

# ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGE ROOM RENOVATIONS

2 PRINCESS STREET  
ORONO, ONTARIO

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OBC MATRIX

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DEMOLITION

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## CONSULTANTS

### ARCHITECTURAL / STRUCTURAL

BARRY BRYAN  
ASSOCIATES

Architects  
Engineers  
Project Managers

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Toronto, Ontario, M4P 3A2  
Tel: (416) 592-2423



1  
A000 LOCATION PLAN  
NTS

<b>NAME OF PROJECT :</b> BARRY BRYAN ASSOCIATES <b>CERTIFICATE OF PRACTICE NUMBER :</b> 5192 250 WATER STREET, SUITE 201 WHITBY, ONTARIO, CANADA. L1N 0G5 TEL: (905) - 666 - 5252 (Toronto) (905) - 427 - 4495 FAX: (905) - 666 - 5256 <b>NAME OF PROJECT :</b> ORONO ARENA COMMUNITY CENTRE : RINK REPLACEMENT AND CHANGE ROOM RENOVATION <b>LOCATION OF PROJECT :</b> 2 PRINCESS STREET ORONO, ONTARIO <b>DATE :</b> DECEMBER 2023					
RENOVATION AREA = 2021.16 m <sup>2</sup>					
<b>Ontario Building Code Data Matrix Part 11 - Renovation of Existing Building</b>				OBC Reference	
11.00	Building Code Version: O_Reg_332/12 Last Amendment: O_Reg_191/14				
11.01	Project Type: <input type="checkbox"/> Addition <input checked="" type="checkbox"/> Renovation <input type="checkbox"/> Addition and Renovation			[A] 1.1.2.	
Description <b>ORONO ARENA RINK SLAB REPLACEMENT &amp; INTERIOR IMPROVEMENTS</b>					
11.02	Major Occupancy Classification: <u>Occupancy</u> <u>Use</u> Group A, Div. 2 3.2.2.24			3.1.2.1.(1)	
11.03	Superimposed Major Occupancies: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			3.2.2.7	
11.04	Building Area (m <sup>2</sup> ) (Existing to be site verified)			[A] 1.4.1.2.	
Description Existing New Total					
Ground Floor 2918.78 - 2918.78					
Second Floor 516.43 - 516.43					
Total= 3435.21 - 3435.21					
11.05	Building Height: <u>2 (two)</u> Storeys above grade <u>± 9.00</u> (m) Above grade			[A] 1.4.1.2 & 3.2.1.1	
<u>0 (zero)</u> Storeys below grade (Existing to be site verified)					
11.06	Number of streets/ fire fighter access: <u>1 (one)</u> street(s)			3.2.2.10 & 3.2.5	
11.07	Building Size: <input type="checkbox"/> Small <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Large <input type="checkbox"/> > Large			T.11.2.1.1.B.-N.	
11.08	Change in Major Occupancy: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not Applicable (no change of major occupancy)			11.2.1 T11.2.1.1A T11.2.1.1B to N. 4.2.1(3) & 5.2.2.1.(2)	
Construction Index: <u>6</u>					
Hazard Index: <u>6</u>					
Importance Category: <input type="checkbox"/> Low <input checked="" type="checkbox"/> Normal <input type="checkbox"/> High <input type="checkbox"/> Post-disaster					
11.09	Renovation Type: <input checked="" type="checkbox"/> Basic Renovation <input type="checkbox"/> Extensive Renovation			11.3.3.1 & 11.3.3.2	
11.10	Occupant Load: <u>Floor Level/ Area</u> Occupancy Type Based On Occup. Load			3.4.17	
NO CHANGE					
11.11	Plumbing Fixture Requirements: Ratio: Male/Female = 50:50 Except as noted otherwise			3.7.4	
<u>Floor level/ Area</u> Occupant Load OBC Reference Fixtures Required Fixtures Provided					
NO CHANGE					
11.12	Barrier-free Design: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Explanation: Basic Renovation of non-conforming areas.			11.3.3.2.(2)	
11.13	Reduction in Performance Level: Structural <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes			11.4.2.1	
By Increase in occupant load: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.2	
By change of major occupancy: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.3	
Plumbing <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.4	
Sewage - system: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.5	
11.14	Compensating Construction: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			11.4.2.1	
Structural <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.2	
By Increase in occupant load: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.3	
By change of major occupancy: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.4	
Plumbing <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.5	
Sewage - system: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.6	
Extension of Combustible Construction: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				11.4.2.7	
11.15	Compliance Alternatives Proposed: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes			11.5.1.	
11.16	Notes: THE PROJECT INVOLVES THE BASIC RENOVATIONS OF THE EXISTING ICE RINK DRESSING ROOMS AND TO A COMPLETE REPLACEMENT OF THE ICE SURFACE AND SOME REFRIGERATING EQUIPMENT.  AREA OF WORK: 2,021.16 m <sup>2</sup>			11.5.1	

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**Clarington**

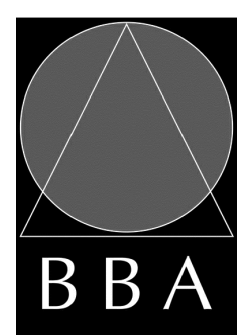
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PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET L0B 1M0  
ORONO, ONTARIO  
MUNICIPALITY OF CLARINGTON

DRAWING:

LIST OF DRAWINGS,  
SITE LOCATION AND  
OBC MATRIX



BARRY BRYAN  
ASSOCIATES

Architects  
Engineers  
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DESIGN BY: BBA  
DRAWN BY: JJA  
CHECKED BY: NS

DATE: DEC. 23, 2022

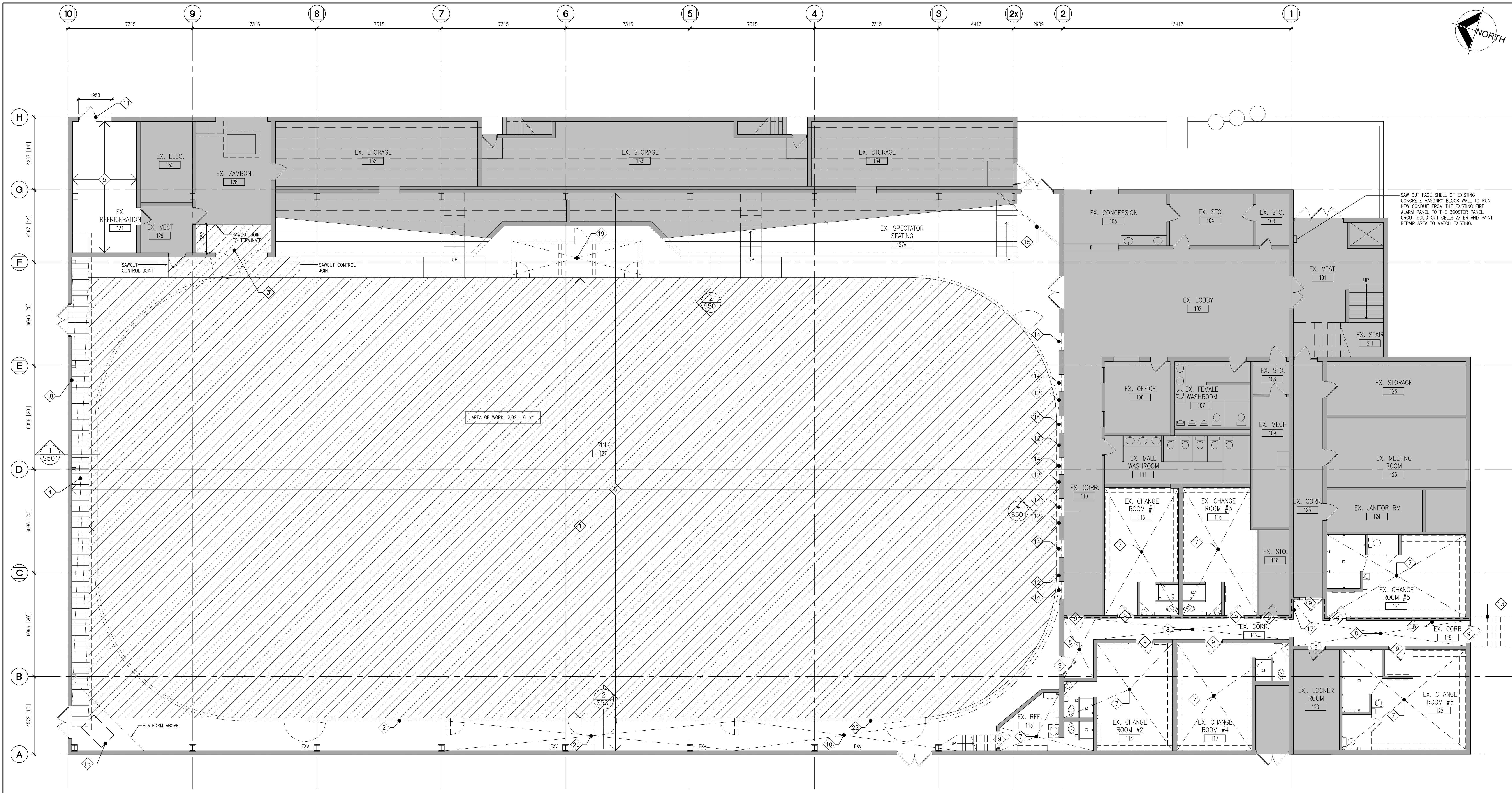
SCALE:

FILE: 22119A A000

PROJECT NO:  
**22119B**

DRAWING NO:  
**A000**





1  
A201  
FIRST FLOOR DEMOLITION PLAN  
1:100

DEMOLITION LEGEND	DEMOLITION FLOOR LEGEND	DEMOLITION LEGEND	DEMOLITION LEGEND	TYPICAL DEMOLITION NOTES
<div><div>EXISTING WALL, PARTITION OR COLUMN</div><div>DEMOTES DEMOLITION OF BUILDING ELEMENT</div><div>EXISTING DOOR, FRAME AND TRIM TO REMAIN (REPAINTED AT RENOVATED AREAS)</div><div>EXISTING DOOR, FRAME AND TRIM TO REMOVE AND DISPOSE</div><div>EXISTING MECHANICAL VENT</div></div>	<div><div>HATCH EXTENT OF EXISTING RINK SLAB AND CONCRETE OVER POUR TO BE REMOVED AND REPLACED WITH NEW CONCRETE RINK SLAB. SEE ALSO STRUCTURAL DRAWINGS FOR MORE INFORMATION</div><div>HATCH EXTENT OF EXISTING WOOD HEADER COVERS TO BE REMOVED AND REPLACED. EXISTING HEADER TRENCH WALL AND EQUIPMENT TO BE DEMOLISHED.</div><div>SHADED AREA DEMOTES EXISTING TO REMAIN</div><div>HATCH EXTENT OF AREA TO SCARIFY EXISTING CONCRETE SLAB AND PREPARE SURFACE TO RECEIVE NEW CONCRETE TOPPING</div></div>	<div><div>REMOVE EXISTING REFRIGERATED RINK SLAB IN ITS ENTIRETY AS INDICATED INCLUDING ALL ASSOCIATED PIPING, REINFORCING, INSULATION, ETC. EXISTING SAND FILL TO REMAIN. PROOF ROLL EXISTING SAND LAYER.</div><div>REMOVE EXISTING DASHER BOARDS IN THEIR ENTIRETY INCLUDING ANCHOR BOLTS.</div><div>SAWCUT AND REMOVE PART OF EXISTING APRON TO EXTENT INDICATED</div><div>REMOVE EXISTING WOOD HEADER TRENCH COVERS AND PIPING BACK TO REFRIGERATION ROOM</div><div>REMOVE EXISTING REFRIGERATION EQUIPMENT AND PREPARE ROOM FOR NEW INSTALLATIONS. SEE REFRIGERATION SPECIFICATIONS FOR SCOPE OF WORK.</div><div>PREPARE EXISTING STEEL BEAMS AND PURLINS AS REQUIRED FOR NEW PAINT FINISH.</div><div>REMOVE EXISTING FLOOR FINISH, RUBBER BASE, T-BAR CEILING, LIGHTS, BENCHES &amp; BRACKETS, METAL CLOTHES HOOK, HOCKEY STICK HOLDER, WASHROOM FIXTURES &amp; COUNTER, WASHROOM ACCESSORIES, SHOWER AREA FLOOR &amp; WALL TILES AND VINYL WALL PANEL. REMOVE SIGNAGE AND DOOR CHAIN AND SET ASIDE FOR RE-INSTALLATION. PATCH AND MAKE GOOD FLOOR AND WALLS FOR NEW FINISH.</div><div>REMOVE EXISTING FLOOR FINISH, RUBBER BASE, T-BAR CEILING AND LIGHTS. PATCH AND MAKE GOOD FLOOR AND WALLS FOR NEW FINISH.</div><div>REMOVE &amp; DISPOSE EXISTING DOOR &amp; FRAME. PATCH &amp; MAKE GOOD WALLS.</div><div>REMOVE &amp; REPLACE EXISTING RUBBER SKATE TILE, EXTENT TO BE CONFIRMED</div><div>REMOVE EXISTING DOOR FRAME, THRESHOLD AND WALL. PROVIDE NEW TEMPORARY SHORING OF WALL TO ACCOMMODATE NEW UTILITY FOR NEW DOOR.</div><div>REMOVE AND REPLACE PUCK PANELING ON LOBBY WALL (AT RINK SIDE)</div></div>	<div><div>REMOVE AND REPLACE STEEL STAIR (INCLUDING GUARDS/HANDRAILS) LEVEL EXISTING GRADING AS NECESSARY TO PROVIDE POSITIVE SLOPE AWAY FROM BUILDING.</div><div>REMOVE AND REPLACE EXISTING GLAZING (INCLUDING FRAMING)</div><div>DEHUMIDIFIER AT HIGH LEVEL. PROTECT FROM EXPOSURE TO DIRT / DUST THROUGHOUT CONSTRUCTION</div><div>COORDINATE ELECTRICAL FAN COOL BOX REMOVALS.</div><div>EXISTING SPLIT FACE ARCHITECTURAL CONCRETE BLOCK WALL</div><div>EXISTING TIME CLOCK TO BE REMOVED/REINSTALLED DURING/POST CONSTRUCTION.</div><div>REMOVE ALL PENALTY / TIME KEEPER BOXES, BOARDS, CEILING AND MATTING. SAFETY DISCONNECT AND REMOVE ELECTRICAL COMPONENTS IN THE TIME KEEPER BOX FOR REMOVAL AND INSTALLATION OF NEW.</div><div>REMOVE PLAYERS BENCHES IN THEIR ENTIRETY.</div><div>RECEPTACLES TO BE IDENTIFIED, REMOVED AND REINSTATED IN NEW DASHER BOARDS. SITE VERIFY LOCATIONS PRIOR TO REMOVAL.</div><div>REMOVE AND DISCONNECT EXISTING RECEPTACLES IN DASHER BOARDS AND CONDUIT FROM THE JUNCTION BOXES. PROTECT JUNCTION BOXES DURING CONSTRUCTION.</div></div>	<div><div>1. SITE VERIFY ALL DIMENSIONS AND CONDITIONS.</div><div>2. ALL WORK TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.</div><div>3. COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS FOR CONSTRUCTION PROJECTS.</div><div>4. PROVIDE PROTECTION IN LOCATIONS APPROVED BY THE OWNER AND CONSULTANT SO AS NOT TO DAMAGE EXISTING STRUCTURE, LANDSCAPE OR PART THEREOF.</div><div>5. COMPLETE ALL DEMOLITION WORK NECESSARY TO COMPLETE THE RENOVATIONS AS SHOWN AND AS REQUIRED. DEMOLITION OF BUILDING ELEMENTS INCLUDES BUT NOT LIMITED TO COMPLETE REMOVAL OF ALL ASSOCIATED FIXTURES, FITTINGS, HARDWARE, FASTENERS.</div><div>6. ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DEMOLITION DRAWINGS ARE COMPLEMENTARY AND SHALL BE READ TOGETHER.</div><div>7. PROVIDE ALL SHORING AS REQUIRED. SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.</div><div>8. NOTIFY CONSULTANT OF LOAD BEARING MEMBERS OR ASSEMBLIES IDENTIFIED OR DISCOVERED DURING WORK AND NOT INDICATED ON DRAWINGS. DO NOT PROCEED WITH REMOVALS WITHOUT PRIOR REVIEW BY THE CONSULTANT.</div><div>9. PROVIDE TEMPORARY SUPPORT OF PIPES, DUCTS AND ELECTRICAL CHASES AS REQUIRED FOR SAFE REMOVAL. EXISTING AND PROPOSED SUPPORTS ARE TO BE REVIEWED BY THE CONSULTANT PRIOR TO THE REMOVAL OF ANY COMPONENTS WHICH MAY FALL OR CAUSE OTHERS TO FALL.</div><div>10. MAINTAIN ALL WORK AREAS AND ALL STORAGE AREAS CLEAN AND ORDERLY AT ALL TIMES INCLUDING EXISTING AREAS THAT REMAIN IN OPERATION DURING CONSTRUCTION. DUST CONTROL MEASURES ARE TO BE IN PLACE AT ALL TIMES AND NOISE WORK SHALL BE COORDINATED AROUND PROGRAM EVENTS.</div><div>11. DISCONNECT AND CAP OFF ALL SERVICES PRIOR TO DEMOLITION.</div><div>12. DISPOSE MATERIALS OFF SITE.</div><div>13. REMOVAL OF EXISTING FLOOR FINISHES IS TO INCLUDE COMPLETE REMOVAL OF BASE AND ALL MORTAR AND ADHESIVES AND PREPARATION OF EXISTING SUBSTRATES TO RECEIVE NEW FLOORING, SATISFACTORY TO THE MANUFACTURER OF NEW FLOOR FINISHES. ALLOW FOR EXCESSIVE LEVELING &amp; PREPARATION OF SLABS.</div><div>14. DEMOLITION INCLUDES ALL ASSOCIATED MECHANICAL AND ELECTRICAL SERVICES, EQUIPMENT, FITTINGS, FIXTURES, HANGERS, BRACKETS, TRIM AND ACCESSORIES AS REQUIRED TO COMPLETE THE WORK.</div><div>15. SAWCUT, BREAK OUT AND MAKE GOOD (MATCH EXISTING U.N.O.) ALL EXISTING FLOOR SLABS WHERE REQUIRED TO INSTALL NEW UNDERGROUND PLUMBING AND OTHER BURIED SERVICES AS INDICATED AND AS REQUIRED ON MECHANICAL AND ELECTRICAL DRAWINGS.</div><div>16. REMOVAL OF DOORS AND FRAMES IS TO INCLUDE REMOVAL OF ALL HARDWARE.</div><div>17. MAINTAIN WORK AREAS AND STORAGE AREAS.</div><div>18. MAINTAIN EXISTING FIRE HOSE CABINETS AND FIRE RATINGS.</div><div>19. REMOVE ALL PROTRUSIONS OUT OFF FLOOR SLAB AND GRIND DOWN TO FLOOR LEVEL.</div><div>20. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STRUCTURE OR FINISHES SHOWN TO REMAIN AND REPAIR / REPLACE SAME TO THE SATISFACTION OF THE OWNER AND CONSULTANT.</div><div>21. THE EXISTING FACILITY WILL REMAIN OPERATIONAL FOR THE DURATION OF CONSTRUCTION. THE GENERAL CONTRACTOR MUST ISOLATE THE CONSTRUCTION AREA FROM THE SUBROUNGING FACILITY OPERATION WITH DUST TIGHT TAPPS. THE EXISTING MECHANICAL VENTILATION SYSTEMS WITH THE CONSTRUCTION AREA MUST BE COVERED TO ELIMINATE DUST CIRCULATION THROUGH THE FACILITY.</div><div>22. THE GENERAL CONTRACTOR MUST WORK WITH THE MUNICIPALITY TO PROVIDE TEMPORARY SIGNAGE DURING CONSTRUCTION AROUND THE WORK AREA FOR ANY FINISH. THE GENERAL CONTRACTOR WILL PROVIDE, INSTALL AND REMOVE ALL TEMPORARY SIGNAGE.</div><div>23. ALLOW FOR DISCONNECTION TEMPORARILY AND PROTECTION OF CO2 SENSORS AND CARBON MONOXIDE THROUGHOUT CONSTRUCTION.</div><div>24. REMOVE SIGNAGE WHERE REQUIRED AND SET ASIDE FOR RE-INSTALLATION</div></div>

