRUCTURAL STEEL
T.O.W. ----- TOP OF WALL
TR. --------- TRANSFER
T.U.L. ------ TOP UPPER LAYER
TYP. -------- TYPICAL
ULS --------- ULTIMATE LIMIT STATE
U.N.O. ------ UNLESS NOTED OTHERWISE
U/S --------- UNDERSIDE
V., VERT. - VERTICAL
Vf ---------- FACTORED SHEAR FORCE
V.S.C. ------ VERTICALLY SLOTTED CONNECTION
W/ ---------- WITH
W.A. -------- WALL ABOVE
W.B. -------- WALL BELOW
W.P. -------- WORK POINT
WT. -------- WEIGHT
VXB --------- VERTICAL BRACING, VERTICAL CROSS BRACING

DESIGN LOADS - SEISMIC AND WIND

1. SEISMIC AND WIND DESIGN:

   THE LATERAL SYSTEM FOR THE EAST AND WEST BUILDINGS CONSIST OF SHEAR WALLS AND IS DESIGNED FOR THE FOLLOWING EARTHQUAKE FACTORS:

1a. EARTHQUAKE DESIGN PARAMETERS

   Sa (0.2) =0.219
   Sa (0.5) =0.116
   Sa (1.0) =0.060
   Sa (2.0) =0.029
   Sa (0.2)Fale =0.268

   SITE CLASSIFICATION: SITE CLASS D
   Ie =1.0 Fa =1.222
   Rd =1.5 Fv =1.531
   Ro =1.5

BUILDING	Ta (Sec)
EAST	0.232
WEST	0.247

1b. WIND DESIGN PARAMETERS:

   Ce, Cg, and Cp ARE BASED ON OBC CL. 4.1.7.
   q50 =0.47 kPa, Iw = 1.0 ULS, 0.75 SLS

   WIND UPLIFT LOADS ON STEEL OR WOOD ROOFS SHALL BE 1 kPa NET UNLESS NOTED OTHERWISE ON PLAN.

1c. FACTORED BASE FORCES.

   MAXIMUM BASE SHEARS AND OVERTURNING MOMENT FOR THE STRUCTURE THROUGH STATIC ANALYSIS ARE:

		EAST BUILDING	
		SHEAR	MOMENT
WIND	- NORTH/SOUTH DIRECTION -	35 kN	90 kNm
	- EAST/WEST DIRECTION -	75 kN	185 kNm
SEISMIC	- NORTH/SOUTH DIRECTION -	120 kN	520 kNm
	- EAST/WEST DIRECTION -	120 kN	520 kNm

		WEST BUILDING	
		SHEAR	MOMENT
WIND	- NORTH/SOUTH DIRECTION -	120 kN	300 kNm
	- EAST/WEST DIRECTION -	120 kN	300 kNm
SEISMIC	- NORTH/SOUTH DIRECTION -	200 kN	860 kNm
	- EAST/WEST DIRECTION -	200 kN	860 kNm

DRAWINGS

1. THIS SET OF DRAWINGS SHOWS THE COMPLETED PROJECT. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.

2. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" IN THE REVISIONS COLUMN, BY READ JONES CHRISTOFFERSEN LTD. THE DRAWINGS SHALL NOT BE USED FOR PRICING, COSTING, OR TENDER UNLESS SO INDICATED IN THE REVISION COLUMN. PRICING OR COSTING DRAWINGS ARE NOT COMPLETE AND ANY PRICES BASED ON PRICING OR COSTING DRAWINGS MUST INCLUDE ALLOWANCES FOR THIS.

3. THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.

GENERAL

1. SECTION MARK SHOWN THUS 4 / S-3 MEANS SECTION #4 ON DRAWING S-3.

2. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, NAILERS, INSERTS, ETC., TO BE ENCASED IN CONCRETE.

3. SEE ARCHITECTURAL DRAWINGS FOR FLOOR AND ROOF ELEVATIONS, RECESSES, DRAINAGE SLOPES, ETC.

4. THE GENERAL CONTRACTOR SHALL REVIEW ALL THE DRAWINGS AND CHECK DIMENSIONS BEFORE CONSTRUCTION. REPORT DISCREPANCIES BETWEEN STRUCTURAL AND OTHER DISCIPLINES DRAWINGS FOR CLARIFICATION.

5. CONCRETE WORK
   SHALL CONFORM TO CSA A23.1, CSA A23.2, CSA A23.3 AND REFERENCED DOCUMENTS.

6. STRUCTURAL STEEL WORK
   SHALL CONFORM TO CSA S16 AND REFERENCED DOCUMENTS.

7. FIRE RESISTANCE RATINGS
   SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PRECISE LOCATION OF REQUIRED FIRE RESISTANCE RATINGS.

8. DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION OF RJC.

9. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND LANDSCAPE DRAWINGS FOR LOCATIONS, CONFIGURATIONS, EXTENT, AND SIZES OF ALL CURBS, UPSTANDS, DOWNTURNS; AND FOR OPENINGS THROUGH FLOORS AND WALLS FOR DUCTS, CONDUIT AND PIPING. PROVIDE FOR SAME.

10. DEFINITIONS:

   A. RJC: READ JONES CHRISTOFFERSEN OR ITS REPRESENTATIVE.

   B. SPECIALTY STRUCTURAL ENGINEER: A STRUCTURAL ENGINEER REGISTERED AND LICENSED TO PRACTICE BY THE PROFESSIONAL ENGINEERING ASSOCIATION HAVING JURISDICTION IN THE AREA WHERE THE STRUCTURE IS TO BE BUILT AND WHO IS RESPONSIBLE FOR THE DESIGN AND FIELD REVIEW OF:

      - STRUCTURAL ELEMENTS DESIGNED BY THE CONTRACTOR OR SUBCONTRACTORS, SUCH AS OPEN WEB STEEL JOISTS, PRECAST DOUBLE TEES, PRECAST PLANKS, STRUCTURAL STEEL CONNECTIONS, LIGHT WOOD FRAME ROOF TRUSSES, ETC.

      - SECONDARY STRUCTURAL ELEMENTS AND NON-STRUCTURAL ELEMENTS. SEE ALSO "NON-STRUCTURAL ELEMENTS" GENERAL NOTES.

   C. CONTINUOUS: FULL TENSION SPLICE AND TENSION DEVELOPMENT LENGTH.

   D. EMBEDMENT: UNLESS NOTED OTHERWISE COMPRESSION EMBEDMENT MEANS A COMPRESSION DEVELOPMENT LENGTH AND TENSION EMBEDMENT MEANS A TENSION DEVELOPMENT LENGTH AS PER CAN/CSA-A23.3 AND AS SHOWN ON THESE GENERAL NOTES DRAWINGS.

   E. GENERAL CONTRACTOR: FOR THE PURPOSES OF THESE DRAWINGS, THE USE OF THE TERM "CONTRACTOR" OR "GENERAL CONTRACTOR" SHALL REFER TO THE PRIME PERSON OR COMPANY RESPONSIBLE FOR CONSTRUCTION OF THE PROJECT AND THE COORDINATION OF TRADES AND SUBCONTRACTORS. THIS MAY BE THE GENERAL CONTRACTOR, OR A CONSTRUCTION MANAGER.

DESIGN CODE

1. THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012 O.REG 88/19 WHICH IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2015.

FIELD REVIEW BY READ JONES CHRISTOFFERSEN (RJC)

1. READ JONES CHRISTOFFERSEN PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. THIS REVIEW IS NOT A "FULL TIME" REVIEW BUT IS CONDUCTED WITH SUCH FREQUENCY AS RJC DEEMS APPROPRIATE TO OBSERVE VARIOUS STAGES OF THE WORK AND TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY READ JONES CHRISTOFFERSEN. FIELD REVIEW BY READ JONES CHRISTOFFERSEN IS NOT CARRIED OUT FOR THE CONTRACTOR'S BENEFIT, NOR DOES IT MAKE READ JONES CHRISTOFFERSEN GUARANTORS OF THE CONTRACTOR'S WORK. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. RJC SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

2. PROVIDE 24 HOURS ADVANCE NOTICE OF EACH REQUIRED FIELD REVIEW. FIELD REVIEWS SHALL BE SCHEDULED TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH RJC.

3. THE WORK TO BE REVIEWED SHALL BE GENERALLY COMPLETE.

rjc Creative Thinking Practical Results

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Engineers
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North Tower, Suite 400
Toronto, ON M5J 1V6 Canada
tel 416-977-5335

Drawing Notes

1. All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. ("RJC") and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.
2. These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as base drawings for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings.
3. Use of these drawings is limited to that identified in the Issued/Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Issued/Revision column, and then only for the parts noted. The drawings shall not be used for "pricing" / "costing" or "tender" unless so indicated in the Issued/Revisions column. "Pricing" or "Costing" drawings are not complete and any prices based on such drawings must allow for this.

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2025-01-29	CLARIFICATIONS TO CITY COMMENTS
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

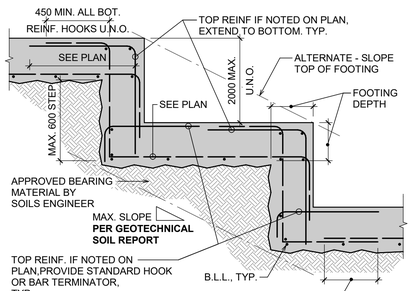
Sheet Title

GENERAL NOTES & TYPICAL DETAILS

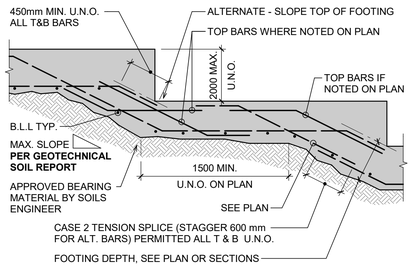
Print Date	**2025-04-14 4:25:43 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S001** Revision **4**

TYPICAL STEPPED FOOTINGS (WALLS)



TYPE NO. 1

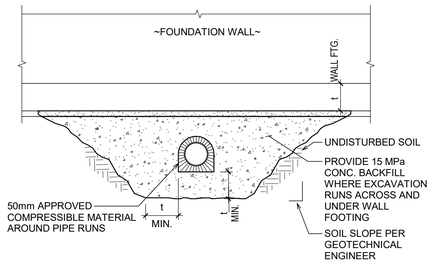


TYPE NO. 2

NOTES:

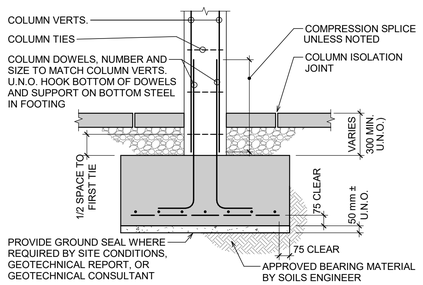
1. IF TOTAL STEPPING 'H' EXCEEDED FOR TYPE NO.2, PROVIDE INTERMEDIATE FLAT HORIZONTAL SECTION BETWEEN SLOPED FOOTINGS U.N.O. ON PLAN.
2. FOR PRICING: ASSUME 1V:2H SLOPE (SOIL), ASSUME 7V:10H (ROCK) U.N.O. SEE ALSO GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. U.N.O, PROVIDE MINIMUM 1 BAR ACROSS FULL WIDTH OF FOOTING PLACED AT INSIDE OF ALL HOOKS AND CRANKS WITH BAR SIZE TO MATCH THE HOOKED OR CRANKED BAR.

TYPICAL PIPE UNDER WALL FOOTING DETAIL



TYPICAL COLUMN FOOTING

EXCEPT AS NOTED:
- FOR SPLICE LENGTHS, SEE TABLES ON STRUCTURAL DRAWINGS.
- FOOTING SHALL BE CENTERED UNDER COLUMN U.N.O.



EXCAVATIONS

1. DESIGN AND FIELD REVIEW OF EXCAVATION, SHORING, AND BACKFILL IS NOT DONE BY READ JONES CHRISTOFFERSEN.

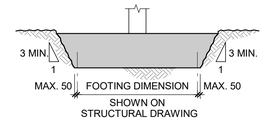
FOUNDATIONS

1. THE GEOTECHNICAL INVESTIGATION FOR THE PROPOSED BLUFFER'S PARK PAVILION WAS PREPARED BY DAVROC TESTING LABORATORIES INC, DATED FEBRUARY 3, 2023

   GROUND IMPROVEMENT WILL BE REQUIRED TO INCREASE THE SOIL BEARING CAPACITY TO SUPPORT THE FOOTINGS AND SLAB ON GRADE. SEE BELOW FOR MINIMUM BEARING CAPACITIES REQUIREMENTS:

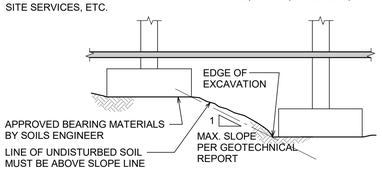
A.	STRIP FOOTINGS:	ULS: 225kPa	SLS:	150kPa
B.	SPREAD FOOTINGS:	ULS: 225kPa	SLS:	150kPa
C.	SLAB ON GRADE: (EAST BUILDING)	ULS: 30kPa	SLS:	20kPa
D.	SLAB ON GRADE: (WEST BUILDING)	ULS: 55kPa	SLS:	40kPa

2. BEARING SURFACES MUST BE APPROVED BY THE SOILS ENGINEER IMMEDIATELY BEFORE FOOTING CONCRETE IS PLACED. RJC IS NOT RESPONSIBLE FOR CONFIRMING BEARING CAPACITIES OF SOILS.
3. REFER TO SOILS REPORT FOR OTHER SPECIFIC DESIGN REQUIREMENTS FOR FOOTINGS, SOIL SLOPES, FROST PROTECTION, MINIMUM COVER, ETC.
4. UNLESS OTHERWISE SHOWN, CENTER FOOTINGS UNDER COLUMNS AND WALLS.
5. DOWELS SHALL BE PLACED BEFORE CONCRETE IS PLACED. TEMPLATES SHALL BE USED TO ENSURE CORRECT PLACEMENT OF DOWELS.
6. PROVIDE 50 mm GROUND SEAL/SKIM COAT OR MUD SLAB UNDER FOOTINGS AS REQUIRED BY SOIL CONDITIONS.
7. FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, SEE ARCHITECT'S DRAWINGS.
8. VARY FOOTING ELEVATIONS WHERE REQUIRED IN ACCORDANCE WITH DETAIL FOR "TYPICAL STEPPED FOOTING", SHOWN ON STRUCTURAL DRAWINGS.
9. FOOTINGS MAY HAVE TO BE LOWERED TO ACCOMMODATE MECHANICAL OR ELECTRICAL SERVICES. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ELEVATIONS OF SAME. FOOTINGS ARE NOT TO BE UNDERMINED BY EXCAVATIONS FOR SERVICES, PITS, ETC.
10. FOOTING ELEVATIONS, IF SHOWN, ARE FOR BIDDING PURPOSES ONLY. ARE NOT FINAL, AND MAY VARY ACCORDING TO SITE CONDITIONS OR AS REQUIRED BY SERVICES. ALL FOOTINGS MUST BE TAKEN TO A BEARING LAYER APPROVED BY THE SOILS ENGINEER.
11. BEARING SURFACES MUST BE PROTECTED FROM FREEZING BEFORE AND AFTER FOOTINGS ARE POURED.
12. SUB-BASE DESIGN OF SOIL UNDER THE SLAB ON GRADE SHALL BE IN ACCORDANCE WITH THE SOIL REPORT.
13. CONCRETE PLACED UNDER WATER SHALL CONFORM TO CSA A23.1.
14. FOOTINGS CAST DIRECTLY INTO EXCAVATIONS (WITHOUT SIDE FORMS) SHALL NOT BE LARGER THAN SHOWN BELOW:



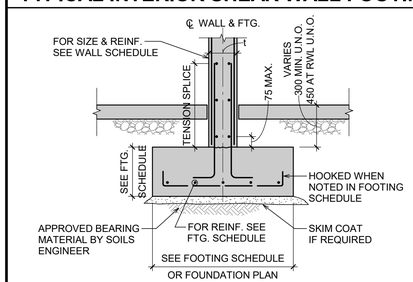
TYPICAL FOOTING ADJACENT TO EXCAVATION

EDGE OF ADJACENT EXCAVATION FOR FOOTINGS, SUMPS, BASEMENT, SITE SERVICES, ETC.



NOTE FOR PRICING: ASSUME 1V:2H SLOPE (SOIL), ASSUME 7V:10H (ROCK) U.N.O. SEE ALSO GEOTECHNICAL REPORT AND SPECIFICATIONS

TYPICAL INTERIOR SHEAR WALL FOOTINGS



DOWELS TO MATCH VERTICAL WALL REINFORCING U.N.O.

SHEAR WALL FOOTING WITHOUT PEDESTAL

CALCULATED STRUCTURAL MOVEMENTS

THIS STRUCTURE WILL UNDERGO NORMAL TYPES OF MOVEMENT AND DEFLECTION, AND THE FOLLOWING ARE ESTIMATES FOR THIS STRUCTURE. NON-STRUCTURAL COMPONENTS MUST BE DETAILED TO ACCOMMODATE THIS. DESIGN, DETAILING, AND FIELD REVIEW OF THESE NON-STRUCTURAL ELEMENTS IS BY OTHERS, AND NOT READ JONES CHRISTOFFERSEN LTD.

1. DIFFERENTIAL VERTICAL MOVEMENTS BETWEEN ADJACENT COLUMNS AND BETWEEN ADJACENT COLUMNS AND WALLS = APPROXIMATELY 25 mm IN ACCORDANCE WITH GEOTECHNICAL REPORT
2. VERTICAL DEFLECTION OF COLUMNS AND WALLS DUE TO SHRINKAGE AND CREEP = APPROXIMATELY 3.5 mm PER 3600 mm OF HEIGHT.
3. VERTICAL FLOOR/ ROOF DEFLECTIONS HAVE BEEN DESIGNED TO MEET THE FOLLOWING CRITERIA, BUT NOT TO EXCEED MAXIMUM DEFLECTION OF 25mm.

TYPE OF MEMBER	DEFLECTION TO BE CONSIDERED	CALCULATED DEFLECTION LIMITATIONS
REINFORCED CONCRETE MEMBERS		
FLAT ROOF NOT SUPPORTING NONSTRUCTURAL ELEMENTS LIKELY TO BE DAMAGED BY LARGE DEFLECTIONS	IMMEDIATE DEFLECTION DUE TO SPECIFIED LIVE LOAD	L/180
ROOF OR FLOOR CONSTRUCTION SUPPORTING NONSTRUCTURAL ELEMENTS **NOT** LIKELY TO BE DAMAGED BY LARGE DEFLECTIONS	SUM OF THE LONG-TERM DEFLECTIONS DUE TO ALL SUSTAINED LOADS AND THE IMMEDIATE DEFLECTION DUE TO ANY DDITIONAL LIVE LOAD	L/240
ROOF OR FLOOR CONSTRUCTION SUPPORTING NONSTRUCTURAL ELEMENTS **NOT** LIKELY TO BE DAMAGED BY LARGE DEFLECTIONS	IMMEDIATE DEFLECTION DUE TO SPECIFIED LIVE LOAD	L/360
ROOF OR FLOOR CONSTRUCTION SUPPORTING NONSTRUCTURAL ELEMENTS LIKELY TO BE DAMAGED BY LARGE DEFLECTIONS	THAT PART OF THE TOTAL DEFLECTION OCCURRING AFTER ATTACHMENT OF NONSTRUCTURAL ELEMENTS	L/480
RESIDENTIAL TYPICAL FLOOR WITH CARPET FLOORING AND WINDOW/ CURTAIN WALL CLADDING	THAT PART OF THE TOTAL DEFLECTION OCCURRING AFTER ATTACHMENT OF NONSTRUCTURAL ELEMENTS	L/360
RESIDENTIAL TYPICAL FLOOR WITH ENGINEERED WOOD FLOOR AND WINDOW/ CURTAIN WALL CLADDING	THAT PART OF THE TOTAL DEFLECTION OCCURRING AFTER ATTACHMENT OF NONSTRUCTURAL ELEMENTS	L/400
STRUCTURAL STEEL MEMBERS		
SIMPLE SPAN MEMBERS OF FLOORS AND ROOFS SUPPORTING CONSTRUCTION AND FINISHES NOT SUSCEPTIBLE TO CRACKING	LIVE LOAD	L/300
SIMPLE SPAN MEMBERS OF FLOORS AND ROOFS SUPPORTING CONSTRUCTION AND FINISHES SUSCEPTIBLE TO CRACKING	LIVE LOAD	L/360

4. PERIMETER OR SPANDREL ELEMENTS (SUPPORTING CLADDING, PRECAST, MASONRY WALLS AND THE LIKE) HAVE BEEN DESIGNED FOR AN ALLOWABLE INCREMENTAL LONG TERM DEFLECTION OF L/360.
5. THE STRUCTURE HAS BEEN DESIGNED ASSUMING THAT THE INSTALLATION OF NONSTRUCTURAL ELEMENTS SUCH AS CLADDING, MECHANICAL AND ELECTRICAL SERVICES AND THE LIKE, WILL NOT COMMENCE UNTIL AT LEAST ONE MONTH AFTER THE REINFORCED CONCRETE SLAB SUPPORTING THE NONSTRUCTURAL ELEMENTS HAS BEEN POURED AND THE RESHORING REMOVED.
6. THE STRUCTURE HAS BEEN DESIGNED TO LIMIT THE MAXIMUM INTERSTOREY DRIFT UNDER SERVICEABILITY LIMIT STATE (SLS) AVERAGE HOURLY WIND PRESSURE TO H/400 WHERE H IS THE FLOOR TO FLOOR HEIGHT BETWEEN TO ADJACENT FLOORS, UNDER SEISMIC LOADS, THE INTERSTOREY DRIFT HAS BEEN LIMITED TO 0.025 Hs, WHERE Hs IS THE HEIGHT OF THE STOREY.
7. DIFFERENTIAL DEFLECTIONS OF EDGE BEAMS AND EDGES OF SLABS ARE APPROXIMATELLY:
   - TYPICAL FLOOR: 12mm
   - 2ND FLOOR (FLOOR ABOVE RIGID FLOOR): 20mm.
8. NONSTRUCTURAL ELEMENTS SUCH AS CLADDING, MECHANICAL AND ELECTRICAL SERVICES AND SUPPORTS AND THE LIKE, MUST BE DESIGNED AND DETAILED TO ACCOMMODATE THE ANTICIPATED MOVEMENTS NOTED ABOVE.
9. MOVEMENT AT EXPANSION JOINTS - SEE DETAIL AND PLANS
10. HORIZONTAL SHRINKAGE MOVEMENTS OF POST-TENSIONED SLABS = APPROXIMATELY 10 mm PER 30000 mm OF LENGTH.

ALL STRUCTURES ARE ALSO SUBJECT TO CONSTRUCTION TOLERANCES. THIS SHOULD BE ALLOWED FOR IN DETAILING NON-STRUCTURAL COMPONENTS IN ADDITION TO THE ABOVE MOVEMENTS.

TEMPORARY WORKS

1. THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN, REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE WORKS.
2. IN THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT AND FREE FROM EXCESSIVE DEFLECTION.
3. ACCESS OF HEAVY CONSTRUCTION EQUIPMENT AND ACCUMULATION OF CONSTRUCTION MATERIALS ON THE FLOORS ARE NOT PERMITTED, UNLESS SUCH HAVE BEEN CATERED FOR IN THE CONTRACTOR'S TEMPORARY WORK DESIGN TO THE SATISFACTION OF THE ARCHITECT & ENGINEER.
4. COSTS OF ALL TEMPORARY WORKS ARE DEEMED TO HAVE BEEN INCLUDED IN THE CONTRACT PRICE.
5. SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY WORKS FOR REVIEW BEFORE FABRICATION COMMENCES. SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED AND LICENSED TO PRACTICE BY THE PROFESSIONAL ENGINEERING ASSOCIATION HAVING JURISDICTION IN THE AREA WHERE THE STRUCTURE IS TO BE BUILT.
6. ANY CONSTRUCTION SEQUENCES SHOWN ON THE DRAWINGS SHALL BE PART OF TEMPORARY WORKS AND ARE FOR THE CONTRACTOR'S CONSIDERATION ONLY. THE CONTRACTOR IS AT LIBERTY TO USE ANY OTHER SEQUENCE AS THE CONTRACTOR DEEMS APPROPRIATE, BUT AT NO TIME SHALL THE SAFETY AND INTEGRITY OF THE WORKS AND THE STRUCTURE BE COMPROMISED. IF THE CONTRACTOR ADOPTS THE SUGGESTED SEQUENCE, SUCH SEQUENCE SHALL BE DEEMED AS THE CONTRACTOR'S OWN SELECTION OF METHOD, AND THE CONTRACTOR SHALL ASSUME FULL AND SOLE RESPONSIBILITY FOR IT, AS STATED IN (1) ABOVE. THE CONTRACTOR SHALL INFORM THE ARCHITECT IF THE CONTRACTOR WISHES TO DEVIATE FROM ANY SUGGESTED SEQUENCE.
7. SEE ALSO CONCRETE FORMWORK STRIPPING AND SHORING NOTES.

NON-STRUCTURAL ELEMENTS

1. "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF READ JONES CHRISTOFFERSEN LTD. WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL PREPARE ALL SUBMITTALS UNDER THEIR SEAL AND SIGNATURE AND ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
2. EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
   - A. ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, FLAG POSTS, CANOPIES, CEILINGS, MILLWORK, ETC.
   - B. LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
   - C. CLADDING, GLAZING, WINDOW MULLIONS, INTERIOR STUD WALLS AND EXTERIOR STUD WALLS.
   - D. ARCHITECTURAL PRECAST, PRECAST CLADDING.
   - E. SKYLIGHTS.
   - F. MECHANICAL AND ELECTRICAL EQUIPMENT, COMPONENTS, AND THEIR ATTACHMENT DETAILS.
   - G. WINDOW WASHING EQUIPMENT AND ITS ATTACHMENTS.
   - H. FALL PROTECTION AND FALL ARREST SYSTEMS AND THEIR ATTACHMENTS.
   - I. ESCALATORS, ELEVATORS, AND CONVEYING SYSTEMS.
   - J. GLASS BLOCK AND ITS ATTACHMENTS.
   - K. BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS.
   - L. DESIGN AND FIELD REVIEW OF SEISMIC RESTRAINT FOR SECONDARY STRUCTURAL ELEMENTS AND OPERATIONAL AND FUNCTIONAL COMPONENTS INCLUDING MECHANICAL AND ELECTRICAL EQUIPMENT.
   - M. NON-STRUCTURAL CONCRETE TOPPINGS.
   - N. DESIGN AND FIELD REVIEW OF NON-LOAD BEARING MASONRY
3. DESIGNS PRODUCED BY THE SPECIALTY ENGINEER SHALL CONSIDER STRENGTH, STABILITY, SERVICEABILITY AND INTEGRITY REQUIREMENTS UNDER GRAVITY AND SEISMIC LOADING IN ACCORDANCE WITH THE CURRENT EDITION OF APPLICABLE DESIGN CODES AND ALL OTHER DESIGN REQUIREMENTS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.
4. CONTRACTOR SHALL COORDINATE THE DESIGN OF ALL NON-STRUCTURAL ELEMENTS DESIGNED BY ONE OR MORE SPECIALTY ENGINEERS AND CONNECTING TO ELEMENTS DESIGNED BY OTHER SPECIALTY ENGINEERS TO ENSURE THE STRENGTH, STABILITY, SERVICEABILITY AND INTEGRITY OF THE FINAL CONSTRUCTION.
5. SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO READ JONES CHRISTOFFERSEN LTD. INDICATE CLEARLY THE METHOD OF ATTACHMENT AND MAGNITUDE OF ALL FORCES (SPECIFIED AND FACTORED) THAT THE STRUCTURE MUST WITHSTAND. THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.
6. THE DESIGN WIND LOADS TO BE USED FOR GLAZING, EXTERIOR STUDS AND EXTERIOR CLADDING ARE SHOWN BELOW. LOADS ARE UNFACTORED (SPECIFIED). THE LOADS ARE BASED ON Iw = 1.0 FOR ULTIMATE LIMIT STATES. MULTIPLY TABLE VALUES BY Iw = 0.75 FOR SERVICABILITY LIMIT STATES.

HEIGHT ABOVE STREET (m)	INWARD PRESSURE (kPa)	OUTWARD PRESSURE (kPa)	OUTWARD PRESSURE AT CORNER (kPa)
4.30	1.15	1.05	1.15

   CORNER PRESSURES ARE TO BE TAKEN AT A DISTANCE OF 1800 mm IN EACH DIRECTION FROM EACH CORNER OF THE BUILDING.
7. FOR STONE OR MASONRY CLADDING, SEISMIC FORCES MAY GOVERN.
8. THE DESIGN WIND LOAD TO BE USED FOR INTERIOR STUDS AND PARTITIONS IS 0.25 kPa (UNFACTORED) UNLESS NOTED OTHERWISE.
9. THE MAXIMUM ALLOWABLE DEFLECTIONS FOR GLAZING, STUDS, PARTITIONS AND CLADDING UNDER THE WIND LOADS SHOWN ABOVE SHALL MEET THE ARCHITECTURAL SPECIFICATIONS, THE NATIONAL BUILDING CODE AND THE MANUFACTURER'S SPECIFICATIONS. IN NO CASE SHALL THE DEFLECTIONS EXCEED THE FOLLOWING:
   - A. ELEMENTS SUPPORTING BRICK VENEER ------ L/720, MAX. 25 mm
   - B. ELEMENTS SUPPORTING PRECAST PANELS OR STUCCO ---------- L/360, MAX. 25 mm
   - C. ELEMENTS SUPPORTING WOOD SIDING, METAL SIDING OR EXTERIOR INSULATION ----- L/180, MAX. 25 mm
   - D. ELEMENTS SUPPORTING GLAZING ---------- L/180, MAX. 25 mm

STRUCTURAL MOVEMENTS

THIS STRUCTURE WILL UNDERGO NORMAL TYPES OF MOVEMENT AND DEFLECTION, AND THE FOLLOWING ARE ESTIMATES FOR THIS STRUCTURE. NON-STRUCTURAL COMPONENTS MUST BE DETAILED TO ACCOMMODATE THIS. DESIGN, DETAILING, AND FIELD REVIEW OF THESE NON-STRUCTURAL ELEMENTS IS BY OTHERS, AND NOT READ JONES CHRISTOFFERSEN LTD.

1. DIFFERENTIAL VERTICAL MOVEMENTS BETWEEN ADJACENT COLUMNS AND BETWEEN ADJACENT COLUMNS AND WALLS = APPROXIMATELY 20 mm.
2. VERTICAL DEFLECTION OF COLUMNS AND WALLS DUE TO SHRINKAGE AND CREEP = APPROXIMATELY 3.5 mm PER 3600 mm OF HEIGHT.
3. VERTICAL DEFLECTIONS OF EDGE BEAMS AND EDGES OF SLABS = APPROXIMATELY 25 mm.
   DIFFERENTIAL DEFLECTIONS OF EDGE BEAMS AND EDGES OF SLABS = ± 16 mm.
4. VERTICAL DEFLECTIONS AT INTERIOR OF FLOORS = APPROXIMATELY 25 mm.
   DIFFERENTIAL DEFLECTIONS AT INTERIOR OF FLOORS = ± 16 mm.
5. HORIZONTAL DRIFT DURING WIND AND EARTHQUAKE BETWEEN FLOORS:
   - A. ± 13 mm DRIFT WITHOUT DAMAGE TO NON-STRUCTURAL COMPONENTS.
   - B. ± 50 mm DRIFT WITHOUT COLLAPSE OF NON-STRUCTURAL COMPONENTS.
6. MOVEMENT AT EXPANSION JOINTS:
   - A. ± 50 mm PERPENDICULAR
   - B. ± 50 mm PARALLEL
   - C. ± 25 mm VERTICAL
7. HORIZONTAL SHRINKAGE MOVEMENTS OF POST-TENSIONED SLABS = APPROXIMATELY 10 mm PER 30000 mm OF LENGTH.

ALL STRUCTURES ARE ALSO SUBJECT TO CONSTRUCTION TOLERANCES. THIS SHOULD BE ALLOWED FOR IN DETAILING NON-STRUCTURAL COMPONENTS IN ADDITION TO THE ABOVE MOVEMENTS.

rjc Creative Thinking Practical Results

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Drawing Notes

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No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2025-01-29	CLARIFICATIONS TO CITY COMMENTS
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date	**2025-04-14 4:25:44 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S002**

Revision **4**

CONCRETE - SUPPLY, TESTING AND SUBMITTALS

1. CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN CSA A23.1.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONCRETE SUPPLIER TO ENSURE THAT THE PLASTIC AND HARDENED MIX PROPERTIES MEET SITE REQUIREMENTS FOR PLACING, FINISHING, AND THE OWNERS' SPECIFIED PERFORMANCE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL MEET THE DOCUMENTATION AND QUALITY CONTROL REQUIREMENTS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF CSA A23.1.
3. THE SUPPLIER SHALL MEET ALL CERTIFICATION AND DOCUMENTATION REQUIREMENTS AS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF CSA A23.1.
4. DOCUMENTATION DEMONSTRATING THAT THE PROPOSED MIX DESIGN WILL ACHIEVE THE REQUIRED STRENGTH, DURABILITY, AND PERFORMANCE REQUIREMENTS INDICATED UNDER SUPPLIER RESPONSIBILITY - ITEM (g) OF TABLE 5, CSA A23.1 (2014) SHALL BE IN ACCORDANCE WITH CSA A23.2-24C (2019) AND ITS REFERENCED STANDARDS OR AN APPROVED EQUIVALENT. THE SUBMITTED DOCUMENTATION SHALL BE ACCOMPANIED BY A MIX DESIGN REVIEW LETTER SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
5. AT THE REQUEST OF THE OWNER, THE SUPPLIER WILL FURNISH TEST DATA RESULTS (LESS THAN 3 MONTHS OLD) FOR EACH PROPOSED MIX DESIGN DEMONSTRATING THAT THEY MEET THE STRENGTH, DURABILITY, AND SHRINKAGE REQUIREMENTS SPECIFIED.
6. FOR 56 DAY [OR 90 DAY] STRENGTH SPECIFICATIONS, THE SUPPLIER WILL FURNISH THE OWNER WITH ACCELERATED STRENGTH TEST DATA FOR EACH PROPOSED MIX DESIGN, OR OTHER DOCUMENTATION ACCEPTABLE TO THE OWNER, SUCH THAT THE ANTICIPATED 56 DAY [OR 90 DAY] STRENGTH OF THE MIX AS PLACED ON SITE CAN BE EVALUATED WITHIN 14 DAYS OF PLACEMENT.
7. THE CONCRETE SUPPLIER SHALL BE CERTIFIED BY THE [READY MIXED CONCRETE ASSOCIATION OF ONTARIO][ALBERTA READY MIXED CONCRETE ASSOCIATION].

CONDUITS, PIPES, AND SLEEVES EMBEDDED IN CONCRETE - GENERAL

EXCEPT WHEN APPROVED BY RJC, PIPES, CONDUITS, AND SLEEVES EMBEDDED IN CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH CSA A23.1 CLAUSE 6.7.5 AND THE FOLLOWING GUIDELINES:

1. GENERAL:
   - A. **SLEEVING DRAWINGS FOR THE FOLLOWING ELEMENTS AND THOSE NOTED ON PLANS AND SECTIONS SHALL BE SUBMITTED TO RJC FOR REVIEW PRIOR TO CONSTRUCTION:**
     - i. ALL ELEMENTS
     - ii. SLABS AND SLAB BANDS
     - iii. BEAMS AND GRADE BEAMS
     - iv. WALLS AND SHEAR WALLS
   - B. NOT WITHSTANDING THE SATISFYING OF THESE GUIDELINES, THE CONDUIT, SLEEVES, PIPES, ETC. SHALL NOT IMPAIR THE STRUCTURAL STRENGTH AND SHALL BE MOVED IF SO DIRECTED BY RJC.
   - C. CONTRACTOR SHALL MINIMIZE QUANTITY AND SIZE OF IN-SLAB CONDUITS AND EMBEDDED BOXES TO LEAST AMOUNT POSSIBLE, INCLUDING COMBINING DATA AND TELECOM CABLES IN COMMON CONDUITS WHERE PERMITTED BY CODES AND APPROVED BY THE ELECTRICAL ENGINEER.
   - D. ADD REINFORCING AT POINTS OF CONGESTION AS DIRECTED BY THE STRUCTURAL ENGINEER.
   - E. NO CONDUITS, IN-SLAB DUCTS, SLEEVES, EMBEDDED BOXES, STAYFORM, ETC., SHALL BE PLACED NEAR POST-TENSIONING ANCHORAGES.
   - F. METAL CONDUIT, PIPES, EMBEDDED BOXES, STAYFORM, ETC., SHALL NOT BE PLACED IN PARKING SLABS. NO CONDUIT, PIPES, EMBEDDED BOXES, STAYFORM, ETC. SHALL BE PLACED IN PARKING TOPPING.
   - G. SLEEVES, PIPES OR CONDUITS OF UNCOATED ALUMINUM SHALL NOT BE USED.
   - H. CONDUITS AND PIPES ARE NOT ALLOWED IN THE CONCRETE TOPPING ON TOP OF STEEL DECK UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

CONCRETE - STRENGTH AND EXPOSURE

GENERAL (AREAS NOT INCLUDING PARKING)

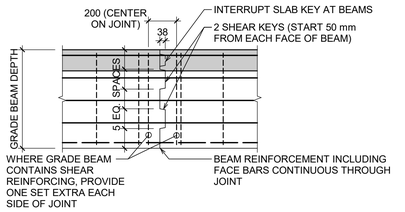
ELEMENT	COMPRESSIVE STRENGTH (MPa) 28 DAY U.N.O.	EXPOSURE CLASS	COMMENTS
FOOTINGS	30 MPa (56 DAY)	N	.
SLAB ON GRADE (INTERIOR)	25 MPa	N	UNO ON PLANS
SLAB ON GRADE (EXTERIOR)	35 MPa	C-1	UNO ON PLANS
RETAINING WALLS / FOUNDATION WALLS	30 MPa	F-2	.
OTHER WALLS	25 MPa	N/F-2	.
COLUMNS / PIERS	30 MPa	F-2	.
MECHANICAL HOUSEKEEPING PADS	20 MPa	N	.

NOTES:

1. WHERE EXPOSURE CLASS LISTED AS N/F-1/F-2:
   - A. USE N EXPOSURE FOR INTERIOR CONCRETE LOCATED WITHIN AN INSULATED BUILDING ENVELOPE (E.G. DRY AND NOT SUBJECTED TO FREEZING AND THAWING).
   - B. USE F-1 EXPOSURE FOR HORIZONTAL AND SLOPED CONCRETE MEMBERS EXTERIOR TO THE BUILDING INSULATION AND NOT PROTECTED BY A MEMBRANE AND DRIP EDGE (E.G. WET AND SUBJECT TO FREEZING AND THAWING).
   - C. USE F-2 EXPOSURE FOR HORIZONTAL AND SLOPED CONCRETE MEMBERS EXTERIOR TO THE BUILDING INSULATION AND PROTECTED BY A MEMBRANE AND DRIP EDGE (E.G. DRY AND SUBJECT TO FREEZING AND THAWING).
   - D. USE F-2 FOR VERTICAL CONCRETE MEMBERS EXTERIOR TO THE BUILDING INSULATION.
2. CONCRETE STRENGTH AND EXPOSURE CLASS OF STAIRS AND RAMPS SHALL MEET THE MOST STRINGENT CRITERIA OF THE ADJOINING SLABS AND BEAMS UNLESS NOTED OTHERWISE.

CONSTRUCTION JOINT THROUGH GRADE BEAMS

NOTE: LOCATIONS OF CONSTRUCTION JOINTS TO BE PRE-APPROVED BY THE STRUCTURAL ENGINEER.



BEAM ELEVATION

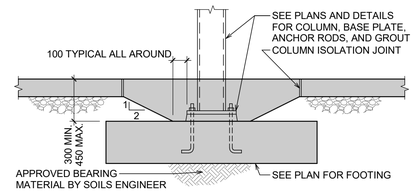
CONCRETE - GENERAL

1. UNLESS NOTED OTHERWISE, ALL CONCRETE IS TO BE CAST-IN-PLACE.
2. CONCRETE PLACEMENT BY THE WET-MIX SHOTCRETE METHOD IS PERMITTED FOR ELEMENTS LISTED IN THE "STRUCTURAL SHOTCRETE" NOTE ON DRAWING .
3. THE USE OF SHOTCRETE [FOR ELEMENTS OTHER THAN THOSE LISTED IN THE "STRUCTURAL SHOTCRETE" NOTE] REQUIRES APPROVAL BY THE STRUCTURAL ENGINEER. ANY COSTS ASSOCIATED WITH REDESIGN, CHANGES TO THE CONTRACT DOCUMENTS AND ANY ADDITIONAL TESTING AND CONTRACT ADMINISTRATION COSTS TO ACCOMMODATE SHOTCRETE [IN OTHER ELEMENTS] IS TO BE PAID FOR BY THE CONTRACTOR.
4. PORTLAND CEMENT SHALL BE TYPE GU UNLESS NOTED OTHERWISE.
5. REQUESTS BY THE CONTRACTOR TO USE TYPE GUL CEMENT FOR ANY STRUCTURAL ELEMENTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. THE SUBMISSION SHALL INCLUDE A SIGNED AND SEALED LETTER PREPARED BY A MATERIALS SPECIALTY ENGINEER OR THE SUPPLIER'S ENGINEER TO ATTEST THAT THE CONCRETE PRODUCED WITH TYPE GUL CEMENT ACHIEVES SIMILAR OR HIGHER LEVEL OF PERFORMANCE THAN THE CONCRETE PRODUCED WITH TYPE GU CEMENT NOTED IN THE DRAWINGS AND SPECIFICATIONS, INCLUDING STRENGTH, EXPOSURE CLASS, ETC. AND THAT THE PROPOSED MIX IS SUITABLE FOR THE INTENDED LOCATION AND PLACEMENT METHOD. FOR CONCRETE WITH TYPE GUL CEMENT TO BE PLACED IN CONTACT WITH NATIVE SOIL OR FILL, SUBSURFACE SOIL INVESTIGATION SHALL BE COMPLETED TO DETERMINE SOLUABLE SULPHATE LEVELS. WHERE THE SOLUABLE SULPHATE LEVELS ARE NOT REPORTED IN THE PROJECT SOILS REPORT REFERENCED IN THE STRUCTURALS DRAWING, ADDITIONAL TESTING SHALL BE CONDUCTED UNDER THE DIRECTION OF A MATERIALS SPECIALTY ENGINEER AND A COPY OF THE SEALED TESTING REPORT SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER. ALL TESTING AND OTHER SERVICES BY THE MATERIALS SPECIALTY ENGINEER RELATED TO USE OF TYPE GUL CEMENT SHALL BE PAID FOR BY THE CONTRACTOR.
6. CEMENT TYPE FOR EXPOSURE CLASSES S-1, S-2, AND S-3 SHALL BE AS OUTLINED IN CSA A23.1.
7. CONCRETE SHALL HAVE A UNIT WEIGHT OF 23±1 kN/m³ (145±5 PCF) UNLESS NOTED OTHERWISE.
8. THE CONCRETE PROPERTIES USED IN DESIGN ARE BASED ON A NOMINAL COARSE AGGREGATE SIZE OF 20 mm (3/4") ACCORDING TO TABLE 11 OF CSA A23.1, UNLESS NOTED OTHERWISE. ALL LOCATIONS PROPOSED BY THE CONTRACTOR FOR USE OF CONCRETE MIX DESIGNS WITH A NOMINAL COARSE AGGREGATE SIZE DIFFERENT THAN 20 mm (3/4") SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. ANY INCREASE IN REQUIRED CONCRETE STRENGTH OR INCREASE IN QUANTITY OF REINFORCEMENT DUE TO PROPOSED USE OF CONCRETE MIX WITH DIFFERENT NOMINAL COARSE AGGREGATE SIZE TO BE PAID FOR BY THE CONTRACTOR.
9. RECYCLED AGGREGATE IS NOT TO BE USED WITHOUT WRITTEN APPROVAL BY THE ENGINEER.
10. SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT, AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
11. MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CSA A23.1. REQUIRED AIR CONTENT FOR EXPOSURE CLASSES F-1, F-2, C-1, C-2, AND C-XL SHALL BE BASED ON CONCRETE EXPOSED TO FREEZE-THAW CYCLES UNLESS NOTED OTHERWISE.
12. CHLORIDE ION PENETRABILITY FOR EXPOSURE CLASS C-1 AND C-XL SHALL MEET THE REQUIREMENTS OF CSA A23.1.

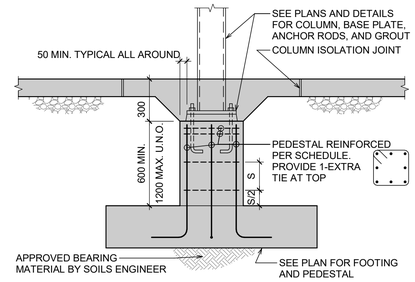
CONCRETE - FINISHING AND ADMIXTURES

1. CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CSA A23.1. CURING COMPOUNDS ARE NOT PERMITTED FOR SUSPENDED PARKING SLABS OR EXPOSURE CLASS C-XL CONCRETE. PARKING SLABS AND REINFORCED SLAB ON GRADES IN PARKING AREAS ARE TO BE CURED FOR MINIMUM 7 DAYS.
2. CORROSION INHIBITORS ARE TO BE USED IN CONCRETE IN AREAS NOTED ON THE STRUCTURAL DRAWINGS, AS WELL AS IN STAIRS AND STAIR LANDINGS WITHIN PARKADES. USE 10 L/m³ OF "DCI S" BY GRACE CONSTRUCTION PRODUCTS OR "MASTERLIFE CI 30" BY BASF CONSTRUCTION CHEMICALS. ALTERNATIVELY, USE C-XL CONCRETE WITH CURING TYPE 3 (EXTENDED) PER CSA A23.1.
3. ALL BOTTOM EDGES OF EXPOSED SLABS AND BEAMS, AS WELL AS EDGES OF WALLS AND COLUMNS, TO BE CHAMFERED 20 mm X 20 mm. ALL TOP EDGES OF EXPOSED SLABS, BEAMS, UPSTANDS AND STAIRS TO BE TOOLED UNLESS NOTED OTHERWISE. SEE ALSO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR OTHER FINISH REQUIREMENTS.
4. NO CALCIUM CHLORIDE IS PERMITTED, IN ANY FORM, IN ANY CONCRETE MIX WITHOUT THE EXPRESS WRITTEN CONSENT OF READ JONES CHRISTOFFERSEN LTD.
5. CURING AND PROTECTION OF CONCRETE FOR HOT, COLD OR DRY WEATHER IS TO BE AS PER CSA A23.1 AS A MINIMUM. SEE ALSO "CONCRETE COLD WEATHER REQUIREMENTS" IN THE STRUCTURAL DRAWINGS.

TYPICAL STEEL COLUMN ON FOOTING DETAILS



STEEL COLUMN BEARING DIRECTLY ON FOOTING



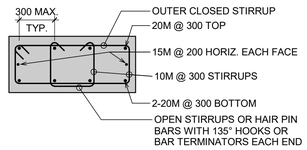
NOTE: STRAIGHT VERTS WITH HOOKED DOWELS MAY BE USED WITH TENSION SPLICE. DO NOT WET SET DOWELS OR VERTS.

STEEL COLUMN ON PEDESTAL ON FOOTING

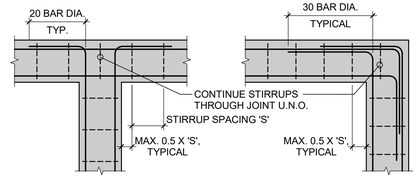
GRADE BEAM REINFORCEMENT

1. UNLESS OTHERWISE NOTED ALL GRADE BEAM REINFORCEMENT SHALL CONSIST OF THE FOLLOWING:
   - A. UP TO 400 mm WIDE:

   - B. OVER 400 mm WIDE:



2. HOOK HORIZONTAL BEAM REINFORCING OR PROVIDE CORNER BARS AT ALL BEAM INTERSECTIONS AND CORNERS.
3. UNLESS NOTED OTHERWISE BEAM REINFORCEMENT SHALL BE CONTINUOUS:
   - A. TOP REINFORCEMENT SHALL BE SPLICED AT MIDSPAN AND SHALL HAVE LAPS OF 600 mm. HOOK TOP REINFORCEMENT AT END SUPPORTS AND PROVIDE ADDITIONAL TOP BARS WHERE REINFORCEMENT IS INTERRUPTED BY RECESSED COLUMN OR BASEPLATE DETAILS.
   - B. BOTTOM REINFORCEMENT SHALL BE SPLICED AT PILE LOCATIONS AND SHALL HAVE LAPS 450 mm.
   - C. ALL REINFORCEMENT TO BE CONTINUOUS THROUGH PILE CAPS OR INTERSECTING GRADE BEAMS.
4. UNLESS OTHERWISE NOTED MAXIMUM LENGTH OF POUR SHALL NOT EXCEED 30 m. LOCATIONS AND DETAILS OF CONSTRUCTION JOINTS SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO CONSTRUCTION.
5. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF GRADE BEAM CONSTRUCTION JOINTS AND CONTROL JOINTS.



TEE INTERSECTION (PLAN VIEW) **CORNER (PLAN VIEW)**

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date	**2025-04-14 4:25:44 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S003** Revision **3**

CONCRETE COVER

1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, PROVIDE 2 HOUR FIRE RATING FOR ALL REINFORCED CONCRETE.

2. **UNLESS OTHERWISE NOTED CONCRETE COVER TO REINFORCEMENT SHALL BE THE LARGEST OF A THROUGH H:**

   A. FOR FIRE RATINGS:

GENERAL (AREAS NOT INCLUDING PARKING)

ELEMENT		FIRE RATINGS		
		0-2 HOURS	3 HOURS	4 HOURS
COLUMNS AND FORMED PILES (TO TIES)		40 mm	40 mm	55 mm
WALLS - NON-RETAINING AND EXPOSED TO FIRE ON 2 SIDES AND INDENTIFIED ON PLAN		40 mm MIN., 50 mm MIN. TO VERTS.		
WALLS - NON-RETAINING AND EXPOSED TO FIRE ON 1 SIDE		GREATER OF 20 mm AND 1.0d_b TO ZONE TIES / OUTER CURTAIN LAYER		
BEAMS, GIRDERS & TRANSFER SLABS	TO STIRRUPS	40 mm		
	NO STIRRUPS	50 mm		
SLABS AND SLAB BANDS, STIRRUPS IN SLAB BANDS		GREATER OF 25 mm AND 1.0d_b	35 mm	40 mm
STRUCTURAL SLAB ON GRADE	TOP COVER	GREATER OF 25 mm AND 1.0d_b	N/A	N/A
	BOT. COVER	30 mm	N/A	N/A
RETAINING / FOUNDATION WALLS (F-2 EXPOSURE)	INSIDE FACE	GREATER OF 40mm AND 1.5db	N/A	N/A
	GROUND OR EARTH SIDE	GREATER OF 40mm AND 1.5db	N/A	N/A

PARKING AREAS

ELEMENT		FIRE RATINGS		
		0-2 HOURS	3 HOURS	4 HOURS
COLUMNS AND FORMED PILES (TO TIES)		40 mm	40 mm	55 mm
WALLS - NON-RETAINING AND EXPOSED TO FIRE ON 2 SIDES AND IDENTIFIED ON PLAN		40 mm MIN., 50 mm MIN. TO VERTS.		
WALLS - NON-RETAINING AND EXPOSED TO FIRE ON 1 SIDE		40 mm TO ZONE TIES / OUTER CURTAIN LAYER		
BEAMS, GIRDERS & TRANSFER SLABS WITH MEMBRANE	TO STIRRUPS	40 mm		
	NO STIRRUPS	50 mm		
SLABS AND SLAB BANDS, STIRRUPS IN SLAB BANDS WITH MEMBRANE	TOP COVER	GREATER OF 40 mm OR 1.5d_b		
	BOT. COVER	GREATER OF 30 mm AND 1.5d_b	GREATER OF 35 mm AND 1.5d_b	GREATER OF 40 mm AND 1.5d_b
STRUCTURAL SLAB ON GRADE TOP AND BOTTOM COVER		55 mm	N/A	N/A
RETAINING / FOUNDATION WALLS COVER BOTH FACES (C-1 EXPOSURE)		GREATER OF 40mm AND 1.5db	N/A	N/A

B. UNLESS NOTED OTHERWISE IN NOTES C THROUGH H MINIMUM CONCRETE COVER ---------- 1.0d_b

C. CONCRETE CAST AGAINST EARTH OR GROUND ----- 75 mm

D. CONCRETE WITH NO MEMBRANE (NON-PARKING) AND EXPOSED TO CHLORIDES - EXPOSURE CLASS C-XL, C1, AND C3. --- 60 mm OR 2.0d_b (WHICHEVER IS GREATER)

E. FORMED FINISHED CONCRETE EXPOSED TO WEATHER - EXPOSURE CLASS F1, F2, S1, S2, OR EARTH --------- 40 mm OR 1.5d_b (WHICHEVER IS GREATER)

F. CONCRETE IN PARKING AREAS WITH MEMBRANE, TOP AND VERTICAL BARS -- 40 mm OR 1.5d_b (WHICHEVER IS GREATER)

G. CONCRETE IN PARKING AREAS WITH MEMBRANE AND SEVERE EXPOSURE (RAMPS, TRUCK ACCESS, ETC.) AS NOTED ON PLAN, TOP BARS -- 45 mm OR 1.5d_b (WHICHEVER IS GREATER)

H. CONCRETE IN PARKING AREAS, BOTTOM BARS ---------- 30 mm OR 1.5d_b (WHICHEVER IS GREATER)

NOTES:

SEE ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS FOR AREAS WHICH MAY REQUIRE 3 OR 4 HOUR RATINGS.

SEE STRUCTURAL DRAWINGS FOR AREAS CLASSIFIED AS (D) or (E) ABOVE FOR WEATHER EXPOSURE.

CONCRETE REINFORCEMENT

1. REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS:

   A. 10M AND LARGER (U.N.O.) - CSA G30.18 GRADE 400R
   B. WELDED WIRE REINFORCEMENT - ASTM A1064M
   C. ALL REINFORCING THAT WILL BE WELDED OR IS PART OF THE SEISMIC RESISTING ELEMENTS: REINFORCING FOR SHEAR WALLS, HEADERS AND ZONES (INCLUDING ZONE TIES AND HEADER TIES/STIRRUPS) AND MOMENT FRAME COLUMNS AND BEAMS (INCLUDING COLUMN TIES AND BEAM STIRRUPS). - CSA G30.18 GRADE 400W
   D. REINFORCING DESIGNATED AS 500 GRADE OR 500 MPa - CSA G30.18 GRADE 500W
   E. PRESTRESSING STRANDS - CSA G279
   F. EPOXY REINFORCING - ASTM A775M AND ASTM D3963M
   G. GALVANIZED REBAR - ASTM A767M

   (NOTE: CSA G30.18 W GRADES MAY BE SUBSTITUTED FOR CSA G30.18 R GRADES)

2. SEE PLAN AND DETAILS FOR ELEMENTS DESIGNATED WITH GRADE 500W REBAR. MARK ALL GRADE 500W REBAR WITH ORANGE PAINT AT BOTH ENDS. REBAR THAT IS NOT CLEARLY IDENTIFIABLE WILL BE REJECTED.

3. REINFORCING BARS WITH 5 x Ab MECHANICAL ANCHOR HEADS TO HAVE A CLEAR SPACING BETWEEN PARALLEL BARS OF NOT LESS THAN 4d_b WITHIN THE SAME LAYER AND BETWEEN LAYERS.

4. DO NOT SUBSTITUTE DEFORMED WIRE FOR REINFORCING BARS WITHOUT PRIOR APPROVAL OF THE RJC.

5. SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES, OR REINFORCING BARS AS REQUIRED. BARS USED AS SUPPORT BARS SHALL BE CONSIDERED AS ACCESSORIES.

6. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN CONCRETE COVER AS SPECIFIED. ALL SUPPORTS AND BARS MUST BE TIED TOGETHER TO MAINTAIN REINFORCING STEEL SECURELY IN PLACE DURING CONCRETE PLACEMENT.

7. IN SUSPENDED PARKING SLABS:

   A. BAR SUPPORT CHAIRS SHALL BE PLASTIC, PLASTIC COATED, OR PRECAST CONCRETE BLOCKS EQUAL IN QUALITY TO THE CONCRETE SPECIFIED FOR THE STRUCTURE.

   B. PLASTIC TIES OR PLASTIC COATED WIRES SHALL BE USED FOR TYING GALVANIZED OR EPOXY COATED REINFORCEMENT.

   C. UNCOATED METAL TIES SHALL NOT EXTEND MORE THAN 5 mm INTO THE CONCRETE COVER.

8. SEE STRUCTURAL DRAWINGS FOR EXTENT OF EPOXY COATED REBAR.

9. TESTING OF REINFORCING STEEL SHALL CONFORM TO THE SPECIFICATIONS.

DESIGNATION OF REINFORCING BARS

1. BARS SHOWN THUS —— —— —— IN BOTTOM OF BEAMS OR SLABS OR IN FAR FACE OF WALL

2. BARS SHOWN THUS ———— IN TOP OF BEAMS OR SLABS OR IN NEAR FACE OF WALL

3. STRAIGHT BARS:

   6-10M4200 MEANS 6-10M BARS 4200 mm LONG. ————

   15M3800 + 15M3200 ALT. @ 200 MEANS 1-15M 3800 mm LONG BAR THEN 1-15M 3200 mm LONG BAR SPACED 200 mm O/C AWAY. ————

   20M4000 @ 300 STAG. 600 MEANS 600 mm OFFSET FOR EACH 20M4000 BAR SPACED AT 300 mm O/C. IF STAGGER NOT SPECIFIED SEE GENERAL NOTES AND TYPICAL DETAILS FOR DIMENSION TYPICAL SLAB REINFORCING LAYOUT NOTE FOR DIMENSION. ———— 600

4. BENT BARS:

   6-C15M4000 @ 300 MEANS 6-15M BARS 4000 mm LONG (LENGTH INCLUDES HOOK LENGTH) HOOKED ONE END WITH 90° STANDARD HOOK AND SPACED AT 300 mm O/C.

   8-A15M3000 @ 300 MEANS 8-15M BARS 3000 mm LONG (LENGTH INCLUDES HOOK LENGTH) HOOKED ONE END WITH 180° STANDARD HOOK AND SPACED AT 300 mm O/C.

   15M @ 300 H.2.E. MEANS 15M BARS HOOKED BOTH ENDS WITH 90° STANDARD HOOK AND SPACED AT 300 mm O/C.

5. REINFORCING BAR HARDWARE:

   REINFORCING BAR TERMINATOR (WITH 5 x Ab GROSS HEAD) OR HEADED BAR (WITH 10 x Ab GROSS HEAD). PROVIDE BAR TERMINATOR U.N.O.

   REINFORCING BAR MECHANICAL SPLICE (TYPE 2 U.N.O.)

   REINFORCING BAR MECHANICAL SPLICE AT CONSTRUCTION JOINT OR FOR FUTURE EXTENSION. (TYPE 2 U.N.O.)

   REBAR HALF COUPLER WELDED TO STRUCTURAL STEEL SECTION OR EMBED PLATE (TYPE 2 U.N.O.)

6. EPOXY COATED STRAIGHT AND HOOKED BARS:

   E15M @ 400 B.E.W. MEANS 15M BARS EPOXY COATED SPACED AT 400 mm O/C AT BOTTOM OF SLAB IN BOTH DIRECTIONS. — — —

   7-EC15M4000 @ 250 MEANS 7-15M BARS EPOXY COATED 4000 mm LONG (LENGTH INCLUDES HOOK LENGTH) HOOKED ONE END WITH 90° STANDARD HOOK AND SPACED AT 250 mm O/C.

CONDUITS, PIPES, AND SLEEVES EMBEDDED IN CONCRETE - WALLS

REFER TO CONDUITS, PIPES, AND SLEEVES EMBEDDED IN CONCRETE - GENERAL FOR ADDITIONAL REQUIREMENTS

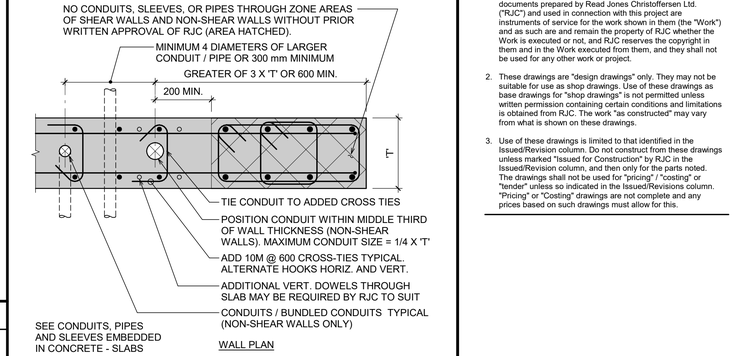
1. WALLS AND SHEAR WALLS:

   A. BOXES, CONDUIT, SLEEVES OR EMBEDDED PIPES ARE NOT ALLOWED WITHOUT THE WRITTEN APPROVAL OF RJC.

   B. CONTRACTOR MUST SUBMIT SHOP DRAWINGS SHOWING PROPOSED DETAILS OF ALL EMBEDMENTS (CONDUIT, BOXES, ETC.) AND OPENINGS IN SHEAR WALLS AND NON-SHEAR WALLS FOR REVIEW A MINIMUM OF 21 DAYS BEFORE START OF WALL CONSTRUCTION AT ANY LEVEL. SHOP DRAWINGS TO INCLUDE PROPOSED CONDUIT O.D., QUANTITY, LOCATION AND REQUIRED BOX-OUTS, STRAIN RELIEF LOOPS, ETC. FOR PRICING AND TENDER PURPOSES, THE CONTRACTOR SHALL NOT ASSUME THAT VERTICAL WALL RUNS WILL BE PERMITTED OR THAT ANY STRUCTURAL PROVISIONS TO ACCOMMODATE VERTICAL WALL RUNS HAVE BEEN MADE.

   C. GUIDELINES FOR CONDUIT, SLEEVES, OR EMBEDDED PIPES IN NON-SHEAR WALLS:

      i. MAXIMUM DIAMETER = 1/4 WALL THICKNESS.
      ii. NO HORIZONTAL RUNS PERMITTED UNLESS NOTED OTHERWISE ON WALL ELEVATIONS OR DETAILS.
      iii. VERTICAL RUNS TO HAVE MINIMUM 50 mm CONCRETE COVER.
      iv. VERTICAL RUNS SHALL HAVE MINIMUM SPACING IN PLANE OF WALL OR PERPENDICULAR TO PLANE OF WALL OF 4 DIAMETERS (300 mm MINIMUM).



rjc Creative Thinking Practical Results

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Drawing Notes

1. All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. ("RJC") and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.

2. These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as base drawings for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings.

3. Use of these drawings is limited to that identified in the Issued/Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Issued/Revision column, and then only for the parts noted. The drawings shall not be used for "pricing" / "costing" or "tender" unless so indicated in the Issued/Revisions column. "Pricing" or "Costing" drawings are not complete and any prices based on such drawings must allow for this.

No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

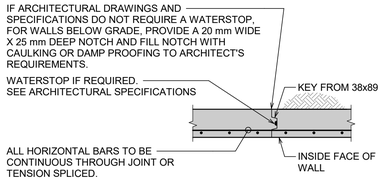
Print Date 2025-04-14 4:25:45 PM
Scale As indicated
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number **S004**

Revision **3**

WALL CONSTRUCTION JOINT

(CONSTRUCTION JOINT CAN REPLACE CONTROL JOINT)

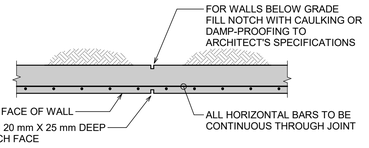


PLAN

WALL CONTROL JOINT

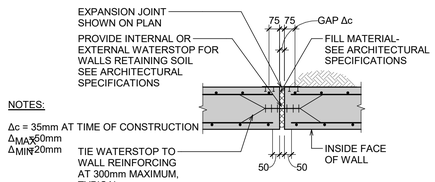
UNLESS NOTED OTHERWISE FOR EXTERIOR WALLS BELOW GRADE AND EXTERIOR WALLS EXPOSED TO WEATHER ABOVE GRADE.

SPACE AT 6000 mm CENTERS MAXIMUM UNLESS OTHERWISE NOTED ON PLAN.



PLAN

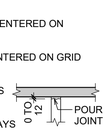
WALL EXPANSION JOINT



PLAN

COLUMNS

1. UNLESS NOTED OTHERWISE, CONCRETE STRENGTH IN COLUMNS IS INDICATED IN COLUMN SCHEDULE.
2. TIE COLUMN CAGES TO FORMS AND SQUARE BEFORE PLACING CONCRETE.
3. CONDUITS, BOXES OR OTHER INSERTS MAY NOT BE PLACED IN COLUMNS UNLESS APPROVED IN WRITING BY RJC.
4. UNLESS OTHERWISE NOTED ON COLUMN SCHEDULE, ALL COLUMN SPLICES SHALL BE AS PER TYPICAL DETAILS SHOWN ON THE STRUCTURAL DRAWINGS.
5. ALL EXPOSED CORNERS OF COLUMNS SHALL BE CHAMFERED 20 mm X 20 mm UNLESS NOTED OTHERWISE BY ARCHITECT.
6. UNLESS NOTED OTHERWISE, ALL COLUMN SPLICES SHALL BE COMPRESSION SPLICES.
7. UNLESS NOTED OTHERWISE, COLUMNS SHOULD BE CENTERED ON COLUMNS BELOW.
8. UNLESS NOTED OTHERWISE, COLUMNS SHALL BE CENTERED ON GRID LINES.
9. UNLESS NOTED OTHERWISE, PLACE TOP OF COLUMNS 0 mm TO 12 mm BELOW SOFFIT OF SUPPORTED CONCRETE STRUCTURE. IF TOP OF COLUMN PLACED ABOVE SOFFIT, CAREFULLY CHIP DOWN MINIMUM 3 DAYS AFTER ELEMENT POURED AND AS REQUIRED BY RJC.



10. WHERE COLUMN VERTICALS DO NOT EXTEND OVER, REFER TO "COLUMN SPLICE AND DOWEL DETAILS" NOTE.

WALLS

1. THESE NOTES APPLY SPECIFICALLY TO CONCRETE WALLS NOT CLASSIFIED AS SHEAR WALLS. SEE ALSO CONCRETE SHEAR WALL NOTES.

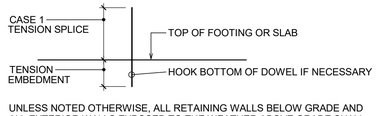
   UNLESS NOTED OTHERWISE, WALLS SHALL BE REINFORCED AS FOLLOWS:

WALL THICKNESS	FIRE EXPOSURE	VERTICAL REINFORCING	HORIZONTAL REINFORCING
150 mm	1 SIDE	10M @ 450 CENTERED	10M @ 330 CENTERED
	2 SIDES	10M @ 450 E.F. STAG.	10M @ 450 E.F. STAG.
200 mm	1 SIDE	10M @ 330 CENTERED	10M @ 250 OR 15M @ 500 CENTERED
	2 SIDES	10M @ 500 E.F. STAG.	10M @ 500 E.F. STAG.
250 mm	1 OR 2 SIDES	10M @ 500 E.F. STAG.	10M @ 400 E.F STAG.
300 mm	1 OR 2 SIDES	10M @ 440 E.F.	10M @ 330 E.F.
350 mm	1 OR 2 SIDES	10M @ 380 E.F.	10M @ 280 E.F.
400 mm	1 OR 2 SIDES	10M @ 330 E.F.	10M @ 250 E.F OR 15M @ 500 E.F. STAG.

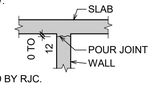
   FOR OTHER THICKNESSES, REINFORCEMENT TO BE PROPORTIONAL TO ABOVE.

   15M @ 500 MAY BE SUBSTITUTED FOR 10M @ 330 ONLY WITH THE APPROVAL OF RJC. FOR WALLS WITH A SINGLE LAYER OF STEEL, THE WALL REINFORCING SHALL BE PLACED IN THE CENTER OF THE WALL U.N.O.

   REFER TO THE "CONCRETE REINFORCEMENT" NOTE AND THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR FIRE EXPOSURE REQUIREMENTS. ALL WALLS DESIGNED FOR FIRE EXPOSURE ONE SIDE U.N.O. ON STRUCTURAL DRAWINGS.
2. PLACE VERTICAL REINFORCEMENT IN OUTER LAYERS OF THE CURTAINS AND HORIZONTAL REINFORCEMENT IN INNER LAYERS (BEHIND VERTICALS), UNLESS NOTED OTHERWISE.
2. PLACE HORIZONTAL REINFORCEMENT IN OUTER LAYERS OF THE CURTAINS AND VERTICAL REINFORCEMENT IN INNER LAYERS (BEHIND HORIZONTALS), UNLESS NOTED OTHERWISE.
3. ALL WALL REINFORCING SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS USED AT ALL WALL JUNCTIONS. EXTEND HOOKS TO FAR FACE OF WALL. CORNER BARS TO BE LOCATED ON OUTSIDE FACE OR CENTER OF WALL.
4. HORIZONTAL AND VERTICAL SPLICES SHALL BE CASE 1 TENSION SPLICES. U.N.O. HORIZONTAL BARS NEED NOT BE CONSIDERED TOP BARS.
5. ENDS OF ALL WALLS AND ALL WALL INTERSECTIONS SHALL HAVE 2-15M VERTICAL MINIMUM UNLESS NOTED OTHERWISE ON DRAWINGS.
6. ADD 2-15M PARALLEL TO ALL EDGES AND EXTENDING 625 mm BEYOND CORNERS AT OPENINGS IN WALLS.
7. UNLESS NOTED OTHERWISE, PROVIDE DOWELS AT BOTTOM OF WALLS (E.G. AT FOOTINGS OR WHEREVER WALL BEGINS) AS SHOWN BELOW. DOWELS TO MATCH VERTICAL REINFORCEMENT.

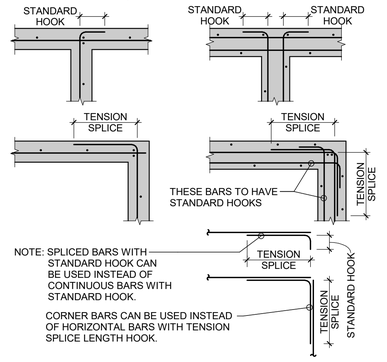


8. UNLESS NOTED OTHERWISE, ALL RETAINING WALLS BELOW GRADE AND ALL EXTERIOR WALLS EXPOSED TO THE WEATHER ABOVE GRADE SHALL HAVE CONTROL JOINTS. SEE CONTROL JOINT DETAIL. CONSTRUCTION JOINT MAY REPLACE CONTROL JOINT WHERE REQUIRED. THE LOCATION OF CONTROL JOINTS IN EXPOSED CONCRETE WALLS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW.
9. UNLESS NOTED OTHERWISE, PLACE TOP OF WALLS 0 mm TO 12 mm BELOW SOFFIT OF SUPPORTED CONCRETE STRUCTURE. IF TOP OF WALL PLACED ABOVE SOFFIT, CAREFULLY CHIP DOWN MINIMUM 3 DAYS AFTER ELEMENT POURED AND AS REQUIRED BY RJC.



WALLS - CORNER DETAILS

1. DETAILS OF HORIZONTAL REINFORCEMENT AT CORNERS (SEE ALSO ZONE REINFORCING DETAILS):



CONT'D FROM RIGHT... EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS

CASE 2 TENSION EMBEDMENT AND SPLICE CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CSA A23.3 TABLE 12.1 ($0.6\,k_1k_2k_3k_4f_yd_b / \sqrt{f'_c}$) ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING CASE 1 CONDITIONS AS SET OUT ABOVE. FOR EXAMPLE:

A. ONE WAY SLAB TOP BARS (SEE TOP BAR NOTE).
B. SLAB BAND BOTTOM BARS.
C. BARS (EXCLUDING THE SPLICE) SPACED CLOSER TOGETHER THAN 2 BAR DIAMETERS IN SAME LAYER AND BETWEEN LAYERS.
D. STIRRUPS IN BEAMS AND GIRDERS.
E. SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION (GRADE 400 LENGTHS)					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	430	645	860	1345	1610	1880
	(SPLICE)	(560)	(840)	(1120)	(1745)	(2095)	(2445)
25 MPa	EMBEDMENT	385	580	770	1200	1440	1680
	(SPLICE)	(500)	(750)	(1000)	(1560)	(1875)	(2185)
30 MPa	EMBEDMENT	355	530	705	1100	1315	1535
	(SPLICE)	(460)	(685)	(915)	(1425)	(1710)	(1995)
35 MPa	EMBEDMENT	325	490	650	1015	1220	1420
	(SPLICE)	(425)	(635)	(845)	(1320)	(1585)	(1850)
40 MPa	EMBEDMENT	305	460	610	950	1140	1330
	(SPLICE)	(395)	(595)	(790)	(1235)	(1480)	(1730)
45 MPa	EMBEDMENT	300	430	575	895	1075	1255
	(SPLICE)	(390)	(560)	(745)	(1165)	(1400)	(1630)
50 MPa	EMBEDMENT	300	410	545	850	1020	1190
	(SPLICE)	(390)	(530)	(710)	(1105)	(1325)	(1545)
55 MPa	EMBEDMENT	300	390	520	810	975	1135
	(SPLICE)	(390)	(505)	(675)	(1055)	(1265)	(1475)
60 MPa	EMBEDMENT	300	375	500	775	930	1085
	(SPLICE)	(390)	(485)	(645)	(1010)	(1210)	(1410)
65 MPa & GREATER	EMBEDMENT	300	360	480	750	900	1050
	(SPLICE)	(390)	(470)	(625)	(975)	(1170)	(1365)

NOTES:

1. "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.
2. INCREASE THESE TABLE LENGTHS BY 1.5 TIMES FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 TIMES FOR EPOXY COATED TOP REINFORCEMENT.
3. TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.25 FOR GRADE 500 REINFORCEMENT.
4. INCREASE THESE TABLE LENGTHS BY 1.15 TIMES WHEN SPACING BETWEEN LAYERS OF REBAR IS $1.0d_b$.
5. WHERE A TENSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE GREATER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

DEVELOPMENT OF STANDARD HOOKS IN TENSION

BASED ON CSA A23.3.

CONCRETE STRENGTH	REBAR DESIGNATION (GRADE 400 LENGTHS)					
	10M	15M	20M	25M	30M	35M
20 MPa	225	340	450	560	675	785
25 MPa	200	300	400	500	600	700
30 MPa	185	275	370	460	550	640
35 MPa	170	255	340	425	510	595
40 MPa	160	240	320	400	475	555
45 MPa	150	225	300	375	450	525
50 MPa	150	215	285	355	425	495
55 MPa	150	205	270	340	405	475
60 MPa	150	195	260	325	390	455
65 MPa & GREATER	150	190	250	315	375	440

NOTES:

1. TABLE SHOWS DEVELOPMENT LENGTHS FOR GRADE 400 REINFORCEMENT. INCREASE TABLE LENGTHS BY 1.25 FOR GRADE 500 REINFORCEMENT.
2. INCREASE TABLE LENGTHS BY 1.2 FOR EPOXY COATED REINFORCEMENT.

EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS

1. BASED ON CSA A23.3
2. WHERE EMBEDMENT OR SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.
3. WHERE THE DRAWINGS INDICATE A COMPRESSION EMBEDMENT, IT IS A COMPRESSION EMBEDMENT LENGTH AND IT SHALL BE AS NOTED BELOW.
4. WHERE THE DRAWINGS INDICATE A TENSION EMBEDMENT, IT IS A TENSION EMBEDMENT LENGTH AND SHALL BE AS NOTED BELOW.
5. WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
6. WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
7. IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND SPLICE LENGTHS ARE SHOWN IN BRACKETS.
8. ALL TENSION SPLICE LENGTHS ARE CLASS "B" (1.3 ℓd).
9. WHERE MORE THAN ONE FACTOR APPLIES FOR INCREASING THE LENGTHS IN THESE TABLES, MULTIPLY ALL FACTORS TOGETHER.

COMPRESSION EMBEDMENT AND SPLICE LENGTHS

10. COMPRESSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE THE "COMPRESSION DEVELOPMENT LENGTH" AS DEFINED IN CSA A23.3 CLAUSE 12.3.2.
11. SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A COMPRESSION SPLICE AS DEFINED IN CSA A23.3 CLAUSE 12.16.1.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION (GRADE 400 LENGTHS)					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	215	325	430	540	645	755
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)
25 MPa	EMBEDMENT	200	290	385	480	580	675
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)
30 MPa & GREATER	EMBEDMENT	200	265	355	440	530	620
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)

NOTES:

1. TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.46 FOR GRADE 500 REINFORCEMENT.
2. WHERE A COMPRESSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE GREATER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

TENSION EMBEDMENT AND SPLICE LENGTHS

1. TENSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE A "TENSION DEVELOPMENT LENGTH" AS DEFINED IN CSA A23.3 CLAUSE 12.2.
2. SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A CLASS 'B' TENSION SPLICE (1.3ℓd) AS PER CSA A23.3 CLAUSE 12.15.

CASE 1 TENSION EMBEDMENT AND SPLICE CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CSA A23.3 TABLE 12.1 ($0.45\,k_1k_2k_3k_4f_yd_b / \sqrt{f'_c}$) ARE TO BE AS PER THE FOLLOWING TABLE FOR:

A. COLUMN VERTS REQUIRING TENSION SPLICES.
B. BEAM AND GIRDER TOP AND BOTTOM BARS.
C. SLAB BAND TOP BARS.
D. TWO WAY SLAB TOP AND BOTTOM BARS.
E. ONE WAY SLAB BOTTOM BARS.
F. FOUNDATION RAFT SLABS, TOP AND BOTTOM BARS.
G. WALL HORIZONTAL AND VERTICAL DISTRIBUTED REINFORCING.
H. SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.
I. MEMBERS WHICH DO NOT SATISFY THE ABOVE CONDITIONS SHALL HAVE TENSION EMBEDMENTS AND SPLICES AS PER CASE 2 TABLE BELOW.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION (GRADE 400 LENGTHS)					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	325	485	645	1010	1210	1410
	(SPLICE)	(420)	(630)	(840)	(1310)	(1570)	(1835)
25 MPa	EMBEDMENT	300	435	580	900	1080	1260
	(SPLICE)	(390)	(565)	(750)	(1170)	(1405)	(1640)
30 MPa	EMBEDMENT	300	395	530	825	990	1155
	(SPLICE)	(390)	(515)	(685)	(1070)	(1285)	(1500)
35 MPa	EMBEDMENT	300	370	490	765	915	1065
	(SPLICE)	(390)	(475)	(635)	(990)	(1190)	(1385)
40 MPa	EMBEDMENT	300	345	460	715	855	1000
	(SPLICE)	(390)	(445)	(595)	(925)	(1110)	(1295)
45 MPa	EMBEDMENT	300	325	430	675	805	940
	(SPLICE)	(390)	(420)	(560)	(875)	(1050)	(1225)
50 MPa	EMBEDMENT	300	310	410	640	765	895
	(SPLICE)	(390)	(400)	(530)	(830)	(995)	(1160)
55 MPa	EMBEDMENT	300	300	390	610	730	850
	(SPLICE)	(390)	(390)	(505)	(790)	(950)	(1105)
60 MPa	EMBEDMENT	300	300	375	585	700	815
	(SPLICE)	(390)	(390)	(485)	(760)	(910)	(1060)
65 MPa & GREATER	EMBEDMENT	300	300	360	565	675	790
	(SPLICE)	(390)	(390)	(470)	(735)	(880)	(1025)

NOTES:

1. "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.
2. "TOP BAR" FACTOR DOES NOT APPLY TO HORIZONTAL WALL REINFORCEMENT IN WALLS THAT ARE NOT VIBRATED.
3. INCREASE THESE TABLE LENGTHS BY 1.5 TIMES FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 TIMES FOR EPOXY COATED TOP REINFORCEMENT.
4. TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.25 FOR GRADE 500 REINFORCEMENT.
5. WHERE A TENSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE GREATER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

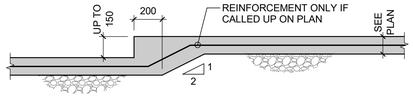
GENERAL NOTES & TYPICAL DETAILS

Print Date 2025-04-14 4:25:46 PM
Scale As indicated
Project No. 21-029
Drawn By DP
Checked By GJ

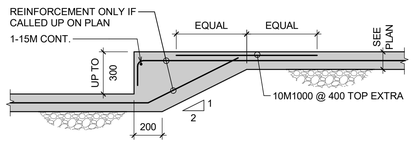
Sheet Number **S005**

Revision **3**

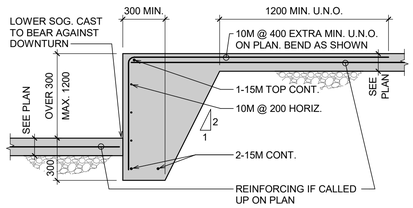
TYPICAL SLAB ON GRADE STEP DETAILS



150 mm MAXIMUM STEP

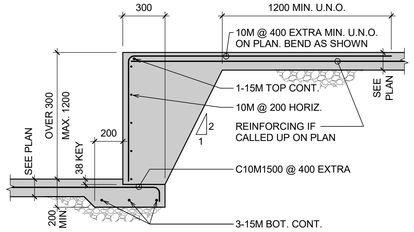


300 mm MAXIMUM STEP



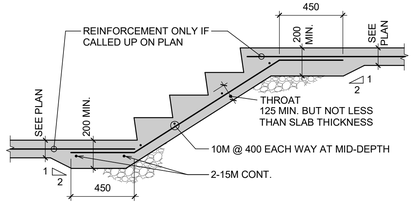
1200 mm MAXIMUM STEP

RETAINING WALL IS ALTERNATE



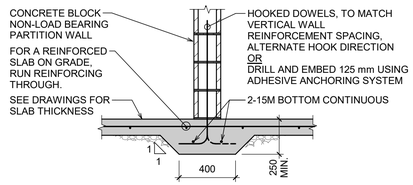
1200 mm MAXIMUM STEP - ALTERNATE

RETAINING WALL IS ALTERNATE



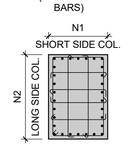
STAIRS (MAXIMUM 12 RISERS)

TYPICAL SLAB ON GRADE THICKENING UNDER NON-LOAD BEARING BLOCK PARTITION



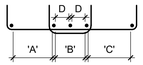
COLUMN VERTICAL REINFORCEMENT AND TIE ARRANGEMENT

TYPE 1 (N1 X N2) (PERIMETER BARS)



TYPE 2 (N1 X N2) (2 LAYERS)

TYPE 3 (N1 X N2) (FILLED)



'A', 'C' = 500 MAX.
'B' = 300 MAX.
TYPICAL AT ALL TIES - ANY SIDE OF COLUMN

TYPICAL ROUND OR OCTAGONAL COLUMN TIES
6 VERTICAL BARS MIN.

NOTES:

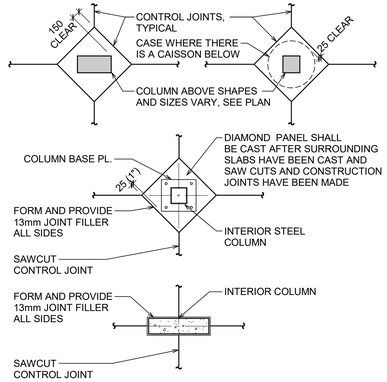
1. PROVIDE CLOSED OUTER TIE FOR ALL COLUMNS.
2. SEE COLUMN TIE SPACING GENERAL NOTE FOR VERTICAL TIE SIZE AND SPACING REQUIREMENTS.
3. MAXIMUM CLEAR DISTANCE BETWEEN VERTICAL BARS ENCLOSED BY THE CORNER OF A TIE, AND WITHOUT AN INTERMEDIATE BAR, IS 500 mm.
4. MAXIMUM ONE BAR MAY BE PLACED BETWEEN TIED BARS. MAXIMUM CLEAR DISTANCE BETWEEN TIED VERTICAL BARS FOR THIS CASE IS 300 mm.
5. ALL TIES SHALL HAVE 135° HOOKS, EXCEPT FOR SINGLE CROSS TIES WHERE ONE HOOK IS 135°AND THE OTHER IS 90°.
6. CLOSED OR OPEN TIES CAN ALWAYS BE SUBSTITUTED FOR CROSS-TIES.
7. ADD SINGLE CROSS TIES WHEN D > 150 mm.
8. THE 90° HOOKS OF SUCCESSIVE TIES HORIZONTALLY AND VERTICALLY SHALL BE ALTERNATED END FOR END.
9. ALL COLUMN TIE ARRANGEMENTS ARE TYPE 1 U.N.O. IN COLUMN SCHEDULE.
10. FOR TYPE 1 COLUMNS, BAR SPACING TO BE AS CLOSE TO EQUAL AS POSSIBLE ON BOTH SIDES OF COLUMN. IF UNEQUAL SPACING IS NECESSARY, SPACE BARS AT THE TIGHTER SPACING ON LONG SIDE OF COLUMN U.N.O.
11. ROUND OR OCTAGONAL COLUMNS TO HAVE 6 VERTICAL BARS MINIMUM. OFFSET LOCATION OF TIE HOOKS OVER HEIGHT OF COLUMN.

SLAB ON GRADE REINFORCEMENT AND CONTROL JOINTS

1. SLAB ON GRADE SHALL BE PLACED ON SOIL CAPABLE OF SUSTAINING 25.0 kPa MIN. WITHOUT SETTLEMENT RELATIVE TO THE BUILDINGS FOOTINGS. IN AREAS WHERE SOG. USED TO SUPPORT TEMPORARY SHORING LOADS, LARGER SUBGRADE CAPACITIES MAY BE REQUIRED PER LOADS SUPPLIED BY TEMPORARY WORKS ENGINEER.
2. REINFORCE SLAB ON GRADE PER TABLE BELOW LOCATED 40mm FROM TOP OF SLAB WITH PROPER CHAIRS.

SOG. THICKNESS	MIN. REINFORCING U.N.O. ON PLAN
≤ 125mm	152x152 MW 18.7 x MW 18.7
126mm TO 175mm	10M @400 E.W.
>176mm	15M @400 E.W.

3. UNLESS MORE RIGOROUS REQUIREMENTS ARE INDICATED ELSEWHERE ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS, SPACE CONTROL JOINTS AT 4500 mm O/C MAXIMUM.
4. SAWCUT JOINTS 4mm WIDE AND 38 mm DEEP AS SOON AS PRACTICAL, BUT NO LATER THAN 12 HOURS AFTER PLACEMENT OF SLAB. USE EQUIPMENT THAT DOES NOT "RAVEL" THE EDGES OF THE CUT, SEAL AS REQUIRED.
5. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, RUN ANY SLAB ON GRADE REINFORCEMENT THROUGH THE JOINTS.
6. UNLESS NOTED OTHERWISE, SAWCUT DIAMOND PATTERN AROUND COLUMNS, 150 mm CLEAR OF COLUMNS.
7. UNLESS NOTED OTHERWISE, FORM A DIAMOND SHAPE AROUND COLUMNS, 150 mm CLEAR, AND DO NOT RUN REINFORCEMENT THROUGH. PLACE INFILL AROUND COLUMN 28 DAYS AFTER SLAB ON GRADE PLACED.



8. APPROVAL OF ARCHITECT IS REQUIRED TO SUBSTITUTE "ZIP STRIPS" FOR SAWCUTS.
9. REINFORCEMENT AS SPECIFIED IN NOTE #2 ABOVE TO CROSS AND LAP MIN 400mm AT COLD JOINTS. FOR UNREINFORCED SLAB ON GRADE PROVIDE 38x38mm DEEP CONTINUOUS SHEAR KEY IN SOG. FACE.

CONT'D FROM RIGHT... COLUMN SPLICE AND DOWEL DETAILS

NOTES:

1. ADD ADDITIONAL SETS OF TIES AT 1/2 TIE SPACING MAXIMUM IF THIS DISTANCE IS MORE THAN 1/2 TIE SPACE.
2. CONTINUE COLUMN TIES THROUGH BEAM / COLUMN, SLAB BAND / COLUMN, AND SLAB / COLUMN JOINTS EXCEPT WHERE BEAMS, SLAB BANDS, OR SLABS OF EQUAL DEPTH FRAME INTO ALL FOUR SIDES OF COLUMN (SLAB OVERHANG AT LEAST 4 TIMES SLAB THICKNESS). COLUMN TIES TO CONTINUE THROUGH JOINT IF COLUMN WIDTH ON ANY SIDE EXCEEDS BEAM WIDTH ON SAME SIDE.
3. CONTINUE COLUMN TIES THROUGH ALL REGIONS WHERE MECHANICAL SPLICES ARE PROVIDED ON VERTICAL BARS
4. WHERE COLUMN VERTICALS DO NOT EXTEND INTO A COLUMN ABOVE, EXTEND VERTICAL REINFORCING 600 mm MINIMUM INTO UNDERSIDE OF BEAMS OR TO WITHIN 25 mm OF TOP OF SLABS UNLESS CLEAR COVER REQUIREMENTS ARE GREATER.
5. WHERE COLUMN VERTICALS WITH NO HOOK OR WITH STANDARD HOOK DO NOT HAVE FULL TENSION EMBEDMENT INTO MEMBER ABOVE, PROVIDE HOOKED DOWELS SAME SIZE AND NUMBER AS VERTICAL COLUMN REINFORCEMENT UNLESS NOTED OTHERWISE IN COLUMN SCHEDULE.
   A. WHERE BARS WITH NO HOOK PERMITTED, EXTEND BAR TO TOP OF SLAB LESS TOP COVER REQUIREMENT.
   B. ALL HOOKS AT EACH COLUMN FACE ORIENTED TO CROSS OVER FAR COLUMN FACE EXCEPT FOR HOOKS FROM INTERIOR FACE PARALLEL TO SLAB EDGE.
   C. HOOKS TO EXTEND TO TOP OF SLAB AND PLACED IN THE SAME LAYER AS AND PARALLEL TO SLAB REINFORCING IN [TOP UPPER LAYER][SAME DIRECTION AS HOOK] U.N.O.
6. DO NOT CRANK COLUMN VERTICAL BARS GREATER THAN 35M.
7. SCHEDULE FOR EXTRA TIES AT CRANKS, UNLESS NOTED OTHERWISE

VERTICAL BAR SIZE	TIE SETS
UP TO 30M	4-10M TIE SETS
35M	5-10M TIE SETS

COLUMN TIE ARRANGEMENTS

TYPE	4 BAR COL.	6 BAR COL.	8 BAR COL.	10 BAR COL.	12 BAR COL.
TYPE 1					
TYPE 2					
TYPE 3					
TYPE 4					

'A', 'C' = 500 mm MAX.
'B' = 300 mm MAX.
TYPICAL AT ALL TIES - ANY SIDE OF COLUMN

TYPICAL ROUND OR OCTAGONAL COLUMN TIES

NOTES:

1. MAXIMUM CLEAR DISTANCE BETWEEN VERTICAL BARS ENCLOSED BY THE CORNER OF A TIE, AND WITHOUT AN INTERMEDIATE BAR, IS 500 mm.
2. MAXIMUM ONE BAR MAY BE PLACED BETWEEN TIED BARS. MAXIMUM CLEAR DISTANCE BETWEEN TIED VERTICAL BARS FOR THIS CASE IS 300 mm.
3. ALL TIES TO HAVE 135° HOOKS. COLUMNS IDENTIFIED WITH BUCKLING PREVENTION TIES SHALL HAVE 135° SEISMIC HOOKS.
4. CLOSED TIES MAY ALWAYS BE SUBSTITUTED FOR CROSS-TIES.
5. ROUND OR OCTAGONAL COLUMNS TO HAVE 6 VERTICAL BARS MINIMUM. OFFSET LOCATION OF TIE HOOKS OVER HEIGHT OF COLUMN.

COLUMN TIE SPACING

MAXIMUM VERTICAL SPACING OF 10M TIES IN COLUMNS - CONCRETE f'c ≤ 50 MPa

COLUMN WIDTH (SHORTEST SIDE)	COLUMN VERTICAL BAR SIZE					
	15M	20M	25M	30M	35M	45M
200 mm	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm
250 mm	240 mm	250 mm	250 mm	250 mm	250 mm	250 mm
300 mm	240 mm	300 mm	300 mm	300 mm	300 mm	300 mm
350 mm	240 mm	310 mm	350 mm	350 mm	350 mm	350 mm
400 mm	240 mm	310 mm	400 mm	400 mm	400 mm	400 mm
450 mm	240 mm	310 mm	400 mm	450 mm	450 mm	450 mm
500 mm AND THICKER	240 mm	310 mm	400 mm	480 mm	480 mm	480 mm

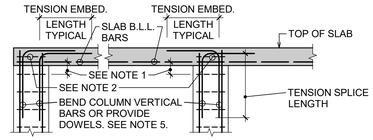
MAXIMUM VERTICAL SPACING OF 10M TIES IN COLUMNS - CONCRETE f'c > 50 MPa

COLUMN WIDTH (SHORTEST SIDE)	COLUMN VERTICAL BAR SIZE					
	15M	20M	25M	30M	35M	45M
200 mm	150 mm	150 mm	150 mm	150 mm	150 mm	150 mm
250 mm	180 mm	180 mm	180 mm	180 mm	180 mm	180 mm
300 mm	180 mm	225 mm	225 mm	225 mm	225 mm	225 mm
350 mm	180 mm	230 mm	260 mm	260 mm	260 mm	260 mm
400 mm	180 mm	230 mm	300 mm	300 mm	300 mm	300 mm
450 mm	180 mm	230 mm	300 mm	330 mm	330 mm	330 mm
500 mm AND THICKER	180 mm	230 mm	300 mm	360 mm	360 mm	360 mm

NOTES:

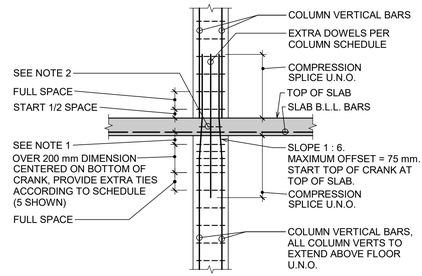
1. FOR COLUMNS CONTAINING BUNDLED BARS, MAXIMUM SPACING NOT TO EXCEED SMALLER OF 300 mm OR VALUE IN TABLE.

COLUMN SPLICE AND DOWEL DETAILS

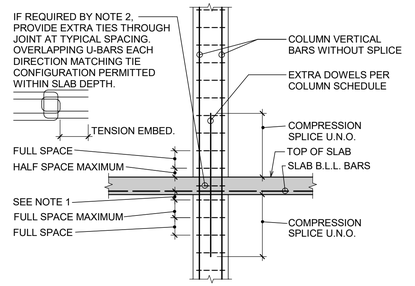


COLUMN NEAR SLAB EDGE INTERIOR COLUMN

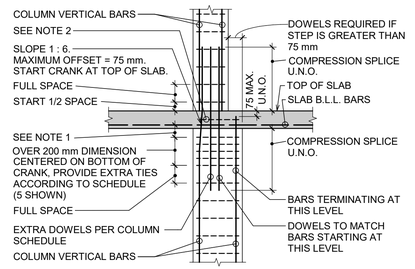
DETAIL A: TYPICAL TOP OF CONCRETE COLUMN



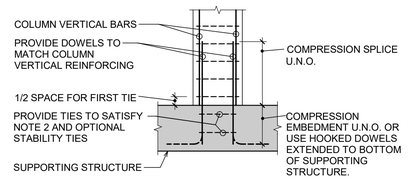
DETAIL B: TYPICAL COLUMN REINFORCING SPLICE WITH CRANKED VERTICAL BARS



DETAIL C: TYPICAL COLUMN WITH CONTINUOUS VERTICAL BARS AT INTERMEDIATE LEVEL OR WITH IN-LINE COUPLERS



DETAIL D: TYPICAL COLUMN REINFORCING SPLICE WHERE COLUMN FACE OFFSET GREATER THAN 75 mm



DETAIL E: TYPICAL COLUMN REINFORCING DOWELS AT SUPPORTING STRUCTURE

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date	2025-04-14 4:25:47 PM
Scale	As indicated
Project No.	21-029
Drawn By	DP
Checked By	GJ

Sheet Number **S006**

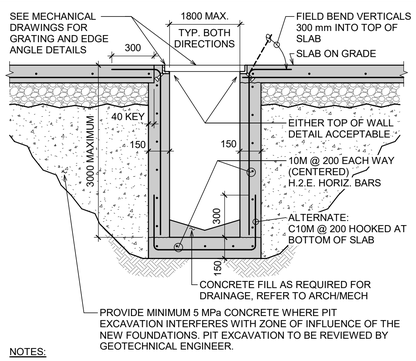
Revision **3**

MASONRY NOTES

READ IN CONJUNCTION WITH THE MASONRY SPECIFICATIONS AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

1. ALL MASONRY WORK SHALL CONFORM TO CAN/CSA S304.1 AND IT'S REFERENCED DOCUMENTS, INCLUDING BUT NOT LIMITED TO:
   - A. CONCRETE BLOCK TO CAN/CSA-A165.1 TYPE H/15/A/M UNLESS NOTED OTHERWISE (BASED ON NET AREA).
   - B. MASONRY WIRE REINFORCING TO CAN/CSA G30.5.
   - C. REINFORCING BARS TO CAN/CSA-G30.18 – 400 MPa.
   - D. GROUT PREPARED OFF SITE SHALL BE COURSE PREPARED BY PROPERTY SPECIFICATION IN ACCORDANCE WITH CAN/CSA-A179.
     - i. MINIMUM 28 DAY COMPRESSIVE STRENGTH – 12.5 MPa
     - ii. SLUMP 200mm (MIN) TO 250mm (MAX).
     - iii. GROUT SHALL BE FINE WHERE MAXIMUM GROUT SPACE IS LESS THAN 50mm IN ANY DIRECTION.
     - vi. TESTING SHALL BE IN ACCORDANCE WITH CSA-A179 AND ITS APPENDIX.
   - E. GROUT PREPARED ON SITE SHALL BE PREPARED BY PROPORTION SPECIFICATION IN ACCORDANCE WITH CAN/CSA-A179.
   - F. MORTAR SHALL BE TYPE S PREPARED BY PROPORTION SPECIFICATION IN ACCORDANCE WITH CAN/CSA-A179.
   - G. CONNECTIONS TO CAN/CSA-A370.
   - H. PRACTICE TO CAN/CSA-A371.
   - I. COMPRESSIVE STRENGTH FOR EVERY 200 SQUARE METERS OF CONSTRUCTED WALL.
2. THE MASONRY CONTRACTOR SHALL BE A MEMBER OF THE CANADIAN MASONRY CONTRACTORS ASSOCIATION.
3. NO MASONRY CONSTRUCTION SHALL BE PERMITTED WITHOUT THE CONTRACTOR ENSURING ALL NECESSARY PROTECTION AND CONSTRUCTION METHODS CAN BE READILY IMPLEMENTED IN ACCORDANCE WITH CAN/CSA-A371 PRIOR TO TEMPERATURES AND WEATHER CONDITIONS REACHING THE FOLLOWING:
   - A. HOT WEATHER – TEMPERATURE ABOVE +30°C
   - B. COLD WEATHER – TEMPERATURE BELOW +5°C
   - C. WET WEATHER OR SNOW PROTECTION (STORAGE AND CONSTRUCTION)
   - D. HIGH WIND CONSTRUCTION
4. ALL WALLS SHALL BE BUILT USING RUNNING BOND. STACK BOND SHALL NOT BE USED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
5. MORTAR MAY NOT BE SUBSTITUTED FOR GROUT.
6. ALL MORTAR JOINTS IN CONCRETE BLOCK WORK SHALL BE TOOLED CONCAVE UNLESS NOTED OTHERWISE IN THE ARCHITECTURAL DRAWINGS.
7. FILL BOND BEAMS AND CELLS CONTAINING VERTICAL REINFORCEMENT OR BOLTS WITH GROUT, VIBRATE OR PUDDLE TO COMPLETELY FILL CELLS.
8. UNLESS MASONRY WALLS ARE NOTED AS "FULLY GROUTED" OR "GROUT SOLID" GROUT ONLY CELLS CONTAINING VERTICAL OR HORIZONTAL REINFORCEMENT, ANCHOR RODS, BOLTS OR OTHER SPECIFICALLY NOTED AREAS. VIBRATE OR PUDDLE TO ENSURE CELLS ARE FILLED COMPLETELY AND PROPERLY CONSOLIDATED.
9. GROUTING OF WALLS SHALL BE CARRIED OUT FOLLOWING ONE OF TWO METHODS TO BE APPROVED BY THE ENGINEER.
   - A. LOW LIFT GROUTING
     - i. LIFTS SHALL NOT EXCEED 1400mm IN HEIGHT.
     - ii. TERMINATE EACH LIFT 40mm BELOW OF THE TOP OF EACH UNIT.
   - B. HIGH LIFT GROUTING
     - i. LIFTS SHALL NOT EXCEED 2400mm IN HEIGHT.
     - ii. THE MASONRY MUST BE ALLOW TO CURE FOR AT LEAST 4 HOURS PRIOR TO PLACING GROUT.
     - iii. GROUT SLUMP MUST BE MAINTAINED AT 250mm.
     - iv. THE WALL SHALL NOT INCLUDE ANY INTERMEDIATE BOND BEAMS BETWEEN THE TOP AND BOTTOM OF THE POUR.
     - v. CLEANOUTS SHALL BE PROVIDED FOR ALL CELLS TO BE REINFORCED AND FILLED WITH GROUT. REPEAT CLEANOUTS ABOVE BOND BEAMS. THESE CELLS ARE TO BE KEPT CLEAR AND CLEAN OF MORTAR.
10. GROUT NOT PLACED WITHIN 1.5 HOURS AFTER WATER IS FIRST ADDED TO THE BATCH SHALL BE DISCARDED.
11. REINFORCEMENT SHALL HAVE SPLICES IN ACCORDANCE WITH THE REINFORCING SPLICE DETAIL.
12. COVER FOR VERTICAL REINFORCEMENT EXPOSED TO WEATHER OR EARTH SHALL BE INCREASE TO 50mm.
13. REINFORCING BAR POSITIONERS SHALL BE PROVIDED AS PER THE TYPICAL DETAIL TO ENSURE BARS REMAIN WITHIN TOLERANCE DURING PLACEMENT OF GROUT OR MORTAR.
14. JOINT REINFORCEMENT MUST BE HOT-DIP GALVANIZED, EPOXY-COATED, OR STAINLESS STEEL WHEN USED IN EXTERIOR WALLS OR INTERIOR WALLS EXPOSED TO DIRECT MOISTURE OR HIGH HUMIDITY.
15. PROVIDE LADDER STYLE HORIZONTAL REINFORCEMENT FOR ALL REINFORCED WALLS AND TRUSS STYLE REINFORCEMENT FOR UNREINFORCED WALLS UNLESS NOTED OTHERWISE.
16. PROVIDE PRE-FABRICATED CORNER AND TEE SECTIONS FOR JOINT REINFORCEMENT.
17. PROVIDE DOWELS INTO FOUNDATION WALLS, CONCRETE FOOTINGS OR SLAB-ON-GRADE:
    - A. TO MATCH VERTICAL REINFORCEMENT DETAILED FOR WALLS.
    - B. AT MINIMUM PROVIDE 15M@1200 STARTER DOWELS WITH STANDARD HOOK EMBEDMENT AND 1200mm PROJECTION INTO MASONRY ABOVE.
18. PROVIDE LINTELS OVER ALL OPENINGS IN WALLS. SEE LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON PLAN. CONNECT BACK TO BACK ANGLES TOGETHER AT 500mm O/C MAXIMUM. PROVIDE 150mm MINIMUM END BEARING FOR LINTELS.
19. CONTROL JOINTS SHALL BE PLACED AT A MAXIMUM SPACING OF 10000mm UNLESS NOTED OTHERWISE.
    - A. REFER TO CONTROL JOINT DETAIL FOR HOW REINFORCEMENT SHALL BE CARRIED THROUGH AT BOND BEAMS UNLESS NOTED OTHERWISE.
    - B. CONTRACTOR TO PROVIDE A SHOP DRAWING SHOWING COORDINATED CONTROL JOINTS WITH STRUCTURAL NOTES, OPENINGS AND ARCHITECTURAL DRAWINGS.
    - C. LOCATIONS OF CONTROL JOINTS SHALL BE LAID OUT TO ENSURE NO FREE STANDING WIDTHS OF WALL LESS THAN 4000mm ARE CREATED.
20. PROVIDE VERTICAL MOVEMENT JOINTS BETWEEN ALL LOAD-BEARING AND NON LOAD-BEARING WALLS.
21. OUTSIDE FACES OF EXTERIOR WALLS SHALL BE WATERPROOFED AS PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

TYPICAL SUMP / ACCESS PIT



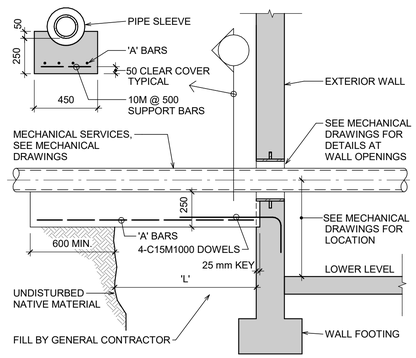
NOTES:

1. SEE MECHANICAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SIZE, LOCATION AND WATERPROOFING REQUIREMENTS.
2. PRECAST ALTERNATIVE MAY BE PROPOSED BY CONTRACTOR IF ACCEPTABLE TO ARCHITECT AND MECHANICAL CONSULTANT. STRUCTURAL DESIGN OF PRECAST ALTERNATIVE NOT BY RJC. SUBMIT SHOP DRAWINGS AND RELATED SCHEDULES FOR PRECAST ALTERNATIVE SIGNED AND SEALED BY LICENSED SPECIALTY ENGINEER FOR REVIEW.