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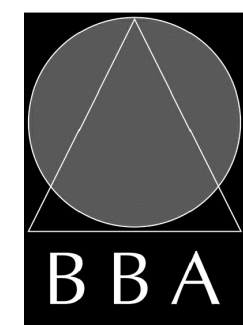
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NO.	REVISIONS	DATE	BY

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET LOB 1M0  
ORONO, ONTARIO  
MUNICIPALITY OF CLARINGTON


DRAWING:  
**FIRST FLOOR  
DEMOLITION PLAN**



**BARRY BRYAN  
ASSOCIATES**  
Architects  
Engineers  
Project Managers

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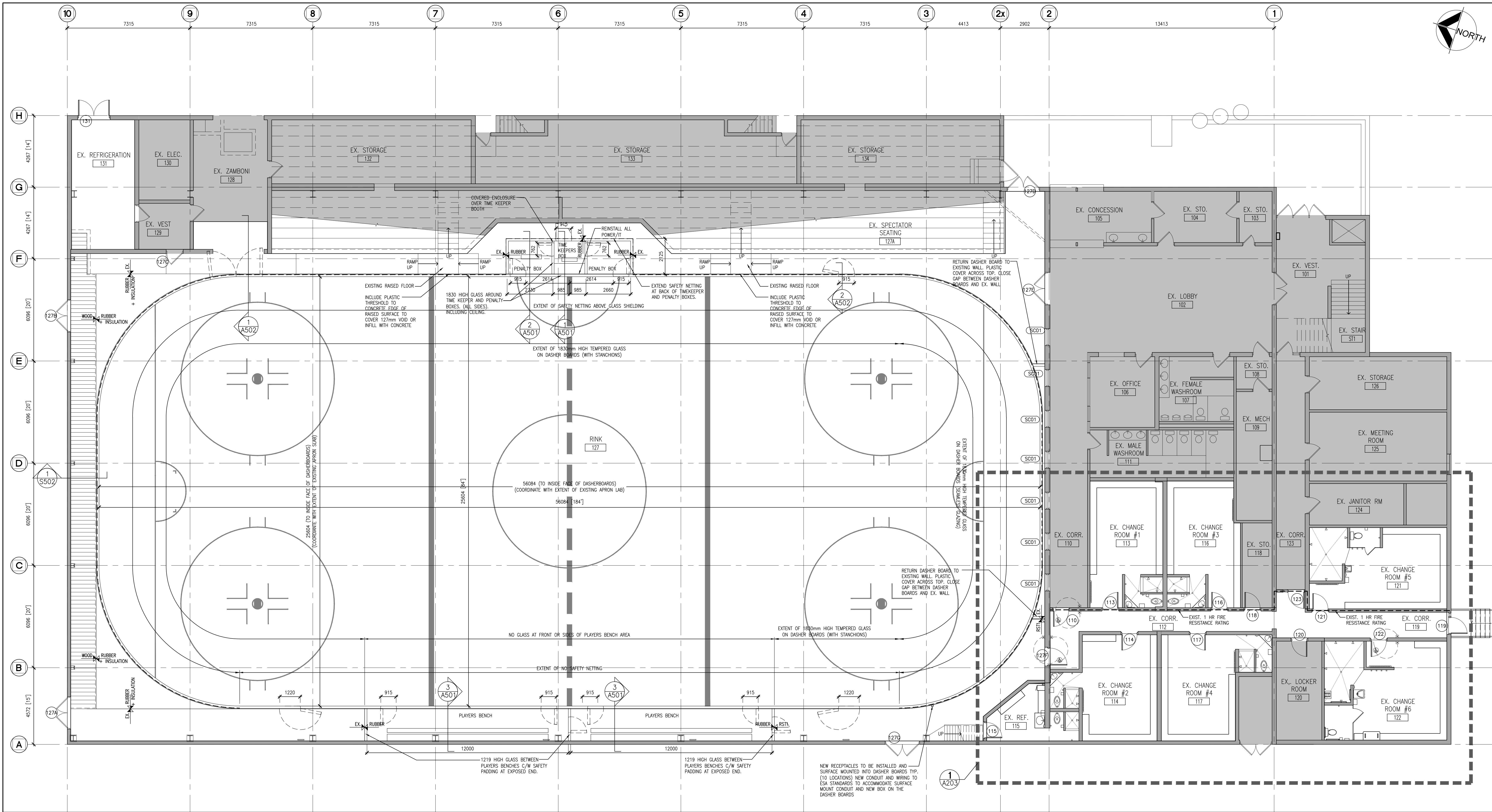
DESIGN BY:  
BBA  
CM  
8 COMPLETE  
CHECKED BY:  
NTM

DATE:  
DEC. 23, 2022  
SCALE:  
1:100  
FILE:

PROJECT NO:  
**22119B**

DRAWING NO:  
**A201**





1  
A202 FIRST FLOOR PLAN  
1:100

**FLOOR PLAN NOTATION LEGEND**

<b>CORRIDOR</b> CA	<b>ROOM NAME &amp; NUMBER</b> 103	<b>F.F.2</b> <b>F.F.1</b> F.F.R.	<b>FLOOR FINISH TYPE</b> (SEE ALSO ROOM FINISH SCHEDULE)
<b>WALL / PARTITION TYPE</b> 001	<b>WALL / PARTITION TYPE</b> 001	<b>FE</b> FEC	<b>FIRE RESISTANCE RATING</b> FIRE EXTINGUISHER
<b>EXTERIOR GLAZING NUMBER</b> SC01	<b>EXTERIOR GLAZING NUMBER</b> SC01	<b>FHC</b> FD	<b>FIRE EXTINGUISHER CABINET</b> FIRE HOSE CABINET
<b>INTERIOR GLAZED SCREEN NUMBER</b> 101	<b>INTERIOR GLAZED SCREEN NUMBER</b> 101	<b>TD</b> ELECTRICAL PANEL	<b>FLOOR DRAIN</b> TRENCH DRAIN
<b>DOOR NUMBER</b> 101	<b>DOOR NUMBER</b> 101	<b>DD</b> 1 HOUR FIRE SEPARATION OR FIRE PROTECTION	<b>BACKED FREE DOOR OPERATOR</b>
<b>WORK N.I.C.</b> 1 A200	<b>WORK N.I.C.</b> 1 A200		
<b>WALL SECTION REFERENCE</b> 1 A200	<b>WALL SECTION REFERENCE</b> 1 A200		
<b>BUILDING SECTION / EXTERIOR ELEVATION REFERENCE</b> D 1 A901	<b>BUILDING SECTION / EXTERIOR ELEVATION REFERENCE</b> D 1 A901		
<b>INTERIOR ELEVATION REFERENCE NUMBER</b> C 1 A901	<b>INTERIOR ELEVATION REFERENCE NUMBER</b> C 1 A901		

**NOTES:**

- ALL RUBBER FLOOR TRANSITIONS FROM SKATE TILE TO RUBBER MATS MUST BE COMPLETE WITH A THRESHOLD / TRANSITION STRIP.
- ALL RUBBER MATTING IN PLAYERS BENCHES TO COVER EXPOSED METAL BRACKETS AND BOLTS.

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RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET L0B 1M0  
ORONO, ONTARIO  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**FIRST FLOOR PLAN**

**BBA**  
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**ONTARIO ASSOCIATION  
OF  
ARCHITECTS  
Engineers  
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7117**

DESIGN BY:  
BBA  
DRAWN BY:  
JJA  
CHECKED BY:  
NTL  
DATE:  
DEC. 23, 2022  
SCALE:  
1:100  
FILE:

DOC. CONTROL:  
441  
% COMPLETE:  
100%

PROJECT NO:  
**22119B**  
DRAWING NO:  
**A202**



CEILING TYPE SCHEDULE

C1

610mmx1220mm ACOUSTIC  
LAY-IN CEILING PANELS IN  
SUSPENDED T-BAR GRID

C2

FIBERGLASS REINFORCED PLASTIC  
(FRP) PANELING ON  
13mm MOLD RESISTANT GYPSUM  
BOARD ON METAL STUD FRAMING

CEILING NOTATION LEGEND

C1

CEILING TYPE (REFER TO  
CEILING TYPE SCHEDULE AND  
ROOM FINISH SCHEDULE)

EXP

EXPOSED STRUCTURE

2400

CEILING LEVEL ABOVE FINISHED  
FLOOR (SEE ALSO ROOM FINISH  
SCHEDULE)

LIGHT FIXTURE  
REFER TO ELECTRICAL DWG.

SUPPLY AIR DIFFUSER  
(REFER TO MECHANICAL DRAWINGS)

RETURN AIR GRILLE, SIZES VARY

CEILING OR WALL MOUNTED  
EXIT LIGHT

EXIST. EXHAUST FAN

SPRINKLER HEAD  
(REFER TO MECHANICAL DRAWINGS)

WORK N.I.C.

FLOOR FINISHES LEGEND

PCT

PORCELAIN CERAMIC TILE

RST1

RUBBER SKATE TILE  
COLOUR 1

RST2

RUBBER SKATE TILE  
COLOUR 2

NOTE:

1.

ALL FLOOR TILE SHALL POSITIVELY SLOPE TO DRAIN.  
WATER TEST ALL SLOPES FOR POSITIVE DRAINAGE.

2.

FLOOR SLOPES TO DRAIN SHALL BETWEEN 2-3% FOR  
POSITIVE DRAINAGE.

WALL FINISHES LEGEND

CERAMIC WALL TILE (C1)

FLOOR PLAN NOTATION LEGEND

CORRIDOR

CA

ROOM NAME & NUMBER

WALL / PARTITION TYPE

EXTERIOR GLAZING NUMBER

INTERIOR GLAZED SCREEN NUMBER

DOOR NUMBER

WORK N.I.C.

WALL SECTION REFERENCE

BUILDING SECTION/  
EXTERIOR ELEVATION REFERENCE

INTERIOR ELEVATION  
REFERENCE NUMBER

FLOOR FINISH TYPE  
(SEE ALSO ROOM FINISH SCHEDULE)

FIRE RESISTANCE RATING

FIRE EXTINGUISHER

FIRE EXTINGUISHER CABINET

FIRE HOSE CABINET

FLOOR DRAIN

TRENCH DRAIN

ELECTRICAL PANEL

BARRIER FREE  
DOOR OPERATOR

1 HOUR FIRE SEPARATION OR  
FIRE PROTECTION

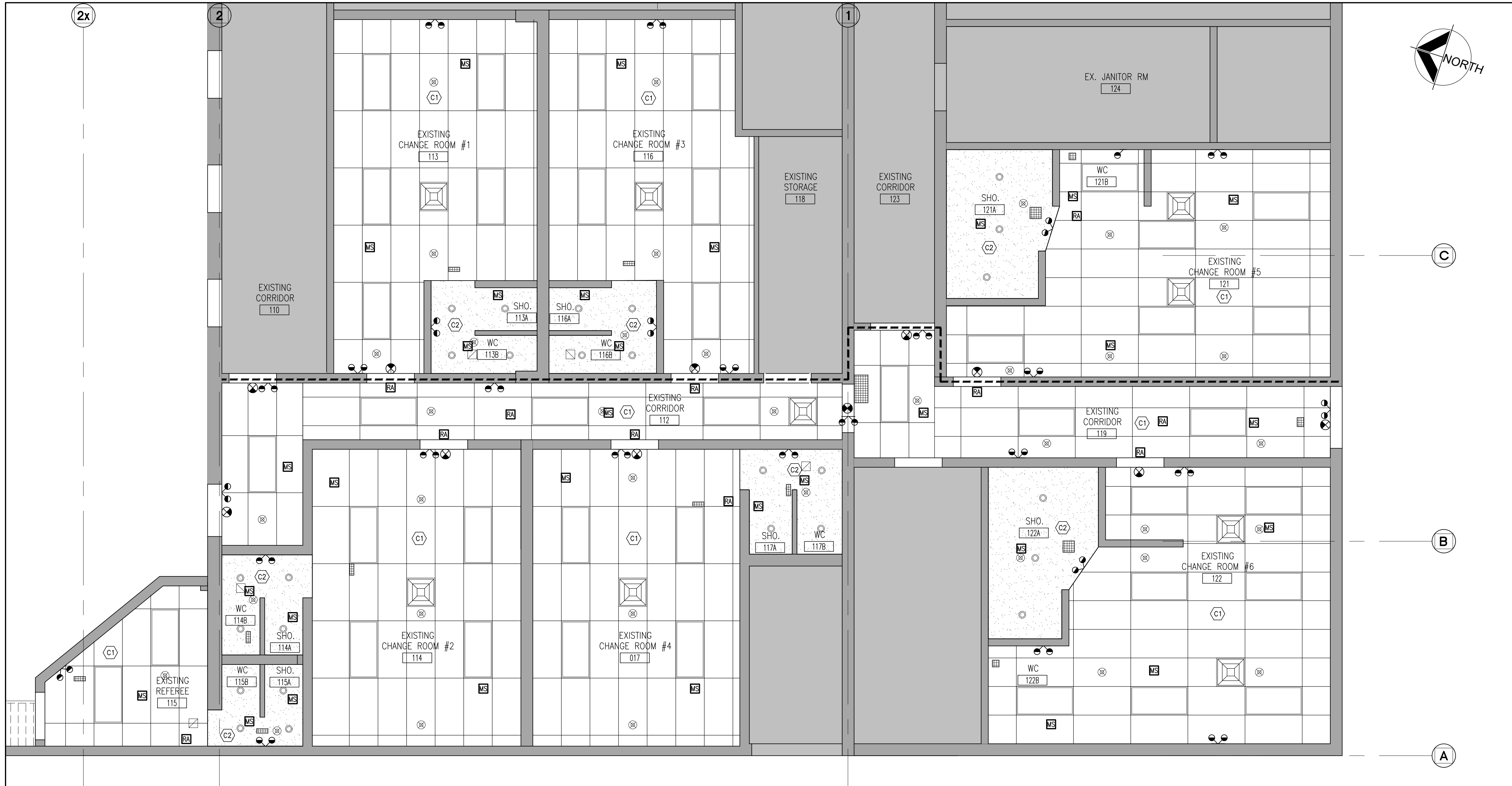
NOTES:

1.

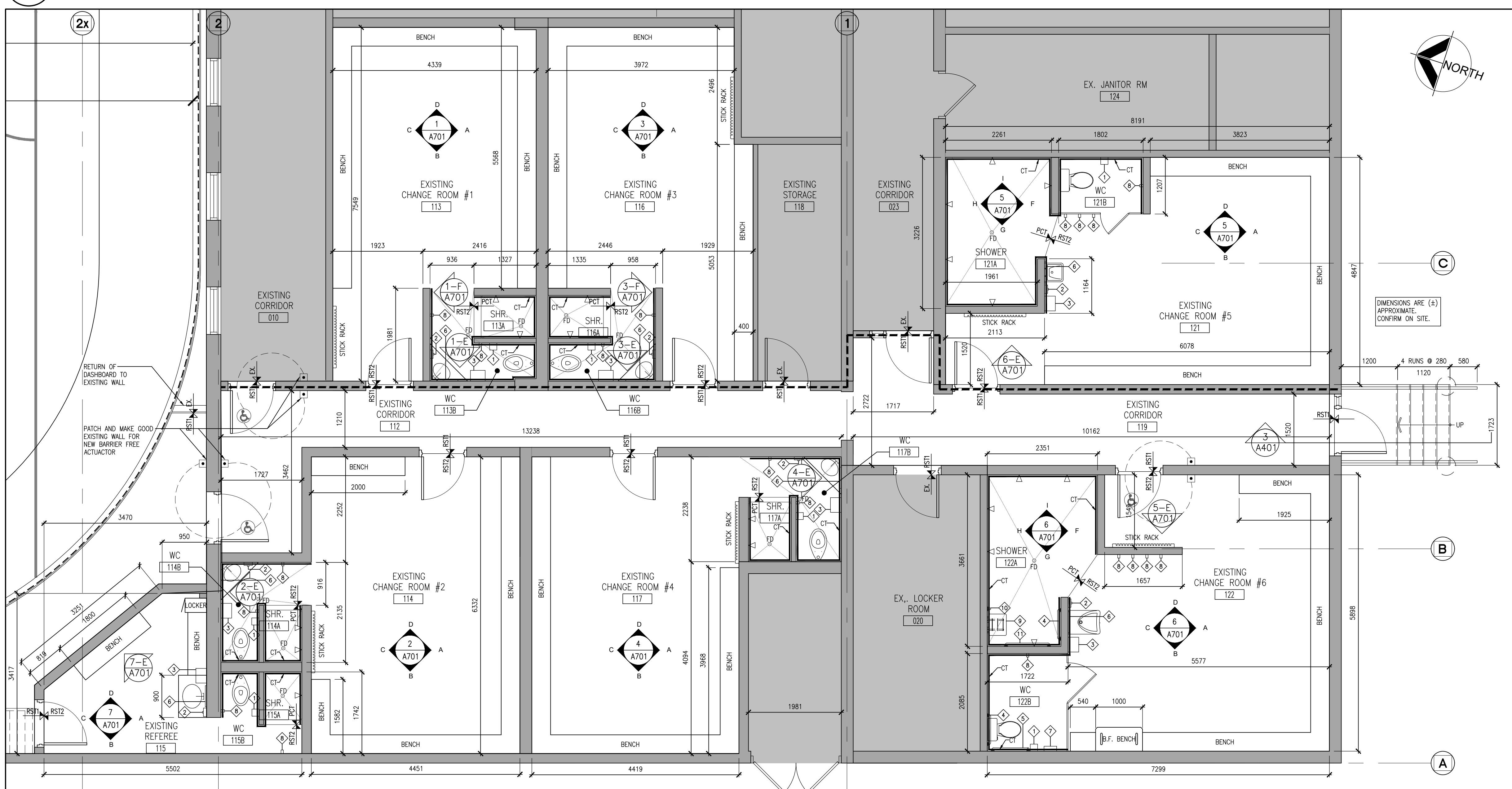
ALL RUBBER FLOOR TRANSITIONS FROM SKATE TILE TO  
RUBBER MATS MUST BE COMPLETE WITH A THRESHOLD/  
TRANSITION STRIP.

2.

ALL RUBBER MATTING IN PLAYERS BENCHES TO COVER  
EXPOSED METAL BRACKETS AND BOLTS.



1  
A203  
1:50  
REFLECTED CEILING PLAN



1  
A203  
1:50  
ENLARGED FLOOR PLAN

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1	ISSUED FOR PRICING	AUG. 17, 2023	BBA
2	ISSUED FOR PERMIT & TENDER	DEC. 4, 2023	BBA
3	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA

NO.	REVISIONS	DATE	BY

PROJECT:

ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

ENLARGED PART FLOOR  
PLAN & REFLECTED  
CEILING PLAN

BBA

BARRY BRYAN  
ASSOCIATES

Architects  
Engineers  
Project Managers

250 Water Street  
Suite 201  
Whitby, Ontario  
L1N 0G5  
Tel: (905) 666-5252  
Fax: (905) 666-5256  
e-mail: bba@bba-arch.com

DESIGN BY:  
BBA

DRAWN BY:  
NV

CHECKED BY:  
DM

DATE:  
JUNE 23, 2023

SCALE:  
1:50

FILE:  
22119B A203

PROJ. NO.:

22119B

DRAWING NO.:

A203





PHOTO 4 - NORTH ELEVATION



PHOTO 5 - SOUTH ELEVATION



PHOTO 1 - EAST ELEVATION



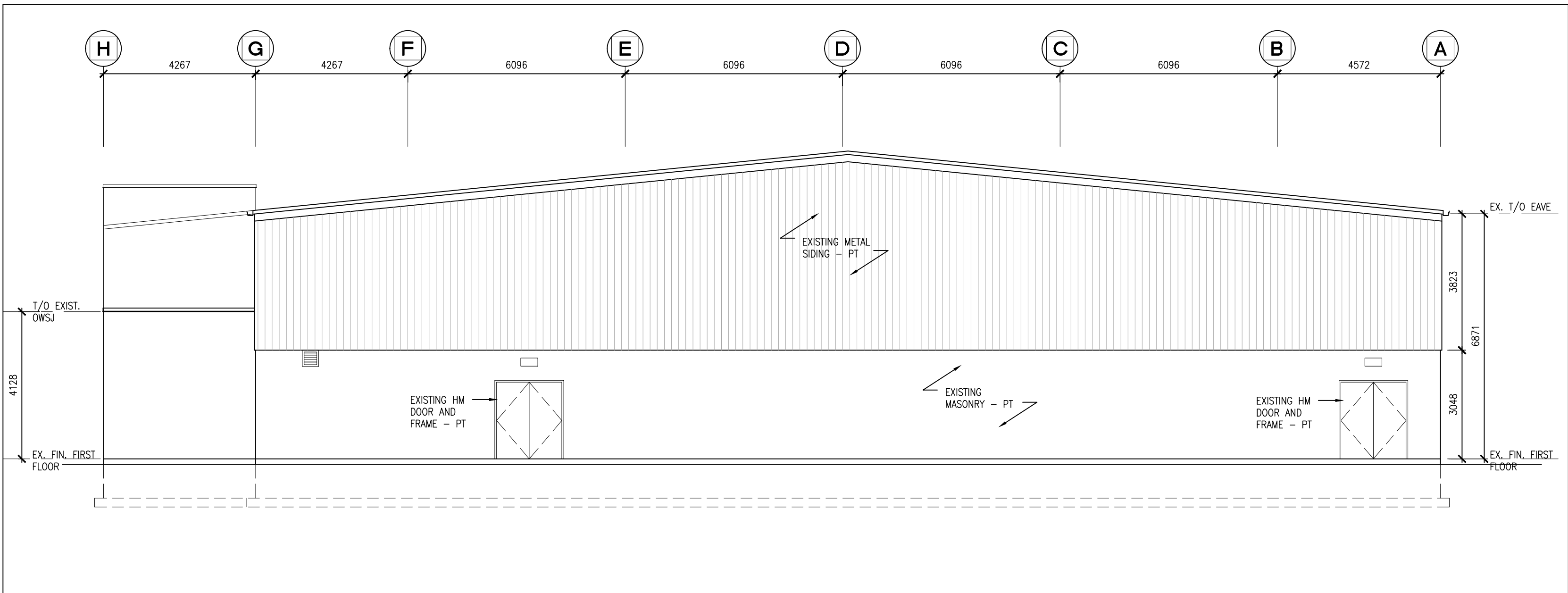
PHOTO 2 - EAST ELEVATION



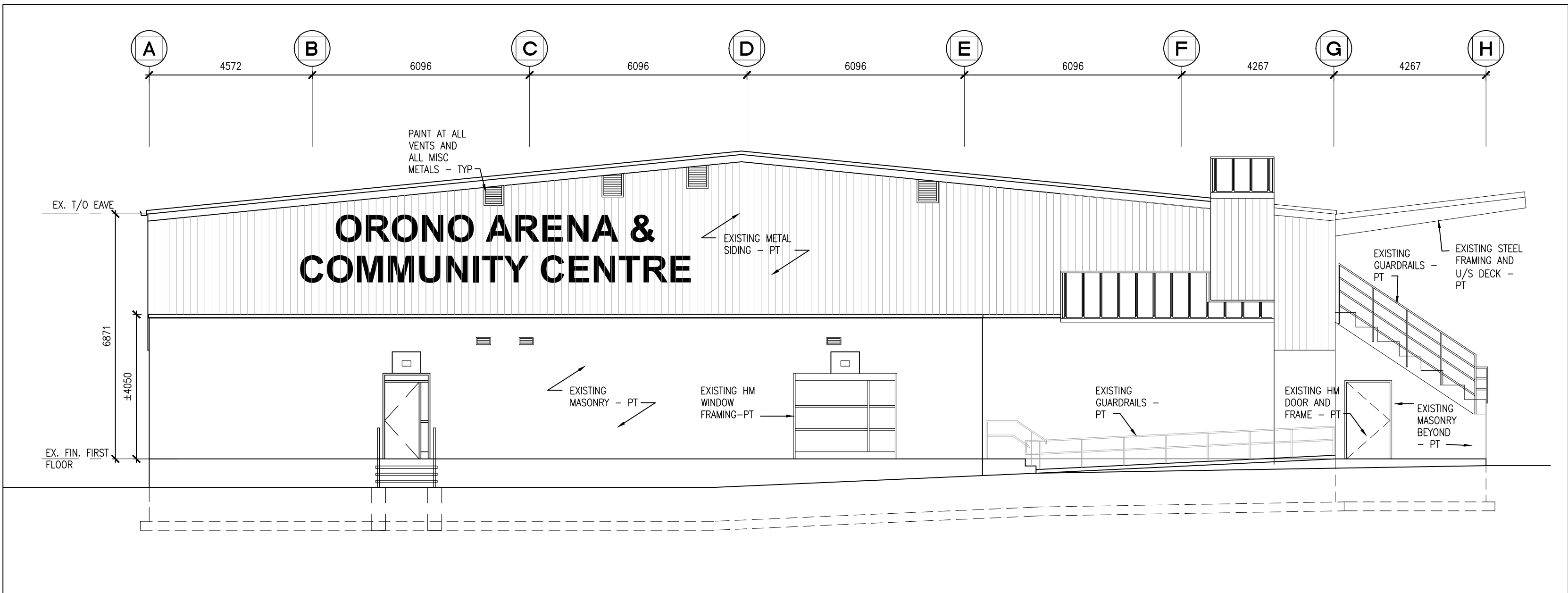
PHOTO 3 - NORTH EAST ELEVATION

SCOPE OF WORK

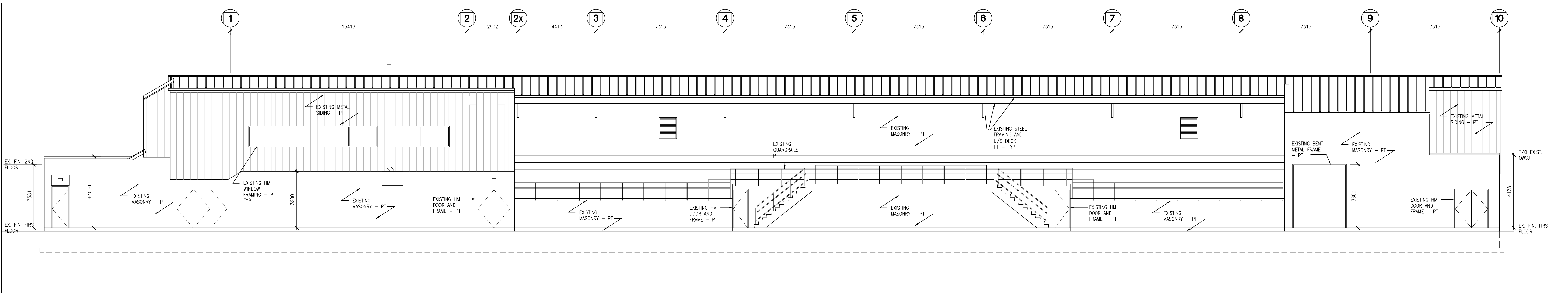
1. EXTERIOR WALLS TO BE CLEANED AND REPAINTED.
2. REPAINTING THE FOLLOWING:
  - EXISTING MASONRY
  - EXISTING METAL SIDING
  - EXISTING YELLOW METAL FRAMES FOR DOORS AND WINDOWS
  - ALL EXISTING EXTERIOR MISCELLANEOUS METALS
  - ALL EXISTING EXPOSED STRUCTURAL FRAMING, METAL DECK AND SOFFITS.



3  
A301  
EXISTING NORTH ELEVATION  
1:100



2  
A301  
EXISTING SOUTH ELEVATION  
1:100



1  
A301  
EXISTING EAST ELEVATION  
1:100

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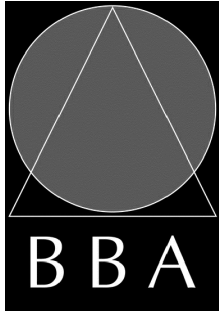
**Clarington**

NO.	ISSUES	DATE	BY
1	ISSUED FOR PERMIT & TENDER	DEC. 4, 2023	BBA
2	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA


PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET L0B 1M0  
ORONO, ONTARIO  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**EXTERIOR REPAINTING  
SCOPE OF WORK**



**BARRY BRYAN  
ASSOCIATES**  
Architects  
Engineers  
Project Managers  
250 Water Street  
Suite 201  
Whitby, Ontario  
L1N 0G5  
Tel: (905) 666-5252  
Fax: (905) 666-5256  
email: info@bba-arch.com



DESIGN BY:  
BBA  
DRAWN BY:  
LJO  
CHECKED BY:  
DM  
DATE:  
NOV. 2023  
SCALE:  
1:100  
FILE:

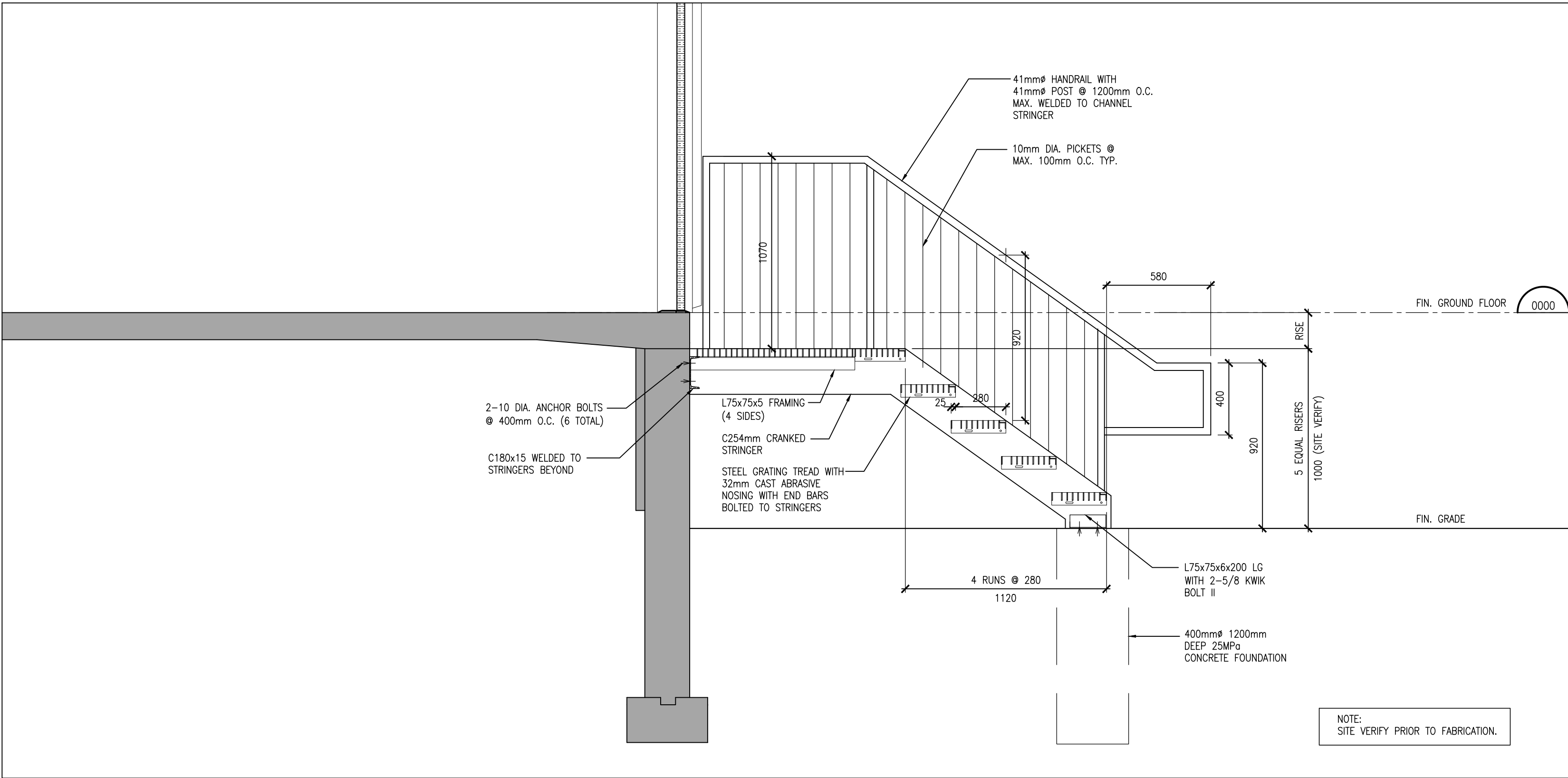
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DEC. 4, 2023  
SCALE:  
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FILE:



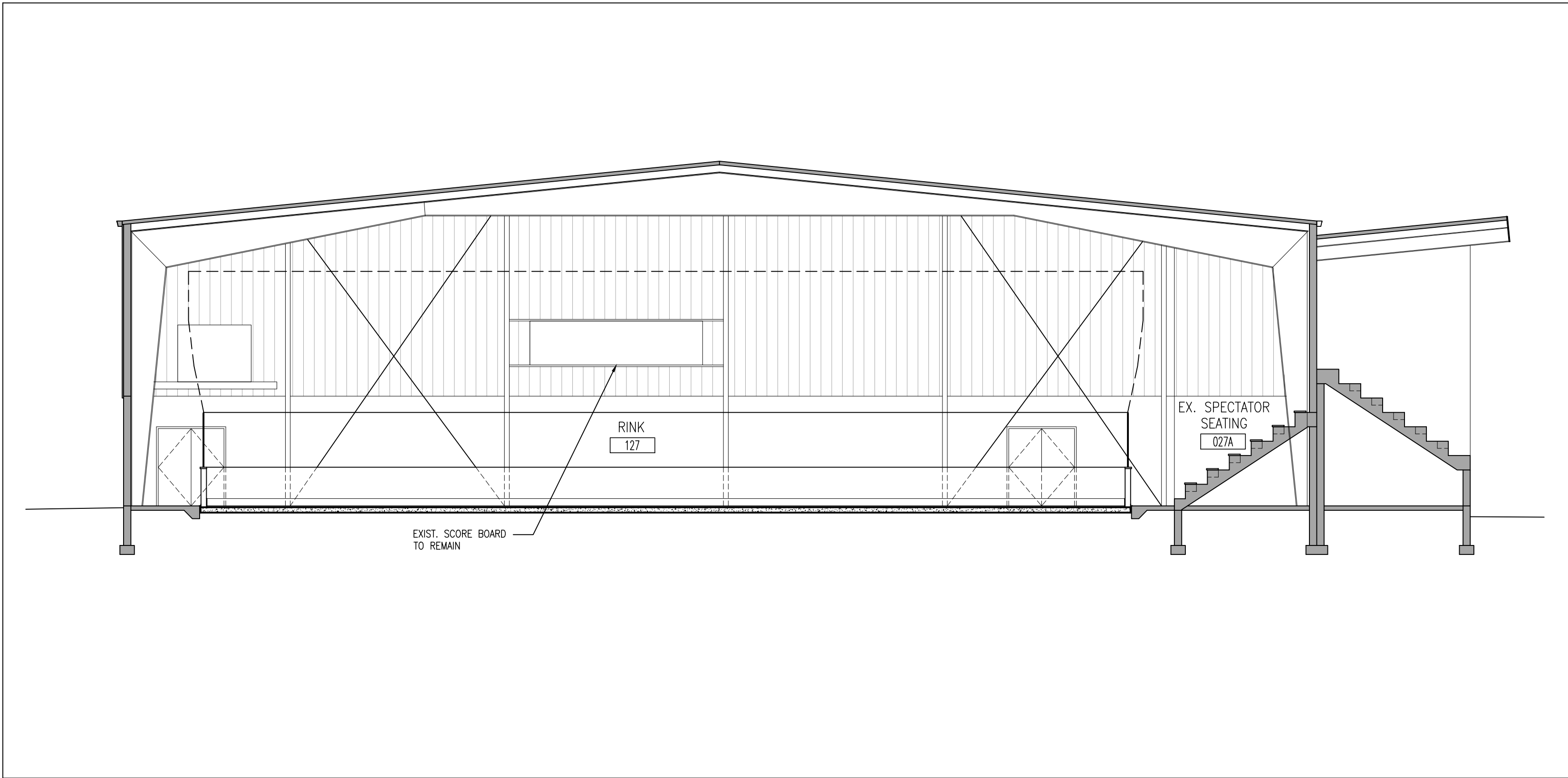
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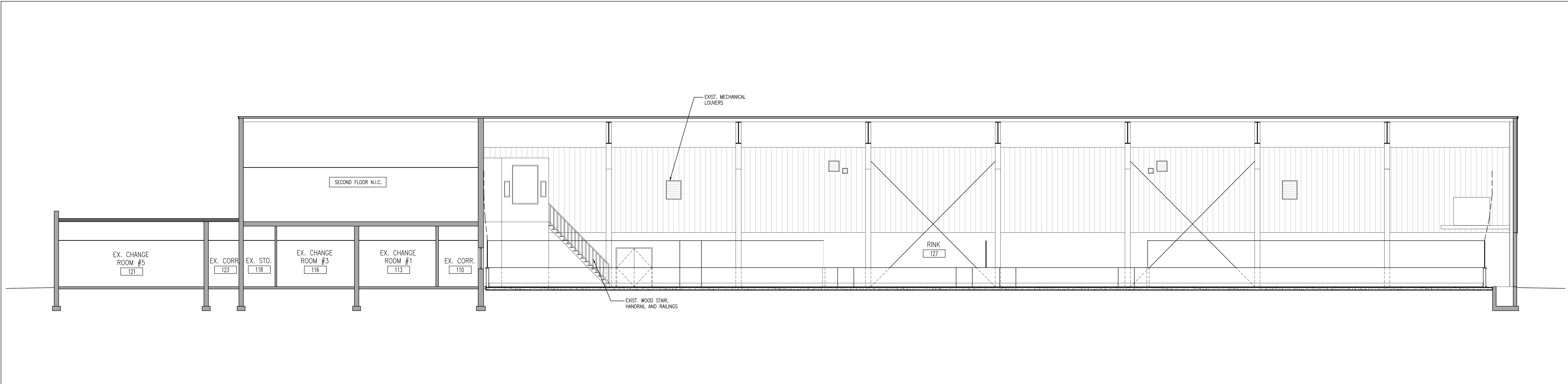
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3	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA



3 STAIR SECTION  
A401 1:20



2 BUILDING SECTION  
A401 1:100

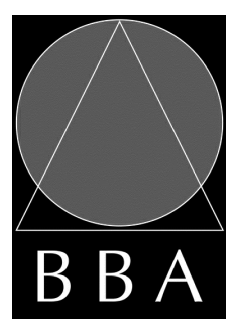


1 BUILDING SECTION  
A401 1:100

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**BUILDING SECTIONS**



BARRY BRYAN  
ASSOCIATES

Architects  
Engineers  
Project Managers

250 Water Street  
Suite 201  
Whitby, Ontario  
L1N 0G5

Tel: (905) 666-5252  
Fax: (905) 666-5256  
e-mail: bba@bba-arch.com

DESIGN BY: BBA

DRAWN BY: NV

CHECKED BY: DM

DATE: JUNE 23, 2023

SCALE: 1:50

FILE: 22119B A401 DWG

PROJECT NO: **22119B**  
DRAWING NO: **A401**



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NO.	ISSUES	DATE	BY
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2	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA

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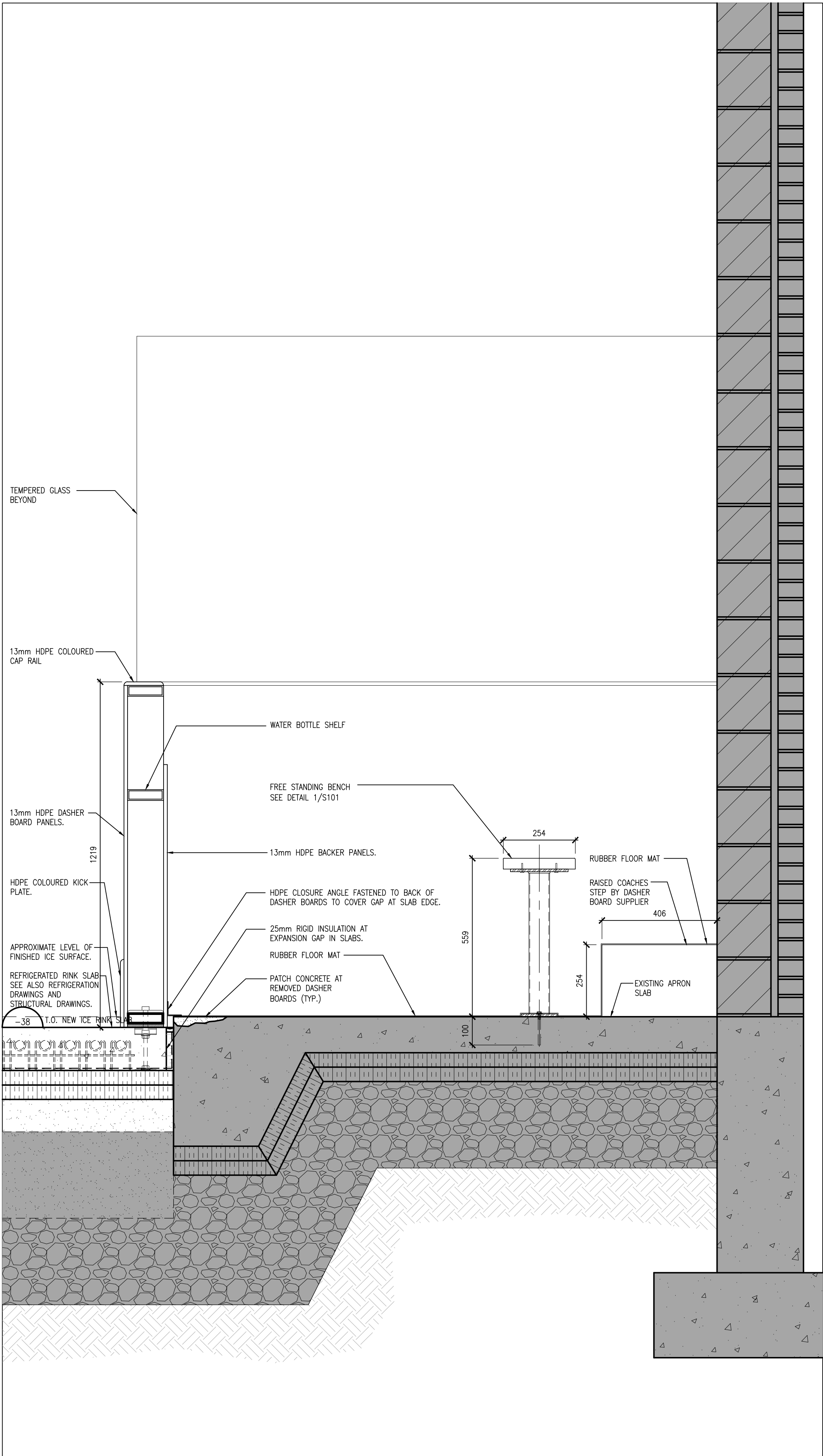
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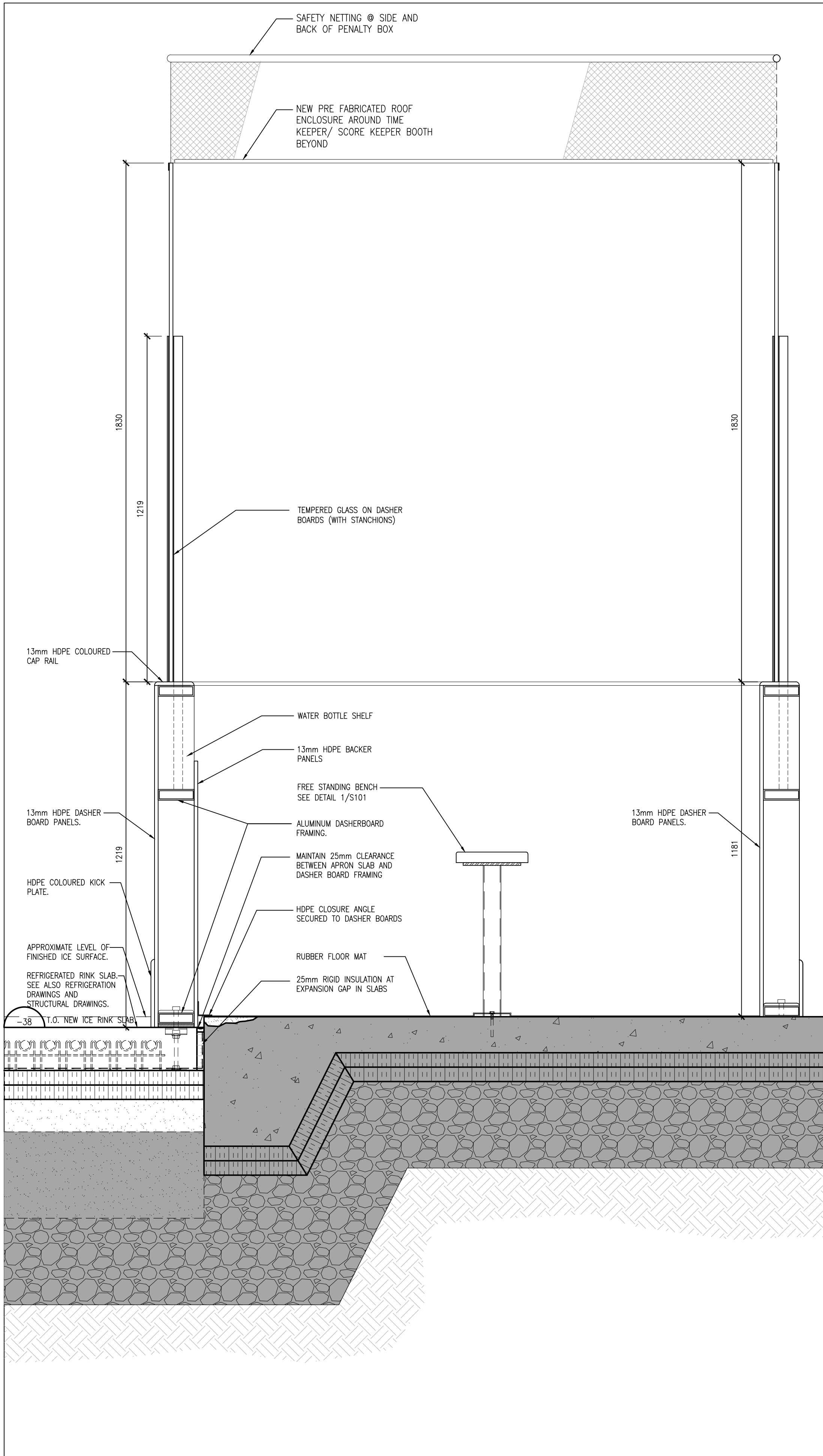
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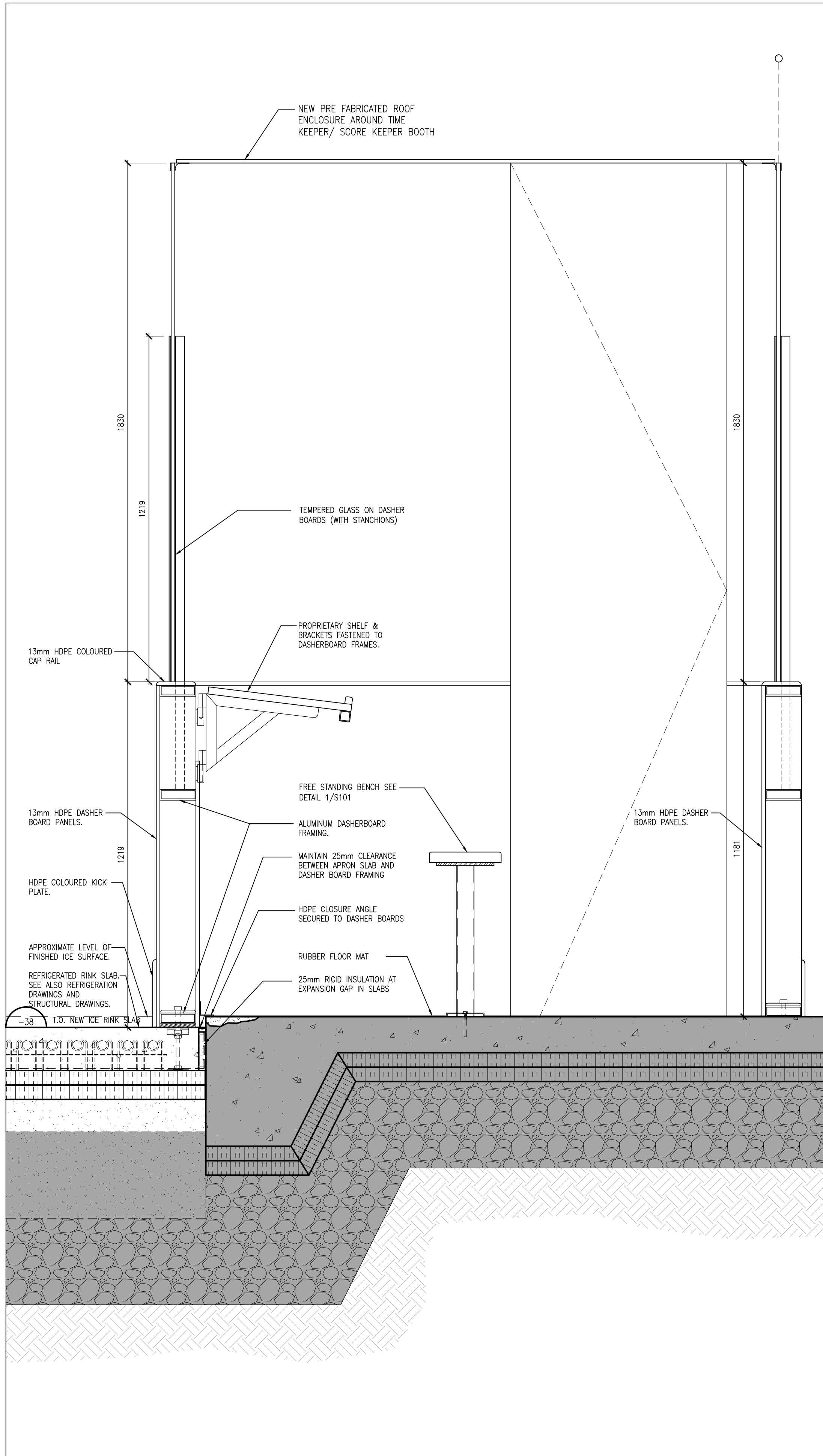
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3  
A501  
TYPICAL PLAYERS BOX SECTION  
1:10



2  
A501  
PENALTY BOX SECTION  
1:10

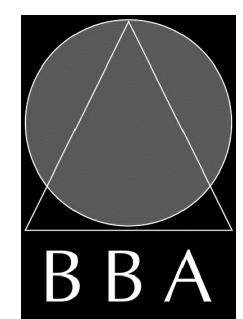


1  
A501  
TIME KEEPERS BOX SECTION  
1:10

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**TYPICAL ARENA DETAILS**



**BARRY BRYAN  
ASSOCIATES**  
Architects  
Engineers  
Project Managers  
250 Water Street  
Suite 201  
Whitby, Ontario  
L1N 0G5  
Tel: (905) 666-5252  
Fax: (905) 666-5256  
email: info@bba-arch.com



DESIGN BY:  
BBA  
DRAWN BY:  
LJO  
CHECKED BY:  
DM  
DATE:  
NOV. 2023  
SCALE:  
1:10  
FILE:

PROJECT NO:  
**22119B**  
DRAWING NO:  
**A501**



# Clarington

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|                      |                      |


NO.	REVISIONS	DATE	BY
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## ORONO ARENA AND

## COMMUNITY CENTRE PINK REPLACEMENT AND

### CHANGEROOM RENO.

ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

### FIT TO USE ARENA DETAILS

--	--




ASSOCIATES	BBA	DATE:
	DRAWN BY:	% COMPLETE:

Project Managers	CHECKED BY:	INITIAL:
250 Water Street	DM	

L1N 035	NOV. 2023
Tel: (02) 886 8060	SCALE:

<p>          UNIVERSITY OF NORTH CAROLINA          CHAPEL HILL, NC 27515-7050          TEL: 919/919-2400 FAX: 919/919-2400          WWW: WWW.UNC-CH.EDU       </p>	<p>          DUKE UNIVERSITY          DURHAM, NC 27708-0101          TEL: 919/286-2000 FAX: 919/286-2000          WWW: WWW.DUKE-EDU       </p>
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**22119B | A502**