LOAD BEARING MASONRY (NON-SEISMIC ZONES)

1. FOR ADDITIONAL REQUIREMENTS SEE MASONRY SPECIFICATION AND STRUCTURAL DRAWINGS.
2. MASONRY WORK SHALL CONFORM TO CSA S304.1 AND ITS REFERENCED DOCUMENTS, INCLUDING:
   - A. CONCRETE BLOCK TO CSA A165.1, TYPE H15/A, UNLESS NOTED OTHERWISE ON SCHEDULE (BASED ON NET AREA).
   - B. MORTAR TO CSA A179, TYPE 'S' FOR ALL WALLS.
   - C. GROUT TO CSA A179.
   - D. MASONRY WIRE REINFORCING TO CSA G30.5.
   - E. REINFORCING BARS TO CSA G30.18 - 400 MPa.
   - F. WELDED REINFORCING BARS TO CSA G30.18 - 400 MPa.
   - G. CONNECTIONS TO CSA A370.
   - H. PRACTICE TO CSA A371.
3. STRUCTURAL DRAWINGS INDICATE ONLY LOAD-BEARING WALLS. DESIGN IS BASED ON ENGINEERING ANALYSIS ACCORDING TO CSA S304.1.
4. FILL BLOCK CORES UNDER ALL CONCENTRATED LOADS WITH 20 MPa CONCRETE GROUT TO A DEPTH OF AT LEAST 400 mm MEASURED DOWN FROM THE BEARING.
5. PROVIDE HEAVY DUTY LADDER TYPE OR TRUSS TYPE MASONRY REINFORCING (4.76 mm DIAMETER) IN HORIZONTAL JOINTS EVERY SECOND COURSE (400 mm) UNLESS NOTED OTHERWISE IN SCHEDULE.
6. PROVIDE LINTELS OVER ALL OPENINGS IN WALLS. SEE LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON PLAN. CONNECT BACK TO BACK ANGLES TOGETHER AT 500 mm O/C MAXIMUM. PROVIDE 150 mm MINIMUM END BEARING FOR LINTELS.
7. PROVIDE 1-15M CONTINUOUS IN TOP COURSE OF WALL UNDER BEAM OR JOIST BEARING AND FILL CELLS SOLID WITH 20 MPa CONCRETE GROUT.
8. LAPS: WIRE REINFORCEMENT ------ 200 mm
   10M BARS ---------- 600 mm
   15M BARS ---------- 750 mm
9. UNLESS NOTED OTHERWISE, PROVIDE 2-15M VERTICAL BARS FULL HEIGHT AT:
   - A. UNSUPPORTED ENDS OF WALLS.
   - B. EACH CORNER AND AT INTERSECTIONS.
   - C. EACH SIDE OF DOORS AND OTHER OPENINGS.
10. PROVIDE 1-15M IN EACH CELL OF ALL PIERS AND PILASTERS UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING SHALL BE CONTINUED TO WITHIN 50 mm OF TOP OF THE WALL.
11. PROVIDE CLEANOUTS FOR ALL CELLS TO BE REINFORCED, REPEAT CLEANOUTS ABOVE BOND BEAMS.
12. FILL CELLS CONTAINING VERTICAL REINFORCING AND BOLTS WITH 20 MPa CONCRETE (10 mm AGGREGATE, 180 mm SLUMP) VIBRATE OR PUDDLE TO FILL CELLS COMPLETELY.
13. FILL CELLS IN 1200 mm LIFTS OR BETWEEN BOND BEAMS, WHICHEVER IS LESS.
14. CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 9000 mm, IF NOT OTHERWISE SHOWN ON DRAWINGS.
15. CONTROL JOINTS AND EXPANSION JOINTS SHALL BE CONTINUED THROUGH BOND BEAMS IF NOT OTHERWISE SHOWN.
16. OUTSIDE FACE OF EXTERIOR WALLS SHALL BE WATERPROOFED AS PER SPECIFICATIONS AND ARCHITECTURAL DRAWINGS.
17. NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURE BELOW 5° CELSIUS, UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK.
18. PROVIDE 15M @ 1200 mm O/C FULL HEIGHT FOR ALL LOAD BEARING MASONRY WALLS, UNLESS NOTED OTHERWISE.
19. PROVIDE 1200 mm STARTER DOWELS TO MATCH ALL VERTICAL REINFORCING, UNLESS NOTED OTHERWISE.
20. LOAD BEARING MASONRY IS SHOWN THUS ////// ON PLAN.

TYPICAL EXTERIOR PIPE SUPPORT DETAIL - U.N.O.

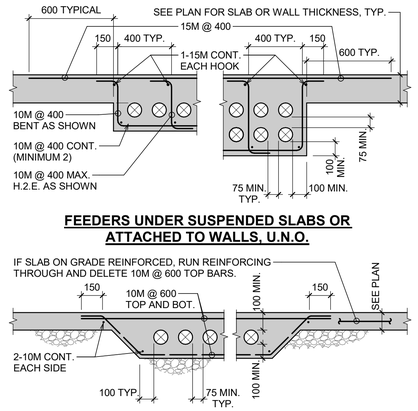


NOTES:

1. MECHANICAL CONTRACTOR SHALL SET PIPE SLEEVES AND SHALL CO-OPERATE WITH GENERAL CONTRACTOR TO LOCATE SLEEVES IN FOUNDATION WALL TO SUIT PIPE BRIDGE SUPPORT AS DETAILED.
2. THIS DETAIL APPLIES TO ALL SERVICE PIPING PASSING THROUGH FOUNDATION WALLS BELOW GRADE, INCLUDING SEWER LINES, WATER MAINS, GAS LINES ETC.

'L'	'A'
UP TO 2400	4-15M
2425 TO 2850	4-20M
2875 TO 3150	4-25M

TYPICAL CONCRETE ENCASEMENT OF ELECTRICAL MAIN FEEDERS



FEEDERS UNDER SUSPENDED SLABS OR ATTACHED TO WALLS, U.N.O.

FEEDERS UNDER SLAB ON GRADE, U.N.O.

NOTES:

1. SEE ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR LOCATION, EXTENT AND NUMBER OF ELECTRICAL DUCTS.
2. ENCASEMENT FOR ELECTRICAL DUCTS TO BE CAST IN RED CONCRETE OR PAINTED RED.

MASONRY - INSPECTION & TESTING

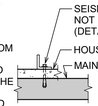
1. 24 HOURS PRIOR TO POURING CONCRETE OR GROUT THE CONTRACTOR SHALL CONTACT RJC TO REQUEST A FIELD REVIEW.
2. AN INDEPENDENT INSPECTION AND TESTING AGENCY WILL BE APPOINTED TO PERFORM TESTING TO ASSURE THE COMPRESSIVE STRENGTH OF THE MORTAR, GROUT AND MASONRY ARE IN ACCORDANCE WITH CSA A179.
3. A MINIMUM OF TWO SAMPLES OF MORTAR SHALL BE TAKEN FOR EVERY 100 SQUARE METERS OF CONSTRUCTED WALL TO BE TESTED AT 7 DAYS AND 28 DAYS.
4. A MINIMUM OF 2 CYLINDER SHALL BE TESTED FOR EVERY 10 CUBIC METERS OF PLACED GROUT TO DETERMINE THE 7 AND 28 DAY STRENGTHS.
5. A MINIMUM OF 1 CMU BLOCKS WITH SPECIFIED COMPRESSIVE STRENGTH OF MASONRY HIGHER THAN 15 MPa SHALL BE TESTED FOR COMPRESSIVE STRENGTH FOR EVERY 200 SQUARE METERS OF CONSTRUCTED WALL.

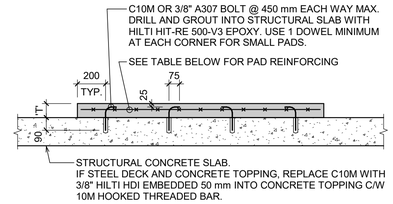
LOAD BEARING MASONRY – LOW SEISMIC ($I_E F_a S_a(0.2)<0.35$)

1. PROVIDE 1-15M CONTINUOUS IN TOP COURSE OF THE WALL UNDER BEAMS OR JOIST BEARING POINTS AND FILL CELLS SOLID WITH 12.5 MPa (MIN) GROUT.

TYPICAL MECHANICAL / ELECTRICAL HOUSEKEEPING PAD DETAIL

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION, EXTENT, AND THICKNESS OF HOUSEKEEPING PADS.
2. THIS DETAIL PROVIDES RESISTANCE TO HORIZONTAL (SLIDING) FORCES ONLY FROM EARTHQUAKE LOADING ON PAD AND EQUIPMENT. ADDITIONAL CONNECTIONS FOR UPLIFT FORCES FROM EQUIPMENT TO BE DESIGNED AND DETAILED BY SPECIALTY ENGINEER AND WILL REQUIRE ANCHORING THROUGH THE PAD AND INTO OR THROUGH THE STRUCTURAL SLAB. IN POST-TENSIONED FLOORS, LOCATE TENDONS BEFORE DRILLING HOLES.

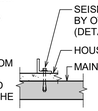


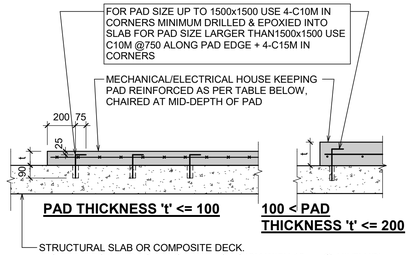


'T' (PAD THICKNESS)	REINFORCING
UP TO 100 mm	1 SHEET OF WWR 152 X 152 - MW18.7 X MW18.7 LAP 300 mm AT MID-DEPTH
110 mm TO 150 mm	10M @ 400 EACH WAY AT MID-DEPTH
160 mm TO 200 mm	10M @ 300 EACH WAY AT MID-DEPTH

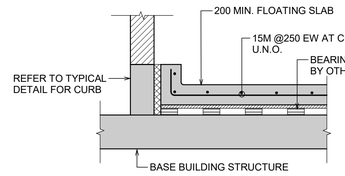
TYPICAL MECHANICAL / ELECTRICAL HOUSEKEEPING PAD & FLOATING SLAB

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION, EXTENT, AND THICKNESS OF HOUSEKEEPING PADS.
2. THIS DETAIL PROVIDES RESISTANCE TO HORIZONTAL (SLIDING) FORCES ONLY FROM EARTHQUAKE LOADING ON PAD AND EQUIPMENT. ADDITIONAL CONNECTIONS FOR UPLIFT FORCES FROM EQUIPMENT TO BE DESIGNED AND DETAILED BY SPECIALTY ENGINEER AND WILL REQUIRE ANCHORING THROUGH THE PAD AND INTO OR THROUGH THE STRUCTURAL SLAB. IN POST-TENSIONED FLOORS, LOCATE TENDONS BEFORE DRILLING HOLES.





PAD THICKNESS 't'	REINFORCEMENT
50	152x152MW18.7xMW18.7WWF 1 LAYER
100	152x152MW18.7xMW18.7WWF 1 LAYER
150	10M @300 EW AT CENTRE
200	10M @400 T&BEW



FLOATING SLAB DETAIL

NON-LOAD BEARING MASONRY – LOW SEISMIC ($I_E F_a S_a(0.2)<0.35$)

1. NON-LOAD BEARING MASONRY WALLS ARE THOSE THAT DO NOT SUPPORT FLOORS OR ROOF STRUCTURE, BE THEY INTERIOR OR EXTERIOR WALLS. NON-LOAD BEARING MASONRY IS NOT PART OF THE PRIMARY STRUCTURAL SYSTEM.
2. NON-LOAD BEARING MASONRY MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE INFORMATION.
3. UNLESS NOTED OTHERWISE, PROVIDE A *25mm* MIN. DEFLECTION GAP BETWEEN THE TOP OF ALL NON LOAD-BEARING MASONRY WALLS AND THE STRUCTURE ABOVE.

rjc Creative Thinking Practical Results

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3. Use of these drawings is limited to that identified in the Issued/Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Issued/Revision column, and then only for the parts noted. The drawings shall not be used for "pricing" / "costing" or "tender" unless so indicated in the Issued/Revisions column. "Pricing" or "Costing" drawings are not complete and any prices based on such drawings must allow for this.

No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

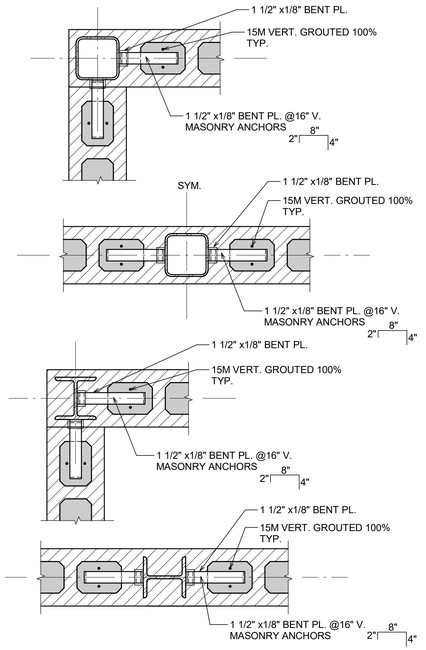
Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date 2025-04-14 4:25:47 PM
Scale As indicated
Project No. 21-029
Drawn By DP
Checked By GJ

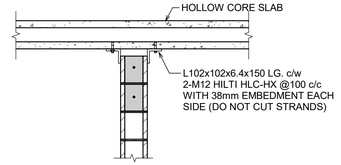
Sheet Number **S007**
Revision **3**

TYP. MASONRY/STEEL COLUMN DETAIL

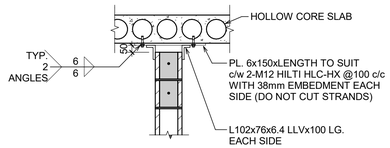


CONT'D FROM RIGHT... SUPPORT DETAILS AT TOP OF BLOCK WALLS (NON-SEISMIC ZONES)

FOR HOLLOW CORE PERPENDICULAR TO WALL



FOR HOLLOW CORE PARALLEL TO WALL



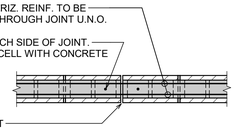
TYPICAL MASONRY WALL CONTROL JOINT

PLAN SECTION TAKEN THROUGH BOND BEAM.

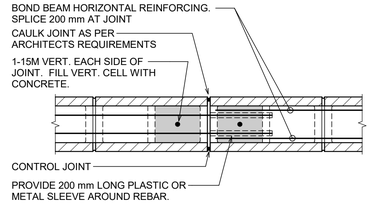
SPACE CONTROL JOINTS AT 10000 mm O/C MAXIMUM UNLESS NOTED OTHERWISE ON PLAN.

BOND BEAM HORIZ. REINF. TO BE CONTINUOUS THROUGH JOINT U.N.O.

1-15M VERT. EACH SIDE OF JOINT. FILL VERTICAL CELL WITH CONCRETE



TYPICAL MASONRY WALL CONTROL JOINT



NOTES:

- PLAN SECTION TAKEN THROUGH BOND BEAM.
- DISCONTINUE HORIZONTAL LADDER REINFORCEMENT EVERY SECOND LAYER.
- SPACE CONTROL JOINTS AT 6000 mm O/C MAXIMUM UNLESS NOTED OTHERWISE ON PLAN.
- COORDINATE LOCATIONS WITH ARCHITECT AND READ JONES CHRISTOFFERSEN LTD.
- CONTROL JOINTS SHALL NOT BE LOCATED UNDER OWSJ OR STEEL BEAMS.

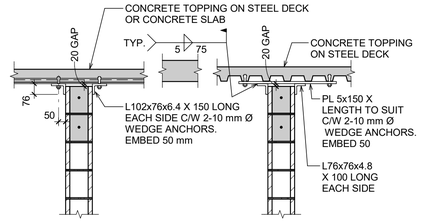
ARCHITECTURAL BRICK VENEER LEDGER ANGLES

1. SEE AND COORDINATE WITH ARCHITECTURAL DRAWINGS FOR BRICK VENEERS. UNLESS NOTED OTHERWISE, 90mm BRICK VENEERS SHALL BE SUPPORTED AT BOTTOM BY DIRECT BEARING ON CONCRETE SLAB OR CORBEL (IF SHOWN ON STRUCTURAL DRAWINGS) OR ON A STEEL LEDGER ANGLE.
2. SEE ARCHITECTURAL DRAWINGS FOR BRICK SUPPORTS IN CASES DIFFERENT THAN SHOWN IN "ARCHITECTURAL BRICK VENEER LEDGER ANGLE DETAILS" NOTE.
3. SEE ARCHITECTURAL DRAWINGS FOR LATERAL SUPPORT OF BRICK VENEER TO WALL BEHIND (CONCRETE, CONCRETE BLOCK, STEEL STUD, WOOD STUD, ETC.).
4. CORROSION PROTECTION OF LEDGER ANGLES SHALL BE HOT-DIP GALVANIZING AFTER ALL SHOP FABRICATION. GRIND SMOOTH ALL WELDS. AFTER WELDING OR BOLTING THE ANGLE IN PLACE, COAT ALL NON-GALVANIZED STEEL (EXPOSED PORTION OF EMBED PLATES, WELDS, AND BOLT HEADS) WITH GALVACON OR EQUIVALENT ZINC RICH PAINT.
5. PROVIDE LEDGER ANGLE AT EVERY FLOOR, UNLESS NOTED OTHERWISE.
6. BRICK LEDGER ANGLES SHOULD BE INSTALLED WITH MINIMUM 150mm CLEARANCE ABOVE SOIL AND 50mm CLEARANCE ABOVE CONCRETE. SEE ARCHITECTURAL DRAWINGS FOR UNDERSIDE OF BRICK LEDGER ANGLE ELEVATIONS.
7. SHOP DRAWINGS SHOWING ALL STEEL SUPPORTS FOR BRICK VENEER SHALL BE SUBMITTED FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE ELEVATION DRAWINGS SHOWING DIMENSIONED LOCATIONS FOR ALL EMBEDS IN CONCRETE.
8. U.N.O. BRICK LEDGER ANGLES SHOWN IN "ARCHITECTURAL BRICK VENEER LEDGER ANGLE DETAILS" NOTE MAY BE FLIPPED ON HORIZONTAL AXIS IF REQUIRED FOR ARCHITECTURAL ELEVATIONS.

SUPPORT DETAILS AT TOP OF BLOCK WALLS (NON-SEISMIC ZONES)

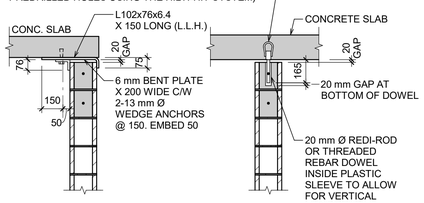
FOR CONCRETE SLABS AND CONCRETE TOPPING ON STEEL DECK

NOTE:
ALL CONNECTIONS AT 1200 c/c MAX. PROVIDE CONT. FULLY GROUTED 400 DP. R/W 2-10M TOP BOND BEAM TOP U.N.O. AT UNDERSIDE OF POST-TENSIONED SLAB PROVIDE EMBEDDED PLATE WITH NELSON STUDS INSTEAD OF WEDGE ANCHORS. FIELD WELD ANGLES TO EMBEDDED PLATE.



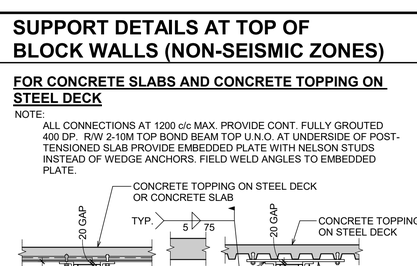
ALTERNATE 1 **ALTERNATE 2**

THREADED INSERT CAST INTO U/S SLAB (IN NON-POST-TENSIONED SLABS ONLY, THESE INSERTS MAY BE REPLACED BY WEDGE ANCHORS, OR DOWELS GROUTED INTO 100 mm DEEP PREDRILLED HOLES USING THE HILTI-HIT SYSTEM)



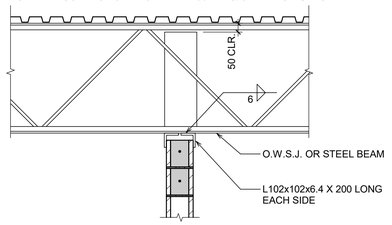
ALTERNATE 3 (AT EDGES OF SLABS) **ALTERNATE 4**

FOR STEEL BEAMS



FOR O.W.S.J. OR STEEL BEAMS PERPENDICULAR TO WALL

NOTE: ALL CONNECTIONS TO BE AT 1200 mm O/C MAXIMUM U.N.O.



FOR O.W.S.J. OR STEEL BEAMS PARALLEL TO WALL

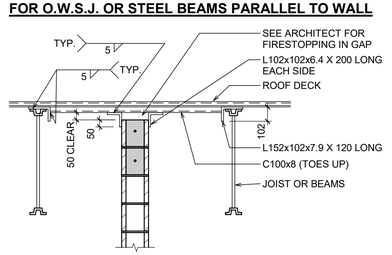


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TABLE 'A'

NON-LOAD BEARING MASONRY WALL (NON SEISMIC ZONE)

WALL THICK. (mm)	INTERIOR (Partition Wall) Maximum Wall Height (mm) and Minimum Reinforcing Pressure (kPa) 0.25	0.375	0.50	EXTERIOR (Wind Bearing Wall) Maximum Wall Height (mm) and Minimum Reinforcing Pressure (kPa) 1.00	1.20	1.50	2.00	2.40
140	4200 Unreinf. 5000 10M @400 V	3400 Unreinf. 5000 10M @400 V	3000 Unreinf. 5000 10M @400 V	4800 10M @400 V	4400 10M @400 V	4200 15M @600 V	4000 15M @400 V	3800 15M @400 V
190	5600 Unreinf. 6800 15M @1200 V	5000 Unreinf. 6800 15M @1200 V	4200 Unreinf. 6800 15M @800 V	6200 15M @600 V	6000 15M @600 V	5600 15M @600 V	5200 15M @400 V	5000 20M @600 V
240	7200 Unreinf. 8600 15M @600 V	6200 Unreinf. 8600 15M @600 V	5400 Unreinf. 8400 15M @600 V	7600 20M @800 V	7200 20M @600 V	7200 20M @600 V	6600 20M @400 V	6200 20M @400 V
290	8600 Unreinf. 9200 20M @600 V	7600 Unreinf. 8600 20M @600 V	6600 Unreinf. 8600 20M @600 V	8600 20M @600 V	8600 20M @600 V	8400 20M @400 V	7600 20M @400 V	7200 20M @400 V

Drawing Notes

1. All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. ("RJC") and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.
2. These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as base drawings for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings.
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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

rjc Creative Thinking Practical Results

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RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date	**2025-04-14 4:25:48 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S008** Revision **3**

STRUCTURAL STEEL - GENERAL

1. STRUCTURAL STEEL SECTIONS SHALL BE NEW AND CONFORM TO THE FOLLOWING U.N.O.:

A.	W AND WT SHAPES	CSA G40.21 GRADE 345WM / ASTM A992
B.	C, L, M, MC, MT, S, AND ST SHAPES	CSA G40.21 CSA G40.21 350W, ASTM A992, OR ASTM A572 GRADE 50
C.	HP SHAPES	ASTM A572 GRADE 50
D.	RECTANGULAR OR SQUARE HSS	ASTM A500 GRADE C, CSA G40.21 GRADE 350W, OR ASTM A1085 CLASS C OR ASTM A1085
E.	ROUND HSS	ASTM A500 GRADE C
F.	PIPE	ASTM A53 GRADE B
G.	ROLLED PLATES AND BARS	CSA G40.21 GRADE 300W
H.	WWF AND WRF SHAPES	CSA G40.21 GRADE 350W
J.	BOLTS (SEE PLANS AND DETAILS)	ASTM F3125 GRADE A325 OR A490
K.	STRUCTURAL STEEL ANCHOR RODS (UNLESS NOTED OTHERWISE)	ASTM F1554 GRADE 36 MINIMUM
L.	REINFORCING BAR ANCHOR BOLTS	CSA G30.18 GRADE 400R

2. USE OF STRUCTURAL STEEL SHAPES, PLATE OR BARS WITH HIGHER GRADE THAN NOTED ABOVE SUBJECT TO APPROVAL BY RJC.

3. ALL ASTM F1554 ANCHOR RODS SHALL HAVE SHOP-APPLIED COLOUR MARKING TO FACILITATE IDENTIFICATION OF GRADE IN FIELD: GRADE 36 = BLUE; GRADE 55 = YELLOW; GRADE 105 = RED.

4. DESIGN FORCES INDICATED ON DRAWINGS FOR STRUCTURAL STEEL WORK ARE FACTORED FORCES UNLESS NOTED OTHERWISE. FORCES ARE VERTICAL SHEAR FORCES UNLESS NOTED OTHERWISE.

METRIC

A.	FORCES	kN
B.	MOMENTS	kN-m
C.	LINE LOADS	kN/m
D.	DISTRIBUTED LOADS	kPa

SEE "DESIGN LOADS" NOTES FOR DEFINITIONS AND VALUES OF LIVE LOAD, DEAD LOAD AND SUPERIMPOSED DEAD LOAD. SEE ALSO PLANS FOR OTHER LOAD/FORCE REQUIREMENTS.

BRICK VENEER LOOSE LINTELS

1. MASONRY VENEER CONSISTING OF 90mm MAXIMUM WIDE BRICK OVER OPENINGS SHALL BE SUPPORTED BY STEEL ANGLES CONFORMING TO THE TABLE BELOW:

MAX. ALLOWABLE SPAN SUPPORTING 90mm BRICK (mm)	STEEL LOOSE LINTEL ANGLE (L.L.V.)
1200	L89x89x6.4
1500	L102x89x7.9
1800	L127x89x7.9
2000	L127x89x9.5
2200	L152x89x7.9
2400	L152x89x9.5

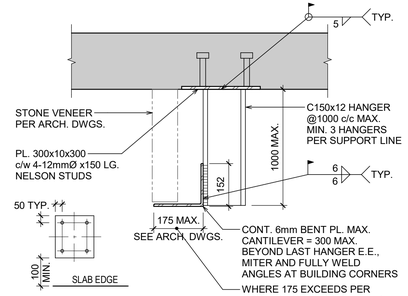
2. MAXIMUM HEIGHT OF BRICK SUPPORTED ABOVE OPENING TO BE 3600mm. NO ADDITIONAL DISTRIBUTED OR CONCENTRATED LOADS PERMITTED ABOVE OPENING.

3. STEEL ANGLES SHALL HAVE A MINIMUM BEARING LENGTH OF 90mm ON EACH SIDE OF OPENING.

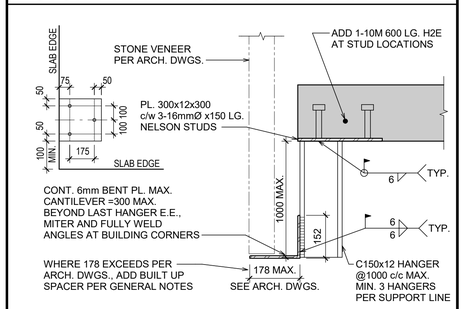
4. STEEL ANGLES SUBJECT TO EXTERIOR EXPOSURE SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. TOUCH UP ALL DAMAGED GALVANIZING WITH GALVACON OR EQUIVALENT ZINC RICH PAINT.

5. GENERAL CONTRACTOR TO COORDINATE SUPPLY AND INSTALL OF STEEL ANGLES.

BRICK VENEER SUPPORT DETAIL



STONE VENEER SUPPORT DETAIL



STRUCTURAL STEEL - CONNECTION DESIGN BY FABRICATOR

1. ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. ALL BEAM CONNECTIONS TO BE STANDARD FRAME BEAM CONNECTIONS OR EQUIVALENT, UNLESS NOTED OTHERWISE. THE FABRICATOR SHALL SUBMIT SUMMARY DESIGN DRAWINGS FOR REVIEW SHOWING IN DETAIL THE "STANDARD" CONNECTIONS AND THEIR CAPACITIES THAT IS INTENDED FOR USE ON THE PROJECT. THESE DRAWINGS ARE IN ADDITION TO THE REGULAR SHOP DRAWINGS, AND SHALL PRECEDE THEM.

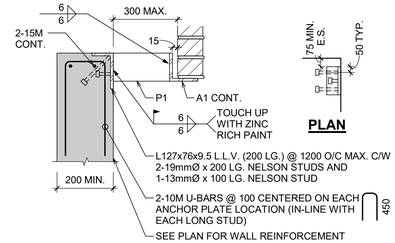
2. SHOP DRAWINGS SHALL BE PREPARED UNDER THE DIRECTION OF A SPECIALTY STRUCTURAL ENGINEER. FOR THOSE CONNECTIONS AND COMPONENTS DESIGNED BY THE FABRICATOR, THIS ENGINEER OR THEIR REPRESENTATIVE SHALL VISIT THE SITE TO REVIEW IN PLACE THE CONNECTIONS AND COMPONENTS DESIGNED BY THIS ENGINEER TO SATISFY THEMSELVES THAT THESE CONNECTIONS AND COMPONENTS SUBSTANTIALLY COMPLY WITH THEIR DESIGN ON THE SHOP DRAWINGS. [THIS ENGINEER SHALL PROVIDE A LETTER TO RJC TO THIS EFFECT.] [THIS ENGINEER SHALL PROVIDE SCHEDULES S-B AND S-C FOR THEIR WORK.] THIS ENGINEER SHALL ALSO PROVIDE SEALED SKETCHES FOR ALL FIELD MODIFICATIONS MADE TO THEIR DESIGN.

3. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT IN WRITING (AND BEFORE THE SUBMISSION OF SHOP DRAWINGS) AS TO WHO THE ENGINEER WILL BE THAT WILL BE DESIGNING AND PROVIDING FIELD REVIEW FOR THE CONNECTIONS AND COMPONENTS DESIGNED BY THE CONTRACTOR.

4. DRAWINGS OF COMPONENTS AND CONNECTIONS DESIGNED BY THE FABRICATOR'S SPECIALTY STRUCTURAL ENGINEER SHALL BE SIGNED AND SEALED BY THIS ENGINEER OR A LETTER SHALL BE SUBMITTED AT THE END OF SHOP DRAWING PRODUCTION SIGNED AND SEALED BY THIS ENGINEER, IDENTIFYING WHAT WAS DESIGNED AND LISTING THE FINAL DRAWINGS WITH DATES AND REVISION NUMBERS.

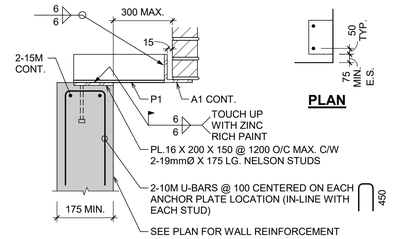
5. CONNECTIONS AND SPLICES NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUESTED BY THE FABRICATOR MUST BE ACCEPTABLE TO RJC AND DETAILED ON THE SHOP DRAWINGS. TESTING OF THESE CONNECTIONS SHALL BE AT THE DISCRETION OF RJC AND TO THE CONTRACTORS ACCOUNT.

ARCHITECTURAL BRICK VENEER LEDGER ANGLE DETAILS



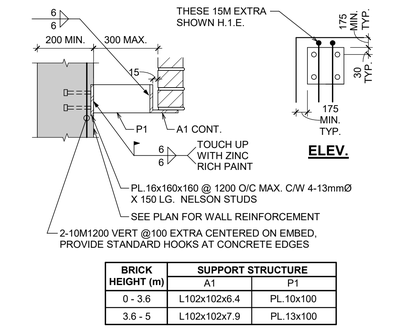
BRICK HEIGHT (m)	SUPPORT STRUCTURE	
	A1	P1
0 - 3.6	L102x102x6.4	PL.10x100
3.6 - 5	L102x102x7.9	PL.13x100

CASE 1: ANGLE AT TOP OF CONCRETE WALL



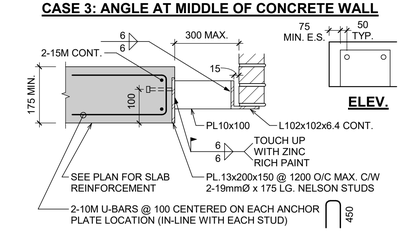
BRICK HEIGHT (m)	SUPPORT STRUCTURE	
	A1	P1
0 - 3.6	L102x102x6.4	L102x102x9.5
3.6 - 5	L102x102x7.9	L102x102x13

CASE 2: ANGLE AT TOP OF CONCRETE WALL (ALTERNATE)

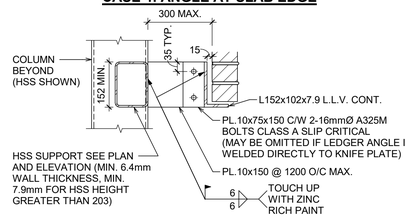


BRICK HEIGHT (m)	SUPPORT STRUCTURE	
	A1	P1
0 - 3.6	L102x102x6.4	PL.10x100
3.6 - 5	L102x102x7.9	PL.13x100

CASE 3: ANGLE AT MIDDLE OF CONCRETE WALL



CASE 4: ANGLE AT SLAB EDGE



CASE 5: ANGLE AT HORIZ. STEEL GIRT

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Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date	**2025-04-14 4:25:48 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S009**

Revision **3**

CONT'D FROM RIGHT... POST-INSTALLED ADHESIVE AND MECHANICAL ANCHORS

2.0 INSTALLATION (CONT'D)

2.9 DO NOT CUT REINFORCING BARS TO INSTALL ANCHORS UNLESS THE STRUCTURAL DRAWINGS SPECIFICALLY NOTE FOR A PARTICULAR DETAIL THAT THE REINFORCING BARS IN THE CONCRETE OR MASONRY CAN BE CUT.

2.10 EXISTING REINFORCING BARS IN THE CONCRETE OR MASONRY STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF CONCRETE ANCHORS, BY HILTI FERROSCAN, HILTI PS 1000, GPR, X-RAY, OR OTHER MEANS, BEFORE ANY HOLES ARE DRILLED.

2.11 AT LOCATIONS OF INTERFERENCE BETWEEN CONCRETE ANCHORS AND EXISTING REINFORCEMENT, ADJUST PROPOSED LOCATIONS OF ANCHORS AS REQUIRED TO AVOID CUTTING REINFORCEMENT. SUBMIT A PROPOSED ANCHOR LAYOUT TO RJC FOR REVIEW AND APPROVAL BEFORE INSTALLING ANCHORS.

2.12 WHEN ANCHORS ARE USED TO ATTACH STRUCTURAL STEEL, THE CONTRACTOR SHALL USE A TEMPLATE TO LOCATE THE ANCHOR HOLES. IF THIS IS NOT DONE OR IF ANCHORS ARE RE-LOCATED DUE TO CONFLICTS, THE CONTRACTOR SHALL PREPARE TEMPLATES OF THE AS-BUILT ANCHOR POSITIONS UPON COMPLETION OF ANCHOR INSTALLATION. THE CONTRACTOR SHALL REFER TO THESE TEMPLATES FOR THE FABRICATION OF THE STEEL STRUCTURE.

2.13 DO NOT OVERSIZE HOLES IN STEEL MATERIAL TO FIT ANCHOR LOCATIONS EXCEPT FOR COLUMN BASE PLATE HOLES WHICH ARE FABRICATED SLIGHTLY OVERSIZED AS PER THE "STRUCTURAL STEEL" GENERAL NOTES ON THESE DRAWINGS.

2.14 THE EXPOSED PORTION OF ANCHORS INCLUDES MANUFACTURER'S MARKINGS THAT DESIGNATE ANCHOR TYPE, MATERIAL GRADE, LENGTH, ETC. CUTTING OFF OF THESE MARKINGS PRIOR TO REVIEW OF ANCHOR INSTALLATION IN CONFORMANCE WITH THE STRUCTURAL DRAWINGS WILL RESULT IN REJECTION OF THE ANCHORS.

2.15 UNLESS NOTED OTHERWISE, ALL ABANDONED HOLES IN CONCRETE SHALL BE FILLED WITH NON-SHRINK GROUT OR EPOXY. GROUT SHALL BE PLACED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND PACKAGING.

3.0 ON-SITE TRAINING AND CERTIFICATION

3.1 THE CONTRACTOR SHALL RETAIN AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON-SITE INSTALLATION TRAINING FOR ALL OF THE ANCHORING PRODUCTS SPECIFIED.

3.2 ALL PERSONNEL WHO INSTALL ANCHORS MUST HAVE RECEIVED TRAINING WITHIN THE PREVIOUS 12 MONTHS FOR THE SPECIFIC ANCHOR SYSTEM TO BE UTILIZED.

3.3 PERSONNEL INSTALLING ADHESIVE ANCHORS IN HORIZONTAL, UPWARDLY INCLINED OR OVERHEAD APPLICATIONS MUST RECEIVE SPECIALIZED INSTALLATION TRAINING BY THE MANUFACTURER SPECIFIC TO THESE ANCHOR ORIENTATIONS AND FOR USE OF THE REQUIRED INSTALLATION ACCESSORIES AS SPECIFIED BY THE MANUFACTURER.

3.4 PERSONNEL INSTALLING ADHESIVE ANCHORS IN WATER-FILLED HOLES OR SUBMERGED CONDITIONS MUST RECEIVE SPECIALIZED INSTALLATION TRAINING BY THE MANUFACTURER.

3.5 SUBMIT CERTIFICATION OF TRAINING FOR ALL OF THE CONTRACTOR'S PERSONNEL WHO MAY BE INSTALLING ANCHORS TO THE ENGINEER OF RECORD PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.

4.0 REVIEW AND TESTING OF ANCHORS

4.1 INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED TO SUPPORT SUSTAINED TENSION LOADS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION IN ACCORDANCE WITH CSA A23.3 BY A SPECIAL INSPECTOR WHO IS SPECIALLY QUALIFIED FOR THAT WORK. THE SPECIAL INSPECTOR IS TO BE FROM AN INDEPENDENT TESTING AGENCY RETAINED BY THE OWNER.

4.2 REFER TO THE GENERAL NOTES AND THE SPECIFICATIONS FOR TESTING REQUIREMENTS TO BE COMPLETED BY AN INDEPENDENT TESTING AGENCY RETAINED BY THE OWNER.

POST-INSTALLED ADHESIVE AND MECHANICAL ANCHORS

1.0 PRODUCTS

1.1 MECHANICAL ANCHORS AND SCREW ANCHORS TO MEET THE ASSESSMENT CRITERIA OF ACI 355.2.

1.2 ADHESIVE ANCHORS TO MEET THE ASSESSMENT CRITERIA OF ACI 355.4.

1.3 EXCEPT WHERE NOTED OTHERWISE ON THE DRAWINGS, ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI (CANADA) LTD. CONTACT HILTI AT (800) 363-4458 FOR PRODUCT RELATED QUESTIONS.

A. ANCHORAGE TO CONCRETE:

ADHESIVE ANCHORS:	[HILTI HIT-RE 500-V3] [HILTI HIT-RE 500-V3 SAFESET WITH HILTI HOLLOW DRILL BIT] [HILTI HIT-RE 500-V3 SAFESET WITH HILTI ROUGHENING TOOL] [HILTI HIT-HY 200] [HILTI HIT-HY 200 SAFESET WITH HILTI HOLLOW DRILL BIT] ADHESIVE ANCHORING SYSTEM
MECHANICAL ANCHORS:	HILTI [KWIK BOLT KB1] [KWIK BOLT KB-TZ2] EXPANSION ANCHORS
SCREW ANCHORS:	[HILTI KWIK HUS] [HILTI KH-EZ]
SHALLOW EMBEDMENT MECHANICAL ANCHORS:	[HILTI HDI-P TZ] [DEWALT MINI- UNDERCUT+] [HILTI METAL HIT]

B. ANCHORAGE TO SOLID GROUTED MASONRY:

ADHESIVE ANCHORS:	HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM
MECHANICAL ANCHORS:	HILTI [KWIK BOLT KB1] [KWIK BOLT KB-TZ2] EXPANSION ANCHORS

C. ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY:

HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM. THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.

D. UNLESS NOTED OTHERWISE, STEEL ANCHOR ELEMENT USED WITH ADHESIVE ANCHORAGE SYSTEM INTO CONCRETE OR MASONRY SHALL BE HILTI HAS-E (55 KSI) CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR. UNMARKED THREADED ROD WILL BE REJECTED.

1.4 ALL NUTS, WASHERS AND OTHER HARDWARE TO BE HOT-DIP GALVANIZED IF PART OF AN ASSEMBLY WITH AN ANCHOR NOTED AS HOT-DIP GALVANIZED. ELECTROPLATE GALVANIZING IS NOT ACCEPTABLE. DISSIMILAR METAL ASSEMBLIES SHALL BE SEPARATED BY NYLON, EPDM, OR OTHER APPROVED NON-METALLIC WASHERS UNLESS NOTED OTHERWISE.

1.5 ANCHOR CAPACITY USED IN DESIGN IS BASED ON ICC TEST REPORT DATA AND GUIDELINES PUBLISHED BY HILTI.

1.6 ALTERNATE FASTENING SYSTEMS PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. ALTERNATE ADHESIVE OR MECHANICAL ANCHORS MUST BE EQUAL CONSIDERING LOAD RESISTANCE, USE IN CRACKED OR UNCRACKED CONCRETE, IN SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, CREEP TESTING, SEISMIC TESTING, AND APPROPRIATE ON SITE TRAINING. PERFORMANCE OF ALTERNATE SYSTEMS MUST BE VALIDATED BY ICC ESR TEST REPORTS AND MUST BE QUALIFIED UNDER ACI 355.2 OR ACI 355.4 AS APPROPRIATE.

1.7 REDESIGN OR REVIEW OF CONNECTIONS BY RJC TO UTILIZE ANCHOR SYSTEMS BY OTHER MANUFACTURERS AND REQUESTED BY THE CONTRACTOR TO BE PAID FOR BY THE CONTRACTOR.

2.0 INSTALLATION

2.1 INSTALL ANCHORS PER THE MANUFACTURER'S INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

2.2 ADHESIVE OR MECHANICAL ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

2.3 ADHESIVE OR MECHANICAL ANCHOR CAPACITY IS DEPENDANT ON THE HOLE DRILLING METHOD AND HOLE CLEANING TECHNIQUE. UNLESS NOTED OTHERWISE, ALL ANCHOR CAPACITIES ARE BASED ON HAMMER DRILLED HOLES USING CARBIDE TIPPED BITS AND STANDARD HOLE CLEANING USING MULTIPLE BRUSHING AND AIR BLAST STEPS. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, DO NOT SUBSTITUTE OTHER HOLE DRILLING METHODS (DIAMOND CORING, SAFESET, ETC.) OR HOLE CLEANING METHODS (SAFESET, ETC.) WITHOUT PRIOR WRITTEN APPROVAL BY RJC.

2.4 ADHESIVE ANCHOR CAPACITY IS DEPENDANT ON THE MOISTURE CONDITION IN THE CONCRETE AT TIME OF INSTALLATION. UNLESS NOTED OTHERWISE:

A. ALL ANCHORS USING HILTI-RE 500-V3 ASSUME DRY CONCRETE OR SATURATED CONCRETE BUT HOLES FREE OF WATER.

B. ALL ANCHORS USING HILTI-HY 200 ASSUME DRY CONDITIONS.

2.5 MINIMUM AGE OF CONCRETE FOR ADHESIVE ANCHOR INSTALLATION TO BE 21 DAYS UNLESS NOTED OTHERWISE.

2.6 MINIMUM CONCRETE TEMPERATURE AT THE TIME OF ADHESIVE ANCHOR INSTALLATION TO BE 10 °C UNLESS DOCUMENTATION BY MANUFACTURER IS SUBMITTED VERIFYING PERFORMANCE AT LOWER TEMPERATURES. 100 PERCENT OF ANCHORS INSTALLED AT CONCRETE TEMPERATURES BELOW 10 °C TO BE PROOF LOAD TESTED.

2.7 THE MAXIMUM PENETRATION OF SHALLOW EMBEDMENT MECHANICAL ANCHORS IN POST-TENSIONED CONCRETE SLABS SHALL BE 20 mm UNLESS THE P/T TENDONS ARE LOCATED BY X-RAY SCANNING OR OTHER METHODS ACCEPTABLE TO THE STRUCTURAL ENGINEER [AND THE BUILDING OPERATOR]. MAINTAIN MINIMUM 100 mm TO ANY P/T TENDONS UNLESS NOTED OTHERWISE ON PLANS AND DETAILS OR APPROVED IN WRITING BY RJC. ALL SHALLOW EMBEDMENT ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS INCLUDING USE OF MANUFACTURER SPECIFIED INSTALLATION SYSTEM THAT PREVENTS ANY OVERDRILLING BEYOND 20 mm DEPTH.

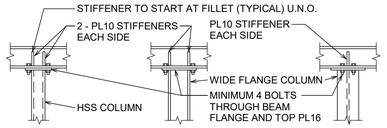
2.8 ADHESIVE ANCHORS INSTALLED FOR HORIZONTAL, UPWARDLY INCLINED OR OVERHEAD ORIENTATIONS MUST BE INSTALLED USING THE MANUFACTURER'S SPECIFIED PROCEDURES AND ACCESSORIES APPROPRIATE TO THE ORIENTATION INCLUDING PISTON PLUGS, EXTENSION HOSES, DRIP GUARDS AND WEDGES. INSTALLERS REQUIRE SPECIALIZED TRAINING BY THE MANUFACTURER'S PERSONNEL FOR THESE ANCHOR ORIENTATIONS.

CONT'D TO LEFT...

CONT'D FROM RIGHT... STRUCTURAL STEEL - FABRICATION AND DETAILING

25. BEAMS NOTED AS COMPOSITE ON THE DRAWINGS REQUIRE STUD SHEAR CONNECTIONS, SEE ALSO SHEAR CONNECTOR NOTES. SEE ALSO PLANS, SECTIONS, DETAILS AND SCHEDULES FOR STUDS SHOWN ON BEAMS/GIRDERS/DRAG-STRUTS ETC. OTHER THAN COMPOSITE BEAMS.

26. UNLESS NOTED OTHERWISE WHERE BEAMS SIT OVER COLUMNS, PROVIDE FULL WIDTH PL10 STIFFENER EACH SIDE OVER COLUMN. FULL HEIGHT STIFFENERS REQUIRED WHERE A COLUMN IS OVER THE BEAM OR WHERE NOTED ON PLANS AND DETAILS.



STRUCTURAL STEEL SYMBOLS

1. FRAMING AND BRACING:

STEEL COLUMN: I □ ○ STEEL ANGLE:

STEEL BEAM/GIRDER: SECONDARY STEEL:

OWSJ: OWSJ BRIDGING:

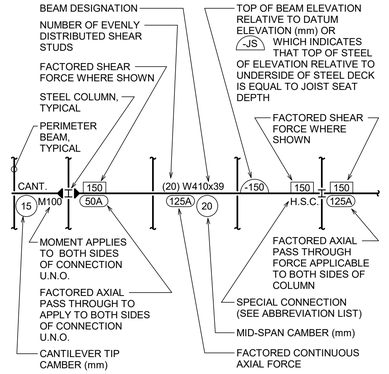
STEEL TRUSS:

STEEL BRACE: BRACE BRACE

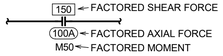
2. LOADING DEFINITIONS AND SPECIAL CONNECTIONS:

A. "A" AXIAL FORCE SUFFIX (E.G. 150A) DENOTES COMPRESSION / TENSION FORCE.
B. "C" AXIAL FORCE SUFFIX (E.G. 100C) DENOTES COMPRESSION FORCE.
C. "T" AXIAL FORCE SUFFIX (E.G. 100T) DENOTES TENSION FORCE.
D. "M" STRONG AXIS MOMENT PREFIX (M100) DENOTES CONNECTION DESIGN MOMENT.

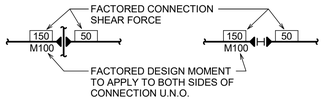
3. TYPICAL BEAM INFORMATION:



4. GIRDER SPLICE:

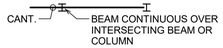


5. MOMENT CONNECTIONS:

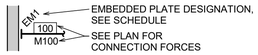


MOMENT CONNECTION FORCES PREFIXED WITH "M" ARE DESIGN MOMENTS. SEE PLAN FOR CONNECTION FORCES. PROVIDE FULL CAPACITY MOMENT CONNECTION WHERE FORCE IS NOT SPECIFIED.

6. BEAM CANTILEVERING OVER COLUMN:



7. EMBEDDED PLATE:



8. FLOOR AND ROOF DECK:

SEE PLAN OR SCHEDULES FOR DEPTH OF DECK PROFILE, CONCRETE DEPTH, MINIMUM DECK GAUGE, MINIMUM CONNECTIONS, ETC.

STRUCTURAL STEEL - FABRICATION AND DETAILING

1. FABRICATION, ERECTION, STRUCTURAL DESIGN, AND DETAILING OF ALL STEEL SHALL BE IN ACCORDANCE WITH CSA S16.

2. PRIOR TO SUBMITTING SHOP DRAWINGS THE CONTRACTOR SHALL NOTIFY RJC IN WRITING THAT THE FABRICATOR IS CERTIFIED TO A MINIMUM OF DIVISION 2 OF CSA W47.1.

3. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO START OF STEEL FABRICATION. ALSO REFER TO "SHOP DRAWINGS" NOTE IN THE GENERAL NOTES SECTION OF THE STRUCTURAL DRAWINGS.

4. FILLET WELDS SHALL BE 5 mm MINIMUM UNLESS NOTED OTHERWISE.

5. BOLTS SHALL BE 3/4" MINIMUM A325 UNLESS NOTED OTHERWISE.

6. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH CONNECTED PIECE AND BE DESIGNED AS BEARING CONNECTIONS, U.N.O.

7. UNLESS NOTED OTHERWISE, BOLTED CONNECTIONS WITH OVERSIZED OR SLOTTED HOLES SHALL HAVE WASHERS PER CISC STANDARD PRACTICE:

A. OVERSIZED AND SHORT SLOTS: HARDENED WASHERS.
B. LONG SLOTS: PLATE WASHERS FULLY COVERING THE SLOTS.

8. IN ADDITION TO ALL OTHER CRITERIA SPECIFIED IN ASTM F1554, ALL HOOKED ANCHOR RODS IN CONCRETE SHALL BE MANUFACTURED WITH A MINIMUM INSIDE BEND RADIUS OF 3 TIMES THE ROD DIAMETER, UNLESS NOTED OTHERWISE.

9. ALL WELDED HEADED STUDS AND WELDED DEFORMED BAR ANCHORS SHALL BE INSTALLED AS PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS OR SHOP FILLET WELDED TO DEVELOP THE TENSILE FACTORED RESISTANCE OF THE BAR. ANY FIELD FILLET WELDED DEFORMED BARS OR STUDS WILL BE REJECTED. SEE PLANS, SECTIONS, DETAILS, AND SCHEDULES FOR LOCATIONS ETC., THE CONTRACTOR SHALL CO-ORDINATE THE DESIGN, SUPPLY, AND INSTALLATION OF ALL STUDS AND ANCHORS, INCLUDING, BUT NOT LIMITED TO STUDS AND DEFORMED BAR ANCHORS ON COMPOSITE BEAMS, DRAG STRUTS, EMBEDDED PLATES, ETC.

10. UNLESS NOTED OTHERWISE, COLUMN CAP PLATES SHALL BE 16 mm THICK AND COLUMN BASE PLATES SHALL BE 20 mm MINIMUM THICK.

11. PROVIDE 6 mm CAP PLATES FOR ALL HSS MEMBERS U.N.O.

12. CONNECTION DETAILS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE ALTERED BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL FROM READ JONES CHRISTOFFERSEN LTD.

13. UNLESS NOTED OTHERWISE ON THE PLANS, REFER TO THE DETAILS IN THE GENERAL NOTES FOR FRAMING FOR SUPPORT OF ROOF TOP MECHANICAL EQUIPMENT.

14. STEEL SHALL BE PREPARED AND FINISHED IN ACCORDANCE WITH CSA S16 AND THE ARCHITECTURAL DRAWINGS AND PAINTING SPECIFICATIONS WHICH MAY INCLUDE ADDITIONAL CLEANING AND PRIMING REQUIREMENTS.

15. ALL STRUCTURAL STEEL OUTSIDE OF THE BUILDING ENVELOPE TO BE HOT-DIP GALVANIZED UNLESS NOTED OTHERWISE.

16. DESIGN DRAWINGS INCLUDE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. SEE ALSO ARCHITECTURAL DRAWINGS FOR ROOF AND FLOOR ELEVATIONS, ROOF SLOPES, EDGE DETAILS, AND ADDITIONAL DIMENSIONS AND DETAILS. WHERE ELEVATIONS, ROOF SLOPES, ETC., ARE SHOWN ON THE STRUCTURAL DRAWINGS, THEY MUST BE CONFIRMED WITH THE ARCHITECTURAL DRAWINGS.

17. UNLESS INDICATED ON APPROVED SHOP DRAWINGS OR OTHERWISE APPROVED IN WRITING BY RJC, DO NOT CONSTRUCT REINFORCED OR UN-REINFORCED SLEEVES THROUGH STEEL BEAMS

18. UNLESS NOTED OTHERWISE, DO NOT OVERSIZE HOLES IN STEEL TO FIT ANY CAST-IN-PLACE OR POST-INSTALLED ANCHORS WITHOUT APPROVAL IN WRITING BY RJC.

19. UNLESS NOTED OTHERWISE, CAST-IN-PLACE ANCHOR RODS FOR COLUMN BASES TO HAVE PLACEMENT TOLERANCE PER CSA A23.1 AND CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL. ANCHOR ROD HOLE SIZES IN STEEL PLATES NOT TO EXCEED DIAMETER OF FASTENER + 6 mm.

20. UNLESS NOTED OTHERWISE, HOLE SIZES IN STEEL PLATES FOR POST-INSTALLED ANCHORS IN ACCORDANCE WITH CSA S16 REQUIREMENTS FOR STANDARD DIAMETER HOLES IN BOLTED STEEL CONNECTIONS:

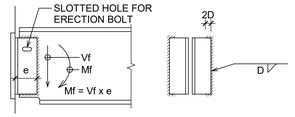
A. METRIC FASTENERS SMALLER THAN M24:
DIAMETER OF FASTENER + 2 mm.
B. US CUSTOMARY FASTENERS SMALLER THAT 1":
DIAMETER OF FASTENER + 1/16".

[ALSO REFER TO "POST-INSTALLED MECHANICAL AND ADHESIVE ANCHOR" NOTES AND "RENOVATION" NOTES.]

21. GENERAL SEISMIC REQUIREMENTS

A. WHERE CONNECTION FORCES ARE NOT SHOWN ON THE DRAWINGS, THE CONNECTION DESIGN SHALL SATISFY THE REQUIREMENTS OF CSA S16 - CLAUSE 27.
B. STEEL IN THE ENERGY DISSAPATION SYSTEM SHALL SATISFY THE LIMITS OF F_y, F_u, AND CHARPY V-NOTCH IMPACT REQUIREMENTS AS NOTED IN CSA S16 - CLAUSE 27.1.5.
C. WELDS AND WELD MATERIAL SHALL SATISFY CSA S16 - CLAUSE 27.1.5.3 (CHARPY REQUIREMENTS).
D. BOLTED CONNECTIONS SHALL SATISFY CSA S16 - CLAUSE 27.1.6.

22. UNLESS NOTED, BEAM AND GIRDER SHEAR CONNECTIONS TO EMBEDDED PLATES SHALL BE DOUBLE ANGLE FRAMING CONNECTIONS WELDED TO THE BEAM WEB THUS:



23. UNLESS NOTED OTHERWISE ALL CONNECTIONS FOR BEAMS AND GIRDERS SHALL BE DESIGNED FOR A SHEAR BASED ON THE MEMBER'S FULL MOMENT RESISTANCE CAPACITY RELATED TO A UNIFORM LOAD ON A SIMPLE SUPPORTED SPAN.

24. TOP FLANGES OF BEAMS TO BE FREE OF ALL PAINT, DIRT, HEAVY RUST, MILL SCALE, SAND AND OTHER MATERIALS WHICH WILL INTERFERE WITH WELDING OF STUD SHEAR CONNECTIONS AND STEEL DECK TO BEAMS.

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rjc Creative Thinking Practical Results

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Drawing Notes

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3. Use of these drawings is limited to that identified in the Issued/Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Issued/Revision column, and then only for the parts noted. The drawings shall not be used for "pricing" / "costing" or "tender" unless so indicated in the Issued/Revisions column. "Pricing" or "Costing" drawings are not complete and any prices based on such drawings must allow for this.

No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date	**2025-04-14 4:25:49 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S010** Revision **3**

WOOD FRAMING - BEAMS

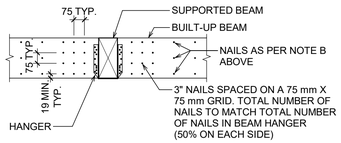
1. BUILT-UP SAWN LUMBER BEAMS (E.G. 3-38 X 235) SHALL HAVE EACH PLY NAILED TOGETHER WITH COMMON NAILS AS FOLLOWS:

   A. FOR TOP LOADED BEAMS: 2 ROWS OF 3" NAILS AT 300 mm O/C.

   B. FOR BEAMS SIDE LOADED WITH UNIFORM JOISTS:

   - BEAM DEPTH < 235 mm: 2 ROWS OF 3" NAILS AT 150 mm O/C.
   - BEAM DEPTH ≥ 235 mm: 3 ROWS OF 3" NAILS AT 150 mm O/C.

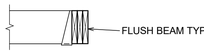
   C. FOR BEAMS SIDE LOADED WITH A BEAM (POINT LOAD):



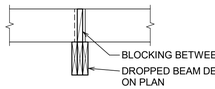
   INDIVIDUAL MEMBERS MAY NOT BE SPLICED BETWEEN SUPPORTS.

2. FOR ENGINEERED PRODUCTS, NAILING REQUIREMENTS OF LAMINATES SHALL BE SPECIFIED ON ENGINEERED SHOP DRAWINGS PROVIDED BY BEAM SUPPLIER.

3. FLUSH BEAMS:



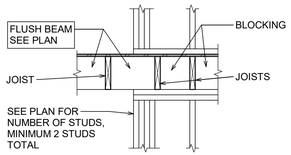
4. DROPPED BEAMS:



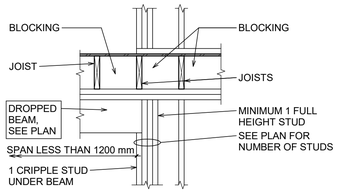
5. UNLESS NOTED OTHERWISE ALL EXTERIOR WALL BEAMS, INTERIOR WALL BEAMS, AND DOOR HEADER BEAMS ARE DROPPED. UNLESS NOTED OTHERWISE ALL OTHER INTERIOR BEAMS ARE FLUSH.

6. USE 2-38 X 235 BEAMS OVER ALL OPENINGS IN BEARING WALLS UNLESS NOTED OTHERWISE. BEAMS SHALL BE SUPPORTED AT EACH END AS SHOWN BELOW UNLESS NOTED OTHERWISE.

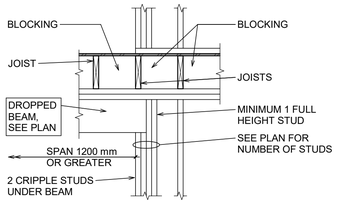
   A. CASE 1 - FLUSH BEAM:



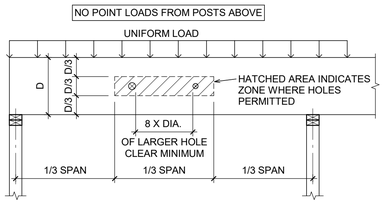
   B. CASE 2 - DROPPED BEAM - OPENING LESS THAN 1200 mm:



   C. CASE 2 - DROPPED BEAM - OPENING 1200 mm OR GREATER:



7. HOLES IN BEAMS:



NOTES:

1. MAXIMUM 3 HOLES PER SPAN.
2. CONTACT RJC FOR OTHER CONDITONS.

BEAM DEPTH	MAXIMUM HOLE DIAMETER
89 mm	19 mm
140 mm	29 mm
184 mm	38 mm
> 184 mm	51 mm

GLUED-LAMINATED TIMBER (GLULAM)

1. GLULAM COLUMN AND BEAM MEMBERS SHALL SATISFY THE FOLLOWING:

   A. SIZING DESCRIBED IN THIS DOCUMENT CONSIDERS NORDIC LAM MANUFACTURED BY NORDIC STRUCTURES AS MINIMUM ACCEPTABLE SIZE. ALL DETAILS CONSIDER THESE SIZES. ALTERNATIVE MAXIMUM ACCEPTABLE ARCHITECTURAL SIZES BASED ON CSA O86 TABLES LISTED AS AN APPROVED EQUIVALENT SUBJECT TO FURTHER REVIEW BY RJC AND ARCHITECT, HOWEVER SECTION DETAILS WOULD NEED TO BE REVISED BY SUPPLIER, ITEMIZED AND ALLOWED FOR IN TENDER.

   B. NORDIC STRESS GRADE :

   BEAMS:
   Fb = 30.7 MPa, Fv = 2.5 MPa, Fcp = 7.5 MPa, E = 13,200 MPa
   24f-E FOR ALL SINGLE SPAN BEAMS TYPICAL U.N.O.
   24f-Ex FOR ALL MULTIPLE SPAN AND BRACING CANTILEVERED BEAMS TYPICAL U.N.O.
   COLUMNS / BRACES:
   24c-EX FOR ALL COLUMNS IN COMPRESSION AND BENDING TYP. U.N.O.
   14t-E FOR ALL COLUMNS IN COMPRESSION TYPICAL U.N.O.

   O86 STRESS GRADE:

   BEAMS:
   24f-X FOR ALL SINGLE SPAN BEAMS AND BRACES TYPICAL U.N.O.
   24f-EX FOR ALL MULTIPLE SPAN OR CANTILEVERED BEAMS TYP U.N.O.
   COLUMNS / BRACES:
   20f-EX FOR ALL COLUMNS IN COMPRESSION AND BENDING TYP U.N.O.
   14t-E FOR ALL COLUMNS IN TENSION TYPICAL U.N.O.

   C. APPEARANCE GRADE : "QUALITY GRADE" PER TABLE 6.8 OF CSA O86.

   D. MOISTURE CONTENT : 12 +/- 2% MAXIMUM, AND NOT EXCEED 14%

   E. SERVICE GRADE :

   INTERIOR FOR ALL ELEMENTS INSIDE BUILDING ENVELOPE TYPICAL U.N.O.
   EXTERIOR FOR ALL ELEMENTS OUTSIDE BUILDING ENVELOPE TYP. U.N.O.

2. GLULAM MEMBERS SHALL BE MANUFACTURED BY A CSA APPROVED PLANT MEETING THE REQUIREMENTS OF CSA O177.

3. GLULAM MEMBERS SHALL BE KEPT DRY AND PROTECTED FROM THE ENVIRONMENT DURING STORAGE ON OR OFF THE PROJECT SITE AND DURING ERECTION SUCH AS ILVA KLIMA 3:1 + 10ML WET FILM OR APPROVED EQUIVALENT AS PER THE MANUFACTURES REQUIREMENTS.

4. ALL STEEL CONNECTIONS / HARDWARE USED FOR CONNECTING BEAMS SHALL BE CAPABLE OF CARRYING THE SHEAR STRENGTH OF THE MEMBER.

5. THREADED ROD CONNECTOR EPOXY TO BE SIKA SIKADUR 35 HI-MOD, OR APPROVED EQUIVALENT. ENSURE RODS ARE PLACED CENTRICALLY AND VOID FREE FILLING OF EPOXY OVER LENGTH OF ROD. RODS TO BE SHOWN ON ALL SHOP DRAWINGS. RODS TO BE FACTORY INSTALLED.

6. MAXIMUM DEFLECTIONS INCLUDING LONG TERM CREEP PER CSA O86 5.4.2 & 5.4.3
   SHORT TERM LIVE LOAD = L/480
   SUSTAINED LONG TERM TOTAL LOAD = L/360, MAX 25 mm U.N.O.
   ALSO SEE "WOOD FRAME MOVEMENT DUE TO SHRINKAGE" AND "CALCULATED STRUCTURAL MOVEMENTS" GENERAL NOTES.

7. HORIZONTAL BEAM SLEEVE REQUIREMENTS PER SPRINKLER SHOP DRAWINGS. NO SLEEVES ALLOWED OUTSIDE ZONE OF BEAM BOUNDED BY MIDDLE THIRD LENGTH AND DEPTH OF BEAM. ALL SLEEVES TO BE REVIEWED BY RJC PRIOR TO FABRICATION.

8. IF EUROPEAN ELEMENTS ARE PROPOSED, THE SUPPLIER MUST SUPPLY AN EQUIVALENCY REPORT FROM AN ENGINEER STATING THAT THE ELEMENT MEET ALL THE REQUIREMENTS OF CSA IN COMPARISON TO THE CANADIAN SPECIFICATION.

9. SEE "MASS TIMBER CONNECTIONS" NOTE.

CONT'D FROM RIGHT... TESTING OF POST-INSTALLED ADHESIVE AND MECHANICAL ANCHORS

18. THE INDEPENDENT TESTING AGENCY IS TO PROVIDE A TESTING AND REPAIR REPORT SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OR TERRITORY WHERE THE WORK IS DONE.

19. THE TEST REPORT SHALL BE SUBMITTED FOR REVIEW BY RJC NO LATER THAN 72 HOURS AFTER THE TESTING IS COMPLETED.

20. THE TEST REPORT SHALL DETAIL ALL OBSERVATIONS AND RESULTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

    A. LOCATION OF TESTING WITHIN THE PROJECT AND SUITABLE DIAGRAM, ANNOTATED PHOTOGRAPH OR OTHER NOTATION CLEARLY IDENTIFYING WHICH ANCHORS AT A PARTICULAR LOCATION WERE TESTED.

    B. DATE OF INSTALLATION AND DATE OF TESTING OF ANCHORS. TIME IS ALSO TO BE INDICATED WHERE THE INSTALLATION AND TESTING TIMES ARE LESS THAN 48 HOURS APART.

    C. EMBEDMENT DEPTH, MANUFACTURER'S MARKINGS OF TESTED ANCHORS AND ADHESIVE PRODUCT UTILIZED. THE METHOD USED TO VERIFY EMBEDMENT DEPTH AND OTHER PROPERTIES SHALL BE DOCUMENTED.

    D. TEST PROCEDURE UTILIZED FOR EACH ANCHOR.

    E. TEST LOADS APPLIED, DURATION OF SUSTAINED LOAD FOR EACH ANCHOR AND NUMBER OF LOADING CYCLES WHERE APPLICABLE.

    F. ANY OTHER RELEVANT OBSERVATIONS BY THE TESTING ENGINEER REGARDING IMPROPER INSTALLATION PROCEDURES OR POOR INSTALLATION QUALITY THAT WOULD HAVE A MEANINGFUL IMPACT ON THE IN-SERVICE PERFORMANCE OF THE ANCHORS.

PROOF LOAD TESTS OF POST-INSTALLED ANCHORS AND REBAR IN MASONRY

ANCHOR DESCRIPTION	DRAWING OR DETAIL REFERENCE	NUMBER OR PERCENT TO TEST	PROOF LOAD (kN) OR TORQUE (kN-m)	COMMENTS / LOCATION
-	-	-	-	-

NOTES:

1. PROOF LOADING TO BE CONDUCTED IN ACCORDANCE WITH THE "TESTING OF POST-INSTALLED ADHESIVE AND MECHANICAL ANCHORS" NOTE U.N.O.
2. PROOF LOAD INDICATED ON DETAILS USING DESIGNATION "PL = xx kN" OR "PL = xx kN.m" AT ANCHOR CALL-UP.
3. WHERE NO PROOF LOAD LEVEL IS GIVEN IN TABLE OR ON PLANS AND DRAWINGS, REQUEST PROOF LOAD INFORMATION FROM ENGINEER OF RECORD MINIMUM OF 72 HOURS BEFORE THE TEST ARE TO BE PERFORMED.

FIRE RATING FOR STRUCTURAL STEEL

1. TO DETERMINE THE FIRE RATING BASED ON ULC RATINGS, THE STEEL STRUCTURE IS CONSIDERED RESTRAINED.
2. THE STRUCTURE IS DESIGNED AS NON-LOAD RESTRICTED. THE ULC FIRE RATED ASSEMBLIES MUST BE CHOSEN AS NON-LOAD RESTRICTED.

TESTING OF POST-INSTALLED ADHESIVE AND MECHANICAL ANCHORS

1. THE OWNER SHALL RETAIN AN INDEPENDENT TESTING AGENCY TO PROVIDE AN ON-GOING SERVICE OF ON-SITE QUALITY CONTROL REVIEWS TO ENSURE THAT ANCHORS ARE BEING INSTALLED IN ACCORDANCE TO THE ANCHOR MANUFACTURER'S SPECIFICATIONS.
2. THE INDEPENDENT TESTING AGENCY FIELD PERSONNEL COMPLETING REVIEWS OF ANCHOR INSTALLATION AND PERFORMING ANCHOR TESTING SHALL BE QUALIFIED FOR THAT WORK AND TRAINED BY THE MANUFACTURER'S REPRESENTATIVE IN THE INSTALLATION AND REVIEW REQUIREMENTS OF ALL ANCHOR SYSTEMS USED ON THE PROJECT INCLUDING SPECIALIZED TRAINING FOR HORIZONTAL OR UPWARDLY INCLINED ADHESIVE ANCHORS.
3. THE INDEPENDENT TESTING AGENCY FIELD PERSONNEL COMPLETING REVIEWS OF ANCHOR INSTALLATION AND PERFORMING ANCHOR TESTING HAVE CURRENT CERTIFICATION (WITHIN PAST 5 YEARS) IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLATION CERTIFICATE PROGRAM OR EQUIVALENT. ACI/CSRI CERTIFICATION DOCUMENTS SHALL BE SUBMITTED FOR REVIEW A MINIMUM OF 72 HOURS BEFORE THE PERSONNEL FROM THE INDEPENDENT TESTING AGENCY COMPLETES ANY TESTING OR OBSERVATIONS ON THE PROJECT.
4. ANCHORS NOTED FOR "CONTINUOUS SPECIAL INSPECTION" OR "PERIODIC SPECIAL INSPECTION" ARE TO BE INSPECTED BY THE INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH THE TERMINOLOGY IN ACI 355.4.
5. PERIODIC SPECIAL INSPECTIONS SHALL BE PROVIDED FOR ALL ANCHORS UNLESS NOTED OTHERWISE.
6. THE INDEPENDENT TESTING AGENCY FIELD PERSONNEL WILL PROVIDE CONTINUOUS SPECIAL INSPECTION FOR INSTALLATION OF ALL ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED TO SUPPORT SUSTAINED TENSION LOADS AS PER THE REQUIREMENTS DEFINED IN THE POST-INSTALLED ADHESIVE AND MECHANICAL ANCHOR NOTES AND IN THE SPECIFICATIONS.
7. MARKINGS ON EXPOSED PORTIONS OF ANCHORS BY THE MANUFACTURER DESIGNATE ANCHOR TYPE, MATERIAL GRADE, LENGTH, ETC. CUTTING OFF THESE MARKINGS PRIOR TO REVIEW FOR CONFORMANCE WITH THE STRUCTURAL DRAWINGS BY THE INDEPENDENT TESTING AGENCY SHALL RESULT IN REJECTION OF THE ANCHORS AND REPLACEMENT AT THE CONTRACTOR'S COST.
8. ALL UNMARKED THREADED ROD SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S COST.
9. QUALITY ASSURANCE REPORTS FROM THE INDEPENDENT TESTING AGENCY ARE TO BE SUBMITTED TO RJC AFTER EACH SITE VISIT.
10. A REPRESENTATIVE SAMPLE OF ANCHORS ARE TO BE TESTED FOR EACH TYPE AND SIZE OF ANCHOR SPECIFIED. ANCHORS WHICH FAIL THE LOAD TEST SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S COST.
11. THE FOLLOWING TESTING BY THE INDEPENDENT TESTING AGENCY IS PAID FOR BY THE OWNER:

    A. RANDOMLY SELECT 10% OF MECHANICAL ANCHORS AND 10% OF SCREW ANCHORS (2 MINIMUM PER CONNECTION) TO VERIFY INSTALLATION TORQUE MEETS MANUFACTURER'S INSTALLATION CRITERIA.

    B. PROOF LOAD TEST 10% OF ADHESIVE ANCHORS OR AS INDICATED IN THE DRAWINGS OR AS IDENTIFIED BY THE STRUCTURAL ENGINEER OF RECORD. PROOF LOAD TEST 100% OF ALL ADHESIVE ANCHORS INSTALLED INTO CONCRETE WITH TEMPERATURE BELOW 10 °C AT TIME OF INSTALLATION.

    C. RANDOMLY SELECT 2% OF ADHESIVE ANCHORS (3 MINIMUM) FOR TESTING TO FAILURE. CONTRACTOR TO REPLACE ANCHORS AT CONTRACTOR'S COST.

    D. PROOF LOAD TEST POST-INSTALLED REBAR AS INDICATED IN THE DRAWINGS OR IDENTIFIED BY THE STRUCTURAL ENGINEER OF RECORD.

12. THE FOLLOWING TESTING AND FIELD REVIEW BY THE INDEPENDENT TESTING AGENCY IS PAID FOR BY THE CONTRACTOR:

    A. IF ANY MECHANICAL ANCHORS IN A CONNECTION FAILS TEST OF INSTALLATION TORQUE, VERIFY INSTALLATION TORQUE OF ALL ANCHORS IN THE SAME CONNECTION AND OTHER ANCHORS AS DIRECTED BY THE INDEPENDENT TESTING AGENCY OR ENGINEER OF RECORD.

    B. IF ANY PROOF LOAD TEST FAILS, TEST 100% OF ANCHORS OF SIMILAR TYPE AND INSTALLATION CONDITION AND OTHER ANCHORS AS DIRECTED BY THE INDEPENDENT TESTING AGENCY OR ENGINEER OF RECORD.

    C. IF ANY ANCHORS ARE FOUND TO BE INSTALLED WITHOUT COMPLETE ADHESIVE OR ARE EMBEDDED LESS THAN 90% OF THE DEPTH SHOWN ON THE DRAWINGS, THEN PROOF LOAD TEST 100% OF THE ANCHORS.

    D. PROVIDE FULL TIME FIELD REVIEW OF ALL REPAIRS.

13. UNLESS NOTED OTHERWISE, ALL PROOF LOADING SHALL BE PERFORMED TO INDIVIDUAL ANCHORS WITH THE FOLLOWING TECHNIQUES:

    A. ADHESIVE ANCHORS OR MECHANICAL ANCHORS INSTALLED IN CONCRETE: PERFORM PROOF LOADING AS CONFINED TENSION TESTS USING A CALIBRATED CENTERHOLE HYDRAULIC CYLINDER AND A RIGID STEEL THRU-HOLE REACTION PLATE BEARING ON THE CONCRETE IN CLOSE PROXIMITY ALL AROUND THE ANCHOR WHERE PROOF TEST IS NOTED ON DRAWINGS AS TORQUE VALUE, PERFORM PROOF LOADING USING A CALIBRATED TORQUE WRENCH.

    B ADHESIVE OR MECHANICAL ANCHORS INSTALLED IN GROUTED OR UNGROUTED MASONRY: PERFORM PROOF LOADING AS UNCONFINED TENSION TESTS USING A CALIBRATED CENTERHOLE HYDRAULIC CYLINDER AND REACTION AGAINST MASONRY LOCATED AWAY FROM THE MASONRY UNIT TESTED AND BEYOND ANY RESULTING FAILURE SURFACE. WHERE PROOF TEST IS NOTED ON DRAWINGS AS TORQUE VALUE, PERFORM PROOF LOADING USING A CALIBRATED TORQUE WRENCH.

    C SCREW ANCHORS INSTALLED IN CONCRETE OR MASONRY: PERFORM PROOF LOADING USING A CALIBRATED TORQUE WRENCH.

14. TESTING AGENCY TO SUBMIT TRACEABLE CALIBRATION DATA FOR THE HYDRAULIC CYLINDER AND TORQUE WRENCH WITH THE TESTING REPORT. CALIBRATION DATA SHALL NOT BE OLDER THAN 12 MONTHS.
15. PROOF LOAD LEVEL SHALL BE AS INDICATED ON SCHEDULE DRAWINGS OR AS INDICATED ON THE PLANS AND DETAILS.
16. MAINTAIN THE PROOF LOAD FOR A MINIMUM OF 60 SECONDS.
17. MAXIMUM ANCHOR DISPLACEMENT AFTER THE SUSTAINED PROOF LOAD SHALL BE 0.5% OF THE EMBEDMENT DEPTH AND MAXIMUM DECREASE IN MEASURED LOAD SHALL BE 2% UNLESS NOTED OTHERWISE.

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

Print Date 2025-04-14 4:25:49 PM
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Project No. 21-029
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Checked By GJ

Sheet Number **S011**
Revision **3**

WOOD FRAMING - SHEATHING

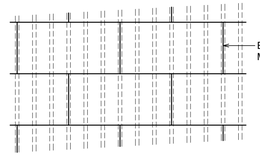
1. A. ROOF SHEATHING — SLOPED ROOF (SLOPE GREATER THAN 15%)
   12.5 mm PLYWOOD WITH H-CLIPS AT UNSUPPORTED JOINTS.
   FLAT ROOF (SLOPE 15% MAXIMUM)
   15.5 mm TONGUE AND GROOVE PLYWOOD.

   B. FLOOR SHEATHING — 15.5 mm TONGUE AND GROOVE PLYWOOD IF NO CONCRETE TOPPING IS USED. (ANY JOINT WITHOUT A TONGUE AND GROOVE CONNECTION SHALL BE BLOCKED WITH A 38 X 89). 15.5 mm BUTT JOINT PLYWOOD IF 38 mm CONCRETE TOPPING IS USED.

   C. EXTERIOR WALL SHEATHING — 9.5 mm PLYWOOD ON EXTERIOR SIDE TYP. 12.5 mm PLYWOOD SHEATHING IF WALLS CLAD WITH VERTICAL STRAPPING OR BRICK VENEER. SEE ALSO ARCHITECTURAL FOR ADDITIONAL SHEATHING REQUIREMENTS.

   D. SHEAR WALL SHEATHING — SEE SHEAR WALL SCHEDULE FOR SHEATHING REQUIREMENTS AT SHEAR WALL LOCATIONS.

2. LAY FLOOR AND ROOF SHEATHING WITH THE SURFACE GRAIN AT RIGHT ANGLES TO THE JOISTS. STAGGER THE JOINTS PARALLEL TO THE JOISTS.



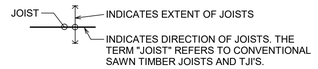
3. DRYWALL OR SHEATHING ON LOAD BEARING WALLS OR SHEAR WALLS SHALL BE FASTENED DIRECTLY TO THE STUDS, WITHOUT THE USE OF RESILIENT METAL CHANNELS.

WOOD DECKING

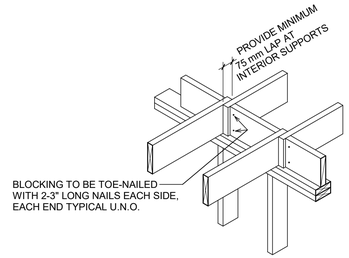
1. WOOD DECKING TO BE [SELECT] GRADE [DOUGLAS FIR] KILN DRY PLANKS TO [19]% MAXIMUM MOISTURE CONTENT.
2. 64 mm X 133 mm AND 89 mm X 133 mm WOOD DECKING SHALL BE PRE DRILLED WITH 6 mm Ø HOLES AT 760 mm O/C FOR LATERAL SPIKING WITH DOUBLE TONGUE AND GROOVE.
3. DECKING LENGTHS TO BE 1800 mm TO 6000 mm OR LONGER WITH A MINIMUM OF 90% OF THE PLANKS EXCEEDING 3000 mm AND A MINIMUM OF 50% OF THE PLANKS EXCEEDING 5000 mm. FOR SINGLE SPANS SHORTER THAN 3000 mm, USE PLANKS OF SAME LENGTH AND SPAN.
4. INSTALL PLANK DECKS TO CSA O86 CONTROLLED RANDOM PATTERN. EXCEPT AS NOTED.
5. PROVIDE MINIMUM OF ONE BEARING SUPPORT FOR EACH PLANK (EXCEPT FOR CANTILEVERS OR SIMPLE SPANS WHICH SHALL EXTEND OVER TWO SUPPORTS AND TWO SPAN CONTINUOUS WHICH SHALL EXTEND OVER THREE SUPPORTS). INSTALL SLOPING DECKS WITH TONGUES UP.
6. STAGGER END JOINTS IN ADJACENT PLANKS MINIMUM OF 500 mm SEPARATE JOINTS IN SAME AREA BY AT LEAST TWO INTERVENING COURSES. NO END JOINTS IN FIRST HALF OF END SPANS. MINIMIZE JOINTS IN MIDDLE THIRD OF ANY SPAN.
7. NAIL ALL 64 mm AND 89 mm PLANKS TOGETHER LATERALLY WITH 8" SPIRAL SPIKES THROUGH PRE DRILLED 6 mm HOLES AT 760 mm O/C.
8. CONNECT EACH 64 mm AND 89 mm PLANK TO SUPPORTING MEMBERS WITH ONE 5" NAIL, TOE-NAILED, AND ONE 6" NAIL, FACE-NAILED, EXCEPT AS NOTED ON PLAN.
9. PLANKS PARALLEL TO SPAN OF SUPPORTING MEMBERS TO BE CONNECTED TO THE SUPPORTING MEMBERS WITH 6" NAILS FACE-NAILED AT 300 mm O/C, EXCEPT AS NOTED ON PLAN.
10. CONNECT EACH 38 mm PLANK TO SUPPORTING MEMBERS WITH ONE 3" NAIL, TOE-NAILED, AND ONE 3" NAIL, FACE-NAILED.

WOOD FRAMING - JOISTS

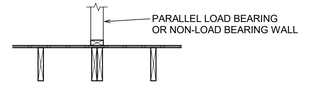
1. REFER TO PLAN AND JOIST SCHEDULE FOR JOIST TYPE, SIZE, AND SPACING.



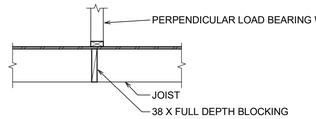
2. DIMENSIONAL LUMBER JOISTS SHALL HAVE CROSS-BRIDGING OR FULL-DEPTH BLOCKING AT 1800 mm O/C ALONG THE SPAN FOR ALL SPANS GREATER THAN 3600 mm. CROSS BRIDGING SHALL CONSIST OF 38 X 38 TIMBER OR APPROVED STEEL BRIDGING. TJI JOISTS SHALL BE BLOCKED AS PER MANUFACTURERS REQUIREMENTS. JOISTS SHALL HAVE FULL-DEPTH BLOCKING OVER LOAD BEARING WALLS, DROPPED BEAMS OR HEADERS. SEE TYPICAL LOAD BEARING WALL AND SHEAR WALL CONNECTIONS BETWEEN FLOORS FOR ADDITIONAL BLOCKING REQUIREMENTS.



3. TRIM OPENINGS IN FLOORS AND ROOFS (E.G. STAIRS, FIREPLACES, SKYLIGHTS, ETC.) WITH DOUBLE JOISTS UNLESS NOTED OTHERWISE.
4. PROVIDE DOUBLE JOISTS UNDER PARALLEL FRAME WALLS UNLESS NOTED OTHERWISE.



5. PROVIDE 38 X FULL DEPTH BLOCKING BETWEEN JOISTS UNDER PERPENDICULAR FRAME WALLS UNLESS NOTED OTHERWISE.



6. STAIRS AND STRINGERS SHALL BE FRAMED IN ACCORDANCE WITH THE BUILDING CODE PART 9, UNLESS NOTED OTHERWISE.
7. JOISTS ARE TO BE FLUSH UNLESS NOTED OTHERWISE. USE JOIST HANGERS OR FRAMING ANCHORS TO CONNECT JOISTS.

8. UNLESS NOTED OTHERWISE JOIST HANGERS OR FRAMING ANCHORS SHALL BE CAPABLE OF DEVELOPING THE SHEAR STRENGTH OF THE SUPPORTED MEMBER. FOR DIMENSIONAL LUMBER JOISTS, THE FOLLOWING CAPACITIES ARE REQUIRED:

JOIST SIZE	REQUIRED SHEAR RESISTANCE (kN)	
	WORKING LOAD	FACTORED LOAD
38 X 89	5.5	7.2
38 X 140	7.2	9.4
38 X 184	8.2	10.6
38 X 235	9.53	12.4
38 X 286	10.5	13.7

FOR I-JOISTS, HANGERS SHALL BE SPECIFIED ON ENGINEERED SHOP DRAWINGS PROVIDED BY THE JOIST SUPPLIER.

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2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
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Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

Sheet Title

GENERAL NOTES & TYPICAL DETAILS

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Sheet Number
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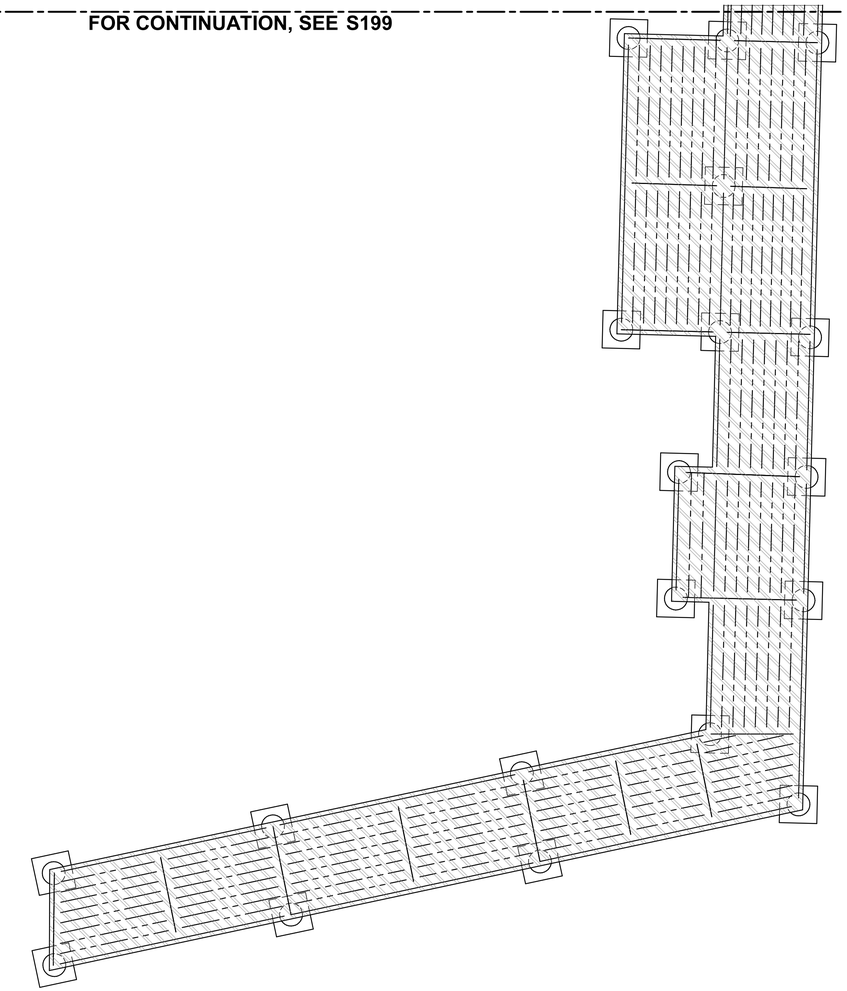
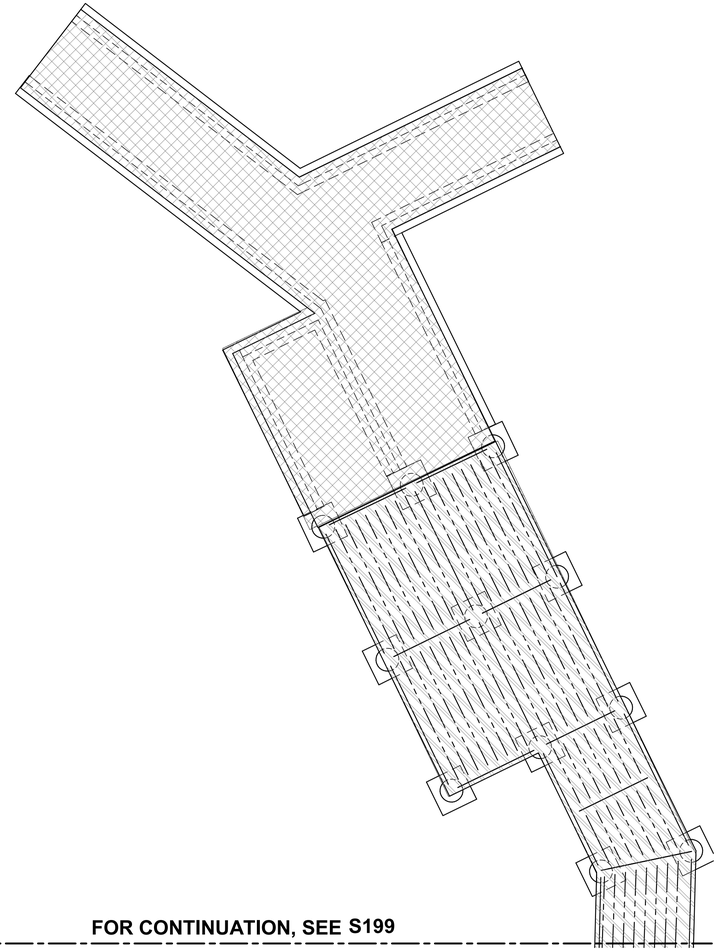
Revision
3

FOR CONTINUATION, SEE S199



2 S199 **GROUND FLOOR / FOUNDATION PART PLAN (BOARD WALK)**
1 : 75



FOR CONTINUATION, SEE S199

1 S199 **GROUND FLOOR / FOUNDATION LOADING PART PLAN (BOARD WALK)**
1 : 75

BOARD WALK - LOADING SCHEDULE

LEGEND	AREA	LOAD TYPE	DESCRIPTION	LOAD (kPa)	REMARKS
	CONCRETE STRUCTURE	DL	FLOOR S.W.	4.8	200 mm CONCRETE SLAB
		SDL		0.5	ALLOWANCE
		LL		4.8	PEDESTRIAN
	BOARDWALK	DL	FLOOR S.W.	1.0	COMPOSITE DECKING
		SDL		0.5	ALLOWANCE
		LL		4.8	PEDESTRIAN

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Issue Record

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Project Name

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Sheet Title

BOARD WALK LOADING PLAN

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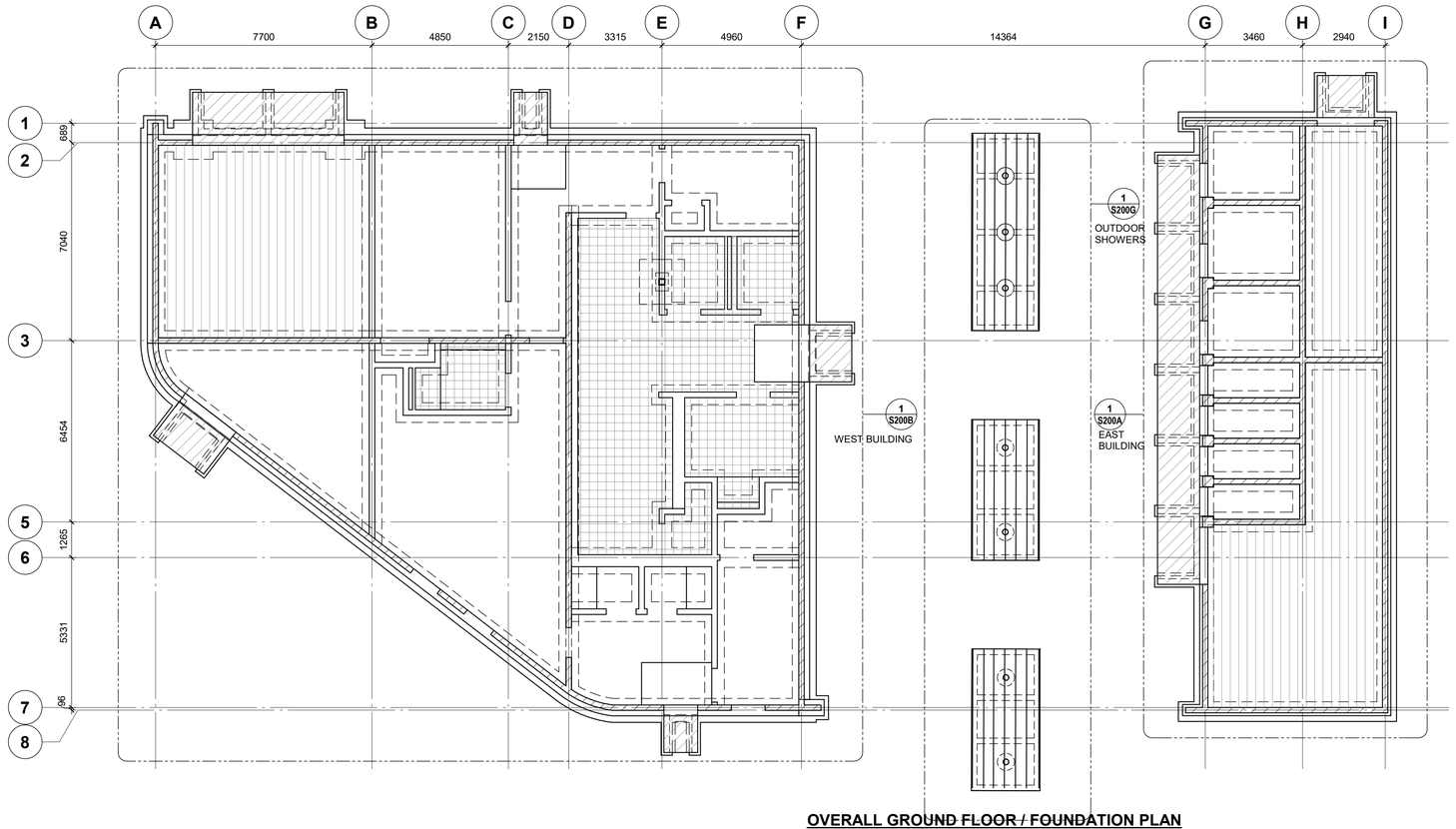
Sheet Number **S199**
Revision **1**



OVERALL GROUND FLOOR / FOUNDATION PLAN

1 : 100

GROUND FLOOR LOADING SCHEDULE

LEGEND	AREA	LOAD TYPE	DESCRIPTION	LOAD (kPa)	COMMENTS
	TYPICAL INTERIOR SLAB	DL	FLOOR S.W.	3.60	150mm CONCRETE SLAB
		SDL	FINISHES	0.20	FLOOR FINISHES ALLOWANCE
			TOTAL	**0.20**	
		LL		4.80	TYPICAL - GROUND FLOOR
	TILED FLOOR	DL	FLOOR S.W.	3.60	150mm CONCRETE SLAB
		SDL	FINISHES	0.80	TILED FLOOR + MAX 12mm MORTAR BED
			TOTAL	**0.80**	
		LL		4.80	TYPICAL - GROUND FLOOR
	STORAGE ROOM AND GARAGE	DL	FLOOR S.W.	3.60	150mm CONCRETE SLAB
		SDL	FINISHES	0.00	N/A
			TOTAL	**0.00**	
		LL		4.80	TYPICAL - GROUND FLOOR
	EXTERIOR SLAB	DL	FLOOR S.W.	3.60	150mm CONCRETE SLAB
		SDL	FINISHES	0.00	N/A
			TOTAL	**0.00**	
		LL		12.0	TYPICAL EXTERIOR SLAB

NOTES:
1. DL VALUES ONLY INCLUDE THE FLOOR SELF-WEIGHT WITH NO ALLOWANCE FOR THE STRUCTURE ITSELF.

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No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2025-01-29	CLARIFICATIONS TO CITY COMMENTS
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

PLAN NORTH

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

Sheet Title

GROUND FLOOR / FOUNDATION PLAN

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Sheet Number
S200

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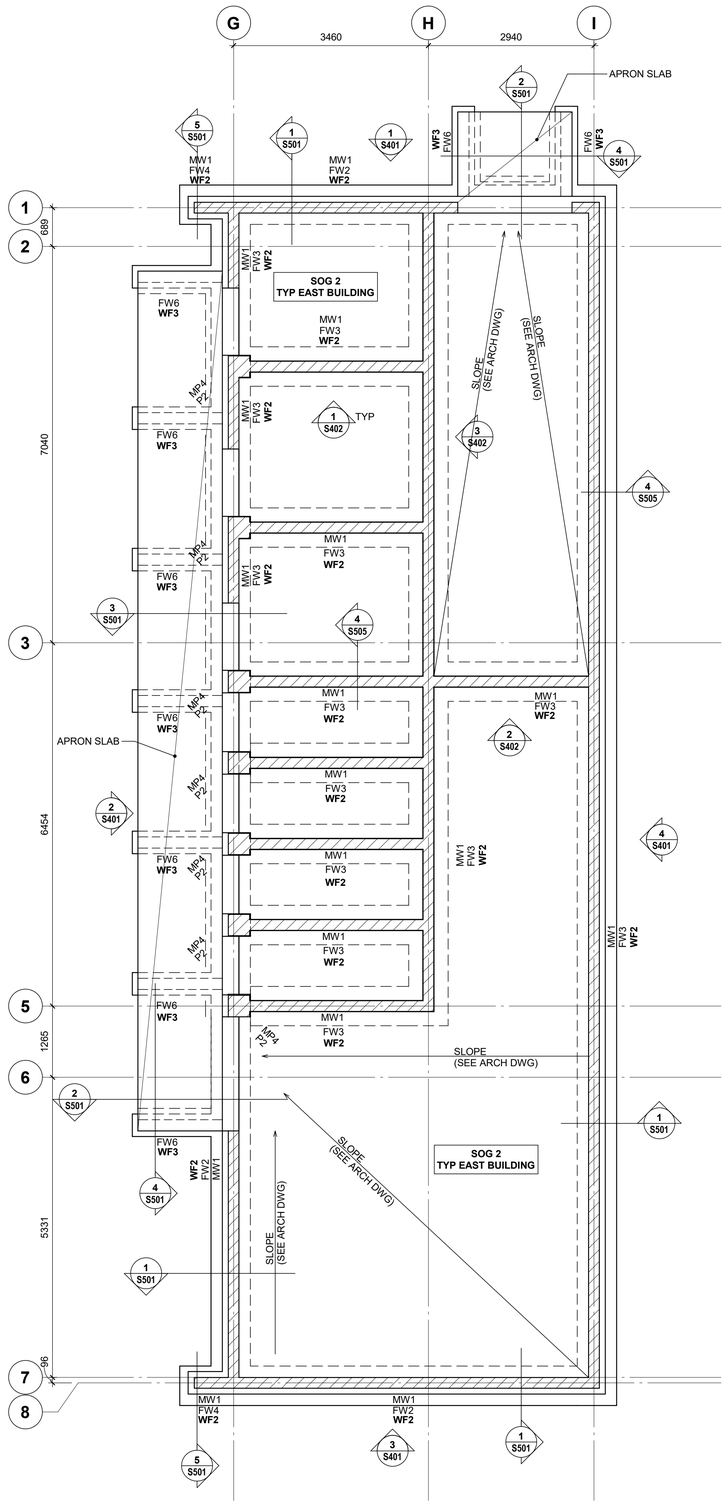
4



GROUND FLOOR / FOUNDATION PLAN (EAST BLDG)

1 : 50

NOTE:

1. REFER S301 FOR FOUNDATION WALL SCHEDULE, FOUNDATION SCHEDULES, CONCRETE PIER DETAILS AND MASONRY PIER SCHEDULES.

SLAB ON GRADE NOTES
SOG 1 TYP. U.N.O.
1. 150 THICK SLAB ON GRADE. 2. REINFORCE WITH 15M@300 E.W. AT 60mm FROM TOP. 3. CONCRETE EXPOSURE = F2 4. REINFORCE STEPS/FOLDS PER GENERAL NOTES.
SOG 2
1. 150 THICK SLAB ON GRADE. 2. REINFORCE WITH 15M@300 E.W. AT 60mm FROM TOP. 3. CONCRETE EXPOSURE = C1 4. 10L/m³ D.C.I. TYPE 'S' CORROSION INHIBITOR. 5. REINFORCE STEPS/FOLDS PER GENERAL NOTES.
APRON SLAB
1. 150 THICK SLAB ON GRADE. 2. SEE SECTIONS FOR REINFORCEMENT. 3. CONCRETE EXPOSURE = C1 4. 10L/m³ D.C.I. TYPE 'S' CORROSION INHIBITOR..
REFER TO GEOTECHNICAL REPORT FOR SUB-BASE PREPARATION REQUIREMENTS.

MASONRY WALL SCHEDULE

MARK	WALL THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING	NOTES
MW1	190	15M@600	E.H.D. M REINFORCING EVERY 2ND COURSE	FULLY GROUTED AND REINFORCED TYP, ADD 3-15M EACH END TYP

NOTES:

1. PROVIDE STARTED DOWELS TO MATCH WALL REINFORCEMENT, TYP.
2. CONSIDER CONTINUOUS 400mm BOND BEAM R/W 1-15M T&B AT TOP OF EACH MW# (BELOW BEAM).
3. CONSIDER CONTINUOUS 200mm BOND BEAM R/W 1-15M AT THE BASE OF EACH MW#.
4. ALL DOWELS TO HAVE TENSION SPLICE (T.S.) TYPICAL.

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Issue Record

PLAN NORTH

RJC Project Number:
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Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GROUND FLOOR / FOUNDATION PLAN (EAST BLDG)

Print Date	**2025-04-14 4:25:51 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
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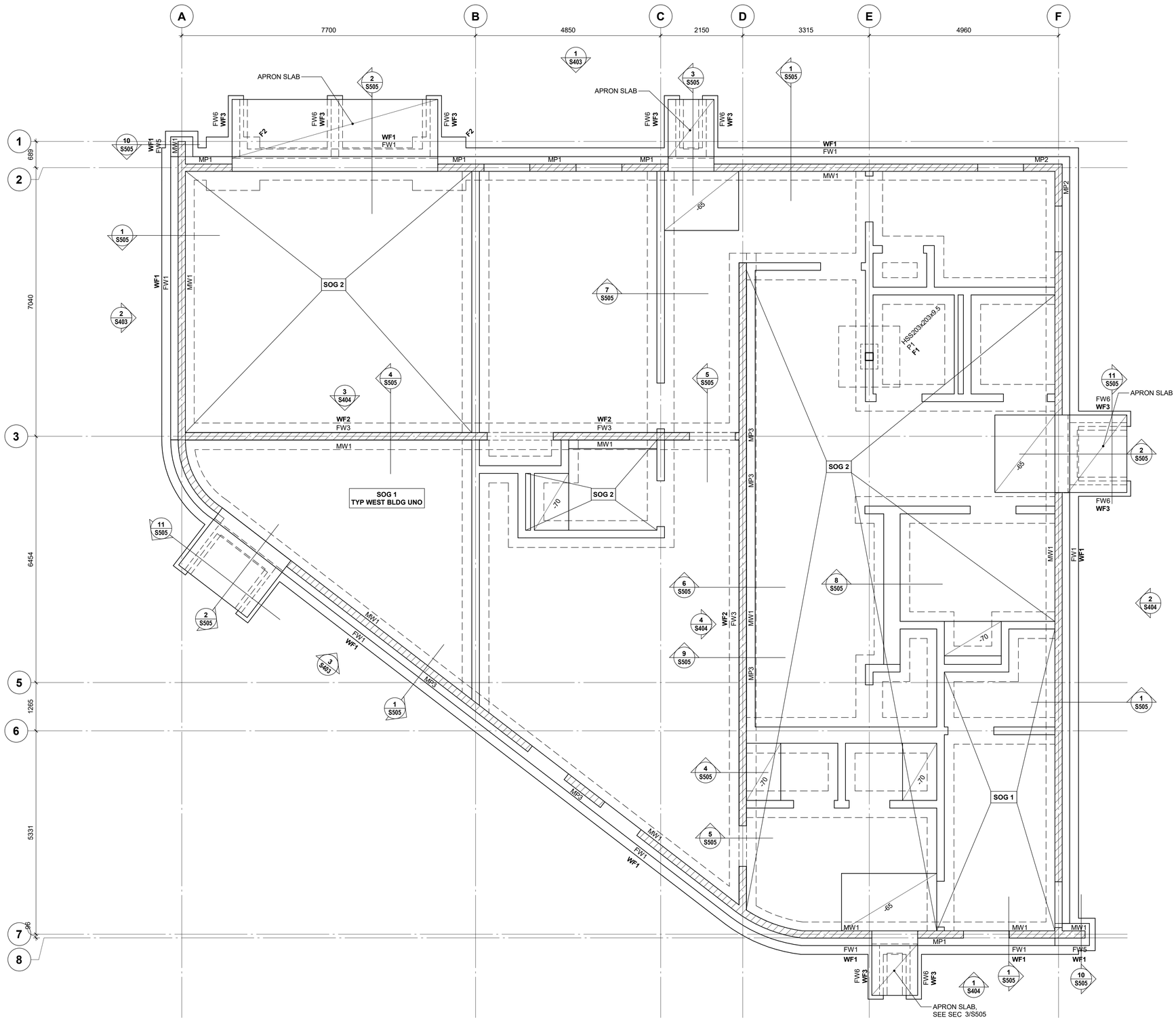
Sheet Number: **S200A**

Revision: **3**



GROUND FLOOR / FOUNDATION PLAN (WEST BLDG)

1 : 50

NOTE:

1. REFER TO S200A FOR MASONRY WALL SCHEDULE.
2. REFER TO S200A FOR SLAB ON GRADE NOTES.
3. REFER S301 FOR FOUNDATION WALL SCHEDULE, FOUNDATION SCHEDULES, CONCRETE PIER DETAILS AND MASONRY PIER SCHEDULES.