2 DASHER BOARD AT MAN GATE  
A502 1:10

1  
A502

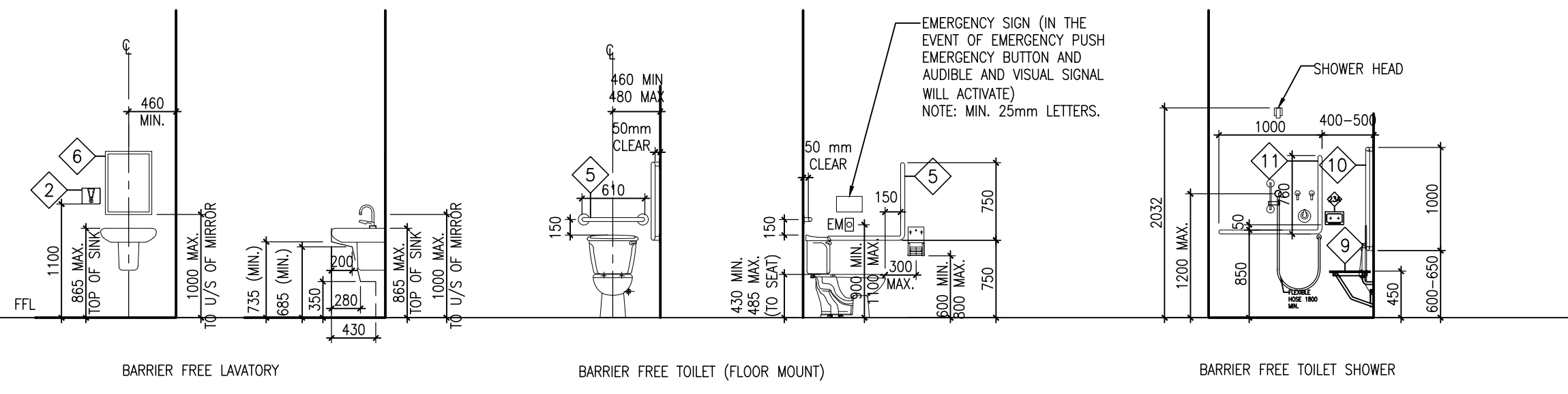
DASHER BOARD AT MACHINE GATE

1:10

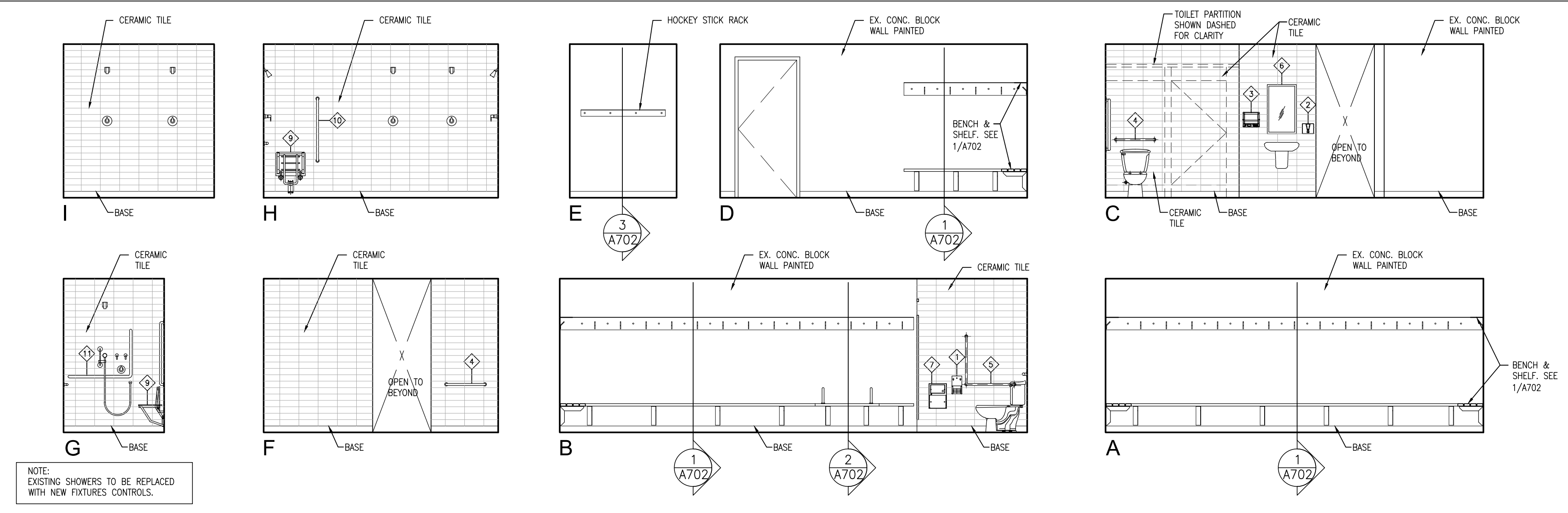
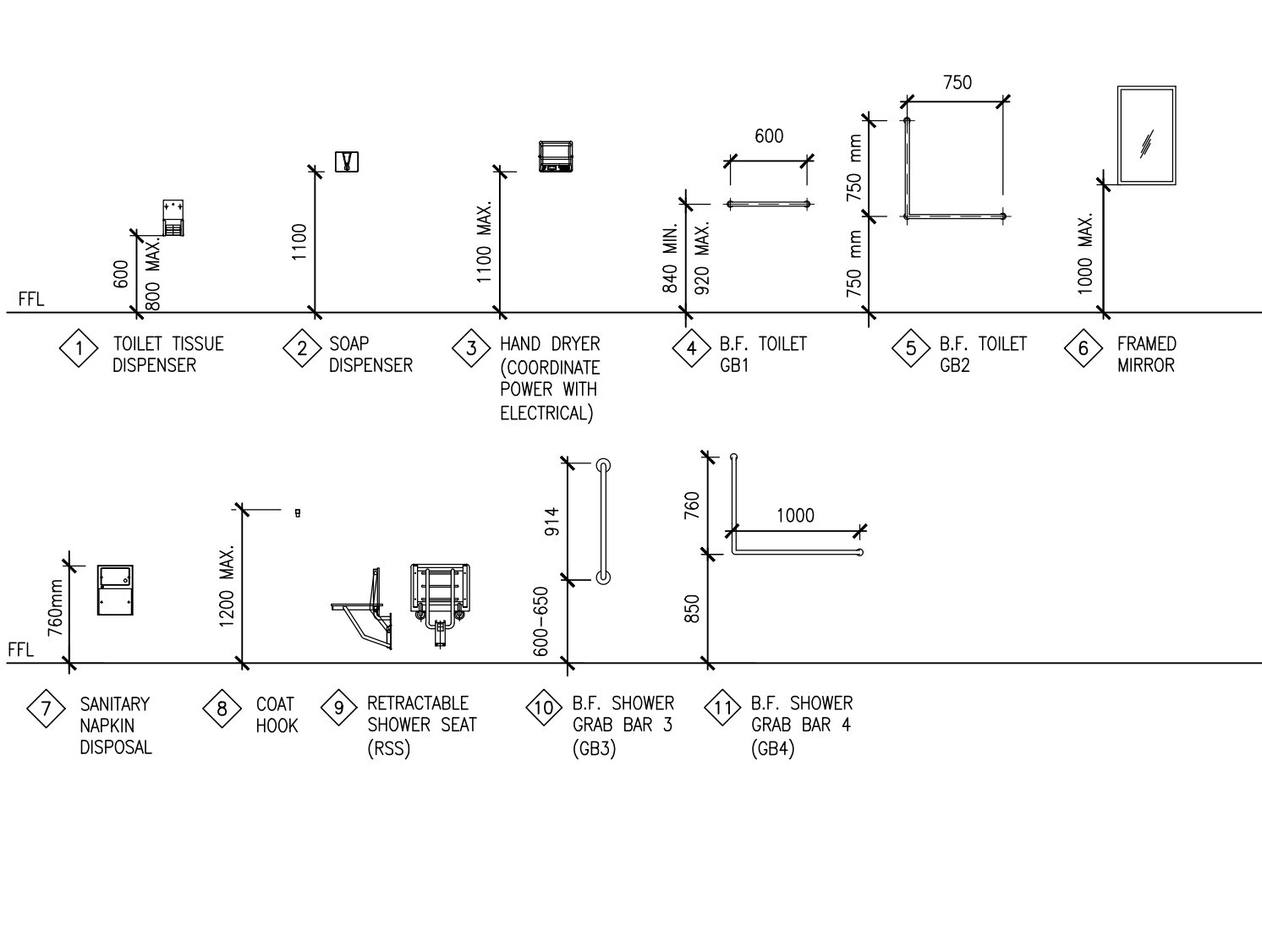


## BARRIER FREE MOUNTING HEIGHT REQUIREMENTS

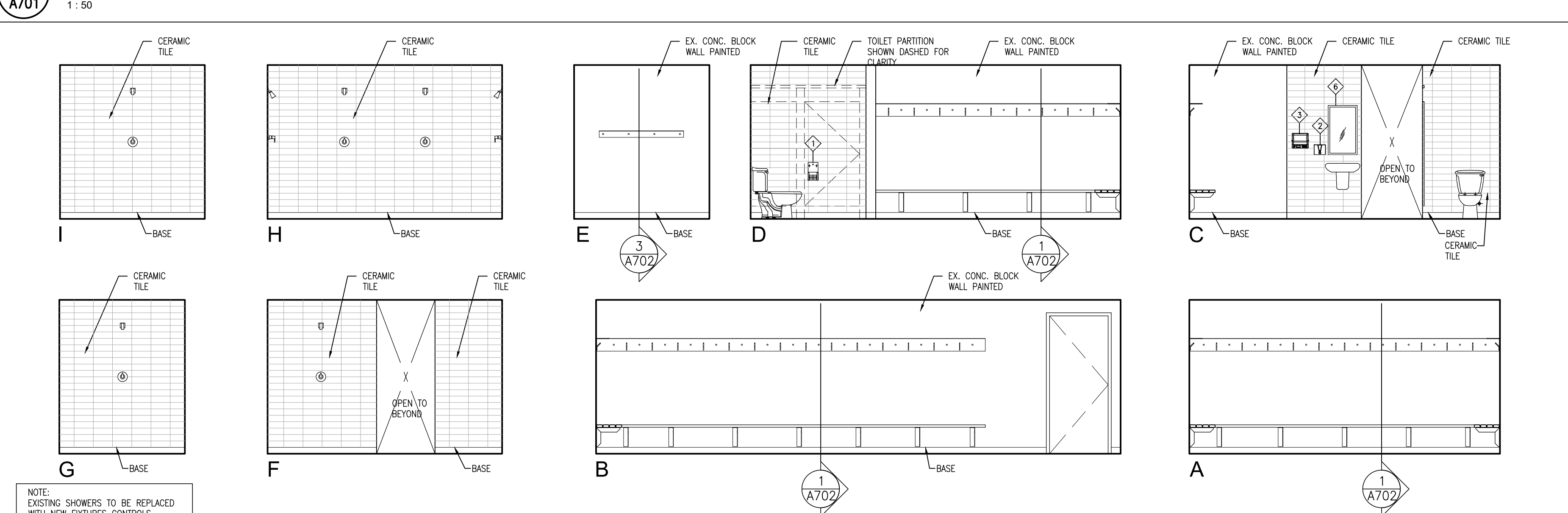
- NOTES:
- GRAB BARS SHALL BE MIN. 35mm Ø, 40mm Ø MAX.
  - CLEARANCE FOR GRAB BARS TO BE MIN. 35mm, 50mm MAX.
  - GRAB BARS TO HAVE SLIP RESISTANT SURFACE.
  - INSTALL GRAB BARS TO SUPPORT LOADING REQUIRED BY THE ONTARIO BUILDING CODE.
  - LOCATE COAT HOOK ON SIDEWALL OF TOILET STALL DOOR AT 1200mm MAX. ABOVE FINISHED FLOOR AND PROJECTING NOT MORE THAN 50mm.
  - ALL FIXTURES SHALL CONFORM TO BARRIER-FREE HEIGHTS OUTLINED IN THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
  - ALL ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
  - INSTALL DOOR OPERATOR, PUSH BUTTONS AND PUSH TO LOCK DEVICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
  - INSTALL EMERGENCY CALL SYSTEM IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
  - PAPER TOWEL DISPENSER MOUNTED 850mm TO EDGE OF LAVATORY.