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PLAN NORTH

RJC Project Number:
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Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

GROUND FLOOR / FOUNDATION PLAN (WEST BLDG)

Print Date 2025-04-14 4:25:51 PM
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Project No. 21-029
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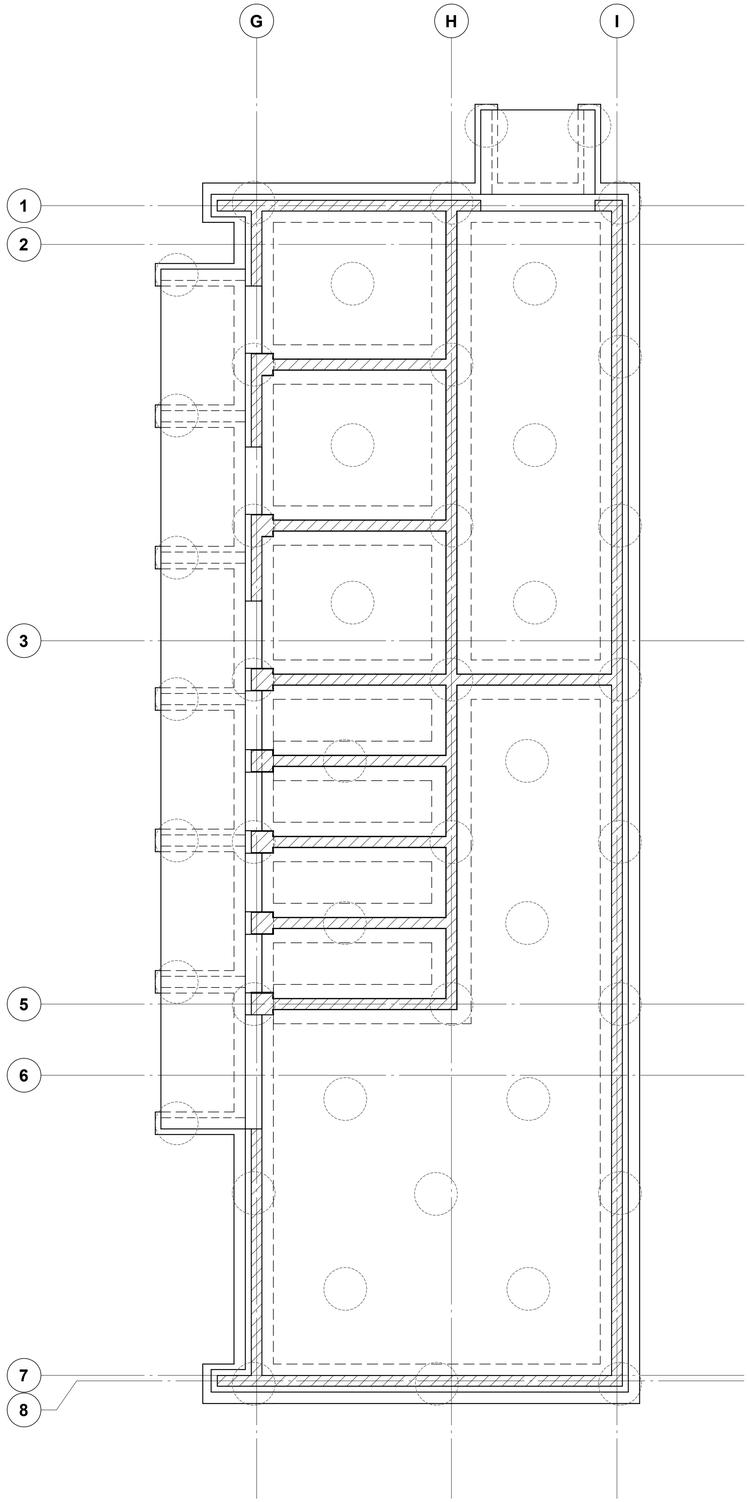
Sheet Number **S200B**

Revision **3**



GROUND FLOOR / FOUNDATION PLAN (EAST BLDG) - PRELIMINARY GEOPIER LAYOUT

1 : 50

NOTE:

1. REFER TO GEOSOLV DESIGN DRAWINGS FOR GEOPIER AND SUB-BASE MINIMUM REQUIREMENTS.
2. THIS PROPOSED GEOPIER LAYOUT IS TO BE USED ONLY FOR COSTING PURPOSES.
3. GROUND IMPROVEMENT FOR SLAB ON GRADE TO BE MINIMUM 20kPa SLS AND 30kPa ULS.
4. GROUND IMPROVEMENT FOR STRIP AND SPREAD FOOTINGS TO BE MINIMUM 150kPa SLS AND 225 kPa ULS.

LEGEND	DESCRIPTION
	762mm DIAMETER GEOPIER (NOT BY RJC)

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No.	Date	Description
2	2025-04-11	ISSUED FOR TENDER
1	2024-09-18	ISSUED FOR PERMIT

Issue Record

PLAN NORTH

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

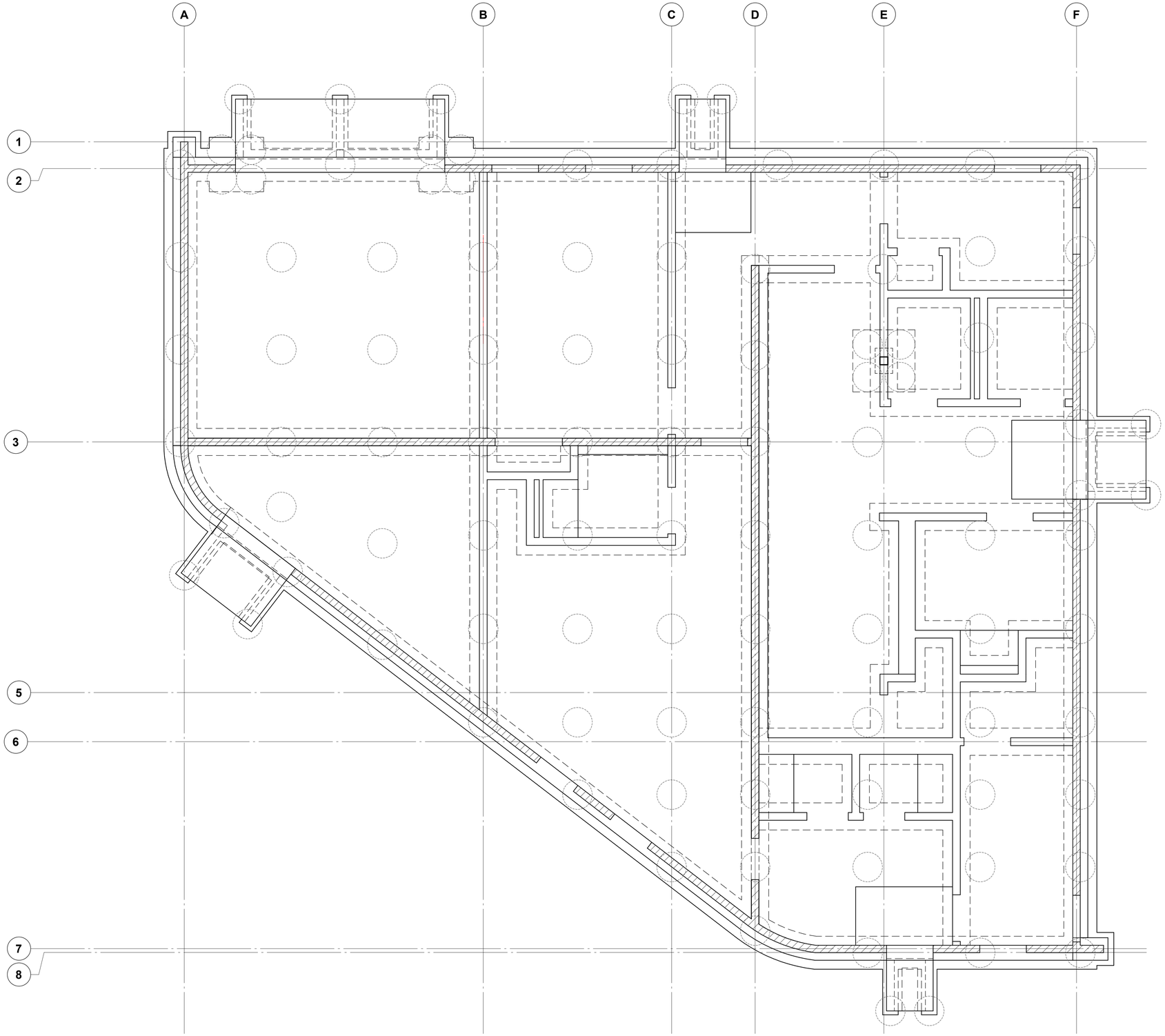
Sheet Title

GROUND FLOOR / FOUNDATION PLAN (EAST BLDG) - PRELIMINARY GEOPIER LAYOUT

Print Date 2025-04-14 4:25:51 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S200C

Revision
2



GROUND FLOOR / FOUNDATION PLAN (WEST BLDG) - PRELIMINARY GEOPIER LAYOUT

1 : 50

NOTE:

1. REFER TO GEOSOLV DESIGN DRAWINGS FOR GEOPIER AND SUB-BASE MINIMUM REQUIREMENTS.
2. THIS PROPOSED GEOPIER LAYOUT IS TO BE USED ONLY FOR COSTING PURPOSES.
3. GROUND IMPROVEMENT FOR SLAB ON GRADE TO BE MINIMUM 40kPa SLS AND 55kPa ULS.
4. GROUND IMPROVEMENT FOR STRIP AND SPREAD FOOTINGS TO BE MINIMUM 150kPa SLS AND 225 kPa ULS.

LEGEND	DESCRIPTION
	762mm DIAMETER GEOPIER (NOT BY RJC)

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Issue Record

PLAN NORTH

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

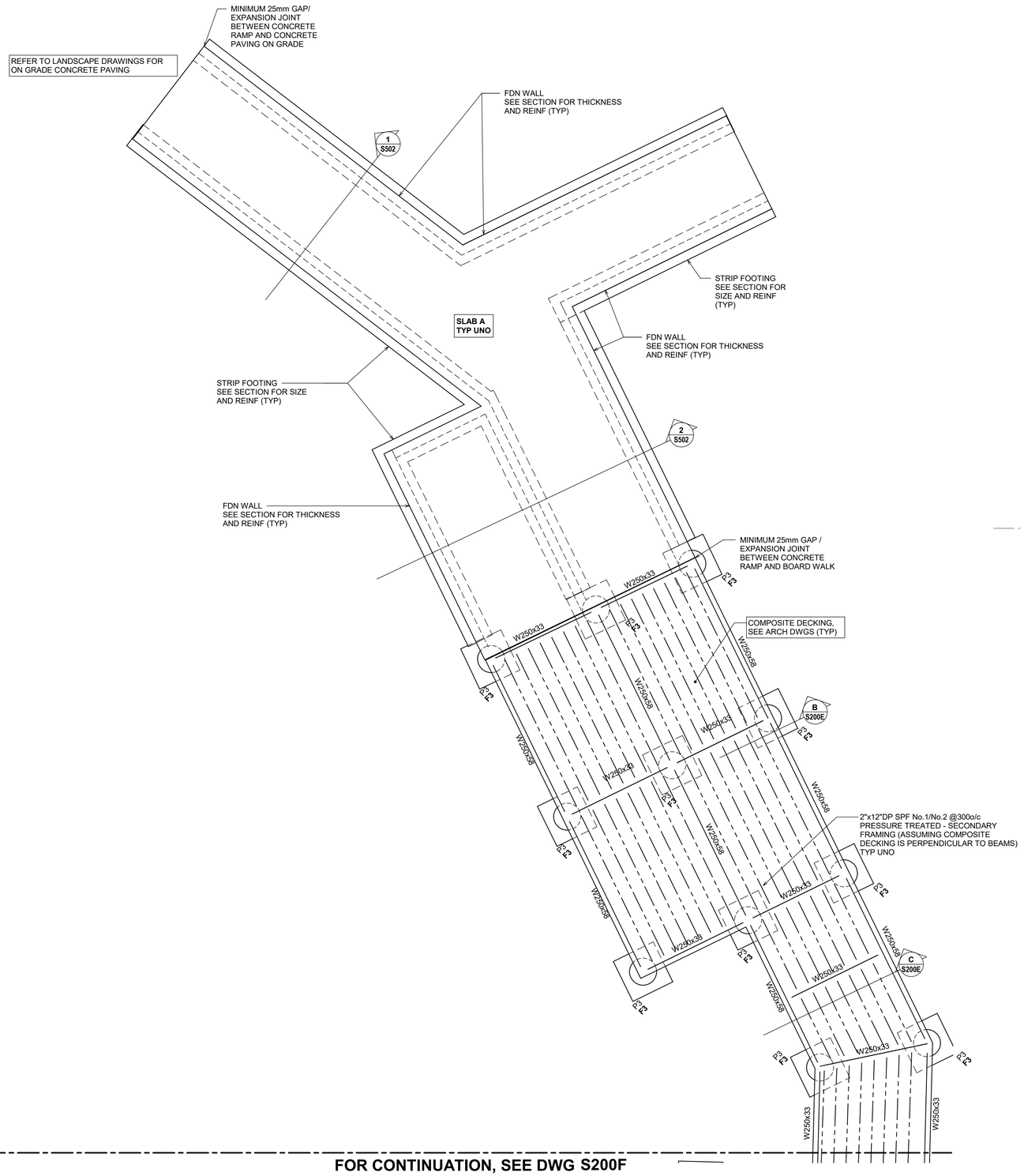
Sheet Title

GROUND FLOOR / FOUNDATION PLAN (WEST BLDG) - PRELIMINARY GEOPIER LAYOUT

Print Date 2025-04-14 4:25:52 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S200D

Revision
2



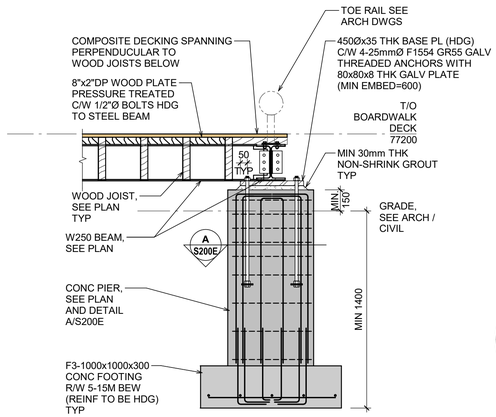
GROUND FLOOR / FOUNDATION PART PLAN (BOARD WALK)

1 : 50

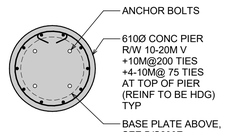
NOTES:

1. ALL STEEL AND REINFORCEMENT TO BE HOT DIP GALVANIZED.
2. REFER ARCH / LANDSCAPE DWGS FOR TOP OF DECK ELEVATIONAND DIMENSIONS.
3. ASSUME THE CONCRETE FOOTING BEARING ELEVATION IS MINIMUM 1400mm BELOW GRADE LEVEL.
   A. MINIMUM BEARING REQUIREMENTS ARE 150kPa (SLS) AND 250kPa (ULS) TO BE CONFIRMED BY GEOTECHNICAL ENGINEER OR GROUND IMPROVEMENT CONTRACTOR.
4. CONCRETE MIX:
   - CONCRETE STRENGTH = 35 MPa.
   - EXPOSURE CLASS = C-1
   - 10L/m³ D.C.I TYPE 'S' CORROSION INHIBITOR
5. REFER TO GENERAL NOTES FOR CONCRETE AND OTHER NOTES.
6. REFER TO GEOSOLV DESIGN DRAWINGS FOR GEOPIER AND SUB-BASE MINIMUM REQUIREMENTS.
7. GROUND IMPROVEMENT FOR STRIP FOOTING AND SPREAD FOOTINGS TO BE MINIMUM 150kPa SLS and 225 kPa ULS.

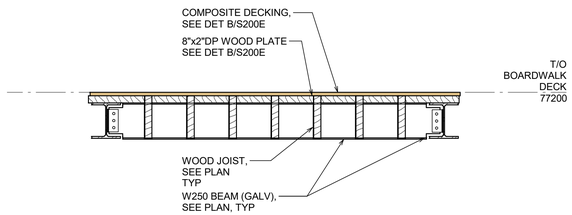
SUSPENDED SLAB NOTES
SLAB A
1. 200 THICK SUSPENED SLAB.
2. REINFORCE W/ 15M@300 T& B.E.W. (60mm CONCRETE COVER)



B S200E SECTION 1 : 20



A S200E PIER P3 PLAN VIEW DETAIL 1 : 20



C S200E SECTION 1 : 20

NOTE:

1. TYPICAL UNFACTORED JOIST REACTION:
   R DL = 1 kN
   R LL = 4 kN

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1	2024-09-18	ISSUED FOR PERMIT

Issue Record

PLAN NORTH

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

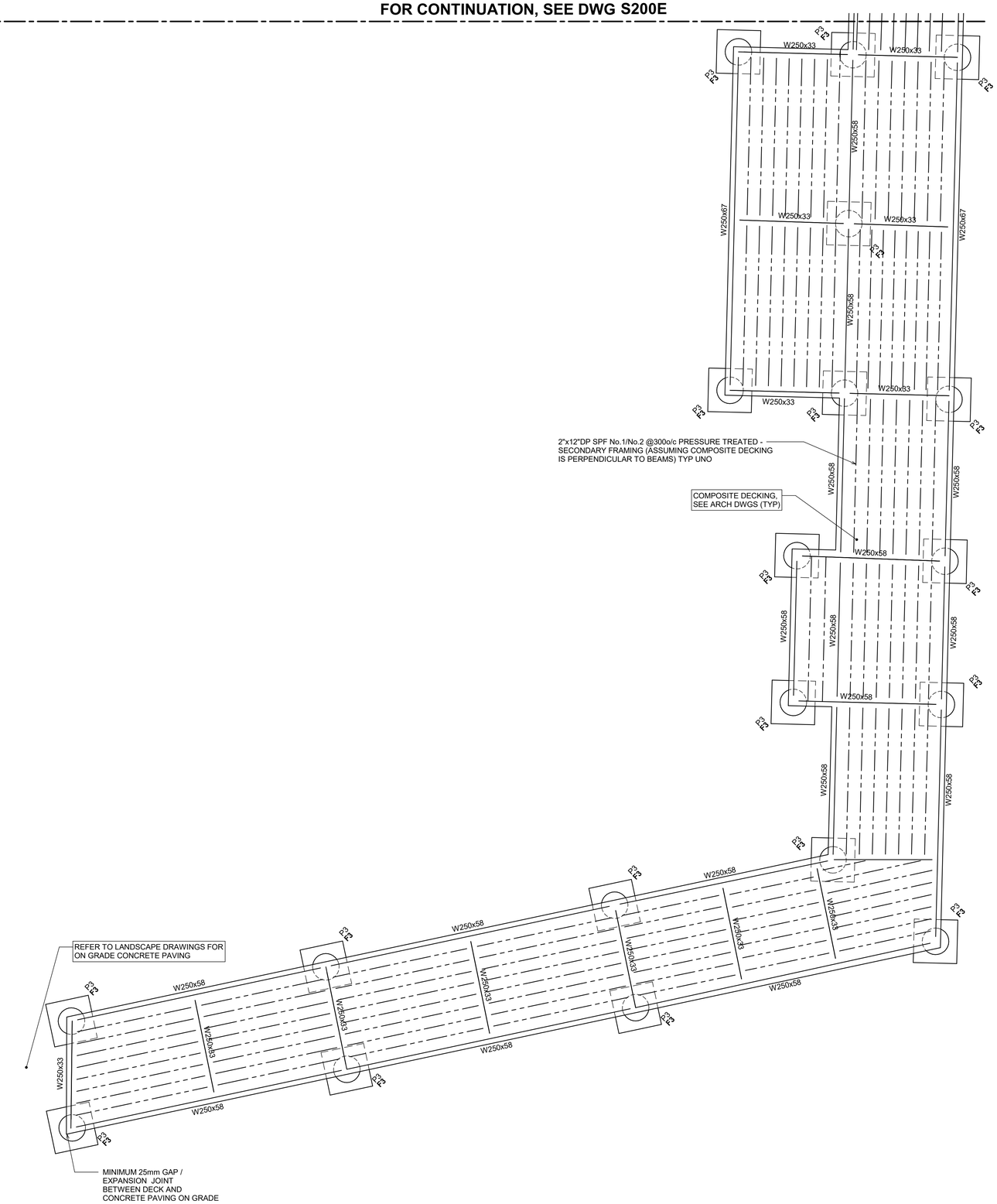
Sheet Title

GROUND FLOOR / FOUNDATION PART PLAN (BOARDWALK)

Print Date	**2025-04-14 4:25:52 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S200E** Revision **2**

FOR CONTINUATION, SEE DWG S200E



GROUND FLOOR / FOUNDATION PART PLAN (BOARD WALK)

1 : 50

NOTES:

1. REFER TO DWG S200E FOR NOTES.

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No.	Date	Description
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TOR.130977.0001

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1 Brimley Road South, Scarborough, Toronto, ON

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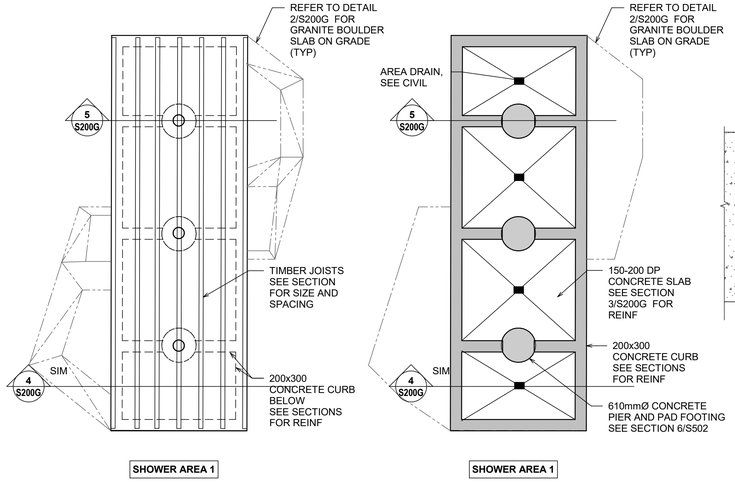
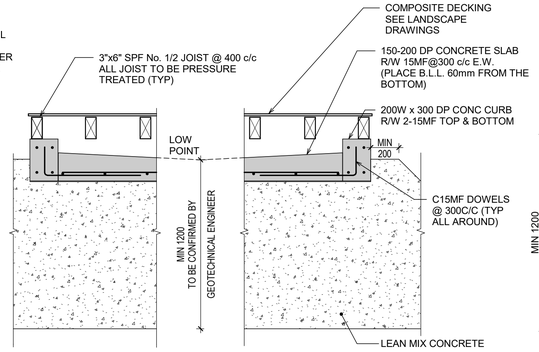
GROUND FLOOR / FOUNDATION PART PLAN (BOARDWALK)

Print Date 2025-04-14 4:25:52 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S200F

Revision
2



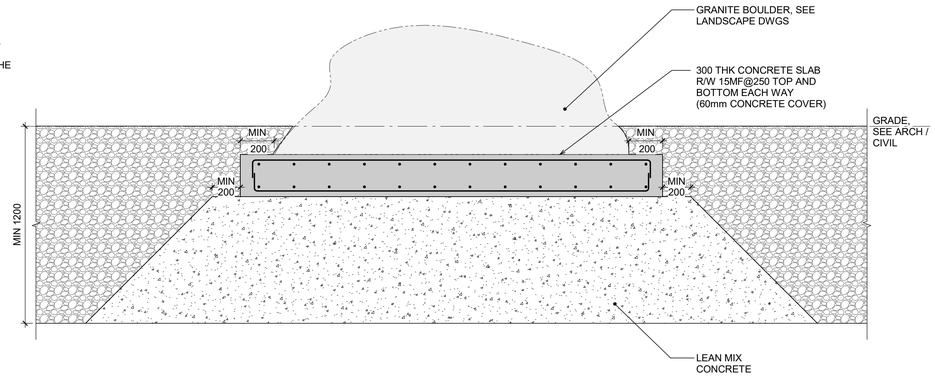


3 S200G SECTION (OUTDOOR SHOWERS)

1 : 20

NOTES:

1. REFER TO LANDSCAPE DRAWINGS FOR OUTDOOR SHOWER LOCATION.

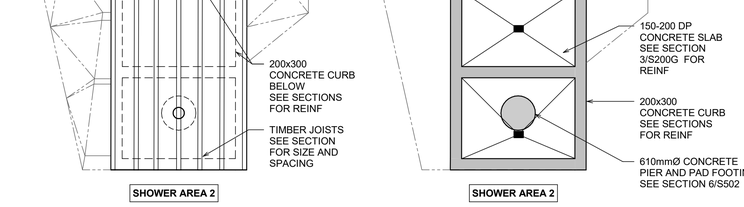


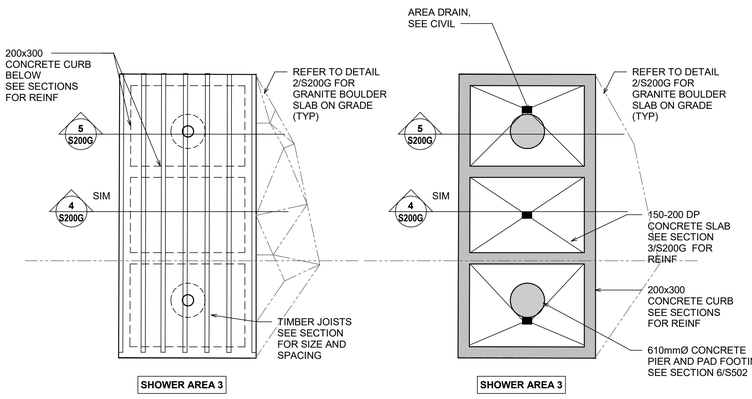
2 S200G SECTION (TYP SLAB FOR GRANITE BOULDERS)

1 : 20

NOTES:

1. REFER TO LANDSCAPE DRAWINGS FOR GRANITE BOULDERS LOCATION.
2. CONCRETE MIX:
   - CONCRETE STRENGTH = 35MPa
   - EXPOSURE CLASS = C-1



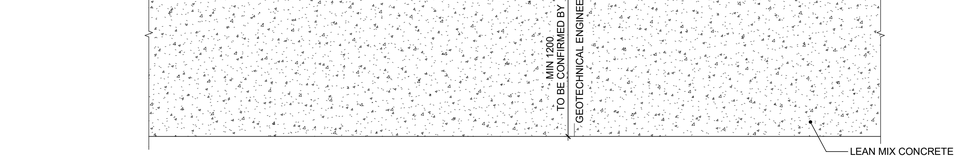


1 S200G FRAMING PLAN (OUTDOOR SHOWERS)

1 : 50

6 S200G CONCRETE BASE PLAN (OUTDOOR SHOWERS)

1 : 50

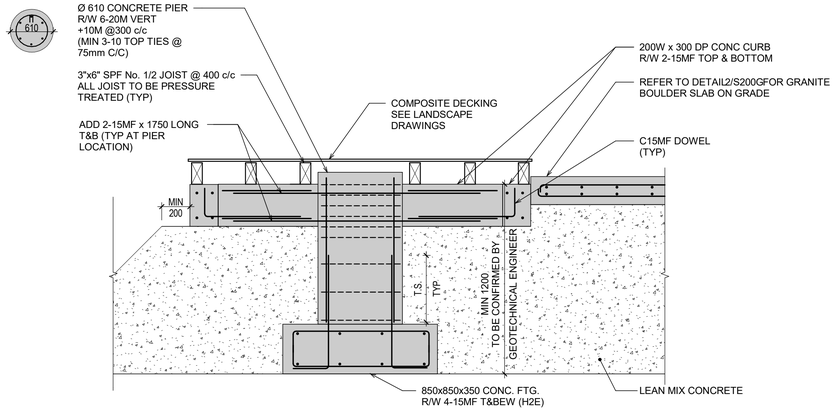


4 S200G SECTION (OUTDOOR SHOWERS)

1 : 20

NOTES:

1. CONCRETE MIX:
   - CONCRETE STRENGTH = 35MPa
   - EXPOSURE CLASS = C-1



5 S200G SECTION (OUTDOOR SHOWERS)

1 : 20

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No.	Date	Description
1	2025-04-11	ISSUED FOR TENDER

Issue Record

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TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

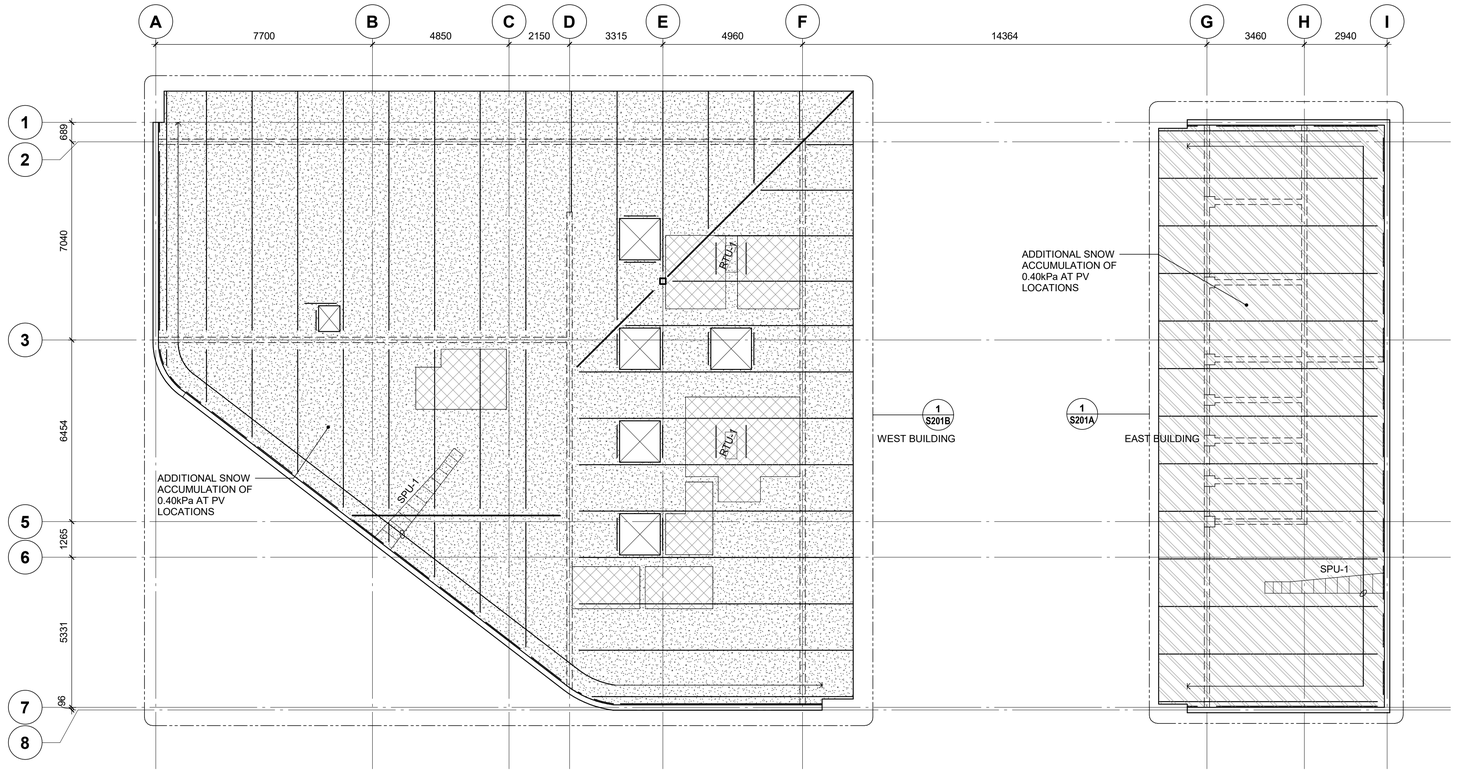
Sheet Title

GROUND FLOOR / FOUNDATION PART PLAN (OUTDOOR SHOWERS)

Print Date	**2025-04-14 4:25:52 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S200G**

Revision **1**



OVERALL ROOF FRAMING PLAN
1 : 100

ROOF TOP UNIT SCHEDULE

MARK	WEIGHT / LOAD	HEIGHT (mm)	WIDTH(mm) X LENGTH(mm)	COMMENTS
RTU-1	86kg / 0.85kN	1050	370 X 950	SEE NOTE 1

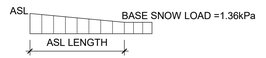
NOTE:

1. RTU-1 IS SUPPORTED ON A STEEL FRAMING ASSEMBLY WITH FOUR LEGS. THE ROOF TOP UNIT IS RAISED 457mm (18") FROM THE ROOF SUPPORT AND THE LEGS ARE SPACED 1067mm (42").

ROOF LOADING SCHEDULE

LEGEND	AREA	LOAD TYPE	DESCRIPTION	LOAD (kPa)	COMMENTS
	INSULATED	DL	ROOF S.W.	0.40	T & G WOOD ROOF DECKING
		SDL	ROOFING	0.30	ROOFING TPO / INSULATION
			M&E	0.40	MISC PIPING AND SERVICES
			PV PANELS	1.00	PV PANEL SELF-WEIGHT (REFER TO ARCH/MECH DWGS FOR LOCATION)
			TOTAL	**1.70**	
		LL		1.00	ROOF TYPICAL
		SNOW		1.36	SEE ACCUMULATED SNOW LOADING PLAN & SCHEDULE
	INSULATED WITH SUSPENDED CEILING	DL	ROOF S.W.	0.40	T & G WOOD ROOF DECKING
		SDL	ROOFING	0.30	ROOFING TPO / INSULATION
			FINISHES	0.25	SUSPENDED CEILING
			PV PANELS	1.00	PV PANEL SELF-WEIGHT (REFER TO ARCH/MECH DWGS FOR LOCATION)
			M&E	0.40	MISC PIPING AND SERVICES
			TOTAL	**1.95**	
		LL		1.00	ROOF TYPICAL
		SNOW		1.36	SEE ACCUMULATED SNOW LOADING PLAN & SCHEDULE
	UNINSULATED	DL	ROOF S.W.	0.40	T & G WOOD ROOF DECKING
		SDL	ROOFING	0.30	ROOFING TPO
			M&E	0.40	MISC PIPING AND SERVICES
			PV PANELS	1.00	PV PANEL SELFT-WEIGHT (REFER TO ARCH/MECH DWGS FOR LOCATION)
			TOTAL	**1.70**	
		LL		1.00	ROOF TYPICAL
		SNOW		1.36	SEE ACCUMULATED SNOW LOADING PLAN & SCHEDULE

NOTES:
1. DL VALUES ONLY INCLUDE THE FLOOR SELF-WEIGHT WITH NO ALLOWANCE FOR THE STRUCTURE ITSELF.
2. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL LOADING FROM UNITS, ETC.,



SNOW ACCUMULATION DIAGRAM
1 : 100

SNOW ACCUMULATION SCHEDULE

MARK	ASL (kPa)	ASL LENGTH (mm)	COMMENTS
SPU-1	2.41	3350	TYPICAL AT ROOF PARAPET

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No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2025-01-29	CLARIFICATIONS TO CITY COMMENTS
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

PLAN NORTH

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

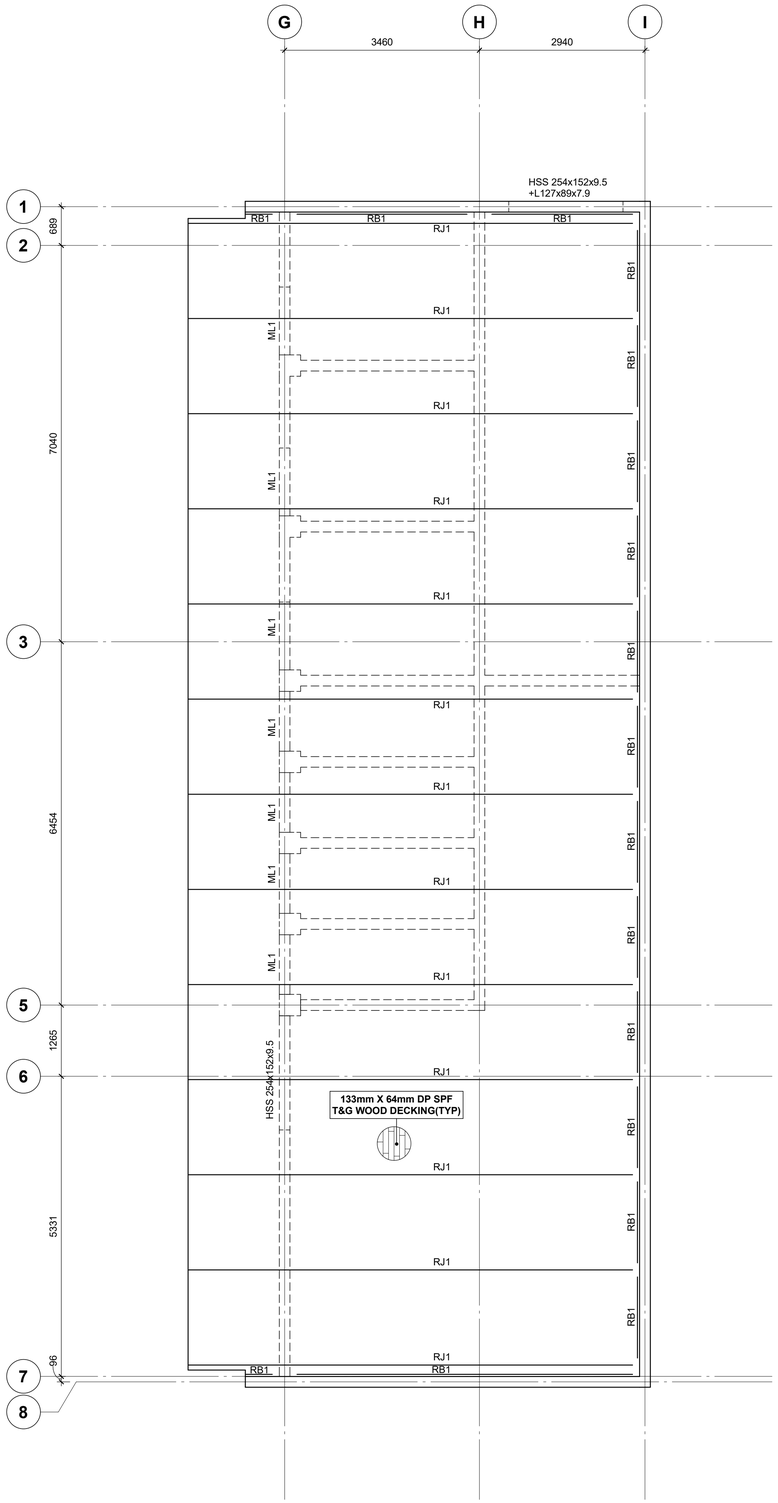
Sheet Title

ROOF FRAMING PLAN

Print Date 2025-04-14 4:25:53 PM
Scale As indicated
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S201

Revision
4



ROOF FRAMING PLAN (EAST BLDG)

1 : 50

NOTE:

1. ML1 INIDCATES 400 DEEP MASONRY BLOCK LINTEL R/W 1-15M BOT AND 1-15M TOP BARS.
2. ML2 INDICATES 400 DEEP MASONRY BLOCK LINTEL R/W 1-15M BOT AND 1-15M TOP BARS + STEEL L127x89x7.9 LLV (HDG) FOR BRICK VENEER.

STRUCTURAL FRAMING SCHEDULE

MARK	WIDTH	DEPTH	COMMENTS
RB1	76	494	GLULAM SPRUCE-PINE 20f-E
RB2	175	494	GLULAM SPRUCE-PINE 20f-E (ALT 175x228 GLULAM SPRUCE-PINE 20f-E)
RB3	215	494	GLULAM SPRUCE-PINE 20f-E
RB4	365	494	GLULAM SPRUCE-PINE 20f-E
RJ1	175	494	ROOF JOIST - GLULAM SPRUCE-PINE 20f-E

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

PLAN NORTH

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
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ROOF FRAMING PLAN (EAST BLDG)

Print Date 2025-04-14 4:25:53 PM
Scale 1 : 50
Project No. 21-029
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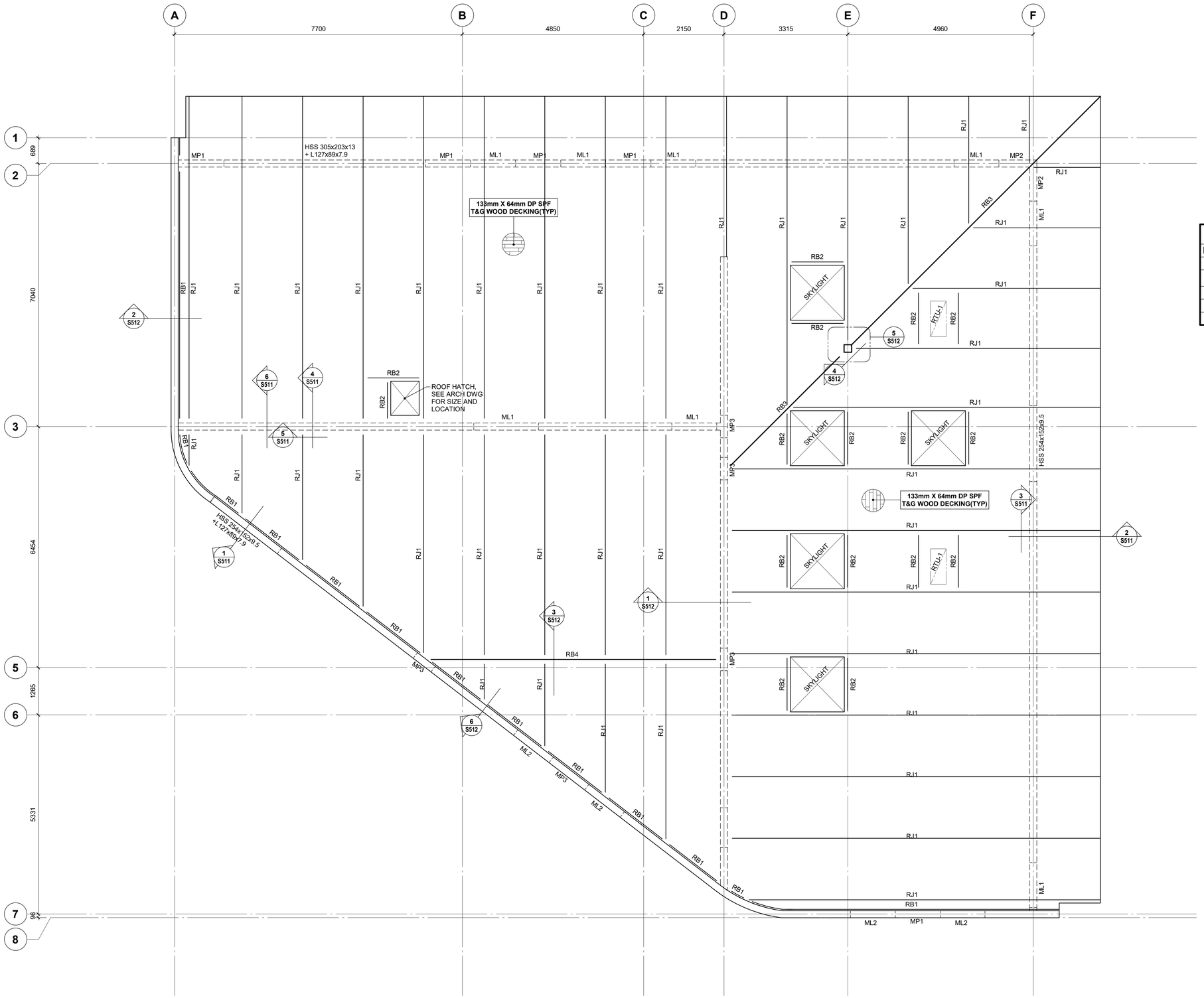
Sheet Number
S201A

Revision
3



ROOF FRAMING PLAN (WEST BLDG)

1 : 50

NOTE:

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2. ML2 INDICATES 400 DEEP MASONRY BLOCK LINTEL R/W 1-15M BOT AND 1-15M TOP BARS + STEEL L127x89x7.9 LLV (HDG) FOR BRICK VENEER.

STRUCTURAL FRAMING SCHEDULE

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RB3	215	494	GLULAM SPRUCE-PINE 20f-E
RB4	365	494	GLULAM SPRUCE-PINE 20f-E
RJ1	175	494	ROOF JOIST - GLULAM SPRUCE-PINE 20f-E

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

PLAN NORTH

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

**1 Brimley Road South,
Scarborough, Toronto, ON**

Sheet Title

ROOF FRAMING PLAN (WEST BLDG)

Print Date 2025-04-14 4:25:54 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S201B

Revision
3

COLUMN FOUNDATION SCHEDULE

MARK	SIZE	BOTTOM REINFORCEMENT		TOP REINFORCEMENT		COMMENTS
		BLL	BUL	TLL	TUL	
F1	1600x1600x300 DP	7-15M	7-15M			
F2	1400x1400x300 DP	6-15M	6-15M			
F3	1000x1000x300 DP	5-15M	5-15M			

FOUNDATION SCHEDULE - WALL

MARK	WIDTH	DEPTH	REINFORCING	COMMENTS
WF1	850	300	4-15M CONT	
WF2	700	300	3-15M CONT	
WF3	400	300	3-15M CONT	

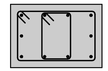
FOUNDATION WALL SCHEDULE

MARK	WALL THICKNESS	REINFORCEMENT	COMMENTS
FW1	385	15M@300 VEF + 10M@300 HEF	
FW2	295	15M@350 VEF + 10M@350 HEF	
FW3	200	15M@400 VEF + 10M@400 HEF	
FW4	400	15M@350 VEF + 10M@350 HEF	
FW5	580	15M@300 VEF + 10M@300 HEF	
FW6	200	15M@300 CENTER VERT + 10M@250 CENTER HORZ	

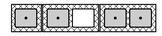
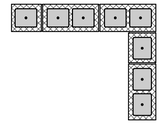
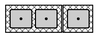
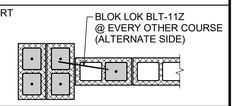
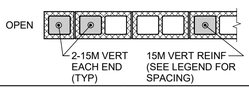
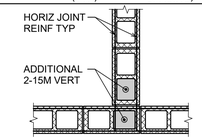
NOTE:

1. TOP OF FOUNDATION WALL TO BE MIN 200mm ABOVE SLAB ON GRADE ELEVATION (TYP, UNO).

PIER SCHEDULE

MARK	SIZE	REINFORCEMENT	DETAIL
P1	650x450	10-20M VERT + 10M@250 TIES (ADD 3-10M@75 TIES AT TOP)	
P2	400x400	8-20M VERT + 10M@250 TIES (ADD 3-10M@75 TIES AT TOP)	

MASONRY PIER SCHEDULE

MARK	SIZE	REINFORCEMENT & DETAIL
MP1	MIN 1000x240	4-15M VERT 
MP2	L-SHAPE (SIZE VARIES)	8-15M VERT 
MP3	MIN 600x190	3-15M VERT 
MP4	MIN 380x380	4-15M VERT 
TYP AT END		
TYP AT WALL INTERSECTION		

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3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

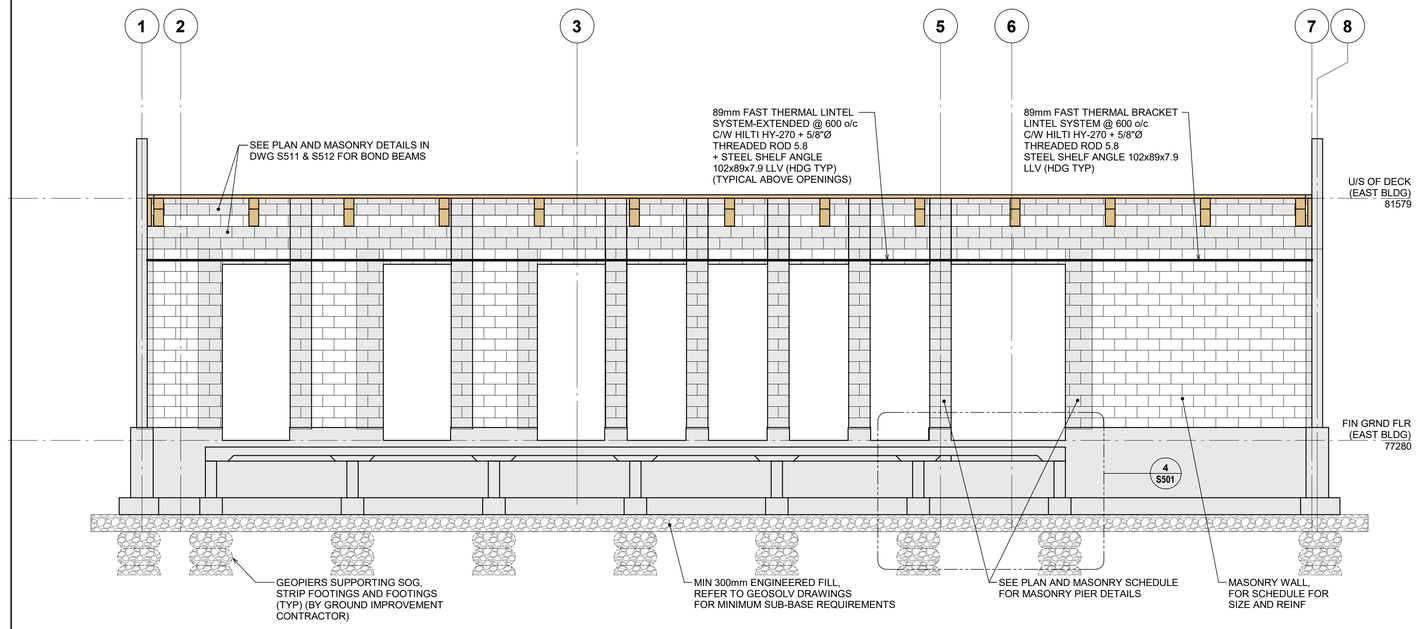
Sheet Title

SCHEDULES

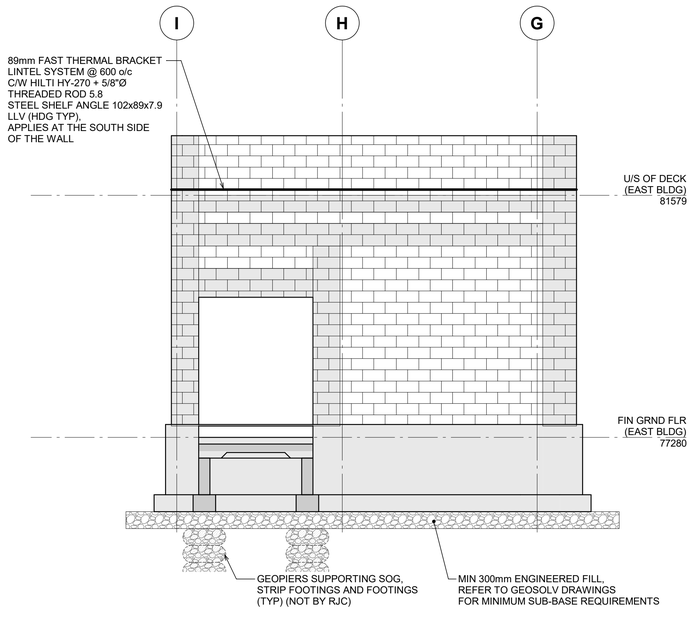
Print Date 2025-04-14 4:25:54 PM
Scale 1 : 20
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number **S301**

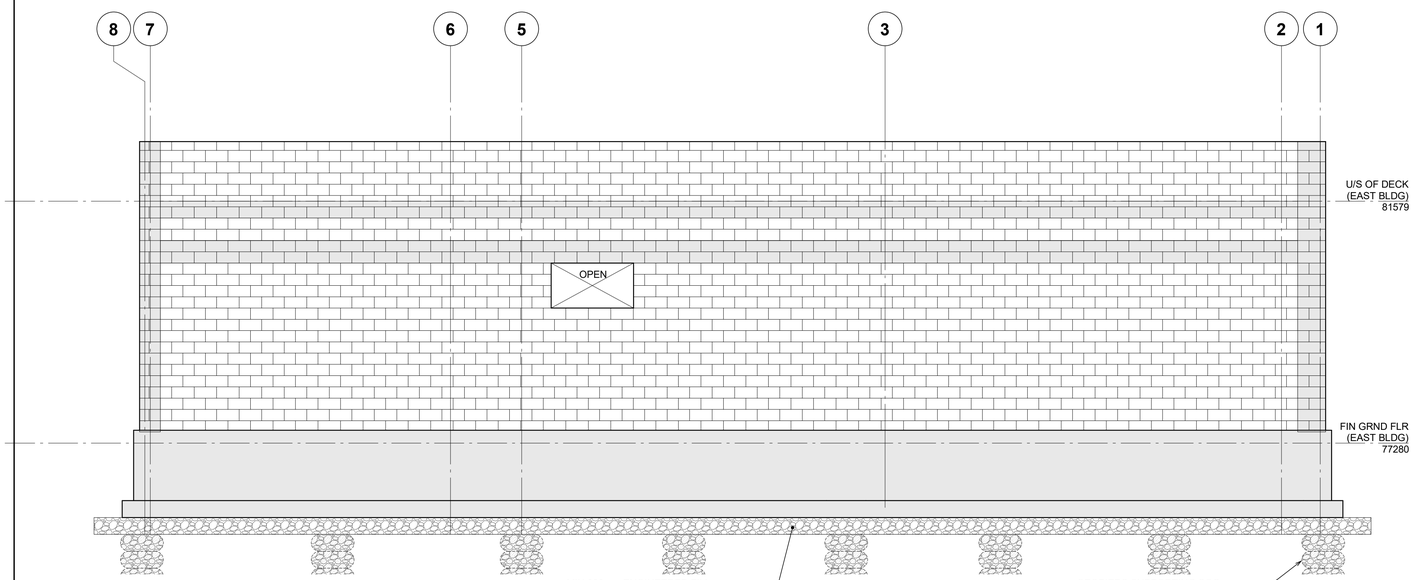
Revision **3**



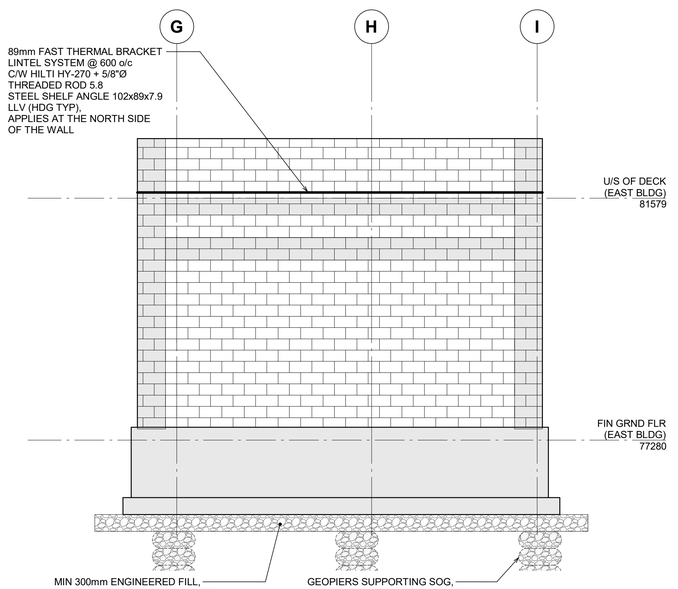
2 S401 **WEST WALL ELEVATION-EAST BLDG**
1 : 50



1 S401 **NORTH WALL ELEVATION-EAST BLDG**
1 : 50



4 S401 **EAST WALL ELEVATION-EAST BLDG**
1 : 50



3 S401 **SOUTH WALL ELEVATION-EAST BLDG**
1 : 50

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Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

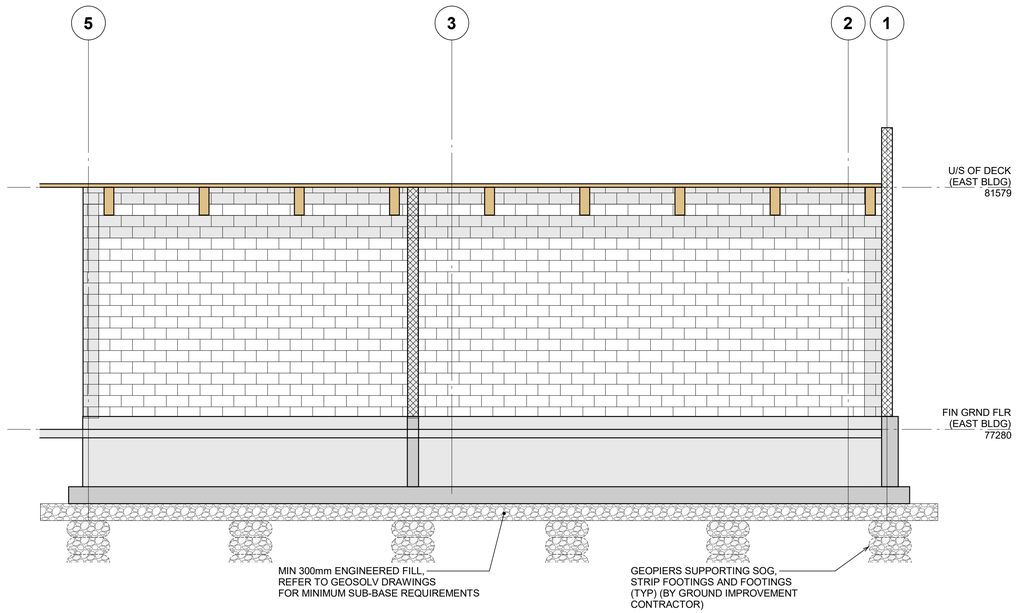
Sheet Title

WALL ELEVATIONS - EAST BLDG

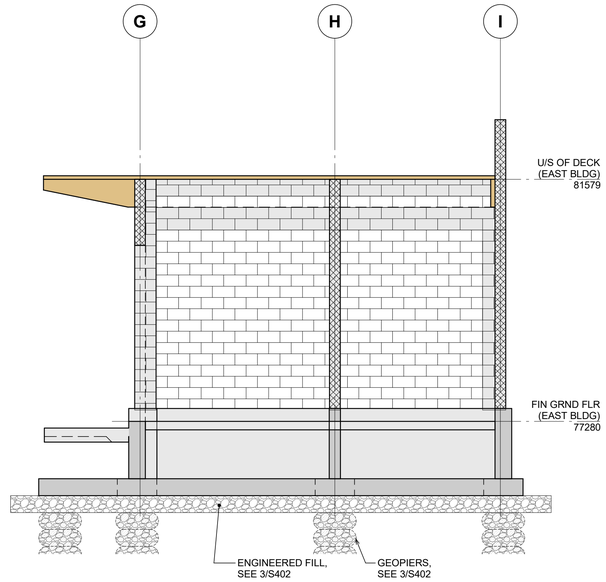
Print Date	**2025-04-14 4:25:55 PM**
Scale	**1 : 50**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

Sheet Number **S401**

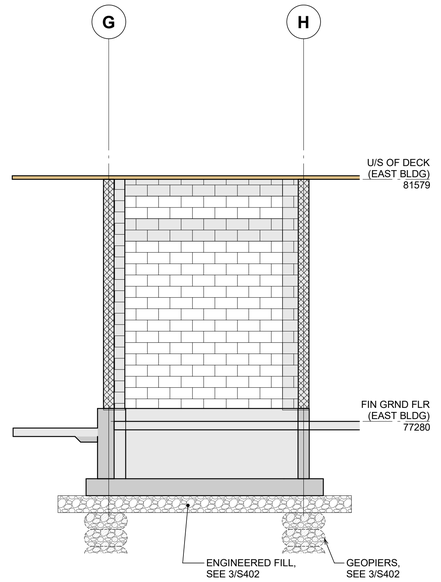
Revision **3**



3 / S402 INTERIOR WALL ELEVATION-EAST BLDG
1 : 50



2 / S402 INTERIOR WALL ELEVATION-EAST BLDG
1 : 50



1 / S402 INTERIOR WALL ELEVATION-EAST BLDG
1 : 50

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Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

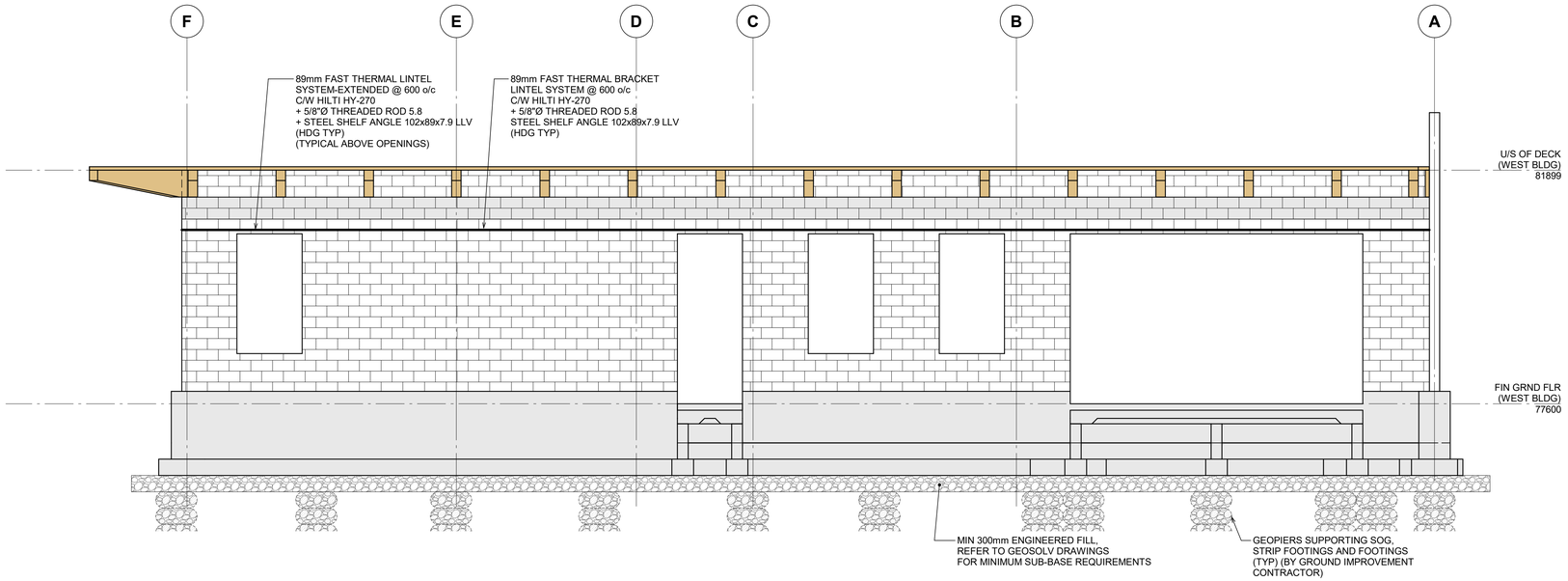
Sheet Title

WALL ELEVATIONS - EAST BLDG

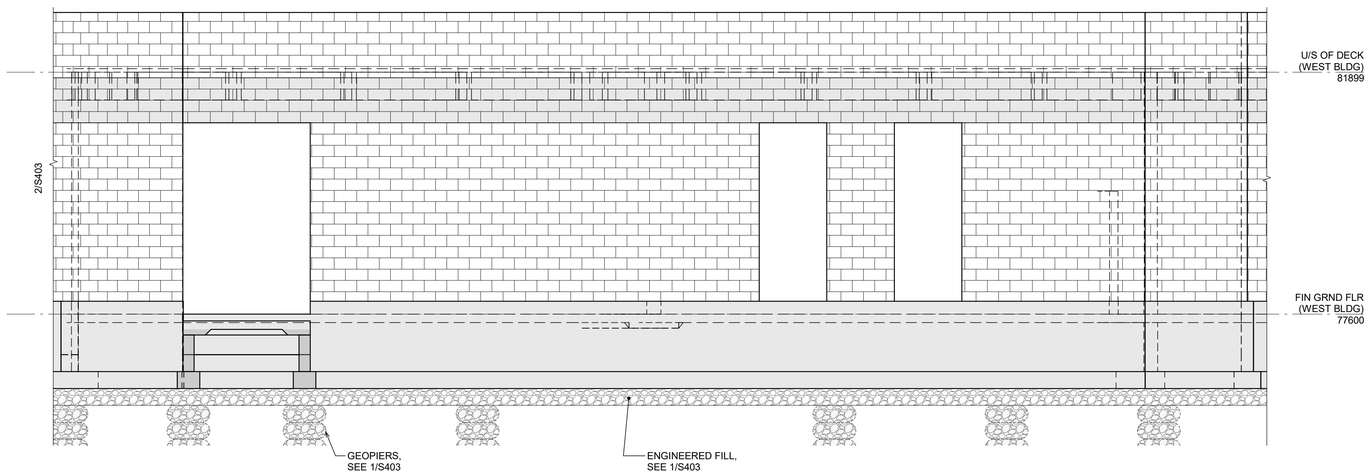
Print Date 2025-04-14 4:25:55 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S402

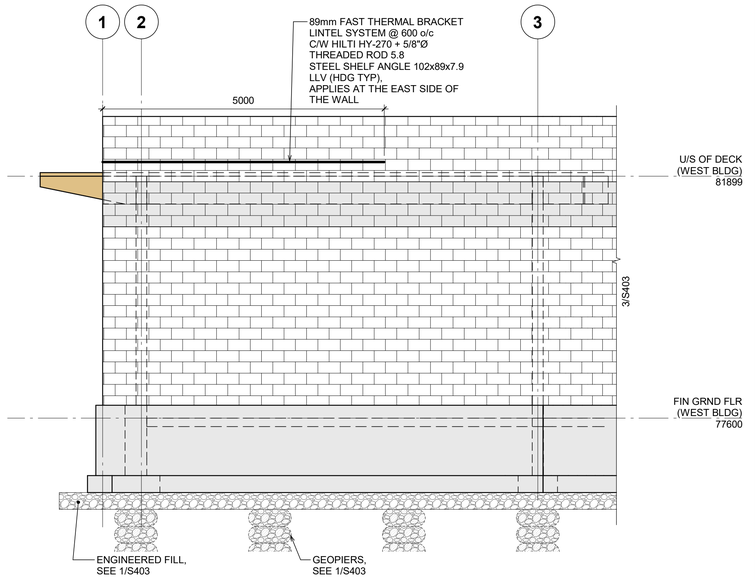
Revision
3



1 / S403 — NORTH WALL ELEVATION-WEST BLDG
1 : 50



3 / S403 — WEST-SOUTH WALL ELEVATION-WEST BLDG
1 : 50



2 / S403 — WEST WALL ELEVATION-WEST BLDG
1 : 50

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Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

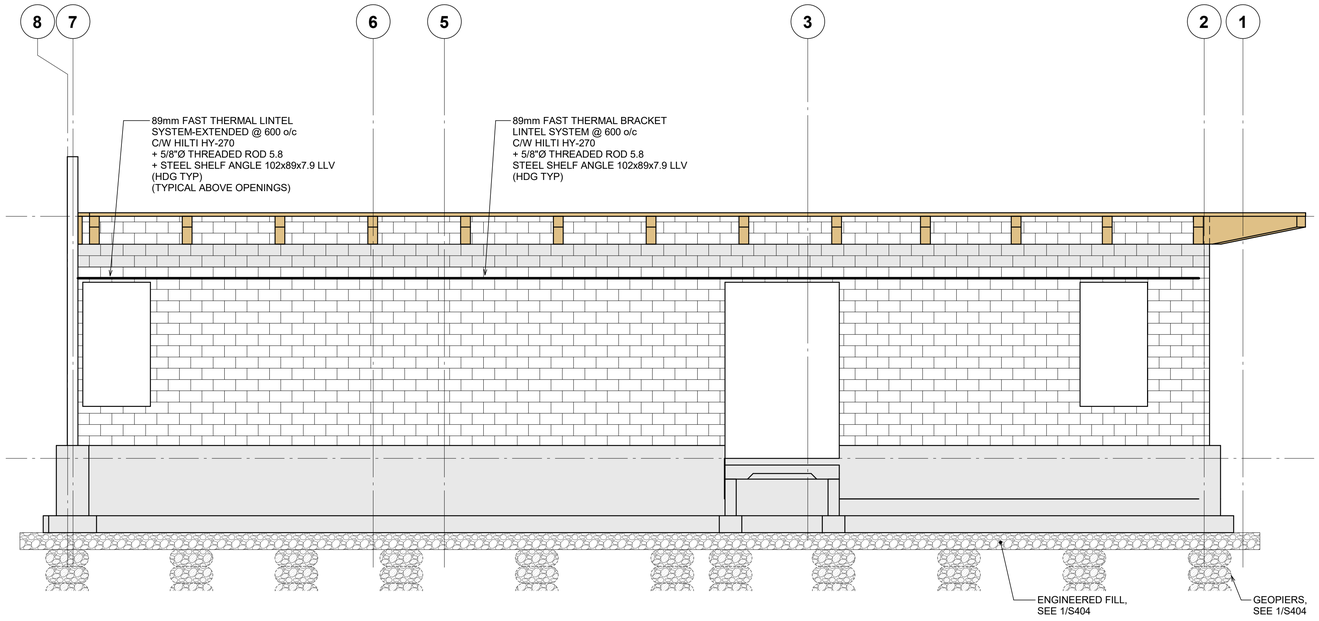
Sheet Title

WALL ELEVATIONS - WEST BLDG

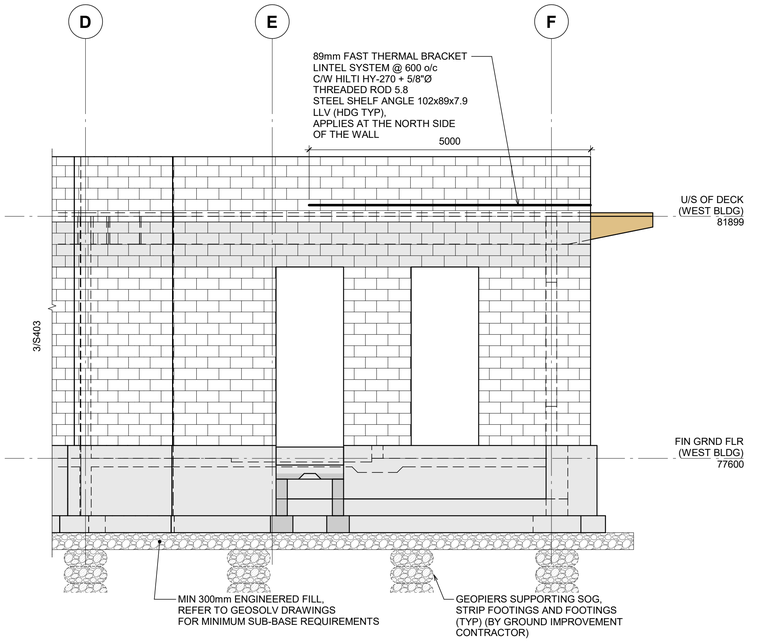
Print Date 2025-04-14 4:25:56 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number
S403

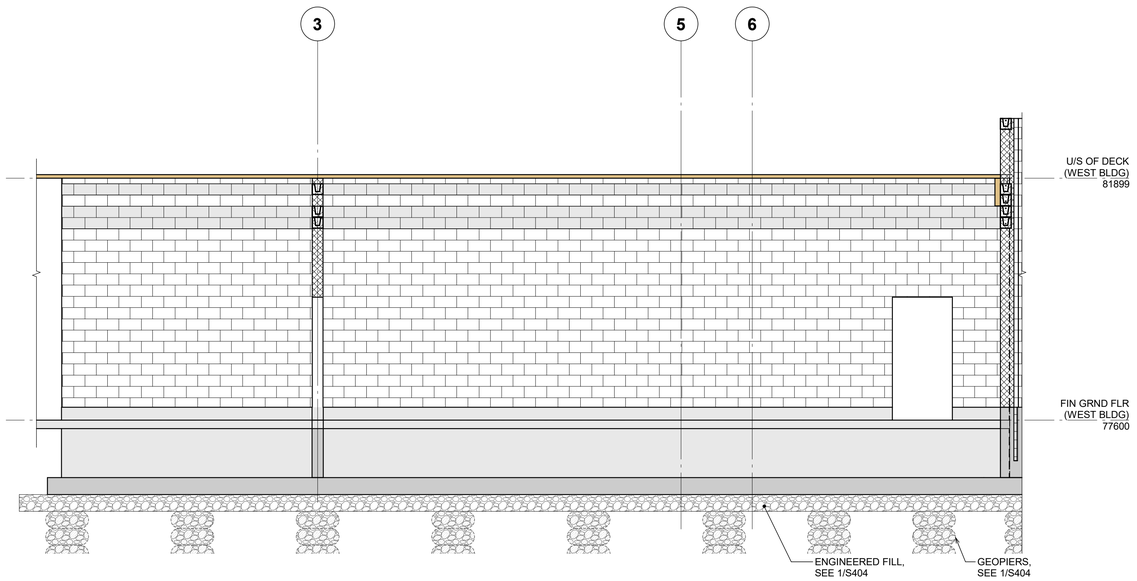
Revision
3



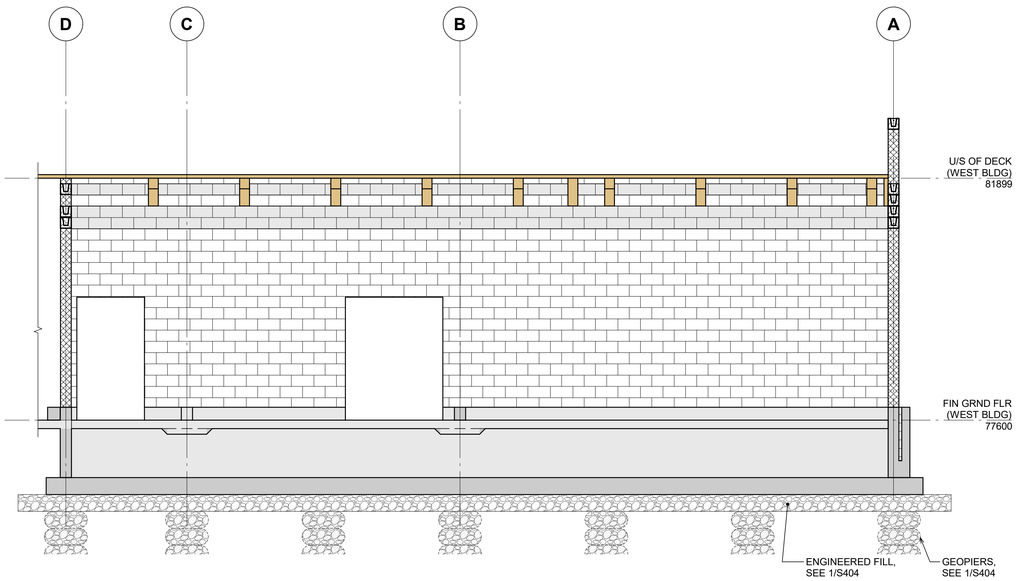
2 / S404 EAST WALL ELEVATION-WEST BLDG
1 : 50



1 / S404 SOUTH WALL ELEVATION-EAST BLDG
1 : 50



4 / S404 INTERIOR WALL ELEVATION-WEST BLDG
1 : 50



3 / S404 INTERIOR WALL ELEVATION-WEST BLDG
1 : 50

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BLUFFER'S PARK EAST WASHROOM

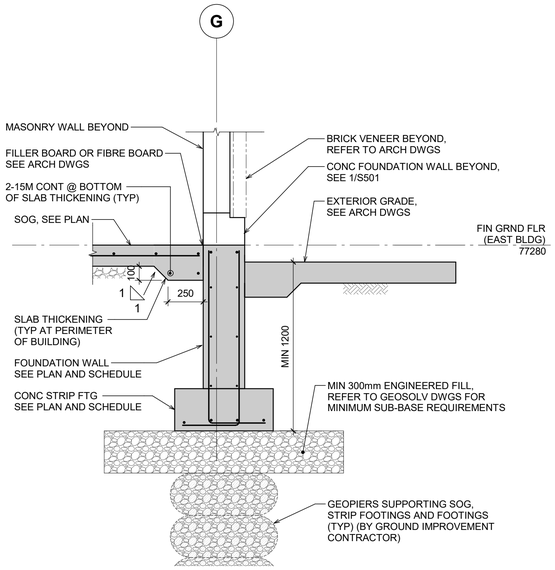
1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

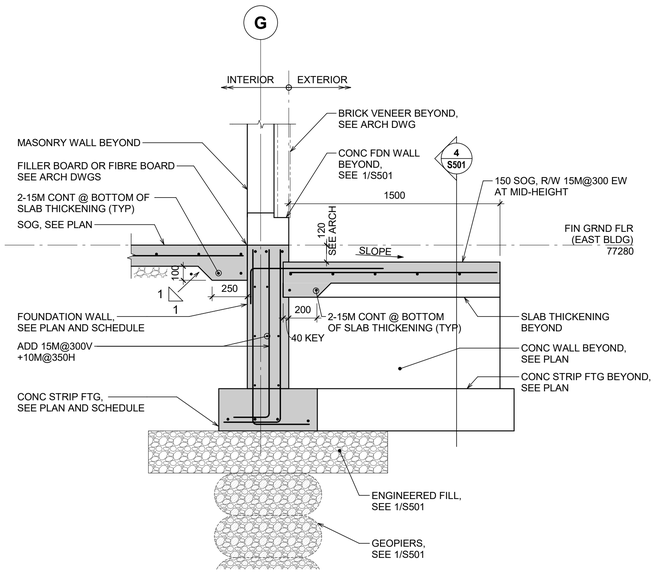
WALL ELEVATIONS - WEST BLDG

Print Date 2025-04-14 4:25:56 PM
Scale 1 : 50
Project No. 21-029
Drawn By DP
Checked By GJ

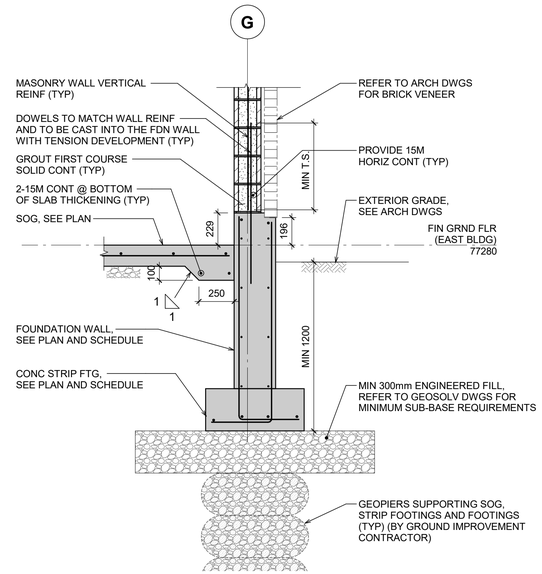
Sheet Number **S404**
Revision **3**



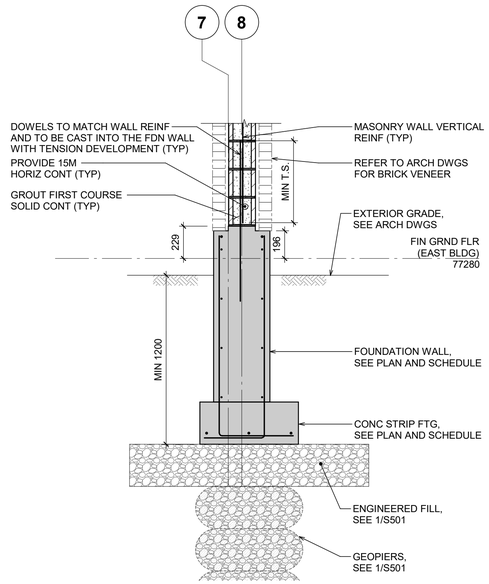
3 / S501 FOUNDATION AT EXTERIOR DOOR
1 : 20



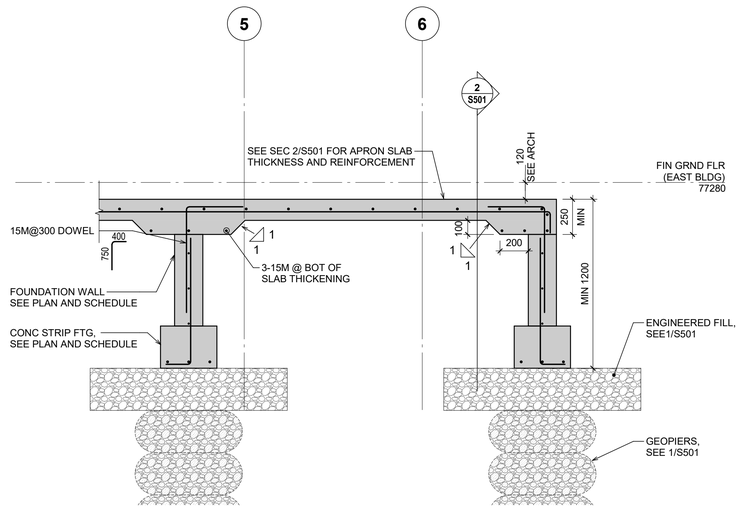
2 / S501 FOUNDATION AT EXTERIOR DOOR W/ APRON SLAB
1 : 20



1 / S501 TYPICAL FOUNDATION SECTION AT EXTERIOR WALL
1 : 20



5 / S501 FOUNDATION SECTION AT EXTERIOR WALL
1 : 20



4 / S501 FOUNDATION SECTION AT APRON SLAB
1 : 20

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Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

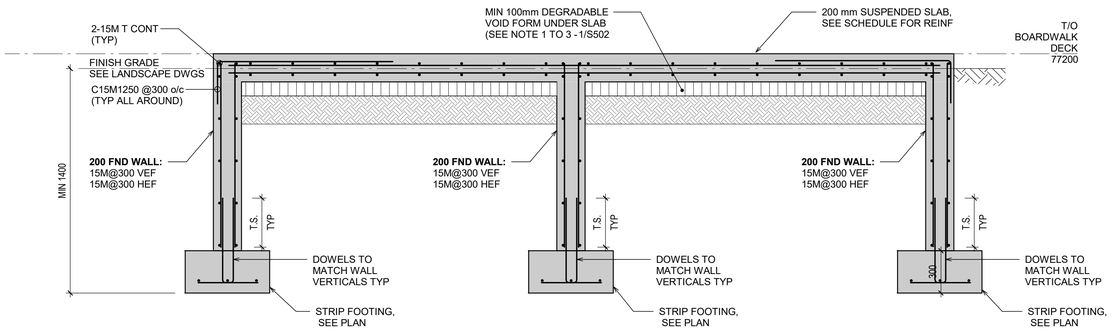
1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

SECTIONS & DETAILS

Print Date 2025-04-14 4:25:57 PM
Scale 1 : 20
Project No. 21-029
Drawn By DP
Checked By GJ

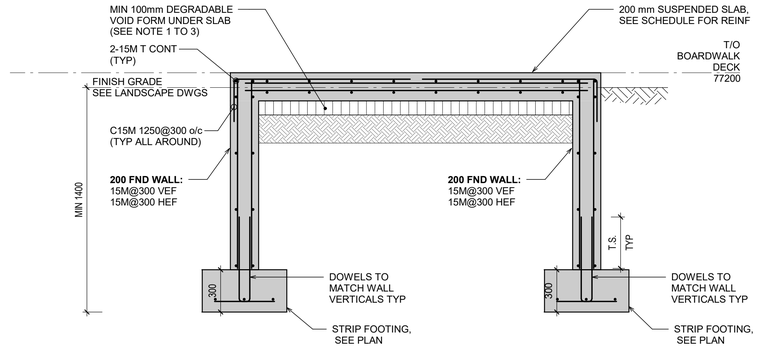
Sheet Number **S501**
Revision **3**



2 / S502 SECTION
1 : 20

NOTE:

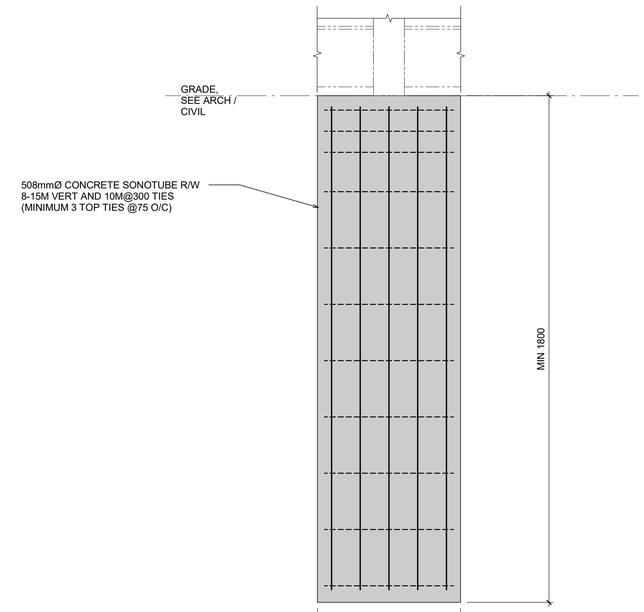
1. ALL REINFORCEMENT TO BE HOT DIP GALVANIZED



1 / S502 SECTION
1 : 20

NOTE:

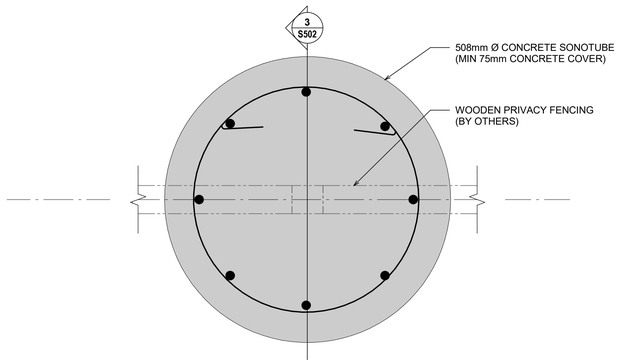
1. MINIMUM PRESSURE LOAD OF 10kPa
2. VOID FORM SPECIALTY CONTRACTOR TO CONFIRM REQUIRED THICKNESS.
3. VOID FORM TO BE DEGRADABLE.
4. ALL REINFORCEMENT TO BE HOT DIP GALVANIZED



3 / S502 SONOTUBE SECTION
1 : 10

NOTE:

1. SONOTUBE FOUNDATION DESIGN APPLICABLE FOR WOODEN PRIVACY FENCING (REFER TO LANDSCAPE DWGS).



4 / S502 WOODEN PRIVACY FENCING FOUNDATION PLAN (SONOTUBE)
1 : 5

NOTES:

1. SOIL BEARING CAPCITY: SLS = 100 kPa ULS = 200 kPa. BEARING CAPACITIES SHALL BE CONFIRMED ON SITE BY GEOTECHNICAL ENGINEER.
2. CONCRETE MIX:
   - CONCRETE STRENGTH = 35 MPa.
   - EXPOSURE CLASS = C-1
3. SEE GENERAL NOTES FOR CONCRETE AND OTHER NOTES.
4. REFER TO ARCHITECTURAL AND LANDSCAPE DWGS FOR WOODEN PRIVACY FENCING LOCATIONS AND DIMENSIONS.

Creative Thinking
Practical Results

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Drawing Notes

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No.	Date	Description
1	2025-04-11	ISSUED FOR TENDER

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South,
Scarborough, Toronto, ON

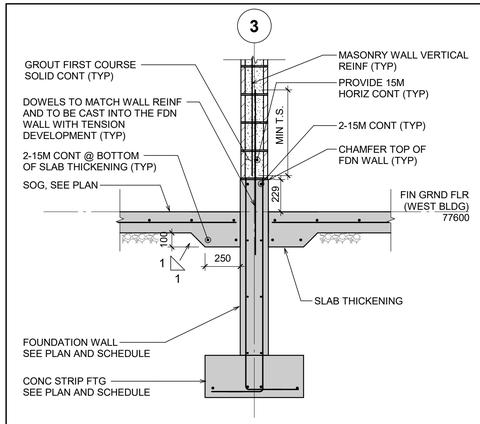
Sheet Title

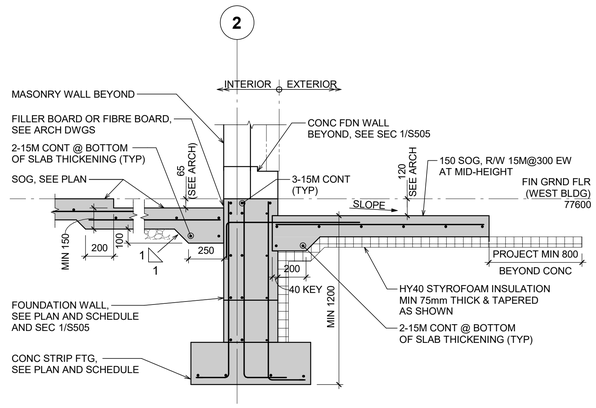
SECTIONS & DETAILS

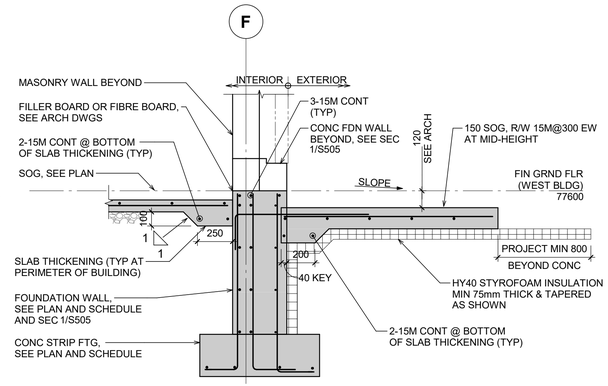
Print Date	**2025-04-14 4:25:57 PM**
Scale	**As indicated**
Project No.	**21-029**
Drawn By	**DP**
Checked By	**GJ**

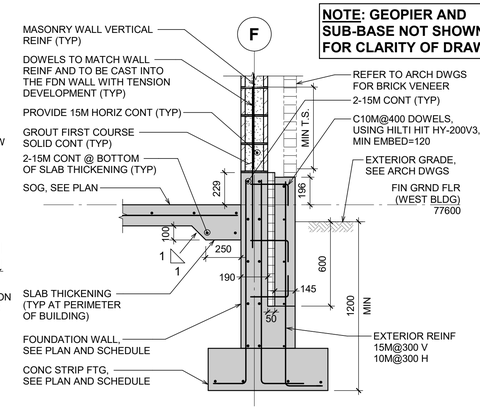
Sheet Number
S502

Revision
1



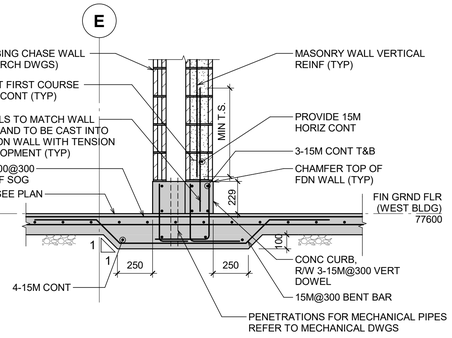




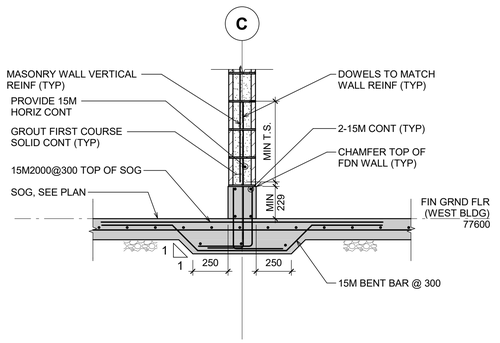


NOTE: GEOPIER AND SUB-BASE NOT SHOWN FOR CLARITY OF DRAWING.

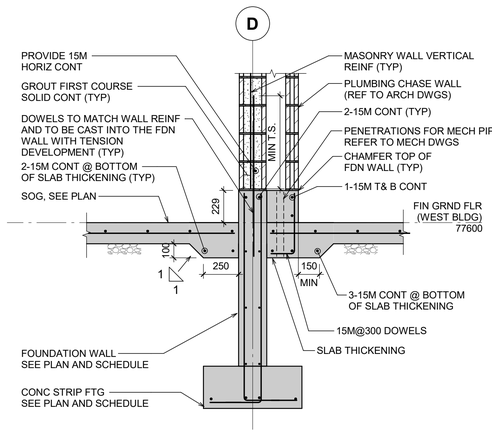
4 S505 TYPICAL FOUNDATION SECTION AT INTERIOR WALL
1 : 20



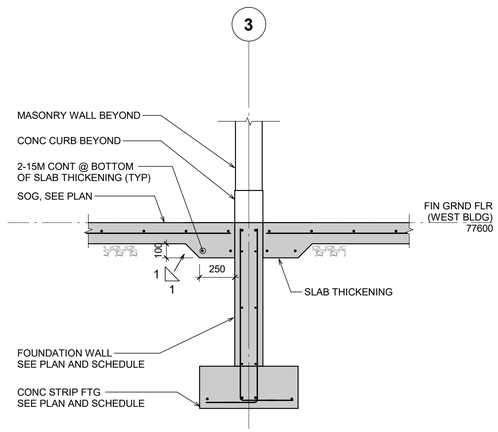
3 S505 FOUNDATION AT EXTERIOR DOOR W/ DEPRESSED & APRON SLAB
1 : 20



2 S505 FOUNDATION AT EXTERIOR DOOR W/ APRON SLAB
1 : 20



1 S505 TYPICAL FOUNDATION SECTION AT EXTERIOR WALL
1 : 20



8 S505 TYPICAL SLAB SECTION AT INTERIOR WALL WITH CHASE WALL
1 : 20

NOTES:

1. ASSUME FOUR MECHANICAL PIPE PENETRATIONS THROUGH THE SLAB ON GRADE AND CURB BETWEEN GRIDLINES E-F & 2-5 - REFER TO MECH DRAWINGS.

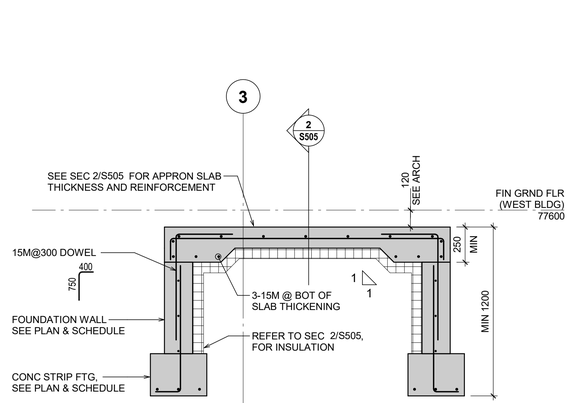
7 S505 TYPICAL SLAB SECTION AT INTERIOR WALL
1 : 20

6 S505 TYPICAL FOUNDATION SECTION AT INTERIOR WALL W/ CHASE WALL
1 : 20

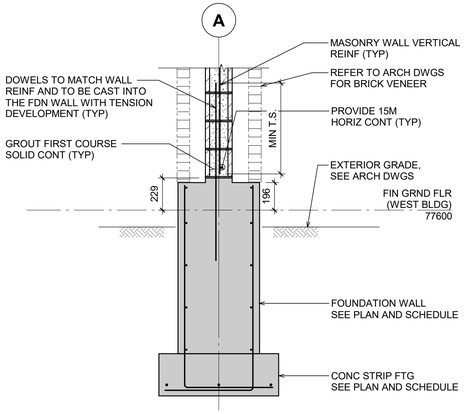
NOTES:

1. ASSUME TWO MECHANICAL PIPE PENETRATIONS THROUGH THE SLAB ON GRADE AND CURB ALONG GRIDLINE D - REFER TO MECHNICAL DRAWINGS.

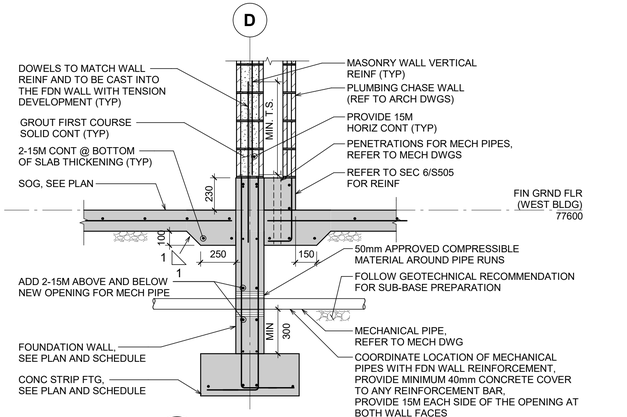
5 S505 TYPICAL FOUNDATION SECTION AT INTERIOR DOOR
1 : 20



11 S505 FOUNDATION SECTION AT APRON SLAB
1 : 20



10 S505 FOUNDATION SECTION AT EXTERIOR WALL
1 : 20



9 S505 FDN WALL DETAIL
1 : 20

NOTES:

1. ASSUME FOUR MECHANICAL PIPE PENETRATIONS AT FOUNDATION WALL ALONG GRIDLINE D - REFER TO MECHNICAL DRAWINGS.
2. ASSUME TWO MECHANICAL PIPE PENETRATIONS AT FOUNDATION WALL ALONG GRIDLINE 3 - REFER TO MECHNICAL DRAWINGS.