## WASHROOM ACCESSORIES MOUNTING HEIGHTS



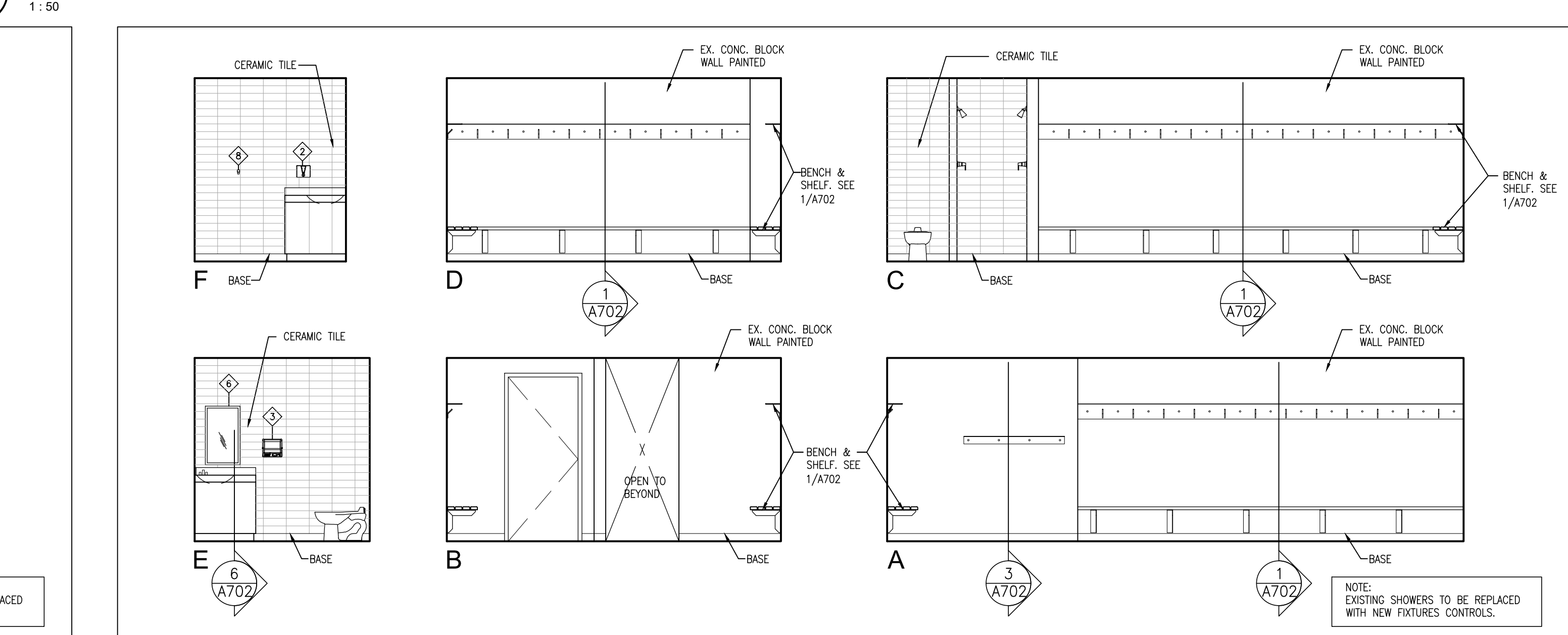
## INTERIOR ELEVATION - CHANGE ROOM #6



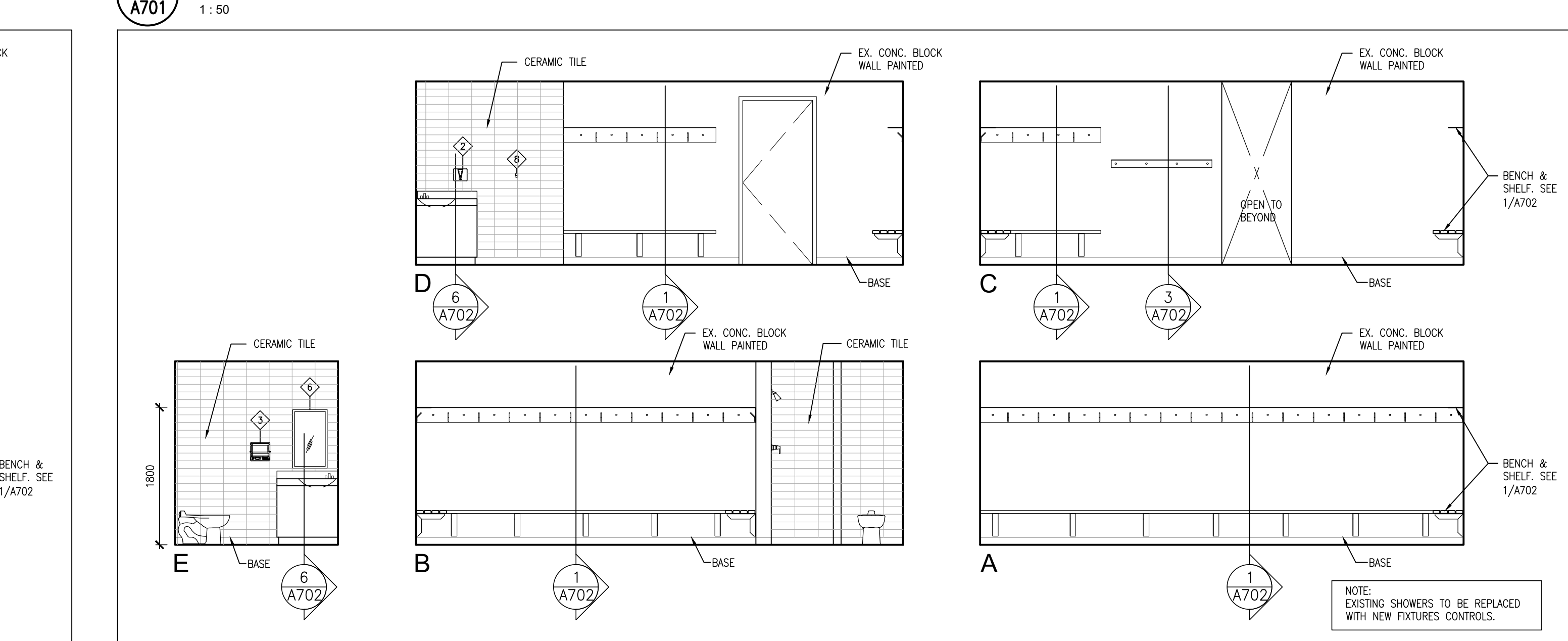
## INTERIOR ELEVATION - CHANGE ROOM #5



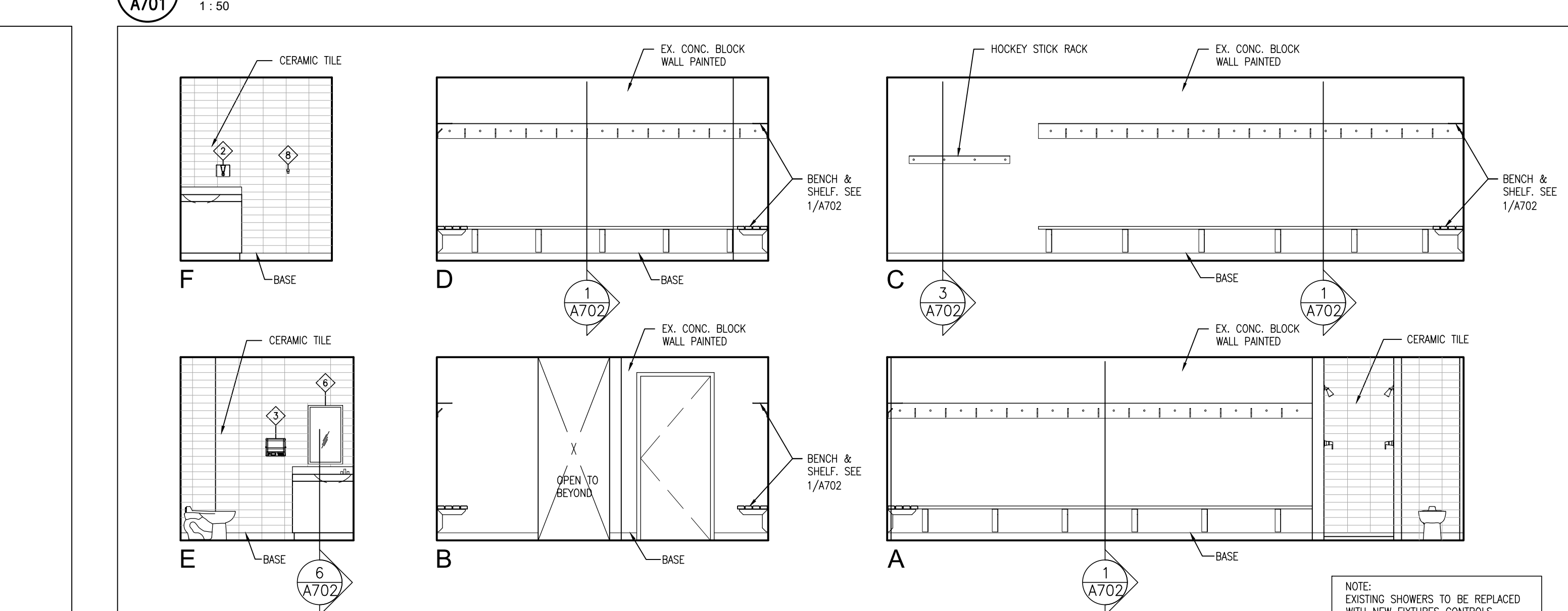
## INTERIOR ELEVATION - CHANGE ROOM #4



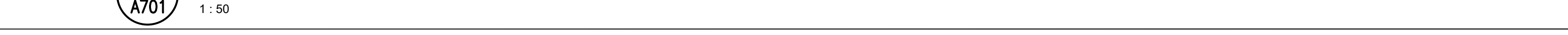
## INTERIOR ELEVATION - CHANGE ROOM #3



## INTERIOR ELEVATION - CHANGE ROOM #2



## INTERIOR ELEVATION - CHANGE ROOM #1



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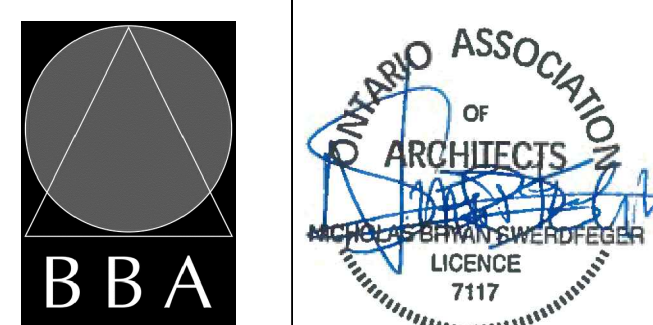
**Clarington**

NO.	ISSUES	DATE	BY
1	ISSUED FOR PRICING	AUG. 17, 2023	BBA
2	ISSUED FOR PERMIT & TENDER	DEC. 4, 2023	BBA
3	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**INTERIOR ELEVATIONS**



**BARRY BRYAN ASSOCIATES**  
Architects  
Engineers  
Project Managers  
250 Water Street  
Suite 201  
Whitby, Ontario  
L1N 6G5  
Tel: (905) 666-5252  
Fax: (905) 666-5256  
e-mail: bba@bba-arch.com

DESIGN BY: BBA  
DRAWN BY: NV  
CHECKED BY: NV  
DATE: JUNE 19, 2023  
SCALE: AS NOTED  
FILE: 22119B A701.DWG

PROJECT NO:  
**22119B**

DRAWING NO:  
**A701**



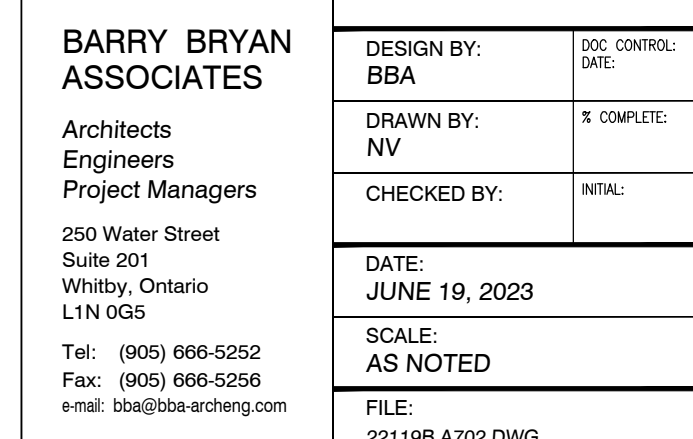


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2	ISSUED FOR PERMIT & TENDER	DEC. 4, 2023	BBA
3	ISSUED FOR CONSTRUCTION	FEB 5, 2024	BBA

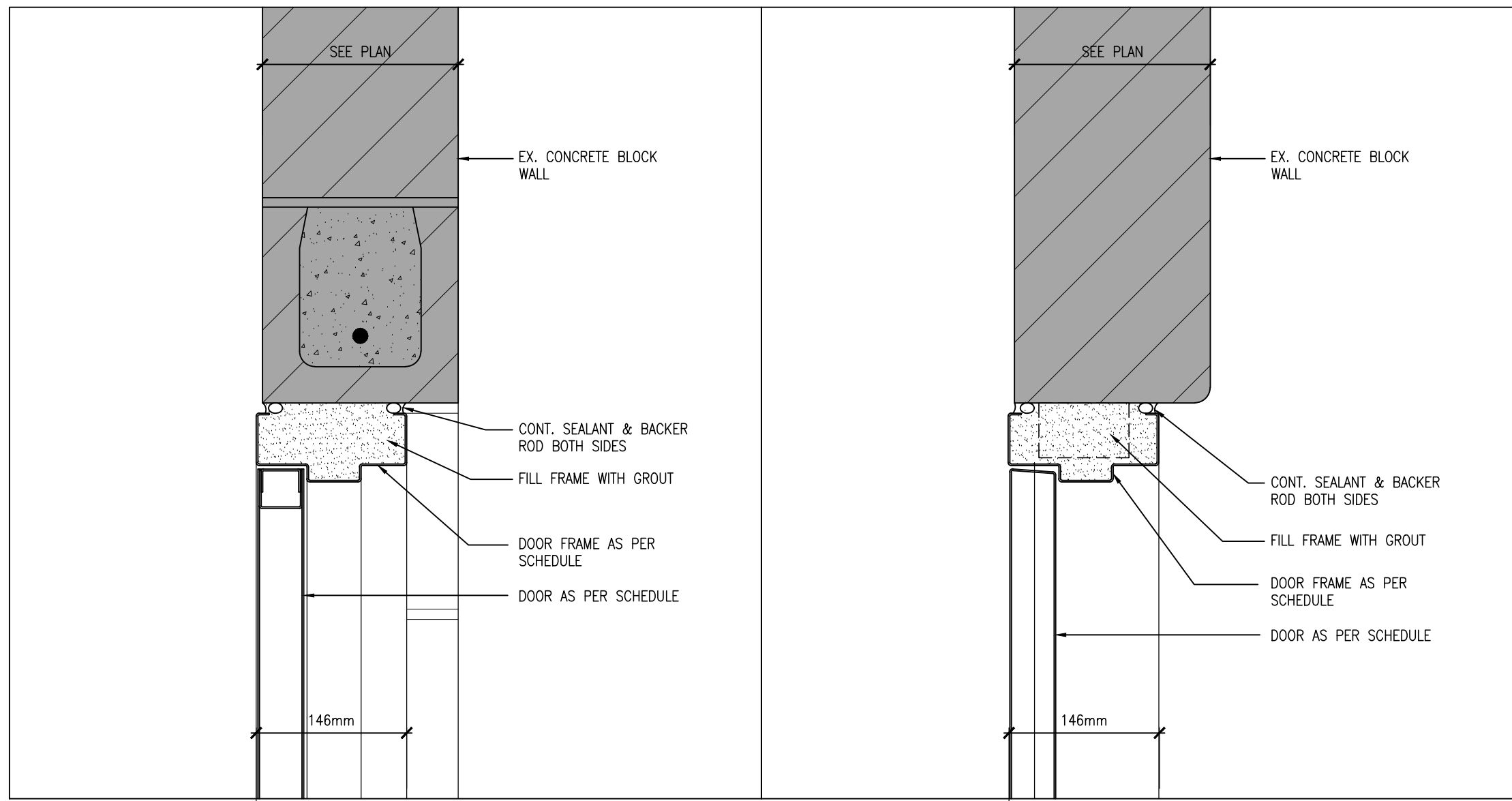
NO.	REVISIONS	DATE	BY

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
MILLWORKS

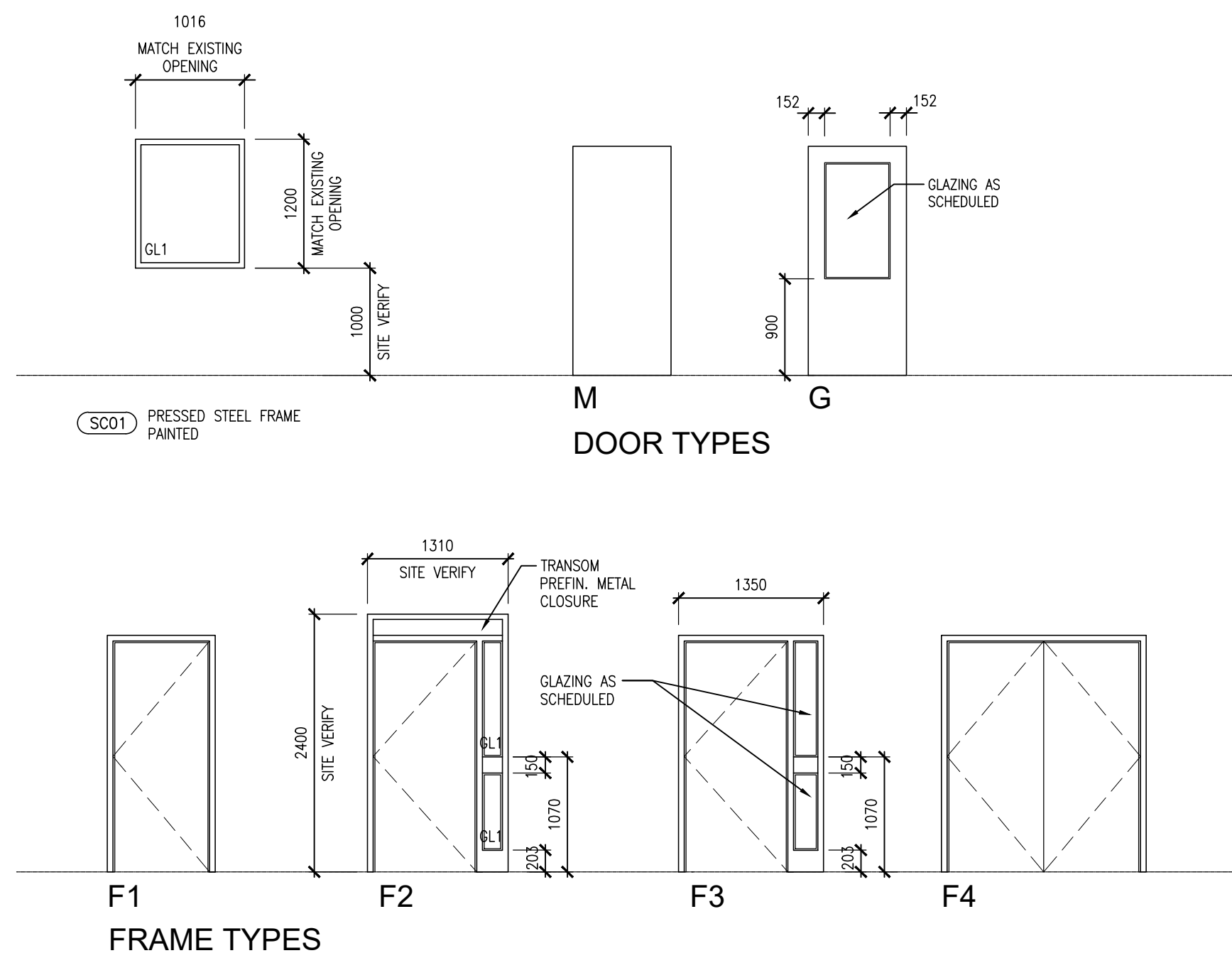
PROJECT NO: <b>22119B</b>	DRAWING NO: <b>A702</b>
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DETAIL H1

DETAIL J1



DOOR TYPES

FRAME TYPES

GLAZING LEGEND

GL1 25mm SEALED TEMPERED DOUBLE GLAZED, INSULATED UNITS.  
TO 6mm TEMPERED GLASS  
FR FIRE RATED GLASS  
FRL FIRE RATED LAMINATED GLASS

GENERAL NOTES

- A. GLASS PANELS IN DOORS TO COMPLY WITH BARRIER FREE VISIBILITY REQUIREMENTS.  
B. ALUMINUM EXTERIOR DOORS TO HAVE INSULATED FRAMES.  
C. PREPARE DOORS AND FRAMES FOR ELECTRONIC HARDWARE WHERE INDICATED. CONDUITS SHALL BE CONCEALED IN FRAMES.  
D. ALL DOORS IN FIRE SEPARATION LOCATIONS SHALL HAVE LATCHING DEVICE.  
E. PRESSED STEEL FRAME DEPTHS SHALL BE 146MM UNLESS OTHERWISE NOTED.

Table with 2 columns: FINISH ABBREVIATION LEGEND and NOTES. The legend lists materials like ACP, AL, ALUM, CB, CLC, CT, DB, EX, EXP, FFL, FRP, FRF, G, GB, HM, MP, MTL, OH and their corresponding finishes. The notes provide additional instructions for the finishes.

Table with 10 columns: ROOM, FLOOR, BASE HT, WALLS, CEILING, CEILING HEIGHT, REV, and REMARKS. It lists various rooms like EXISTING CORRIDOR, EXISTING CHANGE ROOM #1, EXISTING SHOWER, EXISTING WC, EXISTING REFEREE, EXISTING SHOWER, EXISTING WC, EXISTING CHANGE ROOM #3, EXISTING SHOWER, EXISTING WC, EXISTING CHANGE ROOM #4, EXISTING SHOWER, EXISTING WC, EXISTING CORRIDOR, EXISTING CHANGE ROOM #5, EXISTING SHOWER, EXISTING WC, EXISTING CHANGE ROOM #6, EXISTING SHOWER, EXISTING WC, and EXISTING REFRIGERATION.

Table with 10 columns: DOOR, TYPE, MATERIAL, FINISH, GLASS, TYPE, FRAME, MATERIAL, FINISH, FRAME, DOOR HARDWARE, and REMARKS. It lists various doors like 110, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 127A, 127B, 127C, 127D, 127E, 127F, 127G, 131, and 132.

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Table with 4 columns: NO., ISSUES, DATE, and BY. It lists issues like 'ISSUED FOR PRICING', 'ISSUED FOR PERMIT & TENDER', and 'ISSUED FOR CONSTRUCTION'.

Table with 4 columns: NO., REVISIONS, DATE, and BY. It lists revisions for the drawing.

PROJECT: ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO.

2 PRINCESS STREET ORONO, ONTARIO L0B 1M0 MUNICIPALITY OF CLARINGTON

DRAWING: ROOM FINISH, DOOR AND FRAME SCHEDULE

Professional seal and contact information for Barry Bryan Associates, including the Ontario Association of Architects logo, company name, address, phone, fax, email, and project details.



## GENERAL

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, LATEST EDITION.
- CONFORM TO OWNER'S GENERAL SPECIFICATIONS INCLUDING ALL SAFETY REQUIREMENTS.
- SITE VERIFY ALL DIMENSIONS AND LEVELS.
- KEEP THE SITE THROUGHOUT THE WORK AREA IN A CLEAN AND ORDERLY CONDITION AT ALL TIMES TO THE SATISFACTION OF THE OWNER.
- THE LATEST EDITION OF ALL CODES AND STANDARDS SHALL BE USED.
- ALL STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH OTHER CONSULTANTS DRAWINGS.

## STRUCTURAL STEEL

- ALL STRUCTURAL STEEL SECTIONS TO BE C40.21M-300W.
- DESIGN FORCES INDICATED ON DRAWINGS FOR STRUCTURAL STEEL WORK ARE UN-FACTORED FORCES UNLESS NOTED OTHERWISE.
- ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. ALL BEAM CONNECTIONS TO BE STANDARD SHEAR CONNECTIONS IN COMPLIANCE WITH CSC, UNLESS NOTED OTHERWISE.
- FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO CSA S16.1.
- ALL WELDING SHALL CONFORM TO CSA W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.
- ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP APPLIED COAT OF PRIMER. SPOT PRIME ALL WELDED AREAS.
- REMOVE PAINT FILM FROM ALL STEEL SURFACES TO BE WELDED. SPOT PRIME AS REQUIRED.
- ALL WELDED CONNECTIONS SHALL BE WITH CSA W48 SERIES ELECTRODES.
- DO NOT CUT OR CORC ANY OPENINGS IN ANY STRUCTURAL STEEL MEMBERS WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- WHERE A STRUCTURAL STEEL SHAPE SHOWN ON THE DRAWINGS IS UNAVAILABLE, A SHAPE OF EQUAL OR GREATER SECTION PROPERTIES AND STRUCTURAL CAPACITY SHALL BE SUBSTITUTED, UPON APPROVAL BY OWNER AND CONSULTANT AT NO EXTRA COST.