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number: TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

1 Brimley Road South, Scarborough, Toronto, ON

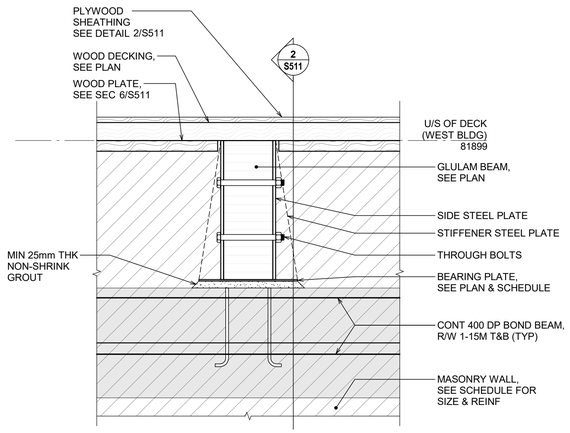
Sheet Title

SECTIONS & DETAILS

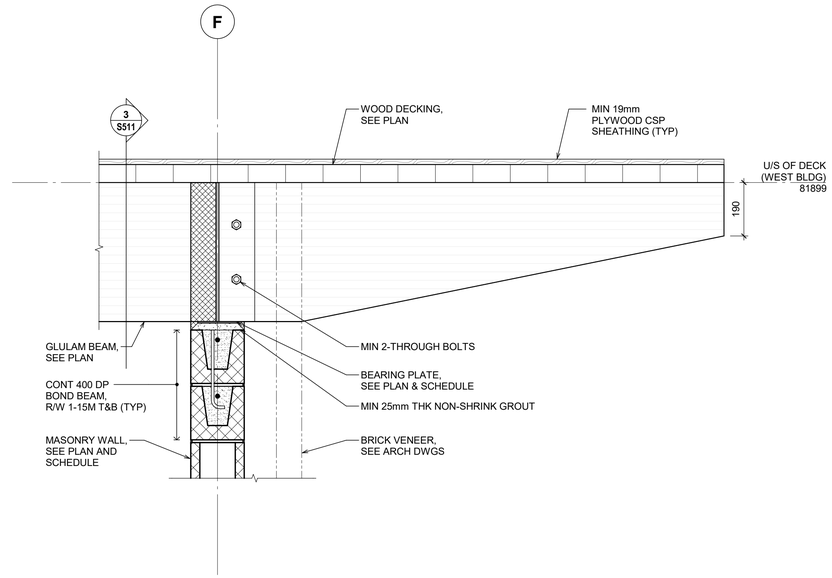
Print Date	2025-04-14 4:25:58 PM
Scale	1 : 20
Project No.	21-029
Drawn By	DP
Checked By	GJ

Sheet Number **S505**

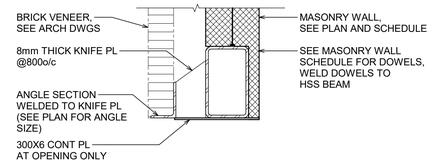
Revision **3**



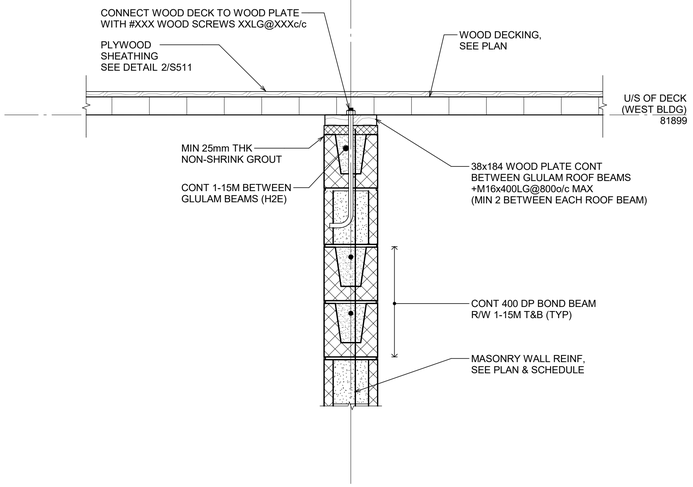
3 S511 GLULAM BEAM TO EXTERIOR MASONRY WALL DETAIL
1 : 10



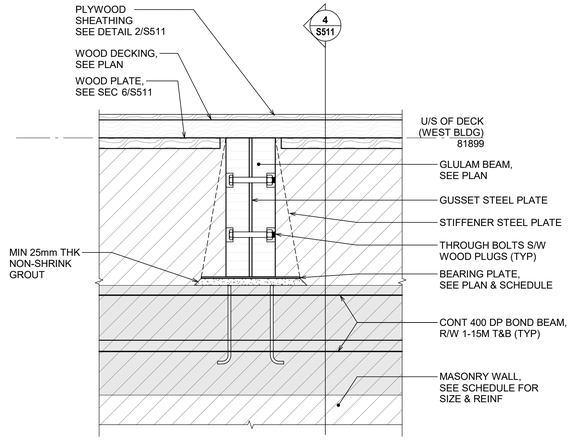
2 S511 GLULAM BEAM TO EXTERIOR MASONRY WALL DETAIL
1 : 10



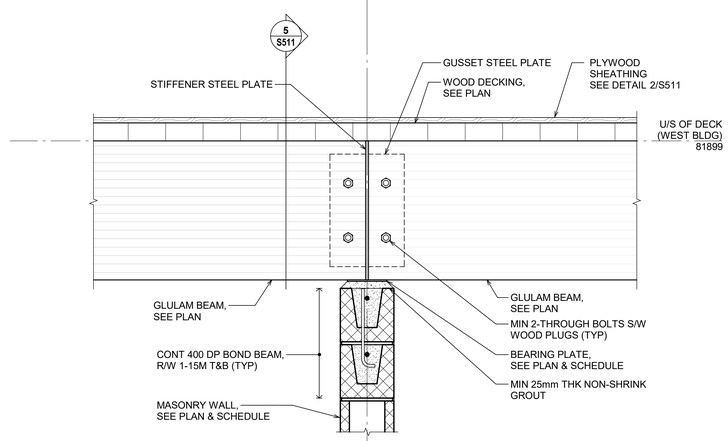
1 S511 HSS BEAM AND STEEL LINTEL DETAIL
1 : 10



6 S511 WOOD DECKING CONNECTION DETAIL
1 : 10



5 S511 GLULAM BEAM TO INTERIOR MASONRY WALL DETAIL
1 : 10



4 S511 GLULAM BEAM TO INTERIOR MASONRY WALL DETAIL
1 : 10

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No.	Date	Description
3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

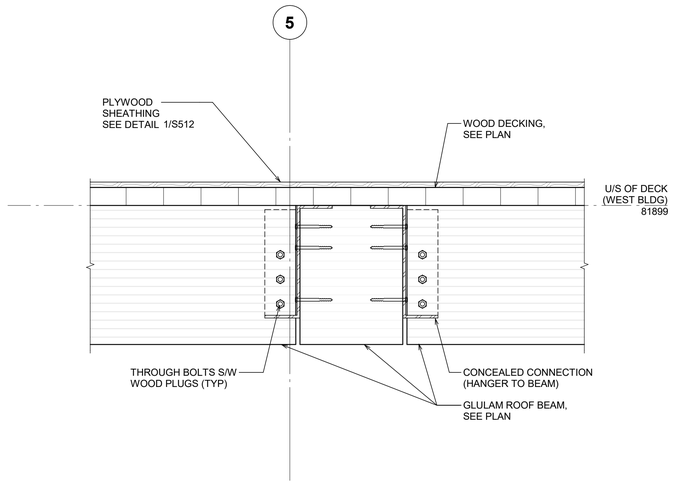
1 Brimley Road South, Scarborough, Toronto, ON

Sheet Title

SECTIONS & DETAILS

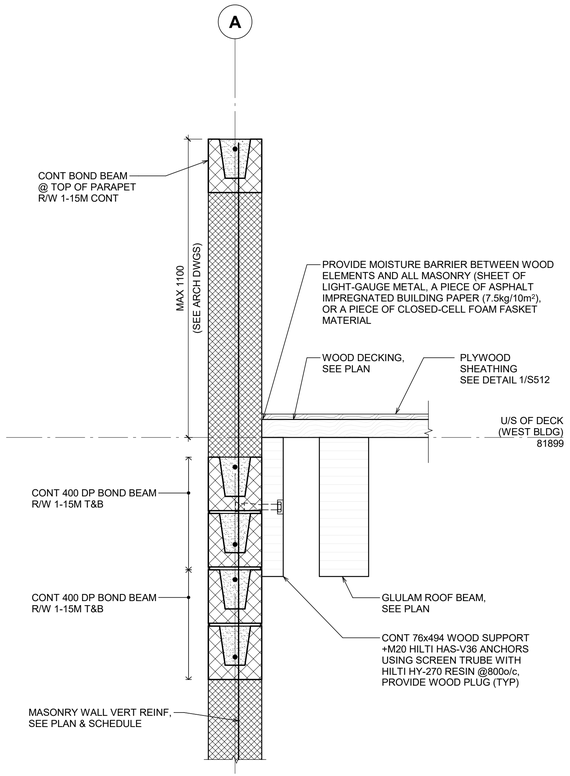
Print Date 2025-04-14 4:25:58 PM
Scale 1 : 10
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number **S511**
Revision **3**

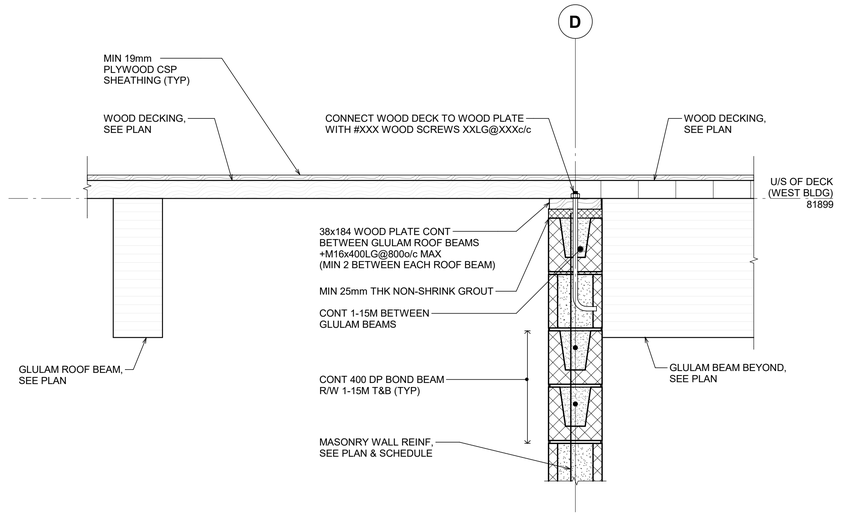


3 S512 TIMER TO TIMBER BEAM CONNECTION DETAIL
1 : 10

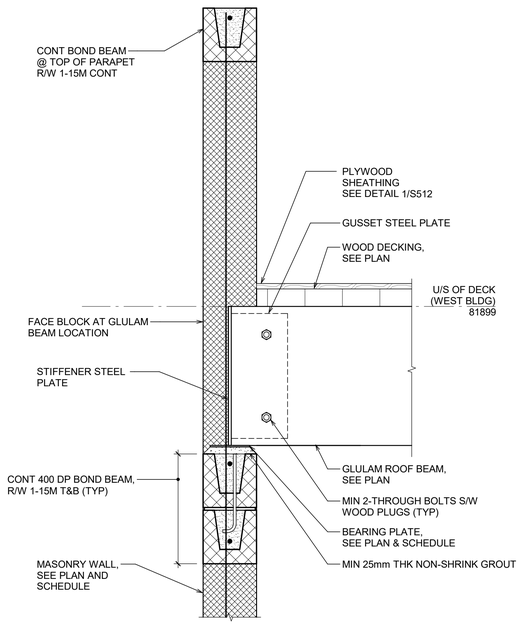
NOTE:
1. ALTERNATIVE GIGANT, MEGANT OR OTHER CONCEALED CONNECTOR CAN BE USED. REFER TO BEAM SCHEDULE FOR LOADING.



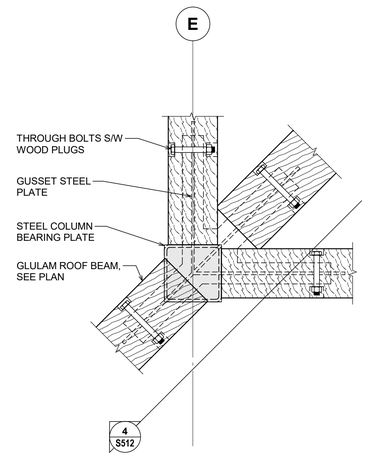
2 S512 WOOD DECKING CONNECTION
1 : 10



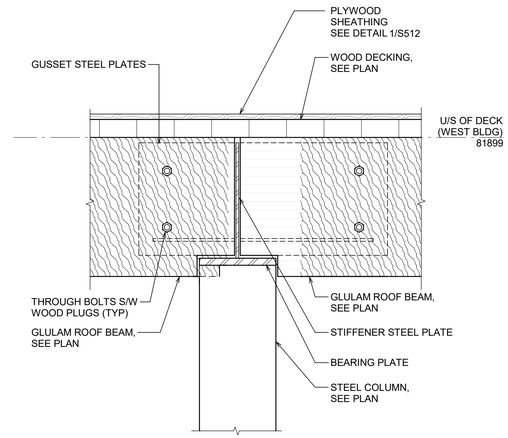
1 S512 WOOD DECKING CONNECTION
1 : 10



6 S512 GLULAM BEAM TO EXTERIOR MASONRY WALL
1 : 10



5 S512 TIMBER TO STEEL COLUMN CONNECTION PLAN VIEW DETAIL
1 : 10



4 S512 TIMBER TO STEEL COLUMN CONNECTION DETAIL
1 : 10

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3	2025-04-11	ISSUED FOR TENDER
2	2024-09-18	ISSUED FOR PERMIT
1	2023-01-31	ISSUED FOR 50% COSTING

Issue Record

RJC Project Number:
TOR.130977.0001

Project Name

BLUFFER'S PARK EAST WASHROOM

**1 Brimley Road South,
Scarborough, Toronto, ON**

Sheet Title

SECTIONS & DETAILS

Print Date 2025-04-14 4:25:59 PM
Scale 1 : 10
Project No. 21-029
Drawn By DP
Checked By GJ

Sheet Number **S512**
Revision **3**

GENERAL NOTES

1. ALL WORK SHALL BE IN FULL ACCORDANCE WITH THE FOLLOWING CODES, REGULATIONS AND STANDARDS: ONTARIO BUILDING CODE; ONTARIO FIRE CODE; THE NATIONAL BUILDING CODE (NBC); THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA); CANADIAN STANDARDS ASSOCIATION (CSA); OCCUPATIONAL SAFETY AND HEALTH ACT AMERICAN SOCIETY OF HEATING,REFRIGERATION AND AIR-CONDITIONING ENGINEERS (ASHRAE); AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI); AMERICAN (SMACNA); SOCIETY OF MECHANICAL ENGINEERS (ASME); SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM); AND OTHER APPLICABLE LAWS, CODES OR REGULATIONS. NOTHING IN THESE PERFORMANCE SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES, REGULATIONS AND STANDARDS.
2. THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT WERE PREPARED BY THE DESIGN TEAM USING 3-D MODELING SOFTWARE. USING THIS SOFTWARE BY THE DESIGN TEAM DOES NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE NECESSARY COORDINATION TO PROVIDE COMPLETE, CODE COMPLIANT AND OPERATIONAL BUILDING SYSTEMS. THE PLANS AND SECTIONS PROVIDED ARE NOT COMPLETE AND ARE TO BE CONSIDERED DIAGRAMMATIC ONLY TO SHOW GENERAL ARRANGEMENT OF SYSTEMS. THE EXACT LOCATION OF THE PIPING, DUCTWORK, ELECTRICAL AND SUPPORT COMPONENTS ARE TO BE DETERMINED IN THE FIELD. ALL BUILDING SECTIONS AND DETAILS PROVIDED ARE FOR INFORMATION ONLY AND DO NOT RELIEVE THE CONTRACTOR FROM PERFORMING FINAL COORDINATION. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES.
3. COORDINATE ALL WORK WITH THE ARCHITECTURAL DRAWINGS AND DRAWINGS OF OTHER TRADES. INSTALL ALL WORK TO CLEAR N ARCHITECTURAL WORK, STRUCTURAL MEMBERS AND WORK OF OTHER TRADES. NO ITEM SUCH AS PIPE, DUCT, ETC., SHALL BE IN CONTACT WITH ANY EQUIPMENT. ANY ERRORS, OMISSIONS, DISCREPANCIES, DEFICIENCIES, OR CONFLICTS SHALL BE BROUGHT TO THE OF THE GENERAL CONTRACTOR, THE ARCHITECT AND THE ENGINEER PRIOR TO PROCEEDING WITH ANY AFFECTED WORK.
4. ALL DUCTWORK AND PIPE DIMENSIONS ARE SHOWN IN MILLIMETRES.
5. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS, EQUIPMENT AND LABOUR NECESSARY TO ENSURE THE INSTALLATION OF COMPLETE AND FULLY OPERATIONAL SYSTEMS.
6. ADEQUATE SERVICE / MAINTENANCE CLEARANCE AROUND EQUIPMENT SHALL BE PROVIDED AND EQUIPMENT INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND INSALLATION CRITERIA. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKING INSTALLATION.
7. PROVIDE AND COORDINATE WITH THE ARCHITECT THE INSTALLATION OF ACCESS PANELS AS REQUIRED FOR MAINTENANCE AND INSPECTION OF ALL EQUIPMENT AND DEVICES. MINIMIZE NUMBER & LOCATION OF ACCESS PANELS BY POSITIONING PANELS TO ALLOW ACCESS TO MULTIPLE DEVICES. MECHANICAL LAYOUT SHALL ALSO BE DEVELOPED TO MINIMIZE ACCESS PANELS.
8. ALL DUCTS, PIPES AND EQUIPMENT SHALL BE CONCEALED ABOVE CEILING, UNLESS OTHERWISE NOTED.
9. SEAL AROUND ALL PIPES AND DUCTS PENETRATING FIRE SEPARATIONS. ASSEMBLY SHALL BE APPOVED BY THE BUILDING INSPECTOR.
10. ALL SUPPORTS, SPACE ARRANGEMENTS, EQUIPMENT FOOTPRINTS, AND EQUIPMENT PADS ARE BASED ON PRELIMINARY INFORMATION FROM THE BASIS OF DESIGN MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING DATA FROM SUBMITTED SHOP DRAWINGS AND SHALL MAKE MODIFICATIONS REQUIRED.
11. ALL EQUIPMENT, DUCTWORK, PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED EXTERIOR OF THE BUILDING OR OTHERWISE EXPOSED TO WEATHER ELEMENTS SHALL BE WEATHERPROOF.
12. WHERE PIPES AND DUCTS PENETRATE WALL, SEAL OPENINGS TO PREVENT AIR TRANSFER BETWEEN SPACES. USE FIRE RATED SEALANTS ON ALL FIRE SEPARATION PENETRATIONS, INCLUDING FLOORS.

HVAC GENERAL NOTES:

1. MANUAL AIR BALANCING DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES AND IN ALL BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS.
2. MAXIMUM ALLOWABLE LENGTH OF FLEXIBLE DUCTWORK IS 1.5M (5'-0").
3. DUCTWORK SHALL BE INSULATED OR LINED PER SPECIFICATIONS AND/OR AS NOTED ON DRAWINGS. ALL DUCT JOINTS AND SEAMS SHALL BE SEALED PER SPECIFICATIONS.
4. DUCT AND PLENUM SIZES INDICATED ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS. WHERE DUCTWORK AND PLENUMS ARE INTERNALLY LINED, THEIR SIZES SHALL BE ADJUSTED TO PROVIDE THE INSIDE CLEAR DIMENSIONS INDICATED ON THE DRAWINGS.
5. MANUAL DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES AND IN ALL BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS.
6. SLOPE ALL RUNOUTS TO EQUIPMENT AND RISERS, UP IN THE DIRECTION OF FLOW.
7. TEMPERATURE SENSORS TO BE INSTALLED AT 1200MM (48 IN.) ABOVE THE FINISHED FLOOR UNLESS NOTED OTHERWISE.

PLUMBING GENERAL NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING ELEVATIONS FOR PLUMBING FIXTURES.
2. ROUTING OF WATER PIPING SHALL CLEAR SENSITIVE COMPUTER OR ELECTRICAL EQUIPMENT.
3. ALL SOIL & WASTE AND STORM LEADER STACKS SHALL BE COMPLETE WITH CLEANOUT AT BOTTOM AND BE ACCESSIBLE.
4. PRIOR TO FABRICATION OR INSTALLATION, THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT. EXACT ROUGH-IN LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN FIELD.
5. ALL EQUIPMENT, FIXTURES, ETC. SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
6. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY AND PERFORM ALL REQUIRED TESTING OF ALL PIPING, FIXTURES, EQUIPMENT, AND ACCESSORIES INSTALLED. ALL SUCH PLUMBING INSTALLATIONS SHALL BE TESTED, REPAIRED, AND ADJUSTED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AND ALL GOVERNING AUTHORITIES.
7. ALL FIXTURES, FLOOR DRAINS, FLOOR SINKS, ETC. SHALL BE TRAPPED AND VENTED AND TRAP PRIMERS SHALL BE PROVIDED AS REQUIRED. ALL TRAP PRIMERS SHALL BE ACCESSIBLE AND PROVIDED WITH A 18"X18" ACCESS PANEL (MINIMUM).
8. SANITARY AND STORM PIPE SIZES 100MM (4") DIAMETER AND LARGER TO BE SLOPED AT 1%. PIPE SIZES UNDER 100MM (4") IN DIAMETER TO BE SLOPED AT 2% UNLESS OTHERWISE NOTED ON LAYOUTS. ALL PIPE SIZES ARE NOTED ON THE LAYOUTS.
9. PROVIDE VENTING FOR ALL PLUMBING FIXURES. SIZING AND TERMINATION TO COMPLY WITH OBC.

GENERAL DEMOLITION NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF DEMOLITION.

MECHANICAL DRAWING LIST

Sheet Number	Sheet Name
M001	MECHANICAL LEGEND, DRAWING LIST, GENERAL NOTES
M100	MECHANICAL SITE PLAN
M101	MECHANICAL DEMOLITION PLAN
M200	FOUNDATION PLAN
M201	GROUND FLOOR PLAN - HVAC
M202	GROUND FLOOR PLAN - PLUMBING
M203	ROOF PLAN - HVAC
M204	ROOF PLAN - PLUMBING
M301	REFRIGERANT SCHEMATIC
M501	MECHANICAL SCHEDULES
M601	MECHANICAL SPECIFICATIONS

MECHANICAL LEGEND

LIST OF ABBREVIATIONS AND CONTROLS

AFF	ABOVE FINISHED FLOOR	T.O.D.	TOP OF DUCT
C/W	COMPLETE WITH	T.O.P.	TOP OF PIPE
RWL	RAIN WATER LEADER	U.O.D.	UNDERSIDE OF DUCT
F/A, T/A	FROM ABOVE, TO ABOVE	U.O.P.	UNDERSIDE OF PIPE
F/B, T/B	FROM BELOW, TO BELOW	U/S	UNDERSIDE
NTS	NOT TO SCALE	DN	DOWN
O/A	OUTSIDE AIR	FRR	FIRE RESISTANCE RATED
R/A	RETURN AIR	U.N.O.	UNLESS NOTED OTHERWISE
E/A	EXHAUST AIR	CTE	CONNECT TO EXISTING
S/A	SUPPLY AIR		

METER	M	DIGITAL SENSOR	?
WATER METER	W	LOCAL CONTROLS	?
GAS METER	G	CARBON MONOXIDE	CO
		CARBON DIOXIDE	CO2
		SMOKE DETECTOR	SD
		TEMPERATURE	T
		HUMIDITY	H
		COMBUSTIBLE GAS	CG

LIST OF SYMBOLS AND SERVICES

SANITARY DRAIN — SAN
STORM DRAIN — STW
VENT PIPE — V
DOMESTIC COLD WATER
DOMESTIC HOT WATER
DOMESTIC HOT WATER RECIRC
HEAT TRACED PIPING
CONDENSATE — COND

CLEAN OUT - ABOVE GRADE — CO
CLEAN OUT - AT/BELOW GRADE — CO
FLOOR/ ROOF/ HUB/ AREA DRAIN — ?
PLUMBING FIXTURE TAG — ?
HOSE BIBB — HB-
P-TRAP
VENT UP — VTR
VENT THROUGH ROOF
FIRE EXTINGUISHER

PIPE ELBOW RISER / DROP
PIPE TEE DOWN
STACK UP/ DOWN
SHUT OFF VALVE
2-WAY CONTROL VALVE
3-WAY CONTROL VALVE
CHECK VALVE
UNION OR FLANGE
STRAINER -Y OR BASKET
AUTOMATIC AIR VENT — AAV
DOUBLE CHECK VALVE ASSEMBLY — DCVA
PRESSURE GAUGE
CAP OR PLUG

P & T RELIEF VALVE
BALANCING VALVE
GLOBE VALVE
SUPERVISED VALVE
PLUG VALVE
PRESSURE REDUCING VALVE
FLEXIBLE CONNECTION
PIPE ANCHOR
PIPE GUIDE
PUMP
REDUCED PRESSURE BACKFLOW ASSEMBLY — RPBA
AUTOFLOW CONTROL VALVE
THERMOMETER

DUCTWORK
ROUND DUCT RISER
ROUND DUCT DROP
S/A OR O/A DUCT TO OR FROM ABOVE
S/A OR O/A DUCT TO OR FROM BELOW
R/A OR E/A DUCT TO OR FROM ABOVE
R/A OR E/A DUCT TO OR FROM BELOW
BALANCING DAMPER — BD
MOTORIZED DAMPER (MODULATING) — M
BACK DRAFT DAMPER — B.D.D.
TURNING VANES
AIR OUTLET OR INLET TAG — #@ / TYPE / SIZE / CAPACITY
EQUIPMENT TAG

STANDARD BRANCH
SINGLE LINE BRANCH
SUPPLY DIFFUSER
RETURN GRILLE
EXHAUST GRILLE
SUPPLY OUTLET
RETURN OR EXHAUST INLET
DOOR - UNDERCUT — U/C
DOOR GRILLE — DG
FIRE DAMPER - VERTICAL
FIRE DAMPER - HORIZONTAL
SMOKE DAMPER - VERTICAL
SMOKE DAMPER - HORIZONTAL

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

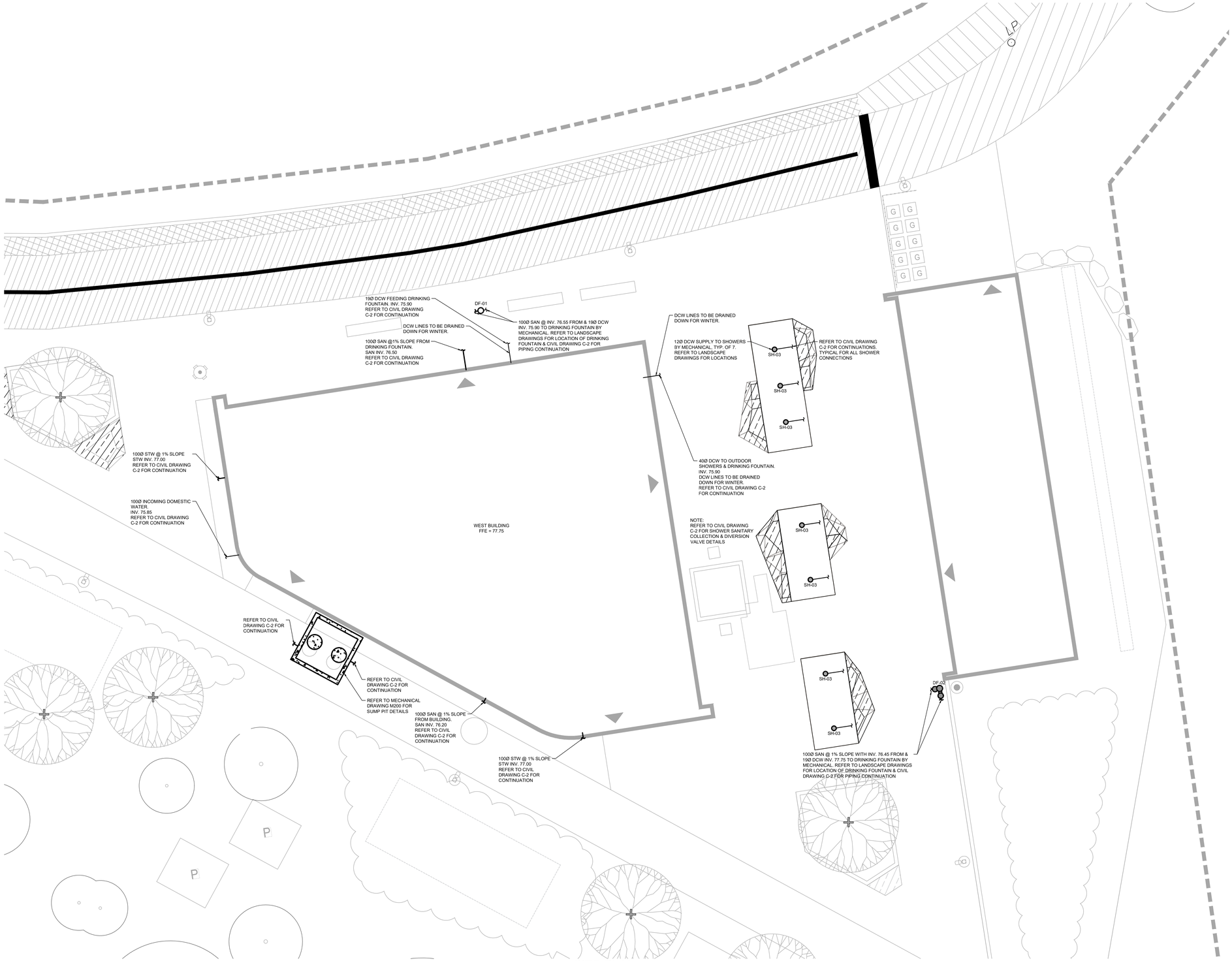
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MECHANICAL LEGEND, DRAWING LIST, GENERAL NOTES

Print Date	2025-04-11
Scale	NONE
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M001



SITE PLAN

0 1 2 5 10

SCALE: 1:100

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

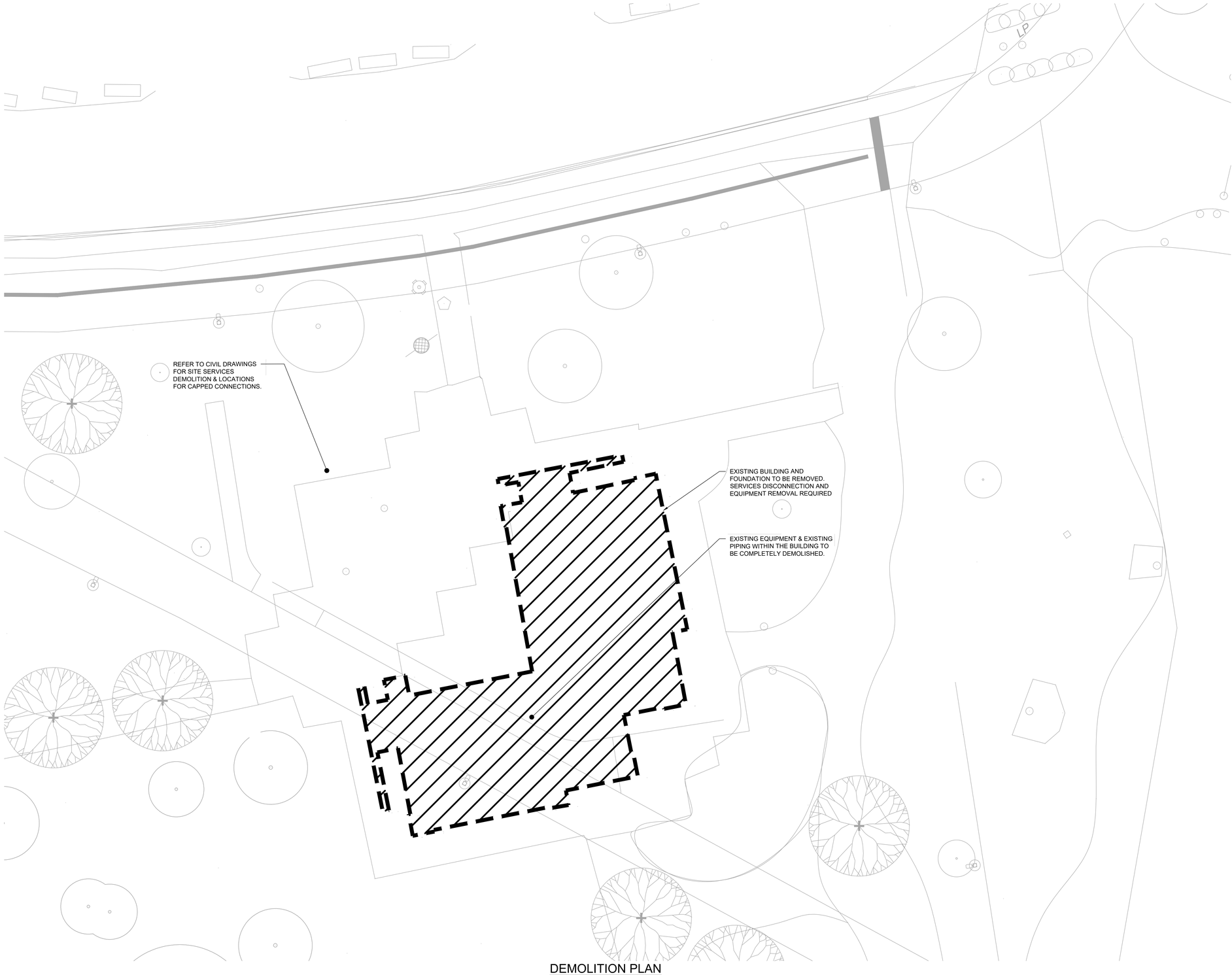
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MECHANICAL SITE PLAN

Print Date	2025-04-11
Scale	1:100
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M100



DEMOLITION PLAN

SCALE: 1:100

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

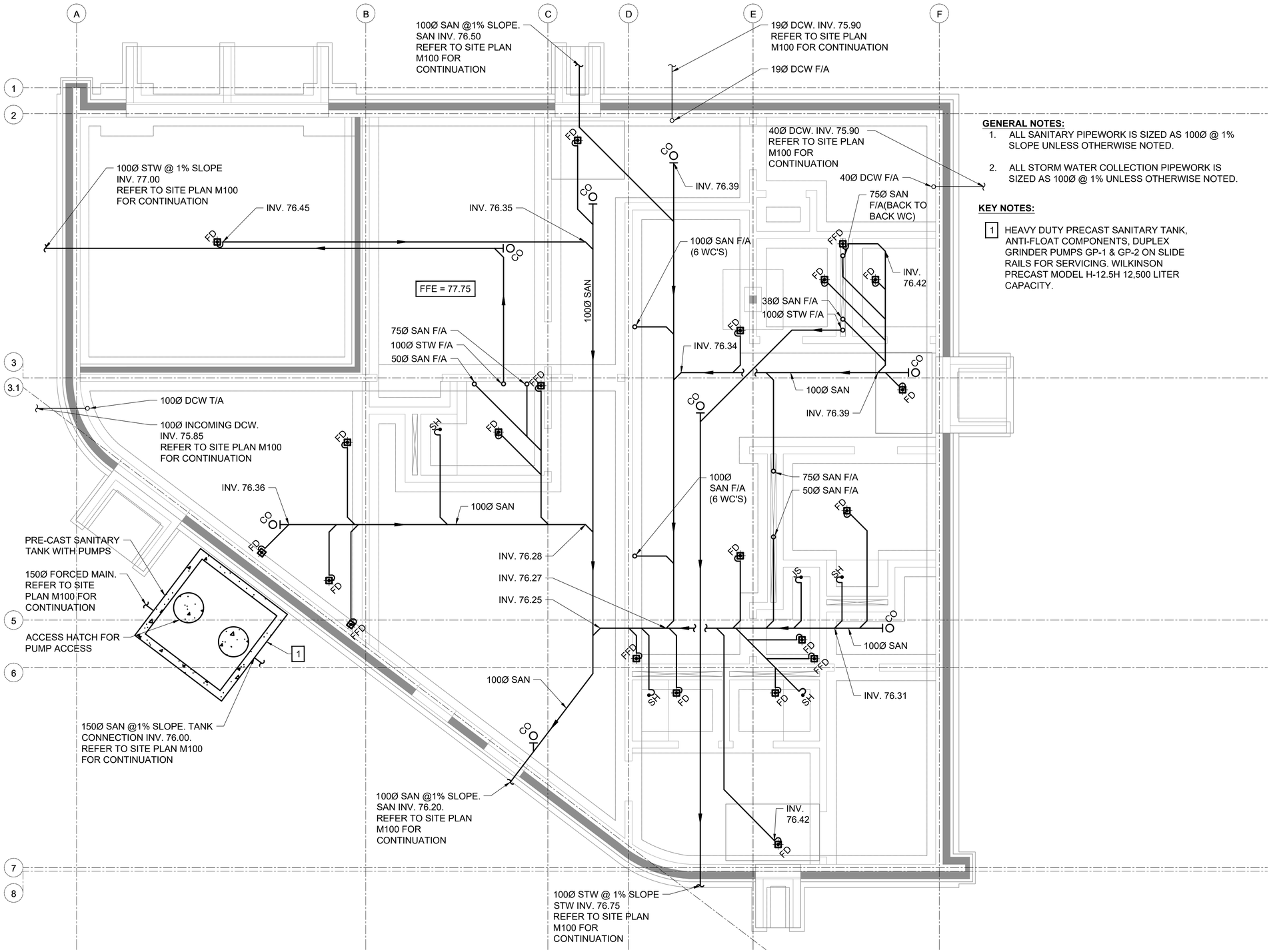
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MECHANICAL DEMOLITION PLAN

Print Date	2025-04-11
Scale	1:100
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M101



FOUNDATION PLAN - PLUMBING - WEST BUILDING

SCALE: 1:50

GENERAL NOTES:

1. ALL SANITARY PIPEWORK IS SIZED AS 100Ø @ 1% SLOPE UNLESS OTHERWISE NOTED.
2. ALL STORM WATER COLLECTION PIPEWORK IS SIZED AS 100Ø @ 1% UNLESS OTHERWISE NOTED.

KEY NOTES:

1 HEAVY DUTY PRECAST SANITARY TANK, ANTI-FLOAT COMPONENTS, DUPLEX GRINDER PUMPS GP-1 & GP-2 ON SLIDE RAILS FOR SERVICING. WILKINSON PRECAST MODEL H-12.5H 12,500 LITER CAPACITY.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

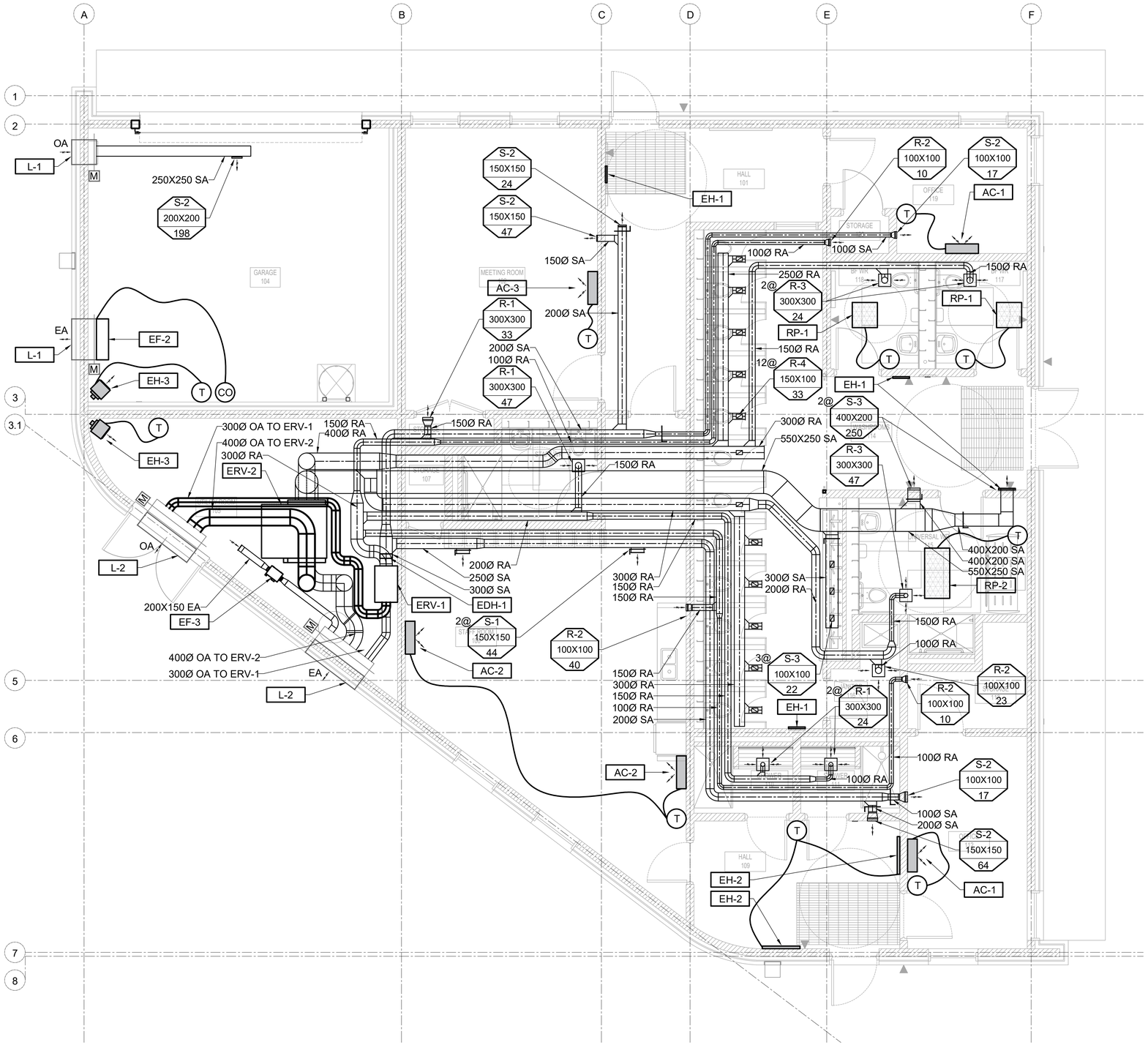
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

FOUNDATION PLAN

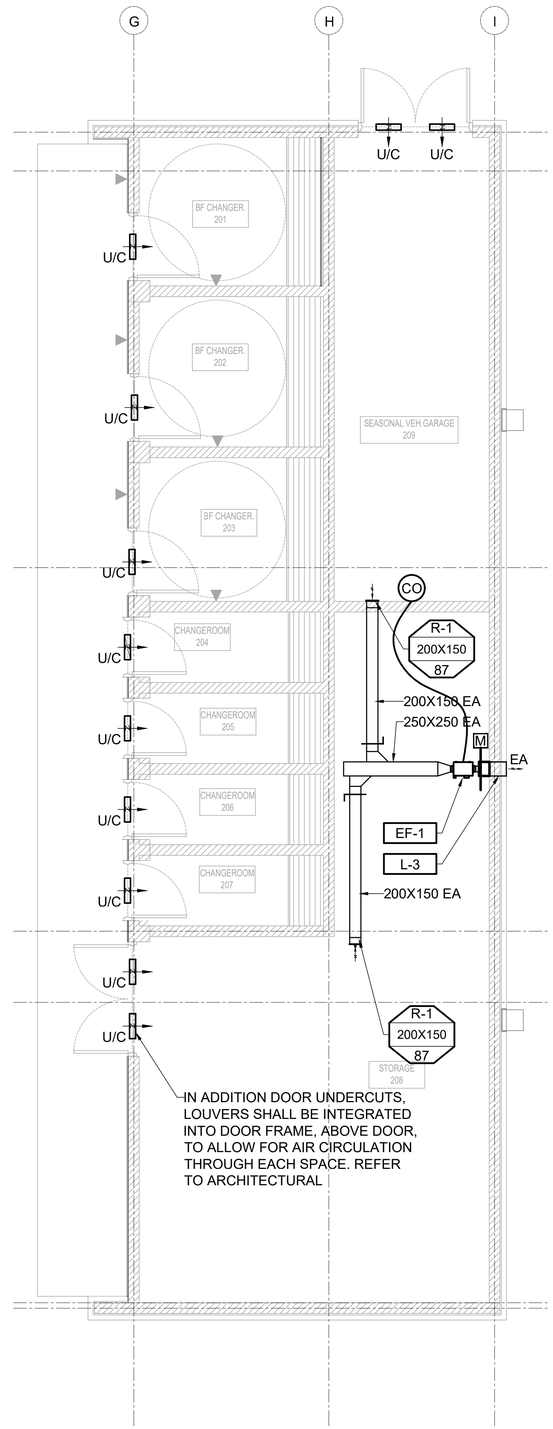
Print Date	2025-04-11
Scale	1:50
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M200



GROUND FLOOR - HVAC - WEST BUILDING

SCALE: 1:50



GROUND FLOOR - HVAC - EAST BUILDING

SCALE: 1:50

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

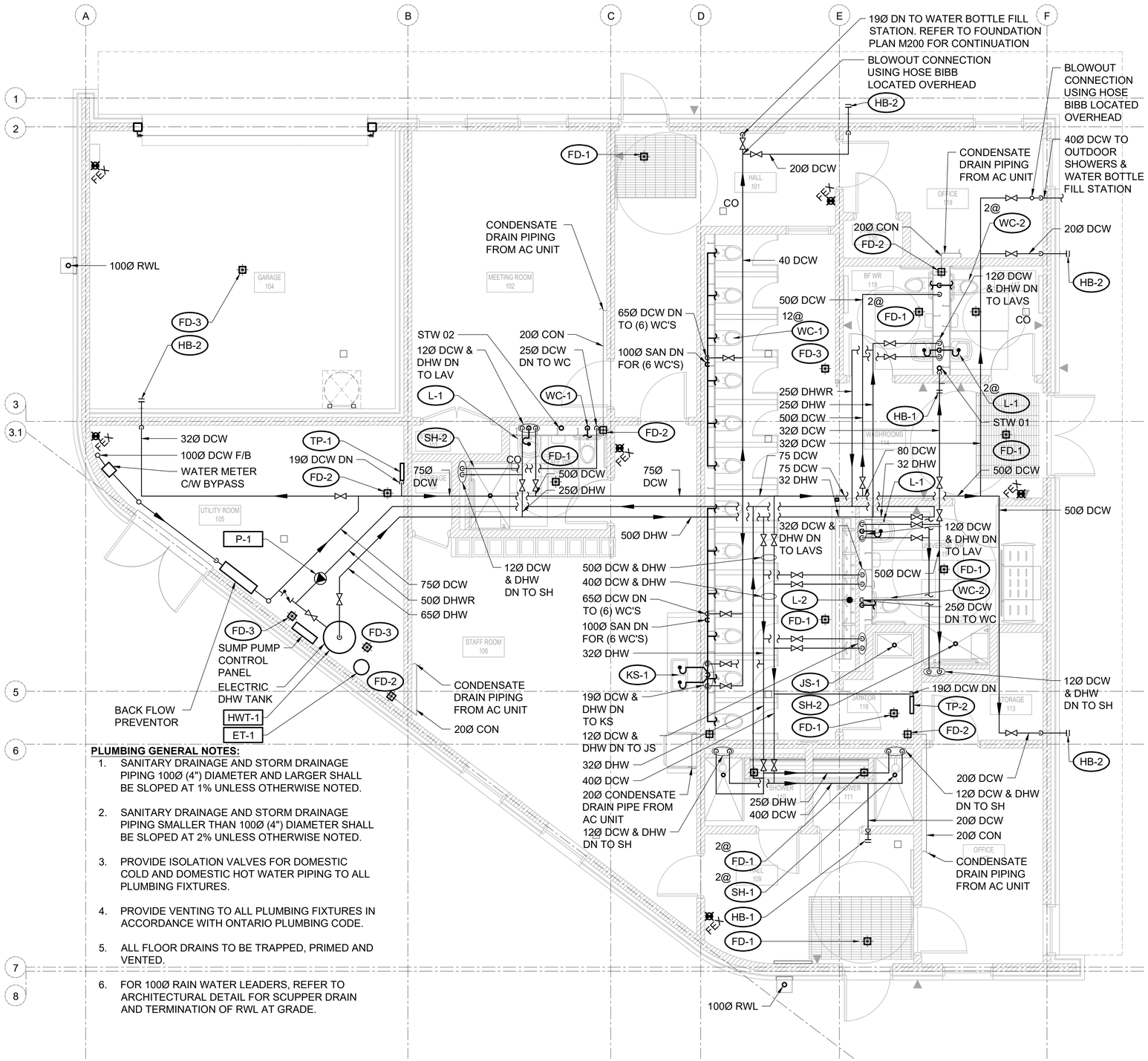
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

GROUND FLOOR PLAN - HVAC

Print Date	2025-04-11
Scale	1:50
Project No.	00100052.000
Drawn by	MD
Checked by	SF

M201

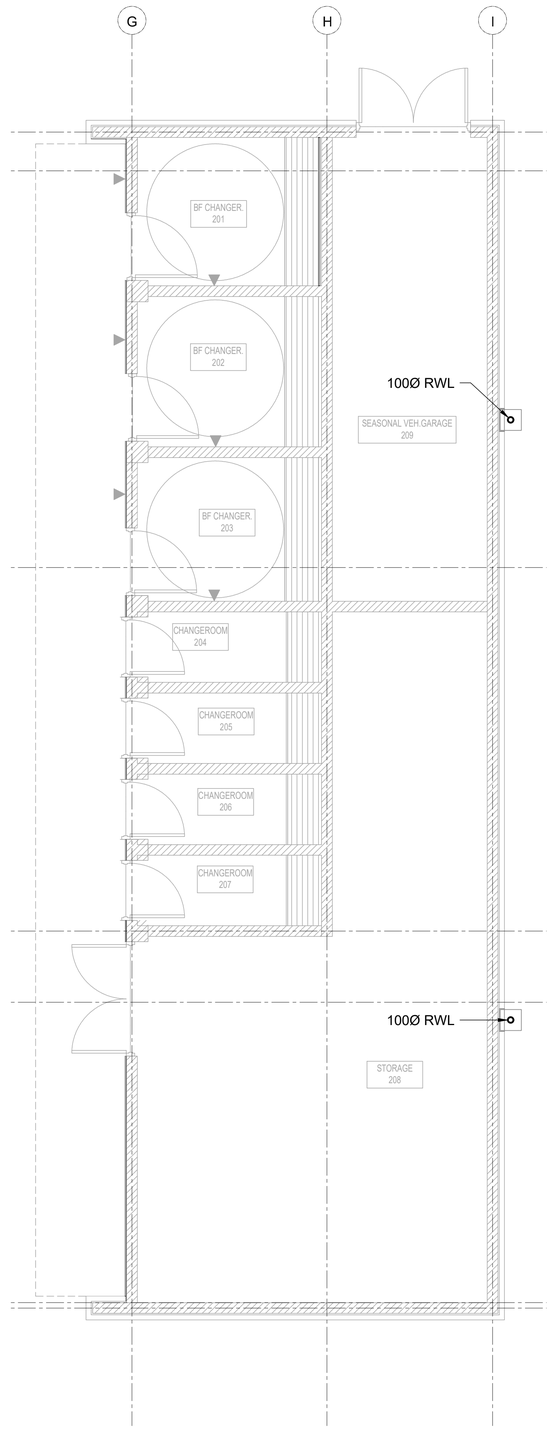


PLUMBING GENERAL NOTES:

1. SANITARY DRAINAGE AND STORM DRAINAGE PIPING 100Ø (4") DIAMETER AND LARGER SHALL BE SLOPED AT 1% UNLESS OTHERWISE NOTED.
2. SANITARY DRAINAGE AND STORM DRAINAGE PIPING SMALLER THAN 100Ø (4") DIAMETER SHALL BE SLOPED AT 2% UNLESS OTHERWISE NOTED.
3. PROVIDE ISOLATION VALVES FOR DOMESTIC COLD AND DOMESTIC HOT WATER PIPING TO ALL PLUMBING FIXTURES.
4. PROVIDE VENTING TO ALL PLUMBING FIXTURES IN ACCORDANCE WITH ONTARIO PLUMBING CODE.
5. ALL FLOOR DRAINS TO BE TRAPPED, PRIMED AND VENTED.
6. FOR 100Ø RAIN WATER LEADERS, REFER TO ARCHITECTURAL DETAIL FOR SCUPPER DRAIN AND TERMINATION OF RWL AT GRADE.

GROUND FLOOR - PLUMBING - WEST BUILDING

SCALE: 1:50



GROUND FLOOR - EAST BUILDING

SCALE: 1:50

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

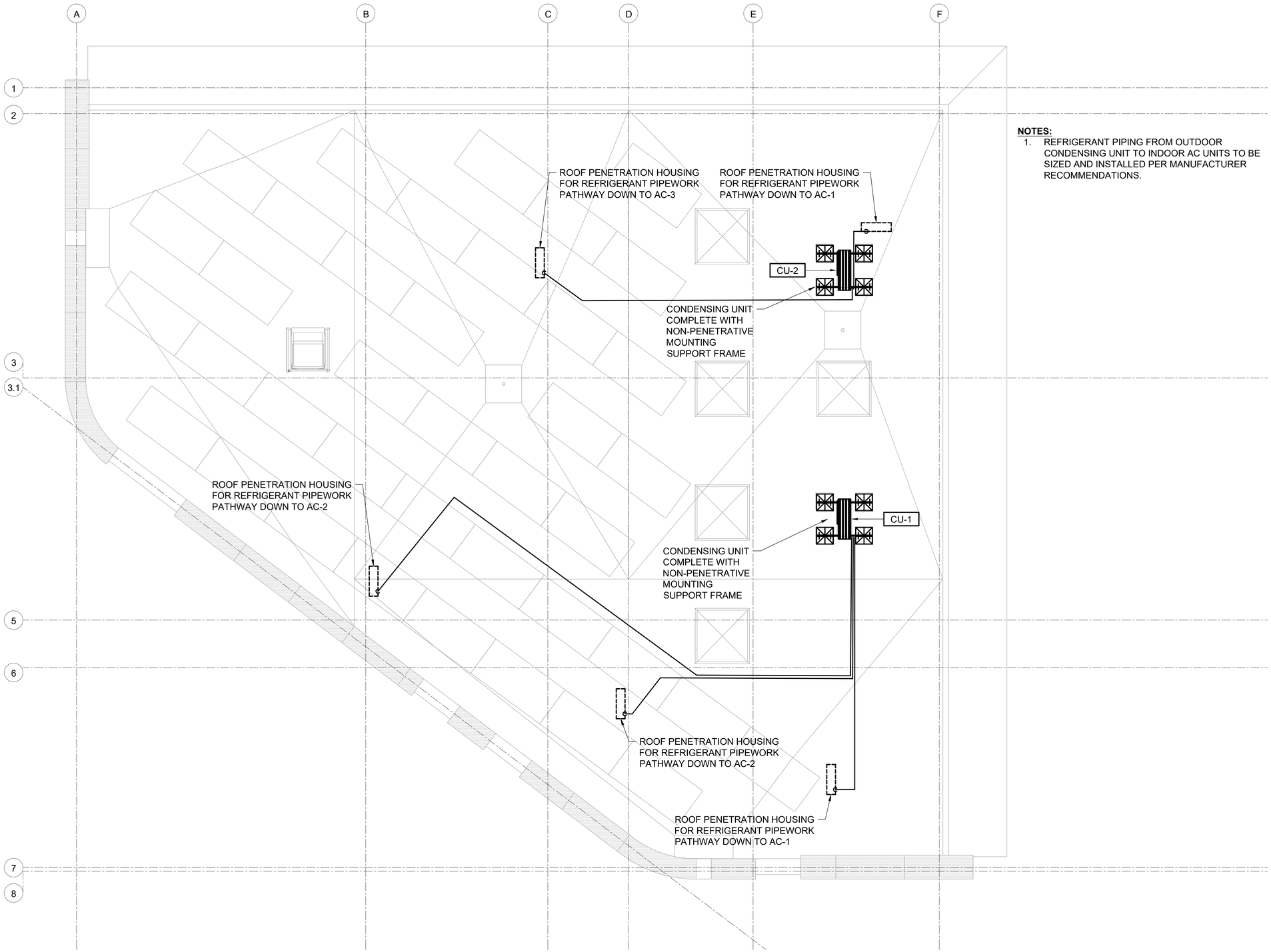
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

GROUND FLOOR PLAN - PLUMBING

Print Date	2025-04-11
Scale	1:50
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M202



ROOF- HVAC - WEST BUILDING

0 1 2 5

SCALE: 1:50

NOTES:

1. REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO INDOOR AC UNITS TO BE SIZED AND INSTALLED PER MANUFACTURER RECOMMENDATIONS.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

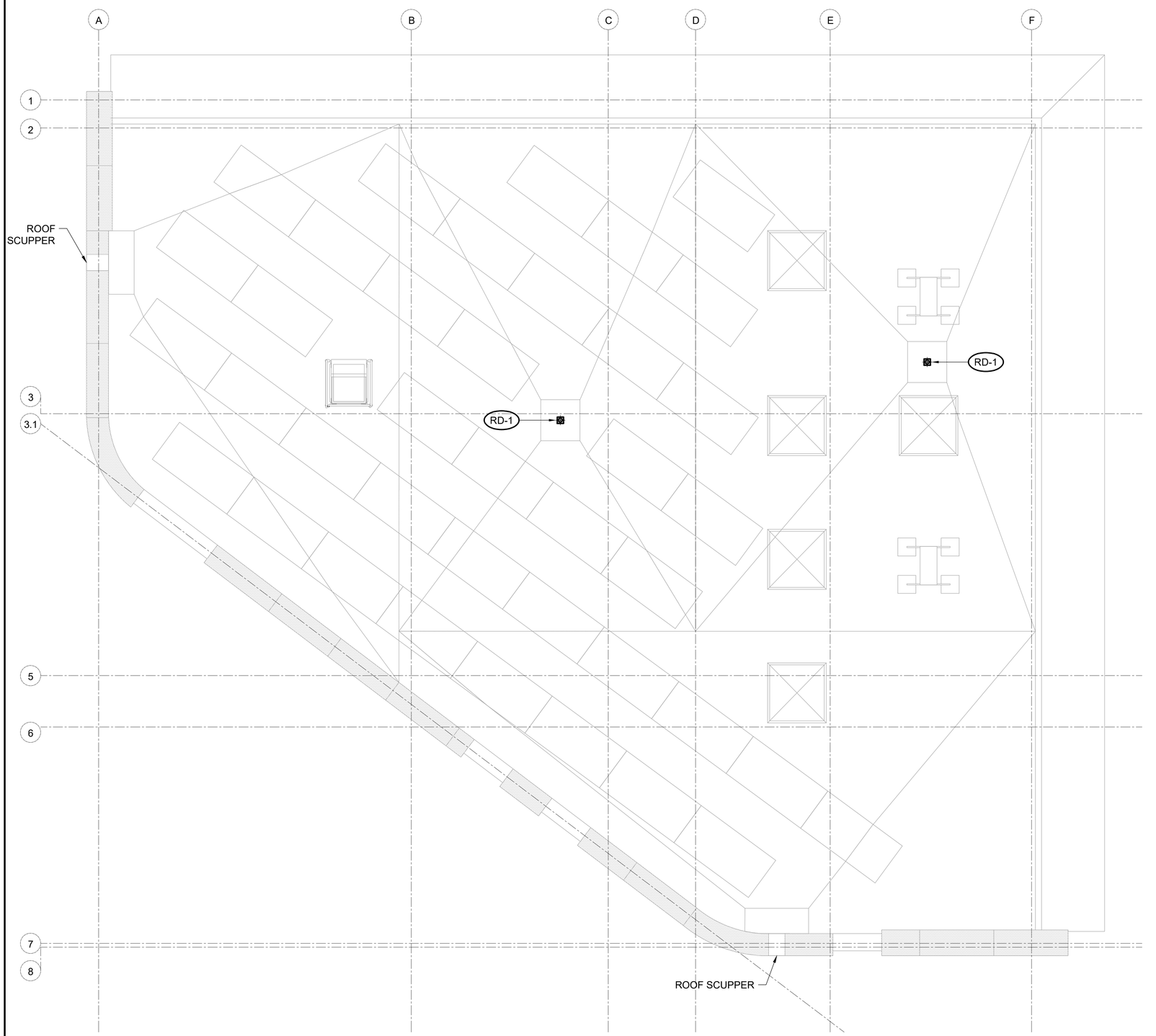
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ROOF PLAN - HVAC

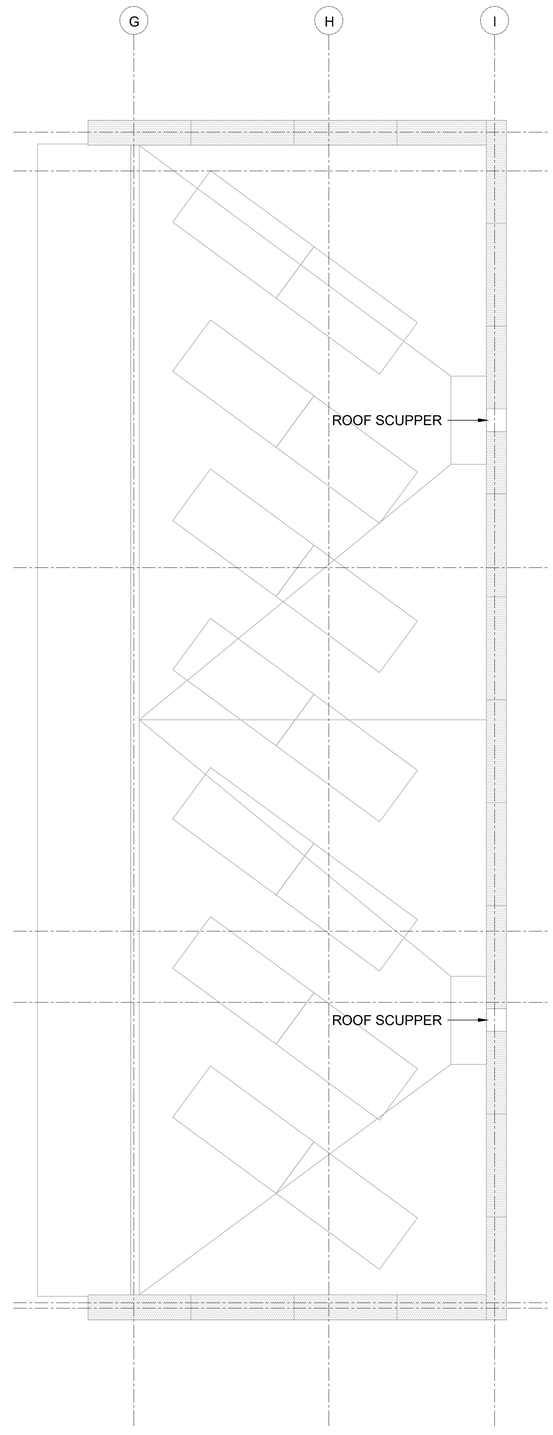
Print Date	2025-04-11
Scale	1:50
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M203



ROOF- PLUMBING - WEST BUILDING

SCALE: 1:50



ROOF - EAST BUILDING

SCALE: 1:50

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
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Issue Record

N

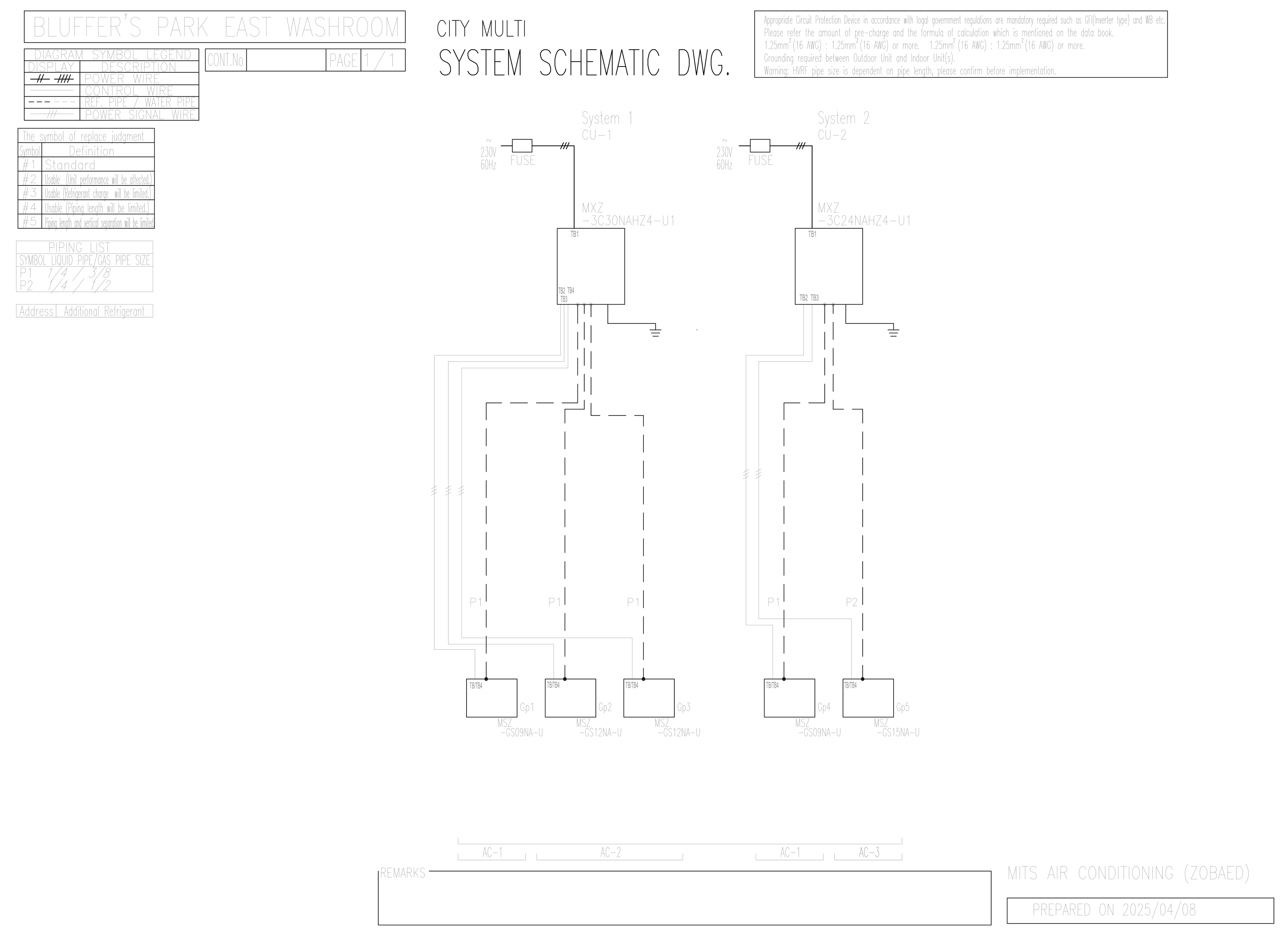
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ROOF PLAN - PLUMBING

Print Date	2025-04-11
Scale	1:50
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M204


BLUFFER'S PARK EAST WASHROOM
DIAGRAM SYMBOL LEGEND
DISPLAY
DESCRIPTION
POWER WIRE
CONTROL WIRE
REF. PIPE / WATER PIPE
POWER SIGNAL WIRE
CONT.No
PAGE 1 / 1
The symbol of replace judgment
Symbol
Definition
#1 Standard
#2 Usable (Unit performance will be affected.)
#3 Usable (Refrigerant charge will be limited.)
#4 Usable (Piping length will be limited.)
#5 Piping length and vertical separation will be limited
PIPING LIST
SYMBOL LIQUID PIPE/GAS PIPE SIZE
P1 1/4 / 3/8
P2 1/4 / 1/2
Address Additional Refrigerant
CITY MULTI
SYSTEM SCHEMATIC DWG.
Appropriate Circuit Protection Device in accordance with logal government regulations are mandatory required such as GFI(Inverter type) and WB etc.
Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.
1.25mm² (16 AWG) : 1.25mm² (16 AWG) or more. 1.25mm² (16 AWG) : 1.25mm² (16 AWG) or more.
Grounding required between Outdoor Unit and Indoor Unit(s).
Warning: HVRF pipe size is dependent on pipe length, please confirm before implementation.
System 1
CU-1
230V
60Hz
FUSE
MXZ
-3C30NAHZ4-U1
TB1
TB2 TB4
TB3
P1
P1
P1
TB/TB4
Gp1
MSZ
-GS09NA-U
TB/TB4
Gp2
MSZ
-GS12NA-U
TB/TB4
Gp3
MSZ
-GS12NA-U
System 2
CU-2
230V
60Hz
FUSE
MXZ
-3C24NAHZ4-U1
TB1
TB2 TB3
P1
P2
TB/TB4
Gp4
MSZ
-GS09NA-U
TB/TB4
Gp5
MSZ
-GS15NA-U
AC-1
AC-2
AC-1
AC-3
REMARKS
MITS AIR CONDITIONING (ZOBAED)
PREPARED ON 2025/04/08

1 GROUND FLOOR REFRIGERANT SCHEMATIC
N.T.S.

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

REFRIGERANT SCHEMATIC

Print Date 2025-04-11
Scale NTS
Project No. 0010052.000
Drawn by MD
Checked by SF

M301

ENERGY RECOVERY VENTILATOR SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION / CONFIGURATION	AREA SERVED	RECOVERY TYPE	SUPPLY FAN			RETURN FAN			PERFORMANCE DATA (WINTER)				PERFORMANCE DATA (SUMMER)				POST-HEATING ELECTRIC COIL SPECIFICATIONS					ELECTRICAL DATA						OPER. WEIGHT (KG)	NOTES
						AIR FLOW (CFM)	FAN QTY	MOTOR (HP)	AIR FLOW (CFM)	FAN QTY	Motor (HP)	SENS. EFFECTIVENESS (%)	OA DB (°F)	RA DB (°F)	SA DB (°F)	SENS. EFFECTIVENESS (%)	LAT. EFFECTIVENESS (%)	OA DB (°F)	OA WB (°F)	RA DB (°F)	SA DB (°F)	MAX ELEC. LOAD (kW)	FLA (AMPS)	MAIN DISCONNECT	FUSE	AIRFLOW (CFM)	PD (IN H20)	EAT (DB) (°F)	LAT (DB) (°F)	FACE VELOCITY (FPM)	MCA	MOP	VOLT (V)	PHASE	FREQUENCY (Hz)	EMERGENCY POWER (Y/N)		
ERV-1	ALDES	PW15(I)	UTILITY ROOM/ WALL MOUNT	STAFF AREAS	WHEEL	565	1	1	455	1	1	91.3	-7.6	72	50.1	90.8	85.6	87.8	73.6	75	78.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.5	8	575	3	60	N	NA	1
ERV-2	ALDES	PW20(I)	UTILITY ROOM/ CEILING MOUNT	WASHROOM	WHEEL	1,200	1	1	1,200	1	1	83.7	-7.6	72	57.9	82.9	78.3	87.8	73.6	75	77.1	32	32.1	NO	YES	1200	0.1	-7.6	65	514	47.7	50	575	3	60	N	590	1

NOTES:
1. C/W REMOTE WALL MOUNTED CONTROLLER FOR EACH UNIT, MOUNTED IN UTILITY ROOM.

SPLIT SYSTEM INDOOR UNIT SCHEDULE

EQPT. NO.	MANUFACTURER	MODEL	AREA SERVED	ASSOCIATED OUTDOOR UNITS	CONFIGURATION	REFRIGERANT TYPE	FAN DATA		COOLING DATA		HEATING DATA		ELECTRICAL DATA					OPER. WEIGHT (KG)	NOTES
							AIRFLOW (CFM)	SPEED CONTROL	EAT DB (°F)	TOTAL CAP. (BTU/H)	EAT DB (°F)	CAPACITY @ 47 °F (BTU/H)	MCA	VOLT (V)	PHASE	FREQUENCY (Hz)	EMERGENCY POWER (Y/N)		
AC-1	MITSUBISHI	MSZ-GL09NA	OFFICE 112, OFFICE 119	CU-1,CU-2	WALL MOUNTED	R410A	145-406	REMOTE	75	9000	70	10900	1	208	1	60	N	12	-
AC-2	MITSUBISHI	MSZ-GL12NA	STAFF ROOM 106	CU-1	WALL MOUNTED	R410A	145-406	REMOTE	75	12000	70	14400	1	208	1	60	N	10	-
AC-3	MITSUBISHI	MSZ-GL15NA	MEETING ROOM 102	CU-2	WALL MOUNTED	R410A	205-463	REMOTE	75	15000	70	18000	1	208	1	60	N	10	-

NOTES:
1. PROVIDE ASPEN MINI AQUA CONDENSATE PUMP.

AIR-COOLED OUTDOOR CONDENSING UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	ASSOCIATED INDOOR UNITS	REFRIGERANT TYPE	COOLING DATA		HEATING DATA			ELECTRICAL DATA						OPER. WEIGHT (KG)	NOTES
						AMBIENT OAT (°F)	CAPACITY (Btu/h)	EFFICIENCY (EER)	CAPACITY (Btu/h)	AMBIENT OAT (°F)	COP AT 47°F	MCA	MOP	VOLT (V)	PHASE	FREQUENCY (Hz)	EMERGENCY POWER (Y/N)		
CU-1	MITSUBISHI	MXZ-3C30NAHZ3-U1	ROOF	AC-1, AC-2, AC-2	R410A	95	28400	12.5	25200	-13	4	30.5	40	208	1	60	N	86	1
CU-2	MITSUBISHI	MXZ-3C24NAHZ3-U1	ROOF	AC-1, AC-3	R410A	95	22000	13.5	22500	-13	4.25	30.5	40	208	1	60	N	86	1

NOTES:
1. Provide wind screens to improve effciency at low ambient conditions

EXHAUST FAN SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	AREA SERVED	FAN CONFIGURATION	FAN		MOTOR		ELECTRICAL DATA					OPER. WEIGHT (KG)	NOTES
						AIR FLOW (CFM)	E.S.P. (Pa)	HP	SPEED CONTROL	POWER (W)	VOLT (V)	PHASE	FREQUENCY (Hz)	EMERGENCY POWER (Y/N)		
EF-1	PANASONIC	FV-20NLF1	STORAGE 208	SEASONAL VEH. GARAGE 209, STORAGE 208	INLINE FAN	240.0	0.8		TWO SPEED	55	120	1	60	N	7.7	1,2,3
EF-2	GREENHECK	AER-20-03-0601	GARAGE 104	GARAGE 104	WALL MOUNT FAN	420.0	0.6	0.33	SINGLE SPEED	-	208	3	60	N	35	1,2,3
EF-3	PANASONIC	FV-20NLF1	UTILITY RM 105	UTILITY ROOM 105	INLINE FAN	240.0	0.8		TWO SPEED	55	120	1	60	N	7.7	1,3

NOTES:
1. PROVIDE WITH STARTER. ELECTRICAL TO PROVIDE DISCONNECT SWITCH.
2. GARAGE EXHAUST FANS TO BE CONTROLLED VIA CO MONITORING AND DETECTION SYSTEM.
3. PROVIDE MOTORISED DAMPERS AT LOUVRE PLENUMS AS INDICATED ON PLANS.

ELECTRIC HEATER SCHEDULE

TAG	MANUFACTURER	TYPE	MODEL	AREA SERVED	CONFIGURATION	AIR FLOW	CAPACITY	ELECTRICAL DATA				OPER. WEIGHT (KG)	NOTES
						(CFM)	(kW)	VOLT (V)	PHASE	FREQUENCY (Hz)	EMERGENCY POWER (Y/N)		
EH-1	KING HEATERS	FAN HEATER	LPWV2015-W-TP	HALL101, WASHROOMS 114	WALL MOUNTED	-	1.5	208	3	60	N	11	1
EH-2	RUNTAL	WALL PANEL	EWP-8-208D	HALL 109	WALL MOUNTED	-	1.15	208	1	60	N	28	2
EH-3	MODINE	UNIT HEATER	HER 30	GARAGE 104, UTILITY ROOM 105	CEILING SUSPENDED	380	3	208	3	60	N	15.5	2

NOTES:
1. PROVIDE WITH BUILT-IN THERMOSTST.
2. C/W REMOTE WALL MOUNTED THERMOSTAT.

ELECTRIC DUCT COIL SCHEDULE

TAG	SERVING	DUCT SIZE (mm)	AIRFLOW (CFM)	SIZE	SP IN (WG)	MAX FACE VELOCITY (FPM)	MBH	EAT (°F)	LAT (°F)	POWER (kW)	ELECTRICAL (V/PH/HZ)			BASIS OF DESIGN	NOTES
EDH-1	STAFF AREAS	300	565	SAME AS DUCT SIZE	0.065	720	7.9	52.0	65.0	2.3	600.0	3.0	60.0	NAILOR DHRS	1

NOTES:
1. C/W DUCT MOUNTED THERMOSTAT AND AIR PROVING SWITCH.

SUMP PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	PUMP DATA				ELECTRICAL DATA				OPER. WEIGHT (KG)	NOTES
						FLOW (GPM)	HEAD (FT OF H2O)	SPEED (RPM)	HP	V	PH	HZ	EMERGENCY POWER (Y/N)		
GP-1,2	BARNES	XGV5052 - 575 (141346)	PRE-CAST SANITARY TANK	SANITARY	SUBMERSIBLE	78	57	3450	5.0 EACH	575	3	60	N	186	1, 2, 3

NOTES:
1. PUMPS ARE DUTY/STANDBY.
2. DUPLEX SYSTEM COMPLETE WITH CONTROL PANEL AND HIGH LEVEL ALARM. PROVIDE LEVEL SWITCHES AND FLOATS. CONTROL PANEL TO BE INSTALLED IN UTILITY ROOM.
3. PUMPS INSTALLED ON GUIDE RAILS FOR REMOVAL.

ELECTRIC DOMESTIC WATER HEATER SCHEDULE

TAG	MFR.	MODEL	LOCATION	SYSTEM SERVED	HEATER STORAGE (L)	INPUT RATE (kW)	RECOVERY CAPACITY (GPH)	TEMP RISE (°F)	DIMENSIONS (MM)		ELECTRICAL	
									DIAMETER (MM)	HEIGHT (MM)	FLA	V/PH/HZ
HWT-1	AO SMITH	DRE-120A-24	UTILITY ROOM 105	DOMESTIC HOT WATER HEATER	450	24	98	98	765	1,784	24	575/3/60

PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	FLUID	PUMP			ELECTRICAL			OPER. WEIGHT (KG)	NOTES
							L/S	HEAD (BAR)	RPM	kW	FLA/MCA/MOC	V/Ph		
P-1	BELL & GOSSETT	NBF-36	UTILITY ROOM 105	DHW RECIRC	IN-LINE	WATER	4	0	3300	0.27	120/1	N	13.1	-

EXPANSION TANK SCHEDULE

TAG	MFR.	MODEL	LOCATION	SERVICE	ORIENTATION	BLADDER VOLUME (L)	DIMENSIONS (MM)		MIN. OPERATING PRESSURE (kPa)	MAX. OPERATING PRESSURE (kPa)	NOTES
							HEIGHT	DIAMETER			
ET-1	WESSELS	TXA-35	UTILITY ROOM 105	DOMESTIC HOT WATER	VERTICAL	30	600	300	-	860	1

NOTES:
1. C/W PRESSURE GAUGES AND FITTINGS

ELECTRONIC TRAP SEAL PRIMER

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	NUMBER OF DRAINS SERVED	ELECTRICAL DATA				EMERGENCY POWER (Y/N)	OPER. WEIGHT (KG)	NOTES
						Power (W)	V	PH	HZ			
TP-1	PPP	PT-12	UTILITY ROOM 105	FLOOR DRAINS	8	6	120	1	60	N	5	1,2
TP-2	PPP	PT-12	JANITOR 113	FLOOR DRAINS	12	6	120	1	60	N	5	1,2

NOTES:
1. WALL MOUNTED. PROVIDE WITH ACCESS PANEL.
2. CONTRACTOR TO COORDINATE SUITABLE LOCATION FOR TRAP PRIMERS & ALLOW FOR 12MM DCW LINE TO EACH FROM NEAREST MAIN.

LOUVER SCHEDULE

UNIT NO.	AREA SERVING	TYPE	AIRFLOW (CFM)	MAX VELOCITY (FPM)	PRESSURE DROP (IN WG)	FRAME SIZE (MM x MM)	BASIS OF DESIGN	NOTES
L-1	GARAGE 104	INTAKE/EXHAUST	420	500	0.01	600X600	C-S GROUP	1, 2, 3, 4
L-2	UTILITY ROOM 105	INTAKE/EXHAUST	1,715	500	0.06	1500X600	C-S GROUP	1, 2, 3, 4
L-3	STORAGE 208	EXHAUST	240	500	0.05	250X250	C-S GROUP	1, 2, 3, 4

NOTES:
1. COLOR TO BE SELECTED BY ARCHITECT.
2. PROVIDE INSECT SCREEN.
3. SIZE TO BE COORDINATED WITH ARCHITECTURE TO FIT WITHIN OPENING FRAME AND/OR BRICK COURSING.
4. PROVIDE MOTORIZED DAMPERS AT INTAKE AND EXHAUST.

RADIANT PANEL SCHEDULE

TAG	MANUFACTURER	TYPE	MODEL	AREA SERVED	CONFIGURATION	CAPACITY	ELECTRICAL DATA				OPER. WEIGHT (KG)	NOTES
						(kW)	VOLT (V)	PHASE	FREQUENCY (Hz)	EMERGENCY POWER (Y/N)		
RP-1	OUELLET	RADIANT PANEL	AS2424-310-208	BF WR 117 & 118	SUSPENDED FROM CEILING	0.310	208	1	60	N	6.8	-
RP-2	OUELLET	RADIANT PANEL	AS2448-535-208	UNIVERSAL WASHROOM 115	SUSPENDED FROM CEILING	0.535	208	1	60	N	13.6	-

NOTES:

DIFFUSER, REGISTER & GRILLE SCHEDULE

TAG	TYPE	SHAPE	SERVICE	LOCATION	SP-IN (WG)	NC LEVEL DB	MATERIAL	BASIS OF DESIGN	REMARKS
S-1	LOUVERED FACE GRILLE	RECTANGULAR	SUPPLY	WALL	0.08	25	STEEL	PRICE 610	1, 2
S-2	DUCT MOUNTED GRILLE	RECTANGULAR	SUPPLY	DUCT	0.08	25	STEEL	PRICE SDG	1, 2
S-3	MEDIUM SECURITY LOUVERED GRILLE	SQUARE	SUPPLY	WALL	0.08	25	STEEL	PRICE MSBL	1, 2
R-1	12 X 12 LAY-IN, ROUND NECK, LOUVERED FACE	SQUARE	RETURN/EXHAUST	CEILING	0.08	25	STEEL	PRICE ATG	1,2
R-2	LOUVERED FACE GRILLE	SQUARE	RETURN/EXHAUST	CEILING	0.08	25	STEEL	PRICE 80	1, 2
R-3	MEDIUM SECURITY CEILING GRILLE	SQUARE	RETURN/EXHAUST	CEILING	0.08	25	STEEL	PRICE MSRRCD	1,3
R-4	MEDIUM SECURITY CEILING GRILLE	SQUARE	RETURN/EXHAUST	CEILING	0.08	25	STEEL	PRICE MSRRP	1,2

NOTES:
1. COLOR WHITE UNLESS NOTED OTHERWISE. COORDINATE WITH ARCHITECT.
2. FRAME TYPE TO MATCH CEILING OR WALL TYPE WHERE INSTALLED.
3. PROVIDE WITH OPPOSED BLADE DAMPER.
4. PROVIDE WITH FACE ADJUSTABLE OPPOSED BLADE DAMPER.

PLUMBING - FIXTURE SCHEDULE

TAG	DESCRIPTION	PIPE CONNECTION DIAMETER (MM)				REMARKS
		DCW	DHW	SAN	VENT	
WC-1	WATER CLOSET - FLUSH VALVE	32	-	75	50	**AMERICAN STANDARD:** AFWALL MILLENIUM FLOWISE ELONGATED FLUSHOMETER TOILET. VITREOUS CHINA WITH EVERCLEAN. **FLUSH VALVE:** MOEN M-POWER AUTOMATIC EXPOSED FLUSH VALVE. MODEL 8311AC12. BRASS ANGLE STOP VALVE. CAST BRASS CONSTRUCTION WITH CHROME ELECTROPLATED FINISH. CHLORAMINES RESISTANT SEALS. 25MM INLET SUPPLY. 38MM TOP SPUD. HIGH BACK PRESSURE VACUUM BREAKER. DIVERTER SUPPORT VALVE. ADA COMPLIANT. 1.28 GPF / 4.8 LPF - WATERSENSE CERTIFIED. **TOILET SEAT:** CENTOCO 500STSCC-001. **CLOSET CARRIER:** FLOOR MOUNTED.
WC-2	WATER CLOSET - FLUSH VALVE (HANDICAP)	32	-	75	50	**AMERICAN STANDARD:** AFWALL MILLENIUM FLOWISE ELONGATED FLUSHOMETER TOILET. VITREOUS CHINA WITH EVERCLEAN. **FLUSH VALVE:** MOEN M-POWER AUTOMATIC EXPOSED FLUSH VALVE. MODEL 8311AC12. BRASS ANGLE STOP VALVE. CAST BRASS CONSTRUCTION WITH CHROME ELECTROPLATED FINISH. CHLORAMINES RESISTANT SEALS. 25MM INLET SUPPLY. 38MM TOP SPUD. HIGH BACK PRESSURE VACUUM BREAKER. DIVERTER SUPPORT VALVE. ADA COMPLIANT. 1.28 GPF / 4.8 LPF - WATERSENSE CERTIFIED. **TOILET SEAT:** CENTOCO 500STSCC-001. **CLOSET CARRIER:** FLOOR MOUNTED.
L-1	LAVATORY SINK	12	12	38	32	**AMERICAN STANDARD:** MURRO UNIVERSAL DESIGN WALL-HUNG LAVATORY WITH EVERCLEAN. **FAUCET:** NEXTGEN SELECTRONIC INTEGRATED TOUCHLESS LAVATORY FAUCET. #7758.103. SUPPLY WITH AC TRANSFORMERS. LAVATORY CARRIER.
L-2	TROUGH SINK	12	12	75	38	TROUGH SINK TO BE BY ARDEC GROUP, MONOLITH BASIN SYSTEM WITH PIPE SKIRT AND ACCESS DOOR LOCKS. WITH DYSON AIRBLADE COMBINED WASH AND DRY - WD04 SHORT, LOW VOLTAGE 247659-01. AMERICAN SPECIALTIES INC. EZFILL AUTOMATIC DECK MOUNTED SOAP DISPENSER.
SH-1	SHOWER (NON-HANDICAP)	12	12	50		**CHICAGO FAUCETS SH-PB1-00-000 COMPLETE SHOWER TRIM** - POLISHED CHROME FINISH, PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH VALVE TRIM, COLD TO HOT CYCLE, WALL MOUNTED, ROUND, 216 MM (8-1/2") Ø TRIM SIZE, LEVER HANDLE, PRESSURE BALANCING VALVE, BUILT-IN INTEGRAL CHECK STOPS, PRESSURE BALANCING VALVE CARTRIDGE, 13 MM (1/2") NOMINAL Ø COPPER SWEAT INLET, 13 MM (1/2") NOMINAL Ø COPPER SWEAT OUTLET, 138 - 862 KPA (20 - 125 PSI) OPERATING PRESSURE RANGE, 4 °C - 60 °C (40 °F - 140 °F) OPERATING TEMPERATURE RANGE, ADA COMPLIANT, ANSI/CC A117.1ASSE 1016ASME A112.1016CSA B125.16 **CHICAGO FAUCETS 621-LCP SHOWERHEAD** - WALL MOUNTED, FULL SPRAY, 1.5 GPM (5.5 LPM), SINGLE FUNCTION, 1/2 " (13 MM) Ø NPT FEMALE THREAD INLET, 25° - 30° SPRAY ANGLE, 80 PSI MAX OPERATING PRESSURE, A112.18.1, ASME CODES, CSA B125.16, WATERSENSE LISTED
SH-2	SHOWER (HANDICAP)	12	12	50		**CHICAGO FAUCETS SH-PB1-00-043 COMPLETE SHOWER TRIM** - POLISHED CHROME FINISH, PRESSURE BALANCING TUB AND SHOWER SYSTEM WITH HAND SPRAY AND VALVE TRIM OPTIONS, WITH HAND SHOWER, 5.7 LPM (1.5 GPM) FLOWRATE, 69" (1753 MM) LONG STAINLESS STEEL HOSE, HAND SPRAY WITH PAUSE CONTROL, WALL ELBOW, IN-LINE VACUUM BREAKER, COLD TO HOT CYCLE, WALL MOUNTED, ROUND TRIM, 171 MM (6-3/4") Ø TRIM SIZE, LEVER HANDLE, PRESSURE BALANCING VALVE, BUILT-IN INTEGRAL CHECK STOPS, 610 MM (24") LONG ADA GRAB BAR, WALL MOUNTED ADA GRAB BAR, PRESSURE BALANCING VALVE CARTRIDGE, 13 MM (1/2") NOMINAL Ø COPPER SWEAT INLET, 13 MM (1/2") NOMINAL Ø COPPER SWEAT OUTLET, 138 - 862 KPA (20 - 125 PSI) OPERATING PRESSURE RANGE, 4 °C - 60 °C (40 °F - 140 °F) OPERATING TEMPERATURE RANGE, ADA, ANSI ICC A117.1 ASSE 1016 ASME A112.1016 CSA B125.16
SH-3	SHOWER ASSEMBLY - OUTDOOR	12				**MOST DEPENDABLE FOUNTAINS INC - MODEL 564 SM.** SURFACE MOUNT INSTALLATION. ADA ACCESSIBLE SHOWER ON ONE SIDE WITH GRAB BARS. ONE METERED SHOWER AND ONE FOOT SPRAY ON OPPOSITE SIDE. PUSH BUTTON OPERATED.
JS-1	JANITOR SINK	25	25	75		**STERN WILLIAMS - SINK SB-300-T-35-T-40-BP** WITHOUT FAUCET LEDGE,PRECAST TERRAZZO PEARL GREY MARBLE CHIPS AND WHITE PORTLAND CEMENT, 76 MM (3") PIPE SIZE, CAST INTEGRALLY AND PROVIDES FOR A CAULKED LEAD CONNECTION NOT LESS THAN 25MM (1") DEEP TO A 76-MM (3") PIPE, FLAT STAINLESS STEEL STRAINER, WITHOUT TILUNG FLANGE, WITH STAINLESS STEEL CAP, HOSE AND WALL HOOK, MOP HANGER, SPLASH CATCHER, BOWL DIMENSION: 851 MM (33-1/2") LONG, 546 MM (21-1/2") WIDE, 254 MM (10") DEEP, OVERALL DIMENSION: 914 MM (36") LONG, 610 MM (24") WIDE, 305 MM (12") HIGH. **CHICAGO FAUCET 897-RCF** WALL-HUNG, MANUAL, TWO HANDLES, MOP SINK FAUCET, ROUGH CHROME PLATED FINISH, 194 - 213 MM (7-5/8" TO 8-3/8") ADJUSTABLE CENTERSET, ROUND WALL ESCUTCHEONS, BRASS CONSTRUCTION, LESS SUPPLY, ADJUSTABLE SUPPLY ARMS, 1/4 TURN CERAMIC CARTRIDGE, NO FLOW RESTRICTOR, THREADED HOSE END, SPOUT WITH PAIL HOOK, 146 MM (5-3/4") SPOUT REACH, 273 MM (10-3/4") HIGH, TOP BRACE, 60 MM (2-3/8") LEVER HANDLE WITH INDEXED BUTTONS, LESS DRAIN, ATMOSPHERIC VACUUM BREAKER IS NOT INTENDED FOR CONTINUOUS PRESSURE APPLICATIONS.
KS-1	KITCHEN SINK	12	12	38		**FRANKE COMMERCIAL UCD6408P-1 SINK** - DOUBLE COMPARTMENT SINK, UNDERMOUNT COMMERCIAL SINKS, WITH OVERALL DIMENSION 784 MM (30-7/8") LONG, 451 MM (17-3/4") WIDE, 203 MM (8") HIGH, CONSTRUCTED FROM 18 GAUGE TYPE 304 STAINLESS STEEL, LEFT BOWL IS 356 MM (14") LONG AND RIGHT BOWL IS 356 MM (14") LONG, LEFT BOWL IS 406 MM (16") WIDE AND RIGHT BOWL IS 406 MM (16") WIDE, LEFT BOWL IS 203 MM (8") DEEP AND RIGHT BOWL IS 203 MM (8") DEEP, POLISHED TO #4 SATIN FINISH, FACTORY APPLIED RIM SEAL, CENTER BACK WASTE LOCATION, 38 MM (1-1/2") (DN38) BRASS TAILPIECE, STANDPIPE WITH GUARD, 89 MM (3-1/2") CRUMB CUP STRAINER, UNDERCOATED TO REDUCE CONDENSATION AND RESONANCE, CODES AND COMPLIANCES: ASME A112.19.3 COMPLIANT, CSA B45.4 COMPLIANT. **CHICAGO FAUCETS 430-ABCP FAUCET** - COUNTER MOUNTED, MANUAL, SINGLE HANDLE, SINK FAUCET, POLISHED CHROME FINISH, SINGLE HOLE CENTERSET, LEAD FREE ANSI/NSF 61 COMPLIANT, ECAST® BRASS CONSTRUCTION, LESS SUPPLY, CERAMIC CARTRIDGE WITH VOLUME CONTROL, 5.7 LPM (1.5 GPM) MAXIMUM FLOWRATE, PRESSURE COMPENSATING ECONO-FLO™ NON-AERATED LAMINAR SPRAY OUTLET, TUBULAR CAST BRASS SPOUT, 229 MM (9") SPOUT REACH, 146 MM (5-3/4") HIGH, 108 MM (4-1/4") LEVER HANDLE, LESS DRAIN, 13 MM (1/2") NPSM SUPPLY INLET, INCLUDES HOT LIMIT SAFETY STOP. **LAWLER 570-96820 MIXING VALVE** - POINT OF USE AND MASTER CONTROLLED FIXTURES, THERMOSTATIC MASTER WATER MIXING CONTROL VALVE, LEAD FREE BRASS BODY CONSTRUCTION, NICKEL PLATED FINISH, 1.9 - 30 LPM (0.5 - 8 GPM) RANGE FOR FLOWRATE , TO ADJUST THE MIXED OUTLET TEMPERATURE OF THE VALVE, REMOVE THE CAP TO GAIN ACCESS TO THE ADJUSTING SPINDLE. THE SPINDLE SHOULD BE ROTATED-CLOCKWISE TO REDUCE THE TEMPERATURE, COUNTER-CLOCKWISE TO INCREASE THE TEMPERATURE UNTIL THE DESIRED SET POINT IS REACHED, 11 LPM (3 GPM) TEMPERED FLOWRATE @ 5 PSI PRESSURE DROP, THE TEMPERATURE IS ADJUSTED WITH THE HELP OF SPINDLE, 4-7/8" (124 MM) HEIGHT, ASSE 1070 APPROVED CERTIFIED TO CSA B125.3 FOR ASSE 1070 APPLICATIONS, 3/8" MNPT (9.5 MM) INLET, 95-115 °F OUTLET WATER TEMPERATURE RANGE, 3/8" MNPT (9.5 MM) OUTLET, INTERNAL CHECKS, OFFERS CHOICE OF TEMPERATURE SETTINGS FROM 95° THROUGH 115 °F., 125 PSI MAX HYDROSTATIC PRESSURE, ±20% PRESSURE VARIATION, 40-80 °F, 10 °F, 180 °F MAX, ±5 °F, PROTECTS AGAINST SCALDING AND CHILLING, 7 GPM FLOWRATE @ 45 PSI **MCGUIRE LFCK165LSK SUPPLY** - LEAD FREE, PIPE TO COMPRESION, INTEGRAL CHECK SUPPLY KIT, CHROME-PLATED FINISH, 3/8" I.P.S X 3/8" O.D, 305 MM (12") CHROME-PLATED RISERS, LOOSE KEY, FAUCET, SHALLOW WALL FLANGE **MCGUIRE 8912CB P-TRAP** - HEAVY CAST BRASS, ADJUSTABLE P-TRAP, 292 MM (11-1/2") LENGTH, WITH CLEANOUT PLUG, STEEL BOX FLANGE, NEOPRENE GASKET, SEAMLESS TUBULAR BRASS BEND, SLIPNUTS
HB-1	HOSE BIBB	20	-	-		**WATTS HY-330-K HYDRANT** - MODERATE CLIMATE WALL HYDRANT WITH NB BOX, INTEGRAL VACUUM BREAKER, CYLINDER LOCK, ALL BRONZE, CHROME-PLATED HYDRANT FACE, NICKEL BRONZE, SEAT CASTING, LOOSE KEY, 19 MM (3/4") HOSE CONNECTION, INTEGRAL VACUUM BREAKER, 19 MM (3/4") FEMALE X 25 MM (1") MALE PIPE CONNECTION, COMPLIES WITH ASSE 1019-2004, UPC/IAMPO LISTED. MAX. OPERATING PRESSURE 125 PSI.
HB-2	NON-FREEZE HOSE BIBB (EXTERIOR)	12	-	-		**WATTS - HYDRANT HY-725-K.** NON-FREEZE DUO-TEMP WALL HYDRANT WITH SS BOX, ALL BRONZE, CHROME-PLATED HYDRANT FACE, NICKEL BRONZE, SEAT CASTING, LOOSE KEY, 19 MM (3/4") HOSE CONNECTION, BRONZE WALL CASING, UNSIZED THICKNESS, INTEGRAL VACUUM BREAKER, 19 MM (3/4") FEMALE X 25 MM (1") MALE PIPE CONNECTION, COMPLIES WITH ASME B1.20.7 AND ASSE 1019-2004, UPC/IAMPO LISTED. MAX. OPERATING PRESSURE 125 PSI.
DF-1	DRINKING FOUNTAIN	20	-	75		MOST DEPENDABLE FOUNTAINS, MODEL 10890 SM
DF-2	DRINKING FOUNTAIN	20	-	75		MOST DEPENDABLE FOUNTAINS, MODEL 10155 SM

FLOOR AND ROOF DRAIN SCHEDULE

TAG	DESCRIPTION	PIPE CONNECTION DIAMETER (MM)				REMARKS
		DCW	DHW	SAN	VENT	
FD-1	FLOOR DRAIN	-	-	75		**WATTS - FLOOR DRAIN FD-100-M.** EPOXY COATED CAST IRON, FLOOR DRAIN,ADJUSTABLE SQUARE HEEL PROOF NICKEL BRONZE STRAINER. ANCHOR FLANGE, REVERSIBLE MEMBRANE CLAMP, COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, VANDAL-PROOF, TRAP PRIMER TAPPING, CERTIFICATION AND COMPLIANCES INCLUDE: ASME A112.21.1M COMPLIANT
FD-2	FUNNEL FLOOR DRAIN	-	-	75		**WATTS - FUNNEL FLOOR DRAIN FD-320-EG-6.** EPOXY COATED CAST IRON, FLOOR DRAIN,ADJUSTABLE ROUND 203 MM (8") DIAMETER TOP, 203 MM (8") DUCTILE IRON GRATE, ANCHOR FLANGE, MEMBRANE CLAMP, 102 X 229 MM (4" X 9") OPEN THROAT CAST IRON FUNNEL, COLLAR WITH WEEPHOLES, 97 CM² (15 SQ. IN.) FREE AREA, VANDAL-PROOF, CERTIFICATION AND COMPLIANCES INCLUDE: ASME A112.21.1M COMPLIANT.
FD-3	HEAVY DUTY FLOOR DRAIN	-	-	150		**WATTS - FLORR DRAIN FD-320-6-7.** EPOXY COATED CAST IRON, FLOOR DRAIN,ADJUSTABLE ROUND 203 MM (8") DIAMETER TOP, HEEL PROOF DUCTILE IRON GRATE, ANCHOR FLANGE, BODY COLLAR WITH WEEPHOLES, 116 CM² (18 SQ. IN.) FREE AREA, VANDAL-PROOF, TRAP PRIMER TAPPING, CERTIFICATION AND COMPLIANCES INCLUDE: ASME A112.21.1M COMPLIANT.
CO-1	CLEANOUTS			75		WATTS - FLOOR CLEANOUT CO-200-S. FLOOR CLEANOUT WITH SQUARE TOP. WATTS CO-200-S EPOXY COATED CAST IRON FLOOR CLEANOUT WITH 5" X 5"(127X127) SQUARE ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB (STANDARD) OUTLET.
RD-1	ROOF DRAIN	-	-	150		**WATTS-ROOF DRAIN RD-100-A-B-D-K.** LARGE AREA ROOF DRAIN, BI-LEVEL (IRMA), EPOXY COATED CAST IRON, FLASHING CLAMP, INTEGRAL GRAVEL STOP, SELF-LOCKING POLYETHYLENE DOME STRAINER, ACCUTROL FLOW RESTRICTOR (SPECIFY # 1-6 SLOTS), SUMP RECEIVER, UNDERDECK CLAMP, DUCTILE IRON DOME

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MECHANICAL SCHEDULES

Print Date	2025-04-11
Scale	NONE
Project No.	0010052.000
Drawn by	MD
Checked by	SF

M501

1. GENERAL

1.1. INTENT: THIS SPECIFICATION SHALL SERVE TO PROVIDE DIRECTION AND STANDARDS TO ENABLE THE CONTRACTOR TO SUPPLY AND INSTALL A FINISHED, FULLY FUNCTIONAL MECHANICAL SYSTEM FOR THE PROJECT, IN COMPLETE ACCORDANCE WITH CURRENT ONTARIO BUILDING CODE AND LOCAL BYLAWS. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL LABOUR, MATERIAL AND EQUIPMENT NECESSARY TO COMPLETE THE MECHANICAL WORK.

1.2. LIABILITY: ASSUME RESPONSIBILITY FOR LAYING OUT WORK AND FOR DAMAGE CAUSED TO THE OWNER OR OTHERS BY IMPROPER EXECUTION OF WORK. PROTECT FINISHED AND UNFINISHED WORK FROM DAMAGE. TAKE RESPONSIBILITY FOR CONDITION OF MATERIALS AND EQUIPMENT SUPPLIED, AND PROTECT UNTIL WORK IS COMPLETED AND ACCEPTED.

1.3. CERTIFICATES: GIVE NOTICES, OBTAIN PERMITS, AND PAY PERMIT AND INSPECTION FEES SO WORK SPECIFIED AND SHOWN MAY BE CARRIED OUT. FURNISH CERTIFICATES, IF REQUESTED, AS EVIDENCE THAT WORK CONFORMS TO LAWS AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.

1.4. CUTTING AND PATCHING: MEASURE OUT AND PROVIDE LOCATIONS FOR HOLES FOR MECHANICAL EQUIPMENT AND PROVIDE SLEEVES REQUIRED FOR THE MECHANICAL INSTALLATIONS. BE RESPONSIBLE FOR CUTTING AND PATCHING OF BUILDING STRUCTURE REQUIRED BY WORK UNLESS OTHERWISE INDICATED.

1.5. TESTING: TEST EQUIPMENT AND MATERIALS WHERE INDICATED HERE AND REQUIRED BY AUTHORITIES HAVING JURISDICTION, TO DEMONSTRATE PROPER OPERATION.

1.6. GUARANTEE: PROVIDE THE OWNER WITH A WRITTEN GUARANTEE FOR LABOUR AND MATERIAL WARRANTING SYSTEMS AND EQUIPMENT FURNISHED TO REMAIN IN SERVICEABLE CONDITION FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER.

1.7. STANDARD OF MATERIALS AND WORKMANSHIP: MAKE AND QUALITY OF MATERIALS USED ARE SUBJECT TO ACCEPTANCE BY THE CONSULTANT. REMOVE CONDEMNED MATERIALS AND INSTALL SUITABLE MATERIALS IN THEIR PLACE. MATERIALS SHALL BE NEW AND OF UNIFORM PATTERN THROUGHOUT, WHERE SPECIFICALLY IDENTIFIED IN THIS SPECIFICATION. WORKMANSHIP SHALL FOLLOW THE BEST TRADITION AND TRADESMANSHIP. EMPLOY ONLY TRADESMEN PROPERLY LICENSED FOR WORK REQUIRING TRADESMEN WITH SPECIAL SKILL.

1.8. ACCESS: ENSURE ADEQUATE MAINTENANCE ACCESS IS PROVIDED/MAINTAINED TO MANUAL BALANCING DAMPERS, SMOKE/FIRE DAMPERS, VALVES, METERS, EQUIPMENT, INCLUDING THOSE EXISTING. PROVIDE ADEQUATELY-SIZED AND FIRE-RATED (WHERE REQUIRED) ACCESS DOORS WHERE A SOLID FINISHED CEILING/WALL EXISTS. COORDINATE TYPE, COLOUR, AND INSTALLATION WITH THE GENERAL CONTRACTOR AND ARCHITECT/INTERIOR DESIGNER.

1.9. SHOP DRAWINGS: SUBMIT THREE COPIES OF SHOP DRAWINGS (FOR APPLICABLE ITEMS) FOR HVAC EQUIPMENT, BMS/DDC SYSTEM, FANS, AIR OUTLETS, FIRESTOP ASSEMBLIES, SMOKE/ FIRE DAMPERS, WATER HEATER AND PLUMBING FIXTURES TO THE CONSULTANT FOR REVIEW INCLUDING ALL PERFORMANCE DATA, PHYSICAL DIMENSIONS, ELECTRICAL DATA, OPERATING WEIGHTS, AND APPLICABLE LISTINGS.

1.10. RECORD DRAWINGS: ENSURE ONE SET OF WHITE PRINT PLANS AND SPECIFICATIONS ARE KEPT ON SITE AT ALL TIMES FOR CONSULTANT INSPECTION. INDICATE ANY CHANGES AND DEVIATIONS FROM THE CONTRACT DOCUMENTS, INCLUDING WORK BY CHANGE ORDERS AND JOB INSTRUCTIONS. THE CONTRACTOR SHALL INCLUDE A CASH ALLOWANCE OF $300 PER PLAN SHEET FOR THE CONSULTANT TO TRANSFER MARKED UP CHANGES TO CAD FILES, AND FOR PROVIDING TWO SETS OF RECORD DRAWINGS AND ELECTRONIC CAD FILES TO THE OWNER.

1.11. CLOSE-OUT DOCUMENTATION/OPERATION AND MAINTENANCE MANUALS: WITHIN TWO WEEKS OF SUBSTANTIAL COMPLETION, PROVIDE THREE COPIES OF THE FOLLOWING (WHERE APPLICABLE) IN 8-1/2” X 11” PLASTIC COATED CATALOGUE BINDERS:

1. PROJECT INFORMATION
   - PROJECT NAME, ADDRESS, AND DATE OF SUBSTANTIAL COMPLETION
   - CONTACT INFORMATION FOR GENERAL CONTRACTOR AND ALL MECHANICAL CONTRACTORS AND SUBTRADES
2. LETTERS OF ASSURANCE AND WARRANTY DOCUMENTS
   - COPIES OF ALL APPLICABLE WORK PERMITS
   - COPY OF CONTRACTOR'S (AND MECHANICAL SUB-CONTRACTOR'S IF APPLICABLE) 1-YEAR WARRANTY LETTER
   - WARRANTY FORMS FOR ALL APPLICABLE MECHANICAL EQUIPMENT
   - LETTER FROM FIRESTOP CONTRACTOR CERTIFYING FIRESTOP IS COMPLETE AND INSTALLED ACCORDING TO MANUFACTURER'S LISTINGS.
   - PLUMBING FINAL INSPECTION CERTIFICATE. (IF REQUIRED)
   - NATURAL GAS INSPECTION REPORT. (IF REQUIRED)
   - BACKFLOW PREVENTER TEST CERTIFICATES
3. TESTING, ADJUSTING, AND BALANCING (TAB) DOCUMENTATION
   - WATER AND AIR BALANCING REPORT
   - PIPING TEST FORMS
   - CHEMICAL TREATMENT REPORT
   - REFRIGERATION STARTUP CHECKLISTS
4. HVAC SYSTEM
   - BRIEF DESCRIPTION OF HVAC SYSTEM COMPONENTS AND OPERATION
   - OPERATING AND MAINTENANCE MANUALS FOR NEW EQUIPMENT
   - SEQUENCES OF OPERATION (CONTROLS SHOP DRAWINGS)
5. FINAL SHOP DRAWINGS

1.1. ADDITIONAL DOCUMENTATION: CONTRACTOR SHALL SUPPLY ALL DOCUMENTATION AND INFORMATION WHICH IS REQUIRED FOR APPLICATION TO INCENTIVE AND REBATE PROGRAMS.

1.2. FIELD REVIEW: THE MECHANICAL CONTRACTOR SHALL NOTIFY THE CONSULTANT, IN WRITING AND WITHIN 48 HOURS, OF START-UP OF WORK, FOR 50% COMPLETION AND 100% COMPLETION FOR FIELD REVIEW SCHEDULING PURPOSES.

2. IDENTIFICATION

2.1. PROVIDE IDENTIFICATION SYSTEMS FOR MATERIALS USED IN MECHANICAL SYSTEMS WHICH REQUIRE CONTROL BY WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) ISSUED BY OCCUPATIONAL SAFETY AND HEALTH AUTHORITIES.

2.2. TAG AUTOMATIC CONTROLS, ELECTRIC SWITCHES, INSTRUMENTS AND RELAYS WITH LAMICOID LABELS WITH 1” LETTERS AND KEY WITH CONTROL SCHEMATICS. PROVIDE LAMICOID LABELS WITH 1” LETTERS ON EQUIPMENT AND MOTOR STARTERS.

2.3. ON SERVICES THAT ARE EXPOSED, WITHIN MECHANICAL/SERVICE ROOMS, OR LOCATED ABOVE REMOVABLE CEILING PANELS, PROVIDE PIPE/DUCTWORK IDENTIFICATION AND FLOW DIRECTION ARROW FOR EVERY 6 METERS (20 FEET) OF STRAIGHT RUN AND AT EVERY CHANGE OF DIRECTION.