## CONCRETE

- CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF CAN/CSA-A23.1 AND CAN/CSA-A23.3 WITH THE FOLLOWING PROVISION:

LOCATION	DESIGN STRENGTH (28 DAYS)	SUMP	EXPOSURE CLASS
EXTERIOR FOOTINGS AND PIERS	25 MPa	80± 30	F-1
INTERIOR FOOTINGS/ FOOTING WALLS AND PIERS	25 MPa	80± 30	N
SLAB ON GRADE	25 MPa	80± 30	N
ALL OTHER INTERIOR CONCRETE	25 MPa	80± 30	N
RINK SLAB	30 MPa	185± 20	N

- NO ADDITIONAL WATER SHALL BE ADDED AT THE JOB SITE. CONCRETE WHICH HAS BEEN WATERED OR DOES NOT MEET SPECIFICATIONS SHALL BE REJECTED.
- DURING WINTER WEATHER BELOW 5°C PROVIDE TEMPORARY HEATING OF CONCRETE IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1.
- WHEN PIPES, CONDUITS, OR SLEEVES ARE REQUIRED TO PENETRATE CONCRETE ASSEMBLIES, THE FOLLOWING SHALL BE OBSERVED:
  - SPACING OF SUCH ITEMS SHALL BE ≥ DIAMETERS ON CENTER.
  - CONCRETE SHALL NOT BE PENETRATED WITHIN 600mm OF CONCENTRATED LOADS.
  - ANY PENETRATION SHALL BE A MINIMUM OF 600mm FROM ALL EDGES SUCH AS ENDS AND TOPS OF WALLS.
  - FOR ANY PENETRATIONS GREATER THAN 300mm, CONSULT THE ENGINEER FOR REVIEW AND DETERMINATION OF EXTRA REINFORCEMENT REQUIREMENTS IF APPLICABLE.

## CONCRETE REINFORCEMENT

- THE CLEAR DISTANCE BETWEEN REINFORCING STEEL AND SURFACE OF CONCRETE SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE.

LOCATION	CLEAR COVER
FOOTINGS	75mm UNDERSIDE 50mm TOP AND ENDS
WALLS	50mm AGAINST EARTH (20M BAR OR GREATER) 40mm AGAINST EARTH (15M BAR) 40mm AGAINST FORM (20M BAR OR GREATER) 25mm AGAINST FORM (15M BAR)
SLABS	25mm TOP BARS 25mm BOTTOM BARS
COLUMNS/PIERS	40mm TO TIES
SURFACE IN CONTACT WITH GROUND	75mm

- STRUCTURAL GROUT SHALL BE NON-SHRINK, NON METALLIC M-BED STANDARD PREMIX BY Sika OR APPROVED EQUAL.
- DETAIL REINFORCING STEEL IN ACCORDANCE WITH "REINFORCING STEEL MANUAL OF STANDARD PRACTICE" LATEST EDITION.
- REINFORCING BAR SPLICES FOR DEFORMED BARS:
  - COLUMNS - COMPRESSION LAP UNLESS NOTED
  - WALLS - CLASS "B" TENSION SPLICE UNLESS NOTED
  - ALL OTHERS - CLASS "B" TENSION LAP UNLESS NOTED
- ALL REINFORCING STEEL SHALL BE DEFORMED HARD GRADE BILLET STEEL CONFORMING TO CSA G30.18 GRADE 400.
- WELDED STEEL WIRE FABRIC, PLAIN TYPE CONFORMING TO ASTM A1064/A1064M-17 IN FLAT SHEETS NOT ROLLED.
- ALL CONCRETE REINFORCEMENT MUST BE PROPERLY CHAIRED WITH APPROVED BAR SUPPORTS.
- PROVIDE CHAIRS, SPACER BARS, SUPPORT BARS AND OTHER ACCESSORIES TO SUPPORT REINFORCING IN ACCORDANCE WITH THE LATEST EDITIONS OF CSA A23.1 AND CSA A23.3. CHAIRS TO BE PLASTIC, PLASTIC TYPED OR CONCRETE. ALL THE WIRE, CHAIRS AND BAR SUPPORTS USED FOR COATED REINFORCING SHALL BE NON-METALLIC OR PROTECTED WITH ACCEPTABLE COATING.
- CHAIRS SHALL BE SPACED AT 1200mm O.C. MAXIMUM.

## SLAB ON GRADE

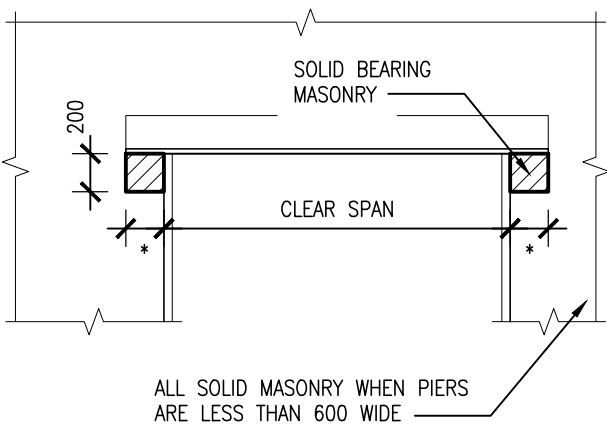
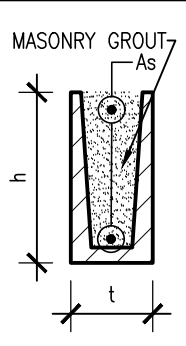
- CAST SLAB ON GRADE ON 200mm (8") MIN GRANULAR 'A' AND COMPACTED SUB-GRADE UNLESS NOTED OTHERWISE.
- SAWCUT WITHIN 6 TO 18 HOURS. REFER TO THE DRAWINGS FOR SAWCUT REQUIREMENTS.
- DO NOT CAST SLAB MORE THAN 30 METERS IN LENGTH IN EITHER DIRECTION. PLACE SLAB IN STRIP PATTERN, KEY CONSTRUCTION JOINTS AS DETAILLED.
- MAINTAIN MINIMUM SPECIFIED THICKNESS AT ALL DEPRESSIONS AND CHANGES IN ELEVATIONS.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATION OF ALL FINISHES, DEPRESSIONS AND SLOPES.
- WELDED WIRE MESH REINFORCING IN SLABS ON GRADE MUST BE PROPERLY CHAIRED. LIFTING OF THE WIRE MESH DURING POURS WILL NOT BE ACCEPTED.

## TEMPORARY WORKS

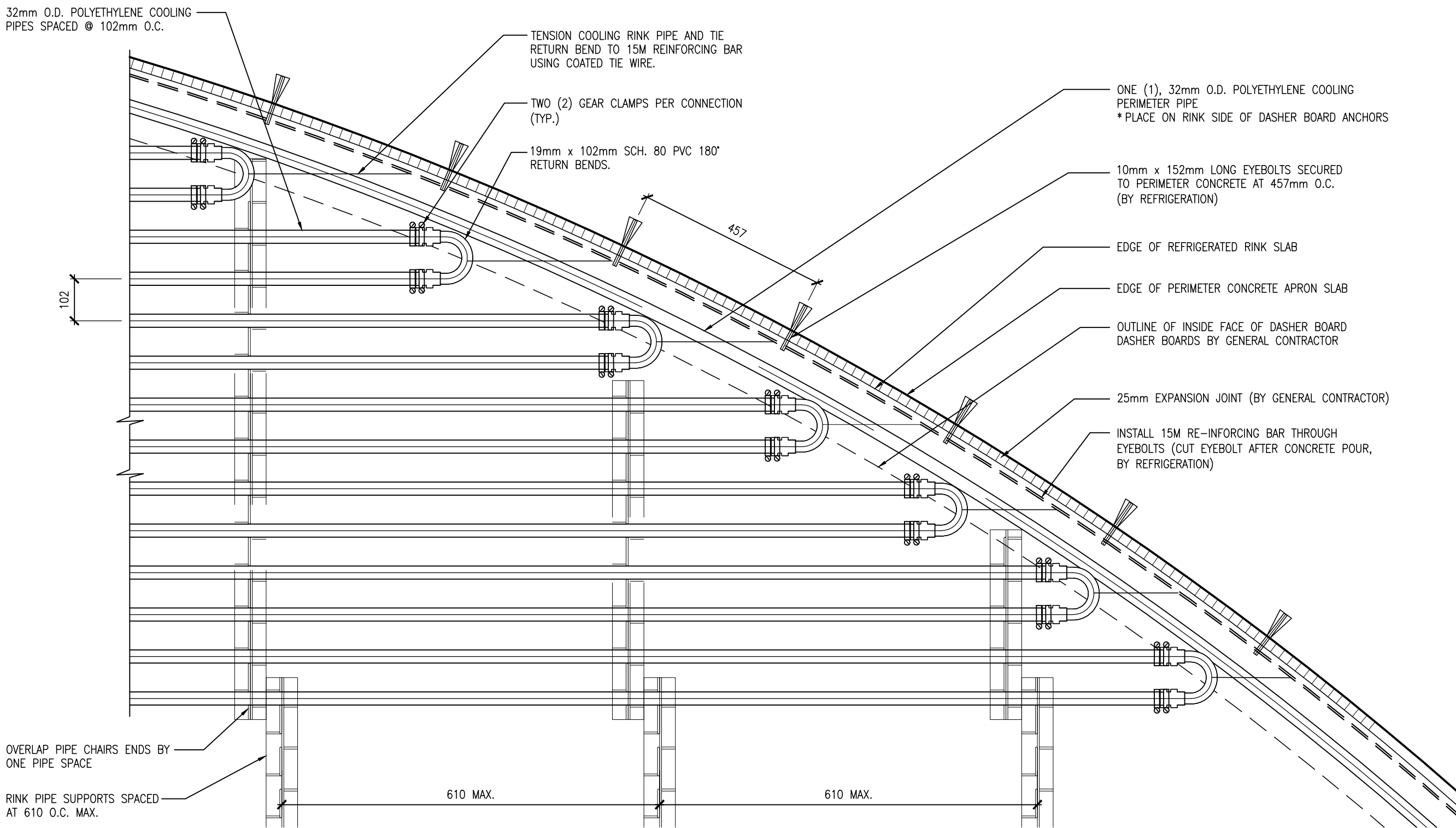
- THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE WORKS.
- IN THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNED AND FREE FROM EXCESSIVE DEFLECTION.
- 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.
- SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY WORKS FOR REVIEW BEFORE FABRICATION COMMENCES. SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.

## MASONRY LINTELS FOR MASONRY WALLS

CLEAR SPAN	TOP & BOT. REINF. FOR BLOCK THICKNESS L AND HEIGHT h														
	t	h	As	t	h	As	t	h	As	t	h	As			
UP TO 1200	90	190	1-10M	140	190	1-10M	190	190	2-10M	240	190	2-10M	290	190	2-10M
1200 TO 1800	90	190	1-15M	140	190	1-15M	190	190	2-10M	240	190	2-10M	290	190	2-10M
1800 TO 2400	-	-	-	140	190	1-15M	190	190	2-15M	240	190	2-15M	290	190	2-15M

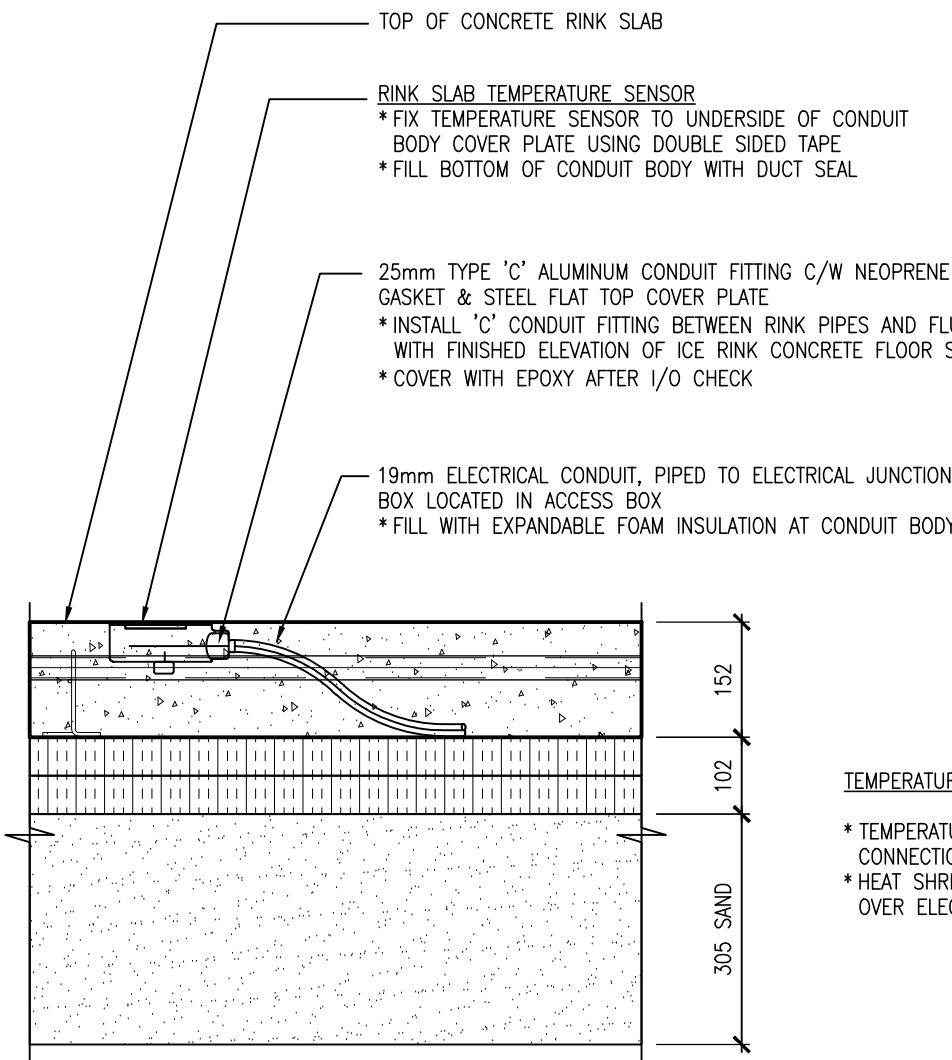


\* BEARING LENGTH  
200 (8") MINIMUM EACH END (BLOCK LINTELS)



## RINK PIPE RETURN BEND FASTENING

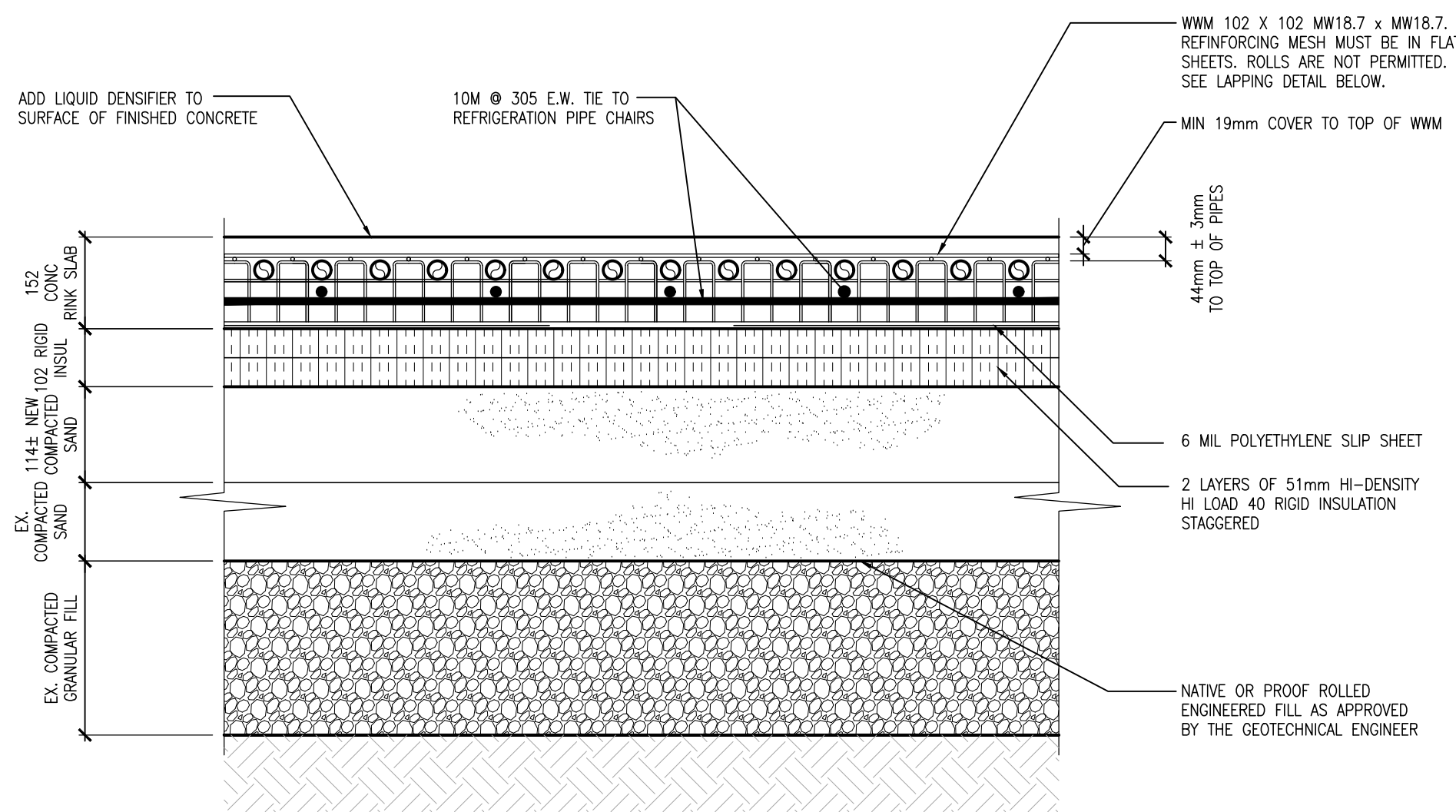
N.T.S.



TEMPERATURE SENSOR WIRING NOTES:  
\* TEMPERATURE SENSOR LEAD ELECTRICAL CONNECTION TO BE SOLDERED JOINT  
\* HEAT SHRINK TUBING TO BE APPLIED OVER ELECTRICAL CONNECTION

## RINK FLOOR SENSOR DETAIL

1:10



NOTES:

PROVIDE ADEQUATE CHAIRS TO SUPPORT REINFORCING AT NO LESS THAN 610mm CENTRES.

DO NOT SUPPORT REINFORCING STEEL ON REFRIGERANT PIPING.

NO CONCRETING APPARATUS IS TO BE SUPPORTED OFF OF THE REFRIGERANT PIPING SUPPORTS.

REFER TO SPECIFICATIONS FOR TOLERANCE REQUIREMENTS FOR SAND BED, INSULATION LAYER AND TOP OF RINK SLAB FINISHES.