2.4. ALL PIPE, DUCT AND OTHER SYSTEMS (DDC) IDENTIFICATION SHALL ALSO BE COORDINATED WITH THE LANDLORD'S REQUIREMENTS.

3. BALANCING

3.1. QUALITY ASSURANCE

1. ACCEPTABLE BALANCING FIRMS: AIR BALANCE GROUP. AIR AUDIT, CLARK, AERODYNAMICS, PRO-AIR, DYNAMIC FLOW BALANCING, AIR VELOCITIES CONTROL, FLOWSET, DESIGNTEST AND BALANCE, VPG, VITAL CANADA, TECHNICAL AIR BALANCING
2. PROCEDURES SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF AABC'S NATIONAL STANDARDS FOR FIELD MEASUREMENT AND INSTRUMENTATION, TOTAL SYSTEM BALANCE.

3.1. INSTRUMENTS FOR TESTING AND BALANCING OF AIR SYSTEMS SHALL HAVE BEEN CALIBRATED WITHIN SIX MONTHS AND VERIFIED FOR ACCURACY BEFORE START OF WORK.

3.2. PROCEDURES

1. DATA SHEETS REQUIRED ARE AS FOLLOWS: AIR MOVING EQUIPMENT TEST SHEET, EXHAUST FAN TEST SHEET, CIRCULATION WATER PUMP DATA SHEET, HYDRONIC DISTRIBUTION / TERMINAL TEST SHEET
2. BALANCE TO MAXIMUM FLOW DEVIATION FROM SPECIFIED VALUES OF 10% AT TERMINAL DEVICE AND 5% AT EQUIPMENT OR MEAN SOUND LEVEL DEVIATION OF 20 DB.
3. PERMANENTLY MARK SETTING ON VALVES, SPLITTERS, DAMPERS AND OTHER ADJUSTMENT DEVICES. TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED OR SUCH DISRUPTION HAS BEEN RECTIFIED.
4. AT FINAL FIELD REVIEW, RE-CHECK RANDOM SELECTIONS OF DATA RECORDED IN REPORT. RECHECK POINTS OR AREAS AS SELECTED AND WITNESSED BY CONSULTANT AND/OR LANDLORD.

3.1. ACCEPTANCE

1. MECHANICAL SYSTEMS SHALL NOT BE CONSIDERED READY FOR FINAL FIELD REVIEW UNTIL BALANCING RESULTS ARE ACCEPTABLE TO CONSULTANT. IF FOUND THAT SPECIFIED FLOWS CANNOT BE ACHIEVED ON PORTIONS OF SYSTEM, ACTUAL CONDITIONS SHALL BE REPORTED TO CONSULTANT FOR CONSIDERATION OF CORRECTIVE ACTION BEFORE CONTINUING BALANCING PROCEDURE. IF REPORT REJECTED, SYSTEMS SHALL BE RE-BALANCED AND NEW CERTIFIED REPORT SUBMITTED AT NO ADDITIONAL COST TO THE CONTRACT.

3.1. BALANCING REPORT

1. SUBMIT DRAFT COPIES OF REPORTS, COMPLETE WITH FIELD NOTES, BEFORE FINAL ACCEPTANCE OF PROJECT. PROVIDE THREE COPIES OF FINAL REPORT FOR INCLUSION IN OPERATING AND MAINTENANCE MANUALS.
2. REPORT SHALL BE INDEXED AS FOLLOWS:
   - SECTION 1 SYSTEM DATA (DESIGNED, INSTALLED AND RECORDED)
   - AIR MOVING EQUIPMENT (FANS)
   - AIR HEATING AND COOLING EQUIPMENT (COILS)
   - AIR INLETS/OUTLETS
   - CIRCULATION WATER PUMP DATA SHEET
   - HYDRONIC DISTRIBUTION / TERMINAL TEST SHEET
   - SECTION 2 DRAWINGS
   - BALANCING DRAWINGS

3.1. AIR SYSTEM PROCEDURES

1. MAKE TESTS WITH SUPPLY, RETURN AND EXHAUST SYSTEMS OPERATING AND DOORS AND WINDOWS CLOSED OR IN NORMAL OPERATION CONDITION. TEST AND ADJUST BLOWER RPM TO DESIGN REQUIREMENTS. TEST AND RECORD MOTOR FULL LOAD AMPS.
2. MAKE AIR QUANTITY MEASUREMENTS IN DUCTS BY PITOT TUBE TRAVERSE OF ENTIRE CROSS-SECTIONAL AREA. TAKE MINIMUM OF 16 READINGS.
3. ADJUST MAIN SUPPLY AND RETURN DUCTS TO DESIGN FLOW RATES. ADJUST ZONES TO DESIGN, SUPPLY AND RETURN FLOW RATES. TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO WITHIN 10% OF DESIGN REQUIREMENTS. ADJUST DIFFUSERS, GRILLES AND REGISTERS TO MINIMIZE DRAFTS.
4. USE VOLUME CONTROL DEVICES TO REGULATE AIR QUANTITIES ONLY TO EXTENT THAT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS. EFFECT VOLUME CONTROL BY DUCT INTERNAL DEVICES SUCH AS DAMPERS AND SPLITTERS.
5. PROVIDE SYSTEM SCHEMATIC WITH REQUIRED AND ACTUAL AIR FLOW RATES AT EACH OUTLET OR INLET. IDENTIFY EACH DIFFUSER, GRILLE AND REGISTER AS TO LOCATION AND AREA.
6. RECORD INSTALLED FAN DRIVE ASSEMBLIES, FAN SHEAVES, MOTOR SHEAVES AND BELTS. RECORD EACH INSTALLED MOTOR MANUFACTURER AND FINAL MOTOR AMPERAGE.
7. COMPLETE BALANCING TO ACHIEVE POSITIVE BUILDING PRESSURE UNLESS OTHERWISE INSTRUCTED.
8. POSITIVE PRESSURE RELATIVE TO OUTSIDE PRESSURE OF 0.04"W.G. MINIMUM, AND 0.07"W.G. MAXIMUM SHALL BE ACHIEVED, MEASURED WITH NEGLIGIBLE OUTSIDE WIND VELOCITY.

1. TESTING

1.1. TEST EQUIPMENT AND MATERIAL WHERE SPECIFIED OR REQUIRED BY AUTHORITY HAVING JURISDICTION. TEST IN ACCORDANCE WITH APPLICABLE PORTIONS OF ASME, ASHRAE, SMACNA, NFPA, CSA AND OTHER RECOGNIZED TEST STANDARDS/CODES.

1.2. PROVIDE NOTICE OF TESTS TO CONSULTANT. ON COMPLETION OF INSTALLATION, PROVIDE CERTIFICATION OF TESTS WITH REQUIRED DETAIL. ITEMIZE TESTS AS TO TIME PERFORMED AND PERSONNEL RESPONSIBLE. INCLUDE COPY OF FIELD DATA IN OPERATING AND MAINTENANCE MANUALS.

1.3. PRESSURE TESTS

1. PIPING, FIXTURES OR EQUIPMENT SHALL NOT BE CONCEALED UNTIL INSPECTED AND APPROVED BY CONSULTANT. CARRY OUT HYDRAULIC TESTS FOR 8 HOURS. MAINTAIN PRESSURE. WHERE LEAKAGE OCCURS, REPAIR AND RE-TEST.
2. DOMESTIC WATER PIPING: TEST TO 1-1/2 TIMES MAXIMUM WORKING PRESSURE OR 150 PSI WATER PRESSURE MEASURED AT SYSTEM LOW POINT.
3. DRAINAGE SYSTEM: TEST BY FILLING WITH WATER TO PRODUCE WATER PRESSURE OF 1.5 METERS (5 FEET) WATER COLUMN MINIMUM AND 7.5 METERS (25 FEET) WATER COLUMN MAXIMUM. CHECK FOR PROPER GRADE AND OBSTRUCTION BY BALL TEST.
4. LOW PRESSURE DUCTS: TEST FOR TIGHTNESS SUCH THAT LEAKAGE IS INAUDIBLE AND NOT DETECTABLE BY FEEL.
5. SHOULD TESTS INDICATE DEFECTIVE WORK OR VARIANCE WITH SPECIFIED REQUIREMENTS, CORRECT DEFECTS. CORRECT LEAKS BY RE-MAKING JOINTS IN SCREWED FITTINGS, CUTTING OUT AND RE-WELDING WELDED JOINTS AND RE-MAKING JOINTS IN COPPER LINES. DO NOT CAULK.

4.1. PERFORMANCE TESTS

1. LUBRICATE BEARINGS, ADJUST AND/OR REPLACE AND SET DIRECT AND "V"-BELT DRIVES FOR PROPER ALIGNMENT AND TENSION.
2. CALIBRATE AND ADJUST THERMOSTATS, LINKAGES AND DAMPERS. OPERATE AND TEST MOTORS FOR CORRECT WIRING AND SEQUENCES. CHECK OVERLOAD HEATERS IN MOTOR STARTERS. FASTEN LOOSE AND RATTLING PIECES OF EQUIPMENT TO ENSURE QUIET OPERATION.

5. VIBRATION ISOLATION

5.1. PROVIDE VIBRATION ISOLATORS SYSTEMS MEETING REQUIREMENTS OF AUTHORITY HAVING JURISDICTION.

5.2. RESILIENTLY FASTEN ALL MECHANICAL EQUIPMENT TO STRUCTURE INCLUDING (BUT NOT LIMITED TO) HEAT RECOVERY VENTILATORS, FANS, AIR HANDLING UNITS, SPLIT SYSTEM OUTDOOR UNITS, DOMESTIC HOT WATER TANKS.

6. FIRESTOPPING

6.1. WORK INCLUDED: FURNISH LABOUR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY TO PROVIDE FIRESTOPPING AND SMOKE SEALS AROUND MECHANICAL SERVICE PIPING AND DUCT PENETRATIONS THROUGH FIRE RATED WALL AND FLOOR ASSEMBLIES TO CSA STANDARD CAN4-S115-M85 AND AUTHORITIES HAVING JURISDICTION.

6.2. ACCEPTABLE FIRESTOPPING SYSTEMS FOR VERTICAL PENETRATIONS: 3M FIRE BARRIER PENETRATION SEALING SYSTEM, BIO-FIRE PROTECTION LTD. FIRESTOPPING AND SMOKE SEALS.

6.3. LOCATION AND EXTENT OF FIRE SEPARATIONS SHALL BE CONFIRMED WITH ARCHITECTURAL DRAWINGS.

7. INSULATION

7.1. MATERIALS AND APPLICATION TEMPERATURES SHALL BE AS RECOMMENDED BY ADHESIVE, COATING OR SEALER MANUFACTURER. MAKE GOOD SEPARATIONS OF JOINTS OR CRACKING OR INSULATION DUE TO THERMAL MOVEMENT OR POOR WORKMANSHIP. COMPOSITE FIRE AND SMOKE HAZARD RATINGS FOR ADHESIVES, INSULATION, COATINGS AND JACKETS SHALL NOT EXCEED 25 FOR FLAME SPREAD AND 50 FOR SMOKE DEVELOPED OR OTHERWISE AS REQUIRED BY CODE. USE ONLY ULC LISTED OR TESTED COVERING MATERIALS.

7.2. PIPING INSULATION THICKNESS:

1. DOMESTIC COLD WATER, ALL SIZES = 25mm (1”) THICK
2. DOMESTIC HOT WATER AND RECIRC, PIPE SIZE <40mm (1-1/2”)ø = 12mm (1/2”) THICK
3. DOMESTIC HOT WATER AND RECIRC, PIPE SIZE 40mm (1-1/2”)ø AND UP = 12mm (1/2”) THICK

7.1. PIPING INSULATION FINISHES:

1. EXPOSED: 15 MIL PVC JACKET WITH SOLVENT WELDS (INCLUDES WITHIN MECHANICAL ROOMS AND ABOVE CLOUD CEILINGS)
2. CONCEALED: ALL SERVICE JACKET WITH INTEGRAL VAPOUR BARRIER.

7.1. DUCTWORK AND PLENUMS INSULATION THICKNESS:

1. SUPPLY AIR DUCTS AND PLENUMS ABOVE FINISHED CEILINGS = 25mm (1”)THICK (UP TO FLEXIBLE DUCT CONNECTION OR 1.5 METERS (5') FROM DIFFUSER)
2. ACOUSTIC DUCT LINERS AS INDICATED BY HATCHING = 25mm (1”) THICK
3. PLENUMS BELOW ROOF MOUNTED FANS (ACOUSTICAL LINING) =25mm (1”) THICK
4. OUTDOOR AIR DUCT IN HEATED SPACE = 50mm (2”) THICK

7.1. DUCTWORK AND PLENUMS INSULATION FINISHES:

1. FACTORY FINISHED WITH NO FURTHER FINISH REQUIRED. RAW EDGE OF INSULATION SHALL NOT BE ALLOWED TO BE EXPOSED IN CEILING PLENUM/SPACE.

7.1. FOR ANY SERVICES, TEMPERATURES, OR SIZES NOT REFERENCED ABOVE, INSULATION THICKNESS SHALL BE PROVIDED ACCORDING TO ASHRAE/IES STANDARD 90.1-2010 (TABLE 6.8.2 MINIMUM DUCT INSULATION, TABLE 6.8.3 MINIMUM PIPE INSULATION THICKNESS).

7.2. VAPOUR BARRIER SHALL BE CONTINUOUS FOR ALL “COLD” SERVICES INCLUDING DOMESTIC COLD WATER AND CHILLED WATER. PROVIDE RIGID BLOCKING AND OVERSIZED PIPE HANGERS/SUPPORTS FOR THESE SERVICES. PENETRATIONS THROUGH WALLS SHALL HAVE CONTINUOUS INSULATION.

7.3. REFRIGERATION PIPING: REFER TO REFRIGERATION SECTION.

8. PLUMBING

8.1. PROVIDE ALL NECESSARY PIPING MATERIAL AND LABOUR FOR THE SYSTEMS AS SHOWN ON THE DRAWINGS. PIPING AND FITTINGS SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE CODES OR GOVERNING REGULATIONS.

8.2. PIPE AND FITTINGS

1. SANITARY DRAINAGE WASTE VENT (DWV) BELOW GRADE
   - ABS OR DWV PVC
2. SANITARY DRAINAGE WASTE VENT (DWV) ABOVE GRADE
   - UP TO 65mm (2-1/2”)ø: DWV COPPER WITH WROUGHT OR CAST BRASS FITTINGS AND 50-50 SOLDER
   - ALL SIZES: CAST IRON WITH S.S. MECHANICAL JOINT COUPLINGS
3. DOMESTIC WATER ABOVE GRADE
   - ALL SIZES: CERTIFIED TYPE “L” OR “K” HARD COPPER WITH SILVABRITE 100 LEAD-FREE SOLDER
   - ALL SIZES: VIEGA PRO-PRESS (CONTRACTOR MUST CONFIRM CERTIFICATION BY MANUFACTURER AND MINIMUM 5 YEARS OF EXPERIENCE)
4. CONDENSATE DRAINS
   - FROM COOLING COILS / ERV: DWV COPPER, IPEX SYSTEM 15 DWV PVC, (COMBUSTIBLE BUILDINGS ONLY: PVC PIPE OR PE TUBE)

8.1. PIPE SUPPORTS: ALL “COLD” SERVICES INCLUDING DOMESTIC COLD WATER, AND IRRIGATION PIPING SHALL USE OVERSIZED PIPE HANGERS TO PERMIT CONTINUOUS INSULATION AND VAPOUR BARRIER TO BE MAINTAINED. PROVIDE RIGID INSULATION BLOCKING AND METAL INSULATION SHIELDS BETWEEN PIPE AND HANGER OR RISER CLAMPS.

8.2. VALVES

1. PROVIDE VALVES OF SAME MANUFACTURER THROUGHOUT WHERE POSSIBLE. VALVES ON DOMESTIC COLD, HOT AND RECIRCULATION WATER SERVICE SHALL BE RATED AT 125 PSI.
2. BACK FLOW PREVENTER ASSEMBLIES: PROVIDE ULC LISTED BACKFLOW PREVENTERS AS SHOWN ON DRAWINGS AND/OR AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION.
3. PROVIDE VACUUM BREAKER ON DOMESTIC WATER SUPPLY TO COMMERCIAL DISHWASHERS, JANITOR SINKS AND OTHER REQUIRED FIXTURES AS NOTED IN THE FIXTURE SCHEDULE.
4. PROVIDE AIR GAP FITTING ON DRAIN FROM REQUIRED FIXTURES. EQUAL TO WATTS 900 AG.
5. TRAP SEAL PRIMERS: PROVIDE PRIMING DEVICE AND PIPING TO NEAREST ACCEPTABLE FIXTURE SO THAT DEVICE WILL INTRODUCE REGULATED AMOUNT OF WATER INTO TRAP. EQUAL TO WATTS 200.

8.1. CLEAN-OUTS AND ACCESS COVERS: INSTALL ACCESSIBLE CLEAN-OUTS AT TRAPS, WHERE REQUIRED BY CODE AND AS INDICATED ON DRAWINGS. CLEAN-OUT COVERS SHALL HAVE DEPRESSED CENTRE TO ACCEPT FLOOR FINISH OR BE SELECTED TO SUIT TRAFFIC LOADING REQUIREMENTS, WHERE APPLICABLE. EQUAL TO ZURN ZN-1508. CLEAN-OUTS ON SUB-SURFACE DRAINAGE SYSTEM EXTENSIONS SHALL BE ZURN Z-1500 (OR EQUAL) IN UNFINISHED CONCRETE, ZURN Z-1440 (OR EQUAL) ENCASED IN 400MM X 400MM X 100MM (16" X 16" X 4") THICK CONCRETE PAD IN SOFT LANDSCAPING AND ZURN Z-1502 (OR EQUAL) IN FINISHED CONCRETE OR PAVERS.

8.2. DRAINS: PROVIDE DRAINS AS SHOWN ON DRAWINGS. DRAINS SHALL BE 75mm (3") UNLESS NOTED OTHERWISE. REVIEW LOCATION OF DRAINS ON ARCHITECTURAL DRAWINGS AND CONFIRM WITH CONSULTANT THAT DRAINS WILL BE AT LOW POINTS ON FLOOR. IMPROPERLY LOCATED DRAINS SHALL BE RELOCATED AT NO COST TO OWNER.

8.3. PLUMBING FIXTURES AND TRIM

1. PROVIDE NEW FIXTURES OF ONE MANUFACTURER AND OF SAME COLOUR, CSA APPROVED, FREE FROM DEFECTS WITH CLEAR, SMOOTH AND BRIGHT FINISH. PROVIDE CSA APPROVED PLUMBING BRASS WITH METAL WORK HEAVY CHROMIUM PLATED AND PRODUCT OF ONE MANUFACTURER.
2. PROVIDE FLEXIBLE ANGLE TYPE HOT AND COLD WATER SUPPLIES WITH SCREWDRIVER STOP, HEXAGONAL REDUCER AND ESCUTCHEON. PROVIDE HEAVY CHROMIUM PLATING WHERE EXPOSED.
3. REVIEW MILLWORK DRAWINGS AND ADVISE CONSULTANT OF DISCREPANCIES BEFORE ORDERING FIXTURES. REVIEW ARCHITECTURAL DRAWING TO CHECK PLUMBING FIXTURE SPECIFICATION PRIOR TO PREPARING SHOP DRAWINGS.
4. INSTALL EACH FIXTURE WITH ITS OWN TRAP, EASILY REMOVABLE FOR SERVICING AND CLEANING. AT COMPLETION, THOROUGHLY CLEAN PLUMBING FIXTURES AND EQUIPMENT.
5. INSTALL WALL MOUNTED FIXTURES WITH APPROVED WALL CARRIERS, MODEL TO SUIT INSTALLATION. WHERE FIXTURES OR TRIM COME IN CONTACT WITH WALL AND/OR FLOOR, MAKE JOINT WATERTIGHT WITH WHITE SILICONE BASE NON-HARDENING CAULKING COMPOUND, FINISHED IN NEAT MANNER. ATTACH FLOOR MOUNTED WATER CLOSETS TO FLOOR WITH LAG SCREWS. LEAD FLASHING SHALL NOT HOLD CLOSET IN PLACE. PROVIDE FIXED COVER ON HANDICAPPED WATER CLOSET TANK.

8.1. EXECUTION

1. NO PIPE SHALL BE INSTALLED IN ANY PART OF WALL WHERE TEMPERATURE IS LESS THAN 5°C UNDER WINTER DESIGN CONDITIONS EXCEPT WHERE PIPING HAS BEEN INSTALLED FOR WINTER SHUTDOWN WITH BLOWOUT CONNECTIONS.
2. UPON COMPLETION, WATER PIPING SYSTEMS SHALL BE FLUSHED WITH WATER BEFORE INSTALLATION OF FIXTURES IN ORDER TO REMOVE ANY FOREIGN MATERIAL IN PIPING. PLUMBING FIXTURES AND EQUIPMENT SHALL BE THOROUGHLY CLEANED AND LEFT IN GOOD OPERATING CONDITION.
3. GRADE DRAINAGE LINES MINIMUM 2%, PIPING 100MM (4") AND LARGER MAY BE GRADED AT 1% SLOPE. PLUG OR CAP PIPE AND FITTINGS TO KEEP OUT DEBRIS DURING CONSTRUCTION. LAY PIPE IN PROPER COMPACTED BEDDING MATERIAL (SAND INSIDE BUILDING, CLEAN GRAVEL OUTSIDE OF BUILDING) ; DO NOT LAY PIPE WHEN WATER IS PRESENT IN TRENCH. PROVIDE 1,500 PSI CONCRETE FOR BURIED LINES WITHIN 45 DEG. OF FOOTING.
4. GRADE VENTS SO CONDENSATION WILL NOT FORM TRAP.
5. WHEREVER DISSIMILAR METALS ARE JOINED OR SUPPORTED, PIPING SHALL HAVE NON-CONDUCTING TYPE CONNECTIONS OR HANGERS TO PREVENT GALVANIC CORROSION. BRASS ADAPTERS AND VALVES ARE ACCEPTABLE FOR PIPE CONNECTIONS.
6. DOMESTIC HOT WATER HEATERS: PROVIDE AS SPECIFIED; ENSURE GOOD ACCESS TO HEATERS FOR SERVICING. PIPE RELIEF OUTLET FULLY TO DRAIN.
7. WATER SPECIALTIES: PROVIDE BACK FLOW PREVENTERS AS SPECIFIED AND AS REQUIRED BY AUTHORITIES. PROVIDE TRAP PRIMERS TO ALL FLOOR DRAINS.

9. VENTILATION

9.1. DUCTWORK EXPOSED:

1. DUCTWORK IN EXPOSED SPACES SHALL BE NAD KLIMA MODEL RDD.
2. THE HIGH INDUCTION DUCT DIFFUSER SHALL BE MADE OF 22 GA BRUSHED STEEL FOR DUCTS INFERIOR TO 508 MM IN DIAMETER, AND 20 GA FOR DUCTS WITH DIAMETER SUPERIOR OR EQUAL TO 508MM.
3. THE DUCT DIFFUSER SHALL BE GROOVED AT EACH END AND FITTED WITH A PVC GASKET TO INSURE A TIGHT SEAL BETWEEN SECTIONS.THE SECTIONS SHALL BE ASSEMBLED USING UNION SLEEVES.
4. STEEL REININFORCEMENTS SHALL BE HAVE TO BE INSTALLED INSIDE DUCTS OF MORE THAN 433 MM (17 INCHES) IN DIAMETER IN ORDER TO MAINTAIN IT'S SHAPE.
5. THE DUCT DIFFUSER SHALL BE PAINTED WITH A TGIC FREE POLYESTER POWDER COAT. IT SHALL HAVE A SMOOTH SURFACE FOR EASY CLEANING. THE COLOUR SHALL BE CHOSEN BY THE ARCHITECT. THE PAINT OF THE DIFFUSER SHALL BE GUARANTEED AGAINST PEELING FOR A MINIMUM PERIOD OF 5 YEARS.
6. THE PATTERN FOR THE HOLES SHALL BE DETERMINED WITH THE HELP OF A COMPUTER PROGRAM.
7. THE BURR FREE HOLES SHALL BE MADE WITH A LASER CUTTER.
8. WHEN REQUIRED, THE DUCT DIFFUSER SHALL BE EQUIPED WITH BALANCING PERFORATED DAMPER WITH A SELF BLOCKING MECHANISM ALLOWING FOR AIR OUTPUT OF BETWEEN 25% TO 100%.
9. THE UNION SLEEVES SHALL NOT EXCEED THE DIMENSIONS OF THE DUCT BY MORE THAN 3 MM, AND WILL BE ROUNDED TO FACILITATE CLEANING.
10. THE DUCT SHALL HAVE AS SMOOTH AS POSSIBLE SURFACE TO MAINTAIN AN ARCHITECTURAL APPEARANCE.

9.2. CONCEALED DUCTWORK:

1. DUCTWORK ABOVE CEILINGS OR CONCEALED SHALL BE GALVANIZED STEEL. FABRICATED IN ACCORDANCE WITH RECENT SMACNA DUCT MANUALS AND ASHRAE HANDBOOKS. DUCTWORK SHALL MEET THE REQUIREMENTS OF NFPA 90A AND 91 AND CONFORM TO ALL APPLICABLE CODES.
2. PRIOR TO FABRICATION OF DUCTWORK, CHECK ALL CEILING SPACE AND HEIGHTS FOR CONFLICTS WITH OTHER TRADES.
3. THE MINIMUM SHEET METAL THICKNESS FOR LOW PRESSURE DUCTS, INCLUDING FITTINGS, ACCESS DOORS AND OTHER ACCESSORIES, SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE".
4. DUCT SIZES ON DRAWINGS INDICATE INSIDE CLEAR DIMENSIONS. ADJUST ACTUAL SHEET METAL DIMENSIONS TO ACCOMMODATE ACOUSTICALLY LINED OR INTERNALLY INSULATED DUCTS.
5. ALL TRANSVERSE DUCT JOINTS SHALL BE SEALED (CLASS C SMACNA) WITH DUCT SEALANT. FLEXIBLE DUCTWORK SHALL BE EQUAL TO THERMAFLEX TYPE ST OR E.H. PRICE MK-10.
6. CONNECT DIFFUSERS TO DUCTS WITH 1.5 METER (5'-0") MAXIMUM LENGTH OF FLEXIBLE DUCT. HOLD IN PLACE WITH CAULKING COMPOUND AND STRAP OR CLAMP. FLEXIBLE DUCTWORK SHALL NOT FORM ANY DIPS, KINKS OR LOOPS.
7. PROVIDE RETURN AIR OPENINGS AND/OR INSULATED SOUND TRAPS WHERE INDICATED.
8. BALANCE DAMPERS SHALL BE LOCKING QUADRANT TYPE ONLY - PIN-TYPE BALANCING DAMPERS ARE NOT ACCEPTABLE.

9.2 AIR OUTLETS: PROVIDE AIR OUTLETS AS SPECIFIED ON THE DRAWINGS.

9.3 ENTHALPY RECOVERY VENTILATORS (ERV):

1. ACCEPTABLE MANUFACTURERS: RENEWAIRE, NU-AIR, ALDES, LIFEBREATH, VANEE, LOSSNAY (MITS)
2. ECM BLOWER MOTORS RATED FOR CONTINUOUS OPERATION (PSC MOTORS NOT ACCEPTABLE), DRAIN PAN AND CONDENSATE DRAIN CONNECTION, AUTOMATIC FAN CYCLED DEFROST, INTEGRATED BACKDRAFT DAMPERS. UNIT SHALL INCLUDE OPTION FOR FAN-COIL INTERLOCK AND DUAL-SPEED SWITCH OPERATION.
3. POLY HEAT EXCHANGER CORE SHALL BE WASHABLE AND REMOVABLE WITH 10 YEAR WARRANTY.

9.1. UTILITY EXHAUST FANS: PROVIDE FANS AS SPECIFIED ON THE DRAWINGS. FANS TO BE AMCA RATED WITH NON-OVERLOADING POWER CHARACTERISTIC, STABLE PRESSURE CURVE AND SELF ALIGNING BEARINGS.

9.2. THE AIR HVAC SYSTEM SHALL OPERATE FOR A MINIMUM OF 48 CONSECUTIVE HOURS PRIOR TO TURNOVER OF THE EQUIPMENT.

9.3. ON COMPLETION OF CONSTRUCTION, INCLUDE REPLACEMENT OF FILTERS FOR ALL HVAC SERVING THE SPACE.

9.4. DUCT CLEANING: THE CONTRACTOR SHALL PROTECT ALL EQUIPMENT AND OPEN- ENDED DUCTS THROUGHOUT CONSTRUCTION. UPON COMPLETION, DUCT CLEANLINESS WILL BE REVIEWED BY CONSULTANT ON SITE. IF DUCTWORK CLEANLINESS IS NOT TO THE CONSULTANT'S SATISFACTION, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENGAGING A PROFESSIONAL DUCT CLEANING CONTRACTOR TO POWER CLEAN ALL DUCTWORK WITHIN THE SPACE, AT NO ADDITIONAL COST TO THE OWNER.

10. HEAT PUMP AND SPLIT-TYPE DIRECT EXPANSION COOLING SYSTEMS

10.1. GENERAL

1. PROVIDE FOR COMPLETE AND OPERATIONAL SPLIT TYPE HEAT PUMP/AIR CONDITIONING SYSTEMS AS INDICATED ON DRAWINGS AND EQUIPMENT SCHEDULES. COMPLY WITH APPLICABLE CODES, LAWS AND REGULATIONS. CONFORM TO CSA-B52, CODE FOR MECHANICAL REFRIGERATION AND CSA-B131.5, CODE FOR REFRIGERANT PIPING. MATCH OUTDOOR AND INDOOR UNITS WITH OPERATING CONTROLS, ELECTRONIC DIGITAL CONTROLS AND COMMUNICATION SYSTEM BY ONE MANUFACTURER. DO NOT MIX MANUFACTURERS OF INDOOR AND OUTDOOR UNITS. PROVIDE PROPER OPERATION OF SAFETY CONTROLS AND AUTOMATIC CONTROLS NOT PROVIDED BY OTHERS.
2. WARRANTY: EXTENDED 5-YEAR PARTS-ONLY WARRANTY ON ALL COMPRESSORS.
3. “DESIGN-BUILD” DELIVERY OF REFRIGERANT PIPING SYSTEMS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING SITE CONDITIONS, COORDINATING WITH WORK BY OTHER TRADES, AND SIZING PIPING AND PROPOSING ROUTING THROUGH THE NEW PORTIONS OF THE BUILDING TO SUIT EQUIPMENT LOCATIONS SHOWN ON MECHANICAL PLANS IN ACCORDANCE WITH RECOMMENDATIONS AND LIMITATIONS ADVISED BY THE EQUIPMENT MANUFACTURER.

10.1. PRODUCTS

1. ACCEPTABLE MANUFACTURERS: ACCEPTABLE MANUFACTURERS: DAIKIN, LG, MITSUBISHI
2. REFRIGERANT: R410A.
3. ALL EQUIPMENT SHALL COMPLY WITH THE MINIMUM EFFICIENCY REQUIREMENTS OF ASHRAE 90.1-2010 FOR THE APPLICABLE EQUIPMENT TYPE AND CAPACITY RANGES. PERFORMANCE SHALL BE RATED IN ACCORDANCE WITH AHRI STANDARDS WITH RESULTS PUBLISHED FOR PUBLIC REVIEW. ALL EQUIPMENT SHALL BE FACTORY ASSEMBLED, WIRED AND RUN TESTED. INDOOR UNIT AND REFRIGERANT PIPES SHALL BE CHARGED WITH DEHYDRATED NITROGEN GAS BEFORE SHIPMENT FROM THE FACTORY.
4. REFRIGERANT PIPING AND ACCESSORIES
   - PIPING SHALL BE BRIGHT ANNEALED REFRIGERANT GRADE ACR COPPER, MANUFACTURED TO ASME STANDARDS.
   - MAKE JOINTS WITH BRAZED COPPER-TO-COPPER FITTINGS. DO NO USE CAST FITTINGS.
   - SHUT-OFF VALVES SHALL BE REFRIGERANT GRADE ANGLE, GLOBE AND BALL TYPE.
   - SILVER BRAZED JOINTS USING COPPER-PHOSPHOROUS ALLOY WITH MELTING POINT BETWEEN 1,112°F (600°C) AND 1,472°F (800°C).
   - PROVIDE SAFETY VALVES SIZED TO CODE.
   - PROVIDE SERVICE VALVES ON SUCTION AND DISCHARGE OF COMPRESSORS.
5. INDOOR UNITS:
   - PROVIDE UNITS SHALL OF THE CONFIGURATION, AIRFLOW CAPACITY, AND STATIC PRESSURE SHOWN ON DRAWINGS.
   - INDOOR COILS SHALL BE NONFERROUS CONSTRUCTION, COPPER SEAMLESS TUBING FORCE FITTED TO ALUMINUM CONTINUOUS FLAT PLATE FINS. TUBE JOINTS SHALL BE BRAZED WITH PHOS-COPPER OR SILVER ALLOY, WITH HYDROPHILIC COATING. COILS SHALL BE FACTORY INSTALLED IN UNIT.
   - CONDENSATE PAN. INCLUDE INTEGRAL CONDENSATE PUMP CAPABLE OF 750mm (29.5”) LIFT WHERE NOTED ON DRAWINGS.
   - VARIABLE SPEED DIRECT DRIVE BLOWER MOTOR, STATICALLY AND DYNAMICALLY BALANCED, WITH INHERENT PROTECTION, PERMANENTLY LUBRICATED BEARINGS, MOUNTED FOR QUIET OPERATION. UNIT SHALL BE FITTED WITH LINEAR ELECTRONIC EXPANSION VALVE.
   - INTEGRATED CONTROL SHALL INCLUDE SELF-DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM, AND AUTO RESTART FUNCTION.
   - DUCTED UNITS SHALL HAVE CABINET FABRICATED OF GALVANIZED STEEL, INSULATED, WITH REMOVABLE ACCESS PANELS, WITH FACTORY INSTALLED RETURN AIR FILTER ON REAR OF UNIT.
   - DUCTLESS UNITS SHALL HAVE A WHITE FINISH, MANUAL ADJUSTABLE GUIDE VANE, AND MOTORIZED AIR SWEEP LOUVER FOR UNIFORM AIR DISTRIBUTION. REMOVABLE, WASHABLE FILTER. INTEGRAL RETURN AIR SENSOR.
6. OUTDOOR UNITS
   - ONE DIRECT DRIVE, VARIABLE SPEED PROPELLER TYPE FAN. RAISED GUARD TO PREVENT CONTACT WITH MOVING PARTS.
   - OUTDOOR UNIT SHALL HAVE A SOUND RATING NO HIGHER THAN 54 DB
   - HIGH PRESSURE SAFETY SWITCH, FUSE, OVER-CURRENT PROTECTION AND CRANK CASE HEATER.
   - CAPABLE OF OPERATING IN OUTSIDE AMBIENT TEMPERATURES BETWEEN -5ºC (23ºF) TO 46ºC (115ºF) IN COOLING MODE WITHOUT ADDITIONAL LOW AMBIENT CONTROLS.
   - CAPABLE OF OPERATING IN OUTSIDE AMBIENT TEMPERATURES BETWEEN -25ºC (-13F) AND 23ºC (75ºF) IN HEATING MODE WITHOUT ADDITIONAL LOW AMBIENT CONTROLS.
   - ELECTRONIC EXPANSION VALVES TO CONTROL REFRIGERANT FLOW TO EACH INDOOR UNIT INDEPENDENTLY (MULTI-SPLIT SYSTEMS ONLY)
   - NONFERROUS COIL CONSTRUCTION WITH LANCED OR CORRUGATED ALUMINUM PLATE FINS ON COPPER TUBING, WITH A HYDROPHILIC/PROTECTIVE COATING TO REDUCE CORROSION AND PROMOTE MOISTURE SHEDDING.
   - INVERTER DRIVEN DC COMPRESSOR, TWIN BLDC ROTARY TYPE WITH CRANKCASE HEATER AND THERMAL OVERLOAD PROTECTION, MOUNTED TO AVOID THE TRANSMISSION OF VIBRATION.
7. SHOP DRAWINGS: PROVIDE SUBMITTALS INCLUDING:
   - REFRIGERANT PIPING PLANS INCLUDING PROPOSED SIZES AND ROUTING TO SUIT EQUIPMENT LOCATIONS SHOWN ON MECHANICAL PLANS IN ACCORDANCE WITH RECOMMENDATIONS AND LIMITATIONS ADVISED BY THE EQUIPMENT MANUFACTURER. INCLUDE PIPING LENGTH ESTIMATE, AND TOTAL REFRIGERANT CHARGE REQUIRED.
   - REFRIGERANT SCHEMATIC.
   - FAN PERFORMANCE SHOWING DESIGN OPERATIONS POINT, R/MIN, POWER, ETC.
   - DIMENSIONAL DATA INCLUDING WEIGHTS, SERVICE SPACE AND CLEARANCE REQUIREMENTS.
   - ELECTRICAL CIRCUIT DIAGRAMS INCLUDING FIELD-WIRED COMPONENTS AND REQUIREMENTS FOR SPECIFIC INSTALLATION.
   - ELECTRICAL VOLTAGES, PHASE AND POWER REQUIREMENTS.
   - COMPLETE INSTALLATION INSTRUCTIONS.
   - POWER REQUIREMENTS.
   - CONTROL OPTIONS AND ACCESSORIES, AND CONTROL WIRING DIAGRAM.
   - PROGRAMMING INSTRUCTIONS FOR INCLUSION IN MAINTENANCE MANUALS.
   - ACOUSTIC SOUND PRESSURE LEVEL DATA FOR OUTDOOR CONDENSING UNIT.
   - WARRANTY INFORMATION, INCLUDING CONFIRMATION OF EXTENDED WARRANTY FOR COMPRESSORS.
   - TESTING, DEHYDRATION, CHARGING AND START-UP OF REFRIGERANT SYSTEM

10.1. EXECUTION

1. REFRIGERANT PIPING: INSTALLATION SHALL ENSURE:
   - COMPRESSOR OIL AND LIQUID REFRIGERANT RETURN TO COMPRESSOR UNDER LOAD WITHOUT HARM TO COMPRESSOR
   - MINIMUM PRESSURE DROPS
   - RESTRICTED REFRIGERANT MIGRATION DURING INOPERATIVE CYCLES
   - ACCESSORIES AND PIPING PREVENT EXCESSIVE COMPRESSOR CYCLING
   - PIPE ROUTING AND ISOLATION TO AVOID LINE BREAKAGE OR EXCESSIVE VIBRATION AND SOUND TRANSMISSION TO CONDITIONED SPACE
   - MAINTENANCE OF CLEAN AND DRY SYSTEM
2. PROVIDE SUBMITTAL DRAWINGS OF THE REFRIGERANT PIPE WORK LAYOUT, INCLUDING ALL PIPE SIZING AND POSITIONS OF BOXES, ETC.
3. ALL INDOOR PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED OR ACCEPTED BY THE CONSULTANT. SPECIFICALLY INDICATE ON SHOP DRAWING PLANS WHERE REFRIGERANT PIPING CANNOT BE CONCEALED, OR IS IMPRACTICAL TO CONCEAL, AND INCLUDE PREMANUFACTURED SHROUD PRODUCTS WHERE PIPING MUST BE EXPOSED.
4. ALL PIPE WORK SHALL BE CLEAN, DEHYDRATED AND CHARGED WITH INERT GAS AND SEALED FOR SHIPMENT FROM FACTORY. PIPE WORK SHALL BE STORED IN DRY CONDITIONS; END CAPS MUST BE USED. WHERE SPECIALIST PIPE WORK FITTINGS BRANCHING OFF TO THE INDOOR FAN COIL UNITS ARE NECESSARY, THESE BRANCHES SHALL BE SUPPLIED BY THE UNIT MANUFACTURER. NO OTHER FITTINGS ARE ACCEPTABLE. THE POSITION OF THE JOINTS SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION. REFRIGERANT PIPE WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. ALL REFRIGERATION PIPE WORK SHALL BE SUPPORTED ON GALVANIZED CABLE TRAY, WIDTH TO ACCOMMODATE PIPE WORK AND CONTROLS CABLE. PIPE WORK SUPPORTS SHALL BE PROVIDED THROUGH ENTIRE LENGTH ACCORDING TO GOOD PRACTICE. ON HORIZONTAL PIPE WORK, THE BRACKETING SHALL ALLOW PIPE MOVEMENT DUE TO CONTRACTION AND EXPANSION. VERTICAL PIPE WORK SHALL BE BRACKETED AT NO MORE THAN 40” (1000 MM) CENTRES AND THE HORIZONTAL AT NO MORE THAN 60” (1,500 MM) CENTRES. THE PROVISIONS OF SPECIAL SUPPORTS SHALL BE INCORPORATED IN DROP RODS OR PIPE CLIPS IN PIPE WORK SUPPORTS. PROVIDE SUITABLE ISOLATION VALVING AS REQUIRED FOR THE SYSTEM CONFIGURATION TO ENABLE MINIMIZED RAIN/REFILLING OF REFRIGERANT.
5. ALL INSTALLED PIPE WORK LENGTHS SHALL BE ACCURATELY MEASURED AND RECORDED ON THE FORM PROVIDED ON THE REMOVABLE ACCESS PANEL WITHIN THE OUTDOOR UNITS AND THE OPERATING AND MAINTENANCE MANUALS (THIS INFORMATION IS REQUIRED FOR THE ACCURATE CALCULATION OF THE REFRIGERANT CHARGE FOR THE SYSTEM).
6. THE PRESSURE TESTING AND EVACUATION SHALL BE CARRIED OUT STRICTLY ACCORDING TO THE MANUFACTURER'S SPECIFICATION.
7. THE FINAL REFRIGERANT CHARGING AND THE COMMISSIONING OF THE SYSTEM SHALL BE CARRIED OUT BY THE SPECIALIST REFRIGERATION SUB-CONTRACTOR AUTHORIZED BY THE MANUFACTURER. CONTRACTOR SHALL PROVIDE A VERIFIED AND SUBMITTED COMMISSIONING REPORT TO THE CONSULTANT VERIFYING THAT THE SYSTEM HAS MET THE REQUIREMENTS FOR PROPER INSTALLATION, AND FUNCTION.
8. ALL REFRIGERANT PIPE WORK SHALL BE INSULATED WITH ARMAFLEX CLASS “O” INSULATION, ½” (12 MM) THICK, AS MANUFACTURED BY ARMSTRONG INDUSTRIES. BOTH REFRIGERANT LINES FROM THE OUTDOOR UNIT TO INDOOR UNITS SHALL BE INSULATED. THE JOINTS OR HEADERS SHALL BE INSULATED WITH THE PRE-FORMED INSULATION SUPPLIED WITH THESE FITTINGS. INSULATION EXPOSED TO ATMOSPHERIC CONDITIONS SHALL BE PROTECTED WITH TWO COATS OF SPECIAL ARMSTRONG ADHESIVE AND CARE SHOULD BE TAKEN THAT EVERY PART OF THE INSULATION IS SEALED TO MAINTAIN A VAPOUR BARRIER. PROVIDE METAL CLADDING FINISH FOR PIPING EXPOSED OUTDOORS.
9. AT COMPLETION OF INSTALLATION, PRESSURIZE SYSTEM WITH NITROGEN OR REFRIGERANT AND CHECK FOR LEAKS. REPAIR LEAKS AND RE-TEST. DEHYDRATE SYSTEM AND CHARGE WITH REFRIGERANT. START-UP SYSTEM AND CHECK OPERATION.
10. IF INSTALLATION IS COMPLETED IN WINTER SEASON, PUMP DOWN REFRIGERANT WHERE APPLICABLE AND REPEAT PROCEDURE AT START OF NEXT COOLING SEASON.
11. CARRY OUT CHECK USING DETAILED CHECK SHEETS PROVIDED BY EQUIPMENT MANUFACTURER. INCLUDE COMPLETED AND SIGNED CHECKLISTS IN OPERATING AND MAINTENANCE MANUALS.
12. PROVIDE DOCUMENTATION FOR PROPER OPERATION AND MAINTENANCE OF SYSTEM. PROVIDE ON-SITE INSTRUCTION PERIOD FOR OWNER'S PERSONNEL WITH CONSULTANT'S REPRESENTATIVE.

11. CONTROLS

11.1. ACCEPTABLE CONTROLS SUBCONTRACTORS: JOHNSON CONTROLS, HONEYWELL, SIEMENS, ALERTON, AUTOMATED LOGIC, SCHNEIDER, ESC/DELTA, MITSUBISHI, LG, DIAKIN

11.2. THERMOSTATS: MOUNT THERMOSTATS AND TEMPERATURE SENSORS AS INDICATED ON DRAWINGS. ALL TEMPERATURE SENSORS AND THERMOSTATS SHALL BE WALL OR COLUMN MOUNTED AT 1200MM (48") ABOVE FLOOR TO MEET AODA REQUIREMENTS UNLESS SPECIFICALLY NOTED OTHERWISE. COORDINATE FINAL MOUNTING LOCATIONS WITH ARCHITECT AND CONSULTANT ON SITE BEFORE ROUGH-IN.

11.3. ERV'S TO OPERATE VIA LOCAL WALL MOUNTED CONTROLLER WITH TIME CLOCK WHICH IS ADJUSTABLE TO THE OPERATING HOURS OF THE BUILDING.

11.4. ELECTRIC DUCT HEATER ASSOCIATED WITH ERV-1 TO OPERATE BASED ON DUCT MOUNTED THERMOSTAT TO ENSURE SUPPLY AIR TEMPERATURE AT 21°C.

11.5. LOCAL ELECTRIC HEATERS & RADIANT PANELS TO OPERATE BASED ON LOCAL WALL MOUNTED THERMOSTATS TO 18°C (ADJUSTABLE). CONTRACTOR TO COORDINATE EXACT THERMOSTAT LOCATION WITH ARCHITECT.

11.6. SPLIT AC SYSTEM TO OPERATE BASED ON LOCAL WALL MOUNTED CONTROLLERS IN ORDER TO SATISFY HEATING/COOLING SETPOINTS.

11.7. GARBAGE EXHAUST FAN AND MAKE UP AIR DAMPER TO OPERATE BASED ON CO CONTROL. UPON DETECTION OF CO LEVELS AT 50PPM (ADJUSTABLE) OR ABOVE, MOTORIZED DAMPERS OPEN AND EXHAUST FAN STARTS UNTIL LEVELS HAVE DROPPED BELOW 50PPM. EXHAUST FAN TO PROVE MOTORIZED DAMPERS OPEN PRIOR TO STARTING.

11.8. ELECTRIC DOMESTIC HOT WATER HEATER TO OPERATE BASED ON OWN INTERNAL CONTROLS TO ENSURE STORAGE AT 60°C.

12. FIRE PROTECTION

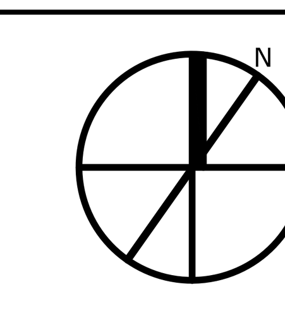
12.1. FIRE EXTINGUISHERS

1. PROVIDE NEW PORTABLE-TYPE ABC FIRE EXTINGUISHERS AS INDICATED ON DRAWINGS, AND TO SUIT THE REQUIREMENTS OF NFPA 10 AND/OR THE LOCAL AUTHORITIES HAVING JURISDICTION AND FIRE DEPARTMENT.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record



BLUFFER'S PARK EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

MECHANICAL SPECIFICATIONS

Print Date 2025-04-11
Scale NONE
Project No. 0010052.000
Drawn by MD
Checked by SF

M601

POWER SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT DUPLEX RECEPTACLE
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT GROUND FAULT CIRCUIT INTERRUPTER (GFI) DUPLEX
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT ISOLATED GROUND DUPLEX RECEPTACLE
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT ARC FAULT CIRCUIT INTERRUPTER DUPLED RECEPTACLE
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT SWITCHED DUPLEX RECEPTACLE
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT QUAD RECEPTACLE
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT GROUND FAULT CIRCUIT INTERRUPTER (GFI) QUAD
	15 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT SINGLE RECEPTACLE
	20 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT T-SLOT DUPLEX RECEPTACLE
	20 AMP 125 VOLT WALL MOUNT / COUNTER HEIGHT GROUND FAULT CIRCUIT INTERRUPTER (GFI) T-SLOT DUPLEX
	208V WALL MOUNT / COUNTER HEIGHT RECEPTACLE
	EQUIPMENT CONNECTION AS NOTED ON PLAN
	SPECIAL RECEPTACLE AS NOTED ON PLAN
F	NON-FUSED DISCONNECT / FUSED DISCONNECT
JB	JUNCTION BOX
	GROUND CONNECTION
	GROUND ROD
T	THERMOSTAT
	SURFACE MOUNTED PANEL BOARD
	RECESSED PANEL BOARD
	SURFACE RELAY PANEL
	RECESSED RELAY PANEL
(#)	EQUIPMENT TAG, REFER TO EQUIPMENT SCHEDULE (# DENOTES UNIT IDENTIFICATION)
#	KEYED NOTE TAG, REFER TO KEYED NOTES (# DENOTES KEYED NOTE NUMBER)
M	MOTOR CONNECTION
G	ELECTRICAL GENERATOR
	GROUND REFERENCE BUSBAR
G	FLOOR BOX OUTLET (OUTLET WILL BE DENOTED BY SYMBOL WITHIN) (G DENOTES GANG QUANTITY)
G	CEILING MOUNTED OUTLET (OUTLET WILL BE DENOTED BY SYMBOL WITHIN) (G DENOTES GANG QUANTITY)
G	CEILING MOUNTED OUTLET (OUTLET WILL BE DENOTED BY SYMBOL WITHIN) (G DENOTES GANG QUANTITY)
	SNOW MELTING SYSTEM
(EBH - #)	ELECTRICAL BASE BOARD HEATER (# DENOTES UNIT IDENTIFICATION)
	WIREMOLD
	HEAT TRACE
	TRANSFORMER
	TELECOMMUNICATIONS CABINET
P	PULL BOX
EV	ELECTRIC VEHICLE CHARGING STATION
DEV	DUAL CONNECT ELECTRIC VEHICLE CHARGING STATION
VSD	VARIABLE SPEED DRIVE

FIRE ALARM SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	DUCT SMOKE DETECTOR - PHOTOELECTRIC TYPE
	SMOKE DETECTOR
	HEAT DETECTOR (F DENOTES FIXED TEMP (94°c)
	CEILING MOUNTED HORN SPEAKER
	WALL MOUNTED HORN SPEAKER
	CEILING MOUNTED HORN SPEAKER / STROBE
	WALL MOUNTED HORN SPEAKER / STROBE
	ALARM SIGNALLING DEVICE - BELL
	MANUAL PULL STATION
	FIRE ALARM HORN
	BUZZER WITH 10 MIN SILENCE PERIOD
	MINI FIRE ALARM HORN
	CEILING MOUNTED STROBE LIGHT / HORN UNIT
	WALL MOUNTED STROBE LIGHT / HORN UNIT
	DOOR HOLDER
FACP	FIRE ALARM CONTROL PANEL
CACP	FIRE ALARM CENTRAL ALARM CONTROL FACILITY
ANN	REMOTE ANNUNCIATOR PANEL
	CEILING MOUNTED STROBE LIGHT UNIT
	WALL MOUNTED STROBE LIGHT UNIT
FH	FIREMAN HANDSET
CM	ADDRESSABLE CONTROL OR SIGNALLING MODULE
MM	ADDRESSABLE MONITORING MODULE
ISO	ISOLATION MODULE
EOL	END OF LINE RESISTOR
PS	PRESSURE SWITCH
FS	WATER FLOW SWITCH
TS	GATE VALVE TAMPER ALARM SWITCH
SV	SUPERVISORY VALVE
CO	CARBON MONOXIDE DETECTOR
A	SMOKE ALARM (LINE VOLTAGE) A - DENOTES CO / SMOKE COMBINATION UNIT

SINGLE LINE SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	BREAKER
	CAPACITOR
	CAPACITOR BANK
FR	TWO HOUR FIRE RATED CONDUCTORS
ST	SHUNT TRIP
M	UTILITY METER
M	INFORMATION METER
	CONTACTOR
	FUSE
	MOTOR STARTER
	PANEL
	RECTIFIER
	DISCONNECT SWITCH
	TRANSFER SWITCH
	TRANSFORMER CT
	TRANSFORMER ΔY
	BUS
	DRAW OUT BREAKER
UPS	UNINTERRUPTED POWER SUPPLY
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSION
	FUSEABLE SWITCH
	FUSE DISCONNECT

LIGHTING SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
A B - 7a A B - 7a	SURFACE / RECESSED LUMINAIRE, LETTER DENOTES TYPE. ON CIRCUIT B - 7 SWITCHED BY LOCAL SWITCH 'a' (TYPICAL CIRCUITING DESIGNATION FOR ALL LIGHTS AND RECEPTACLES)
A	WALL MOUNTED LUMINAIRE.
A A	SURFACE / RECESSED / SUSPENDED CEILING LUMINAIRE, ROUND SHAPE.
A	WALL MOUNTED LUMINAIRE, ROUND SHAPE.
A A	SURFACE / RECESSED / SUSPENDED CEILING LUMINAIRE, SQUARE SHAPE.
A	WALL MOUNTED LUMINAIRE, SQUARE SHAPE.
A A A	EMERGENCY LIGHT.
A	STRIP LUMINAIRE.
A	TRACK LIGHTING, TRIANGLE INDICATES HEAD.
A	SINGLE LUMINAIRE EXTERIOR LAMP STANDARD
A A A	DOUBLE LUMINAIRE EXTERIOR LAMP STANDARD
	EXTERIOR BOLLARD TYPE LUMINAIRE
A	LANDSCAPE LIGHTING (LETTER DENOTES TYPE)
EX	CEILING MOUNTED EXIT LIGHT FIXTURE LINES ON BOTH SIDE INDICATE DOUBLE SIDED EXIT SIGN
EX EX	WALL MOUNTED EXIT LIGHT FIXTURE, ARROW INDICATES EGRESS DIRECTION. ARROW ON BOTH SIDES INDICATE DOUBLE SIDE EXIT SIGN
EX	CEILING MOUNTED EXIT LIGHT WITH TWO EMERGENCY LIGHTS AND INTEGRAL BATTERY COMBO UNIT, ARROW DENOTES EGRESS DIRECTION.
EX EX	WALL MOUNTED EXIT LIGHT WITH TWO EMERGENCY LIGHTS AND INTEGRAL BATTERY COMBO UNIT, ARROW DENOTES EGRESS DIRECTION, ARROW ON BOTH SIDE INDICATE DOUBLE SIDE EXIT SIGN
	EMERGENCY REMOTE LIGHT HEADS
	BATTERY UNIT WITH REMOTE HEADS
$ 3 2G	SINGLE POLE LINE VOLTAGE SWITCH 3 - WAY 4 - WAY D - DIMMER F - FAN SWITCH K - KEY OPERATED P - C/W PILOT LIGHT V - VARIABLE SPEED #G - NUMBER OF GANGS
	LOW VOLTAGE SWITCH.
	MASTER SWITCH
	LINE VOLTAGE COMBINATION SWITCH AND OCCUPANCY SENSOR
	LOW VOLTAGE COMBINATION SWITCH AND OCCUPANCY SENSOR
PC	PHOTOCELL
TC	TIME CLOCK
OS	CEILING MOUNTED LINE VOLTAGE OCCUPANCY SENSOR
OS	WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR
OS	CEILING MOUNTED LOW VOLTAGE OCCUPANCY SENSOR
OS	WALL MOUNTED LOW VOLTAGE OCCUPANCY SENSOR

SECURITY SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
DC	DOOR CONTACT - ROUGH IN
OHC	OVERHEAD DOOR CONTACT - ROUGH IN
CR	CARD READER - ROUGH IN
	CCTV
PB	PUSH BUTTON / DOOR OPERATOR - ROUGH IN
ES	ELECTRIC DOOR STRIKE - ROUGH IN
REX	REQUEST TO EXIT DEVICE - ROUGH IN
ML	MAG-LOCK
EH	ELECTRONIC DOOR HARDWARE. REFER ARCHITECTURAL DOOR SCHEDULE FOR DETAILS.
DUT	INTERCOM/DURESS STATION
WR	WIRELESS RECIEVER
EL	ELECTRIFIED LOCKSET - ROUGH IN

COMMUNICATION SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	TELEPHONE OUTLET, P - PAY PHONE
	DATA OUTLET
	CATV OUTLET (CABLE TELEVISION)
D/V	COMBINATION COMMUNICATION - TEL/DATA OUTLET, #D = No. OF DATA CABLES, #V = No. OF VOICE CABLES
	SPECIAL PURPOSE COMMUNICATION OUTLET
WAP	WIRELESS ACCESS POINT
	COMMUNICATION PATCH PANEL WITH RACK
DR	COMMUNICATION DATA RACK
IC	INTERCOM STATION

SOUND SYSTEM SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	SPEAKER - CEILING MOUNTED
	SPEAKER - WALL MOUNTED
MIC	MICROPHONE
	SOUND MASKING SPEAKER
PS	PAGING STATION
ALS	AMBIENT LEVEL SENSOR
AMP	AMPLIFIER
	VOLUME CONTROL
TS	TOUCH SCREEN

ABBREVIATIONS

A	AMPERE	REF	REFRIGERATOR
AT	AMPERE TRIP	WM	WASHING MACHINE
AF	AMPERE FRAME	DRY	DRYER
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AWG	AMERICAN WIRE GUIDE	MH	MOUNTING HEIGHT
C	CONDUIT	MLO	MAIN LUGS ONLY
CACF	CENTRAL ALARM CONTROL FACILITY - FIRE ALARM	MOCP	MAXIMUM OVERCURRENT PROTECTION
CB	CIRCUIT BREAKER	MTG	MOUNTING
CKT	CIRCUIT	N	NEUTRAL
DO	DOOR OPERATOR	P	POLE OR PHASE
EC	EMPTY CONDUIT	PNL	PANELBOARD
EM	DEVICE FED FROM EMERGENCY CIRCUIT	QTY	QUANTITY
ER	EXISTING TO REMAIN	REC	RECESSED
FLA	FULL LOAD AMPS	RL	RELOCATE EXISTING DEVICE
FSS	FUSED SAFETY SWITCH	RM	REMOVE EXISTING DEVICE
GFI, GFCI	GROUND FAULT INTERRUPTER	RR	REMOVE AND REPLACE WITH NEW DEVICE
GND	GROUND	V	VOLTAGE / VOLTS
HP	HORSEPOWER	W	WATTS
IG	ISOLATED GROUND	WP	WEATHERPROOF
KW	KILOWATT	XFMR	TRANSFORMER
KVA	KILO VOLT AMPERES	RH	RANGEHOOD
MCA	MINIMUM CIRCUIT AMPACITY	MW	MICROWAVE
		DW	DISHWASHER

DRAWING NO.	DRAWING NAME	SCALE
E001	ELECTRICAL LEGEND, GENERAL NOTES AND DRAWING LIST	NTS
E100A	ELECTRICAL SITE PLAN - NORTH	1:200
E100B	ELECTRICAL SITE PLAN - SOUTH	1:200
E101	GROUND FLOOR POWER & SYSTEMS PLAN	1:50
E102	ROOF POWER & SYSTEMS PLAN	1:50
E201	GROUND FLOOR LIGHTING PLAN	1:50
E301	ELECTRICAL SINGLE LINE DIAGRAM & SCHEMATICS	NTS
E401	ELECTRICAL SCHEDULES	NTS
E501	ELECTRICAL DETAILS	NTS
E601	ELECTRICAL SPECIFICATIONS	NTS

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, LATEST EDITION, AND ALL OTHER ACTS ADMINISTRATED BY ALL AUTHORITIES HAVING JURISDICTION.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL OTHER TRADES CONTRACT DOCUMENTS, AND SPECIFICATIONS.
3. BEFORE SUBMITTING ANY PRICE, THE CONTRACTOR SHALL VISIT THE SITE AS IDENTIFIED IN THE GENERAL CONTRACT CONDITIONS AND EXAMINE THE FOLLOWING:
   - 3.1. CHECK THE EXISTING CONDITIONS AND IDENTIFY ANY LIMITATIONS
   - 3.2. EXAMINE THE PROPOSED WORK AGAINST THE EXISTING CONDITIONS. AFTER EXAMINING ALL OF THE ABOVE AGAINST THE PLANS, SPECIFICATIONS, AND TERMS OF CONTRACT, THE CONTRACTOR MUST SATISFY THEMSELVES THAT THE PROPOSED WORK CAN BE CARRIED OUT, OR SHALL BE MODIFIED AT NO EXTRA COST TO THE OWNER IN ORDER TO ACHIEVE THE INTENT OF THE SCOPE OF WORK IDENTIFIED IN THESE DOCUMENTS.
   - 3.3. IF THE CONTRACTOR BELIEVES LIMITATIONS AND/OR DISCREPANCIES EXIST, THEY MUST THEN SUBMIT IN WRITING TO THE PRIME CONSULTANT IDENTIFYING THEM. CLARIFICATION WILL BE ISSUED.
4. BUILDING HAS EXPOSED UNDERSIDE OF ROOF DECK CONDITIONS IN MANY AREAS. CONTRACTOR TO SUBMIT CONDUIT ROUTING DRAWINGS FOR REVIEW FOR ANY AREAS WHERE IT IS NOT POSSIBLE TO CONCEAL THE CONDUIT.
5. DETAILS ON ELECTRICAL DRAWINGS ARE INTENDED TO BE FOR GENERAL ARRANGEMENT ONLY. DETAILS DO NOT SHOW ALL COMPONENTS, BUT ARE MERELY A GUIDE AS TO THE ORIENTATION OF EQUIPMENT THAT IS REQUIRED TO ASSIST THE CONTRACTOR WITH THE INSTALLATIONS.
6. THE CONTRACTOR SHALL MAKE GOOD AND MAINTAIN THE FIRE RATINGS OF ASSEMBLY. ANY SURFACES OR FINISHES DAMAGED AS A RESULT OF ELECTRICAL ALTERATIONS OR INSTALLATION SHALL BE REPAIRED.
7. JUNCTION BOXES ARE TO BE IDENTIFIED AS PER SPECIFICATIONS. ELECTRICAL CONTRACTOR SHALL ENSURE ACCESS TO ALL JUNCTION BOXES ARE NOT IMPEDED.
8. BEFORE BEGINNING CONSTRUCTION, PROVIDE TO THE OWNER A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
9. OBTAIN AND PAY FOR ALL PERMITS, LICENSES, AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK, UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT, AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
11. MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. AT THE CONCLUSION OF THE PROJECT, PROVIDE ACCURATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ENGINEER.
12. ALL MATERIALS PROVIDED FOR THE PROJECT SHALL BE NEW, UNLESS OTHERWISE NOTED. PROVIDE ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
13. PROVIDE ALL REQUIRED "CUTTING ,PATCHING, BACK FILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK.
14. CONDUITS SHALL NOT BE USED AS A GROUND PATH. ALL CONDUITS SHALL CONTAIN A GROUNDING CONDUCTOR, SIZED PER ONTARIO ELECTRICAL CODE REQUIREMENTS.
15. CONDUIT AND WIRING SHOWN ON THESE PLANS ARE DIAGRAMMATIC. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD TO SUIT SITE CONDITIONS.
16. PLANS SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION PRIOR TO BEGINNING OF WORK. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO PURCHASE.
17. SUFFICIENT ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED ABOUT ALL ELECTRIC EQUIPMENT TO PERMIT READY AND SAFE OPERATION AND MAINTENANCE OF SUCH EQUIPMENT PER ELECTRICAL CODE.

DRAWING NOTES:

1. THE ELECTRICAL DRAWINGS SHALL BE READ AS ONE UNIT INCLUDING PLANS, SCHEMATIC DIAGRAMS AND MISCELLANEOUS DETAILS.
2. ALL ELECTRICAL SYSTEMS SHALL BE GROUNDED: GROUNDING TO INCLUDE A DEDICATED CONDUCTOR FOR ALL CIRCUITS 15AMPS AND LARGER AND AS INDICATED ON THE DRAWINGS, SIZED IN ACCORDANCE WITH ONTARIO ELECTRICAL CODE.
3. ALL WORK SHALL BE PERFORMED IN A NEAT AND WORKMEN LIKE MANNER AND IN ACCORDANCE WITH THE BUILDINGS OWNERS' STANDARDS.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEERS' REVIEW, FOR ALL EQUIPMENT AND MATERIAL FURNISHED UNDER THIS SECTION OF WORK.
5. VERIFY EXACT POWER REQUIREMENT WITH PROVIDER OF THE EQUIPMENT PRIOR TO INSTALLING THE EQUIPMENT.
6. WHEN DISCREPANCIES EXIST BETWEEN DRAWINGS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, THE MORE RESTRICTIVE, MOST EXPENSIVE ALTERNATIVES SHOULD APPLY.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

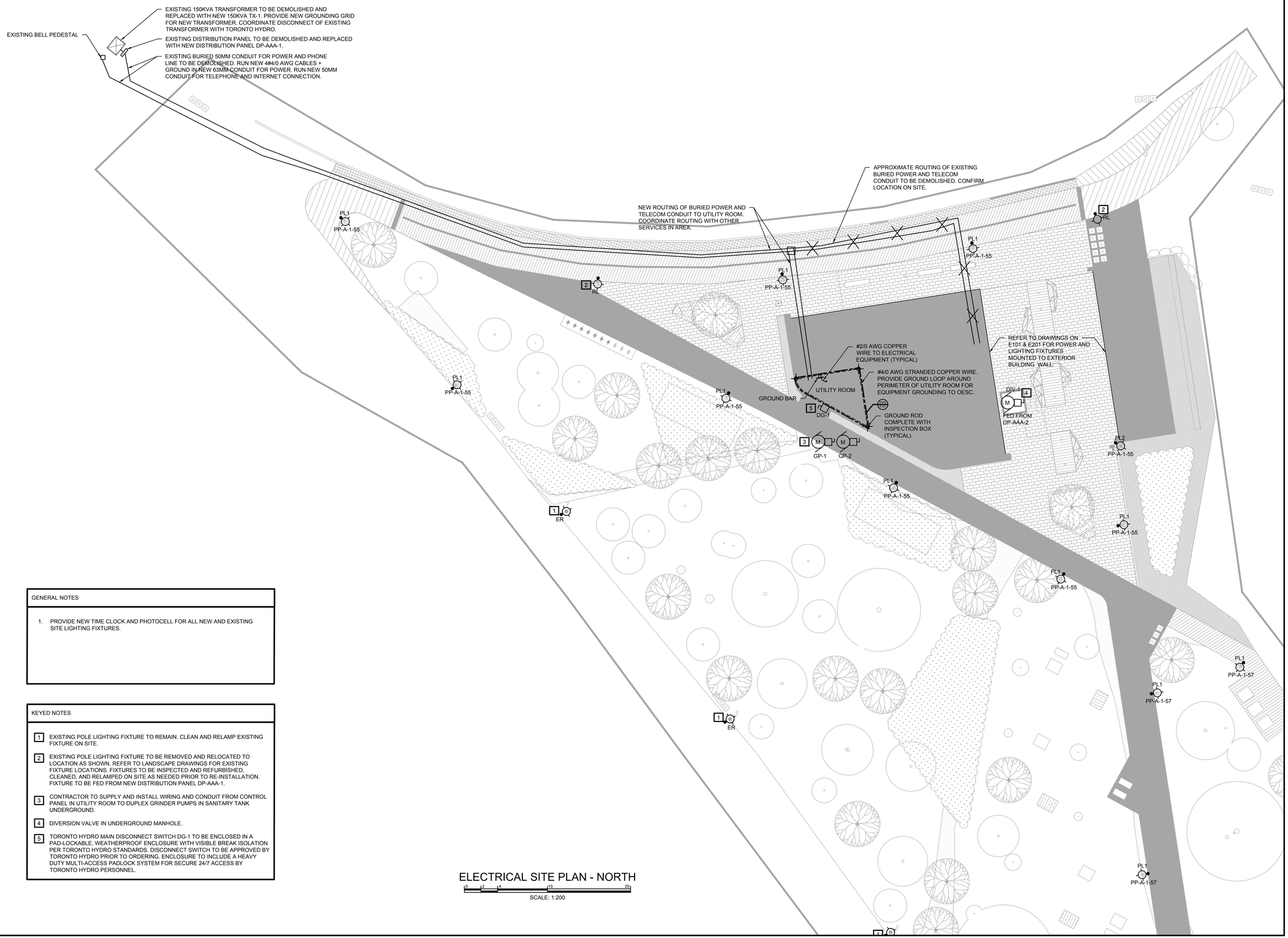
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL LEGEND, DRAWING LIST, GENERAL NOTES

Print Date 2025-04-10
Scale NONE
Project No. 0010052.000
Drawn by LT
Checked by JN

E001



ELECTRICAL SITE PLAN - NORTH

0 2 4 10 20

SCALE: 1:200

GENERAL NOTES

1. PROVIDE NEW TIME CLOCK AND PHOTOCELL FOR ALL NEW AND EXISTING SITE LIGHTING FIXTURES.

KEYED NOTES

1. EXISTING POLE LIGHTING FIXTURE TO REMAIN. CLEAN AND RELAMP EXISTING FIXTURE ON SITE.
2. EXISTING POLE LIGHTING FIXTURE TO BE REMOVED AND RELOCATED TO LOCATION AS SHOWN. REFER TO LANDSCAPE DRAWINGS FOR EXISTING FIXTURE LOCATIONS. FIXTURES TO BE INSPECTED AND REFURBISHED, CLEANED, AND RELAMPED ON SITE AS NEEDED PRIOR TO RE-INSTALLATION. FIXTURE TO BE FED FROM NEW DISTRIBUTION PANEL DP-AAA-1.
3. CONTRACTOR TO SUPPLY AND INSTALL WIRING AND CONDUIT FROM CONTROL PANEL IN UTILITY ROOM TO DUPLEX GRINDER PUMPS IN SANITARY TANK UNDERGROUND.
4. DIVERSION VALVE IN UNDERGROUND MANHOLE.
5. TORONTO HYDRO MAIN DISCONNECT SWITCH DG-1 TO BE ENCLOSED IN A PAD-LOCKABLE, WEATHERPROOF ENCLOSURE WITH VISIBLE BREAK ISOLATION PER TORONTO HYDRO STANDARDS. DISCONNECT SWITCH TO BE APPROVED BY TORONTO HYDRO PRIOR TO ORDERING. ENCLOSURE TO INCLUDE A HEAVY DUTY MULTI-ACCESS PADLOCK SYSTEM FOR SECURE 24/7 ACCESS BY TORONTO HYDRO PERSONNEL.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL SITE PLAN - NORTH

Print Date	2025-04-11
Scale	1:200
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E100A

GENERAL NOTES

1. PROVIDE NEW TIME CLOCK AND PHOTOCELL FOR ALL NEW AND EXISTING SITE LIGHTING FIXTURES.

KEYED NOTES

1 EXISTING POLE LIGHTING FIXTURE TO REMAIN. CLEAN AND RELAMP EXISTING FIXTURE ON SITE.

2 EXISTING POLE LIGHTING FIXTURE TO BE REMOVED AND RELOCATED TO LOCATION AS SHOWN. REFER TO LANDSCAPE DRAWINGS FOR EXISTING FIXTURE LOCATIONS. FIXTURES TO BE INSPECTED AND REFURBISHED, CLEANED, AND RELAMPED ON SITE AS NEEDED PRIOR TO RE-INSTALLATION. FIXTURE TO BE FED FROM NEW DISTRIBUTION PANEL DP-AAA-1.

ELECTRICAL SITE PLAN - SOUTH

0 2 4 10 20

SCALE: 1:200

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

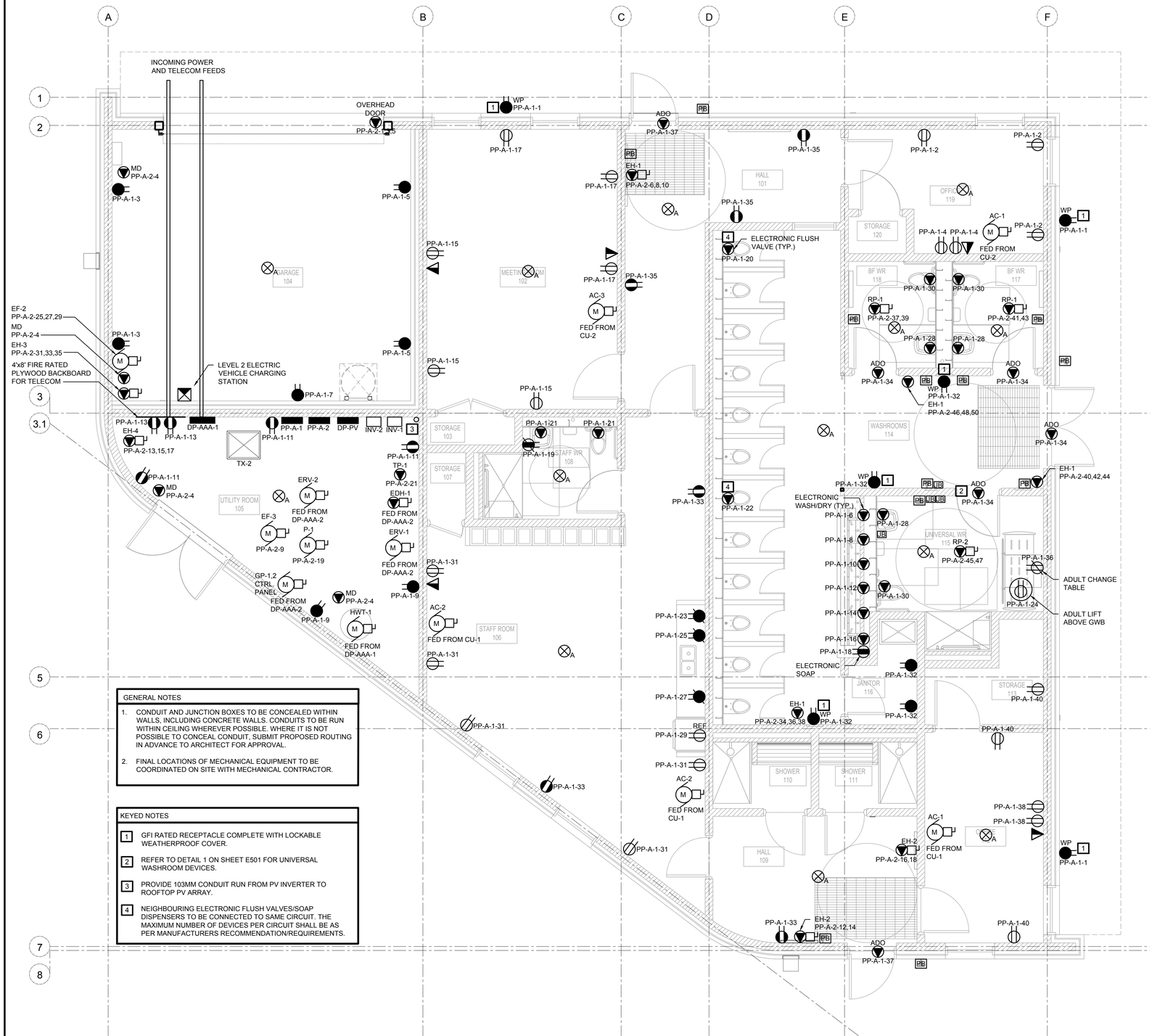
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL SITE PLAN - SOUTH

Print Date	2025-04-10
Scale	1:200
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E100B



GENERAL NOTES

1. CONDUIT AND JUNCTION BOXES TO BE CONCEALED WITHIN WALLS, INCLUDING CONCRETE WALLS. CONDUITS TO BE RUN WITHIN CEILING WHEREVER POSSIBLE. WHERE IT IS NOT POSSIBLE TO CONCEAL CONDUIT, SUBMIT PROPOSED ROUTING IN ADVANCE TO ARCHITECT FOR APPROVAL.
2. FINAL LOCATIONS OF MECHANICAL EQUIPMENT TO BE COORDINATED ON SITE WITH MECHANICAL CONTRACTOR.

KEYED NOTES

1. GFI RATED RECEPTACLE COMPLETE WITH LOCKABLE WEATHERPROOF COVER.
2. REFER TO DETAIL 1 ON SHEET E501 FOR UNIVERSAL WASHROOM DEVICES.
3. PROVIDE 103MM CONDUIT RUN FROM PV INVERTER TO ROOFTOP PV ARRAY.
4. NEIGHBOURING ELECTRONIC FLUSH VALVES/SOAP DISPENSERS TO BE CONNECTED TO SAME CIRCUIT. THE MAXIMUM NUMBER OF DEVICES PER CIRCUIT SHALL BE AS PER MANUFACTURERS RECOMMENDATION/REQUIREMENTS.

GROUND FLOOR - POWER & SYSTEMS - WEST BUILDING

SCALE: 1:50

GROUND FLOOR - POWER & SYSTEMS - EAST BUILDING

SCALE: 1:50

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

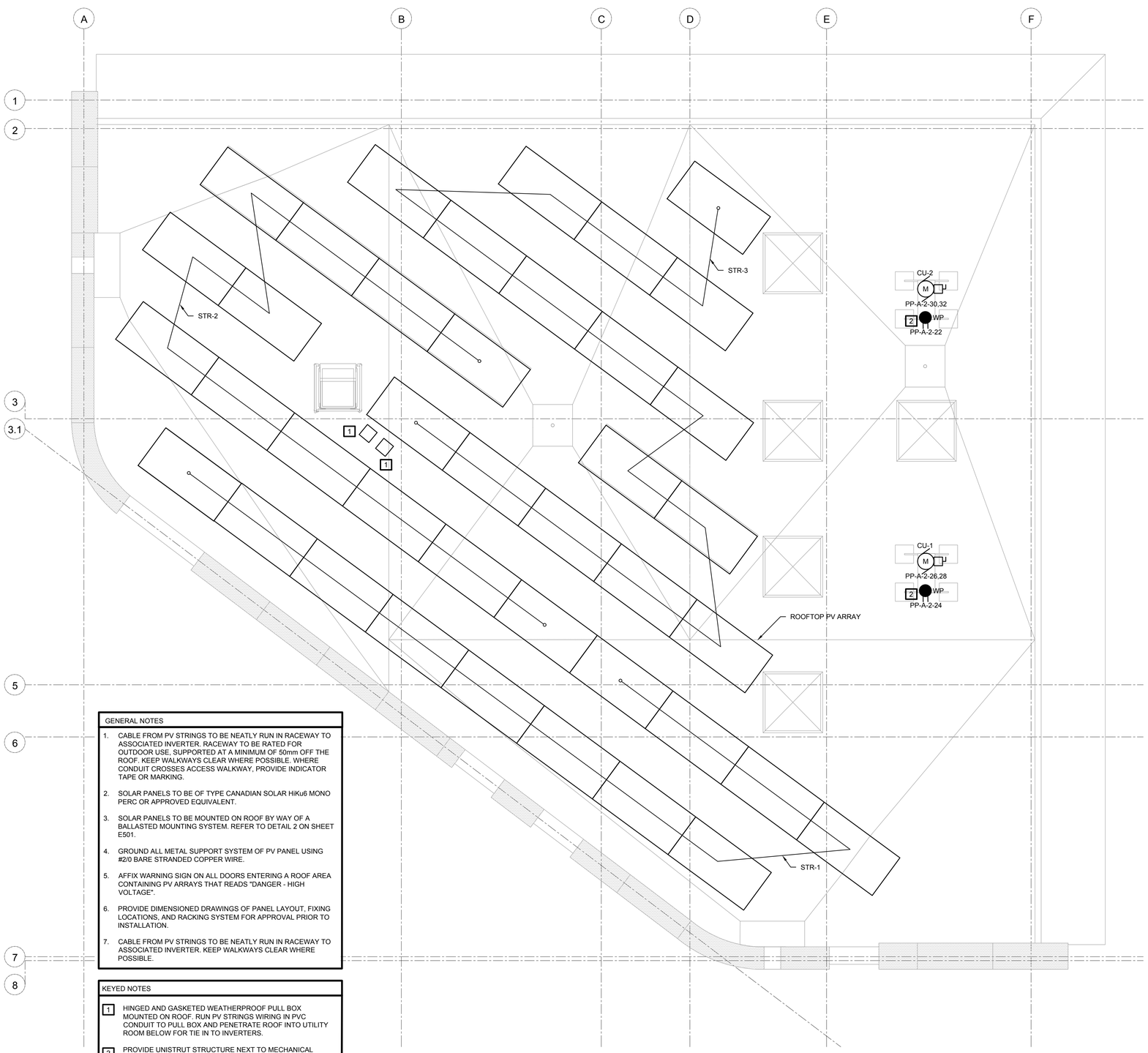
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

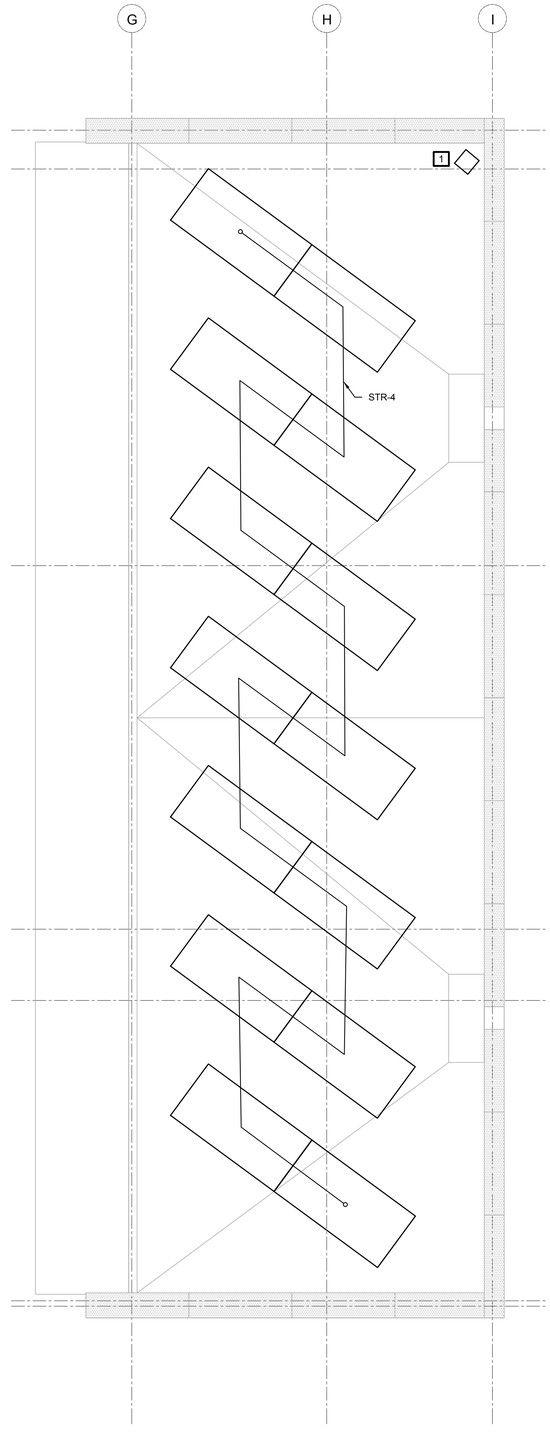
Drawing Title

GROUND FLOOR - POWER & SYSTEM PLAN

Print Date	2025-04-11
Scale	1:50
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E101





GENERAL NOTES

1. CABLE FROM PV STRINGS TO BE NEATLY RUN IN RACEWAY TO ASSOCIATED INVERTER. RACEWAY TO BE RATED FOR OUTDOOR USE, SUPPORTED AT A MINIMUM OF 50mm OFF THE ROOF. KEEP WALKWAYS CLEAR WHERE POSSIBLE. WHERE CONDUIT CROSSES ACCESS WALKWAY, PROVIDE INDICATOR TAPE OR MARKING.
2. SOLAR PANELS TO BE OF TYPE CANADIAN SOLAR HiKu6 MONO PERC OR APPROVED EQUIVALENT.
3. SOLAR PANELS TO BE MOUNTED ON ROOF BY WAY OF A BALLASTED MOUNTING SYSTEM. REFER TO DETAIL 2 ON SHEET E501.
4. GROUND ALL METAL SUPPORT SYSTEM OF PV PANEL USING #2/0 BARE STRANDED COPPER WIRE.
5. AFFIX WARNING SIGN ON ALL DOORS ENTERING A ROOF AREA CONTAINING PV ARRAYS THAT READS "DANGER - HIGH VOLTAGE".
6. PROVIDE DIMENSIONED DRAWINGS OF PANEL LAYOUT, FIXING LOCATIONS, AND RACKING SYSTEM FOR APPROVAL PRIOR TO INSTALLATION.
7. CABLE FROM PV STRINGS TO BE NEATLY RUN IN RACEWAY TO ASSOCIATED INVERTER. KEEP WALKWAYS CLEAR WHERE POSSIBLE.

KEYED NOTES

1 HINGED AND GASKETED WEATHERPROOF PULL BOX MOUNTED ON ROOF. RUN PV STRINGS WIRING IN PVC CONDUIT TO PULL BOX AND PENETRATE ROOF INTO UTILITY ROOM BELOW FOR TIE IN TO INVERTERS.

2 PROVIDE UNISTRUT STRUCTURE NEXT TO MECHANICAL EQUIPMENT AND MOUNT MAINTENANCE RECEPTACLE.

ROOF- POWER & SYSTEMS - WEST BUILDING

0 1 2 5

SCALE: 1:50

ROOF - EAST BUILDING

0 1 2 5

SCALE: 1:50

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

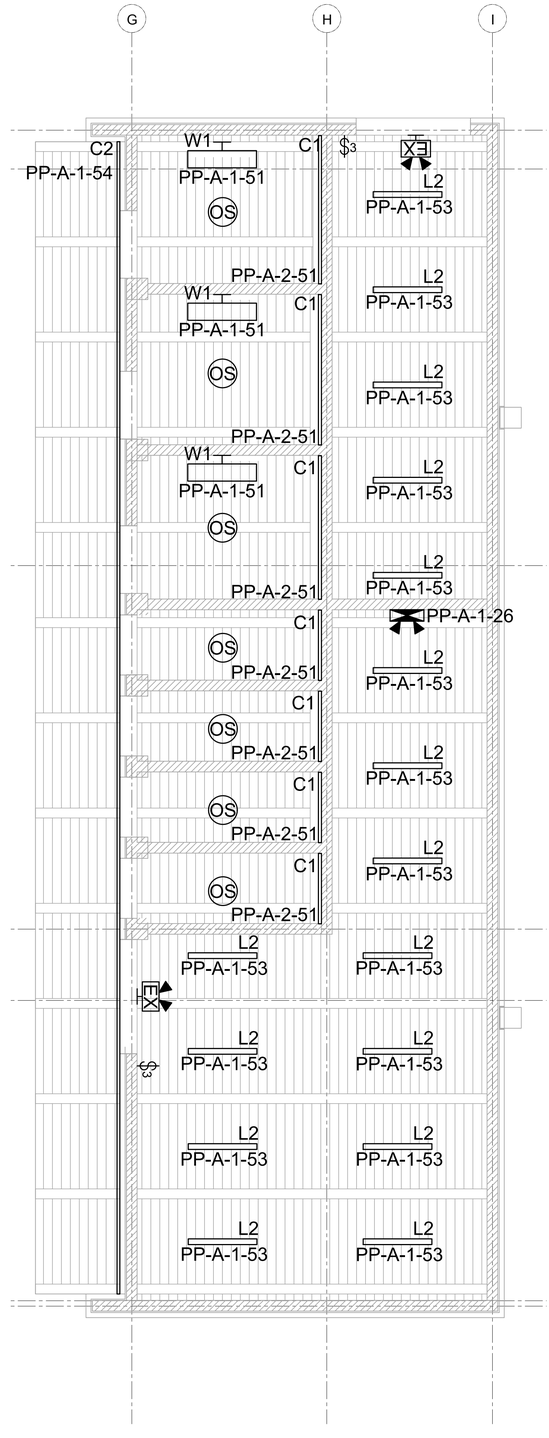
ROOF PLAN - POWER & SYSTEMS PLAN

Print Date	2025-04-10
Scale	1:50
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E102

GROUND FLOOR - LIGHTING - WEST BUILDING

SCALE: 1:50



GROUND FLOOR - LIGHTING - EAST BUILDING

SCALE: 1:50

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR CHECKING ALL DIMENSIONS AND CONDITIONS ON THE JOB.

DO NOT SCALE DRAWINGS.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

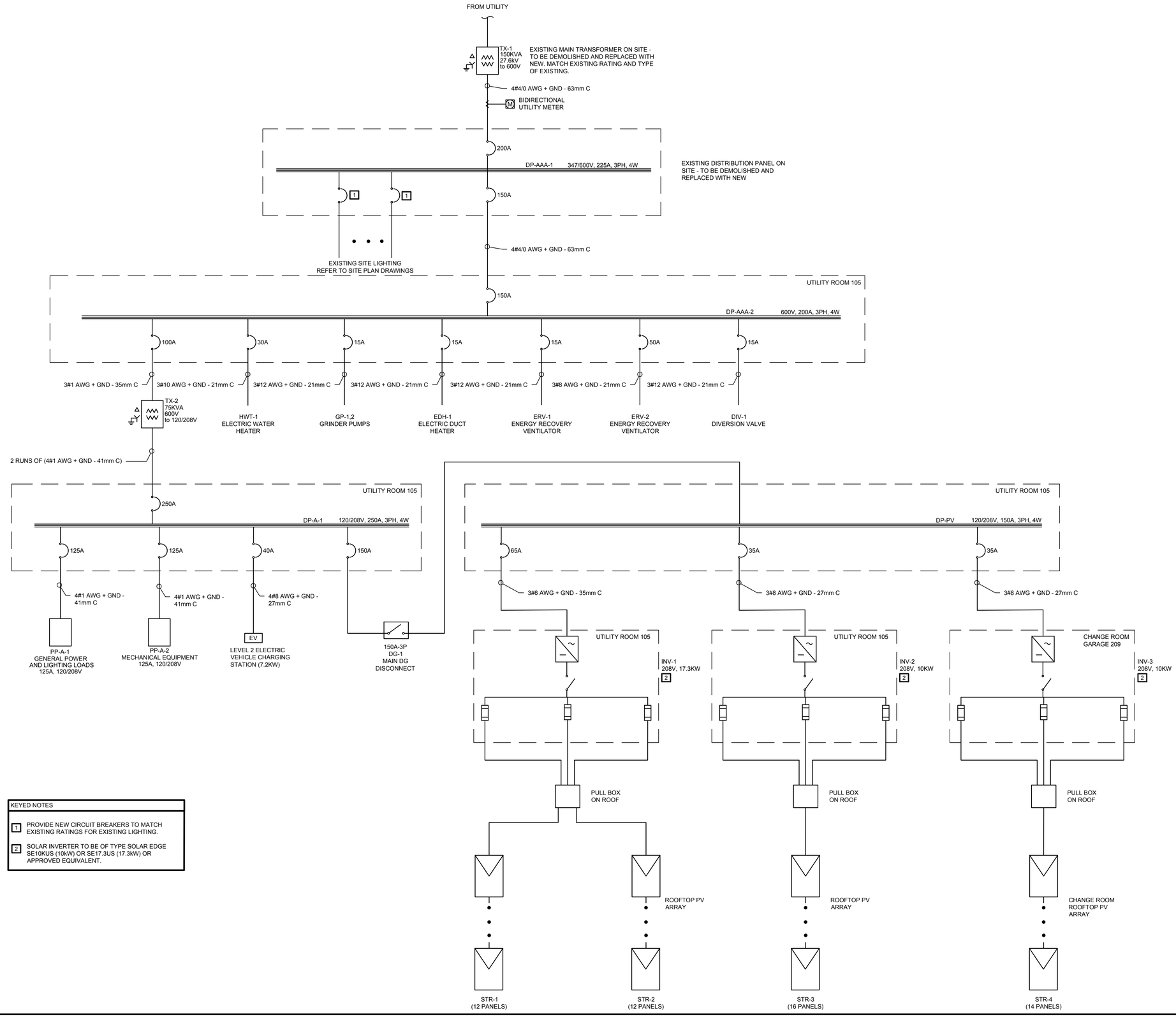
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

GROUND FLOOR PLAN - LIGHTING PLAN

Print Date	2025-04-11
Scale	1:50
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E201



KEYED NOTES

1. PROVIDE NEW CIRCUIT BREAKERS TO MATCH EXISTING RATINGS FOR EXISTING LIGHTING.
2. SOLAR INVERTER TO BE OF TYPE SOLAR EDGE SE10KUS (10kW) OR SE17.3US (17.3kW) OR APPROVED EQUIVALENT.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL SINGLE LINE DIAGRAM & SCHEMATIC

Print Date	2025-04-10
Scale	NTS
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E301

PANEL NUMBER: PP-A-1

MOUNTING: SURFACE | VOLTAGE: 120/208V | A.I.C. RATING

FED FROM: DP-A-1 | PHASE: 3 | MAIN BREAKER: 125A MCB

PANEL LOCATION: UTILITY ROOM | CIRCUITS: 72

CCT	LOAD								LOAD	CCT
No.	DESCRIPTION	TYPE	VA	BKR		BKR	VA	TYPE	DESCRIPTION	No.
1	EXTERIOR WP GFI T-SLOT REC	REC.	1200	20A	A	15A	600	REC.	OFFICE RECS	2
3	GARAGE GFI T-SLOT REC	REC.	800	20A	B	15A	400	REC.	OFFICE REC	4
5	GARAGE GFI T-SLOT REC	REC.	800	20A	C	15A	1000	OTH.	W/R ELECTRONIC WASH/DRY	6
7	GARAGE GFI T-SLOT REC	REC.	400	20A	A	15A	1000	OTH.	W/R ELECTRONIC WASH/DRY	8
9	UTILITY RM GFI T-SLOT REC	REC.	400	20A	B	15A	1000	OTH.	W/R ELECTRONIC WASH/DRY	10
11	UTILITY RM T-SLOT REC	REC.	600	20A	C	15A	1000	OTH.	W/R ELECTRONIC WASH/DRY	12
13	UTILITY RM TELECOM REC	REC.	400	20A	A	15A	1000	OTH.	W/R ELECTRONIC WASH/DRY	14
15	MTG RM CONV. REC	REC.	600	15A	B	15A	1000	OTH.	W/R ELECTRONIC WASH/DRY	16
17	MTG RM CONV. REC	REC.	600	15A	C	15A	500	OTH.	W/R ELECTRONIC SOAP	18
19	STAFF RM W/R GFI REC	REC.	200	15A	A	15A	600	OTH.	W/R ELECTRONIC FLUSH	20
21	STAFF RM W/R ELECTRONIC FIXTURES	OTH.	200	15A	B	15A	600	OTH.	W/R ELECTRONIC FLUSH	22
23	STAFF RM KITCHEN GFI T-SLOT REC	REC.	800	20A	C	15A	200	OTH.	W/R ADULT LIFT	24
25	STAFF RM KITCHEN GFI T-SLOT REC	REC.	800	20A	A	15A	200	OTH.	UTILITY RM LTG BATT. PACK	26
27	STAFF RM KITCHEN GFI T-SLOT REC	REC.	800	20A	B	15A	150	OTH.	W/R ELECTRONIC FAUCET	28
29	STAFF RM KITCHEN REFRIGERATOR REC	REC.	800	15A	C	15A	300	OTH.	W/R ELECTRONIC FLUSH	30
31	STAFF RM CONV. REC	REC.	1000	15A	A	20A	1000	REC.	W/R WP GFI T-SLOT REC	32
33	STAFF RM & HALL T-SLOT CONV. REC	REC.	600	20A	B	15A	600	OTH.	W/R ADOs	34
35	HALL T-SLOT CONV. REC	REC.	600	20A	C	15A	400	REC.	W/R ADULT CHANGE TABLE	36
37	HALL ADOs	OTH.	300	15A	A	15A	200	REC.	SHOWER HALL REC	38
39	GARAGE & UTILITY RM LTG	LTG.	360	15A	B	15A	400	REC.	OFFICE REC	40
41	MTG RM, HALL & OFFICE LTG	LTG.	760	15A	C	15A	600	REC.	STORAGE & OFFICE REC	42
43	STAFF RM LTG	LTG.	601	15A	A	15A	361	LTG.	HALL & STORAGE LTG	44
45	W/R LTG	LTG.	586	15A	B	20A	1500	LTG.	EXTERIOR COVE LTG	46
47	EB EXTERIOR WP GFI T-SLOT REC	REC.	400	20A	C	20A	800	REC.	EB GARAGE T-SLOT REC	48
49	EB CHANGE ROOM ADOs	OTH.	450	15A	A	20A	800	REC.	EB GARAGE T-SLOT REC	50
51	EB CHANGE ROOM LTG	LTG.	293	15A	B	20A	1000	REC.	EB STORAGE T-SLOT REC	52
53	EB GARAGE & STORAGE LTG	LTG.	480	15A	C	15A	670	LTG.	EB EXTERIOR COVE LTG	54
55	SITE LIGHTING	LTG.	421	20A	A					56
57	SITE LIGHTING	LTG.	336	20A	B					58
59					C					60
61					A					62
63					B					64
65	SPARE			15A	C	15A			SPARE	66
67	SPARE			15A	A	15A			SPARE	68
69	SPARE			15A	B	15A			SPARE	70
71	SPARE			15A	C	15A			SPARE	72

LOAD TOTALS			DEMAND	
PHASE A	11.53 KVA			
PHASE B	11.62 KVA		LIGHTING	6.37 KVA
PHASE C	11.31 KVA	DIVERSITY FACTOR	RECEPTACLES	9.00 KVA
			MOTORS	0.00 KVA
LIGHTING	6.37 KVA	1	OTHERS	10.10 KVA
RECEPTACLES	18.00 KVA	0.5		
MOTORS	0.00 KVA	0.75	TOTAL POWER	25.47 KVA
OTHERS	10.10 KVA	1	TOTAL CURRENT	70.74 A

PANEL NUMBER: PP-A-2

MOUNTING: SURFACE | VOLTAGE: 120/208V | A.I.C. RATING

FED FROM: DP-A-1 | PHASE: 3 | MAIN BREAKER: 125A MCB

PANEL LOCATION: UTILITY ROOM | CIRCUITS: 72

CCT	LOAD								LOAD	CCT
No.	DESCRIPTION	TYPE	VA	BKR		BKR	VA	TYPE	DESCRIPTION	No.
1	GARAGE OVERHEAD DOOR	MTR.	1167	15A	A					2
3		MTR.	1167		B	15A	250	OTH.	MOTORIZED DAMPERS	4
5		MTR.	1167		C		500	OTH.	NORTH ENTRY ELECTRIC HEATER EH-1	6
7	STORAGE - EF-1	MTR.	55	15A	A	15A	500	OTH.		8
9	UTILITY ROOM - EF-3	MTR.	60	15A	B		500	OTH.		10
11					C	15A	381	OTH.	SOUTH ENTRY EH-2	12
13					A		381	OTH.		14
15					B	15A	381	OTH.	SOUTH ENTRY EH-2	16
17					C		381	OTH.		18
19	UTILITY RM PUMP P-1	MTR.	270	15A	A					20
21	STAFF W/C TRAP PRIMER TP-1	OTH.	6	15A	B	20A	200	MTR.	ROOF MECH EQUIP MAINTENANCE GFI T-SLOT REC	22
23					C	20A	200	MTR.	ROOF MECH EQUIP MAINTENANCE GFI T-SLOT REC	24
25	GARAGE EF-2	MTR.	288	15A	A	40A	1016	MTR.	ROOF AIR-COOLED OUTDOOR CONDENSING UNIT CU-1	26
27		MTR.	288		B		1016	MTR.		28
29		MTR.	288		C	40A	1016	MTR.	ROOF AIR-COOLED OUTDOOR CONDENSING UNIT CU-2	30
31	GARAGE EH-3	OTH.	1000	15A	A		1016	MTR.		32
33		OTH.	1000		B		500	OTH.	WASHROOMS ELECTRIC HEATER EH-1	34
35		OTH.	1000		C	15A	500	OTH.		36
37	BARRER FREE WASHROOM RADIANT HEATER RP-1	OTH.	155	15A	A		500	OTH.		38
39		OTH.	155		B		500	OTH.	WASHROOMS ELECTRIC HEATER EH-1	40
41	UNIVERSAL WASHROOM RADIANT HEATER RP-1	OTH.	155	15A	C	15A	500	OTH.		42
43		OTH.	155		A		500	OTH.		44
45	BARRER FREE WASHROOM RADIANT HEATER RP-2	OTH.	265	15A	B		500	OTH.	WASHROOMS ELECTRIC HEATER EH-1	46
47		OTH.	265		C	15A	500	OTH.		48
49					A		500	OTH.		50
51					B					52
53					C					54
55					A					56
57					B					58
59					C					60
61					A					62
63	SPARE			15A	B					64
65					C	15A			SPARE	66
67					A					68
69	SPARE			15A	B					70
71					C	15A			SPARE	72

LOAD TOTALS			DEMAND	
PHASE A	7.50 KVA			
PHASE B	6.79 KVA		LIGHTING	0.00 KVA
PHASE C	6.85 KVA	DIVERSITY FACTOR	RECEPTACLES	0.00 KVA
			MOTORS	6.91 KVA
LIGHTING	0.00 KVA	1	OTHERS	11.93 KVA
RECEPTACLES	0.00 KVA	0.5		
MOTORS	9.21 KVA	0.75	TOTAL POWER	18.84 KVA
OTHERS	11.93 KVA	1	TOTAL CURRENT	52.34 A

LUMINAIRE SCHEDULE

EQUIPMENT INFO.			ELECTRICAL INFO.						INSTALLATION INFO.
TYPE	DESCRIPTION	LOCATION	MODEL	POWER	VOLTAGE	LAMP	ILLUMINANCE	CCT (K)	CRI	REMARKS
PL1	EXTERIOR POLE MOUNTED LIGHTING FIXTURE. POLE HEIGHT OF 3.7M	EXTERIOR	LANDSCAPE FORMS MOTIVE AREA LIGHT	48W	120V	LED	3987lm	4000K	80+	TO BE CONTROLLED BY TIME CLOCK/PHOTOCELL
PL2	EXTERIOR POLE MOUNTED PROJECTOR LIGHTING FIXTURE. POLE HEIGHT OF 6M	EXTERIOR	WE-EF LIGHTING FLC220 LED GOBO PROJECTOR	37W	120V	LED	4900lm	4000K	80+	TO BE CONTROLLED BY TIME CLOCK/PHOTOCELL
C1	INTEGRATED COVE LIGHTING FIXTURE	WASHROOMS	WINONA LIGHTING CVF WINCOVE	5.5W/ft	120V	LED	600lm/ft	3000K	80+	FIXTURE LENGTH VARIES, REFER TO FLOOR PLANS
C2	EXTERIOR COVE LIGHTING FIXTURE	EXTERIOR	COOPER LIGHTING iO LED CowO	10W/ft	120V	LED	1000lm/ft	4000K	90+	TO BE CONTROLLED BY TIME CLOCK/PHOTOCELL
D1	4" ROUND RECESSED DOWNLIGHT	WASHROOMS	EDISON LIGHTING ED RD+	20W	120V	LED	2050lm	3500K	90+	
L1	SUSPENDED 4' LINEAR LIGHTING FIXTURE, WITH 70% UP AND 30% DOWNLIGHT COMPONENT	STAFF AREA	EDISON LIGHTING VECTOR 5+	40W	120V	LED	4280lm	3500K	90+	
L2	SUSPENDED 4' VANDAL PROOF LINEAR LIGHTING FIXTURE	UTILITY ROOM, GARAGE, STORAGE	COOPER LIGHTING FAIL-SAFE VAPORITE LED	30W	120V	LED	4000lm	3500K	80+	
P1	7.5" ROUND SUSPENDED PENDANT LIGHTING FIXTURE	WASHROOMS	EDISON LIGHTING ED-PRO+	30W	120V	LED	3000lm	3500K	90+	
W1	VANDAL RESISTANT WALL MOUNTED LIGHTING FIXTURE	CHANGE ROOMS	COOPER LIGHTING FAIL-SAFE G12 LED	15W	120V	LED	1700lm	3500K	80+	

Project name: Bluffer's Park Pavilion

MECHANICAL EQUIPMENT SCHEDULE

DATE: April 11, 2025

EQUIPMENT TAG	QUANTITY	UNIT DESCRIPTION	UNIT LOCATION	POWER												STARTER				DISC.			CONTROLS				
				HP	FLA	kW	MCA	VOLTAGE	PHASE	BREAKER (A)	POLES	NO. OF WIRES	WIRE SIZE	CONDUIT SIZE (mm)	DISTRIBUTION BOARD	TYPE (B)	SUP'LD BY (A)	INST'LD BY (A)	WIRED BY (A)	SUP'LD BY (A)	INST'LD BY (A)	WIRED BY (A)	TYPE (C)	SUP'LD BY (A)	INST'LD BY (A)	WIRED BY (A)	
ERV-1	1	ENERGY RECOVERY VENTILATOR	UTILITY ROOM - SERVING STAFF AREA	2.05	6.0	1.53	7.5	600V	3	15	3	3	#12 AWG	21mm	DP-AAA-2		M	M	E	E	E	E		M	M	E	
ERV-2	1	ENERGY RECOVERY VENTILATOR	UTILITY ROOM - SERVING WASHROOMS		38.2	32.00	47.7	600V	3	50	3	3	#6 AWG	21mm	DP-AAA-2		M	M	E	E	E	E		M	M	E	
AC-1	2	FAN COIL UNIT	OFFICE, OFFICE		0.8	0.29	1.0	208V	1	15	2	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
AC-2	2	FAN COIL UNIT	STAFF ROOM		0.8	0.29	1.0	208V	1	15	2	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
AC-3	2	FAN COIL UNIT	MEETING ROOM		0.8	0.29	1.0	208V	1	15	2	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
CU-1	1	CONDENSING UNIT	ROOF		24.4	5.08	30.5	208V	1	40	2	2	#8 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
CU-2	1	CONDENSING UNIT	ROOF		24.4	5.08	30.5	208V	1	40	2	2	#8 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
DIV-1	1	DIVERSION VALVE	DIVERSION MANHOLE - EXTERIOR		0.6	0.12	0.8	600V	3	15	3	3	#12 AWG	21mm	DP-AAA-2		M	M	E	E	E	E		M	M	E	
EF-1	1	EXHAUST FAN	SEASONAL GARAGE, STORAGE		0.5	0.06	0.6	120V	1	15	1	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
EF-2	1	EXHAUST FAN	GARAGE	0.33	2.4	0.25	3.0	208V	3	15	3	3	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
EF-3	1	EXHAUST FAN	UTILITY ROOM		0.5	0.06	0.6	120V	1	15	1	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
EH-1	4	ELECTRIC HEATER	WASHROOMS		4.2	1.50	5.2	208V	3	15	3	3	#12 AWG	21mm	PP-A-2		N/A	N/A	N/A	E	E	E		M	M	E	
EH-2	2	ELECTRIC HEATER	SOUTH ENTRYWAY		5.5	1.15	6.9	208V	1	15	2	2	#12 AWG	21mm	PP-A-2		N/A	N/A	N/A	E	E	E		M	M	E	
EH-3	2	ELECTRIC HEATER	UTILITY ROOM, GARAGE		8.3	3.00	10.4	208V	3	15	3	3	#12 AWG	21mm	PP-A-2		N/A	N/A	N/A	E	E	E		M	M	E	
EDH-1	1	ELECTRIC DUCT HEATER	UTILITY ROOM		4.8	5.00	6.0	600V	3	15	3	3	#12 AWG	21mm	DP-AAA-2		N/A	N/A	N/A	E	E	E		M	M	E	
GP-1,2	1	GRINDER PUMPS	SANITARY TANK - EXTERIOR	5.00	6.4	3.73	8.0	600V	3	15	3	3	#12 AWG	21mm	DP-AAA-2		M	M	E	E	E	E		M	M	E	
HWT-1	1	HOT WATER TANK	UTILITY ROOM		24.0	24.94	30.0	600V	3	30	3	3	#10 AWG	21mm	DP-AAA-2		N/A	N/A	N/A	E	E	E		M	M	E	
P-1	1	RECIRC PUMP	UTILITY ROOM		2.3	0.27	2.9	120V	1	15	1	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
TP-1	1	TRAP PRIMER	STAFF WASHROOM		0.1	0.01	0.1	120V	1	15	1	2	#12 AWG	21mm	PP-A-2		M	M	E	E	E	E		M	M	E	
RP-1	1	RADIANT HEATER	BARRIER FREE WASHROOM		1.5	0.31	1.8	208V	1	15	1	2	#12 AWG	21mm	PP-A-2		N/A	N/A	N/A	E	E	E		M	M	E	
RP-2	1	RADIANT HEATER	UNIVERSAL WASHROOM		2.5	0.53	3.2	208V	1	15	1	2	#12 AWG	21mm	PP-A-2		N/A	N/A	N/A	E	E	E		M	M	E	

TOTAL LOAD	94.98 kW
EMERGENCY LOAD	0.00 kW
NON EMERGENCY LOAD	94.98 kW

NOTES

(A) ABBREVIATIONS:
E = ELECTRICAL CONTRACTOR
M = MECHANICAL CONTRACTOR
O = OWNER REPRESENTATIVE
K = KITCHEN CONTRACTOR

(B) STARTER TYPE:
HOA = HAND-OFF-AUTO SWITCH
MS = MANUAL STARTER
CO = COMBINATION STARTER
CO2 = 2-SPEED COMBINATION STARTER
VFD = VARIABLE FREQUENCY DRIVE
MRR = MOTOR RATED RELAY (24 VAC COIL AND MS)
PCS = PACKAGED CONTROL SYSTEM

(C) CONTROL DEVICES:
BA = BUILDING AUTOMATION SYSTEM
ES = END SWITCH
LT = LINE VOLTAGE THERMOSTAT
FS = FLOW SWITCH
GS = GAS SENSOR
H = HUMIDITY SENSOR
I = INTERLOCK
LS = LEVEL SWITCH
PS = PRESSURE SWITCH
TC = TIME CLOCK
T = THERMOSTAT
VFD = VARIABLE FREQUENCY DRIVE
WS = WALL SWITCH
RT = REVERSE ACTING THERMOSTAT
FCCF = FIREFIGHTERS CENTRAL CONTROL FACILITY
FA = FIRE ALARM SYSTEM
DDC = DIRECT DIGITAL CONTROLS
HOA = HAND-OFF-AUTO SWITCH

NOTES:
1. CONTRACTOR TO CONFIRM EXACT SIZE, LOCATION AND WIRING REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ANY WIRING.
2. CONTRACTOR SHALL REVIEW DIV.25 DRAWINGS AND SPECIFICATION TO ENSURE LOCATIONS AND QUANTITIES ARE CORRECT
3. WIRE MOTOR DISCONNECT AHEAD OF THE VFD AND INSTALL AT THE MOTOR. PROVIDE WIRING BETWEEN MOTOR AND VFD
4. ALL MOTORS 1/2 HP OR LARGER SHALL HAVE MAGNETIC STARTERS
5. SINGLE SPEED STARTERS TO BE WITH HOA POSITION SWITCH, PILOT LIGHT, AND 120 VAC CONTROL CIRCUIT.
6. CONTROL PANELS ARE SHIPPED LOOSE AND REQUIRE FIELD WIRING BY DIVISION 26.
7. ALL STARTERS TO BE WIRED BY DIVISION 26.
8. DIVISION 26 TO SUPPLY AND INSTALL DISCONNECT SWITCHES. IF THE DISCONNECT COLUMN INDICATES 'M', THEN IT IS A PACKAGE UNIT C/W A DISCONNECT SWITCH WIRED BY DIVISION 26.
9. ALL FIRE ALARM DEVICES WIRED BY DIVISION 26. PROVIDE HARDWIRE CONNECTION TO SHUTDOWN ON FIRE ALARM.
10. PROVIDE EMERGENCY SHUTDOWN FOR ALL BOILERS AT DOOR TO BOILER ROOM
11. PROVIDE 120 VOLT 20A RECEPTACLE ON A DEDICATED CIRCUIT FOR ALL DDC PANELS. CONFIRM QUANTITIES AND LOCATIONS WITH DIV. 25
12. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR INSTALLED AFTER THE SUPPLY AIR FAN AS PER CAN/CSA-S524

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

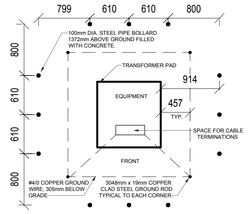
BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL SCHEDULES

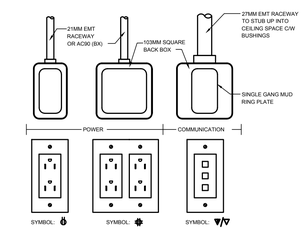
Print Date 2025-04-11
Scale NTS
Project No. 0010052.000
Drawn by LT
Checked by JN

E401

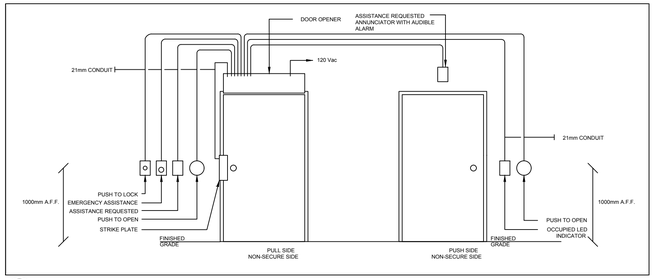


1. ANY STATION FENCE REQUIRED TO BE BONDED TO THE TRANSFORMER GROUND MAT SHALL BE CONNECTED WITH A #4/0 BARE CU CONDUCTOR. IF THE STATION FENCE IS LOCATED A MINIMUM OF 1100mm AWAY FROM EQUIPMENT, IT IS NOT REQUIRED TO BE BONDED.

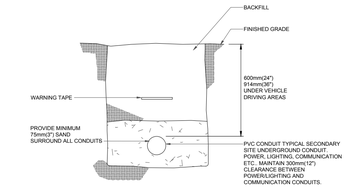
8 / E501 PAD MOUNT TRANSFORMER GROUNDING DETAIL
SCALE: N.T.S.



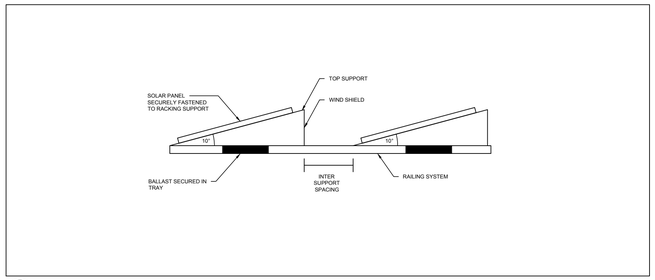
4 / E501 TYPICAL POWER/COMMUNICATION OUTLET INSTALLATION DETAIL
SCALE: N.T.S.



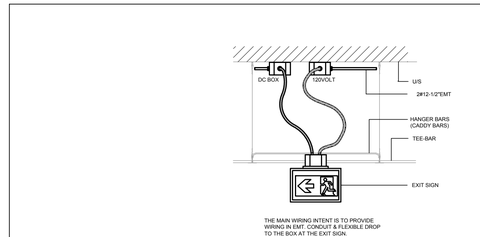
7 / E501 UNIVERSAL WASHROOM DETAIL
SCALE: N.T.S.



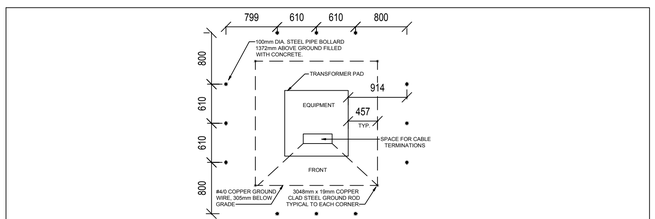
3 / E501 TYPICAL DIRECT BURIED CONDUIT INCOMING SERVICE DETAIL
SCALE: N.T.S.



6 / E501 SOLAR PANEL RACKING DETAIL
SCALE: N.T.S.

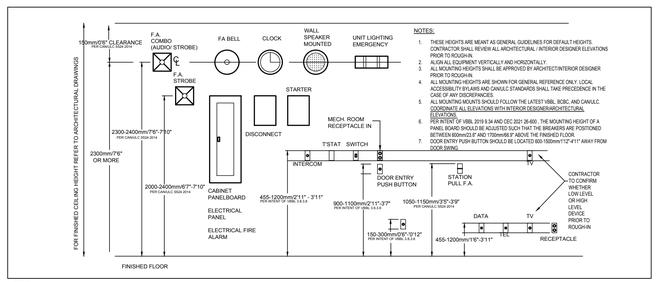


2 / E501 TYPICAL EXIT SIGN WIRING DETAIL
SCALE: N.T.S.

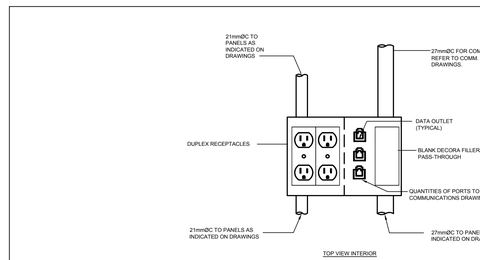


1. ANY STATION FENCE REQUIRED TO BE BONDED TO THE TRANSFORMER GROUND MAT SHALL BE CONNECTED WITH A #4/0 BARE CU CONDUCTOR. IF THE STATION FENCE IS LOCATED A MINIMUM OF 1100mm AWAY FROM EQUIPMENT, IT IS NOT REQUIRED TO BE BONDED.

9 / E501 PAD MOUNT TRANSFORMER GROUNDING DETAIL
SCALE: N.T.S.



5 / E501 TYPICAL DEVICES MOUNTING DETAIL
SCALE: N.T.S.



1 / E501 TYPICAL COMMUNICATION FLOOR OUTLET BOX
SCALE: N.T.S.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL DETAILS

Print Date	2025-04-10
Scale	NTS
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E501

ELECTRICAL SPECIFICATIONS:

1. GENERAL

1.1 SHORT FORM SPECIFICATIONS

1.1.1 THE ELECTRICAL PROJECT SPECIFICATION IS IN SHORT FORM FORMAT AND IS BASED ON THE "MASTER FORMAT" PUBLISHED JOINTLY BY CONSTRUCTION SPECIFICATIONS CANADA AND THE CONSTRUCTION SPECIFICATIONS INSTITUTE.

1.1.2 THE NATURE OF THE SHORT FORM SPECIFICATION FORMAT INDICATES THAT DETAILED EXECUTION AND REGULATORY REQUIREMENTS MAY NOT BE PRESENT IN THIS SECTION.

1.1.3 IT IS EXPECTED THAT THE CONTRACTOR SHALL MAKE ALLOWANCE FOR ANY EXCLUSIONS ARISING FROM THE USE OF THE SHORT FORM SPECIFICATION IN THE BID PRICE, AND INCLUDE ALL REQUIREMENTS THAT WOULD BE NECESSARY IF THIS HAD BEEN A STANDARD, THREE PART FORMAT SPECIFICATION.

1.1.4 REQUIREMENTS OF WORK REQUIRING COORDINATION OR COMBINED SKILLS WILL BE READ AS ONE REQUIREMENT, APPLICABLE TO ALL PARTIES PROVIDING WORK.

1.1.5 THESE DOCUMENTS INCLUDE ALL DRAWINGS AND SPECIFICATIONS AND CONTRACT REQUIREMENTS; WHAT IS REQUIRED BY ONE COMPONENT IS REQUIRED BY ALL.

1.1.6 THESE SPECIFICATIONS SHOULD BE READ IN CONJUNCTION WITH ALL OTHER DOCUMENTS; WHERE DIFFERENCES OCCUR BETWEEN DIFFERENT DOCUMENTS, THE MOST RESTRICTIVE REQUIREMENT WILL APPLY.

1.1.7 COORDINATE ACTIVITIES WITH OTHER SECTIONS AND TRADES TO MINIMIZE CONFLICTS THAT MAY ARISE.

1.2 DEFINITIONS

1.2.1 PROVIDE: THE WORD PROVIDE MEANS TO SUPPLY, INSTALL AND MAKE OPERATIONAL, AND IS APPLICABLE TO THE CONTRACTOR OF THE WORK OF THIS SECTION.

1.2.2 ALTERNATES: THE WORD ALTERNATE IS APPLIED TO A PRODUCT LISTED BY THE CONSULTANT THAT IS DIFFERENT THAN PRODUCTS SPECIFIED FOR THE PROJECT, AND THAT HAS BEEN DETERMINED TO ESSENTIALLY FUNCTION, OPERATE AND PERFORM IN A MANNER SIMILAR TO OR BETTER THAN THE SPECIFIED PRODUCT; WILL NOT ALTER CONSTRUCTION METHODS OR DIMENSIONS; AND WILL HAVE THE SAME VISUAL APPEARANCE, FIT AND FINISH INCLUDING ANY ADDITIONAL REQUIREMENTS AS LISTED AS A PART OF THE PROPERTIES LISTED IN THIS SECTION.

1.2.3 SUBSTITUTION: THE WORD SUBSTITUTION WILL BE APPLIED TO A PRODUCT PROPOSED FOR USE BY THE SUBCONTRACTOR THAT IS DIFFERENT THAN PRODUCTS SPECIFIED FOR THE PROJECT, BUT WILL ESSENTIALLY FUNCTION, OPERATE AND PERFORM IN A MANNER SIMILAR TO OR BETTER THAN THE SPECIFIED PRODUCT; WILL NOT ALTER CONSTRUCTION METHODS OR DIMENSIONS; AND WILL HAVE THE SAME VISUAL APPEARANCE, FIT AND FINISH INCLUDING ANY ADDITIONAL REQUIREMENTS AS LISTED AS A PART OF THE PROPERTIES LISTED IN THIS SECTION.

1.3 ADMINISTRATIVE REQUIREMENTS

1.3.1 GENERAL PROVISIONS: PROVIDE LABOUR, MATERIALS, PRODUCTS, EQUIPMENT, SERVICES AND ALL INCIDENTALS REQUIRED TO COMPLETE, TEST AND COMMISSION ALL ELECTRICAL WORK SHOWN ON THE DRAWINGS OR NOTED IN THIS SPECIFICATION:

1. DRAWINGS ARE DIAGRAMMATIC EXCEPT WHERE SPECIFIC DETAILS ARE GIVEN.
2. OBTAIN ACCURATE DIMENSIONS FROM THE ARCHITECTURAL, STRUCTURAL, OR BY ONSITE MEASUREMENTS.
3. WHERE DIRECTED, RELOCATE OUTLETS AND FIXTURES TO WITHIN 3050 MM OF THE INDICATED LOCATION AT NO EXTRA COST PROVIDING THAT INSTRUCTIONS ARE GIVEN BEFORE THE INSTALLATION OF THE OUTLETS AND FIXTURES REQUIRING RELOCATION.

1.3.2 WORKMANSHIP: WORK SHALL BE COMPLIMENTARY TO THE BASE BUILDING DESIGN AND INSTALLATIONS:

1. WHERE AN EXACT METHOD OF INSTALLATION HAS NOT BEEN INDICATED, FOLLOW THE METHODS USED ON THE BASE BUILDING.
2. GENERALLY, THE STANDARD OF WORK SHALL BE EQUAL TO OR BETTER THAN THAT OF THE BASE BUILDING.

1.3.3 ADDITIONS OR CHANGES TO EXISTING SYSTEMS SHALL BE MADE USING EQUIPMENT IDENTICAL TO THAT ALREADY USED IN THE BASE BUILDING, E.G.: FIRE ALARM SYSTEM COMPONENTS, PANELS, ETCETERA

1.3.4 EXAMINATION OF SITE: VISIT THE SITE TO THOROUGHLY EXAMINE AND BECOME FAMILIAR WITH CONDITIONS WHICH MAY AFFECT THE WORK:

1.3.5 NO CLAIMS FOR EXTRAS WILL BE ALLOWED FOR WORK OR MATERIALS NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE CONTRACT OR FOR THE BIDDER'S FAILURE, ERROR, OR NEGLIGENCE IN THIS REGARD.

1.4 SUBMITTALS

1.4.1 PROVIDE REQUIRED INFORMATION IN ACCORDANCE WITH GENERAL REQUIREMENTS: SUBMITTALS.

1.4.2 ACTION SUBMITTALS: PROVIDE THE FOLLOWING SUBMITTALS BEFORE STARTING ANY WORK OF THIS SECTION:

1. SHOP DRAWINGS: SUBMIT MANUFACTURER'S DETAILED DRAWINGS SHOWING DIMENSIONS, CAPACITIES, WEIGHTS, AND ELECTRICAL DATA AND PERFORMANCE CHARACTERISTICS FOR EQUIPMENT INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
2. SERVICE EQUIPMENT
3. PANEL BOARDS
4. STARTERS
5. LIGHT FIXTURES
6. TELECOMMUNICATIONS EQUIPMENT
7. PHOTOVOLTAIC (PV) SYSTEM
8. OTHER ITEMS REASONABLY REQUESTED BY THE CONSULTANT, OR AS LISTED IN THESE SPECIFICATIONS.

1.5 RECORD DOCUMENTS (DRAWINGS AND SPECIFICATIONS)

1.5.1 SUBMIT AS CONSTRUCTED INFORMATION AS DESCRIBED IN THIS SECTION.

1.5.2 RECORD INFORMATION USING A RED PEN ON PRINTS AND SPECIFICATION MANUAL DEDICATED FOR THE USE OF RECORD DOCUMENTS.

1.5.3 INDICATE ALL CHANGES AND VARIATIONS FROM CONTRACT DRAWINGS CONCURRENTLY WITH CONSTRUCTION PROCESS; DO NOT CONCEAL ANY WORK UNTIL REQUIRED INFORMATION IS RECORDED.

1.5.4 INCLUDE SUFFICIENT INFORMATION ACCURATELY RECORDING ACTUAL CONSTRUCTION INCLUDING; BUT NOT LIMITED TO, THE FOLLOWING:

1. MEASURED LOCATIONS OF INTERNAL UTILITIES AND APPURTENANCES CONCEALED IN CONSTRUCTION REFERENCED TO VISIBLE AND ACCESSIBLE FEATURES OF CONSTRUCTION.
2. SITE CHANGES OF DIMENSION AND DETAIL OR CHANGES IN CONSTRUCTION MATERIALS OR LOCATIONS REQUIRED BY ONSITE CONDITIONS AND TO MAKE COMPONENTS OF THE WORK COME TOGETHER.
3. CHANGES TO EQUIPMENT LAYOUT AND SERVICES.
4. DEVIATIONS IN PIPING, DUCT RUNS, WIRING, AND UTILITY CONNECTIONS.
5. ACTUAL LOCATIONS OF EQUIPMENT, POWER, DATA, AND COMMUNICATIONS LINES REFERENCED TO FIXED STRUCTURAL ELEMENTS FOR ITEMS THAT ARE SCHEMATICALLY INDICATED ON THE DRAWING.
6. CHANGES REQUIRED BY ADDENDA, BID REVISIONS, CHANGE ORDERS, WORK ORDERS AND CONSTRUCTION COMMUNICATIONS.

1.5.5 MAKE RECORDINGS IMMEDIATELY AFTER THE RESPECTIVE WORK IS COMPLETED AND NOT LESS THAN ONCE A WEEK; DATE EACH RECORDING.

1.5.6 CHANGES TO SPECIFICATION SECTIONS SHALL BE LEGIBLY NOTED IN THE MARGINS OF THE DOCUMENT OR BY STAPLING A SHEET OF WHITE PAPER TO THE MARGIN AND REFERENCING THE AFFECTED ARTICLE(S); USE OF ADHESIVE TAPE OR SELF-STICKING REMOVABLE NOTES WILL NOT BE ACCEPTABLE FOR THIS PURPOSE.

1.5.7 ARRANGE AND PAY FOR THE SERVICES OF THE CONSULTANT TO INCORPORATE INTO THE AUTOCAD DRAWING BASE.

1.6 QUALITY ASSURANCE

1.6.1 REGULATORY REQUIREMENTS: COMPLETE WORK IN ACCORDANCE WITH CURRENT CANADIAN ELECTRIC CODE, CSA STANDARDS, THE LOCAL ELECTRICAL INSPECTION AUTHORITY'S REQUIREMENTS, AND WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION:

1. SUBMIT THE NECESSARY PLANS AND INFORMATION TO THE ELECTRICAL INSPECTION AUTHORITY AND PAY FOR ALL PERMITS AND FEES AS REQUIRED BEFORE COMMENCEMENT OF WORK.
2. QUALIFICATIONS: PROVIDE PROOF OF QUALIFICATIONS WHEN REQUESTED BY CONSULTANT:

1.6.2 MATERIALS: USE ONLY NEW MATERIALS HAVING APPROPRIATE CSA LABELLING INDICATING APPROVAL, AND CONFORM WITH NEMA OR EEMAC STANDARDS WHERE APPLICABLE AND AS FOLLOWS:

1. ONLY USE NEW MATERIALS, EXCEPT WHERE SPECIFICALLY DETAILED OR INDICATED THAT EXISTING MATERIALS SHALL BE REUSED.
2. WORKMANSHIP: USE ONLY SKILLED WORKERS WHO PERFORM THEIR WORK IN A NEAT AND PROFESSIONAL MANNER; AS A MINIMUM, THE CONSULTANT WILL EXPECT THAT:
3. EXPOSED CONDUIT AND WIRING BE INSTALLED SQUARE AND PLUMB TO BUILDING LINES AND LEVELS.
4. DAMAGED OR INCORRECTLY INSTALLED MATERIALS BE REMOVED AND REPLACED.
5. DAMAGED FINISHES ARE RESTORED TO MATCH ORIGINAL FINISHES.
6. STRUCTURAL, ARCHITECTURAL OR MECHANICAL ITEMS ARE NOT DAMAGED, ALTERED, OR INTERFERED WITH BY INSTALLATION OF MATERIALS BY THIS SECTION, WHETHER CAUSED DIRECTLY OR INDIRECTLY BECAUSE OF THEIR WORK.
7. SITE IS LEFT CLEAN AND TIDY AT THE END OF EACH WORKDAY BY REMOVING TOOLS, EQUIPMENT, LADDERS, AND EMPTY CARDBOARD BOXES FROM SITE AND PREMISES ARE LEFT BROOM CLEAN AT THE END OF THE WEEK.

2. PRODUCTS

2.1 ALTERNATES AND SUBSTITUTIONS

2.1.1 BID PRICE SHALL BE BASED ON MATERIALS AND EQUIPMENT SPECIFIED; ALTERNATES WILL BE CONSIDERED FOR MATERIALS AND EQUIPMENT THAT PERFORM SIMILARLY TO OR BETTER THAN THE ACCEPTABLE MATERIALS OR BASIS-OF-DESIGN MATERIALS LISTED AND AS FOLLOWS:

7. SUBMIT PROPOSED ALTERNATES WHERE ALTERNATE EQUIPMENT IS PROPOSED INDICATING PROPOSED COST SAVING OR IMPROVED VALUE TO THE PROJECT.
8. INCLUDE COSTS FOR ADDITIONAL WORK REQUIRED BY SUBSTITUTE MATERIALS WHERE THE CHANGE IN MATERIALS REQUIRES A CHANGE IN THE DESIGN BASED ON THE ORIGINALLY SPECIFIED EQUIPMENT, INCLUDING WORK REQUIRED BY OTHER DIVISIONS TO ACCOMMODATE ALTERNATE EQUIPMENT.

2.2 FIRE STOPPING

2.2.1 PROVIDE FIRESTOP FOR ALL PENETRATIONS THROUGH FIRE RATED SEPARATIONS.

2.2.2 FIRESTOP MUST BE A COMPLETE SYSTEM, MEETING CAN/ULC FIRE RESISTANCE STANDARDS.

2.3 CONDUIT

2.3.1 INSTALL WIRING IN EMT CONDUIT, EXCEPT WHERE SPECIFICALLY STATED OTHERWISE OR WHERE SUBJECT TO INJURY WHERE SAME SHALL BE RIGID METALLIC CONDUIT.

2.3.2 CONDUIT IN CONTACT WITH EARTH SHALL BE RIGID METALLIC CONDUIT WITH PROTECTIVE COATING OR RIGID PVC.

2.3.3 FLEXIBLE CABLE MAY BE USED FOR SHORT BRANCH CIRCUIT CONNECTIONS BETWEEN OUTLETS AND MOTORIZED EQUIPMENT, FIXED APPLIANCES, ELECTRIC HEATING EQUIPMENT, IN ACCESSIBLE CEILING SPACES FOR FINAL CONNECTION TO LIGHTING FIXTURES AND FOR WIRING DEVICES IN CAVITY WALL CONSTRUCTION.

2.3.4 INSTALL CONDUIT PARALLEL OR PERPENDICULAR TO BUILDING LINES WHEREVER POSSIBLE AND AS FOLLOWS:

1. CONDUITS SHALL BE CONCEALED IN WALLS WHEREVER POSSIBLE, INCLUDING CMU WALLS.
2. RUN ALL CONDUITS CONCEALED IN FINISHED AREAS.
3. CONDUITS IN SERVICE AREAS MAY BE SURFACE MOUNTED.
4. MAINTAIN 50 MM BETWEEN PARALLEL CONDUITS IN CAST CONCRETE CONSTRUCTION, EXCEPT IMMEDIATELY ADJACENT TO CAST IN OUTLET BOXES, WHERE CONDUIT RUN CAN BE ADJUSTED TO FIT.

2.3.5 INSTALL A CONTINUOUS 180 KG TEST NYLON CORD IN ALL EMPTY CONDUITS, WITH CAP AT EACH END OF CONDUIT.

2.3.6 PROVIDE SUITABLE METAL BRACKETS, FRAMES, HANGERS, CLAMPS AND RELATED TYPES OF SUPPORT TO SUPPORT CONDUIT AND CABLE RUNS.

2.3.7 FASTEN EXPOSED CONDUITS TO BUILDING CONSTRUCTION OR SUPPORT SYSTEM USING ONE HOLE MALLEABLE IRON STRAPS.

2.3.8 SUPPORT TWO OR MORE CONDUITS ON U-CHANNELS SUPPORTED BY MINIMUM 6 MM DIAMETER THREADED ROD HANGERS WHERE DIRECT FASTENING TO BUILDING CONSTRUCTION IS IMPRACTICAL.

2.3.9 SUPPORT CONDUITS FROM U-CHANNELS USING ONE PIECE PIPE CLAMPS.

2.3.10 USE EMT CONDUIT WITH DIE CAST SET SCREW TYPE CONCRETE TIGHT COUPLINGS AND CONNECTORS IN DRY AREAS.

2.3.11 USE FLEXIBLE CONDUIT FOR CONNECTION TO MOTORS IN DRY AREAS AND DRY TYPE TRANSFORMERS.

2.3.12 USE LIQUID-TIGHT FLEXIBLE METAL CONDUIT WITH COMPRESSION TYPE RAIN-TIGHT COUPLINGS AND CONNECTORS WITH INSULATED THROAT FOR CONNECTION TO EQUIPMENT IN DAMP OR WET LOCATIONS.

2.3.13 INSTALL ALL SECURITY POWER AND COMMUNICATIONS WIRING IN CONDUIT. FREE AIR HOOKS OR CABLE TRAY WILL NOT BE ACCEPTED FOR SECURITY WIRING.

2.4 WIRE AND CABLE

2.4.1 BUILDING AND CONTROL WIRES SHALL BE 98% CONDUCTIVITY COPPER CONDUCTORS; SIZE AS INDICATED WITH 600 V INSULATION, CROSS LINKED THERMOSETTING POLYETHYLENE MATERIAL RATED RW90XL.

2.4.2 COMPUTER EQUIPMENT RECEPTACLES AND DEDICATED GROUND RECEPTACLES: PROVIDE SEPARATE NEUTRAL AND SEPARATE GROUND WIRES FOR EVERY CIRCUIT; NEUTRAL WIRES SHALL BE MINIMUM 12 AWG OR TO MATCH CIRCUIT CONDUCTOR SIZE IF LARGER; GROUND WIRES SHALL BE MINIMUM 12 AWG.

2.4.3 HOUSEKEEPING RECEPTACLES AND MISCELLANEOUS POWER AND LIGHTING CIRCUITS: PROVIDE SHARED NEUTRAL WIRES IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE; SHARED NEUTRAL SHALL BE MINIMUM 10 AWG; SHARED GROUND SHALL BE MINIMUM 12 AWG.

2.4.4 LIGHTING CIRCUITS CONTROLLED FROM DIMMER: PROVIDE SEPARATE NEUTRAL WIRE FOR EVERY CIRCUIT OR DIMMING CHANNEL; NEUTRAL WIRE SHALL BE MINIMUM 12 AWG.

2.4.5 SIZE WIRE FOR BRANCH CIRCUITS TO LIMIT VOLTAGE DROP FROM THE PANELBOARD TO THE FURTHEST RECEPTACLE AT 3% WITH A TEST CURRENT OF 80% OF BRANCH CIRCUIT BREAKER RATING.

2.4.6 BRANCH CIRCUIT WIRING GUIDELINES:

1. POWER CONDUCTORS SMALLER THAN 12 AWG NOT PERMITTED.
2. WIRE FOR 120 VOLT CONTROL CIRCUITS: MINIMUM 14 AWG.

2.4.7 WIRE FOR 120 VOLT CIRCUITS USING SHARED NEUTRALS, MINIMUM WIRE SIZES AS FOLLOWS:

1. 12 AWG FOR RUNS UP TO 23 M.
2. 10 AWG FOR RUNS OF 23 M TO 37 M.
3. RUNS IN EXCESS OF 37 M SHALL USE A WIRE SIZE THAT COMPLIES WITH THE REQUIREMENTS OF ITEM PART 2.4.5 ABOVE.

2.4.8 WIRE FOR 120 VOLT CIRCUITS USING SEPARATE NEUTRALS, MINIMUM WIRE SIZES AS FOLLOWS:

1. 12 AWG FOR RUNS UP TO 20 M.
2. 10 AWG FOR RUNS OF 20 M TO 35 M.
3. RUNS IN EXCESS OF 35 M SHALL USE A WIRE SIZE THAT COMPLIES WITH THE REQUIREMENTS OF ITEM PART 2.4.5 ABOVE.
4. HOMERUNS SHALL NOT BE LESS THAN 10 AWG.

2.4.9 WIRE FOR 347 VOLT LIGHTING CIRCUITS, MINIMUM WIRE SIZES AS FOLLOWS:

1. 12 AWG FOR RUNS UP TO 90 M.
2. 10 AWG FOR RUNS OF 90 M UP TO A DISTANCE THAT ENSURES COMPLIANCE WITH THE REQUIREMENTS OF ITEM PART 2.4.5 ABOVE.

2.4.10 WIRE FOR DC EMERGENCY LIGHTING CIRCUITS, MINIMUM SIZE AS FOLLOWS:

1. 10 AWG OR LARGER SIZE WHERE REQUIRED TO COMPLY WITH REQUIREMENTS OF ITEM PART 2.4.5 ABOVE; COORDINATE WITH EQUIPMENT MANUFACTURER'S WRITTEN RECOMMENDATIONS.

2.4.11 SIZE CONDUCTORS IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE WHERE WIRE SIZES ARE NOT INDICATED ON THE DRAWINGS.

2.4.12 WIRING FOR FIRE ALARM, SECURITY, PAGING AND SIMILAR SYSTEMS SHALL MATCH BASE BUILDING WIRING, OR AS RECOMMENDED BY THE SYSTEM MANUFACTURER.

2.4.13 ALL WIRING INSTALLED IN UNDERGROUND CONDUIT SHALL BE SUITABLE FOR WET LOCATION. THIS INCLUDES LINE VOLTAGE, LOW VOLTAGE, TELEVISION, DATA, COMMUNICATION, AND ALL TYPES OF WIRING. WIRING SHALL ALSO BE SUITABLE TO EQUIPMENT MANUFACTURER'S REQUIREMENTS.

2.4.14 ALL WIRES IN CLASS 1, GROUP 1, ZONE 1 AND ZONE 2 AREAS MUST BE OIL AND GAS RESISTANT.

2.4.15 ALL PETROLEUM WIRING MUST BE COLOUR CODED AND/OR LABELED SUCH THAT WIRING IS EASILY IDENTIFIABLE.

2.4.16 ALL PETROLEUM WIRING MUST BE CONNECTED AS A CONTINUOUS RUN. NO SPLICES OR FIELD TERMINAL CONNECTORS CAN BE USED, OTHER THAN THOSE SPECIFIED BY PETROLEUM EQUIPMENT MANUFACTURER.

2.4.17 ELECTRICAL CONTRACTOR TO ALLOW FOR PLENUM RATED CABLING/CONDUIT IN ALL PLENUMS AS PER ARCHITECTURAL AND/OR MECHANICAL DRAWINGS. THIS WILL INCLUDE ANY CEILING SPACES BEING USED FOR RETURN AIR (I.E. FAN COIL UNITS, COMPARTMENT UNITS, ERVS). REFER TO MECHANICAL DRAWINGS AND COORDINATE WITH MECHANICAL CONTRACTOR. IF ANY CLARIFICATIONS ARE REQUIRED ON WHERE PLENUMS MAY BE PRESENT, AN RFI IS TO BE RAISED DURING TENDER.

2.5 WIRING DEVICES AND COVER PLATES

2.5.1 SPECIFICATION GRADE DEVICES SHALL BE USED.

2.5.2 COVER PLATES SHALL BE WHITE NYLON MOLDED, UNLESS NOTED OTHERWISE.

2.5.3 PROVIDE NAMEPLATE WITH CIRCUIT NUMBER ON ALL RECEPTACLES. WHERE THERE IS ONLY ONE RECEPTACLE ON A CIRCUIT. IDENTIFY AS "DED.CCT#...".

2.5.4 PROVIDE JUNCTION AND OUTLET BOXES WHERE NECESSARY FOR PROPER PULLING OF WIRES.

2.5.5 PROVIDE OUTLET BOX FOR LIGHTING SWITCHES, FIXTURES, RECEPTACLES, EACH WIRING DEVICE, AND COMMUNICATION OUTLET AND AS INDICATED.

2.5.6 USE ONE-PIECE ELECTRO-GALVANIZED STEEL BOXES.

2.5.7 PROVIDE GANG BOXES WHERE WIRING DEVICES ARE GROUPED. COMBINATION BOXES WITH BARRIERS WHERE OUTLETS FOR MORE THAN ONE SYSTEM ARE GROUPED.

2.5.8 SUPPORT BOXES INDEPENDENTLY OF CONNECTING CONDUITS.

2.5.9 DO NOT INSTALL OUTLET BOXES BACK-TO-BACK IN WALLS:

1. NON-ACOUSTIC WALLS: ALLOW MINIMUM 150 MM HORIZONTAL CLEARANCE BETWEEN BOXES.
2. ACOUSTICALLY RATED WALLS: OFFSET OUTLET BOXES BY 610 MM SEPARATED BY ONE STUD SPACE OR GYPSUM BOARD BAFFLE; COORDINATE WITH DIVISION 09 - GYPSUM BOARD ASSEMBLIES.
3. PARTY WALLS: OFFSET OUTLET BOXES BY 1000 MM SEPARATED BY TWO STUD SPACES AND GYPSUM BOARD BAFFLES.

2.5.10 ALLOW FOR A VARIATION OF 3050 MM FROM LOCATIONS SHOWN WITHOUT EXTRA COST; CONFIRM FINAL LOCATION BEFORE INSTALLATION.

2.5.11 MOUNTING HEIGHTS FROM FINISHED FLOOR TO CENTRE LINE OF DEVICE, UNLESS INDICATED OTHERWISE, SHALL BE:

LOCATION AND DISTANCE	
• OUTLET BOXES ABOVE COUNTERS OR SPLASH BACKS	225 MM ABOVE COUNTER
• OUTLET BOXES ABOVE BASE BOARD HEATERS AND RADIATION CABINETS	200 MM ABOVE ENCLOSURE
• GENERAL RECEPTACLES, TV AND COMMUNICATIONS OUTLET BOXES	400 MM
• RECEPTACLES IN MECHANICAL AND SHOP AREAS; WASHER AND DRYER OUTLET BOXES	950 MM
• SWITCHES, DIMMERS, PUSH BUTTONS	1150 MM
• WALL MOUNTED COMMUNICATIONS OUTLET BOXES, FIRE ALARM PULL STATIONS	1350 MM
• END OF LINE RESISTORS	1800 MM
• PANEL BOARDS, ANNUNCIATOR PANELS, ETCETERA	1900 MM TO TOP OF PANEL
• FIRE ALARM BELLS, SPEAKERS, CLOCKS	2300 MM

(HEIGHTS AS ABOVE OR IN BOTTOM OF NEAREST BLOCK OR BRICK COURSE).

2.5.12 USE GANG PLATES WHERE TWO OR MORE OUTLETS ARE LOCATED TOGETHER:

2.5.13 ALIGN ALL COVER PLATES PARALLEL AND PERPENDICULAR TO BUILDING LINES.

2.5.14 PROVIDE BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES.

2.5.15 WHERE LIGHTING DIMMERS ARE SHOWN, USE SEPARATE SINGLE GANG BOXES ONLY.

2.6 PHOTOVOLTAIC (PV) POWER SYSTEM

2.6.1 PRODUCT DATA:

1. PROVIDE MANUFACTURER'S PRINTED PRODUCT LITERATURE, SPECIFICATIONS, AND DATA SHEETS, AND INCLUDE PRODUCT CHARACTERISTICS, PERFORMANCE CRITERIA, PHYSICAL SIZE, FINISH, AND LIMITATIONS.
2. PROVIDE COMPLETE PHOTOVOLTAIC POWER CALCULATIONS SHOWING AMP HOURS PRODUCED, ROOFTOP PANEL LAYOUTS, ELECTRICAL WIRING SCHEMATIC AND SINGLE LINE DIAGRAM.

2.6.2 DESCRIPTION OF SYSTEM:

1. PROVIDE ALL MATERIAL, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE AND OPERATIONAL PV ARRAY SYSTEM.
2. THE PV SYSTEM SHALL PROVIDE AT LEAST 22kW OF POWER DURING PEAK OPERATION.
3. PROVIDE ONLY NEW EQUIPMENT WHICH BEARS THE ULC OR CSA LABELS.
4. PROVIDE ALL REQUIRED EQUIPMENT AND METERING TO TORONTO HYDRO DISTRIBUTION GENERATION REQUIREMENTS.

2.6.3 PRODUCTS:

1. SOLAR PANELS
   - CELL EFFICIENCY SHALL BE BETWEEN 14 AND 18% NORMAL.
   - CELL STRUCTURE SHALL BE MONOCRYSTALLINE.
   - EACH CELL SHALL BE SQUARE IN SHAPE.
   - CELL COLOUR SHALL BE BLUE.
   - PEAK POWER OUTPUT SHALL BE 400W OR GREATER.
   - PHOTOVOLTAIC ARRAY SUPPORT STRUCTURES AND NECESSARY APPURTENANCES FOR MOUNTING THE ARRAY SHALL BE PROVIDED. EACH MODULE MUST BE CAPABLE OF BEING REPLACED WITHOUT DISRUPTING THE OPERATION OF THE REMAINDER OF THE SYSTEM.
   - CONNECTIONS BETWEEN THE MODULES AND COMBINER BOX SHALL CONSIST OF FLEXIBLE CONDUITS WITH LIQUID-TIGHT FITTINGS AND UL-LISTED WIRE RATED FOR 90ºC WET CONDITIONS.
   - TRADE CONTRACTOR SHALL ARRANGE THE ARRAY PANELS IN SERIES AND/OR PARALLEL AS DETERMINED BY THE INVERTER TO ENSURE TOLERANCES ARE NOT EXCEEDED.
2. INVERTER

   THE INVERTER SHALL CONTROL AND REGULATE THE OUTPUT OF THE PV ARRAY. THE CONTROLLER SHALL BE A SERIES TYPE ON/OFF CONTROL. THE INVERTER SHALL HAVE THE FOLLOWING:
   - OPERATING TEMPERATURE RANGE OF -40ºC TO 60ºC AMBIENT TEMPERATURES.
   - MUST BE A NEGATIVE GROUNDED SYSTEM.
   - LCD DISPLAY THAT WILL SHOW ALL MONITORED PARAMETERS AND THEIR SETTINGS, AND THE SETTINGS SHALL BE PASSWORD-PROTECTED.
   - ADJUSTABLE LOW-VOLTAGE DISCONNECT (LVD) FOR LOAD CIRCUITS.
   - TWO LOAD CHANNELS THAT CAN BE CONTROLLED.
   - COMMUNICATION VIA AN RS232 PORT.
   - REVERSE POLARITY PROTECTED.
   - TRANSIENT VOLTAGE PROTECTION.
   - CIRCUIT BREAKERS ON ARRAY INPUTS AND LOAD OUTPUTS
   - INTEGRAL RAPID SHUTDOWN.

   2.1. ALARMS SHALL INCLUDE THE FOLLOWING:
   - WARNING ALARMS SHALL CONSIST OF LEDs FOR LOW-VOLTAGE DISCONNECT, HIGH-VOLTAGE ALARM, AND GENERATOR FAULT.
   - ALARM SETTINGS ARE TO BE DETERMINED BY SYSTEM DESIGNERS BASED ON THE SELECTED COMPONENTS AND MANUFACTURER'S RECOMMENDATIONS.

4.1 EXECUTION OF THE WORK

4.1.1 OBTAIN CONSULTANT'S INTERPRETATION OR CLARIFICATION ON THE SPECIFICATIONS AND DRAWINGS BEFORE PROCEEDING WITH THE WORK:

1. CORRECT COMPLETED WORK INSTALLED CONTRARY TO THE INTENT OF THE DRAWINGS AND SPECIFICATIONS AT THEIR OWN EXPENSE, WHERE IT CAN BE DETERMINED THAT A CLARIFICATION COULD HAVE BEEN ISSUED.
2. NOTIFY THE CONSULTANT AS WORK PROGRESSES WHERE ADDITIONAL CLARIFICATION OR INTERPRETATION OF THE SPECIFICATIONS AND DRAWINGS IS REQUIRED.

4.1.2 CLEAN AND TOUCHUP SURFACES OF SHOP PAINTED EQUIPMENT SCRATCHED OR MARRED DURING SHIPMENT OR INSTALLATION, TO MATCH ORIGINAL PAINT.

4.1.3 COMPLETE CORING, CUTTING AND PATCHING USING QUALIFIED SPECIALISTS; OBTAIN WRITTEN APPROVAL FROM CONSULTANT BEFORE STARTING CORING OR CUTTING WORK.

4.1.4 IDENTIFY ELECTRICAL EQUIPMENT WITH LAMACOID NAMEPLATES MINIMUM 13 MM HEIGHT; INDICATE VOLTAGE, USAGE, AND OTHER PERTINENT INFORMATION SUBJECT TO THE ACCEPTANCE OF THE CONSULTANT.

4.1.5 COORDINATE AND COOPERATE WITH OTHER TRADES ON SITE TO AVOID INTERFERENCE OF SYSTEMS INSTALLED BY THIS SECTION AND THOSE INSTALLED BY OTHER PARTS OF THE WORK:

1. PROTECT ALL FINISHES AND UNFINISHED WORK OF THIS AND OTHER DIVISIONS FROM DAMAGE DUE TO CARRYING OUT OF THIS WORK.
2. KEEP EQUIPMENT DRY AND CLEAN AT ALL TIMES.
3. COVER OPENINGS IN EQUIPMENT AND MATERIALS.
4. BE RESPONSIBLE FOR AND MAKE GOOD ANY DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO WALLS, FLOORS, CEILINGS, WOODWORK, BRICKWORK, FINISHES, ETCETERA
5. PACK SPACE BETWEEN WIRING AND SLEEVE FULL WITH MINERAL WOOL FIRE STOPPING AND FIRE RATED SILICONE SEALANT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS WHERE CABLES OR CONDUITS PASS THROUGH FLOORS AND FIRE RATED WALLS.

4.1.6 CONDUCT FINAL CLEANING UPON COMPLETION OF WORK INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. CLEAN LIGHTING REFLECTORS, LENSES, AND OTHER LIGHTING SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT.
2. CLEAN AND REFINISH EXPOSED EQUIPMENT, AND REPLACE ANY BROKEN OR MALFUNCTIONING COMPONENTS.

4.1.7 GUARANTY MATERIALS, EQUIPMENT, AND INSTALLATIONS TO BE FREE OF ALL DEFECTS FOR A PERIOD OF TWELVE MONTHS FROM THE DATE OF SUBSTANTIAL PERFORMANCE IN ACCORDANCE WITH GENERAL CONDITIONS OF CONTRACT.

4.2 SITE QUALITY CONTROL

4.2.1 TESTING: MEASURE PHASE CURRENTS OF PANEL BOARDS WITH NORMAL LIGHTING LOADS OPERATING, ALONG WITH ANY OTHER NORMAL LOADS THAT MAY ALREADY BE INSTALLED IN THE FACILITY.

1. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BALANCE OF CURRENT BETWEEN PHASES NOT EXCEEDING 10% MAXIMUM AND RECORD CHANGES.
2. MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT.

4.2.2 PERFORM ALL NECESSARY TESTS TO CONFIRM THE CORRECT OPERATION OF ALL SYSTEMS AFFECTED BY THE RENOVATIONS.

4.2.3 SUBMIT LETTERS FROM MANUFACTURERS OF ALL SYSTEMS INDICATING THAT THEY HAVE CHECKED, TESTED AND VERIFIED THE RESPECTIVE SYSTEM AND ARE SATISFIED WITH THE METHODS OF INSTALLATION, CONNECTION AND OPERATION.

4.2.4 SUBMIT ALL TEST RESULTS TO THE CONSULTANT FOR APPROVAL.

4.2.5 CONTRACTOR TO ARRANGE FOR CONSULTANT SITE INSPECTION AT THE FOLLOWING STAGES OF CONSTRUCTION:

1. ELECTRICAL SITE WORKS PRIOR TO BURIAL OF ELECTRICAL CONDUCTORS AND CONDUITS.
2. COMPLETION OF ELECTRICAL ROUGH-IN.
3. SUBSTANTIAL COMPLETION OF ELECTRICAL INSTALLATION.

4.2.6 PHOTOVOLTAIC (PV) SYSTEM TESTS

1. THE FOLLOWING TESTS SHALL BE PERFORMED BY THE TRADE CONTRACTOR TO VERIFY THE PROPER SYSTEM OPERATION IN ALL MODES AND PROVIDE INITIAL "BURN-IN" OF THE POWER SYSTEM COMPONENTS. THE TRADE CONTRACTOR SHALL PROVIDE FOUR LOAD BANKS TO PERFORM THE TESTS. DETAILS OF THE FOLLOWING TESTS TO BE COMPLETED BY THE TRADE CONTRACTOR.

   1.1. NORMAL OPERATION MODE
   - PLACE SYSTEM IN NORMAL OPERATING MODE.
   - CONNECT EACH LOAD BANK TO THE LOAD PANELS AND OPERATE THE SYSTEM FOR APPROXIMATELY 20 TO 24 HOURS CONTINUOUSLY, SUCH THAT THE BATTERY STATE-OF-CHARGE IS APPROXIMATELY 45 TO 50%.

   1.1. NORMAL LOAD TEST
   - VERIFY THE SYSTEM IS IN NORMAL OPERATING MODE FOLLOWING THE ABOVE TEST.
   - THE TRADE CONTRACTOR SHALL CONNECT THE BUILDING LOADS TO THE APPROPRIATE LOAD PANEL FOR OPERATIONAL TESTING UNDER LOW VOLTAGE CONDITIONS.

Introba

No.	Date	Description
4	2025-04-11	ISSUED FOR TENDER
3	2024-09-18	ISSUED FOR BUILDING PERMIT
2	2024-08-16	ISSUED FOR 100% COSTING
1	2023-01-31	ISSUED FOR 50% CD

Issue Record

N

BLUFFER'S PARK
EAST WASHROOM
1 Brimley Road South
Scarborough, Toronto, ON

Drawing Title

ELECTRICAL SPECIFICATIONS

Print Date	2025-04-11
Scale	NONE
Project No.	0010052.000
Drawn by	LT
Checked by	JN

E601

STANDARD TRCA ENVIRONMENTAL REQUIREMENTS

STANDARD NOTES:

1. 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. ALL IN-WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY WITH APPROPRIATE EROSION AND SEDIMENT CONTROLS.

4. THE ESC STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE , ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE IMPACTS. A TRCA ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USED, AS NECESSARY.

5. AN ENVIRONMENTAL MONITOR EMPLOYED BY THE CONTRACTOR WILL ATTEND THE SITE TO INSPECT ALL NEW CONTROLS IMMEDIATELY AFTER INSTALLATION. INSPECTION OF ESC MEASURES 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 MEATURES RELATED TO ESCs, DEWATERING OR UNWATERING, OR RESTORATION IN- OR NEAR- WATER WORKS AND PROOVIDE ADVICE TO ENSURE THAT ACTIVITIES AS PER THE APPROVED TRCA PERMIT ARE EFFECTIVELY MITIGATED AS CONSTRUCTION PROCEEDS. SHOULD CONCERNS ARISE ON SITE, THE ENVIRONMENTAL MONITOR WILL CONTACT THE TRCA ENFORCEMENT OFFICER (FOR APPROVED PERMITS) AND PROJECT MANAGER (FOR ISSUED VOLUNTARY PROJECT REVIEW) AS WELL AS THE PROPONENT, IF ISSUES ARISE.

6. ALL GRADES WITHIN THE REGULATED AREA 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 CONDUCTED DURING FAVOURABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGULATORY FLOOD PLAIN 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. ALL DEWATERING / UNWATERING SHALL BE FILTERED AND RELEASED TO THE ENVIRONMENT AT LEAST 30 METRES FROM A WATERCOURSE OR WETLAND AND ALLOWED TO DRAIN THROUGH A WELL-VEGETATED AREA. NO DEWATERING EFFLUENT SHALL BE SENT DIRECTLY TO ANY WATERCOURSE, WETLAND OR OTHER REGULATED FEATURE OR HAZARD, OR ALLOWED TO DRAIN ONTO DISTURBED SOILS WITHIN THE WORK AREA. THESE CONTROL MEASURES SHALL BE MONITORED FOR EFFECTIVENESS AND MAINTAINED OR REVISED TO MEET THE OBJECTIVES OF THE ESC MEASURES.

9. ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE.

10. NO STAGING OR STORAGE WILL OCCUR WITHIN TRCA'S REGULATED AREA, UNLESS SHOWN ON THE APPROVED DRAWINGS.

ENVIRONMENTAL COMPLIANCE:

11. PLEASE NOTIFY TRCA ENFORCEMENT OFFICER 48 HOURS PRIOR TO COMMENCING CONSTRUCTION: TRCA ENFORCEMENT (T: 437-880-2124; E: Inspections@trca.ca) FOR APPROVED PERMITS AND THE TRCA PROJECT MANAGER FOR ISSUED VOLUNTARY PROJECT REVIEWS. PLEASE ENSURE YOU QUOTE THE TRCA FILE NUMBER OR TRCA PERMIT NUMBER IN YOUR NOTIFICATION.

12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TRCA EROSION AND SEDIMENT CONTROL GUIDELINE FOR URBAN CONSTRUCTION (2019).

CONSTRUCTION TIMING:

13. IN ORDER TO COMPLY WITH THE MIGRATORY BIRDS CONVECTION ACT, TRCA RECOMMENDS THAT TREE REMOVALS BE COMPLETED BETWEEN AUGUST 1 AND APRIL 1. TO PROTECT LOCAL FISH POPULATIONS DURING THEIR SPAWNING, NURSERY AND MIGRATORY PERIODS, IN-WATER ACTIVITIES, MAY ONLY OCCUR DURING THE FOLLOWING TIME PERIOD JULY 15 TO SEPT 15

FISH AND WILDLIFE RELOCATION:

14. FISH AND WILDLIFE STRANDED WITHIN THE WORK AREA SHALL BE CAPTURED AND RELEASED LIVE IN SUITABLE HABITAT UPSTREAM OF THE WORK AREA UNDER THE SUPERVISION OF A QUALIFIED AQAUTIC BIOLOGIST. A PERMIT FROM THE MINISTRY OF NATURAL RESOURCES IS REQUIRED.

PERMIT PROCUREMENT:

15. REFER TO CONTRACT SPECIFICATIONS FOR ROLE AND RESPONSIBILITY OF CONTRACTOR WITH RESPECT TO APPLYING FOR AND PROCURING CONSTRUCTION PERMITS FROM TRCA AND SUBMITTAL REQUIREMENTS FOR ENVIRONMENTAL PROTECTION PLAN(S) AND/OR EROSION & SEDIMENT CONTROLS.

Ravine & Natural Feature Protection By-law

The Ravine & Natural Feature Protection By-law, Chapter 658 of the City of Toronto Municipal Code regulates the injury and destruction of trees, dumping of refuse and changes to grade within protected areas defined in Schedule A.

Under this By-law protected trees may not be removed, injured or destroyed, and protected grades may not be altered, without written authorisation from Urban Forestry Ravine & Natural Feature Protection, on behalf of the General Manager of Parks, Forestry & Recreation.

Convictions of offences respecting the regulations in the Ravine & Natural Feature Protection By-law are subject to fines, and the landowner may be ordered by the court to restore the area to the satisfaction of the City. A person convicted of an offence under this By-law is liable to a minimum fine of $500 and a maximum fine of $100,000 for each tree destroyed, a maximum fine of $100,000 for any other offence committed under this chapter, and/or a Special fine of $100,000. A person convicted of a continuing offence, including failure to comply with ravine permit conditions is liable to a maximum fine of not more than $10,000 for each day or part of a day that the offence continues. RNFP *0608*

BLUFFER'S PARK IS LOCATED ENTIRELY WITHIN TORONTO REGION CONSERVATION AUTHORITY (TRCA) AND TORONTO RAVINE & NATURAL FEATURE PROTECTION (RNFP) REGULATED AREAS AND SUBJECT TO ALL APPLICABLE TRCA AND RNFP REGULATIONS.

NO.	DATE	DESCRIPTION
05	2025-04-11	ISSUED FOR TENDER
04	2024-11-22	ISSUED FOR TRCA PERMIT
03	2024-09-19	ISSUED FOR BUILDING PERMIT
02	2024-06-26	ISSUED FOR TRCA PERMIT
01	2023-01-31	50%-ISSUED FOR COSTING

ISSUE RECORD

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425 Adelaide St. W
Suite 600
Toronto, Ontario
M5V 3C1

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BLUFFER'S PARK
EAST WASHROOM

1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO | M1M

DRAWING TITLE:

NOTES

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

L-100

Ravine & Natural Feature Protection By-law

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Convictions of offences respecting the regulations in the Ravine & Natural Feature Protection By-law are subject to fines, and the landowner may be ordered by the court to restore the area to the satisfaction of the City. A person convicted of an offence under this By-law is liable to a minimum fine of $500 and a maximum fine of $100,000 for each tree destroyed, a maximum fine of $100,000 for any other offence committed under this chapter, and/or a Special fine of $100,000. A person convicted of a continuing offence, including failure to comply with ravine permit conditions is liable to a maximum fine of not more than $10,000 for each day or part of a day that the offence continues. RNFP *0608*

BLUFFER'S PARK IS LOCATED ENTIRELY WITHIN TORONTO REGION CONSERVATION AUTHORITY (TRCA) AND TORONTO RAVINE & NATURAL FEATURE PROTECTION (RNFP) REGULATED AREAS AND SUBJECT TO ALL APPLICABLE TRCA AND RNFP REGULATIONS.

PROVIDE CLEAN SAWCUT (TYP.)
PROVIDE CLEAN RADIAL CUT (RADIUS TO MATCH EXISTING)
EXISTING SIGN TO BE REMOVED AND RELOCATED
EXISTING CURB TO REMAIN AND BE PROTECTED
EXISTING ASPHALT PATH BE REMOVED
EXISTING MEMORIAL STONE TO REMAIN AND BE PROTECTED
EXISTING MEMORIAL BENCH TO REMAIN AND BE PROTECTED
EXISTING CONCRETE PAD WALKWAY AND SUB-BASE TO BE REMOVED
EXISTING ASPHALT PATH TO REMAIN AND BE PROTECTED
EXISTING ASPHALT WALKWAY AND SUB-BASE TO BE REMOVED
EXISTING LIGHT POLE TO REMAIN AND BE PROTECTED
EXISTING LIGHT POLE TO REMAIN AND BE PROTECTED
EXISTING SIGN TO BE REMOVED AND RELOCATED (LOCATION TO BE CONFIRMED ON SITE)
EXISTING FOUNDATION AND CONDUIT TO BE REMOVED. LIGHT POLE TO BE RELOCATED (TYP.), REFER TO LAYOUT
EXISTING SIGN TO BE REMOVED AND RELOCATED
EXISTING FIRE HYDRANT/WATER VAULT TO BE REMOVED AND RELOCATED- REFER TO CIVIL
EXISTING DROP CURB TO REMAIN AND BE PROTECTED
EXISTING CONCRETE CURB TO BE REMOVED. PROVIDE CLEAN SAWCUT
EXISTING SIGN TO BE REMOVED AND RELOCATED
EXISTING MANHOLE TO BE REMOVED REFER TO CIVIL
EXISTING PILLAR AND FOUNDATION BE REMOVED
EXISTING PLANTING INCLUDING ROOTBALL TO BE REMOVED
EXISTING BIKE RACKS TO BE REMOVED AND RETURNED TO CoT
EXISTING PLANTING INCLUDING ROOTBALL TO BE REMOVED
EXISTING PLANTING INCLUDING ROOTBALL TO BE REMOVED
EXISTING BOULDERS TO BE REMOVED AND RETURNED TO COT
EXISTING CONCRETE PAD AND SUB-BASE TO BE REMOVED
EXISTING GRAVEL PATH AND SUB-BASE TO BE REMOVED
EXISTING GRAVEL PATH AND SUB-BASE TO BE REMOVED
PROVIDE CLEAN RADIAL CUT AT EXISTING ASPHALT TO MATCH PROPOSED
EXISTING BOULDERS TO BE REMOVED AND RETURNED TO COT
PROVIDE CLEAN SAWCUT (TYP.)
EXISTING LIGHT POLE, FOUNDATION, AND ASSOCIATED CONDUIT TO BE RELOCATED (TYP.), REFER TO LAYOUT
EXISTING DRAIN TO BE REMOVED- REFER TO CIVIL
EXISTING GATE TO REMAIN AND BE PROTECTED
EXISTING SIGN AND FLAG POLE TO REMAIN AND BE PROTECTED
EXISTING FAUCET, CONCRETE PAD AND SUB-BASE TO BE REMOVED. WATER SUPPLY TO BE CAPPED AT P.O.C
EXISTING BUILDING AND FOUNDATION TO BE REMOVED. SERVICE DISCONNECTION AND EQUIPMENT REMOVAL REQUIRED
EXISTING BOLLARD AND FOUNDATION BE REMOVED
EXISTING UTILITY BOX TO BE REMOVED AND RE-USED ON SITE (LOCATION TO BE CONFIRMED ON SITE)
EXISTING SHOWER AND PAD TO BE REMOVED. WATER SUPPLY TO BE CAPPED AT P.O.C
EXISTING BOULDERS TO BE REMOVED AND RETURNED TO COT
EXISTING SAND TO BE REMOVED AND RELOCATED ON-SITE
EXISTING SHIPPING CONTAINER TO BE REMOVED AND RETURNED TO COT
EXISTING BOULDERS TO BE REMOVED AND RETURNED TO COT
SEE L-100
SEE L-101

SITE PREPARATION AND DEMOLITION NOTES

1. ALL REFUSE, DEBRIS AND MISCELLANEOUS ITEMS TO BE REMOVED, THAT ARE NOT TO BE STOCKPILED FOR LATER USE ON THE PROJECT OR DELIVERED TO THE OWNER SHALL BE LEGALLY DISPOSED OF OFF-SITE BY THE CONTRACTOR.
2. ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO THE FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE, AND REUSED AS DIRECTED BY THE OWNER OR LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.
3. AT ALL LOCATIONS WHERE CONCRETE PAVEMENT OR BITUMINOUS CONCRETE ROADWAY ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES AND SHRUBS DESIGNATED TO REMAIN FOR THE LENGTH OF THE CONSTRUCTION PERIOD. THE PLACEMENT OF PROTECTION DEVICES ADDITIONAL TO THOSE SPECIFIED SHALL, HOWEVER, BE AT THE CONTRACTOR'S DISCRETION.
5. DAMAGE NO PLANTS TO REMAIN BY BURNING, BY PUMPING OF WATER, BY CUTTING OF LIVE ROOTS OR BRANCHES, OR BY ANY OTHER MEANS. NO PLANTS TO BE SAVED SHALL BE USED FOR CRANE STAYS, GUYS OR OTHER FASTENINGS. VEHICLES SHALL NOT BE PARKED OR PARKED TEMPORARILY STANDING IDLE WITHIN THE DRIP LINE OR WHERE DAMAGE MAY RESULT TO TREES TO BE SAVED. CONSTRUCTION MATERIALS SHALL NOT BE STORED BENEATH TREES TO BE SAVED.
6. TREES DESIGNATED TO BE REMOVED SHALL INCLUDE THE REMOVAL OF TREE PIT TO FULL DEPTH.
7. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING CONDITIONS THAT ARE DUE TO CONTRACTOR OPERATIONS AND WHICH ARE OUTSIDE THE LIMIT OF WORK.
9. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT TRACKING OF MUD ONTO PUBLIC WAYS. ANY MUD ON PUBLIC WAYS ORIGINATING FROM THE JOB SITE SHALL BE CLEANED BY THE CONTRACTOR. PROVIDE DUST CONTROL AS APPROVED BY THE LANDSCAPE ARCHITECT.
10. THE CONTRACTOR SHALL SECURE ALL PERMITS THAT MAY BE REQUIRED FROM ALL JURISDICTIONS AFFECTED BY THIS WORK.
11. UNLESS OTHERWISE STATED, SITE FURNISHINGS SHALL BE SALVAGED AND RETURNED TO THE OWNER TO CONFIRM DISPOSAL OR STORAGE.
12. EXISTING SITE DOCUMENTATION TO BE PROVIDED TO CONSULTANT PRIOR TO DEMOLITION
13. ALL PICNIC TABLES WITHIN LIMIT OF WORK TO BE SALVAGED AND RETURNED TO CITY OF TORONTO

LEGEND

- LIMIT OF WORK
- TREE PROTECTION FENCE
- SHORELINE FLOODING HAZARD LIMIT
- 100 YEAR FLOOD LEVEL
- EXISTING STRUCTURE TO BE REMOVED
- EXISTING SOFTSCAPE / SOIL TO BE REMOVED TO REQUIRED DEPTH
- EXISTING ASPHALT PAVING TO BE REMOVED TO REQUIRED DEPTH
- EXISTING CONC. PAVING TO BE REMOVED TO REQUIRED DEPTH
- EXISTING GRAVEL PATH TO BE REMOVED TO REQUIRED DEPTH
- UTILITY POLE TO BE REMOVED
- SITE ELEMENT TO REMAIN AND BE PROTECTED
- SITE ELEMENT TO BE REMOVED
- EXISTING SIGNAGE TO BE RELOCATED
- EXISTING TREE TO BE REMOVED (SEE TREE PROTECTION PLAN L-102)

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DEMOLITION PLAN

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L-101

Ravine & Natural Feature Protection By-law

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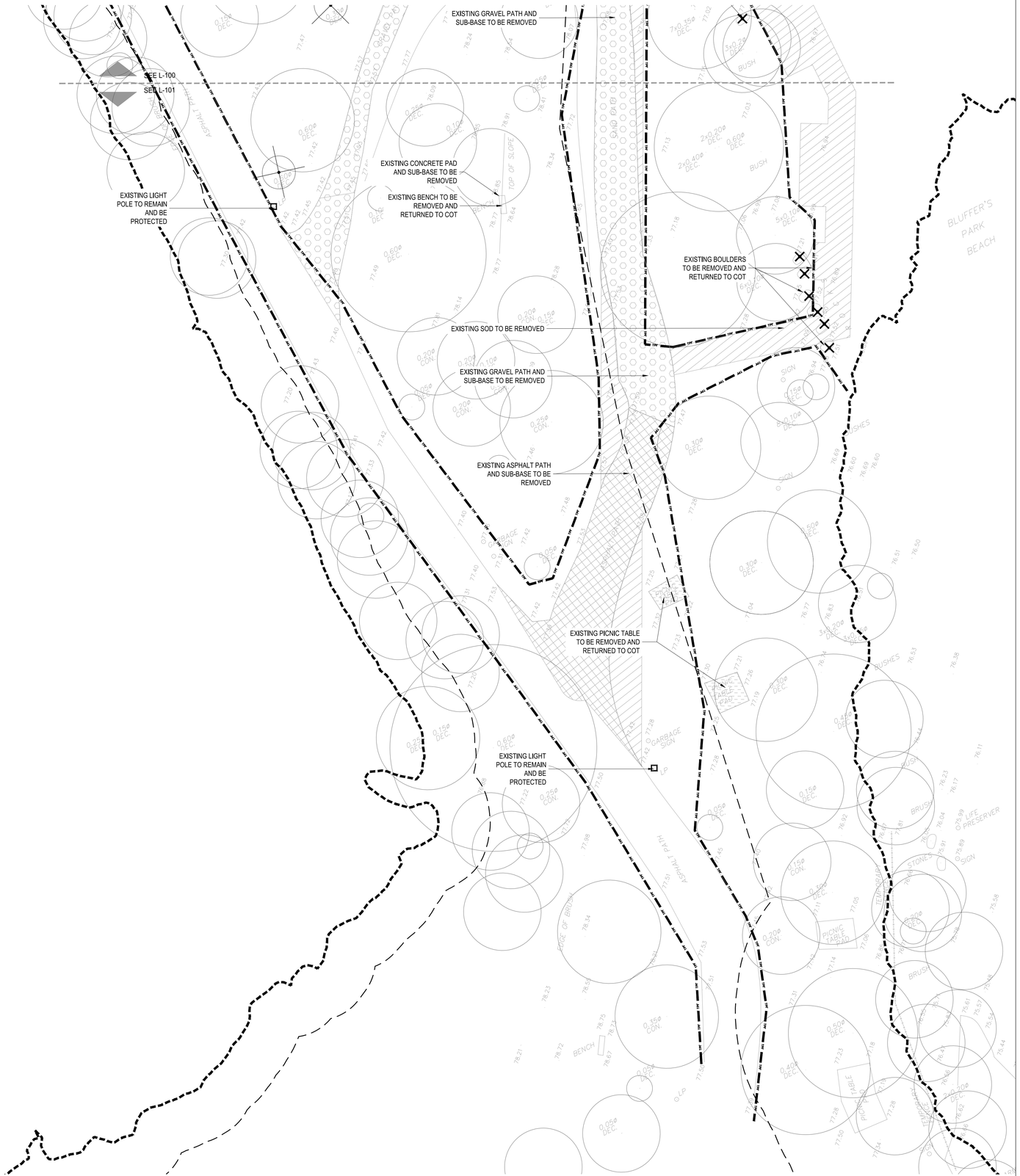

LEGEND

- LIMIT OF WORK
- TREE PROTECTION FENCE
- SHORELINE FLOODING HAZARD LIMIT
- 100 YEAR FLOOD LEVEL
- EXISTING STRUCTURE TO BE REMOVED
- EXISTING SOFTSCAPE / SOIL TO BE REMOVED TO REQUIRED DEPTH
- EXISTING ASPHALT PAVING TO BE REMOVED TO REQUIRED DEPTH
- EXISTING CONC. PAVING TO BE REMOVED TO REQUIRED DEPTH
- EXISTING GRAVEL PATH TO BE REMOVED TO REQUIRED DEPTH
- UTILITY POLE TO BE REMOVED
- SITE ELEMENT TO REMAIN AND BE PROTECTED
- SITE ELEMENT TO BE REMOVED
- EXISTING SIGNAGE TO BE RELOCATED
- EXISTING TREE TO BE REMOVED (SEE TREE PROTECTION PLAN L-102)

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DEMOLITION PLAN

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L-102

Ravine & Natural Feature Protection By-law

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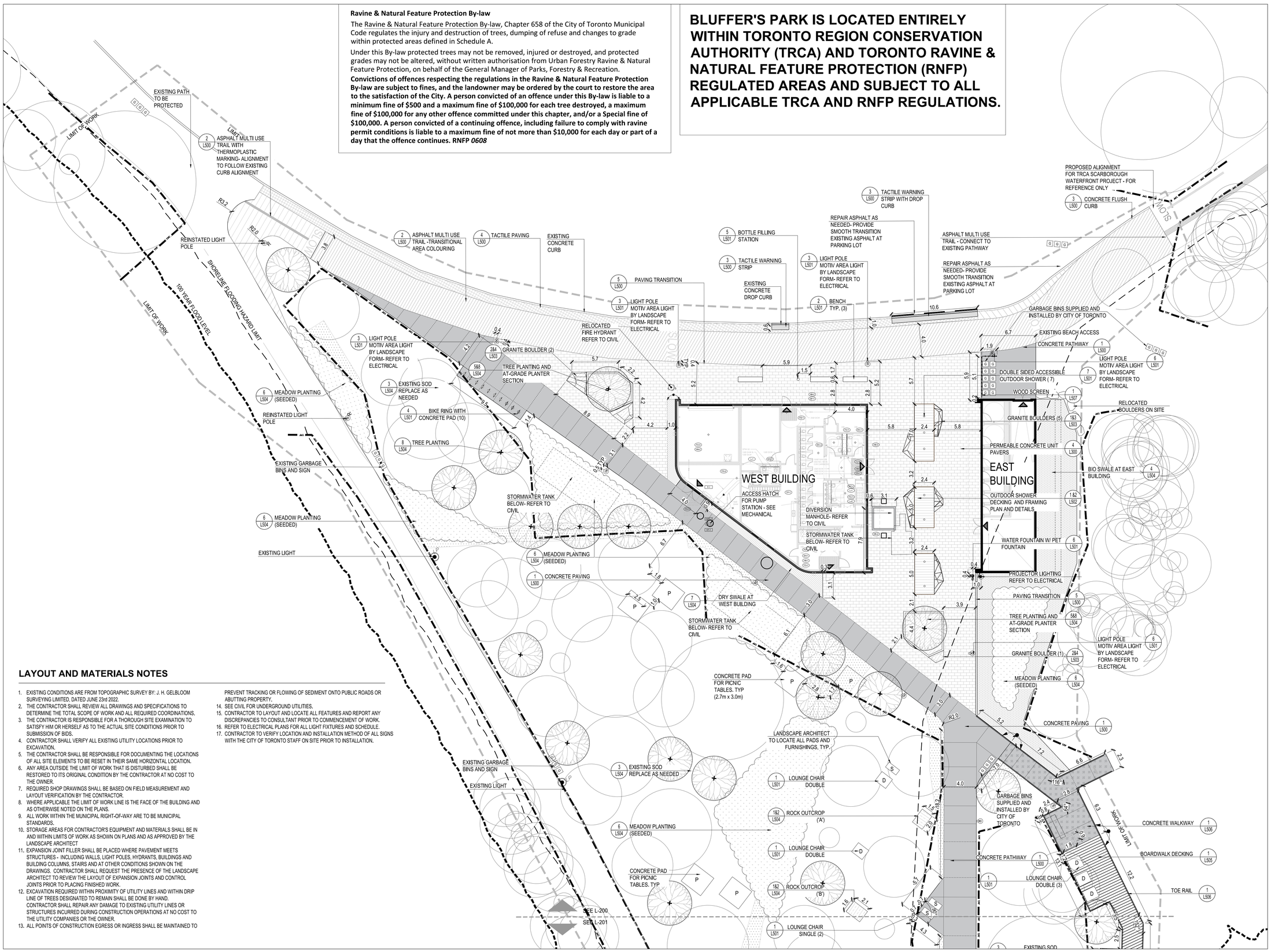

LAYOUT AND MATERIALS NOTES

1. EXISTING CONDITIONS ARE FROM TOPOGRAPHIC SURVEY BY: J. H. GELBLOOM SURVEYING LIMITED, DATED JUNE 23rd 2022.
2. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE TOTAL SCOPE OF WORK AND ALL REQUIRED COORDINATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR A THOROUGH SITE EXAMINATION TO SATISFY HIM OR HERSELF AS TO THE ACTUAL SITE CONDITIONS PRIOR TO SUBMISSION OF BIDS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING THE LOCATIONS OF ALL SITE ELEMENTS TO BE RESET IN THEIR SAME HORIZONTAL LOCATION.
6. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER.
7. REQUIRED SHOP DRAWINGS SHALL BE BASED ON FIELD MEASUREMENT AND LAYOUT VERIFICATION BY THE CONTRACTOR.
8. WHERE APPLICABLE THE LIMIT OF WORK LINE IS THE FACE OF THE BUILDING AND AS OTHERWISE NOTED ON THE PLANS.
9. ALL WORK WITHIN THE MUNICIPAL RIGHT-OF-WAY ARE TO BE MUNICIPAL STANDARDS.
10. STORAGE AREAS FOR CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE IN AND WITHIN LIMITS OF WORK AS SHOWN ON PLANS AND AS APPROVED BY THE LANDSCAPE ARCHITECT
11. EXPANSION JOINT FILLER SHALL BE PLACED WHERE PAVEMENT MEETS STRUCTURES - INCLUDING WALLS, LIGHT POLES, HYDRANTS, BUILDINGS AND BUILDING COLUMNS, STAIRS AND AT OTHER CONDITIONS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL REQUEST THE PRESENCE OF THE LANDSCAPE ARCHITECT TO REVIEW THE LAYOUT OF EXPANSION JOINTS AND CONTROL JOINTS PRIOR TO PLACING FINISHED WORK.
12. EXCAVATION REQUIRED WITHIN PROXIMITY OF UTILITY LINES AND WITHIN DRIP LINE OF TREES DESIGNATED TO REMAIN SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE UTILITY COMPANIES OR THE OWNER.
13. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS OR ABUTTING PROPERTY.
14. SEE CIVIL FOR UNDERGROUND UTILITIES.
15. CONTRACTOR TO LAYOUT AND LOCATE ALL FEATURES AND REPORT ANY DISCREPANCIES TO CONSULTANT PRIOR TO COMMENCEMENT OF WORK.
16. REFER TO ELECTRICAL PLANS FOR ALL LIGHT FIXTURES AND SCHEDULE.
17. CONTRACTOR TO VERIFY LOCATION AND INSTALLATION METHOD OF ALL SIGNS WITH THE CITY OF TORONTO STAFF ON SITE PRIOR TO INSTALLATION.

LAYOUT & MATERIALS LEGEND

- LIMIT OF WORK
- TREE PROTECTION FENCE
- SHORELINE FLOODING HAZARD LIMIT
- 100 YEAR FLOOD LEVEL

PAVING

- C.I.P CONCRETE PAVING
- CONCRETE WALKWAY WITH VOID FORM
- ASPHALT PAVING
- ASPHALT PAVING WITH THERMOPLAST MARKING
- TACTILE PAVERS
- CONCRETE UNIT PAVERS
- BOARDWALK
- RIVERSTONE

PLANTING | DRAINAGE

- EXISTING TREE TO REMAIN
- PROPOSED TREE
- MIX SEED- ONTARIO MEADOW (TRCA-SW-6)
- SOD
- DRY SWALE AT BUIDLING
- SHRUB PLANTING

SITE FURNITURE

- BENCH
- LOUNGE CHAIR DOUBLE AND SINGLE
- GRANITE SEATING
- NEW LIGHT POLE. SEE ELEC.
- REINSTATED EXISTING LIGHT POLE. SEE ELEC.
- EXISTING LIGHT POLE
- WASTE BINS
- PROPOSED PICNIC TABLE CONC. PAD
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DRAWING TITLE:
LAYOUT AND MATERIAL PLAN

PRINT DATE:	2025-04-14
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L-200

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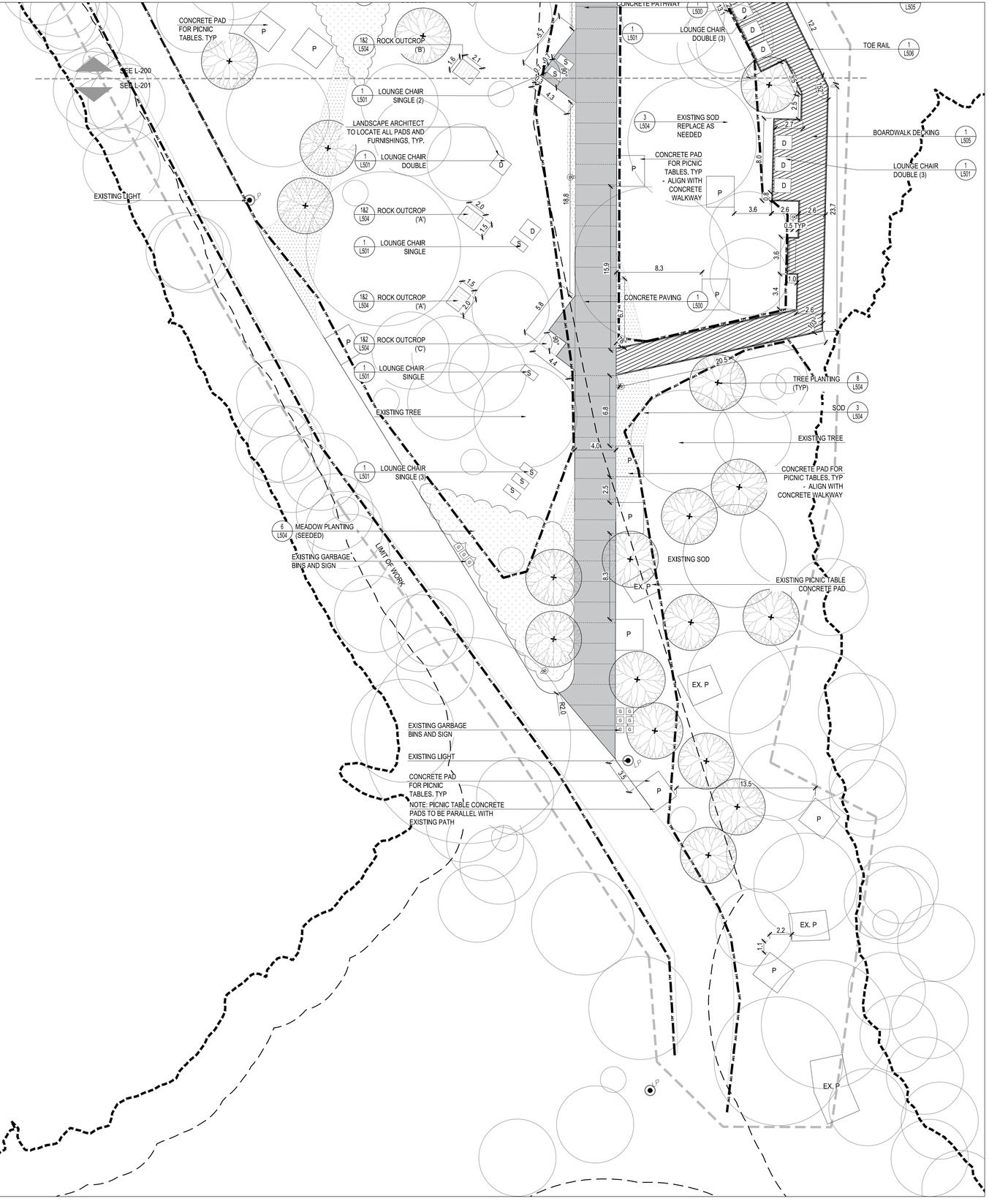

LAYOUT & MATERIALS LEGEND

- LIMIT OF WORK
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GRADING LEGEND

- LIMIT OF WORK
- TREE PROTECTION FENCE
- SHORELINE FLOODING HAZARD LIMIT
- 100 YEAR FLOOD LEVEL

LAYOUT AND MATERIALS

- EXISTING TREE
- PROPOSED TREE

GRADING

- (XX.X) EXISTING SPOT ELEVATION
- XX.XX PROPOSED SPOT ELEVATION
- 2% PROPOSED SLOPE
- HP HIGH POINT
- LP LOW POINT
- TC TOP OF CURB
- BC BOTTOM OF CURB

GRADING NOTES

1. CONTRACTOR SHALL VERIFY ALL EXISTING GRADES IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES BETWEEN EXISTING AND PROPOSED CONDITION TO THE LANDSCAPE ARCHITECT.
2. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER.
3. COMPACT SUBGRADE PRIOR TO ANY FINISH GRADING. REMOVE ALL SOFT SPOTS OBSERVED OR IDENTIFIED IN FIELD.
4. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM SLOPE OF 1%. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT PRIOR TO CONTINUING WORK.
5. CATCH BASIN AND RIM ELEVATIONS PROVIDED FOR REFERENCE ONLY. FOR ALL DRAINAGE STRUCTURES, SEE CIVIL DRAWINGS.
6. EXCAVATION REQUIRED WITHIN PROXIMITY OF UTILITY LINES AND WITHIN DRIP LINE OF TREES DESIGNATED TO REMAIN SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE UTILITY COMPANIES OR THE OWNER.
7. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS OR ABUTTING PROPERTY.
8. WHERE NEW PAVING OR EARTHWORK MEETS EXISTING PAVING OR EARTHWORK, SMOOTHLY BLEND LINE AND GRADE OF EXISTING WITH NEW.
9. MEET EXISTING GRADES AT LIMIT OF WORK.
10. REFER TO CIVIL DRAWINGS FOR PROTECTION OR ADJUSTMENT OF EXISTING UTILITY FRAMES TO NEW PAVING SURFACES WHERE NECESSARY.
11. ALL PICNIC TABLE CONCRETE SLABS TO MATCH EXISTING ADJACENT GRADES. SLOPE FOR POSITIVE DRAINAGE.

NO.	DATE	DESCRIPTION
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01	2023-01-31	50%-ISSUED FOR COSTING

ISSUE RECORD

dtah
425 Adelaide St, W
Suite 600
Toronto, Ontario
M5V 3C1

T 416 968 7908
www.dtah.com

BLUFFER'S PARK EAST WASHROOM

1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO | M1M

DRAWING TITLE:

GRADING PLAN

PRINT DATE: 2025-04-14
SCALE: 1:200
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

L-300

Ravine & Natural Feature Protection By-law

The Ravine & Natural Feature Protection By-law, Chapter 658 of the City of Toronto Municipal Code regulates the injury and destruction of trees, dumping of refuse and changes to grade within protected areas defined in Schedule A.

Under this By-law protected trees may not be removed, injured or destroyed, and protected grades may not be altered, without written authorisation from Urban Forestry Ravine & Natural Feature Protection, on behalf of the General Manager of Parks, Forestry & Recreation.

Convictions of offences respecting the regulations in the Ravine & Natural Feature Protection By-law are subject to fines, and the landowner may be ordered by the court to restore the area to the satisfaction of the City. A person convicted of an offence under this By-law is liable to a minimum fine of $500 and a maximum fine of $100,000 for each tree destroyed, a maximum fine of $100,000 for any other offence committed under this chapter, and/or a Special fine of $100,000. A person convicted of a continuing offence, including failure to comply with ravine permit conditions is liable to a maximum fine of not more than $10,000 for each day or part of a day that the offence continues. RNFP *0608*

BLUFFER'S PARK IS LOCATED ENTIRELY WITHIN TORONTO REGION CONSERVATION AUTHORITY (TRCA) AND TORONTO RAVINE & NATURAL FEATURE PROTECTION (RNFP) REGULATED AREAS AND SUBJECT TO ALL APPLICABLE TRCA AND RNFP REGULATIONS.

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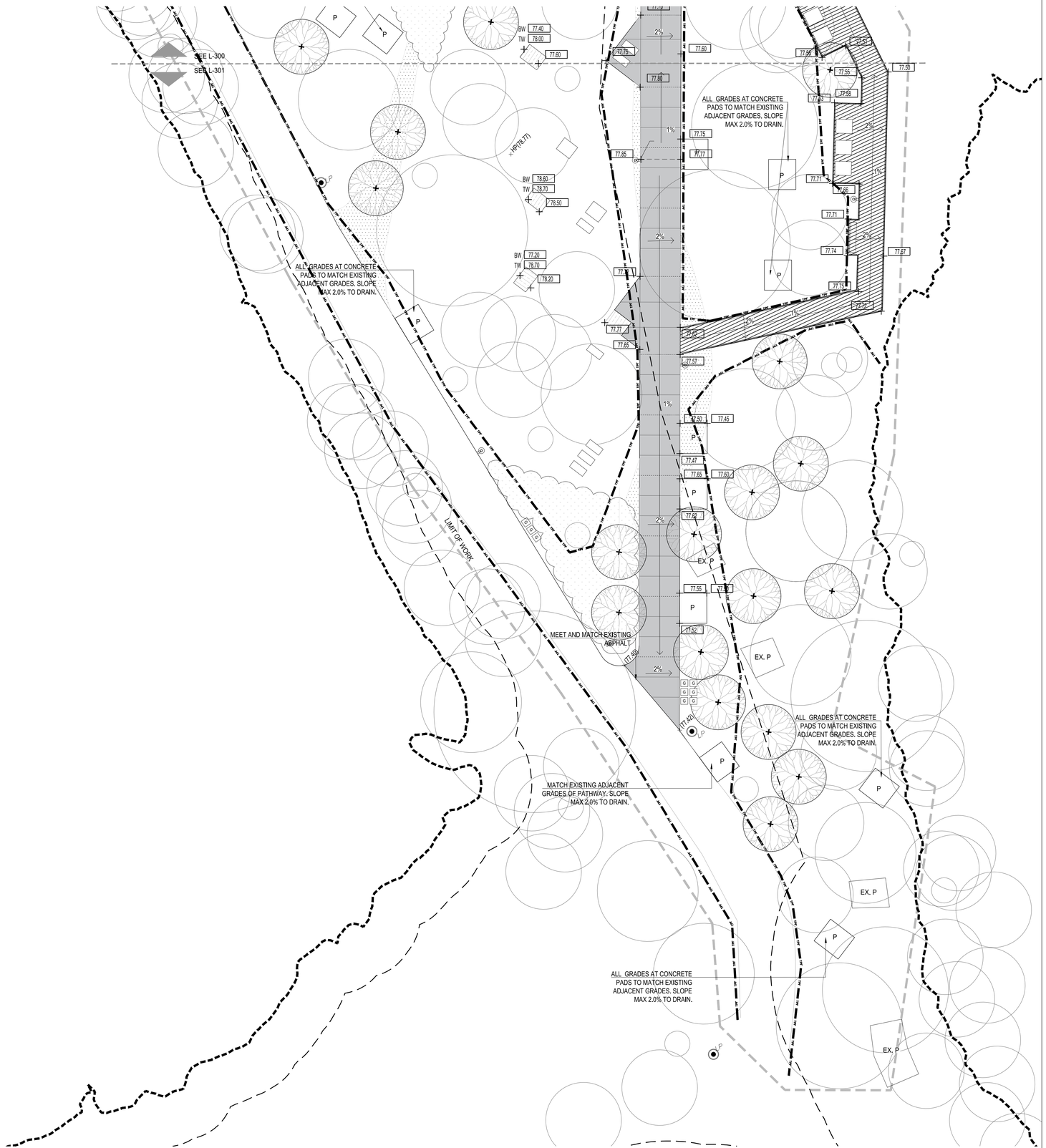

GRADING LEGEND

- LIMIT OF WORK
- TREE PROTECTION FENCE
- SHORELINE FLOODING HAZARD LIMIT
- 100 YEAR FLOOD LEVEL

LAYOUT AND MATERIALS

- EXISTING TREE
- PROPOSED TREE

GRADING

- (XX.XX) EXISTING SPOT ELEVATION
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DRAWING TITLE:

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PRINT DATE: 2025-04-14
SCALE: 1:200
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

L-301

Ravine & Natural Feature Protection By-law

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Convictions of offences respecting the regulations in the Ravine & Natural Feature Protection By-law are subject to fines, and the landowner may be ordered by the court to restore the area to the satisfaction of the City. A person convicted of an offence under this By-law is liable to a minimum fine of $500 and a maximum fine of $100,000 for each tree destroyed, a maximum fine of $100,000 for any other offence committed under this chapter, and/or a Special fine of $100,000. A person convicted of a continuing offence, including failure to comply with ravine permit conditions is liable to a maximum fine of not more than $10,000 for each day or part of a day that the offence continues. RNFP *0608*

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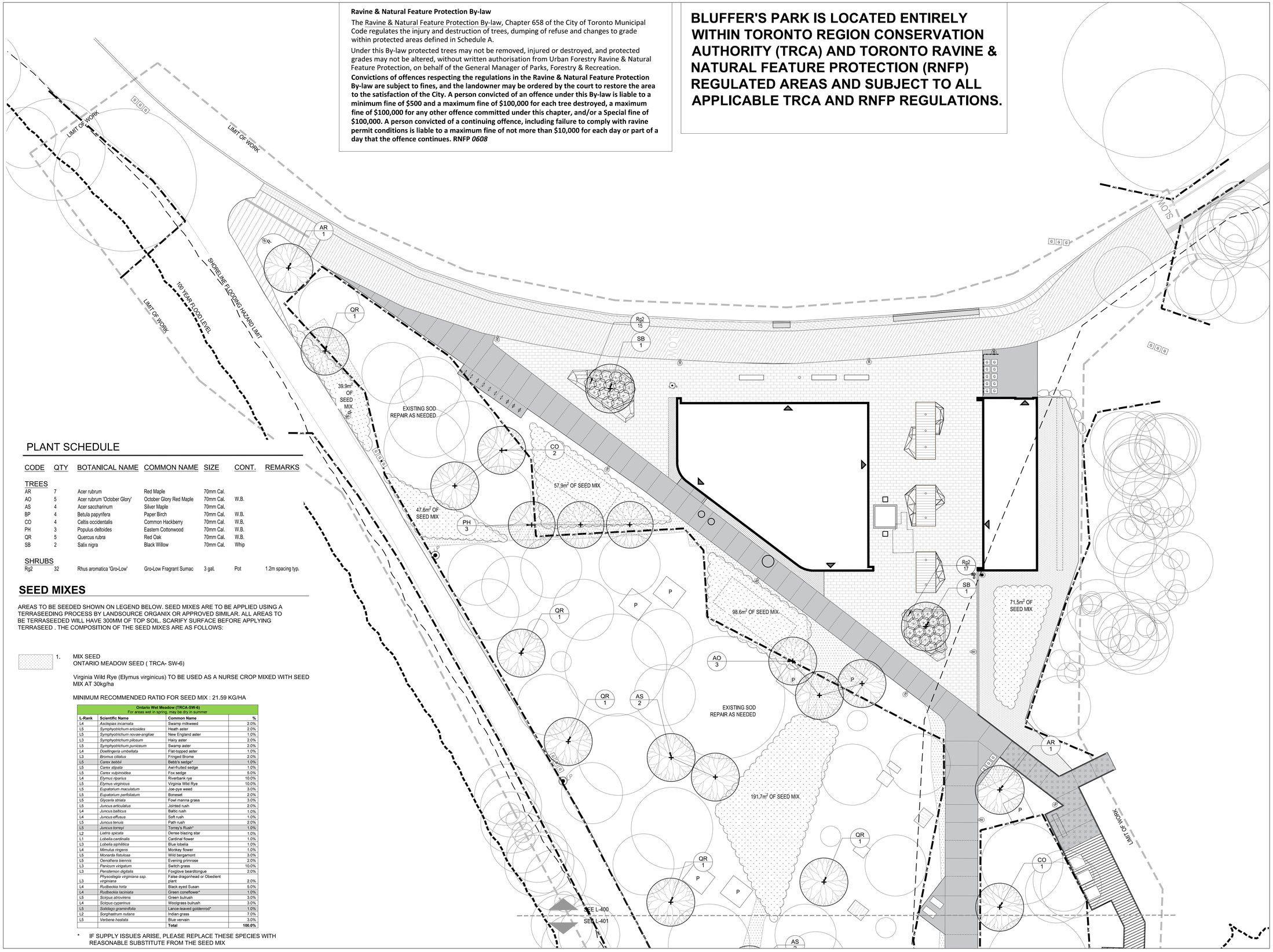

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	REMARKS
TREES						
AR	7	Acer rubrum	Red Maple	70mm Cal.		
AO	5	Acer rubrum 'October Glory'	October Glory Red Maple	70mm Cal.	W.B.	
AS	4	Acer saccharinum	Silver Maple	70mm Cal.		
BP	4	Betula papyrifera	Paper Birch	70mm Cal.	W.B.	
CO	4	Celtis occidentalis	Common Hackberry	70mm Cal.	W.B.	
PH	3	Populus deltoides	Eastern Cottonwood	70mm Cal.	W.B.	
QR	5	Quercus rubra	Red Oak	70mm Cal.	W.B.	
SB	2	Salix nigra	Black Willow	70mm Cal.	Whip	
SHRUBS						
Rg2	32	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	3 gal.	Pot	1.2m spacing typ.

SEED MIXES

AREAS TO BE SEEDED SHOWN ON LEGEND BELOW. SEED MIXES ARE TO BE APPLIED USING A TERRASEEDING PROCESS BY LANDSOURCE ORGANIX OR APPROVED SIMILAR. ALL AREAS TO BE TERRASEEDED WILL HAVE 300MM OF TOP SOIL. SCARIFY SURFACE BEFORE APPLYING TERRASEED . THE COMPOSITION OF THE SEED MIXES ARE AS FOLLOWS:

1. MIX SEED
ONTARIO MEADOW SEED (TRCA- SW-6)

Virginia Wild Rye (Elymus virginicus) TO BE USED AS A NURSE CROP MIXED WITH SEED MIX AT 30kg/ha

MINIMUM RECOMMENDED RATIO FOR SEED MIX : 21.59 KG/HA

Ontario Wet Meadow (TRCA-SW-6) For areas wet in spring, may be dry in summer			
L-Rank	**Scientific Name**	**Common Name**	**%**
L4	*Asclepias incarnata*	Swamp milkweed	2.0%
L5	*Symphyotrichum ericoides*	Heath aster	2.0%
L5	*Symphyotrichum novae-angliae*	New England aster	1.0%
L3	*Symphyotrichum pilosum*	Hairy aster	2.0%
L5	*Symphyotrichum puniceum*	Swamp aster	2.0%
L4	*Doellingeria umbellata*	Flat-topped aster	1.0%
L3	*Bromus ciliatus*	Fringed Brome	2.0%
L5	*Carex bebbii*	Bebb's sedge*	1.0%
L5	*Carex stipata*	Awl-fruited sedge	1.0%
L5	*Carex vulpinoidea*	Fox sedge	5.0%
L4	*Elymus riparius*	Riverbank rye	10.0%
L5	*Elymus virginicus*	Virginia Wild Rye	10.0%
L5	*Eupatorium maculatum*	Joe-pye weed	3.0%
L5	*Eupatorium perfoliatum*	Boneset	2.0%
L5	*Glyceria striata*	Fowl manna grass	3.0%
L5	*Juncus articulatus*	Jointed rush	2.0%
L4	*Juncus balticus*	Baltic rush	1.0%
L4	*Juncus effusus*	Soft rush	1.0%
L5	*Juncus tenuis*	Path rush	2.0%
L5	*Juncus torreyi*	Torrey's Rush*	1.0%
L2	*Liatris spicata*	Dense blazing star	1.0%
L1	*Lobelia cardinalis*	Cardinal flower	1.0%
L3	*Lobelia siphilitica*	Blue lobelia	1.0%
L4	*Mimulus ringens*	Monkey flower	1.0%
L5	*Monarda fistulosa*	Wild bergamont	3.0%
L5	*Oenothera biennis*	Evening primrose	2.0%
L3	*Panicum virigatum*	Switch grass	10.0%
L3	*Penstemon digitalis*	Foxglove beardtongue	2.0%
L3	*Physostegia virginiana ssp. virginiana*	False dragonhead or Obedient plant	2.0%
L4	*Rudbeckia hirta*	Black eyed Susan	5.0%
L4	*Rudbeckia laciniata*	Green coneflower*	1.0%
L5	*Scirpus atrovirens*	Green bulrush	3.0%
L4	*Scirpus cyperinus*	Woolgrass bulrush	3.0%
L5	*Solidago graminifolia*	Lance-leaved goldenrod*	1.0%
L2	*Sorghastrum nutans*	Indian grass	7.0%
L5	*Verbena haatata*	Blue vervain	3.0%
		Total	**100.0%**

* IF SUPPLY ISSUES ARISE, PLEASE REPLACE THESE SPECIES WITH REASONABLE SUBSTITUTE FROM THE SEED MIX

LEGEND

- LIMIT OF WORK
- TREE PROTECTION FENCE
- SHORELINE FLOODING HAZARD LIMIT
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PRINT DATE:	2025-04-14
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L-400

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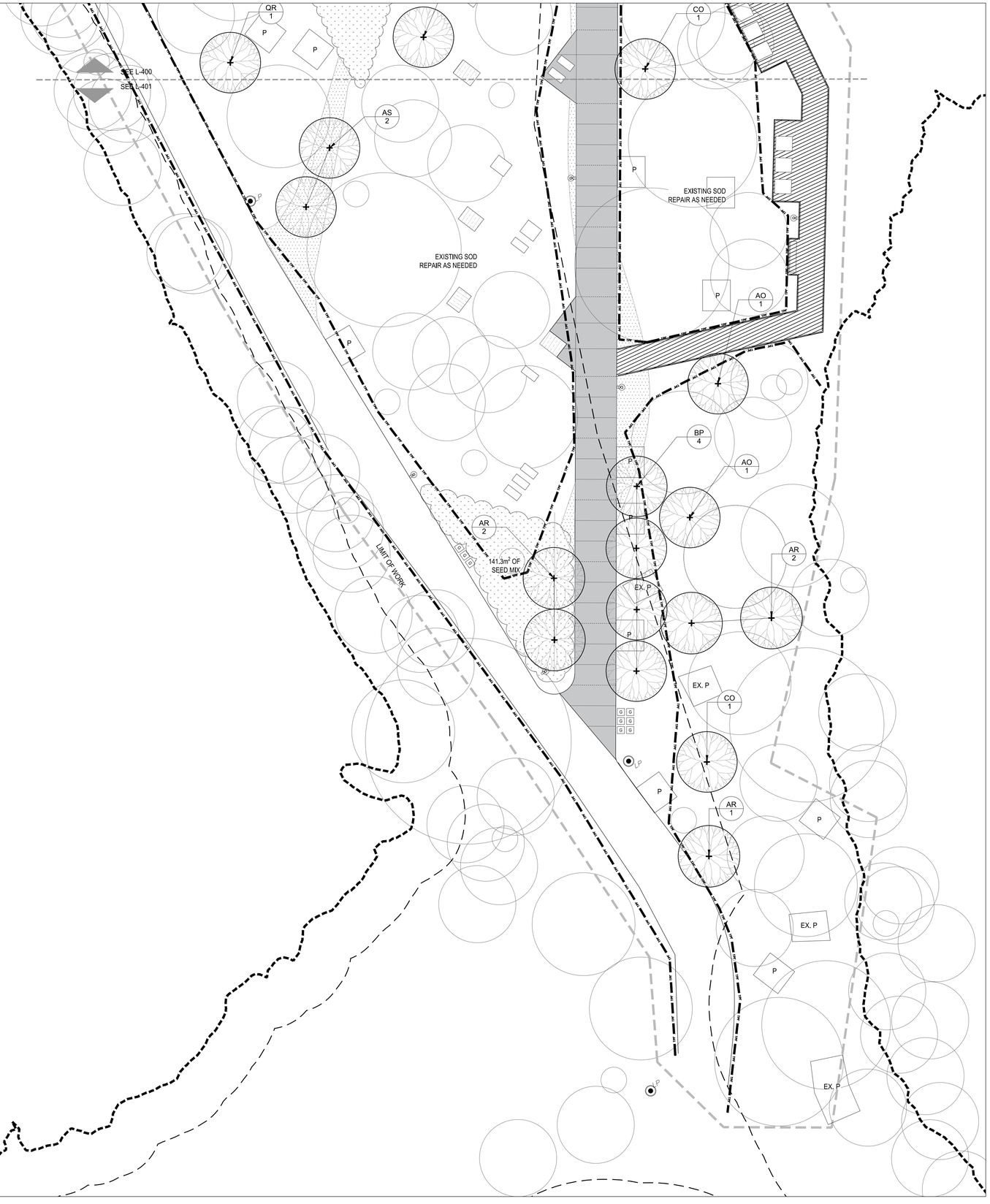

LEGEND

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DRAWING TITLE:

PLANTING PLAN

PRINT DATE:	2025-04-14
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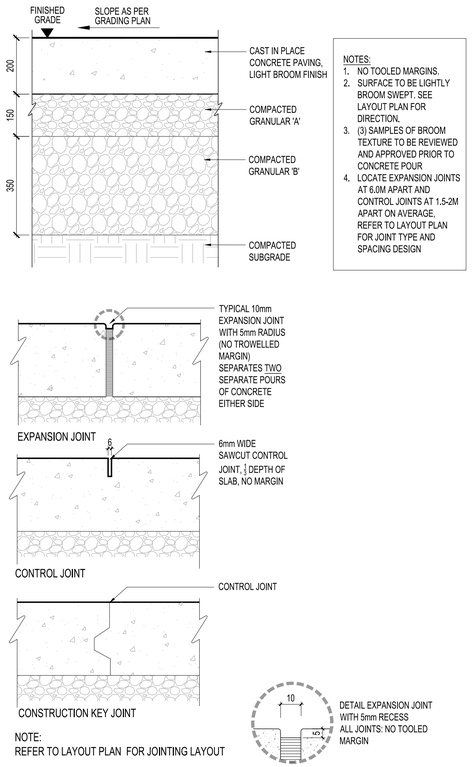
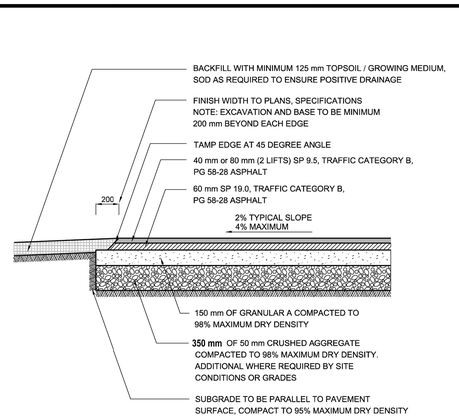
L-401



1 CONCRETE PAVING
1:10



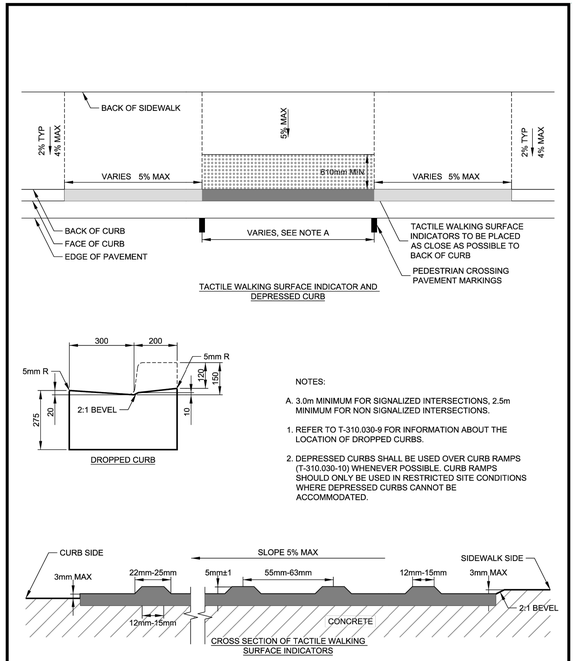
TRAIL USE	ACTIVITIES	PAVEMENT THICKNESS
LOW / MEDIUM	BIKING, ROLLER BLADING, SCOOTER, WALKING AND JOGGING. INFREQUENT MAINTENANCE/SERVICE VEHICLES.	80 mm SP 9.5 B, PG 58-28 (2 LIFTS) 150 mm GRANULAR A 200 mm 50 mm CRUSHED AGGREGATE
HIGH	FULL RANGE OF ACTIVITIES FROM WALKING TO BIKING. FULLSIZE VEHICLES, PICKUPS AND TRUCKS ARE EXPECTED IN REGULAR ACCESS.	40 mm SP 9.5 B, PG 58-28 60 mm SP 19.0 B, PG 58-28 150 mm GRANULAR A **350 mm** 50 mm CRUSHED AGGREGATE

Note:
1. GRANULAR A CAN BE GRANULAR A NATIVE OR GRANULAR A RAP.
2. GRANULAR B TYPE II CAN BE USED IN LIEU OF 50 MM CRUSHED AGGREGATE.

All dimensions are in millimetres unless otherwise shown.

TORONTO	ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING	REV 4	SEP 2021
	ASPHALT PAVING FOR MULTI-USE PATHWAYS	**T-221.01**	
		NTS	SHEET 1

2 ASPHALT PAVING
NTS



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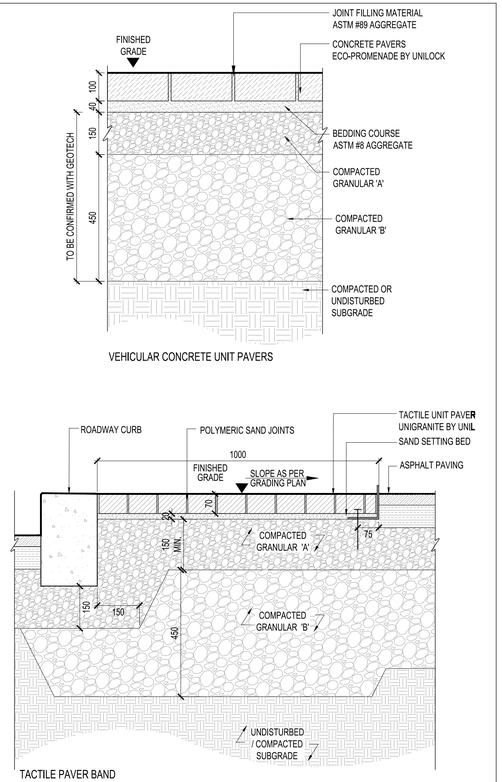
TORONTO	ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING	REV 2	SEP 2018
	TACTILE SURFACE INDICATOR AND DEPRESSED CURB DETAIL	**T-310.030-11**	
		NTS	SHEET 1

3 TACTILE WARNING STRIP WITH DROP CURB
NTS



4 CONCRETE UNIT PAVERS
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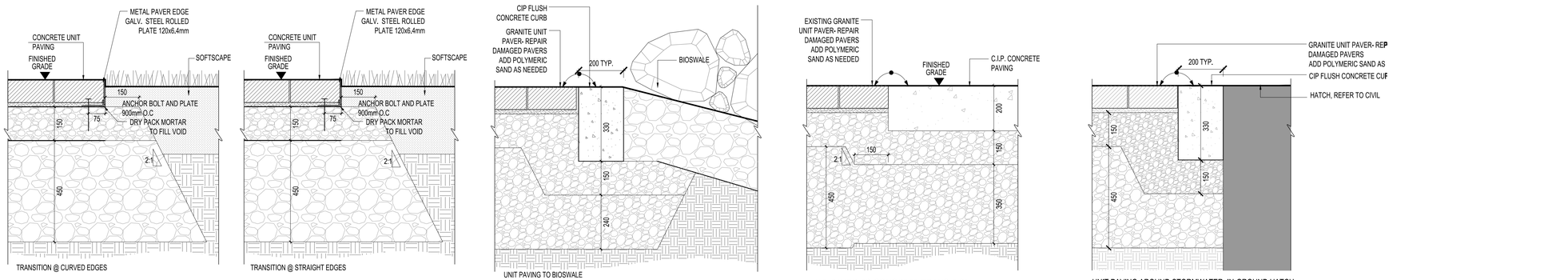

5 PAVING TRANSITIONS
1:10

NO.	DATE	DESCRIPTION
05	2025-04-11	ISSUED FOR TENDER
04	2024-11-22	ISSUED FOR TRCA PERMIT
03	2024-09-19	ISSUED FOR BUILDING PERMIT
02	2024-06-26	ISSUED FOR TRCA PERMIT
01	2023-01-31	50%-ISSUED FOR COSTING

ISSUE RECORD

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425 Adelaide St. W
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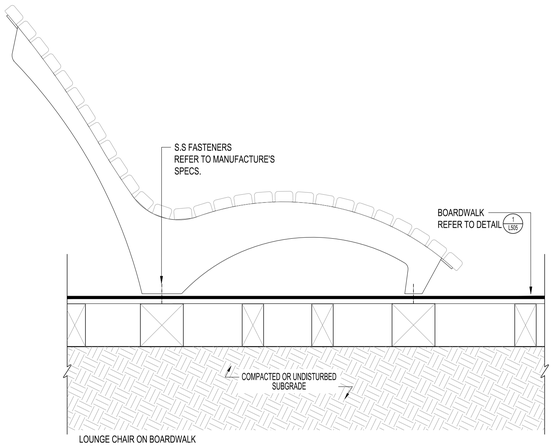
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO | M1M

DRAWING TITLE:

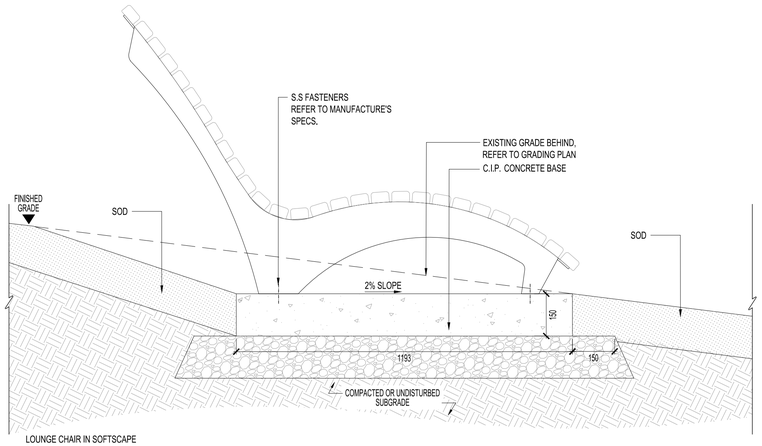
LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

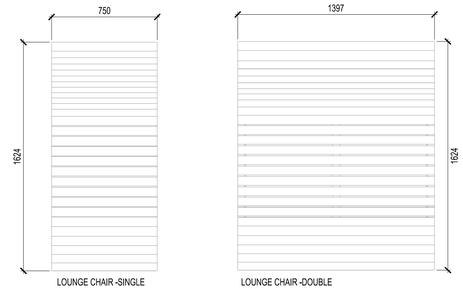
L-500



LOUNGE CHAIR ON BOARDWALK
1:10



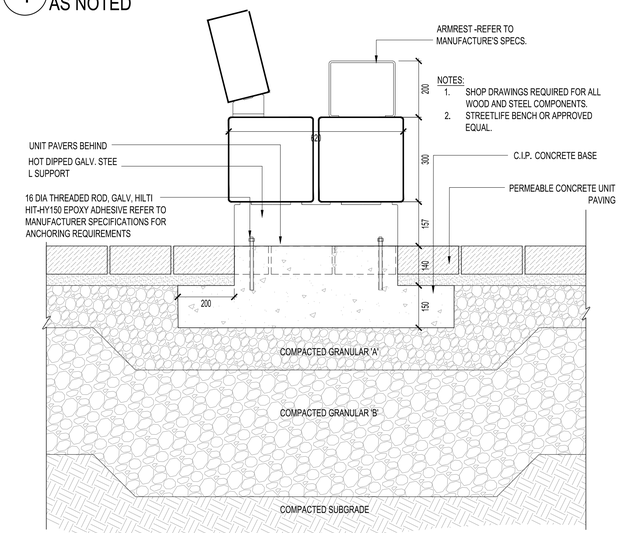
LOUNGE CHAIR IN SOFTSCAPE
1:10



LOUNGE CHAIR -SINGLE
1:20

LOUNGE CHAIR -DOUBLE
1:20

1 LOUNGE CHAIR INSTALLATION
AS NOTED



2 BENCH
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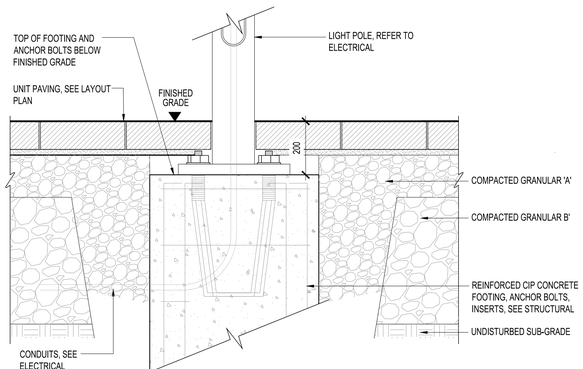
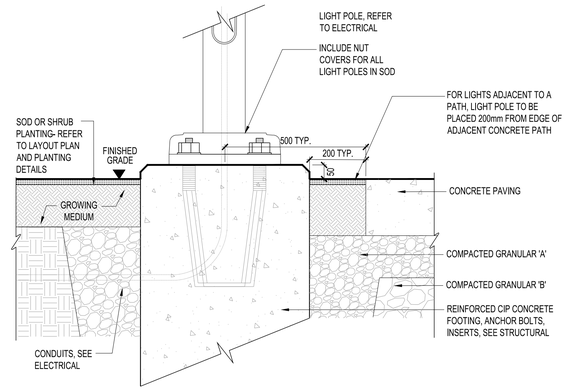
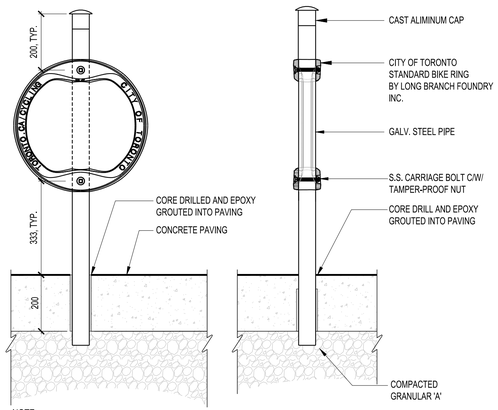


3 LIGHT POLE BASE DETAILS
1:10

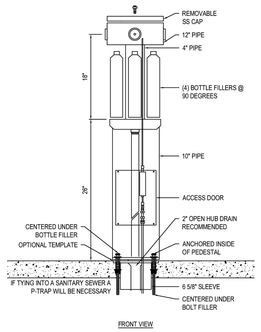




NOTE:
REFER TO SPECIFICATIONS FOR PRODUCT INFORMATION
REFER TO LAYOUT PLAN FOR LOCATION

4 BIKE RING
1:10

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com



NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. NOTE TO ARCHITECT, SCALE DRAWING IN AUTOCAD MODEL SPACE.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-17.17

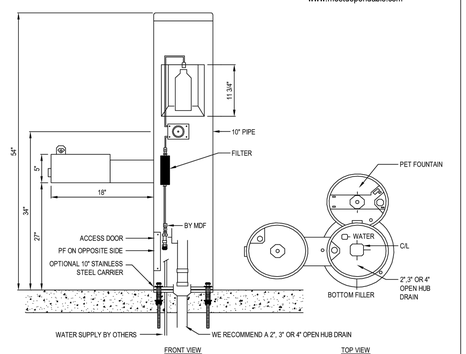
MODEL 10890 SM
WATER STATIONS, SHOWN W/ OPTIONAL TEMPLATE.

3354-17.17 CADdetailsPLUS™ REVISION DATE 15/06/2020

 CADdetails.com

5 BOTTLE FILLING STATION
NTS

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
TOLL FREE: 1-800-552-6331
PHONE: (901) 867-0039
FAX: (901) 867-0159
www.mostdependable.com



NOTES:
1. OPTIONAL STAINLESS STEEL SURFACE CARRIER RECOMMENDED.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
6. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-17.7.

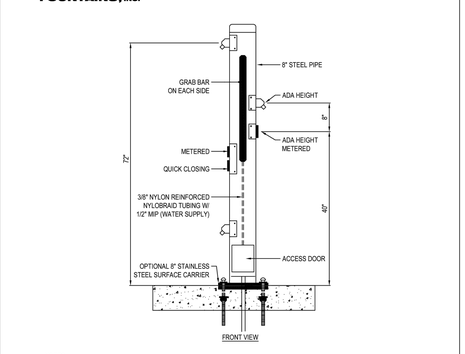
MODEL 10155SM
10155SM SHOWN WITH OPTIONAL 10" SS SURFACE CARRIER

3354-17.7 REVISION DATE 06/13/2016

 CADdetails.com

6 WATER FOUNTAIN
NTS

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com



NOTES:
1. OPTIONAL STAINLESS STEEL SURFACE CARRIER RECOMMENDED ON SURFACE MOUNT INSTALLATIONS..
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
6. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-10.00.

MODEL 564 SM
SHOWN W/ OPTIONAL 8" SS SURFACE CARRIER

3354-10.00 REVISION DATE 04/06/2022

 CADdetails.com

7 DOUBLE-SIDED ACCESSIBLE SHOWER
NTS

NO.	DATE	DESCRIPTION
05	2025-04-11	ISSUED FOR TENDER
04	2024-11-22	ISSUED FOR TRCA PERMIT
03	2024-09-19	ISSUED FOR BUILDING PERMIT
02	2024-06-26	ISSUED FOR TRCA PERMIT
01	2023-01-31	50%-ISSUED FOR COSTING

ISSUE RECORD

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL INFORM THE LANDSCAPE ARCHITECTS IMMEDIATELY OF ANY DISCREPANCY OR VARIATION FROM THE DRAWINGS. DO NOT SCALE THE DRAWINGS.

DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE LANDSCAPE ARCHITECT.

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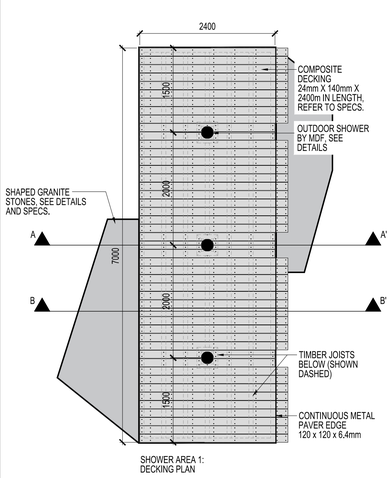
DRAWING TITLE:

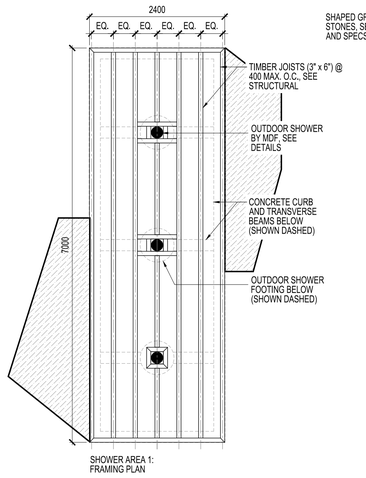
LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

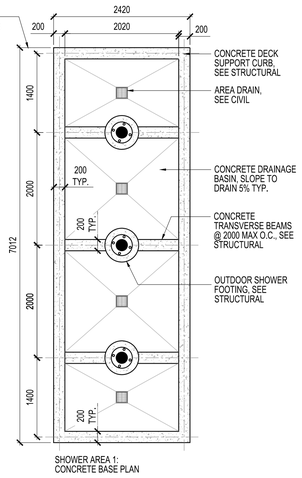
L-501



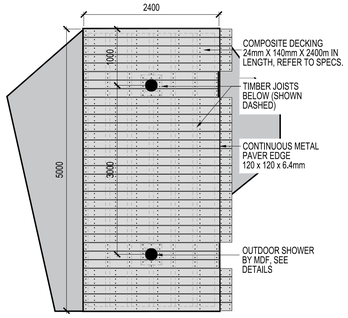
SHOWER AREA 1:
DECKING PLAN



SHOWER AREA 1:
FRAMING PLAN



SHOWER AREA 1:
CONCRETE BASE PLAN



SHOWER AREA 2:
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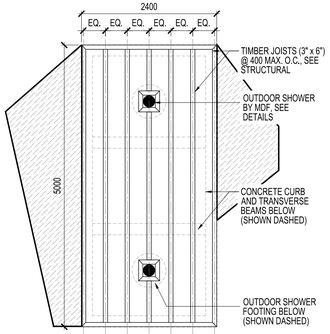
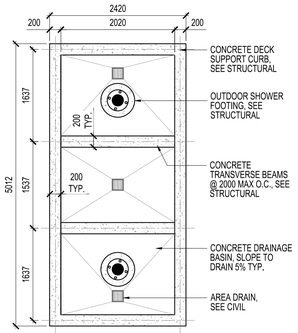
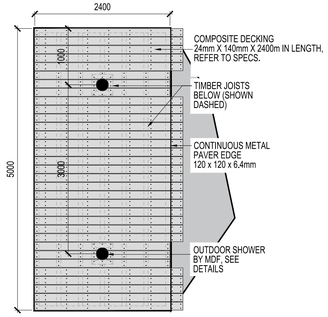


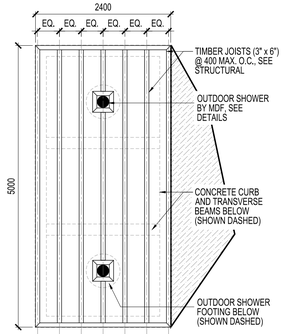
SHOWER AREA 2:
FRAMING PLAN



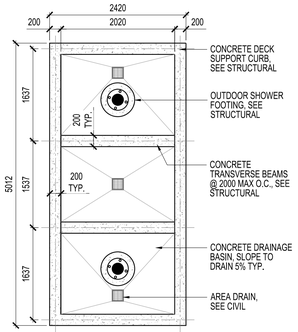
SHOWER AREA 2:
CONCRETE BASE PLAN



SHOWER AREA 3:
DECKING PLAN

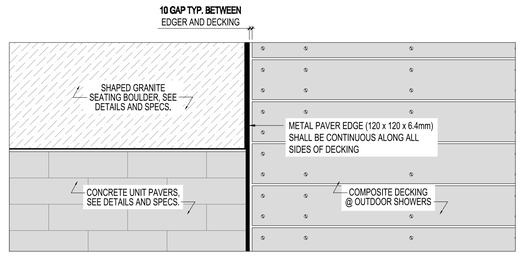


SHOWER AREA 3:
FRAMING PLAN

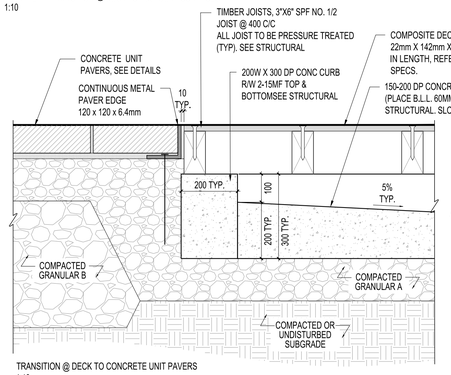


SHOWER AREA 3:
CONCRETE BASE PLAN

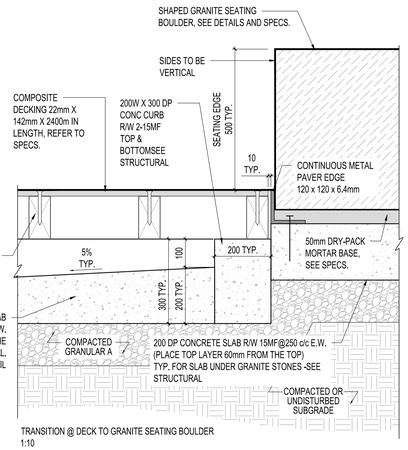
1 OUTDOOR SHOWER DECKING AND FRAMING PLANS
1:50



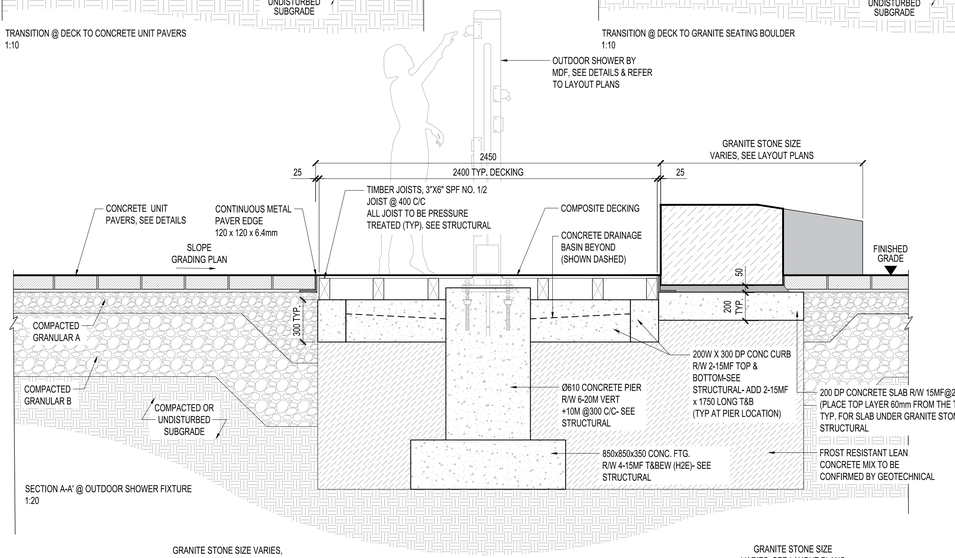
PLAN VIEW - TRANSITION @ DECK TO ADJACENT SURFACES
1:10



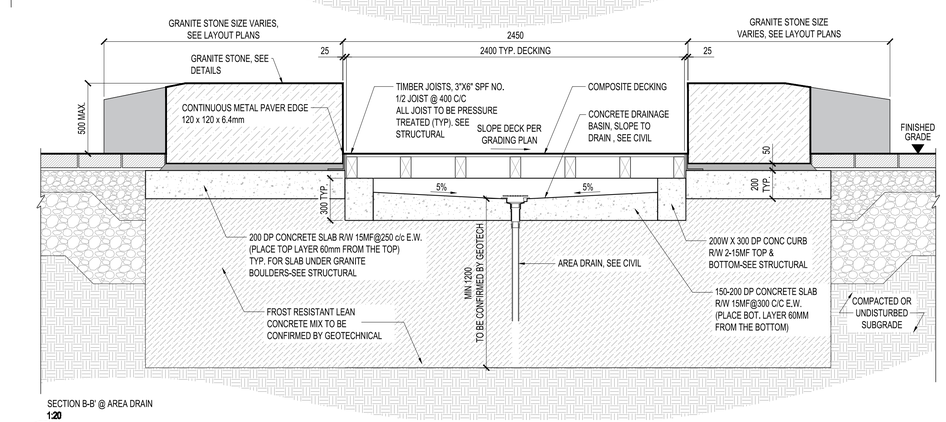
TRANSITION @ DECK TO CONCRETE UNIT PAVERS
1:10



TRANSITION @ DECK TO GRANITE SEATING BOULDER
1:10



SECTION A-A' @ OUTDOOR SHOWER FIXTURE
1:20



SECTION B-B' @ AREA DRAIN
1:20

2 OUTDOOR SHOWER DECKING DETAILS
AS SHOWN

NO.	DATE	DESCRIPTION
05	2025-04-11	ISSUED FOR TENDER
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02	2024-06-26	ISSUED FOR TRCA PERMIT
01	2023-01-31	50%-ISSUED FOR COSTING

ISSUE RECORD

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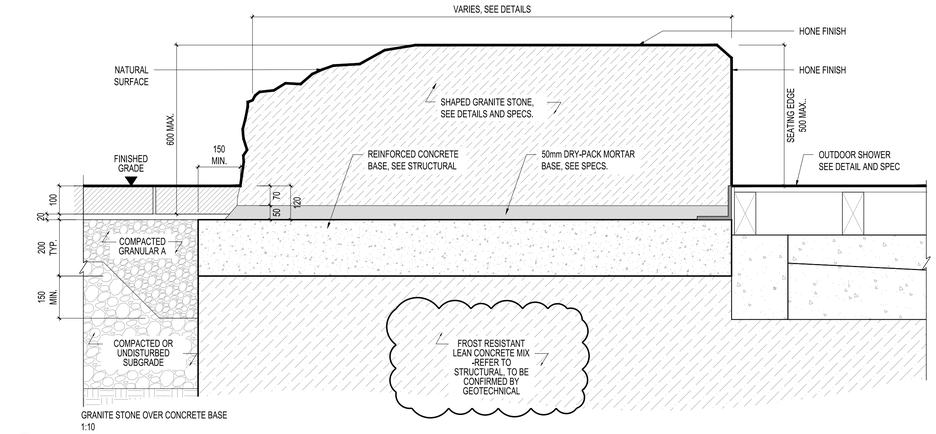
SCARBOROUGH, TORONTO, ONTARIO | M1M

DRAWING TITLE:

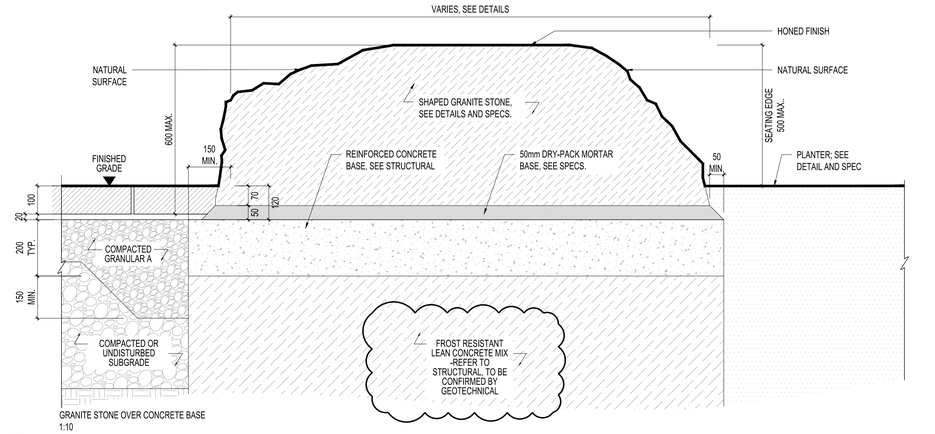
LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

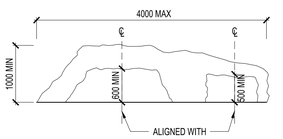
L-502



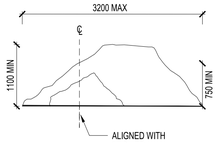
1 GRANITE STONE AT SHOWER
NTS



2 GRANITE STONE AT PLANTER
1:20

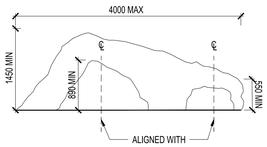


GRANITE STONE H
LAYOUT PLAN



GRANITE STONE J
LAYOUT PLAN

GRANITE STONE L
LAYOUT PLAN



GRANITE STONE I
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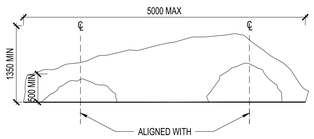

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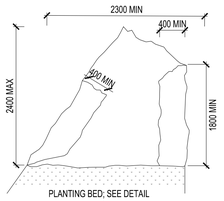

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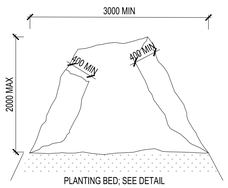

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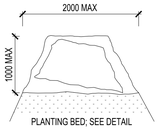

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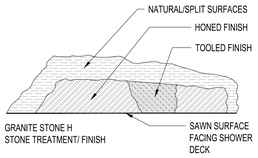
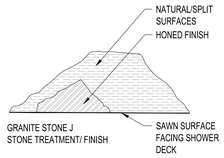


GRANITE STONE H
STONE TREATMENT/ FINISH



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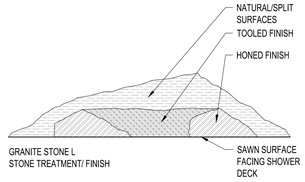

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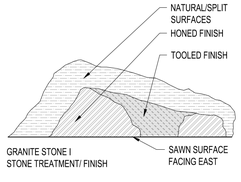
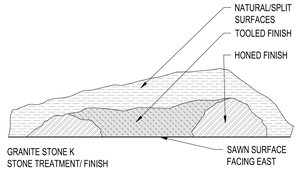
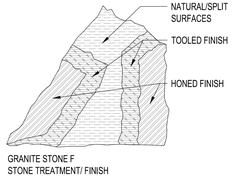
STONE TREATMENT/ FINISH



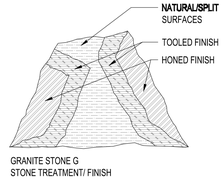
GRANITE STONE I
STONE TREATMENT/ FINISH



GRANITE STONE K
STONE TREATMENT/ FINISH



GRANITE STONE F
STONE TREATMENT/ FINISH



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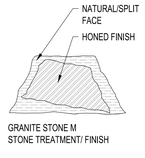
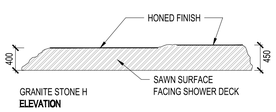
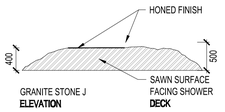
STONE TREATMENT/ FINISH



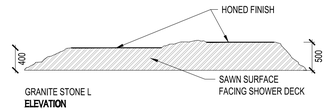
GRANITE STONE M
STONE TREATMENT/ FINISH



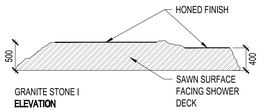
GRANITE STONE H
ELEVATION



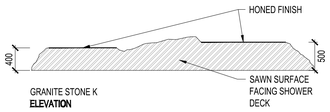
GRANITE STONE J
ELEVATION
DECK



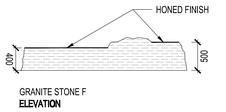
GRANITE STONE L
ELEVATION



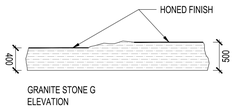
GRANITE STONE I
ELEVATION



GRANITE STONE K
ELEVATION



GRANITE STONE F
ELEVATION



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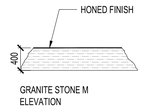
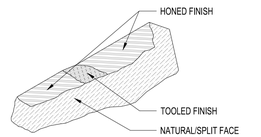
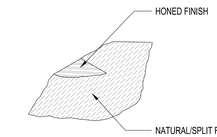
ELEVATION



GRANITE STONE M
ELEVATION



GRANITE STONE H
AXO DIAGRAM



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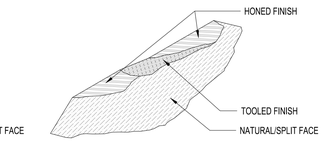
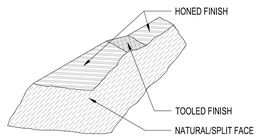
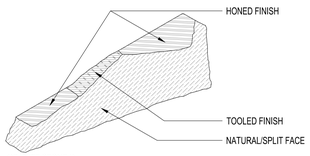
AXO DIAGRAM



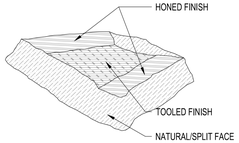
GRANITE STONE L
AXO DIAGRAM



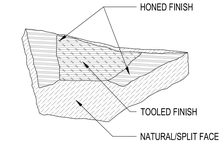
GRANITE STONE I
AXO DIAGRAM



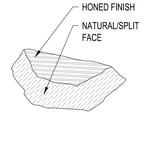
GRANITE STONE K
AXO DIAGRAM



GRANITE STONE F
AXO DIAGRAM



GRANITE STONE G
AXO DIAGRAM



GRANITE STONE M
AXO DIAGRAM

3 GRANITE STONES AT SHOWERS
1:50

4 GRANITE STONES AT PLANTERS
1:50

NOTES

1. STONE OUTCROPS TO BE WEATHERED GRANITE BOULDERS, REFER TO SPECIFICATIONS,
2. PRIOR TO PURCHASING AND SUPPLYING STONE TO THE SITE, THE CONTRACTOR SHALL PROVIDE SAMPLES FOR THE CONSULTANTS REVIEW AND APPROVAL, ALONG WITH THE NAME AND LOCATION OF THE PROPOSED SUPPLIER.
3. ALL BOULDERS ARE TO BE INSPECTED AND SELECTED BY THE CONSULTANT AT THE QUARRY PRIOR TO SUPPLY. MAKE ARRANGEMENTS FOR APPROVAL BY THE CONSULTANT AT A TIME MUTUALLY AGREED UPON.
4. SIZE AND DIMENSION OF ALL GRANITE BOULDERS TO BE DETERMINED WHEN SELECTING.
5. ALL SHARP EDGES TO BE CHAMFERED.

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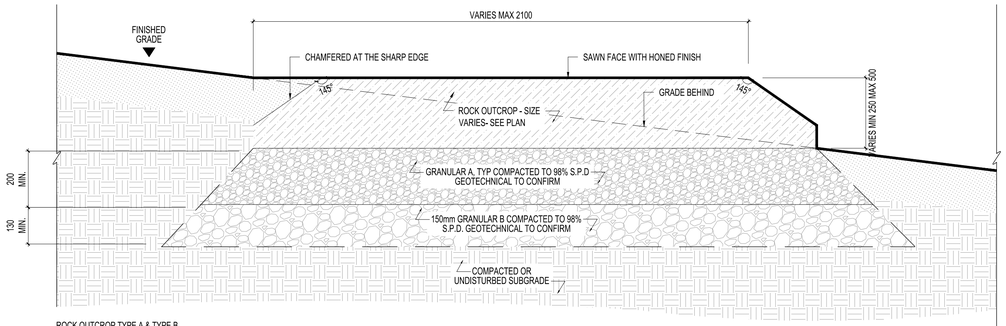
DRAWING TITLE:

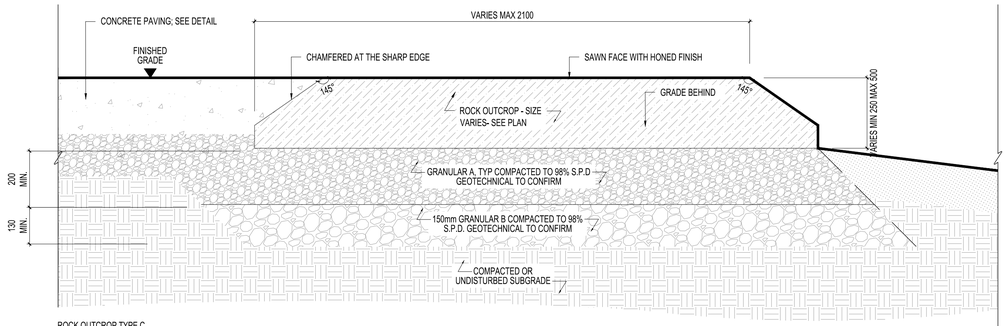
LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

L-503

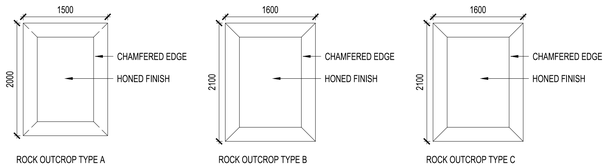


ROCK OUTCROP TYPE A & TYPE B
1:10



ROCK OUTCROP TYPE C
1:10

1 ROCK OUTCROP DETAILED SECTION
1:10



2 ROCK OUTCROP ENLARGEMENT PLAN
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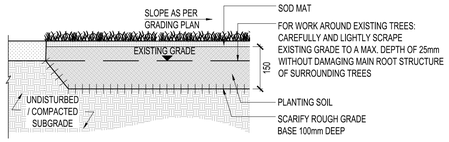
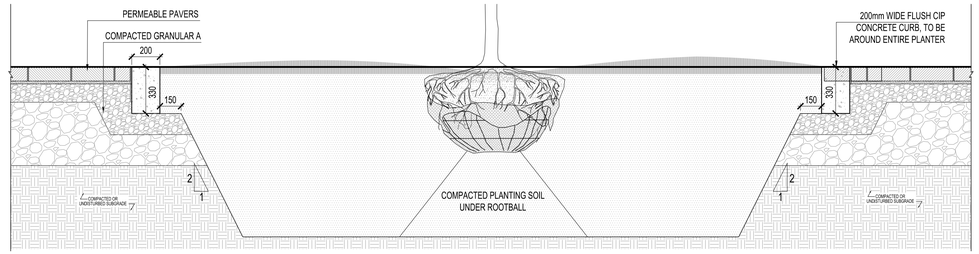
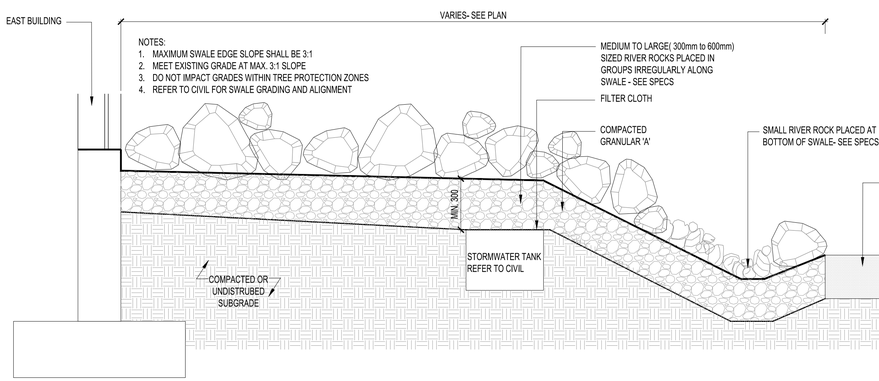


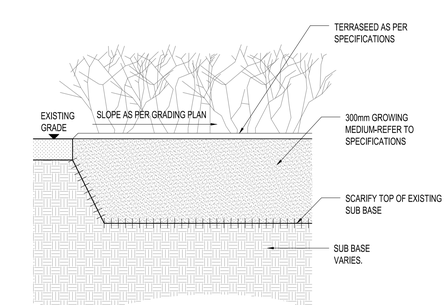
3 SOD
1:20



5 AT-GRADE PLANTER SECTION
1:20

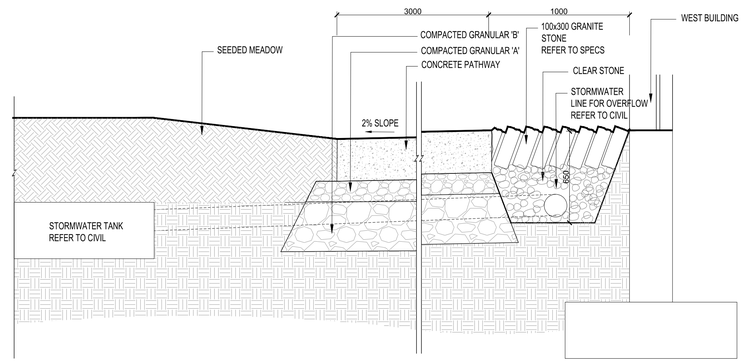


4 BIO SWALE AT EAST BUILDING
1:20

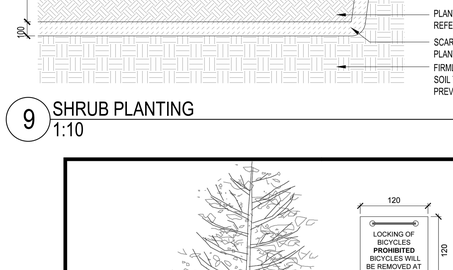


NOTE:
KEEP CLEAR OF ALL EXISTING UTILITY COVERS AND HATCHES

6 TERRASEEDING PLANTING
1:20



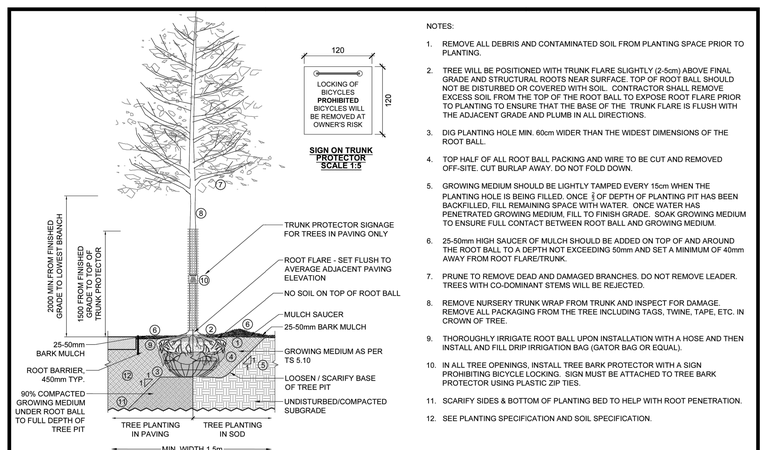
7 DRY SWALE AT WEST BUILDING
1:20



NOTE:
REMOVE PLANTS FROM POTS PRIOR TO PLANTING.

NOTES:
1. ALL DIMENSIONS SHOWN IN MILLIMETERS
2. ALL SHRUBS TO BE PLANTED IN CONTINUOUS BEDS
3. THIS DETAIL DOES NOT REPRESENT ANY PARTICULAR SHRUB SPECIES
4. THIS DETAIL IS TO BE USED IN CONJUNCTION WITH SPECIFICATION.
5. FOR LANDFORM PLANTING FOLLOW MANUFACTURER'S RECOMMENDATION SOIL DEPTH OF 300mm .

9 SHRUB PLANTING
1:10



NOTES:
1. REMOVE ALL DEBRIS AND CONTAMINATED SOIL FROM PLANTING SPACE PRIOR TO PLANTING.
2. TREE WILL BE POSITIONED WITH TRUNK FLARE SLIGHTLY (2-5cm) ABOVE FINAL GRADE AND STRUCTURAL ROOTS NEAR SURFACE. TOP OF ROOT BALL SHOULD NOT BE DISTURBED OR COVERED WITH SOIL. CONTRACTOR SHALL REMOVE EXCESS SOIL FROM THE TOP OF THE ROOT BALL TO EXPOSE ROOT FLARE PRIOR TO PLANTING TO ENSURE THAT THE BASE OF THE TRUNK FLARE IS FLUSH WITH THE ADJACENT GRADE AND PLUMB IN ALL DIRECTIONS.
3. DIG PLANTING HOLE MIN. 60cm WIDER THAN THE WIDEST DIMENSIONS OF THE ROOT BALL.
4. TOP HALF OF ALL BOOT BALL PACKING AND WIRE TO BE CUT AND REMOVED OFF-SITE. CUT BURLAP AWAY. DO NOT FOLD DOWN.
5. GROWING MEDIUM SHOULD BE LIGHTLY TAMPED EVERY 15cm WHEN THE PLANTING HOLE IS BEING FILLED. ONCE ⅔ OF DEPTH OF PLANTING PIT HAS BEEN BACKFILLED, FILL REMAINING SPACE WITH WATER. ONCE WATER HAS PENETRATED GROWING MEDIUM, FILL TO FINISH GRADE. SOAK GROWING MEDIUM TO ENSURE FULL CONTACT BETWEEN ROOT BALL AND GROWING MEDIUM.
6. 25-50mm HIGH SAUCER OF MULCH SHOULD BE ADDED ON TOP OF AND AROUND THE ROOT BALL TO A DEPTH NOT EXCEEDING 50mm AND SET A MINIMUM OF 40mm AWAY FROM ROOT FLARE/TRUNK.
7. PRUNE TO REMOVE DEAD AND DAMAGED BRANCHES. DO NOT REMOVE LEADER. TREES WITH CO-DOMINANT STEMS WILL BE REJECTED.
8. REMOVE NURSERY TRUNK WRAP FROM TRUNK AND INSPECT FOR DAMAGE. REMOVE ALL PACKAGING FROM THE TREE INCLUDING TAGS, TWINE, TAPE, ETC. IN CROWN OF TREE.
9. THOROUGHLY IRRIGATE ROOT BALL UPON INSTALLATION WITH A HOSE AND THEN INSTALL AND FILL DRIP IRRIGATION BAG (GATOR BAG OR EQUAL).
10. IN ALL TREE OPENINGS, INSTALL TREE BARK PROTECTOR WITH A SIGN PROHIBITING BICYCLE LOCKING. SIGN MUST BE ATTACHED TO TREE BARK PROTECTOR USING PLASTIC ZIP TIES.
11. SCARIFY SIDES & BOTTOM OF PLANTING BED TO HELP WITH ROOT PENETRATION.
12. SEE PLANTING SPECIFICATION AND SOIL SPECIFICATION.

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PLANTING DETAILS
TREE PLANTING DETAILS

T-850.026-1 | 1:40 | SHEET 1

8 TREE PLANTING
NTS

NO.	DATE	DESCRIPTION
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LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

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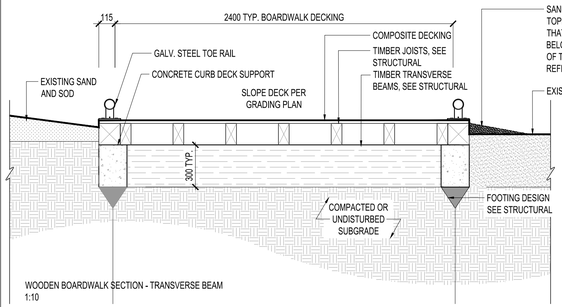
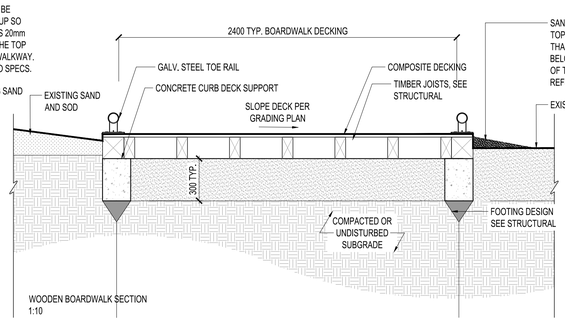


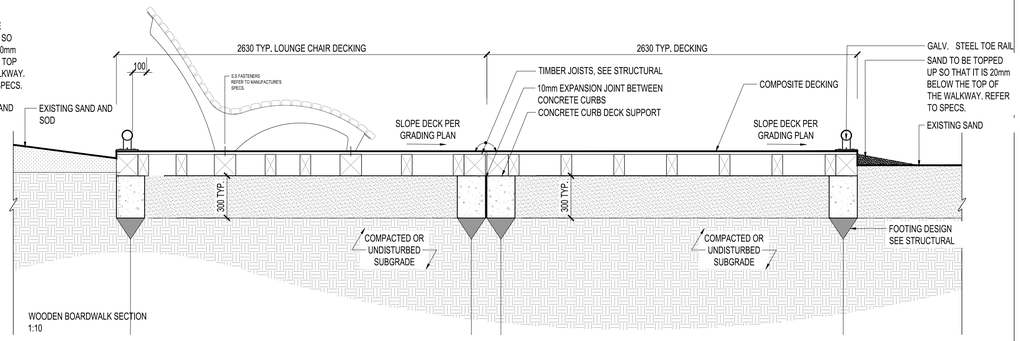
WOODEN BOARDWALK SECTION - TRANSVERSE BEAM
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



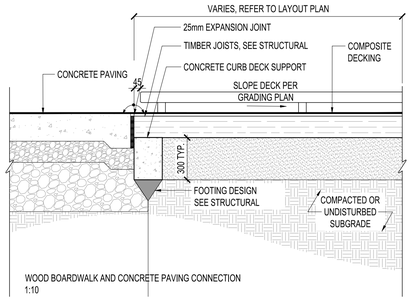
WOODEN BOARDWALK SECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



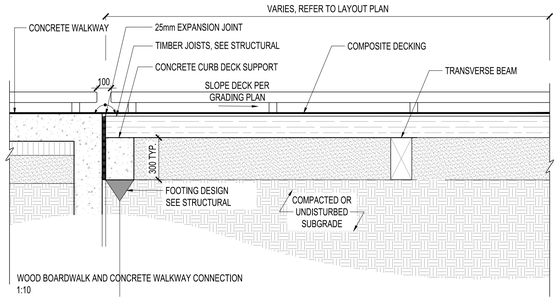
WOODEN BOARDWALK SECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



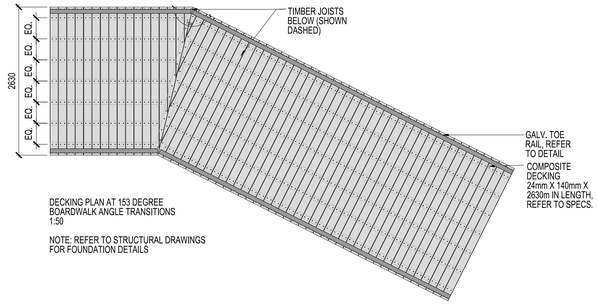
WOOD BOARDWALK AND CONCRETE PAVING CONNECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



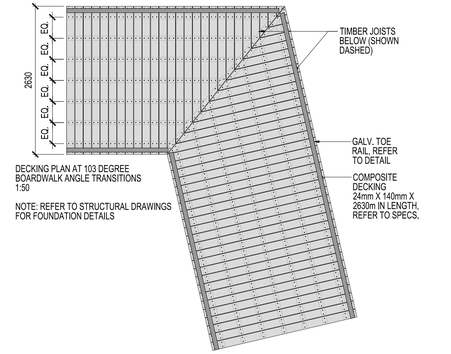
WOOD BOARDWALK AND CONCRETE WALKWAY CONNECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND VOID FORM DETAILS



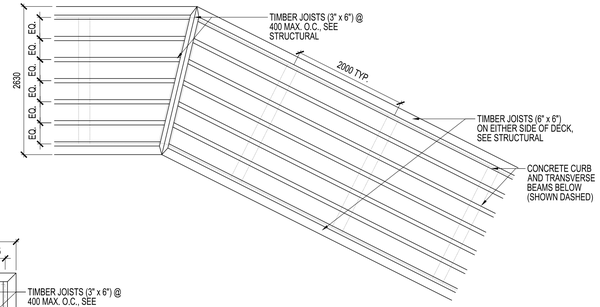
DECKING PLAN AT 153 DEGREE BOARDWALK ANGLE TRANSITIONS
1:50

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



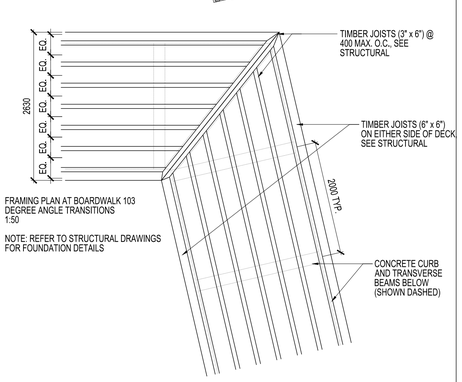
DECKING PLAN AT 103 DEGREE BOARDWALK ANGLE TRANSITIONS
1:50

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



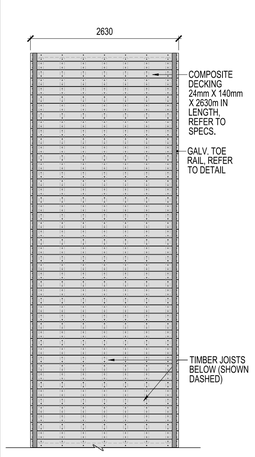
FRAMING PLAN AT BOARDWALK 153 DEGREE ANGLE TRANSITIONS
1:50

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS

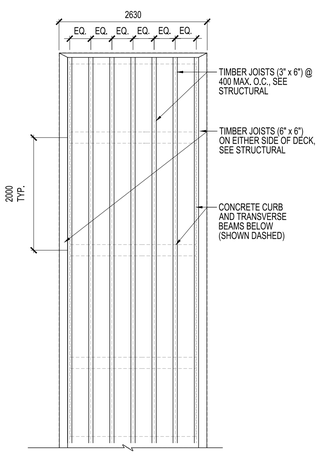


FRAMING PLAN AT BOARDWALK 103 DEGREE ANGLE TRANSITIONS
1:50

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS

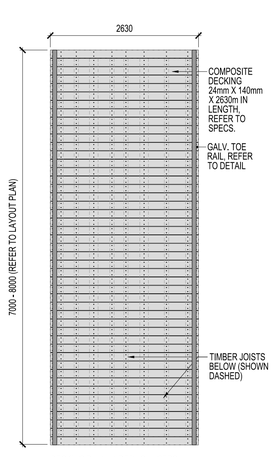


TYPICAL DECKING PLAN
1:50

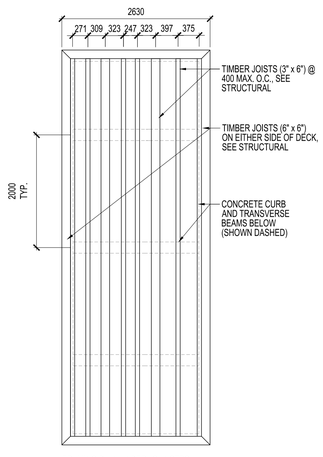


TYPICAL FRAMING PLAN
1:50

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS



DECKING PLAN UNDER LOUNGERS
1:50



FRAMING PLAN UNDER LOUNGERS
1:50

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS

1 BOARDWALK DECKING
1:20

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CHECKED BY: JR

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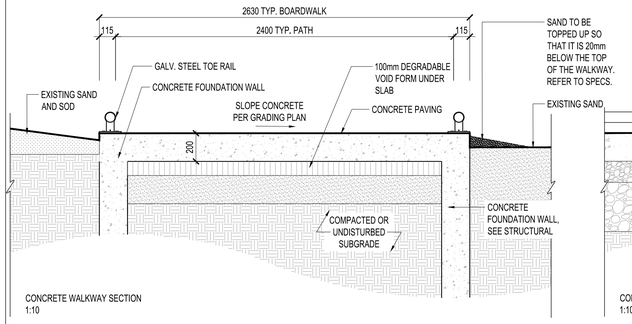
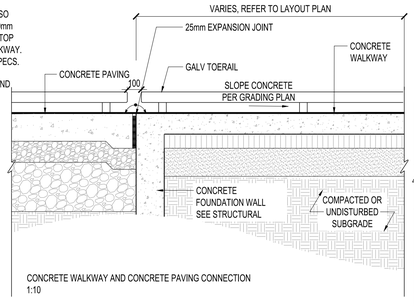


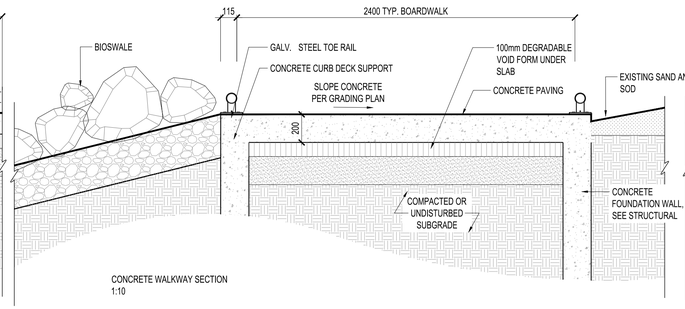
CONCRETE WALKWAY SECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND VOID FORM DETAILS



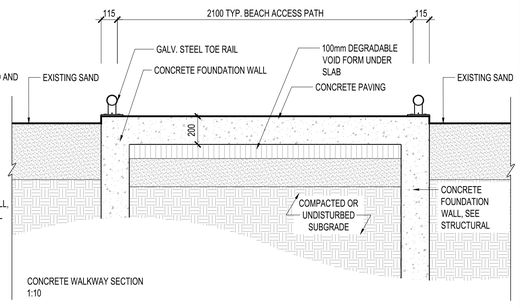
CONCRETE WALKWAY AND CONCRETE PAVING CONNECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND VOID FORM DETAILS



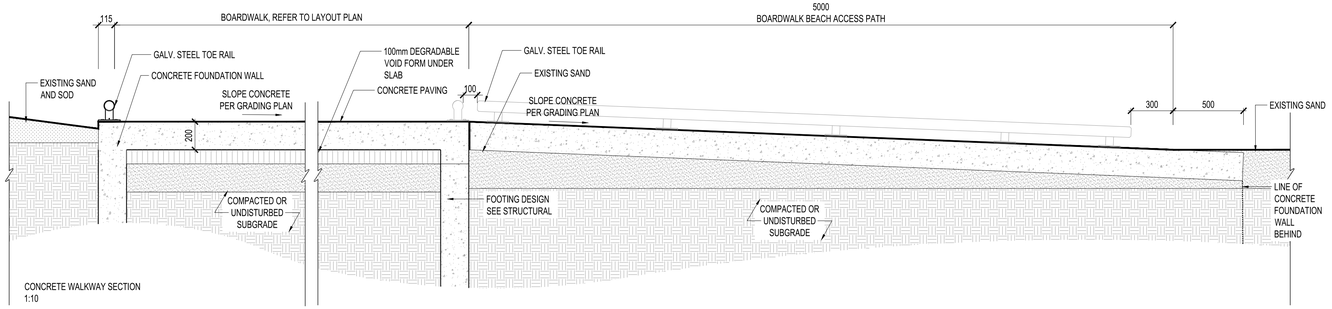
CONCRETE WALKWAY SECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND VOID FORM DETAILS



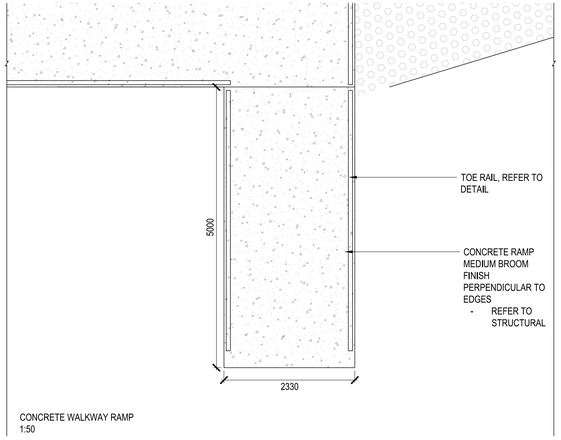
CONCRETE WALKWAY SECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND **VOID FORM DETAILS**



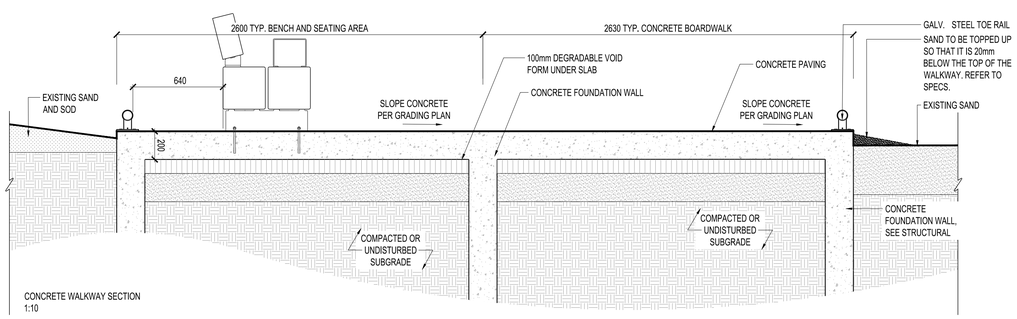
CONCRETE WALKWAY SECTION
1:10

NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND VOID FORM DETAILS



CONCRETE WALKWAY RAMP
1:50

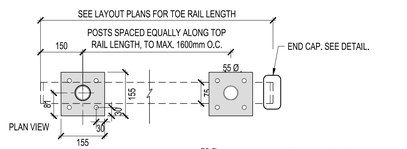
NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS

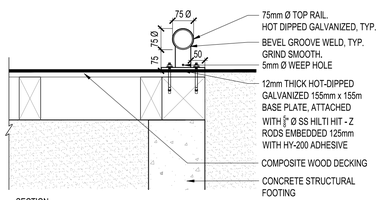


CONCRETE WALKWAY SECTION
1:10

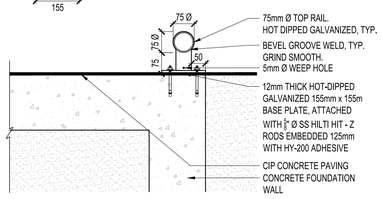
NOTE: REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND VOID FORM DETAILS

1 BOARDWALK DECKING
REFER TO DETAIL



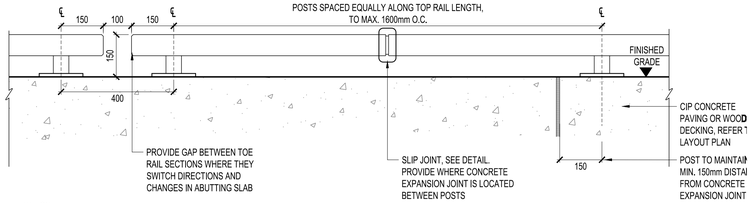


SECTION

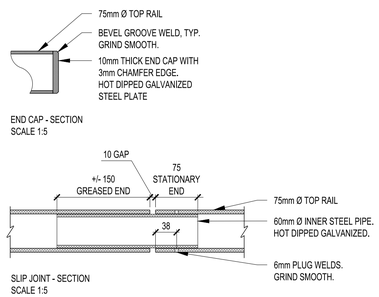


SECTION

NOTES:
1. SUBMIT SHOP DRAWINGS OF TOE RAIL SECTIONS FOR REVIEW AND APPROVAL.
2. SHOP DRAWINGS TO BE SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
3. ALL WELDS TO BE GROUND SMOOTH, NO WELDS OR SEAMS TO SHOW
4. STRUCTURAL STEEL SHALL CONFORM TO CSA G40.21-M300W AND CSA G40.21-M350W FOR HSS SECTIONS
5. ALL WELDING TO CONFORM TO CSA W59-1989
6. HOT DIP GALVANIZE ALL METAL PARTS FOLLOWING FABRICATION



ELEVATION



2 TOE RAIL
1:10

NO.	DATE	DESCRIPTION
05	2025-04-11	ISSUED FOR TENDER
04	2024-11-22	ISSUED FOR TRCA PERMIT
03	2024-09-19	ISSUED FOR BUILDING PERMIT
02	2024-06-26	ISSUED FOR TRCA PERMIT
01	2023-01-31	50%-ISSUED FOR COSTING

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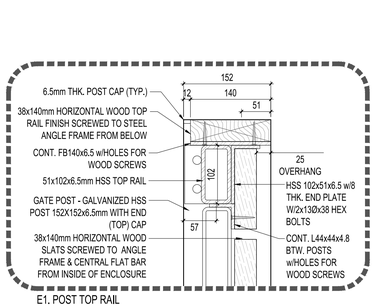
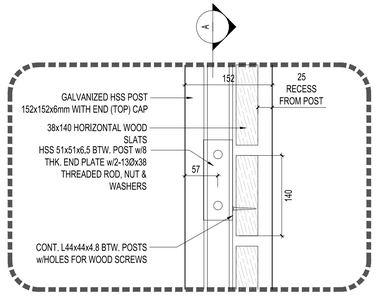
LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
SCALE:
PROJECT NO. 21029
DRAWN BY: LD
CHECKED BY: JR

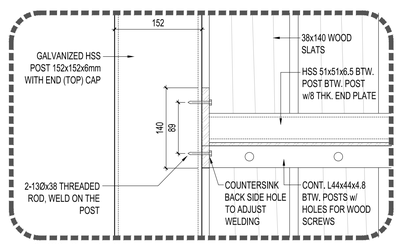
L-506



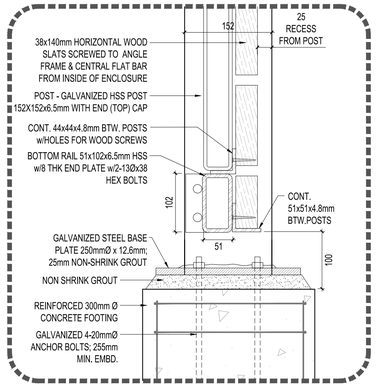
E1. POST TOP RAIL
SECTION 1:5



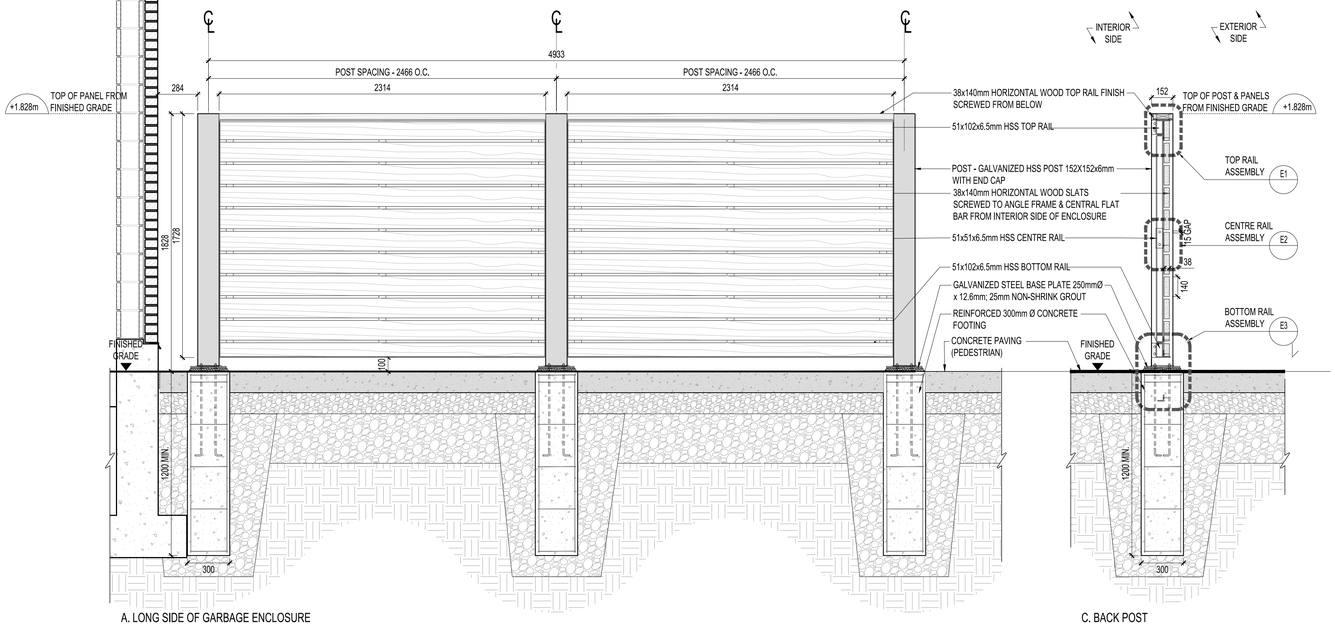
E2. POST CENTRE RAIL
SECTION 1:5



E2. POST CENTRE RAIL
SECTION 1:5

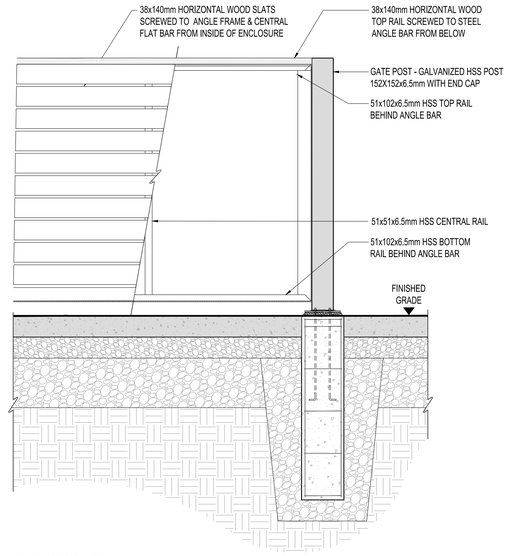


E3. POST BOTTOM RAIL
SECTION 1:5

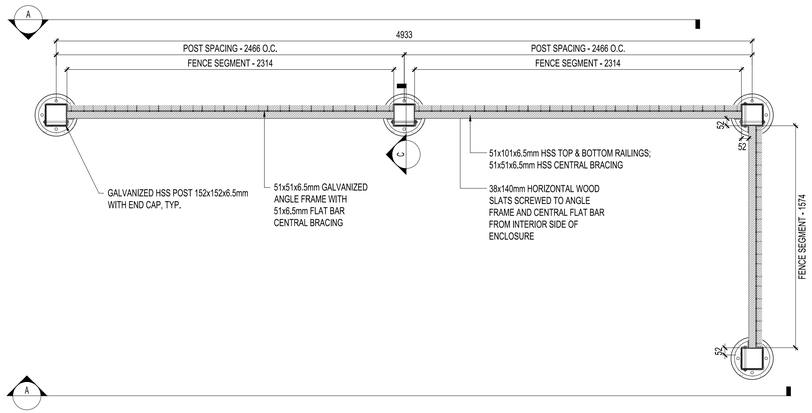


A. LONG SIDE OF GARBAGE ENCLOSURE
SECTION 1:20

C. BACK POST
SECTION 1:20



D. STEEL FRAME
SECTION 1:50



B. GARBAGE ENCLOSURE
PLAN 1:20

NOTE:

1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.
2. ALL STEEL TO BE GALVANIZED & PAINTED AS PER SPECIFICATIONS.
3. ALL WOOD TO BE RED CEDAR; ROUGH CUT.
4. SCREWS WOOD SLATS FROM BACK OF BRACING.
5. USE GALVANIZED DRILL POINT FASTENER (TEK® SCREW) TO DRILL FROM ANGLE FRAME INTO VERTICAL SLOTS (NOT SHOWN).

1 WOODEN PRIVACY FENCING
AS SHOWN

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DRAWING TITLE:

LANDSCAPE DETAILS

PRINT DATE: 2025-04-14
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DRAWN BY: LD
CHECKED BY: JR

L-507

GENERAL NOTES

1. ALL WORK TO CONFORM TO THE LATEST CITY OF TORONTO STANDARD DRAWINGS AND SPECIFICATIONS AS WELL AS THE LATEST ADOPTED ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CURRENT "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATION FOR CONSTRUCTION PROJECTS". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
3. ALL TEMPORARY TRAFFIC CONTROL AND SIGNAGE DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT ONTARIO TRAFFIC MANUAL BOOK 7: TEMPORARY CONDITIONS FIELD EDITION.
4. ALL TRENCHES WITHIN THE EXISTING RIGHT–OF–WAY SHALL BE BACKFILLED WITH UNSHRINKABLE FILL. TEMPORARY REPAIRS TO UTILITY CUTS WILL BE AS PER MUNICIPAL CONSENT REQUIREMENTS, APPENDIX D, TEMPORARY REPAIRS TO UTILITY CUTS.
5. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO THE ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES.
6. PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT–OF–WAY THE CONTRACTOR OR DEVELOPER OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHT–OF–WAY MANAGEMENT SECTION.
7. CONTACT CITY INSPECTOR AND ENGINEER 48 HOURS BEFORE EXCAVATION, INSTALLATION OR BACKFILL.
8. LOCATION AND COMPLETENESS OF EXISTING SERVICES/UTILITIES SHOWN ON THE DRAWINGS ARE NOT GUARANTEED. CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AT LEAST FORTY–EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY LOCATION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS TO LOCATE THE EXISTING SERVICES ON SITE.
9. THE DRAWINGS INDICATE EXISTING SERVICES AND DID NOT ATTEMPT TO LOCATE ANYTHING OTHER THAN THESE SERVICES (I.E. ABANDONED BUILDING FOUNDATIONS AND OTHER EXISTING FACILITIES WERE NOT INVESTIGATED OR SHOWN ON THE DRAWINGS).
10. THE CONTRACTOR SHALL PROVE THE EXACT LOCATION AND SIZE OF ALL SERVICES AND STRUCTURES AND SHALL BE RESPONSIBLE FOR ADEQUATELY PROTECTING THEM AGAINST DAMAGE ASSUMING ALL LIABILITIES FOR DAMAGE.
11. THE CONTRACTOR SHALL REPORT TO THE ENGINEER ANY CONFLICT WHICH THE EXISTING SERVICES MAY CREATE WITH THE PROPOSED WORK AND SHALL SCHEDULE CONSTRUCTION WORK AVOIDING CONSTRUCTION DELAYS CAUSED BY SUCH CONFLICTS.
12. MAINTAIN VEHICULAR AND PEDESTRIAN TRAFFIC AT ALL TIMES.
13. ALL SERVICES TO BE SUPPORTED AS PER CITY STD T–1007.01 TO T–1007.01–10.
14. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND LICENSES BEFORE PROCEEDING WITH ANY WORK.
15. THE CONTRACTOR SHALL BECOME SOLE OWNER OF ALL EXCESS MATERIAL.
16. WITHIN THE PROPOSED PAVED AREAS AND EASEMENTS GRAN. B SHALL BE USED AS BACKFILL WITHIN 1M FROM MANHOLES, VALVE CHAMBERS AND CATCHBASINS, AND APPROVED NATIVE OR IMPORTED BACKFILL SHALL BE USED FOR ALL OTHER AREAS.
17. PROTECT ALL TREES FROM DAMAGE. SEE LANDSCAPE DRAWINGS FOR DETAILS.
18. REMOVE OBJECTS AS PER OPSS 510, INCLUDING APPROVED COMPACTED BACKFILL. AND ABANDON PIPE AS PER OPSS 510 INCLUDING SEALING OF PIPE AND FILLING IT WITH 15MPA CONCRETE OR GROUT.
19. ADJUST ALL EXISTING MANHOLE, CATCHBASIN AND VALVEBOX FRAMES TO PROPOSED FINISHED GRADE.
20. RELOCATE EXISTING SERVICES AS REQUIRED TO CONSTRUCT PROPOSED INFRASTRUCTURE.
21. CONTRACTOR TO WORK IN DRY CONDITIONS. TEMPORARY PLUGGING OF SEWER UP AND DOWN STREAM WILL BE REQUIRED. PROVISION FOR WET WEATHER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
22. WHERE THE STABILITY, SAFETY OR FUNCTION OF THE EXISTING ROADWAY OR UNDERGROUND FACILITIES MAY BE IMPAIRED DUE TO THE CONTRACTOR'S METHOD OF OPERATIONS, THE CONTRACTOR SHALL PROVIDE SUCH PROTECTION AS MAY BE REQUIRED INCLUDING SHEETING, SHORING AND DRIVING PILES WHERE NECESSARY. CONSTRUCTION OF SHORING, BRACING AND PROTECTION SCHEMES SHALL CONFORM TO OPSS 538 AND OPSS 539.
23. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER.
24. REQUIRED SHOP DRAWINGS SHALL BE BASED ON FIELD MEASUREMENT AND LAYOUT VERIFICATION BY THE CONTRACTOR.
25. WHERE NEW PAVING OR EARTHWORK MEETS EXISTING PAVING OR EARTHWORK, SMOOTHLY BLEND LINE AND GRADE OF EXISTING WITH NEW.
26. EXPANSION JOINT FILLER SHALL BE PLACED WHERE PAVEMENT MEETS STRUCTURES–INCLUDING WALLS, LIGHT POLES, HYDRANTS, BUILDINGS AND BUILDING COLUMNS, STAIRS AND AT OTHER CONDITIONS SHOWN ON THE DRAWINGS.
27. EXCAVATION REQUIRED WITHIN PROXIMITY OF UTILITY LINES AND WITHIN THE TREE PROTECTION ZONE OF TREES DESIGNATED TO REMAIN SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATION AT NO COST TO THE UTILITY COMPANIES OR THE OWNER.

LAYOUT AND MATERIALS

1. ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN METERS, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETERS, UNLESS OTHERWISE SHOWN.
2. CONSTRUCTION LAYOUT BY CONTRACTOR.
3. ALL HORIZONTAL DIMENSION ARE TO CENTER OF OBJECT OR TO GUTTER OF CURB.
4. LASER ALIGNMENT CONTROL IS MANDATORY. AS–BUILT OF PIPE INVERT ELEVATIONS WITH CORRESPONDING STATIONS SHALL BE RECORDED PRIOR TO BACK FILLING OF TRENCH.
5. AS–BUILT ELEVATION AND COORDINATES SHALL BE PROVIDED AT 20M INTERVALS, AND AT EVERY HORIZONTAL AND VERTICAL CHANGE OF ALIGNMENT AND UPSTREAM AND DOWNSTREAM OF EACH SANITARY OR STORM MAHHOLE, AND WATERMAIN VALVE CHAMBERS.
6. HORIZONTAL AND VERTICAL CONTROL BASED ON THE CITY OF TORONTO PUBLISHED BENCHMARKS AND HORIZONTAL CONTROL MARKERS.
7. ALL LINE AND GRADE WORK PER DRAWING AND SPECIFICATION SHALL BE LAID OUT BY A REGISTERED CIVIL ENGINEER OR SURVEYOR.

DEWATERING AND SOIL STABILIZATION

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING AND SOIL STABILIZATION.

SANITARY AND STORM SEWERS

1. MAIN LINE PVC PIPE AS PER DR 35 CSA B182.2–06 CERTIFIED ASTM D3034–04A, F679–03. SERVICE CONNECTION PVC PIPE TO BE AS PER DR 28 CSA B182.2–06 CERTIFIED ASTM D3034–04A.
2. BEDDING FOR FLEXIBLE PIPE SHALL BE AS PER OPSD 802.010, 802.013 OR 802.014.
3. ULTRA–RIB PIPE IS NOT PERMITTED WITHIN THE MUNICIPAL RIGHT OF WAY.
4. MAINTENANCE HOLES AS PER CITY OF TORONTO STANDARD, T–701.010 (1200MM), T–701.011 (1500MM), T–701.012–1(1800MM), T–701.013 (2400MM) OR OPSD 701.014(3000MM). FRAME AND COVER AS PER OPSD 401.010 TYPE A CLOSED (SANITARY) TYPE B OPEN (STORM).
5. BENCHING SHALL BE AS PER CITY OF TORONTO STANDARD T–701.021.
6. DROP STRUCTURES TO BE AS PER CITY OF TORONTO STANDARD T–1003.01 (EXTERNAL) AND T–1003.01–2 (INTERNAL).
7. SANITARY SERVICE CONNECTIONS SHALL BE SINGLE, 150MMØ MINIMUM, PVC CLASS DR 28 INSTALLED AT 2 PERCENT AND THE COLOUR SHALL BE GREEN, FOR SINGLE RESIDENTIAL DWELLINGS.
8. SANITARY MAINTENANCE HOLE SHALL HAVE WATERTIGHT FRAME AND COVER IN PONDING AREAS AS PER OPSD 401.030.
9. REINFORCED CONCRETE PIPE SHALL BE AS PER CSA A257.2–03 (MINIMUM 65–D). HEIGHT OF FILL TO BE VERIFIED USING OPSD TABLES 807.010 AND 807.030.
10. NON–REINFORCED CONCRETE PIPE 150 MM TO 250 MM SHALL BE AS PER CSA A257.1–03 CLASS 3. HEIGHT OF FILL TO BE VERIFIED USING OPSD TABLES 807.040.
11. BEDDING FOR RIGID PIPE SHALL BE CLASS B AS PER OPSD 802.030, 802.031, 802.032 OR 802.033.
12. SINGLE CATCHBASINS SHALL BE AS PER CITY OF TORONTO STANDARD T–705.010 COMPLETE WITH GOSS TRAP WHERE SPECIFIED. FRAME AND COVER AS PER OPSD 400.070.
13. DOUBLE CATCHBASINS SHALL BE AS PER CITY OF TORONTO STANDARD T–705.020 COMPLETE WITH GOSS TRAP WHERE SPECIFIED. FRAME AND COVER AS PER OPSD 400.070.
14. SERVICE CONNECTIONS AND UTILITY CUTS TO BE BACKFILLED WITH UNSHRINKABLE FILL.
15. CATCHBASIN LEADS TO BE 200MMØ PVC DR 35 FOR SINGLE CATCHBASINS AND 250MMØ PVC DR 35 FOR DOUBLE CATCHBASINS UNLESS OTHERWISE NOTED.
16. UPON COMPLETION OF INSTALLATION, SEWERS ARE TO BE CLEANED AND HAVE CCTV INSPECTION PER TS 409 AND MANDRELL TEST PER TS 410. SEWERS TO HAVE DEFLECTION NO GREATER THAN 5.0%.
17. REAR YARD CATCHBASINS & CATCHBASINS IN PARKS SHALL BE AS PER CITY OF TORONTO STANDARD 235 T–705.010 COMPLETE WITH GOSS TRAP. FRAME AND COVER AS PER OPSD 400.070.

WATERMAINS

1. ALL SERVICE CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH T–1104.01, T–1104.02–1, T–1104.02–2, T–1105.02–1 AND T–1105.02–2.
2. WATERMAIN AND WATERMAIN APPURTENANCES SHALL CONFORM TO CITY OF TORONTO MATERIAL/MANUFACTURER SPECIFICATIONS. SEE CHAPTER 6, MATERIAL SPECIFICATIONS.
3. ALL POLYVINYL CHLORIDE (PVC) PIPES, RANGING IN SIZE FROM 100 MM THROUGH 300 MM IN DIAMETER SHALL BE PRESSURE CLASS 235, DR 18 AND MANUFACTURED IN ACCORDANCE AWWA C900–07 AND TO CSA B137.3–05 AND SHALL HAVE CAST IRON OUTSIDE DIAMETER DIMENSIONS. ALL PVC PIPE LARGER THAN 350 MM THROUGH 400 MM IN DIAMETER, SHALL BE PRESSURE CLASS 235, DR 18 AND MANUFACTURED IN ACCORDANCE TO AWWA C905–97 STANDARD AND CSA B137.3–05 AND SHALL HAVE CAST IRON OUTSIDE DIAMETER DIMENSIONS.
4. BEDDING FOR FLEXIBLE PIPE SHALL BE AS PER OPSD 802.010, 802.013 OR 802.014.
5. MINIMUM COVER ON WATERMAINS WILL BE 1.8 METRES.
6. PROVISIONS FOR FLUSHING THE WATER LINE PRIOR TO TESTING AND SO FORTH MUST BE PROVIDED WITH AT LEAST A 50 MM OUTLET ON 100 MM AND LARGER LINES AS PER T–1104.03–1. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. ON FIRE LINES, FLUSHING OUTLET TO BE 100 MM DIAMETER MINIMUM OR A HYDRANT.
7. ALL HYDRANTS TO BE AS PER CITY OF TORONTO STANDARD T–1105.01. IT SHALL CONFORM TO CITY OF TORONTO MATERIAL /MANUFACTURER SPECIFICATIONS. SEE CHAPTER 6, MATERIAL SPECIFICATIONS.
8. SINGLE WATER SERVICE CONNECTIONS SHALL BE A MINIMUM OF 19 MM DIAMETER AND CONFORM TO ASTM B88–03 (ASTM B88M–05 FOR METRIC SIZES) TYPE "K" SOFT COPPER AS PER T–1104.01.
9. ALL CURB AND VALVE BOXES TO BE LOCATED AT STREET LINE.
10. MECHANICAL THRUST RESTRAINTS SHALL BE INSTALLED AT ALL FITTINGS, BENDS, TEES, CROSSES, REDUCERS AND VALVES FOR ALL WATERMAIN SIZES. MECHANICAL RESTRAINTS AT JOINTS SHALL BE INSTALLED WITHIN 6.1 METRES OF EITHER SIDE OF THE VALVE FOR WATERMAINS 300 MM DIAMETER OR LARGER. MECHANICAL THRUST RESTRAINTS SHALL CONFORM TO THE MATERIAL SPECIFICATIONS CONTAINED IN CITY OF TORONTO MATERIAL/MANUFACTURER SPECIFICATIONS. SEE CHAPTER 6, MATERIAL SPECIFICATIONS.
11. ALL TEES, PLUGS, HORIZONTAL, VERTICAL BENDS, REDUCERS AND HYDRANTS TO HAVE CONCRETE THRUST BLOCKS AS PER CITY OF TORONTO STANDARD T–1103.01, T–1103.020.
12. WATERMAINS MUST FOLLOW THE MINISTRY OF THE ENVIRONMENT PROCEDURES THAT GOVERN THE SEPARATION OF SEWERS AND WATERMAINS F–6–1. A MINIMUM VERTICAL CLEARANCE OF 0.30 METRE OVER, 0.5 METRE UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING. MUST ALSO MAINTAIN 2.5 METRES HORIZONTAL SEPARATION WITH SEWERS.
13. ALL VALVES LESS THAN 400 MM WILL BE IN A VALVE AND BOX AS PER CITY OF TORONTO STANDARD T–1101.02–2. ALL VALVES 400 MM AND LARGER WILL BE IN A CHAMBER.
14. SACRIFICIAL ANODES TO BE INSTALLED FOR ALL METAL PIPES AND APPURTENANCES, WATER SERVICES AND FITTINGS AS PER CITY OF TORONTO STANDARD T–1106.04, T–1106.05 AND T–1106.06 CONSTRUCTION SPECIFICATION T.S. 7.22.
15. TRACER WIRE INSTALLATION AS PER CITY OF TORONTO CONSTRUCTION SPECIFICATION T.S. 7.40.
16. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM THE EXISTING SYSTEM. FLUSHING, SWABBING, AND TESTING OF WATERMAIN AS PER ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS), AS WELL AS CITY OF TORONTO SPECIFICATION TS 7.30 OR LATEST AMENDMENT.
17. AFTER PASSING THE HYDROSTATIC PRESSURE TEST AND LEAKAGE TEST, CHLORINATION CAN PROCEED. SAMPLING OF THE NEW MAINS IS TO BE DONE AT THE REQUIRED LOCATIONS PRIOR TO CONNECTING TO THE CITY WATERMAIN SYSTEM. THE TEE FITTING IS TO BE CUT INTO THE EXISTING WATERMAIN TO MAKE THE CONNECTION. TO MAINTAIN THE PRESSURE IN THE NEW MAIN DURING INSTALLATION OF SERVICE, A 50 MM BY–PASS WITH AN APPROVED PRESSURE DIFFERENTIAL BACKFLOW PREVENTER, MOUNTED ABOVE GROUND LEVEL IS TO BE INSTALLED AROUND THE CLOSED ISOLATING VALVE.
18. CITY IN–SERVICE WATER VALVES CAN ONLY BE OPERATED BY TORONTO WATER STAFF.
19. WATERMAINS TO BE INSTALLED TO GRADE AS SHOWN ON APPROVED PLANS, COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHEN REQUESTED BY INSPECTOR.
17. INSULATE WATERMAIN WHERE COVER IS LESS THAN 1.8M.

WATERMAIN – FILL AREAS

1. PIPES ARE NOT TO BE LAID ON FILL UNTIL THE FIELD DENSITY TEST REPORTS HAVE BEEN SUBMITTED AND APPROVED BY THE ENGINEER.
2. FILL TO BE PLACED TO A MINIMUM OF 600 MM ABOVE THE WATERMAIN GRADES AND TO 3 METRES MINIMUM ON EACH SIDE PRIOR TO WATERMAIN LAYING COMPACTED TO A MINIMUM OF 100 PERCENT STANDARD PROCTOR DENSITY IN 300 MM LIFTS.
3. SOIL DENSITY TESTS SHALL BE TAKEN ALONG CENTRELINE OF THE WATERMAIN AND ON LINES 1.5 METRES ON EITHER SIDE OF SAME AT A MAXIMUM INTERVAL OF 30 METRES. TESTS TO BE TAKEN AT EACH 600 MM LIFT.
4. ALL HYDRANTS, TEES, VALVES, BENDS, PLUGS AND EACH PIPE JOINT ARE TO BE MECHANICALLY RESTRAINED.
5. PIPE JOINT DEFLECTIONS ARE NOT ALLOWED.

ADDITIONAL SEWER NOTES

1. MODULOC RINGS SHALL EXTEND 300MM MAXIMUM BELOW CATCHBASIN OR MANHOLE COVER FRAME AND THE REMAINING DISTANCE SHALL BE BUILT UP WITH PRECAST CONCRETE ADJUSTMENT UNITS 1200MMØ OR LARGER
2. MANHOLES OVER 5M DEEP SHALL HAVE SAFETY PLATFORMS ACCORDING TO OPSD–404.020 MODIFIED WITH FIBRE REINFORCED PLASTIC LANDINGS.
3. INSTALL FACTORY MADE WYES FOR LATERAL CONNECTIONS TO ON–SITE SEWERS.
4. AT ALL MANHOLES USE FLEXIBLE PIPE–TO–MANHOLE CONNECTORS KOR–N–SEAL ASSEMBLIES FOR 450MM DIAMETER PIPES OR SMALLER, EXCLUDING DROP CONNECTIONS.
5. INSULATE SEWERS AS PER CITY STD. T–708.01–4 WHERE COVER IS LESS THAN 1.2m.
6. CATCHBASIN CONNECTION TO MAIN SEWER AS PER OPSD–708.010
7. GOSS TRAPS SHALL NOT RESTRICT FLOWS
8. GRANULAR MATERIALS INCLUDING SEWER EMBEDMENT SHALL NOT CONSIST OF RECLAIMED/RECYCLED MATERIAL
9. THE USE OF HIGH PERFORMANCE BEDDING (HPB) FOR SEWER PIPE BEDDING/BACKFILL WILL NOT BE PERMITTED UNLESS REQUIRED AS A RESULT OF A SPECIFIC TRENCH CONDITIONS AND SUPPORTED WITH A RECOMMENDATION FROM A GEOTECHNICAL ENGINEER WHICH WILL INCLUDE THE POTENTIAL FOR MIGRATION OF NATIVE FINES INTO HPB VOIDS AND ITS MITIGATION
10. GRANULAR EMBEDMENT MATERIALS FOR SEWERS SHALL BE NATIVE GRANULAR A MATERIAL.
11. REFER TO GEOTECHNICAL REPORT PREPARED BY DAVROC TESTING LABORATORIES INC. DATED FEBRUARY 3, 2023 FOR ADDITIONAL BURIED SERVICING RECOMMENDATIONS.
12. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRE–CAST SITE SERVICING ELEMENTS (MH'S + CB'S) PRIOR TO ORDERING MATERIALS

EROSION AND SEDIMENT CONTROL

1. SEDIMENT BARRIERS, CHECK DAMS, AND TEMPORARY CONSTRUCTION ACCESS TO BE INSTALLED PRIOR TO THE BEGINNING OF CONSTRUCTION.
2. ALL SEDIMENT CONTROL DEVICES TO BE ROUTINELY INSPECTED AND MAINTAINED IN PROPER WORKING ORDER UNTIL AREA IS STABILIZED.
3. IF NECESSARY, TRUCKS WILL BE WASHED DOWN BEFORE LEAVING THE SITE.
4. THE SITE WILL BE WET DOWN IF NECESSARY TO CONTROL DUST.
5. ALL CONSTRUCTION EQUIPMENT MUST BE PARKED ON–SITE.
6. ALL CONSTRUCTION ACTIVITY WILL COMPLY WITH CITY OF TORONTO NOISE BYLAW.
7. SEDIMENT CONTROL FENCE TO BE AS PER CITY OF TORONTO STANDARD T–219.130–1.
8. ALL CONSTRUCTION VEHICLES TO ENTER AND EXIT SITE FROM TEMPORARY CONSTRUCTION ACCESS.
9. ALL TOPSOIL STOCKPILES TO BE SURROUNDED WITH SEDIMENT CONTROL FENCING.
10. FILTER FABRIC TO BE PLACED UNDER GRATES ON ALL CATCHBASINS TO TRAP SEDIMENT. SILT TRAPS ARE TO BE CLEANED REGULARLY AND ARE NOT TO BE REMOVED UNTIL SUCH TIME AS THE CURBS ARE CONSTRUCTED AND THE BOULEVARDS ARE SODDED OR BACKYARDS GRADED AND SODDED. FILTER FABRIC FOR SILT CONTROL TO BE TERRA FIX 270R OR APPROVED EQUIVALENT.
11. FILTER CLOTH WILL BE PLACED ON THE CATCHBASINS ON PUBLIC STREET ACROSS THE PROPERTY'S FRONTAGE.
12. IN THE CASE OF ANY CONFLICT WITH ANOTHER PLAN, THIS PLAN PREVAILS ONLY IN RESPECT TO CONSTRUCTION MEASURES AND ACTIVITIES SUCH AS THE CONSTRUCTION ACCESS, SILT FENCE, SECURITY FENCING, SEDIMENT CONTROL, AND MUD MATS.
13. STREET SWEEPING, CATCH BASIN CLEANING AND DUST CONTROL ARE THE RESPONSIBILITY OF THE DEVELOPER AND MUST BE KEPT UNDER CONTROL ON ALL ROADWAYS TO THE SATISFACTION OF THE CITY.
14. MUD MATS TO BE INSTALLED AT ALL TEMPORARY CONSTRUCTION ACCESS POINTS.
15. THE CONTRACTOR WILL BE RESPONSIBLE TO DETERMINE LOCATIONS OF TOPSOIL AND/OR GRANULAR STOCKPILES WITHIN THE SITE. LOCATION OF STOCKPILES MAY CHANGE TO SUIT VARIOUS STAGES OF CONSTRUCTION.
16. THE CONTRACTOR SHALL PROVIDE SEPERATE STORAGE AREAS WITHIN THE SITE FOR HAZARDOUS AND WASTE MATERIALS. THE STORAGE AREAS SHALL BE LOCATED AWAY FROM ANY RECEIVING WATER BODIES, INCLUDING PONDS, SEWERS, DITCHES, ETC. AND INCLUDE SPILL CONTAINMENT AREAS WITH IMPERVIOUS SURFACES. THE CONTRACTOR IS RESPONSIBLE FOR ADDRESSING AND REPORTING ANY HAZARDOUS WASTE SPILLS TO THE APPROPRIATE LOCAL AGENCY.
17. CONTRACTOR TO ENSURE THAT PORTABLE TOILETS ARE LOCATED OFF PAVED ROADWAYS AND AWAY FROM ANY RECEIVING WATERS SUCH AS PONDS AND SEWERS.
18. THE SEDIMENT CONTROLS, INCLUDING SEDIMENTS, SHALL BE REMOVED OFF SITE AFTER GRASS SURFACES HAVE BEEN RESTORED TO THE SATISFACTION OF THE ENGINEER.
18. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL SEDIMENT AND EROSION CONTROLS, AS DESCRIBED IN THE "GTA CA'S EROSION & SEDIMENT CONTROL GUIDELINES FOR URBAN CONSTRUCTION" AND/OR OTHER CITY OF TORONTO REQUIREMENTS ON A SITE–BY–SITE BASIS SUCH AS INTERCEPTOR SWALES/DIKES, ROCK CHECK DAMS, SEDIMENT TRAPS, ETC. TO PREVENT SEDIMENTS FROM THEIR CONSTRUCTION OPERATIONS FROM ENTERING THE EXISTING AND PROPOSED STORM DRAINAGE SYSTEMS.
19. AFTER ROAD CONSTRUCTION AND PRIOR TO LANDSCAPE OR SODDING OF SITE, CONTRACTOR TO INSTALL SEDIMENT CONTROLS, SUCH AS SEDIMENT FENCING, ALONG DOWNSTREAM EDGES OF INDIVIDUAL BLOCKS.

NOTES FOR SITE STORMWATER MANAGEMENT SYSTEMS:

1. DESIGN / CONSTRUCTION RESPONSIBILITIES AND LIMITATIONS FOR SWM SYSTEMS WITHIN BUILDING FOOTPRINT:

THE STORMWATER MANAGEMENT (SWM) SYSTEM DEPICTED ON THIS DRAWING SET ESTABLISHES THE FUNCTIONAL PARAMETERS TO MEET THE OBJECTIVES OF THE APPROVED SWM PLAN. THESE PARAMETERS INCLUDE AND ARE LIMITED TO THE SIZE AND SHAPE OF THE BURIED SWM FACILITIES AND TREATMENT UNITS AND ACCESS OPENING FRAME AND GRATE MODELS AND LOCATION(S).

THE HYDROLOGIC FUNCTION OF THE SWM SYSTEM IS BASED ON THE GROUND AND BUILDING SURFACES AND AREA MATERIALS (I.E. EXTENT OF ROOF AREA, PERMEABLE PAVING STONES, PAVING STONES AND OTHER LANDSCAPING) OUTLINED ON THE APPROVED LANDSCAPE PLANS. CHANGES TO THESE MATERIALS WILL AFFECT THE SWM SYSTEM.

THE PRESCRIBED BUILDING SURFACES (I.E. ROOF DRAIN CONVEYANCE) STRUCTURES AND BUILDING SYSTEMS, DETAILED DESIGN ARE UNDERTAKEN BY OTHERS. IN THAT REGARD, THE FOLLOWING PARTIES AND THEIR RESPECTIVE DRAWINGS AND DOCUMENTATION SHOULD BE REFERRED TO WITH RESPECT TO THE DESIGN, CONSTRUCTION AND OPERATION OF THE SWM SYSTEM.

- ARCHITECT – DTAH ARCHITECTS LIMITED
- STRUCTURAL – READ JONES CHRISTOFFERSON LIMITED
- MECHANICAL – INTROBA
- LANDSCAPE ARCHITECT – DTAH ARCHITECTS LIMITED

DETAILED DESIGN AND SPECIFICATIONS FOR THE FOLLOWING ITEMS ASSOCIATED WITH THE SWM SYSTEM ARE PROVIDED BY OTHERS:

- LANDSCAPE SURFACES
- ROOF DRAINS (TO BE DESIGNED TO CAPTURE 100–YEAR DESIGN STORM)
- STORM PIPING WITHIN THE BUILDING ENVELOPE (TO BE DESIGNED TO CAPTURE 100–YEAR DESIGN STORM)
- CONTROL SYSTEMS
- ELECTRICAL SUPPLY, DISTRIBUTION AND CLASSIFICATION OF AREAS
- PROPRIETARY SWM EQUIPMENT

DURING CONSTRUCTION, THE CONTRACTOR IS TO IDENTIFY ANY DISCREPANCIES BETWEEN THE VARIOUS DESIGN INFORMATION PERTAINING TO THE SWM SYSTEM TO R.V.ANDERSON ASSOCIATES LIMITED FOR COORDINATION OF RESOLUTION.

2. OPERATION AND MAINTENANCE BY BUILDING OWNER

A. THE SWM SYSTEM DEPICTED ON THE DRAWING SET REQUIRES ONGOING MAINTENANCE TO PRESERVE THE INTENDED FUNCTION.
B. CATCHBASINS, AREA DRAINS, STRIP DRAINS, ROOF DRAINS AND OTHER INLETS REQUIRE ONGOING ROUTINE CONDITION INSPECTION AND CLEANING TO ENSURE THAT THEY REMAIN FREE OF ANY BLOCKAGE OR OBSTRUCTIONS.
C. THE AREA DRAINS, SEDIMENT INTERCEPTORS, AND AREA DRAIN SEDIMENT BUCKETS WILL ACCUMULATE SEDIMENT AND DEBRIS AND ONGOING ROUTINE INSPECTION AND CLEANING MUST BE PERFORMED BY A QUALIFIED/LICENSED SERVICE PROVIDER.
D. OTHER MAINTENANCE REQUIREMENTS PRESCRIBED BY THE ARCHITECT, MECHANICAL ENGINEER AND SPECIALITY CONSULTANTS OR EQUIVALENT SUPPLIERS DESIGNING THE CONTROLS FOR THE DIVERSION VALVE MUST BE ADHERED TO.
E. THE BUILDING OWNER IS CAUTIONED THAT CHANGES TO THE BUILDING AND SITE SURFACE MATERIALS MAY ALTER THE PERFORMANCE OF THE SWM SYSTEMS AND SHOULD BE REVIEWED BY A QUALIFIED PROFESSIONAL ENGINEER.

PERMAVOID NOTES

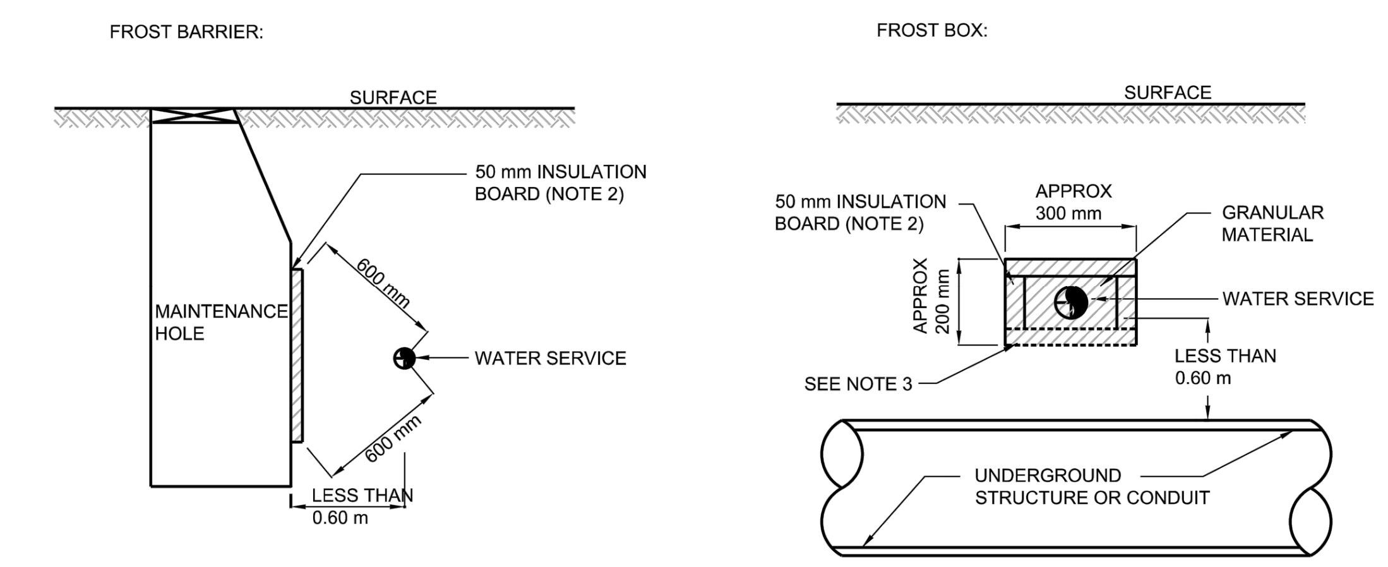
1. SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO ORDERING MATERIALS
2. CONTRACTOR MUST COMPLETE SITE PERMAVOID INSTALLATION TRAINING WITH PERMAVOID REPRESENTATIVES PRIOR TO INSTALLATION
3. GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE SUBGRADE PRIOR TO PLACEMENT OF GRANULAR BASE AND PERMAVOID UNITS

TOPOGRAPHIC SURVEY NOTES:

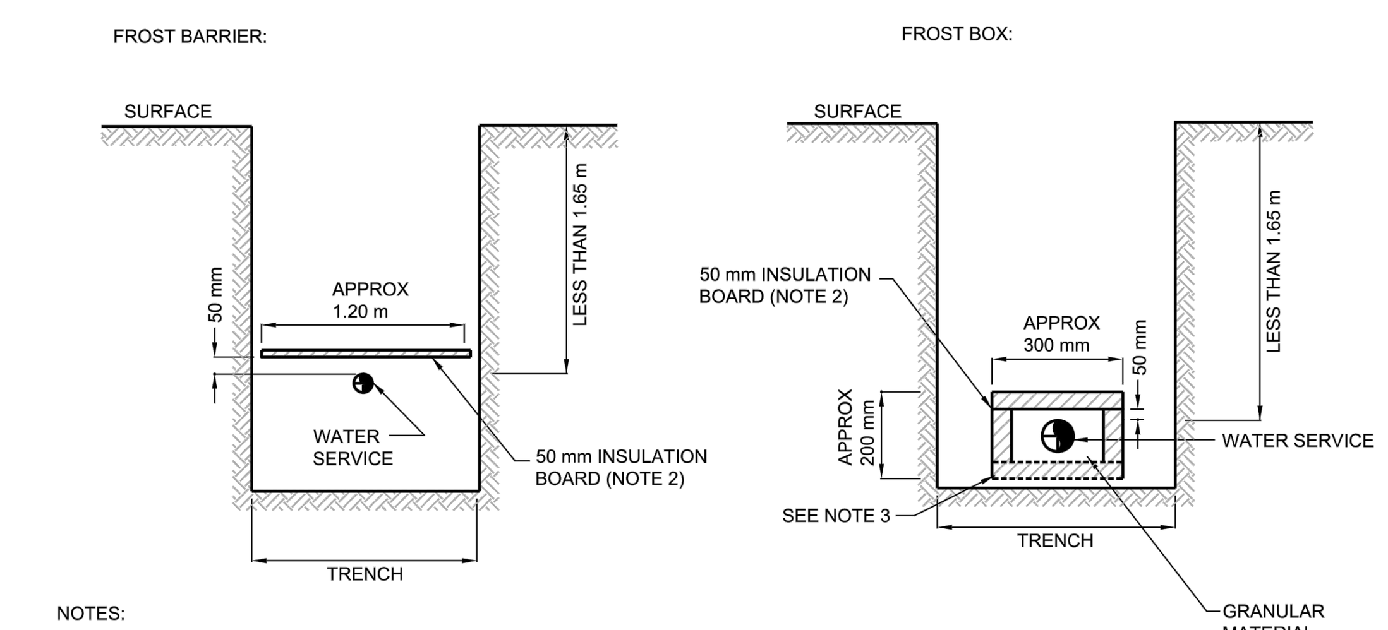
TOPOGRAPHIC SURVEY WAS PREPARED BY J.H. GELBLOOM SURVEYING LIMITED, PROJECT NUMBER 22–129, COMPLETED JUNE 23, 2022.

BENCHMARK
ELEVATIONS ARE GEODETIC AND ARE REFERRED TO CITY OF TORONTO BENCH MARK NO. 12419661547 HAVING AN ELEVATION OF 157.633 METRES.

CASE 'A'
ADJACENT TO VENTILATED UNDERGROUND STRUCTURE:



CASE 'B'
INSUFFICIENT GROUND COVER:

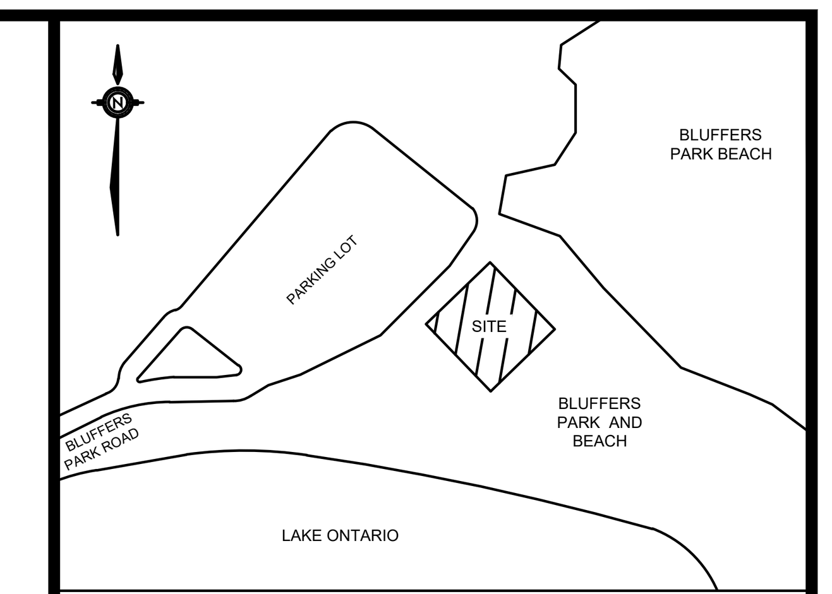


NOTES:

1. WHERE THE EXISTING WATER SERVICE IS SUPPORTED ACROSS THE TRENCH, INSULATION BOARD IS TO BE INSTALLED BETWEEN THE SERVICE AND SUPPORT.
2. DENOTES 50 mm INSULATION (STYROFOAM HI 60 OR PLASTISPAN 60) OR APPROVED EQUIVALENT.
3. INSULATION SHALL BE REQUIRED IN THE BOTTOM OF THE TRENCH WHEN CROSSING CULVERTS.
4. WHERE WATER SERVICE IS A FIRE HYDRANT LEAD, THE INSUFFICIENT GROUND COVER REQUIREMENT SHALL BE INCREASED FROM LESS THAN 1.65 m TO 1.8 m FOR THE PLACEMENT OF INSULATION BOARD AND AS A FROST BARRIER.

All dimensions are in millimetres unless otherwise shown.

TORONTO	ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING	REV 3	SEP 2018
	INSULATION DETAILS FOR WATER MAIN AND SERVICE CONNECTIONS	T-708.01-4	
		NTS	SHEET 1



KEY PLAN
N.T.S.

No.	Date	Comments
1	2023/02/22	ISSUED FOR 50% COSTING
2	2024/06/13	ISSUED FOR TRCA SUBMISSION
3	2024/08/16	ISSUED FOR 100% COSTING
4	2024/09/18	ISSUED FOR BUILDING PERMIT
5	2024/11/15	REISSUED FOR TRCA SUBMISSION
6	2025/01/17	REVISED DIVERSION VALVE OUTLET
7	2025/04/11	ISSUED FOR TENDER

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RVA DRAWINGS

NOTE:
THE INFORMATION DENOTED IN BOXES WITHIN THE DRAWING DETAILS ON THIS SHEET ARE CONSIDERED TO BE PROPOSED DESIGN/SPECIFICATIONS. ALL OTHER INFORMATION IS SHOWN FOR CONTEXT ONLY. REFER TO THE APPROPRIATE DRAWINGS BY THE ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER, AND MECHANICAL ENGINEER FOR DETAIL DESIGN AND SPECIFICATION OF OTHER DESIGN ELEMENTS.

APR 11, 2025

FOR GENERAL NOTES ONLY

Drawing Prepared By:
R.V. ANDERSON ASSOCIATES LIMITED

Client:
DTAH ARCHITECTS LIMITED

Project Name:
BLUFFER'S PARK EAST WASHROOM
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

Drawing Title:
GENERAL NOTES

Drawn: D.A.S	Design: D.A.S	Date: JULY 2024
Checked: S.D.F	Approved: D.A.S	Scale:
CADD File: 215989–S–GENERAL NOTES.dwg		Dwg. No.: C-1
Project No.: 215989		

R:\2021\215989 – DTAH–Bluffers Park Pavillion\10 CADdwg\01 Linear\04 Sheets

NOTE:
CAUTION: PARKS OPERATIONS STAFF SHOULD BE CONSULTED WITH WINTERIZING OUTDOOR WATER SUPPLY SYSTEM.

AT A MINIMUM IT IS RECOMMENDED THAT THE OUTDOOR WATER SUPPLY SYSTEM IS BLOWN OUT DURING THE FALL. COMMISSIONING OF THE SYSTEM DURING THE SPRING SHOULD AT A MINIMUM CONSIST OF CHLORINATING AND FLUSHING THE WATER SUPPLY LINES.

REFER TO PROPOSED FORCEMAIN REPLACEMENT DRAWINGS PP-1 TO PP-5 FOR CONTINUATION OF FORCEMAIN

TWO (2) VALVES PER T-1101.02-2 TO ACCOMMODATE COMMISSIONING AND TESTING OF NEW WATERMAIN PER TS 7.30. ONE (1) VALVE TO INCLUDE SERVICE BOX SET TO FINISHED GRADE PER T-1101.02-2. WEST VALVE TO CONNECT TO EXISTING WATERMAIN C/W TRANSITION COUPLING AS REQUIRED TO TRANSITION TO EXISTING WATERMAIN MATERIAL.

APPROXIMATE LOCATION OF EXISTING 200mmø WATERMAIN (MATERIAL UNKNOWN). LAYOUT AND MATERIAL TO BE CONFIRMED BY CONTRACTOR ON SITE AND REPORTED TO ENGINEER PRIOR TO COMMENCEMENT OF SITE SERVICING WORKS

ABANDON EXISTING SANITARY FORCEMAIN PER TS 510

±28m – 100mmø HDPE DR13.5 SANITARY FORCEMAIN @ 0.5% INSTALLED BY OPEN CUT (GRANULAR 'A' BEDDING AS PER OPSD 802.010, UNSHRINKABLE BACKFILL). REFER TO FORCEMAIN NOTE #1

150mm C/O C/W S/S AD COVER (TYP.) SWM FACILITY #4 OVERFLOW. TOP OF COVER SET TO FG

200mmø PVC RISER C/W PERFORATED S/S COVER FOR MAINTENANCE AND OVERFLOW (TYP.)

SWM FACILITY #4
REFER TO DWG-C5 FOR DETAILS
F.G = 77.85m (REFER TO LA PLANS)
GWL = 75.90m
U/S STONE = 76.75m
INV. SYSTEM = 76.90m
TOP SYSTEM = 77.135m
COVER OVER SYSTEM = ±0.7m
FOOTPRINT AREA = ±38.8 m2
VOLUME = ±8.6 CU.M
PIPE INVERT = ±76.92m

11.0m-150mmø SDR28 PVC STM @ 0.75% INSULATED PER T-708.01-4 INV.BLDG = ±77.00m

NOTE: ALL WATERMAIN COMMISSIONING AND TESTING ACCORDING TO TS 7.30

200mmø PVC DR18 WM TO BE INSTALLED MIN. 1.8m BELOW FINISHED GRADE. INSTALLATION PER TS 441 INCLUDING CATHODIC PROTECTION PER TS 7.22. ALL JOINTS SHALL BE MECHANICALLY RESTRAINED

4.0m-100mmø DR28 SAN @ 1.0% C/W 2-45° BENDS, TO BE INSULATED PER T-708.01-4

MECHANICALLY RESTRAINED 90° BEND AND 200mmx150mm REDUCER

EXISTING HYDRANT TO BE REMOVED AND DISPOSED OFF SITE

ABANDON EXISTING BURIED WATERMAIN AND WATER SERVICE PIPES PER TS 510

ABANDON EXISTING SANITARY MH PER TS 510

FM INV. 75.60

TP#1

PROPOSED HYDRANT T-1105.01

200X200X100 TEE C/W THRUST BLOCK PER T-1103.01 AND MECHANICALLY RESTRAINED JOINTS

VALVE AND SERVICE BOX

100mmø PVC DR18 WM TO BE INSTALLED MIN 1.8m BELOW FINISHED GRADE. INSTALLATION PER TS 441 INCLUDING CATHODIC PROTECTION PER TS 7.22.

45° BEND

NYLOPLAST 15" DRAIN BASIN (OR APPROVED EQUIVALENT) C/W CONCRETE COLLAR DISHED TOWARDS CB INLET. CB LAYOUT TO BE FIELD LOCATED SUITABLY TO CAPTURE FULL FLOW FROM SCUPPER (TYP.)

90-DEGREE BEND C/W THRUST BLOCK PER T-1103.01

WAT INV. 75.85

FM INV. 75.45

CONNECT TO TANK @ INV. 76.00

PROPOSED SANITARY PUMP STATION. REFER TO MECHANICAL DWGS FOR DETAILS

SWM FACILITY #3
REFER TO DWG-C4 FOR DETAILS
F.G = 77.85m (REFER TO LA PLANS)
GWL = 75.90m
U/S STONE = 76.75m
INV.SYSTEM = 76.90m
TOP SYSTEM = 77.135m
COVER OVER SYSTEM = ±0.7m
FOOTPRINT AREA = ±38.8 m2
VOLUME = ±8.6 CU.M
PIPE INVERT = ±76.93m

7m-150mmø PVC SDR28 STM @ 1.0% INSULATED PER T-708.01-4 INV.BLDG = 77.00m

SAN INV. 76.55

WAT INV. 75.90

2-45° BENDS

19mmø SEASONAL TYPE K COPPER WATER SERVICE PIPE INSTALLED MIN 1.8m BELOW FINISHED GRADE

BOTTLE FILLING STATION (BY OTHERS)

SAN INV. 76.50

WAT INV. 75.90

38mmø TYPE K COPPER WAT INV. 75.90

ZURN ZXSS1612-SP C/O OR APPROVED EQUIVALENT (TYP. FOR SAN) INV. 77.00

SAN INV. 76.99

SAN INV. 76.97

7.3m-100mmø DR28 SAN @ 1.0% TO BE INSULATED PER T-708.01-4

SAN INV. 76.93

WEST BUILDING FFE = 77.75

SAND INTERCEPTOR #1

1m-100mmø DR28 SAN @ 1.0% TO BE INSULATED PER T-708.01-4

DIVERSION MH (REFER TO DETAIL ON DWG C-3)

SANMH 1A
1200mmø
T-701.010
TOP. ±77.70
(REFER TO LA)
N.INV.76.17
E.INV.76.16
W.INV.76.10

1m-100mmø DR28 SAN @ 1.0% TO BE INSULATED PER T-708.01-4

SAND INTERCEPTOR #2

10.4m-100mmø PVC DR28 SAN @ 1.8% INV. 76.50 AT DIVERSION CHAMBER

1.7m-150mmø DR28 PVC SAN @ 1.7%

SAN INV. 76.20

4.6m-100mmø DR28 SAN @ 1.0% TO BE INSULATED PER T-708.01-4

SAN INV. 76.96

C/O INV. 76.97

SAN TO BE INSULATED PER T-708.01-4

SAN INV. 76.31

45° BEND

28.8m-100mmø PVC DR28 SAN @ 1.0%

C/O INV. 76.42

C/O INV. 76.25

150mm C/O C/W S/S AD COVER (TYP.) SWM FACILITY #3 OVERFLOW. TOP OF COVER SET TO FG

LANDSCAPE FEATURE. SEE LA DRAWINGS (TYP.)

ASPHALT PATH

PERMEABLE PAVERS

LANDSCAPED AREA

PERFORATED 100mmø SUBDRAIN C/W FILTER SOCK SHALL BE INSTALLED BELOW LOW LYING AREA AND DAYLIGHT TO THE SANDY AREA. ENDS OF SUBDRAIN TO BE CAPPED.

EXISTING CULVERT EAST OF CURB CUT TO BE INSPECTED AND CLEANED INCLUDING REMOVAL OF DEBRIS AND DEPOSITS AT INLET/OUTLET

APPROXIMATE LOCATION OF EXISTING 50mmø WATER SERVICE (SHOWN SCHEMATICALLY BASED ON RECORDS). LOCATION TO BE CONFIRMED BY CONTRACTOR ON SITE.

APPROXIMATE LOCATION OF EXISTING 75mmø SAN FORCEMAIN. LOCATION TO BE CONFIRMED BY CONTRACTOR ON SITE.

ZURN Z610 AD C/W S/S MESH LINER AND SEDIMENT BUCKET (OR APPROVED EQUIV) (TYP.)

SWM FACILITY #2
REFER TO DWG-C4 FOR DETAILS
F.G. = ±77.40 (REFER TO LA)
GWL = 75.65m
U/S STONE = 76.50m
INV. SYSTEM = 76.65m
TOP SYSTEM = 77.10m
COVER OVER SYSTEM = ±0.34m
FOOTPRINT AREA = ±13 m2
VOLUME = ±5.8 CU.M

2.5m MIN

SAN INV. 77.05

SAN INV. 77.03

100mmø DR28 SAN @ MIN 1.0% TO BE INSULATED PER T-708.01-4 (TYP. ALL SHOWER DRAINS)

38mmø CURB STOP (TYP.)

SAN INV. 77.00

SAN INV. 77.00

OUTDOOR SHOWER STALLS (TYP.)

WAT INV. 75.75

SAN INV. 76.45

38mmø SEASONAL TYPE K COPPER WATER SERVICE PIPE INSTALLED MIN 1.8m BELOW FINISHED GRADE

WAT INV. 75.75

WATER CONNECTION TO SHOWER FIXTURE BY OTHERS (TYP.)

1.5m-100mmø SDR28 PVC STM @ 2.0%

EAST BUILDING FFE = 77.65

SWM FACILITY #1
REFER TO DWG-C3 FOR DETAILS
F.G. = ±77.60 (REFER TO LA PLANS)
GWL = ±75.65m
U/S STONE = 76.50m
INV. SYSTEM = 76.65m
TOP SYSTEM = 76.885m
COVER OVER SYSTEM = ±0.7m
FOOTPRINT AREA = ±15 m2
VOLUME = ±3.35 CU.M
PIPE INVERT = ±76.68

WAT. INV. 77.75

DRINKING FOUNTAIN (BY OTHERS)

2.45m

MH INVERTS

DIVERSION MH 1800mmø T-701.012-1 TOP. ±77.70 (REFER TO LA) N.INV.76.91 (INLET) S.INV.76.91 (INLET) W.INV.76.52 (SAN OUTLET) E.INV.76.88 (STM OUTLET)
SAND INTERCEPTOR SAND INT. #1 TOP. ±77.64 SAND INT. #2 TOP. ±77.60 N.INV.76.92 S.INV.76.92 ZURN Z1187-SI PREFIX Z SUFFIX DG (OP APPROVED EQUIVALENT)

CROSSING NOTES

1. F.G. ±77.65 (REFER TO LA)
INV.STM = 76.96
OBV.STM = 77.11
INV.SAN = 75.52
OBV.SAN = 75.62
CLEARANCE = 1340mm

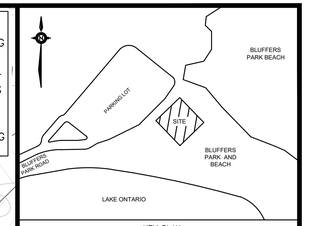
2. F.G. ±77.60 (REFER TO LA)
INV.STM = 76.97
OBV.STM = 77.12
INV.SAN = 76.21
OBV.SAN = 76.31
CLEARANCE = 650mm

3. F.G. ±77.60 (REFER TO LA)
INV.STM = 76.97
OBV.STM = 77.12
INV.WAT = 75.70
OBV.WAT = 75.80
CLEARANCE = 1010mm

FORCEMAIN NOTE #1:
CONNECTIONS BETWEEN HDPE PIPE SEGMENTS SHALL EITHER BE CONTINUOUSLY FUSED OR COMPLETED USING PLAN END READY MECHANICAL COUPLINGS OR APPROVED EQUIVALENT. ALL HDPE FITTINGS SHALL BE RESTRAINED.

NOTE: ALL PRE-CAST CONCRETE MAINTENANCE HOLES SHALL BE FABRICATED WITH A MINIMUM 250mm BASE EXTENSION FOR UPLIFT PREVENTION ALL AROUND BASE (TO BE DESIGNED BY SUPPLIER AND STAMPED BY P.ENG LICENSED TO PRACTICE IN ONTARIO). BASE EXTENSION TO BE FACTORY CAST OR FACTORY DOWELED FOR FIELD POUR

1m 0 2m 4m
1:100



KEY PLAN
N.T.S.

No.	Date	Comments
1	2023/02/22	ISSUED FOR 50% COSTING
2	2024/06/13	ISSUED FOR TRCA SUBMISSION
3	2024/08/16	ISSUED FOR 100% COSTING
4	2024/09/18	ISSUED FOR BUILDING PERMIT
5	2024/11/15	REISSUED FOR TRCA SUBMISSION
6	2025/01/17	REVISED DIVERSION VALVE OUTLET
7	2025/04/11	ISSUED FOR TENDER

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RVA DRAWINGS

LEGEND

- BUILDING OUTLINE
- ROOF OVERHANG
- EX. WATER SERVICE
- EX. SANITARY FORCEMAIN
- TPF TREE PROTECTION FENCING
- WATER SERVICE PIPE
- SANITARY SEWER AND FLOW DIRECTION
- STORM SEWER AND FLOW DIRECTION
- MAINTENANCE HOLE
- CLEANOUT (C/O)
- FIRE HYDRANT
- VALVE AND BOX
- AREA DRAIN (AD)
- TP#1 PROPOSED TEST PIT LOCATION
- NYLOPLAST DRAIN BASIN

This Drawing Is Not To Be Used For Construction Until Signed By The Engineer.

NOTE:
THE INFORMATION DENOTED IN BOXES [ ] WITHIN THE DRAWING DETAILS ON THIS SHEET ARE CONSIDERED TO BE PROPOSED DESIGN/SPECIFICATIONS. ALL OTHER INFORMATION IS SHOWN FOR CONTEXT ONLY. REFER TO THE APPROPRIATE DRAWINGS BY THE ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER, AND MECHANICAL ENGINEER FOR DETAIL DESIGN AND SPECIFICATION OF OTHER DESIGN ELEMENTS.

APR 11, 2025

FOR SITE SERVICING ONLY

Drawing Prepared By:

R.V. ANDERSON ASSOCIATES LIMITED

Client:
DTAH ARCHITECTS LIMITED

Project Name:
BLUFFER'S PARK EAST WASHROOM
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

Drawing Title:
GENERAL SITE SERVICING

Drawn: D.A.S	Design: D.A.S	Date: JULY 2024
Checked: S.D.F	Approved: D.A.S	Scale: 1:100
CADD File: 215989-S-SERVICING.dwg		Dwg. No.: C-2
Project No.: 215989		

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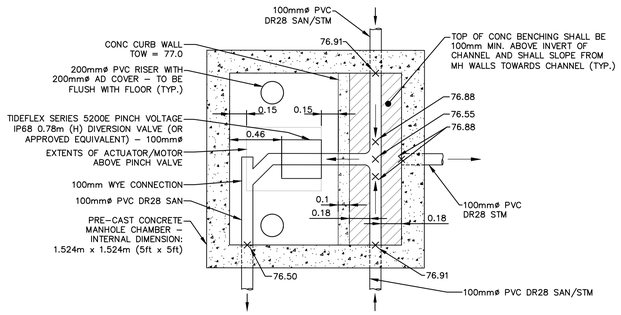
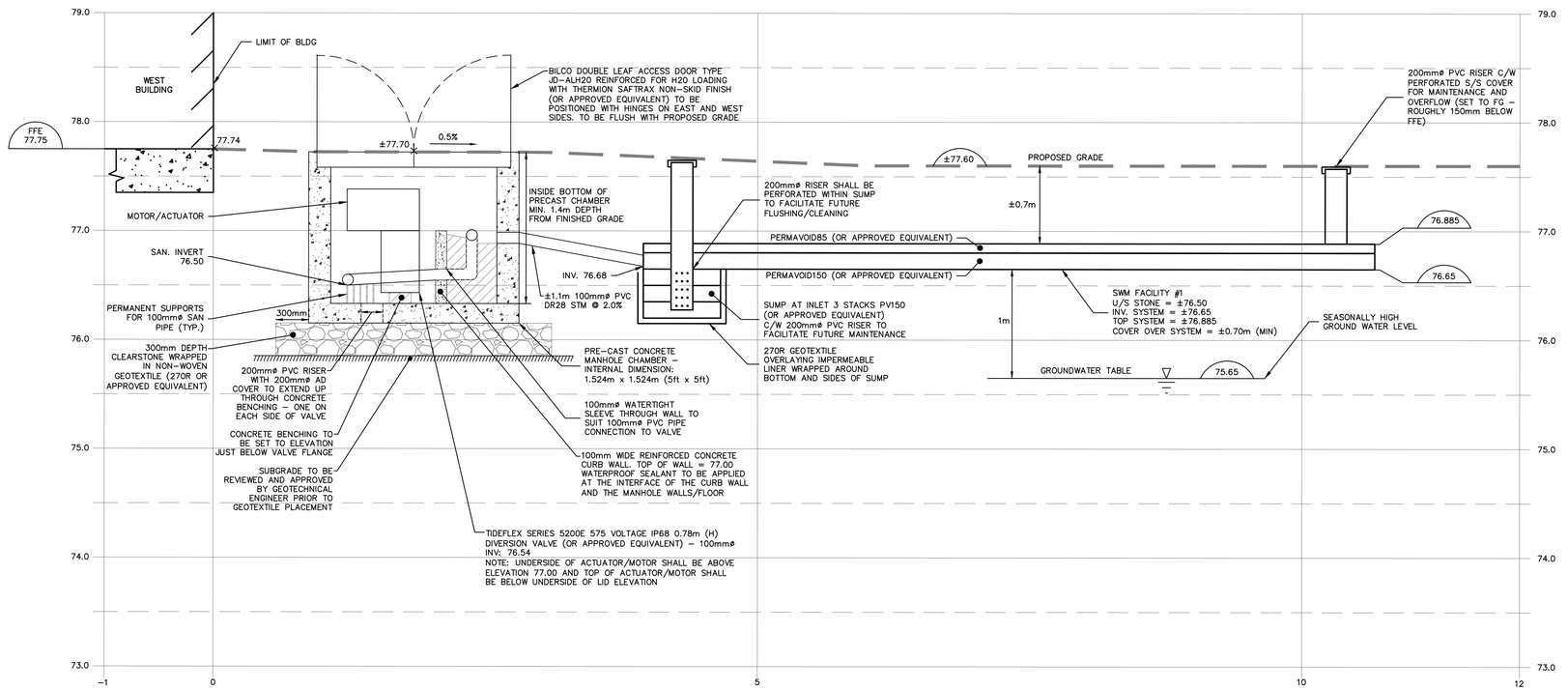
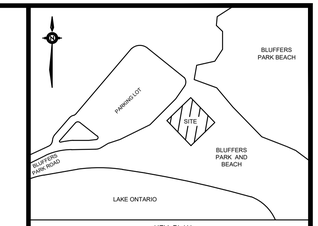


DIVERSION VALVE MH DETAIL
SCALE 1:25

NOTE:
REFER TO DRAWING PACKAGE BY OTHERS FOR DIVERSION VALVE CONTROLS INCLUDING RAIN GAUGE SENSOR AND POWER SUPPLY



A–A SECTION VIEW – PROPOSED DIVERSION VALVE MANHOLE + SWM FACILITY #1
SCALE 1:25



KEY PLAN
N.T.S.

No.	Date	Comments
1	2023/02/22	ISSUED FOR 50% COSTING
2	2024/06/13	ISSUED FOR TRCA SUBMISSION
3	2024/08/16	ISSUED FOR 100% COSTING
4	2024/09/18	ISSUED FOR BUILDING PERMIT
5	2024/11/15	REISSUED FOR TRCA SUBMISSION
6	2025/01/17	REVISED DIVERSION VALVE OUTLET
7	2025/04/11	ISSUED FOR TENDER

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RVA DRAWINGS

LEGEND

- BUILDING OUTLINE
- ROOF OVERHANG
- EX. WATER SERVICE
- EX. SANITARY FORCEMAIN
- TREE PROTECTION FENCING (TPF)
- WATER SERVICE PIPE
- SANITARY SEWER AND FLOW DIRECTION
- STORM SEWER AND FLOW DIRECTION
- MAINTENANCE HOLE
- CLEANOUT (C/O)
- FIRE HYDRANT
- VALVE AND BOX
- AREA DRAIN (AD)
- TP#1 PROPOSED TEST PIT LOCATION
- NYLOPLAST DRAIN BASIN

NOTE:
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APR 11, 2025

Drawing Prepared By:

R.V. ANDERSON ASSOCIATES LIMITED

Client:
DTAH ARCHITECTS LIMITED

Project Name:
BLUFFER'S PARK EAST WASHROOM
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

Drawing Title:
SWM DETAILS AND CROSS - SECTIONS - 1

Drawn:	Design:	Date:
D.A.S	D.A.S	JULY 2024
Checked:	Approved:	Scale:
S.D.F	D.A.S	1:25
CADD File: 215989–S–SERVICING.dwg		Dwg. No.: C-3
Project No.: 215989		

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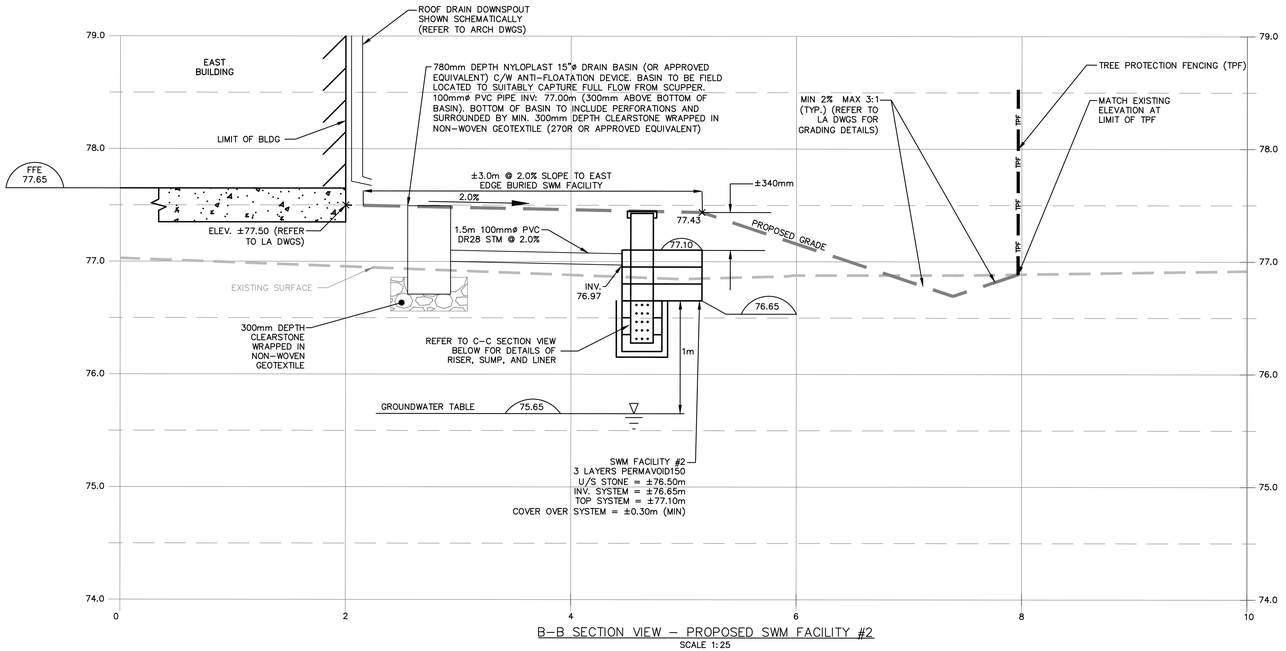
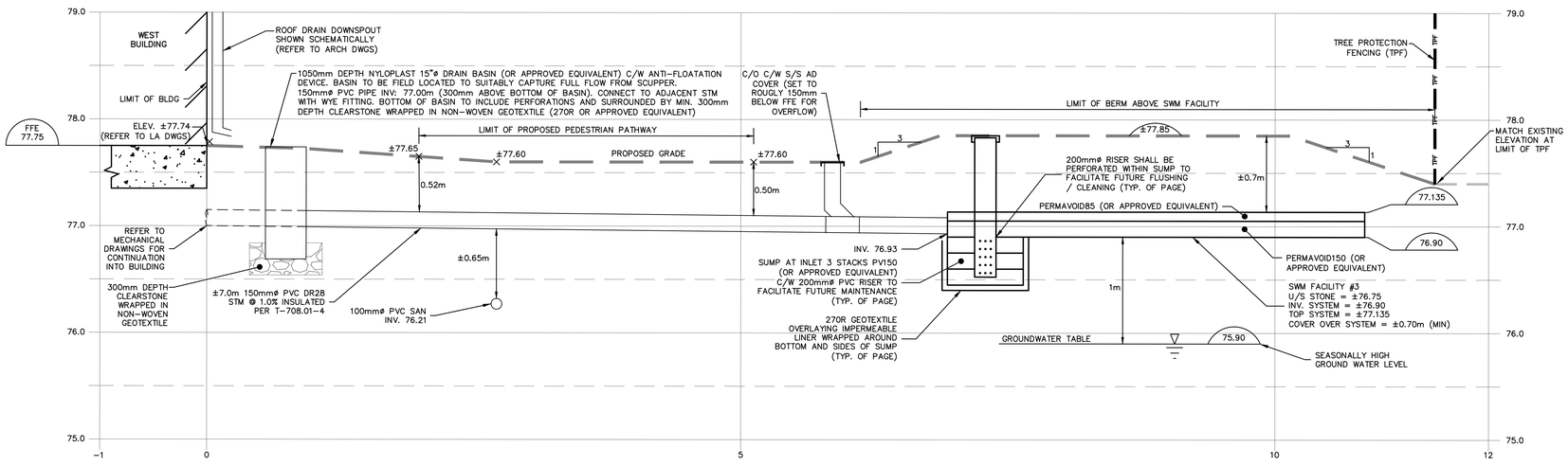


B-B SECTION VIEW – PROPOSED SWM FACILITY #2

SCALE 1:25



C-C SECTION VIEW – PROPOSED SWM FACILITY #3

SCALE 1:25

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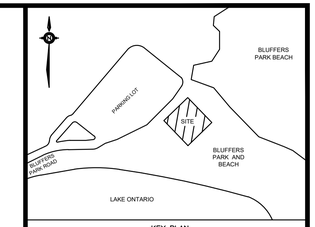
1:25



KEY PLAN
N.T.S.

No.	Date	Comments
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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RVA DRAWINGS

LEGEND

- BUILDING OUTLINE
- ROOF OVERHANG
- EX. WATER SERVICE
- EX. SANITARY FORCEMAIN
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- WATER SERVICE PIPE
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- TP#1 PROPOSED TEST PIT LOCATION
- NYLOPLAST DRAIN BASIN

This Drawing Is Not To Be Used For Construction Until Signed By The Engineer.

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APR 11, 2025

Drawing Prepared By:

R.V. ANDERSON ASSOCIATES LIMITED

Client:

DTAH ARCHITECTS LIMITED

Project Name:

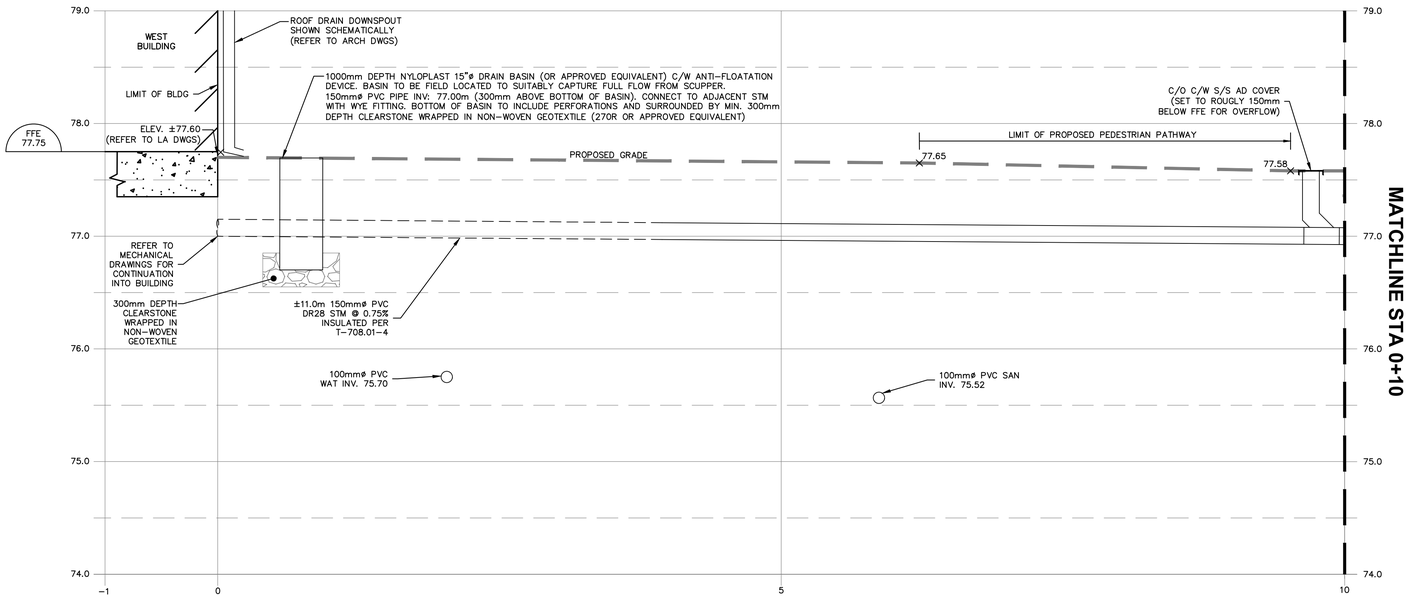
BLUFFER'S PARK EAST WASHROOM

1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

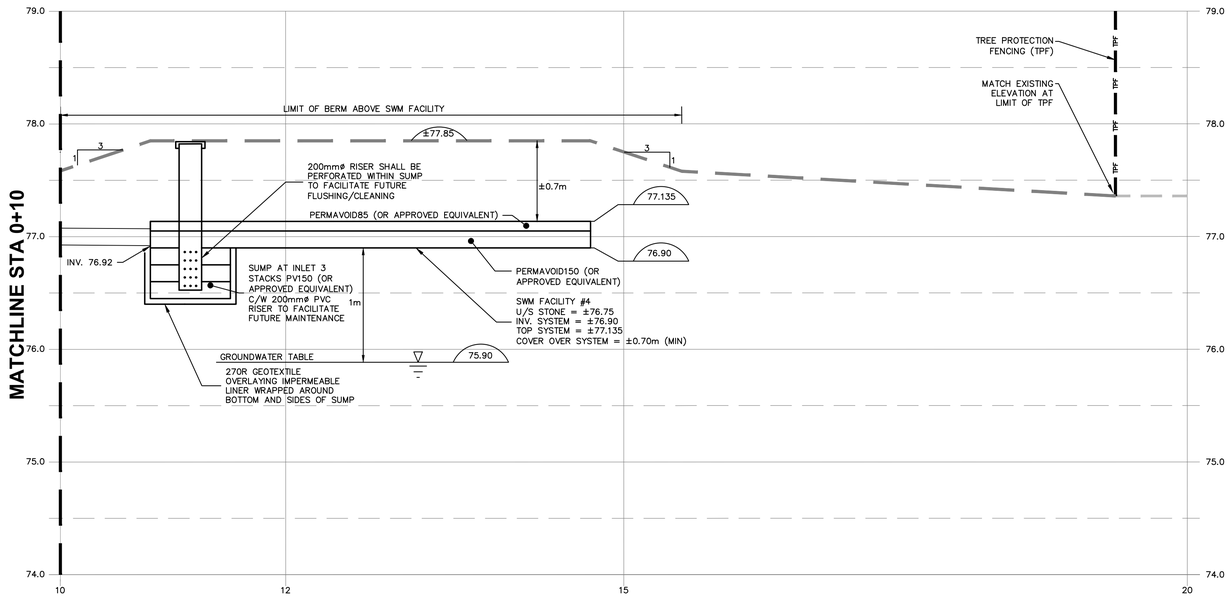
Drawing Title:

SWM DETAILS AND CROSS - SECTIONS - 2

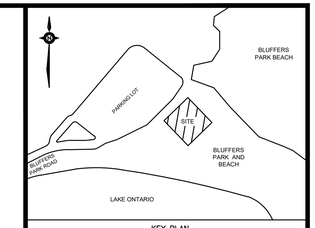
Drawn:	Design:	Date:
D.A.S	D.A.S	JULY 2024
Checked:	**Approved:**	**Scale:**
S.D.F	D.A.S	1:25
CADD File:		**Dwg. No.:**
215989-S-SERVICING.dwg		C-4
Project No.:		
215989		



D−D SECTION VIEW − PROPOSED SWM FACILITY #4
STATION −1−10
SCALE 1:25



D−D SECTION VIEW − PROPOSED SWM FACILITY #4
STATION 10−20
SCALE 1:25



KEY PLAN
N.T.S.

No.	Date	Comments
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- WATER SERVICE PIPE
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APR 11, 2025

Drawing Prepared By:

R.V. ANDERSON ASSOCIATES LIMITED

Client:
DTAH ARCHITECTS LIMITED

Project Name:
BLUFFER'S PARK EAST WASHROOM
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

Drawing Title:
SWM DETAILS AND CROSS - SECTIONS - 3

Drawn:	Design:	Date:
D.A.S	D.A.S	JULY 2024
Checked:	Approved:	Scale:
S.D.F	D.A.S	1:25
CADD File: 215989−S−SERVICING.dwg		Dwg. No.: C-5
Project No.: 215989		

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1:25

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EROSION AND SEDIMENT CONTROL PLAN

1. PRIOR TO ANY BUILDING DEMOLITION AND/OR EXCAVATION, HOARDING FENCE IS TO BE INSTALLED AROUND PERIMETER IN ACCORDANCE WITH THE CONSTRUCTION MANAGEMENT PLAN.
2. WHEEL WASHING STATIONS CAN BE EMPLOYED IF NECESSARY TO MITIGATE MUD TRACKING ON ROADWAY.
3. SEDIMENT CONTROL FENCE TO BE INSTALLED AT LOCATIONS SHOWN ON THIS DRAWING. REPAIR RIPS OR TEAR, BROKEN STAKES AND BLOWOUTS. SILT TO BE REMOVED WHEN IT REACHES 30% OF THE HEIGHT OF THE FENCE OR COMPROMISES THE FENCE FUNCTION.
4. WATERING SHOULD BE PERFORMED AS REQUIRED TO MINIMIZE DISPERSION OF DUST FROM THE SITE INCLUDING FREQUENT APPLICATION TO ANY STOCKPILES ON SITE TO PREVENT LOSS OF SOIL BY WIND EROSION.
5. STREET SWEEPERS WITHIN ADJACENT PARKING LOT AND BLUFFERS PARK ROAD ARE TO BE EMPLOYED REGULARLY AS SEDIMENT ACCUMULATES.
6. CATCHBASIN SEDIMENT FILTERS TO BE TERRAFIX SILTSACK OR EQUIVALENT (AS/IF DIRECTED), AND TO BE MAINTAINED UNTIL FINISHED GROUND COVER IS ESTABLISHED, INCLUDING REGULAR INSPECTION AND EMPTYING/REPLACING AS REQUIRED. NOTE REBAR CAN BE REMOVED AFTER CLOSED GRATE HAS BEEN SECURED, AND REINSERTED FOR MAINTENANCE AND REMOVAL OF THE FILTER.
7. REGULAR INSPECTIONS AND EROSION AND SEDIMENT CONTROL MAINTENANCE ACTIVITIES ARE TO BE RECORDED IN A LOG BOOK ALONG WITH DATE STAMPED PHOTOGRAPHS.

   INSPECTION OF THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES WILL OCCUR:
   - ON A WEEKLY BASIS
   - AFTER EVERY SIGNIFICANT RAINFALL EVENT
   - AFTER SIGNIFICANT SNOW MELT EVENTS
   - DAILY DURING EXTENDED RAIN OR SNOW MELT PERIODS
8. SEDIMENT CONTROLS ARE TO BE REMOVED OFF SITE AFTER ALL FINISHED SURFACES HAVE BEEN ESTABLISHED TO THE SATISFACTION OF THE CITY AND ENGINEER.
9. THE EROSION AND SEDIMENT CONTROL (ESC) MEASURES OUTLINED ON THIS DRAWING ARE NOT STATIC AND MAY NEED TO BE UPGRADED/ AMENDED AS SITE CONDITIONS CHANGE TO PREVENT SEDIMENT RELEASE INTO THE NATURAL ENVIRONMENT. THE ENGINEER SHALL BE CONTACTED IMMEDIATELY SHOULD THE EROSION AND SEDIMENT CONTROL PLANS CHANGE FROM THE APPROVED PLANS. FAILED ESC MEASURES WILL BE REPAIRED IMMEDIATELY.
10. AN AFTER HOURS CONTACT NUMBER IS TO BE VISIBLY POSTED ON SITE FOR EMERGENCIES. ANY SEDIMENT SPILL FROM THE SITE SHOULD BE REPORTED ONLINE OR BY TELEPHONE TO THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS SPILL ACTION CENTER

INSTALL PROPOSED SILTSACK IN EXISTING CB AND MAINTAIN FOR THE DURATION OF CONSTRUCTION

PROPOSED SEDIMENT CONTROL FENCE PER T-219.130-1. WHERE SEDIMENT FENCE IS INSTALLED ADJACENT TO TPF, THE SEDIMENT FENCE MAY BE MODIFIED TO BE AFFIXED TO TPF. BOTTOM OF SEDIMENT FENCE MAY BE SECURED FLUSH WITH THE GROUND WITH A 150mm# SILTSOCK RATHER THAN BURIED INTO THE GROUND

TREE PROTECTION FENCE LAYOUT PER LANDSCAPE ARCHITECT DRAWINGS (TYP.)

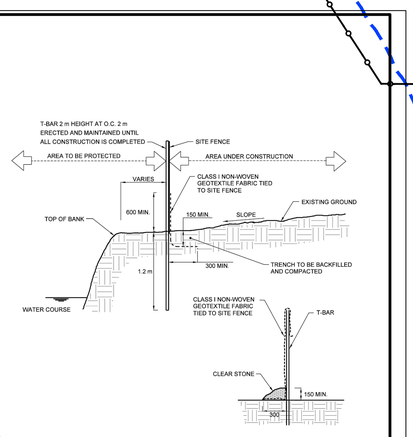
TEMPORARILY 'PLUG' EAST INVERT TO STM UNTIL ALL FINISHED LANDSCAPING HAS BEEN COMPLETED AND ESTABLISHED

SHORELINE FLOODING HAZARD LIMIT

100 YEAR FLOOD LEVEL

WEST BUILDING

EAST BUILDING



NOTES:
1. MATERIALS REMOVED FROM TRENCH SHALL BE REPLACED ON TOP OF HORIZONTAL PORTION OF FILTER CLOTH.
2. FILTER CLOTH SHALL BE HORIZONTALLY OVERLAPPED 500 mm.
3. SILT FENCE INSTALLATION WORK SHALL AVOID THE DESTRUCTION OF EXISTING WOODY VEGETATION (EG. SHRUBS AND TREES) OTHER THAN THOSE SPECIES WHICH MAY HAVE BEEN APPROVED FOR REMOVAL.

All dimensions are in millimetres unless otherwise shown.

ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING	REV 1	NOV 2014
SEDIMENT CONTROL FENCE	**T-219.130-1**	
	NTS	SHEET 1

TRCA STANDARD NOTES:

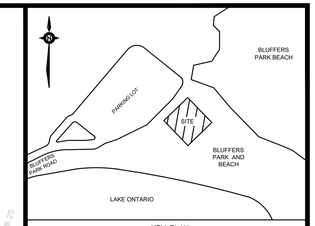
SECTION 1: SITE MANAGEMENT

1. EROSION AND SEDIMENT CONTROL (ESC) MEASURES WILL BE IMPLEMENTED PRIOR TO AND MAINTAINED DURING THE CONSTRUCTION PHASES. ALL DAMAGED ESC 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. ALL IN-WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY WITH APPROPRIATE ESCS IN GOOD WORKING ORDER.
4. THE ESC STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE, ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE IMPACTS. A TRCA ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USED, AS NECESSARY.
5. AN ENVIRONMENTAL MONITOR WILL ATTEND THE SITE TO INSPECT ALL NEW CONTROLS IMMEDIATELY AFTER INSTALLATION. INSPECTION OF ESC MEASURES 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 ESCS, DEWATERING OR UNWATERING, OR RESTORATION IN- OR NEAR- WATER WORKS AND PROVIDE ADVICE TO ENSURE THAT ACTIVITIES AS PER THE APPROVED TRCA PERMIT AND EFFECTIVELY MITIGATED AS CONSTRUCTION PROCEEDS. SHOULD CONCERNS ARISE ON SITE THE ENVIRONMENT MONITOR WILL CONTACT THE TRCA ENFORCEMENT OFFICER (FOR APPROVED PERMITS) AND PROJECT MANAGER (FOR ISSUED VOLUNTARY PROJECT REVIEW) AS WELL AS THE PROPONENT, IF ISSUES ARISE.
6. ALL GRADES WITHIN THE REGULATED AREA 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 CONDUCTED DURING FAVOURABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGULATORY FLOOD PLAIN 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. ALL DEWATERING/UNWATERING SHALL BE FILTERED AND RELEASED TO THE ENVIRONMENT AT LEAST 30 METRES FROM A WATERCOURSE OR WETLAND AND ALLOWED TO DRAIN THROUGH A WELL-VEGETATED AREA. NO DEWATERING EFFLUENT SHALL BE SENT DIRECTLY TO ANY WATERCOURSE OR OTHER REGULATED FEATURE OR HAZARD, OR ALLOWED TO DRAIN ONTO DISTURBED SOILS WITHIN THE WORK AREA. THESE CONTROL MEASURES SHALL BE MONITORED FOR EFFECTIVENESS AND MAINTAINED OR REVISED TO MEET THE OBJECTIVES OF THE ESC MEASURES.
9. ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE UNLESS APPROVED BY TRCA.
10. NO STAGING OR STORAGE WILL OCCUR WITHIN TRCA'S REGULATED AREA, UNLESS SHOWN ON THE APPROVED DRAWINGS.

SECTION 2: ENVIRONMENTAL COMPLIANCE

11. PLEASE NOTIFY THE FOLLOWING CONTACTS 48 HOURS PRIOR TO COMMENCING CONSTRUCTION: TRCA ENFORCEMENT (T: 437-880-2124; E: INSPECTIONS@TRCA.CA) FOR APPROVED PERMITS AND THE TRCA PROJECT MANAGER FOR ISSUED VOLUNTARY PROJECT REVIEWS. PLEASE ENSURE YOU QUOTE THE TRCA FILE NUMBER OR TRCA PERMIT NUMBER IN YOUR NOTIFICATION.



KEY PLAN
N.T.S.

No.	Date	Comments
1	2023/02/22	ISSUED FOR 50% COSTING
2	2024/06/13	ISSUED FOR TRCA SUBMISSION
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6	2025/01/17	REVISED DIVERSION VALVE OUTLET
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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RVA DRAWINGS

LEGEND

- BUILDING OUTLINE
- EX. WATER SERVICE
- TREE PROTECTION FENCE
- WATER SERVICE PIPE
- SEWER AND FLOW DIRECTION
- SILT SACK
- FILTER FABRIC
- SEDIMENT CONTROL FENCE
- 100 YEAR FLOOD LEVEL
- SHORELINE FLOODING HAZARD LIMIT
- MAINTENANCE HOLE
- CLEANOUT (C/O)
- VALVE AND BOX
- AREA DRAIN (AD)
- DRAIN BASIN

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APR 11, 2025

FOR ESC ONLY

Drawing Prepared By:

R.V. ANDERSON ASSOCIATES LIMITED

Client:
DTAH ARCHITECTS LIMITED

Project Name:
BLUFFER'S PARK EAST WASHROOM
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

Drawing Title:
EROSION AND SEDIMENT CONTROL PLAN-1

Drawn: D.A.S	Design: D.A.S	Date: JULY 2024
Checked: S.D.F	Approved: D.A.S	Scale: 1:200
CADD File: 215989-S-ESC PLAN.dwg		Dwg. No.: C-6
Project No.: 215989		

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1:200

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TRCA STANDARD NOTES:

SECTION 1: SITE MANAGEMENT

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2. DISTURBED AREAS WILL BE MINIMIZED TO THE EXTENT POSSIBLE, AND TEMPORARILY OR PERMANENTLY STABILIZED OR RESTORED AS THE WORK PROGRESSES.

3. ALL IN-WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY WITH APPROPRIATE ESCS IN GOOD WORKING ORDER.

4. THE ESC STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE, ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE IMPACTS. A TRCA ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USED, AS NECESSARY.

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6. ALL GRADES WITHIN THE REGULATED AREA 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 CONDUCTED DURING FAVOURABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGULATORY FLOOD PLAIN 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. ALL DEWATERING/UNWATERING SHALL BE FILTERED AND RELEASED TO THE ENVIRONMENT AT LEAST 30 METRES FROM A WATERCOURSE OR WETLAND AND ALLOWED TO DRAIN THROUGH A WELL-VEGETATED AREA. NO DEWATERING EFFLUENT SHALL BE SENT DIRECTLY TO ANY WATERCOURSE OR OTHER REGULATED FEATURE OR HAZARD, OR ALLOWED TO DRAIN ONTO DISTURBED SOILS WITHIN THE WORK AREA. THESE CONTROL MEASURES SHALL BE MONITORED FOR EFFECTIVENESS AND MAINTAINED OR REVISED TO MEET THE OBJECTIVES OF THE ESC MEASURES.

9. ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE UNLESS APPROVED BY TRCA.

10. NO STAGING OR STORAGE WILL OCCUR WITHIN TRCA'S REGULATED AREA, UNLESS SHOWN ON THE APPROVED DRAWINGS.

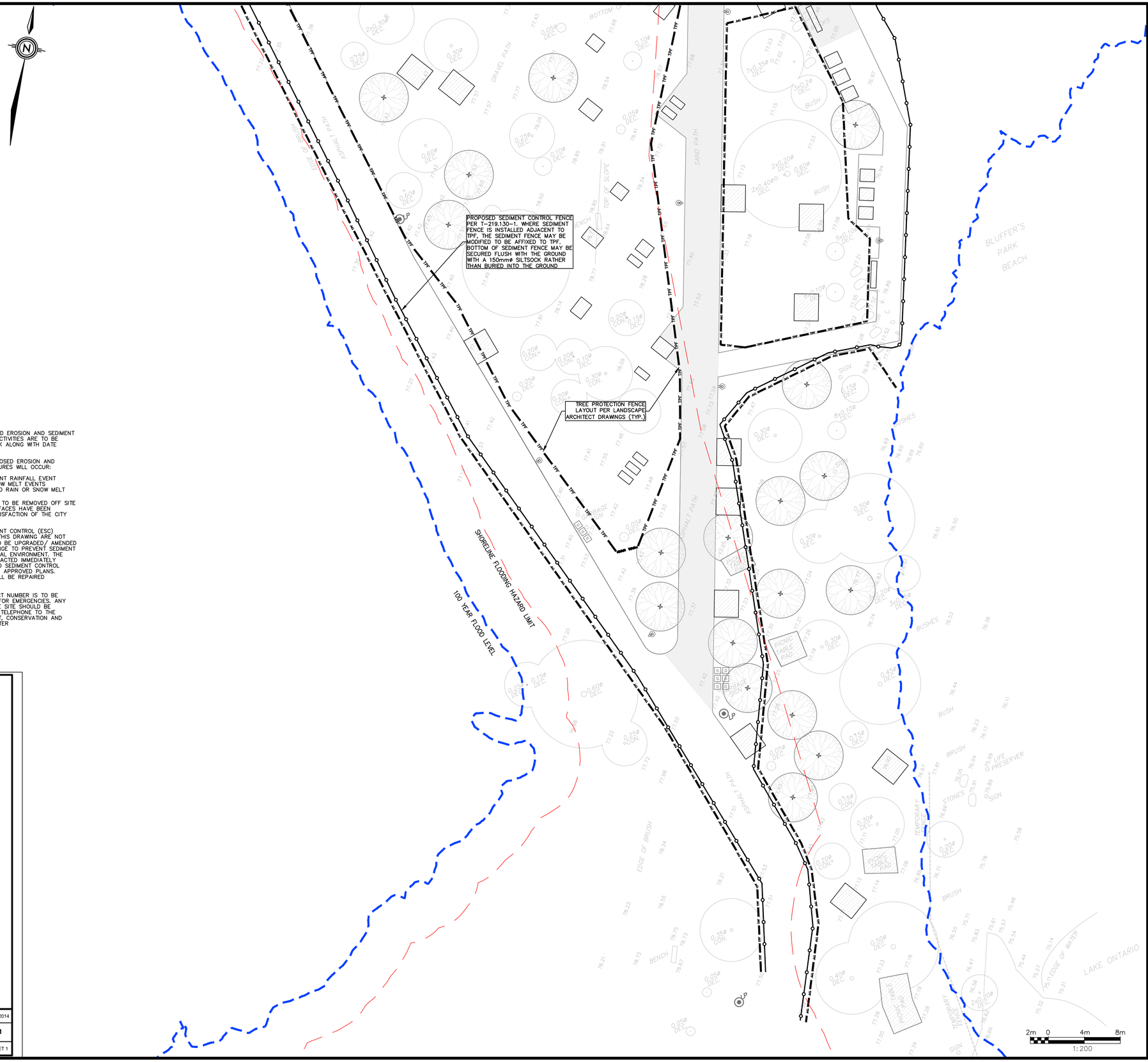
SECTION 2: ENVIRONMENTAL COMPLIANCE

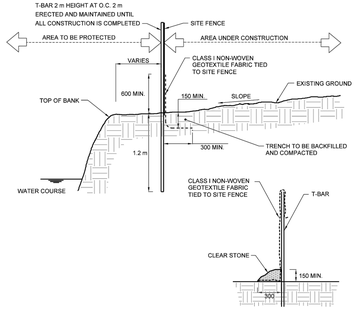
11. PLEASE NOTIFY THE FOLLOWING CONTACTS 48 HOURS PRIOR TO COMMENCING CONSTRUCTION: TRCA ENFORCEMENT (T- 437-880-2124; E- INSPECTIONS@TRCA.CA) FOR APPROVED PERMITS AND THE TRCA PROJECT MANAGER FOR ISSUED VOLUNTARY PROJECT REVIEWS. PLEASE ENSURE YOU QUOTE THE TRCA FILE NUMBER OR TRCA PERMIT NUMBER IN YOUR NOTIFICATION.

EROSION AND SEDIMENT CONTROL PLAN

1. PRIOR TO ANY BUILDING DEMOLITION AND/OR EXCAVATION, HOARDING FENCE IS TO BE INSTALLED AROUND PERIMETER IN ACCORDANCE WITH THE CONSTRUCTION MANAGEMENT PLAN.
2. WHEEL WASHING STATIONS CAN BE EMPLOYED IF NECESSARY TO MITIGATE MUD TRACKING ON ROADWAY.
3. SEDIMENT CONTROL FENCE TO BE INSTALLED AT LOCATIONS SHOWN ON THIS DRAWING. REPAIR RIPS OR TEAR, BROKEN STAKES AND BLOWOUTS. SILT TO BE REMOVED WHEN IT REACHES 30% OF THE HEIGHT OF THE FENCE OR COMPROMISES THE FENCE FUNCTION.
4. WATERING SHOULD BE PERFORMED AS REQUIRED TO MINIMIZE DISPERSION OF DUST FROM THE SITE INCLUDING FREQUENT APPLICATION TO ANY STOCKPILES ON SITE TO PREVENT LOSS OF SOIL BY WIND EROSION.
5. STREET SWEEPERS WITHIN ADJACENT PARKING LOT AND BLUFFERS PARK ROAD ARE TO BE EMPLOYED REGULARLY AS SEDIMENT ACCUMULATES.
6. CATCHBASIN SEDIMENT FILTERS TO BE TERRAFIX SILTSACK OR EQUIVALENT (AS/F DIRECTED), AND TO BE MAINTAINED UNTIL FINISHED GROUND COVER IS ESTABLISHED, INCLUDING REGULAR INSPECTION AND EMPTYING/REPLACING AS REQUIRED. NOTE REBAR CAN BE REMOVED AFTER CLOSED GRATE HAS BEEN SECURED, AND REINSERTED FOR MAINTENANCE AND REMOVAL OF THE FILTER.
7. REGULAR INSPECTIONS AND EROSION AND SEDIMENT CONTROL MAINTENANCE ACTIVITIES ARE TO BE RECORDED IN A LOG BOOK ALONG WITH DATE STAMPED PHOTOGRAPHS.

   INSPECTION OF THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES WILL OCCUR:
   - ON A WEEKLY BASIS
   - AFTER EVERY SIGNIFICANT RAINFALL EVENT
   - AFTER SIGNIFICANT SNOW MELT EVENTS
   - DAILY DURING EXTENDED RAIN OR SNOW MELT PERIODS
8. SEDIMENT CONTROLS ARE TO BE REMOVED OFF SITE AFTER ALL FINISHED SURFACES HAVE BEEN ESTABLISHED TO THE SATISFACTION OF THE CITY AND ENGINEER.
9. THE EROSION AND SEDIMENT CONTROL (ESC) MEASURES OUTLINED ON THIS DRAWING ARE NOT STATIC AND MAY NEED TO BE UPGRADED/ AMENDED AS SITE CONDITIONS CHANGE TO PREVENT SEDIMENT RELEASE INTO THE NATURAL ENVIRONMENT. THE ENGINEER SHALL BE CONTACTED IMMEDIATELY SHOULD THE EROSION AND SEDIMENT CONTROL PLANS CHANGE FROM THE APPROVED PLANS. FAILED ESC MEASURES WILL BE REPAIRED IMMEDIATELY.
10. AN AFTER HOURS CONTACT NUMBER IS TO BE VISIBLY POSTED ON SITE FOR EMERGENCIES. ANY SEDIMENT SPILL FROM THE SITE SHOULD BE REPORTED ONLINE OR BY TELEPHONE TO THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS SPILL ACTION CENTER



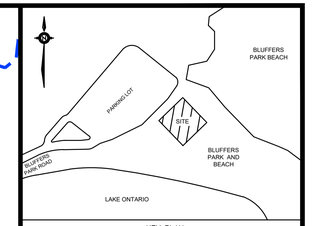


FROZEN CONDITION

NOTES:
1. MATERIALS REMOVED FROM TRENCH SHALL BE REPLACED ON TOP OF HORIZONTAL PORTION OF FILTER CLOTH.
2. FILTER CLOTH SHALL BE HORIZONTALLY OVERLAPPED 500 mm.
3. SILT FENCE INSTALLATION WORK SHALL AVOID THE DESTRUCTION OF EXISTING WOODY VEGETATION (EG. SHRUBS AND TREES) OTHER THAN THOSE SPECIES WHICH MAY HAVE BEEN APPROVED FOR REMOVAL.

All dimensions are in millimetres unless otherwise shown.

TORONTO	ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING	REV 1	NOV 2014
	SEDIMENT CONTROL FENCE	T-219.130-1	
		NTS	SHEET 1



KEY PLAN
N.T.S.

No.	Date	Comments
1	2023/02/22	ISSUED FOR 50% COSTING
2	2024/06/13	ISSUED FOR TRCA SUBMISSION
3	2024/08/16	ISSUED FOR 100% COSTING
4	2024/09/18	ISSUED FOR BUILDING PERMIT
5	2024/11/15	REISSUED FOR TRCA SUBMISSION
6	2025/01/17	REVISED DIVERSION VALVE OUTLET
7	2025/04/11	ISSUED FOR TENDER

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RVA DRAWINGS

LEGEND

- BUILDING OUTLINE
- EX. WATER SERVICE
- TREE PROTECTION FENCE
- WATER SERVICE PIPE
- SEWER AND FLOW DIRECTION
- SILT SACK
- FILTER FABRIC
- SEDIMENT CONTROL FENCE
- 100 YEAR FLOOD LEVEL
- SHORELINE FLOODING HAZARD LIMIT
- MAINTENANCE HOLE
- CLEANOUT (C/O)
- VALVE AND BOX
- AREA DRAIN (AD)
- DRAIN BASIN

NOTE:
THE INFORMATION DENOTED IN BOXES WITHIN THE DRAWING DETAILS ON THIS SHEET ARE CONSIDERED TO BE PROPOSED DESIGN/SPECIFICATIONS. ALL OTHER INFORMATION IS SHOWN FOR CONTEXT ONLY. REFER TO THE APPROPRIATE DRAWINGS BY THE ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER, AND MECHANICAL ENGINEER FOR DETAIL DESIGN AND SPECIFICATION OF OTHER DESIGN ELEMENTS.

APR 11, 2025

FOR ESC ONLY

Drawing Prepared By:

R.V. ANDERSON ASSOCIATES LIMITED

Client:
DTAH ARCHITECTS LIMITED

Project Name:
BLUFFER'S PARK EAST WASHROOM
1 BRIMLEY ROAD SOUTH
SCARBOROUGH, TORONTO, ONTARIO

Drawing Title:
EROSION AND SEDIMENT CONTROL PLAN-2

Drawn:	Design:	Date:
D.A.S	D.A.S	JULY 2024
Checked:	Approved:	Scale:
S.D.F	D.A.S	1: 200
CADD File: 215989-S-ESC PLAN.dwg		Dwg. No.: C-7
Project No.: 215989		

R:\2021\215989 - DTAH-Bluffers Park Pavillion\10 CADdwg\01 Linear\04 Sheets

GEOPIER ELEMENT DESIGN NOTES

1. Geopier foundation support is designed and installed by GeoSolv Design Build Inc.(GeoSolv) and checked by the Geopier Foundation Company, Inc., Davidson, N.C. (Design Reviewer).
2. Geopier system design loads are as per the desired bearing capacities for footings and slab load provided by Read Jones Christoffersen Ltd. via email on October 19, 2023 and October 20, 2023, and the bearing capacities provided in the marked up outdoor plans sent to GeoSolv via email on February 25, 2024. In the event the structural loads vary, GeoSolv shall be notified immediately.
3. The Geopier support has been designed to provide support for the loads referenced above with a geotechnical bearing capacity of up to 150 kPa at SLS and 250 kPa at ULS, As noted on the design drawings. Design settlement control is 25 mm of total and 19 mm differential for footings supported on Geopier elements.
4. If more than 150 mm of engineered fill exist between the top of the Geopier elements and the bottom of footing the geotechnical bearing capacity may be governed by the geotechnical bearing capacity of the engineered fill.
5. These drawings are based on the following drawings:
   5.1. Ground Floor / Foundation Plan (EAST BLDG) by Read Jones Christoffersen Ltd. received via email on December 20, 2023
   5.2. Ground Floor / Foundation Plan (West BLDG) by Read Jones Christoffersen Ltd. received via email on December 20, 2023
   5.3. Marked up Outdoor Drawings received via email on February 25, 2024
   5.4. Marked up GeoSolv Design Drawings received via email on February 25, 2024
   5.5. Bluffers park landscape plan dated April 11, 2023
   5.6. Structural drawings by RJC, draft issued for tender, dated April 11, 2025
6. This Geopier Design Drawings are intended to provide the general area of ground improvement by Geopier installation, building and footing orientations shown on these plans are for information only. Please refer to structural and architectural drawings for specific information on footings, building orientation, and any other information other than Geopier information. GeoSolv accepts no responsibility for location of footings as shown on these plans. GeoSolv shall be notified immediately if information on these plans conflicts with structural or architectural drawings.
7. The Geopier system design is based on the geotechnical information provided in the following geotechnical report Davroc Testing Laboratories Inc.'s report "Geotechnical Investigation Proposed Bluffer's Park Pavilion – 1 Brimley Road South, Toronto, Ontario" dated April 13, 2023. GeoSolv Design Build Inc. and Geopier Foundation Company, Inc., have relied on this information and we have no reason to suspect any of the information in the report is in error. GeoSolv Design Build Inc. and Geopier Foundation Company Inc. are not responsible for errors or omissions in the geotechnical report that may affect the parameter values in our design. If the subsurface or site conditions differ from those utilized in the design, GeoSolv shall be notified immediately.
8. This design drawing represents concept ground improvement design. Any changes to structural, mechanical, or architectural features that affect Geopier design should be communicated to GeoSolv prior to the design completion.
9. GeoSolv accepts no responsibility for structures, foundations, slabs, utilities, or fill that are not supported by Geopier elements.
10. GeoSolv is not responsible for the settlement of adjacent structures.

GEOPIER ELEMENT CONSTRUCTION NOTES

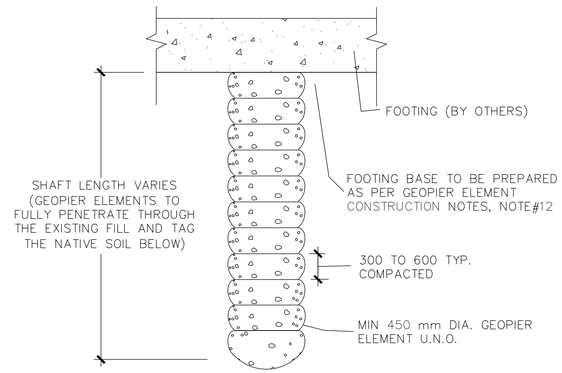
1. The Owner or General Contractor must provide a working platform capable of supporting a 70 tonne high mast machine. GeoSolv will confirm the adequacy of the surface prior to mobilizing.
2. It is assumed that the working platform elevation will be at or around existing grade of approximately 75.0 masl unless otherwise agreed upon by GeoSolv, in writing.
3. The Owner or General Contractor is responsible for the removal of any organics/peat that are deemed necessary for removal by GeoSolv prior to construction of the working platform.
4. A minimum of four (4) horizontal control points located at the building corners and one (1) elevation benchmark shall be established by the Owner or General Contractor prior to GeoSolv mobilizing. A sketch or CAD file showing this layout is required.
5. Geopier element layout is the responsibility of GeoSolv. The as-built location of Geopier elements shall be within 150 mm of location shown on these plans.
6. A qualified, full-time, Quality Control (QC) representative provided by GeoSolv shall be responsible for installation of the Geopier elements in accordance with the design and specifications.
7. Any QA Inspections required by the Owner or the General Contractor are to be arranged by the Owner or General Contractor.
8. Removal of all above and below ground obstructions encountered, that cannot be removed with conventional Geopier equipment, shall remain the responsibility of the General Contractor or Owner. The resulting excavation shall then be backfilled and compacted in accordance with the project specifications. The area shall be tested by the Owner's Geotechnical Engineer and the compaction test results shall be submitted to GeoSolv.
9. Management and removal of spoils generated by the Geopier system remain the responsibility of the General Contractor/Owner and should be performed to allow for an uninterrupted workflow.
10. Geopier elements not meeting the requirements defined in the design shall be re-driven and tamped to meet project requirements unless otherwise approved in writing by GeoSolv.
11. All Geopier elements must have a minimum diameter of 450 mm as measured from the bottom of footing unless otherwise noted on these plans or otherwise agreed upon by GeoSolv.
12. Footing bottoms constructed on Geopier elements shall be prepared in strict accordance with the following and verified through inspections by the Owner's Geotechnical Engineer. The Owner/General Contractor shall ensure that these requirements are met by all sub-trades prior to placement of footings. The Owner's Geotechnical Engineer is to verify in writing that the requirements have been met:
    a. Over-excavation below the bottom of the footing shall be limited to 75 mm. Smooth buckets are recommended for the excavation of footings.
    b. If organics are present in the footing excavation, over-excavation must be completed under the supervision of the Owner's Geotechnical Engineer and GeoSolv must be contacted immediately.
    c. The time between excavation and pouring the footings should be limited to not impact the integrity of the base. If immediate concrete placement is not possible, a "mud-mat" consisting of a 75mm minimum thickness of lean concrete may be placed at the direction of the Owner's Geotechnical Engineer, particularly if poor weather is anticipated.
    d. Prior to pouring footings or a mud-mat, the top of the Geopier elements and founding soils shall be compacted over the entire footing bottom if any loose surface soils or Geopier aggregate is evident. Compaction shall be performed, as shown in Detail 1 with a standard hand-operated jumping jack or equal. Vibrating plate type compactors shall not be used for Geopier element tops installed in predominately fine-grained soils.
    e. The Owner's Geotechnical Engineer shall inspect each compacted footing bottom and approve it in writing on the same day the concrete is poured in that footing excavation. The approval shall state that the footing bottom has been inspected and where necessary the loose founding soil compacted with a tamper. The approval shall further state that the exposed Geopier aggregate has been reasonably compacted with a jumping jack (or equal). Copies of the footing inspection reports shall be provided to GeoSolv. The reports should be itemized by footing location (by Gridline references).
    f. In the event that footing-bottom preparations, as described above, are not performed or documented in accordance with this section, any written or implied warranty with respect to Geopier performance can be considered void.
13. Heavy proof rolling has to be completed as per Detail 2 prior to grade raise engineered fill or slab subgrade.
14. GeoSolv shall be notified of any conflicts with Geopier locations shown on the plans. New utility excavations shall be limited to the zone depicted in Detail 3 on this sheet. If excavations are planned within the Geopier "No Dig" zone, GeoSolv sould be notified immediately to discuss excavation options.
15. Excavations to be completed near Geopier elements must be completed with care ensuring that the requirements of Detail 3 are met. GeoSolv must also be notified in advance when any major excavations are to occur and should be given the opportunity to be present during these excavations.
16. Stepped footings shall follow Detail 4 of this sheet at locations where steps had to be made within runs less than 1750 mm, the Geopier elements need to be cut flat as shown on Detail 4 and backfilled with engineered fill for bearing capacity less than or equal to 150 kPa and U-Fill for bearing capacity greater than 150 kPa.
17. Minor service excavations completed near or at the location of slab and/or raft Geopier element(s) shall follow Detail 5.
18. Saw cut shall be performed as per Detail 6 of this sheet to align with slab Geopier Layout, where possible.
19. After completion of Geopier elements, the Owner/GC is responsible for protection of the work. This includes, but is not limited to, proper site drainage to prevent ponding of water above the Geopier elements as well as the control and coordination of earthwork and any subsequent drill activities to prevent damage to installed Geopier elements. This also includes protection of the elements from frost penetration.
20. Any above or underground utilities conflicting with the Geopier operations/installation must be removed by others before mobilization. GeoSolv will not take any responsibility for any damages incurred.

FILL PLACEMENT NOTES

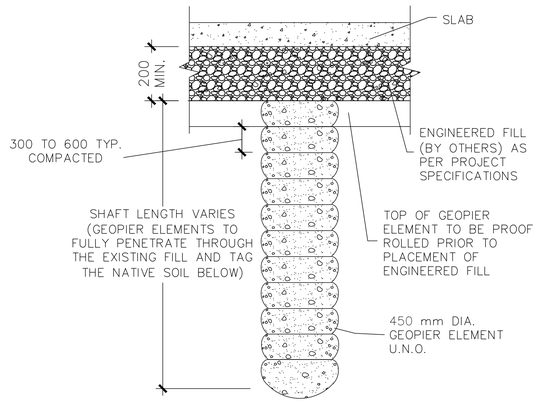
1. No new fill is to be place prior to Geopier element installation unless otherwise approved in writing by GeoSolv.
2. GeoSolv requires that all new fill be placed and compacted as Engineered Fill under the supervision of the Owner's Geotechnical Engineer.
3. The results of the compaction testing shall be provided to GeoSolv prior to issuing closeout documents.
4. Any settlement monitoring required on new fill shall remain the responsibility of the Owner or General Contractor.
5. GeoSolv takes no responsibility for excavation or grading of new or existing fill material.

HELICAL PILE NOTES

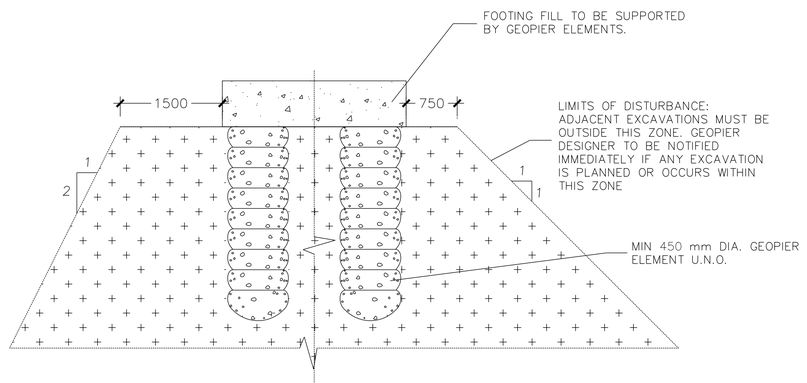
1. The helical piles are designed to resist up to the following loads:
   1.1. Pz: DL=10kN & M DL = 1kN*m (any direction)
   1.2. Px Wind = 1.2kN & My = 6.25 kN*m
   1.3. Py Wind = 0.25 kN & Mx=1.25kN*m
   Note the helical piles are designed to resist the following wind load combinations
   1.1. Wx (+) and Wy (+)
   1.2. Wx (+) and Wy (-)
   1.3. Wx (-) and Wy (+)
   1.4. Wx (-) and Wy (-)
2. Individual helical piles will be installed to penetrate the fill and will be embedded into competent soil to achieve the design torque.
3. The lead sections shall utilize a triple helix configuration comprised of a 200mm(8"), 250mm (10") and 300mm(12") diameter helices mounted on a 127mm (5") round pipe shaft, up to 2134mm (84") long, as shown in Detail 7.
4. The extension sections will consist of 127mm (5") round pipe shaft (RSP) up to 3048mm (120") long extensions to achieve the design depth.
5. All helical pier materials will be hot dip galvanized per ASTM A123.
6. The helix material is hot rolled low carbon steel plate as per ASTM A1018 with a minimum yield strength of 345mpa (50 ksi); 9.5mm (3/8") thick.
7. The shaft material is round pipe shaft bars with a minimum yield strength of 483mpa (70 ksi)
8. The ultimate structural capacity in compression for 127mm (5") RPS is 533 kN.
9. GeoSolv will proved the plates to connect the helical piles to the concrete piers as shown in Detail 8; however, the plates them selves must be connected to the pile by others during construction. It is the project structural engineers responsibility to design the connection between the plate and the concrete pier.
10. The amount of twist at the Ultimate torque capacity should not be more than one times per foot, unless approved by the designer.



1 *TYPICAL GEOPIER ELEMENT FOR FOOTING*
NOT TO SCALE



2 *TYPICAL GEOPIER ELEMENT FOR SLAB*
NOT TO SCALE, UNITS IN mm



3 *ADJACENT EXCAVATION DETAIL*
NOT TO SCALE, UNITS IN mm

GEOSOLV
DESIGN + BUILD
120 VINYL COURT
WOODBRIDGE, ON L4L 4A3
PH: 905 226-2599
FX: 905 226-2601
E: INFO@GEOSOLV.CA

GEOPIER®

REFERENCE DRAWINGS

S200B	GROUND FLOOR / FOUNDATION PLAN (WEST BLDG) DATED FEBRUARY 1, 2023
S200A	GROUND FLOOR / FOUNDATION PLAN (EAST BLDG) DATED FEBRUARY 1, 2023
	STRUCTURAL DRAWING BY RJC – DRAFT ISSUED FOR TENDER, DATED APRIL 11, 2025
	BLUFFERS PARK LANDSCAPE PLAN DATED APRIL 11, 2023
	MARKED UP OUTDOOR DRAWINGS, SENT VIA TO GEOSOLV ON FEBRUARY 25, 2024
	MARKED UP GEOSOLV DESIGN DRAWINGS, SENT VIA EMAIL TO GEOSOLV ON FEBRUARY 25, 2024

DWG NO. TITLE

Revisions

REV	DATE	ISSUED FOR
3	2025/04/14	ISSUED FOR TENDER
2	2024/05/17	REVISED DESIGN DRAWINGS TO ADDRESS LIGHT POLE SUPPORT
1	2024/04/26	REVISED DESIGN DRAWINGS
0	2023/12/22	GEOPIER DESIGN DRAWING

CITY OF TORONTO

BLUFFER'S PARK

1 BRIMLEY RD S, SCARBOROUGH, ON

GEOPIER DESIGN DRAWING NOTES & DETAILS

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: NTS

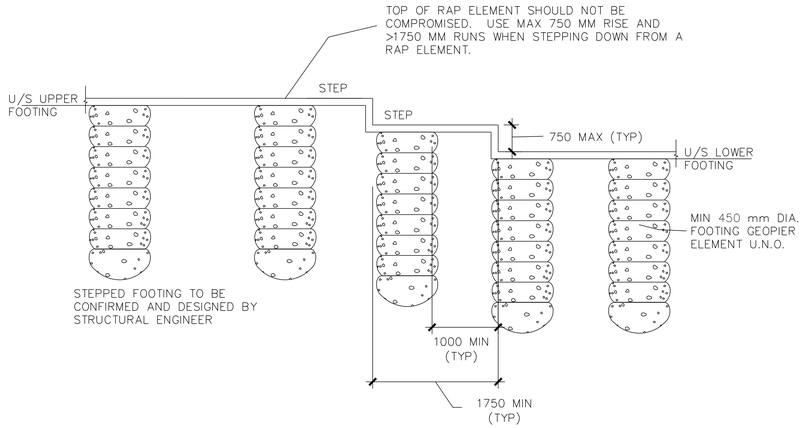
FULL SIZE ONLY

PROJECT : 11733

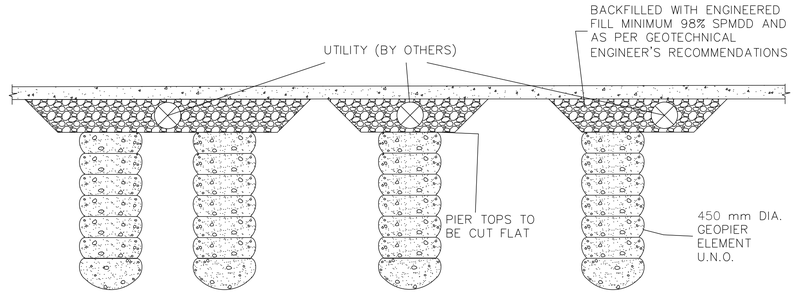
DRAWING : GP-D-0

REV. 3

SHEET 1 OF 8



4 *TYPICAL STEP FOOTING DETAIL*
NOT TO SCALE, UNITS IN mm



5 *MINOR SERVICING EXCAVATIONS BELOW SLAB DETAIL*
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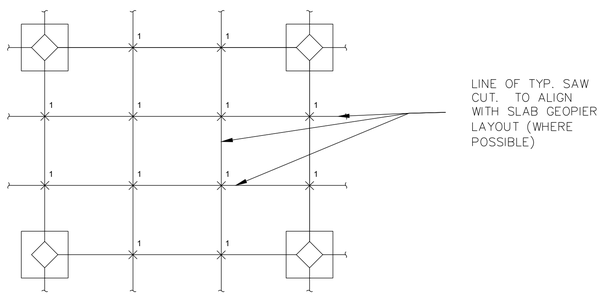
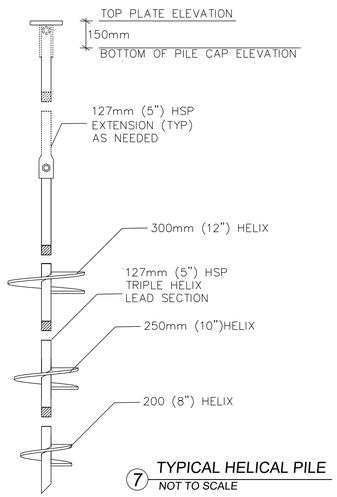
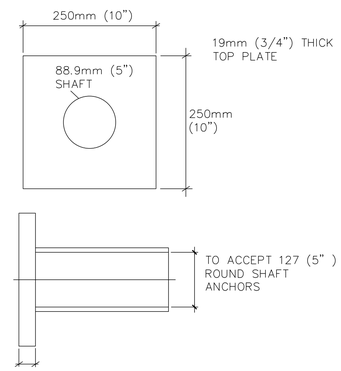


6 *TYPICAL SAW-CUT ALIGNMENT*
NOT TO SCALE



7 *TYPICAL HELICAL PILE*
NOT TO SCALE



8 *TOP PLATE AND BRACKET DETAIL*
NOT TO SCALE

GEOSOLV
DESIGN + BUILD
120 VINYL COURT
WOODBRIDGE, ON L4L 4A3
PH: 905 226-2599
FX: 905 226-2601
E: INFO@GEOSOLV.CA

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CITY OF TORONTO

BLUFFER'S PARK

1 BRIMLEY RD S, SCARBOROUGH, ON

GEOPIER DESIGN DRAWING NOTES & DETAILS

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: NTS

FULL SIZE ONLY

PROJECT : 11733

DRAWING : GP-D-0.1

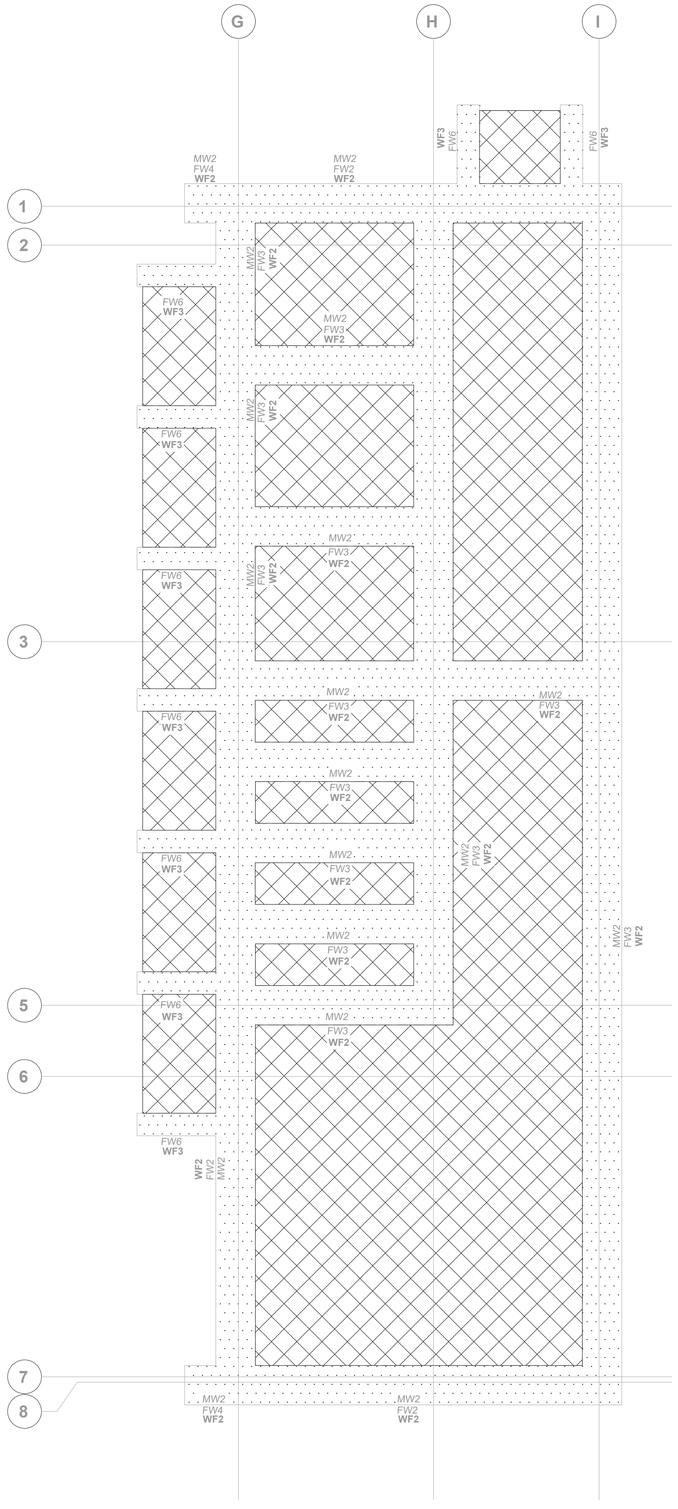
REV. 3

SHEET 2 OF 8

LEGEND

GROUND IMPROVEMENT AREA FOR SLAB LOADING OF 20 KPA SLS / 30 KPA ULS

GROUND IMPROVEMENT AREA FOR BEARING CAPACITIES OF 150 KPA SLS / 225 KPA ULS



GEOSOLV
DESIGN + BUILD
120 VINYL COURT
WOODBRIDGE, ON L4L 4A3
PH: 905 226-2599
FX: 905 226-2601
E: INFO@GEOSOLV.CA

GEOPIER®

REFERENCE DRAWINGS

GP-D-0 GP-D-0.1	GEOPIER DESIGN DRAWINGS NOTES AND DETAILS
S200B	GROUND FLOOR / FOUNDATION PLAN (WEST BLDG) DATED FEBRUARY 1, 2023
S200A	GROUND FLOOR / FOUNDATION PLAN (EAST BLDG) DATED FEBRUARY 1, 2023
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	MARKED UP GEOSOLV DESIGN DRAWINGS, SENT VIA EMAIL TO GEOSOLV ON FEBRUARY 25, 2024

DWG NO. TITLE

Revisions

REV	DATE	ISSUED FOR
3	2025/04/14	ISSUED FOR TENDER
2	2024/05/17	REVISED DESIGN DRAWINGS TO ADDRESS LIGHT POLE SUPPORT
1	2024/04/26	REVISED DESIGN DRAWINGS
0	2023/12/22	GEOPIER DESIGN DRAWING

TRUE NORTH

DRAWING NORTH

CITY OF TORONTO

BLUFFER'S PARK EAST BUILDING

1 BRIMLEY RD S, SCARBOROUGH, ON

GEOPIER DESIGN DRAWING
EAST BLDG LAYOUT

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: 1:50

FULL SIZE ONLY

PROJECT : 11733

DRAWING : GP-D-1

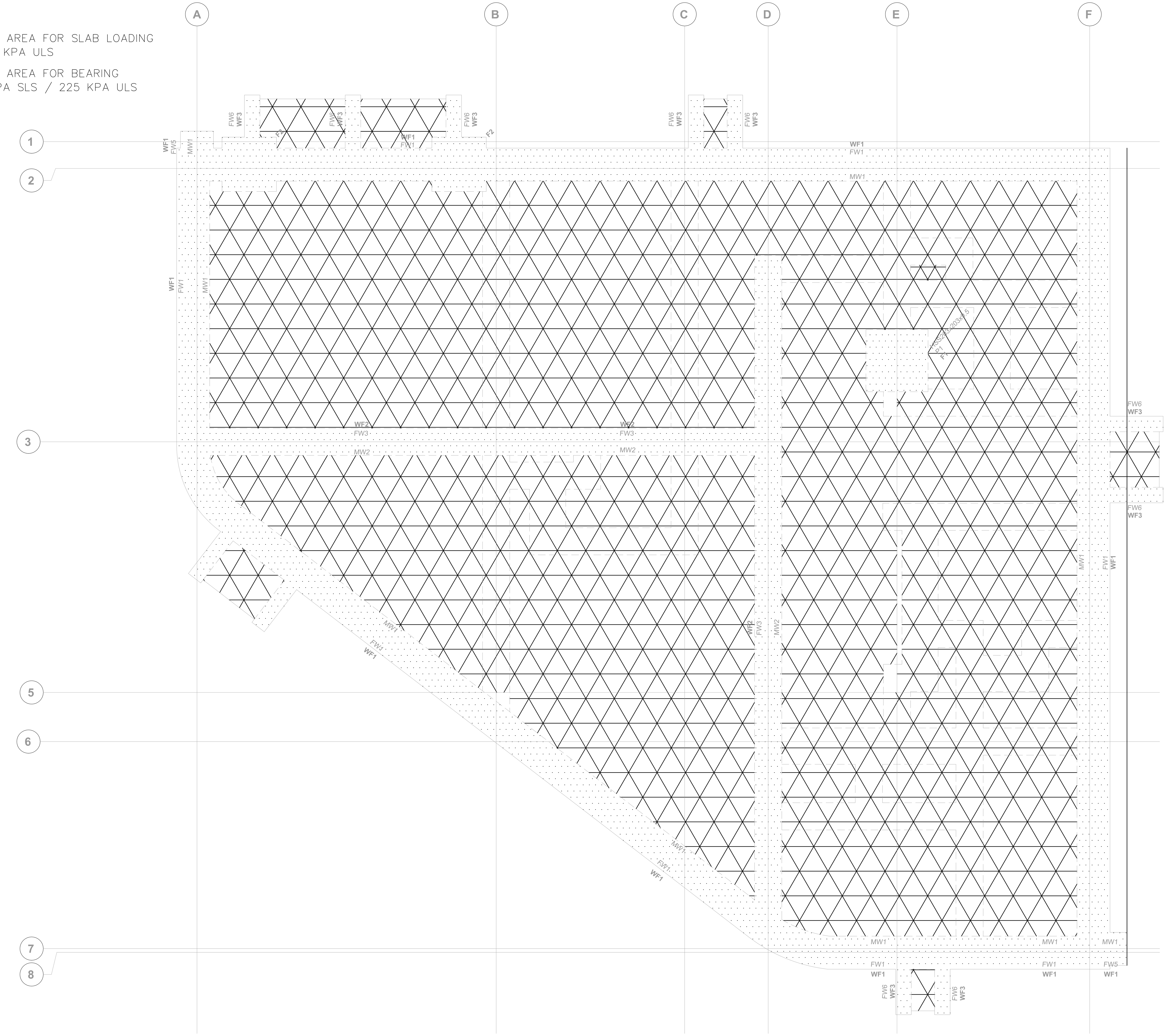
REV. 3

SHEET 3 OF 8

LEGEND

GROUND IMPROVEMENT AREA FOR SLAB LOADING OF 40 KPA SLS / 55 KPA ULS

GROUND IMPROVEMENT AREA FOR BEARING CAPACITIES OF 150 KPA SLS / 225 KPA ULS



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DESIGN + BUILD
120 VINYL COURT
WOODBRIDGE, ON L4L 4A3
PH: 905 226–2599
FX: 905 226–2601
E: INFO@GEOSOLV.CA

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0	2023/12/22	GEOPIER DESIGN DRAWING

TRUE NORTH

DRAWING NORTH

CITY OF TORONTO

BLUFFER'S PARK WEST BUILDING

1 BRIMLEY RD S, SCARBOROUGH, ON

GEOPIER DESIGN DRAWING
WEST BLDG LAYOUT

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: 1:50

FULL SIZE ONLY

PROJECT : 11733

DRAWING : GP–D–2

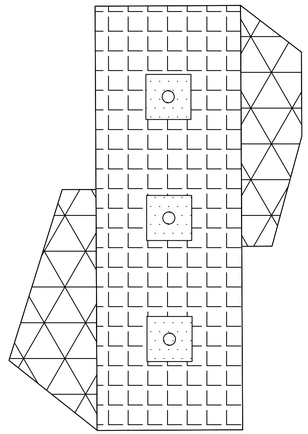
REV. 3

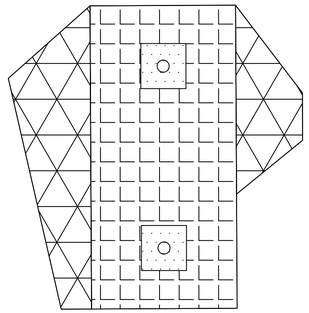
SHEET 4 OF 8

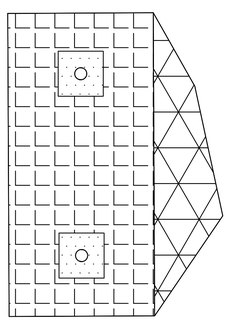
GROUND IMPROVEMENT AREA FOR GRANITE BOULDER SLAB LOADING OF 50 KPA SLS / 70 KPA ULS

GROUND IMPROVEMENT AREA FOR BEARING CAPACITIES OF 150 KPA SLS / 225 KPA ULS

GROUND IMPROVEMENT AREA SHOWER DECKING SLAB LOADING OF 36 KPA SLS /50 KPA ULS







GEOSOLV
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120 VINYL COURT
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GEOPIER®

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DWG NO. TITLE

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0	2023/12/22	GEOPIER DESIGN DRAWING

TRUE NORTH

DRAWING NORTH

CITY OF TORONTO

BLUFFER'S PARK
SHOWERS
1 BRIMLEY RD S, SCARBOROUGH, ON

GEOPIER DESIGN
DRAWING
SHOWERS LAYOUT

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: 1:50

FULL SIZE ONLY

PROJECT : 11733

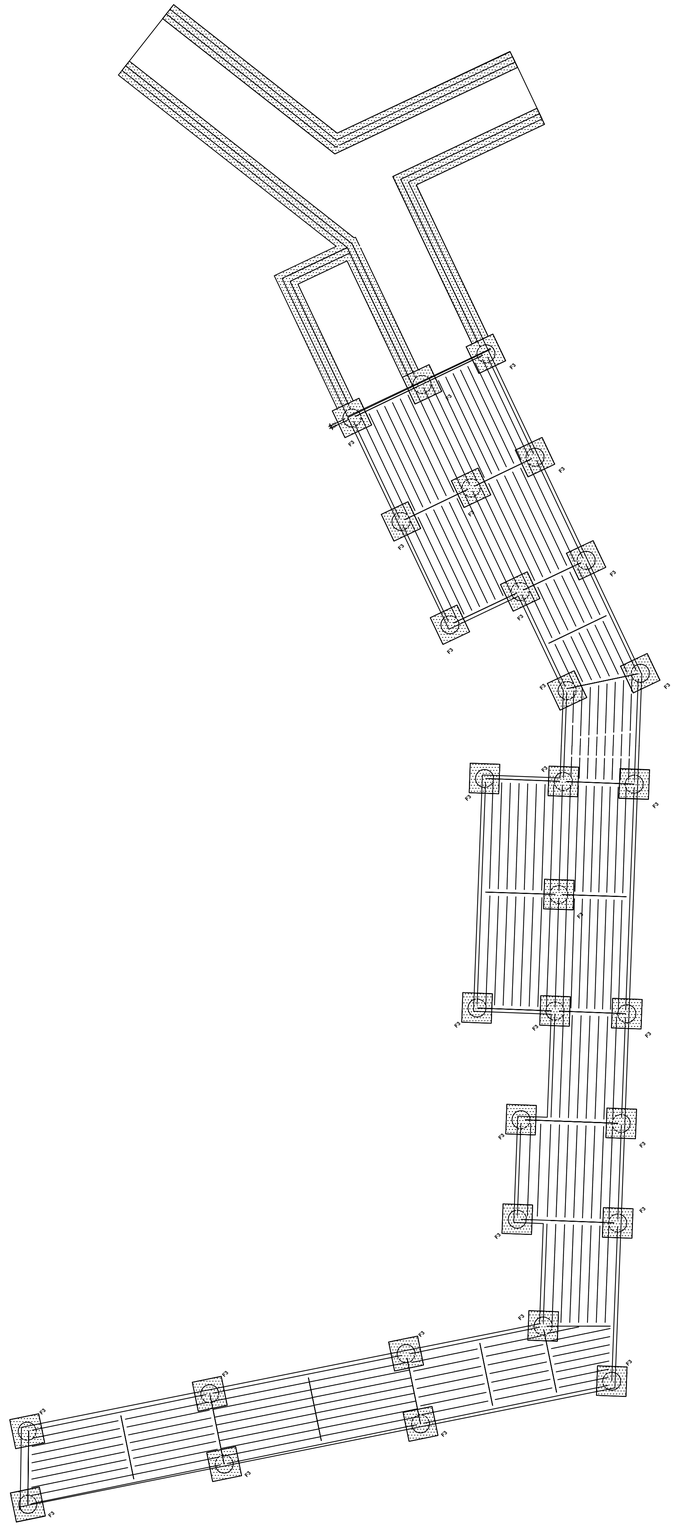
DRAWING : GP-D-3

REV. 3

SHEET 5 OF 8

LEGEND

GROUND IMPROVEMENT AREA FOR BEARING CAPACITIES OF 150 KPA SLS / 250 KPA ULS



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0	2023/12/22	GEOPIER DESIGN DRAWING

TRUE NORTH

DRAWING NORTH

CITY OF TORONTO

BLUFFER'S PARK BOARDWALK

1 BRIMLEY RD S, SCARBOROUGH, ON

GEOPIER DESIGN DRAWING
BOARDWALK LAYOUT

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: 1:75

FULL SIZE ONLY

PROJECT : 11733

DRAWING : GP-D-4

REV. 3

SHEET 6 OF 8

LEGEND

HELICAL PILE SUPPORT AREAS. LOADS AND MOMENTS SUPPORTED AS SHOWN IN THE HELICAL PILE NOTES NOTE 1

MATCH LINE

MATCH LINE

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REV	DATE	ISSUED FOR

TRUE NORTH

DRAWING NORTH

CITY OF TORONTO

BLUFFER'S PARK SOUTH LIGHT POLES (SOUTH END)

1 BRIMLEY RD S, SCARBOROUGH, ON

HELICAL PILE DRAWING LAYOUT

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: 1:175

FULL SIZE ONLY

PROJECT : 11733

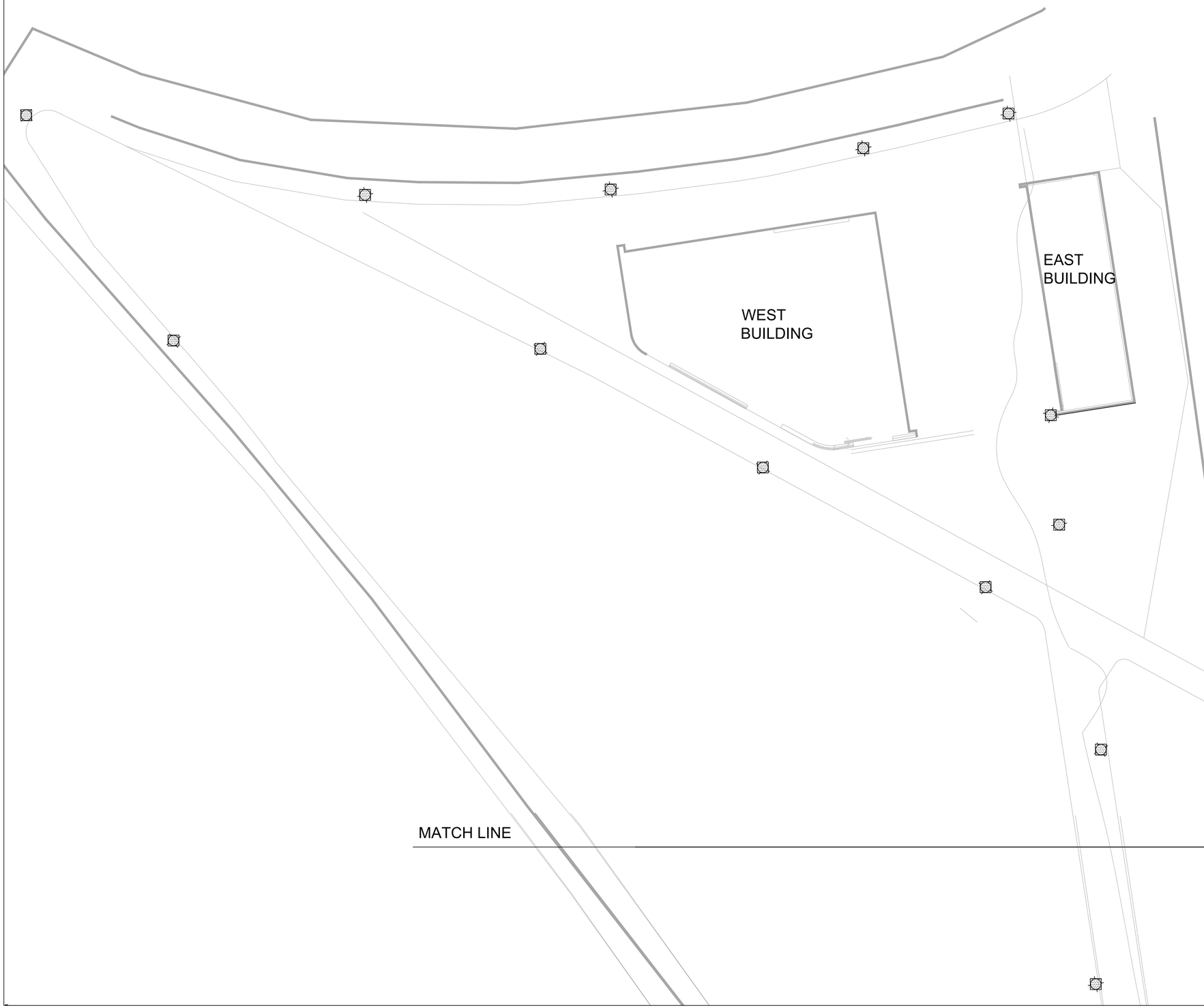
DRAWING : GP-D-5

REV. 3

SHEET 7 OF 8

LEGEND

HELICAL PILE SUPPORT AREAS. LOADS AND MOMENTS SUPPORTED AS SHOWN IN THE HELICAL PILE NOTES NOTE 1



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WOODBRIDGE, ON L4L 4A3
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DWG NO. TITLE

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0	2023/12/22	GEOPIER DESIGN DRAWING

TRUE NORTH

DRAWING NORTH

CITY OF TORONTO

BLUFFER'S PARK SOUTH LIGHT POLES (NORTH END)

1 BRIMLEY RD S, SCARBOROUGH, ON

HELICAL PILE DRAWING LAYOUT

DESIGNED BY: A.T.G. 2025/04/14

DRAWN BY: A.T.G. 2025/04/14

CHECKED BY: K.S.H. 2025/04/14

LICENSED PROFESSIONAL ENGINEER
A. T. GRIFFIN
100508403
April 14, 2025
PROVINCE OF ONTARIO

SCALE: 1:175

FULL SIZE ONLY

PROJECT : 11733

DRAWING : GP-D-6

REV. 3

SHEET 8 OF 8