A SURVEY ESTABLISHING THE ELEVATIONS OF THE TOP OF THE RIGID INSULATION LAYER SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF ANY REINFORCING CHAIRS, PIPING, REINFORCING ETC. SURVEY SHALL SHOW THAT TOLERANCES AS SPECIFIED ARE BEING MET.

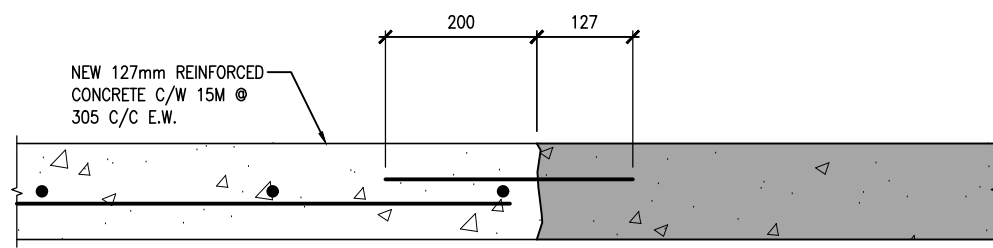
PROVIDE SURVEYS TO VERIFY TOLERANCES AND SUBMIT FINAL SURVEY OF RINK SLAB SURFACE TO CONSULTANT.

COORDINATE INSTALLATION OF RINK BOARD INSERTS WITH DASHERBOARD SUPPLIER.

NOTE: DO NOT PERMIT CONCENTRATED LOADS DURING CONSTRUCTION, ON FINISHED RINK SLAB.

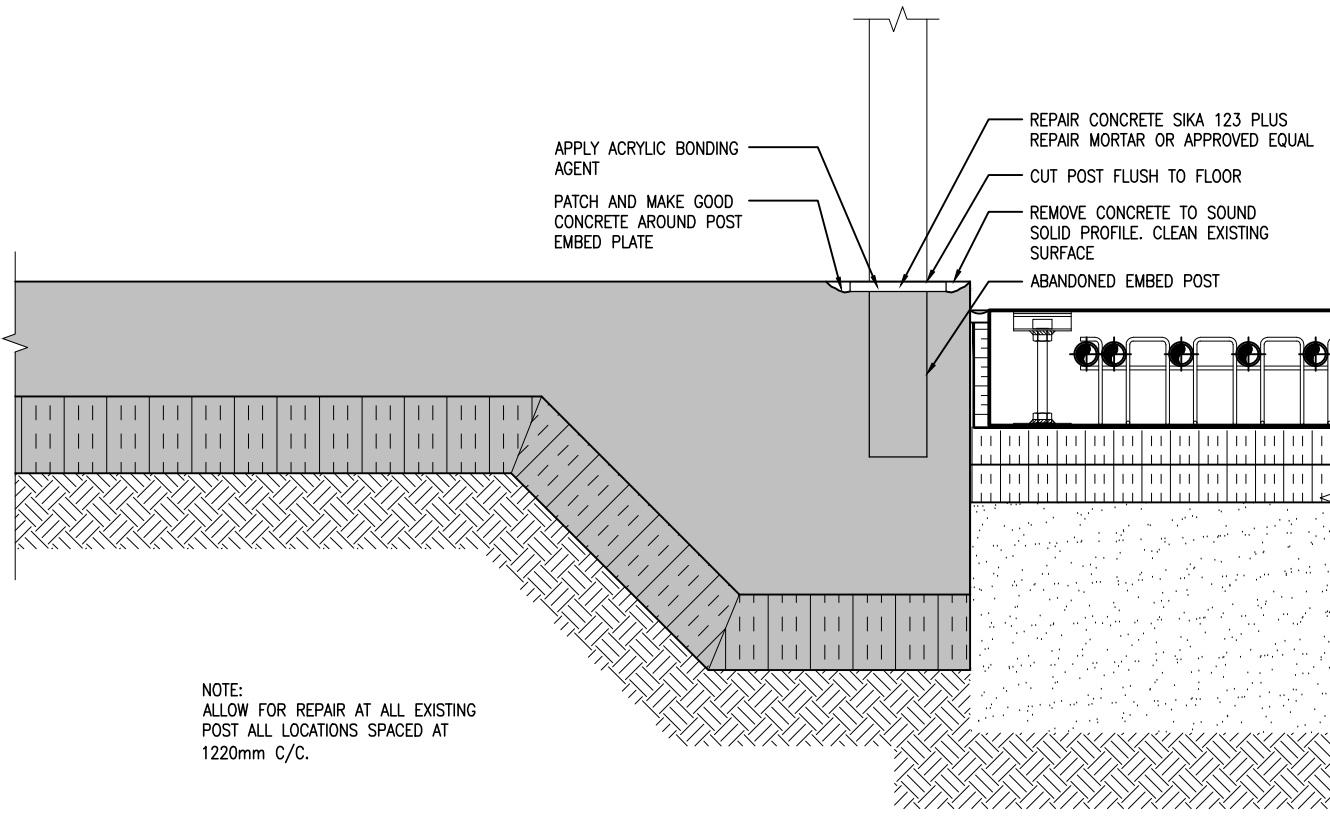
## RINK SLAB DETAILS

1:10



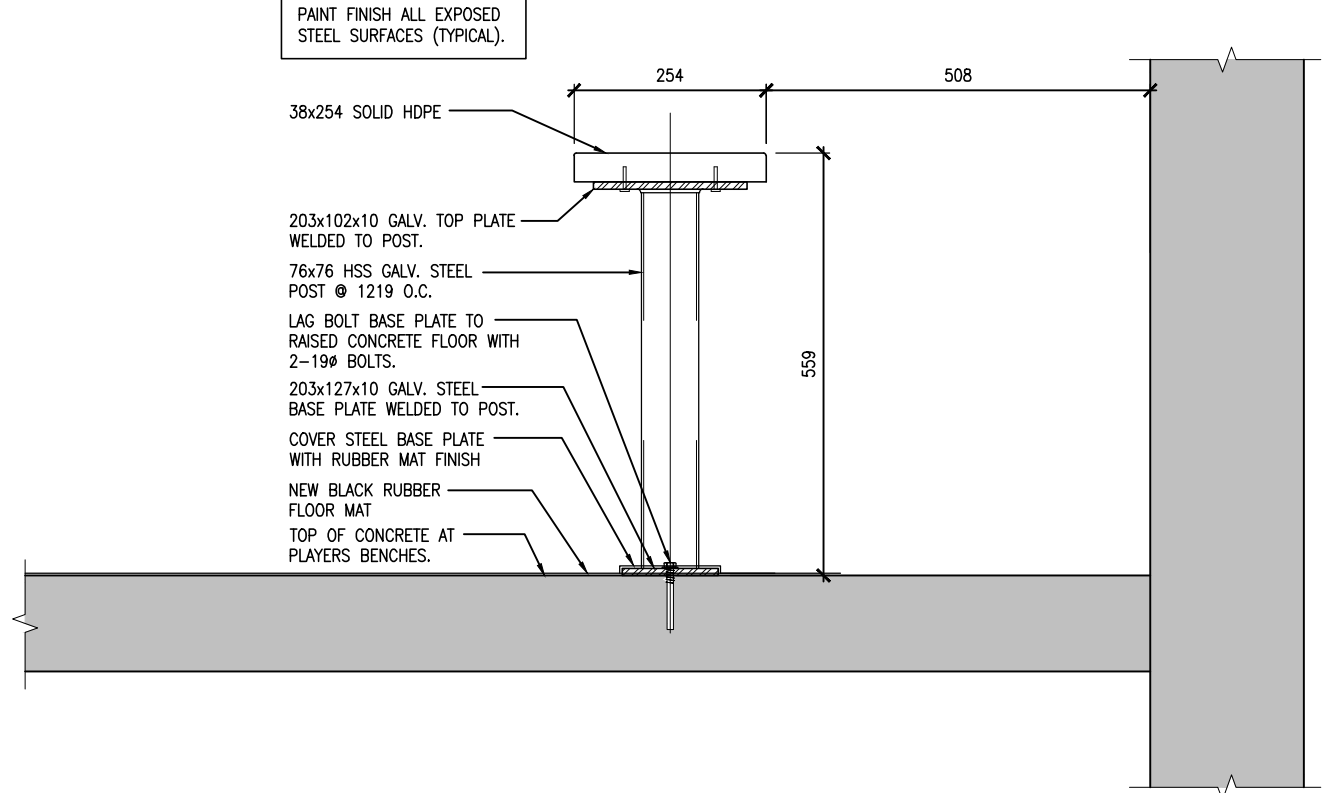
## TYPICAL CONCRETE SLAB INFILL DETAIL

1:10



## TYPICAL CONCRETE REPAIR DETAIL

1:10



## TYPICAL PLAYERS BENCH DETAIL

1:10

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# Clarington

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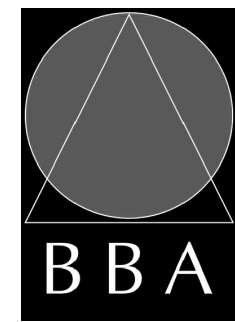
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PROJECT:  
**ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

GENERAL NOTES &  
TYPICAL DETAILS



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JULY 2023

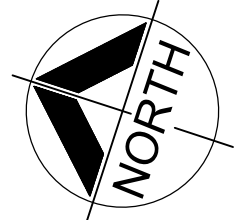
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DRAWING NO:  
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**Clarington**

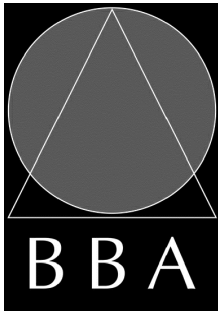
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PROJECT:  
**ORONO ARENA AND  
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RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

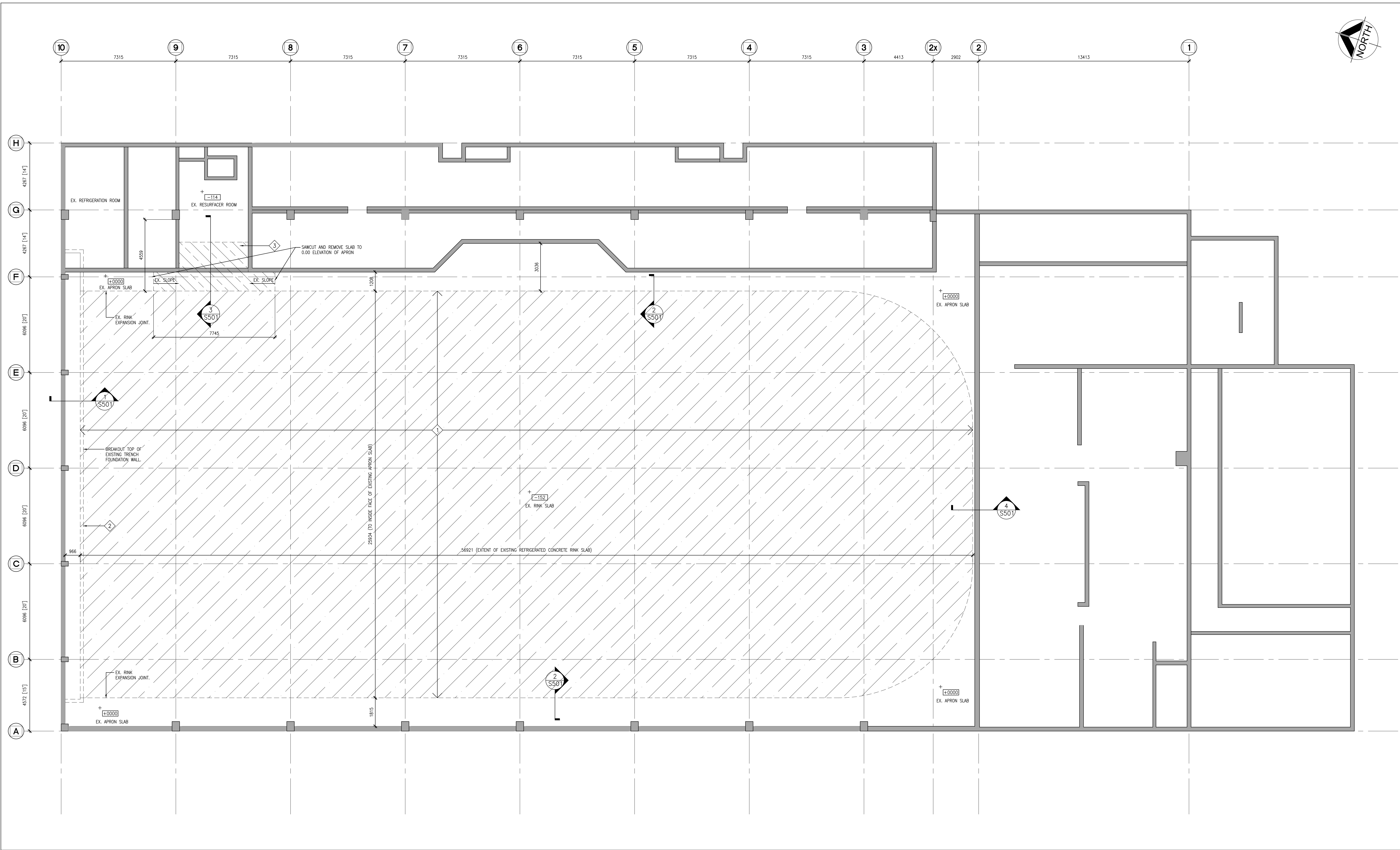
DRAWING:  
**FOUNDATION / RINK SLAB  
DEMOLITION PLAN**







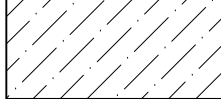






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FILE:  
PROJECT NO:  
**22119B**  
DRAWING NO:  
**S201**



**1 RINK FOUNDATION DEMOLITION PLAN**  
S201 1:100

DEMOLITION LEGEND	DEMOLITION FLOOR LEGEND	DEMOLITION NOTES	TYPICAL DEMOLITION NOTES
 EXISTING WALL, PARTITION OR COLUMN  DENOTES DEMOLITION OF BUILDING ELEMENT  EXISTING DOOR, FRAME AND TRIM TO REMAIN  DENOTES EXISTING RECEPTACLE ON DASHER BOARD	 HATCH EXTENT OF EXISTING 152mm REFRIGERATED RINK CONCRETE SLAB TO BE REMOVED. ASSUME ON (2) LAYERS OF 50mm INSULATION AND POLY VAPOUR BARRIERS TO BE REMOVED.  HATCH EXTENT OF EXISTING APRON SLAB TO BE REMOVED AND REPLACED WITH NEW IN-CELL CONCRETE SLAB/THICKENING.  SHADED AREA DENOTES EXISTING TO REMAIN	 1. REMOVE EXISTING REFRIGERATED RINK SLAB IN ITS ENTIRETY AS INDICATED INCLUDING ALL ASSOCIATED PIPING REINFORCING INSULATION ETC. REMOVE EXISTING FILL MATERIAL DOWN TO LEVEL SHOWN ON SECTIONS. DO NOT DISTURB EXISTING SUBDRAINAGE SYSTEMS. PROOF ROLL EXISTING SUBGRADE.  2. BREAKOUT TOP OF EXISTING HEADER TRENCH FOUNDATION WALL TO ACCOMMODATE NEW RINK SLAB INSTALLATION.  3. BREAKOUT EXISTING APRON SLAB AND TOE THICKENING FOR NEW RESURFACER ROOM PROFILE.  4. BREAKOUT AT EMBEDDED DASHER BOARD POSTS AND REPAIR SLAB. SEE 2/S101.	1. SITE VERIFY ALL DIMENSIONS AND CONDITIONS. 2. ALL WORK TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS FOR CONSTRUCTION PROJECTS. 3. PROVIDE PROTECTION IN LOCATIONS APPROVED BY THE OWNER AND CONSULTANT SO AS NOT TO DAMAGE EXISTING STRUCTURE OR PART THEREOF. 4. COMPLETE ALL DEMOLITION WORK NECESSARY TO COMPLETE THE RENOVATIONS AS SHOWN AND AS REQUIRED. DEMOLITION OF BUILDING ELEMENTS INCLUDES COMPLETE REMOVAL OF ALL ASSOCIATED FIXTURES, FITTINGS, HARDWARE, FASTENERS, EQUIPMENT AND ACCESSORIES UNLESS NOTED OTHERWISE. 5. MAINTAIN WORK AREAS AND STORAGE AREAS. 6. REMOVAL OF EXISTING FLOOR FINISHES IS TO INCLUDE COMPLETE REMOVAL OF BASE AND ALL ADHESIVES INCLUDING PREPARATION OF EXISTING SUBSTRATES TO RECEIVE NEW FLOORING SATISFACTORY TO THE MANUFACTURER OF NEW FLOOR FINISHES. ALLOW FOR EXCESSIVE LEVELING OF SLABS. 7. MAINTAIN EXISTING FIRE HOSE CABINETS AND FIRE RATINGS. 8. REMOVE ALL PROTRUSIONS OUT OFF FLOOR SLAB AND GRIND DOWN TO FLOOR LEVEL. 9. DISPOSE OF ALL MATERIALS OFF SITE. 10. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STRUCTURE OR FINISHES SHOWN TO REMAIN AND REPAIR / REPLACE SAME TO THE SATISFACTION OF THE OWNER AND CONSULTANT. 11. THE EXISTING FACILITY WILL REMAIN OPERATIONAL FOR THE DURATION OF CONSTRUCTION. THE GENERAL CONTRACTOR MUST ISOLATE THE CONSTRUCTION AREA FROM THE SURROUNDING FACILITY OPERATION WITH DUST TIGHT TARPS. THE EXISTING MECHANICAL VENTILATION SYSTEMS WITH THE CONSTRUCTION AREA MUST BE COVERED TO ELIMINATE DUST CIRCULATION THROUGH THE FACILITY. 12. THE GENERAL CONTRACTOR MUST WORK WITH THE TOWN TO PROVIDE TEMPORARY SIGNAGE DURING CONSTRUCTION AROUND THE WORK AREA FOR ANY FINDING. THE GENERAL CONTRACTOR WILL PROVIDE, INSTALL AND REMOVE ALL TEMPORARY SIGNAGE. 13. ALLOW FOR DISCONNECTION TEMPORARILY AND PROTECTION OF CO2 SENSORS AND CARBON MONOXIDE THROUGHOUT CONSTRUCTION.



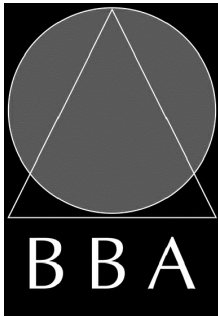
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PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**


2 PRINCESS STREET L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

**RINK FOUNDATION PLAN &  
PART ROOF FRAMING  
PLAN**



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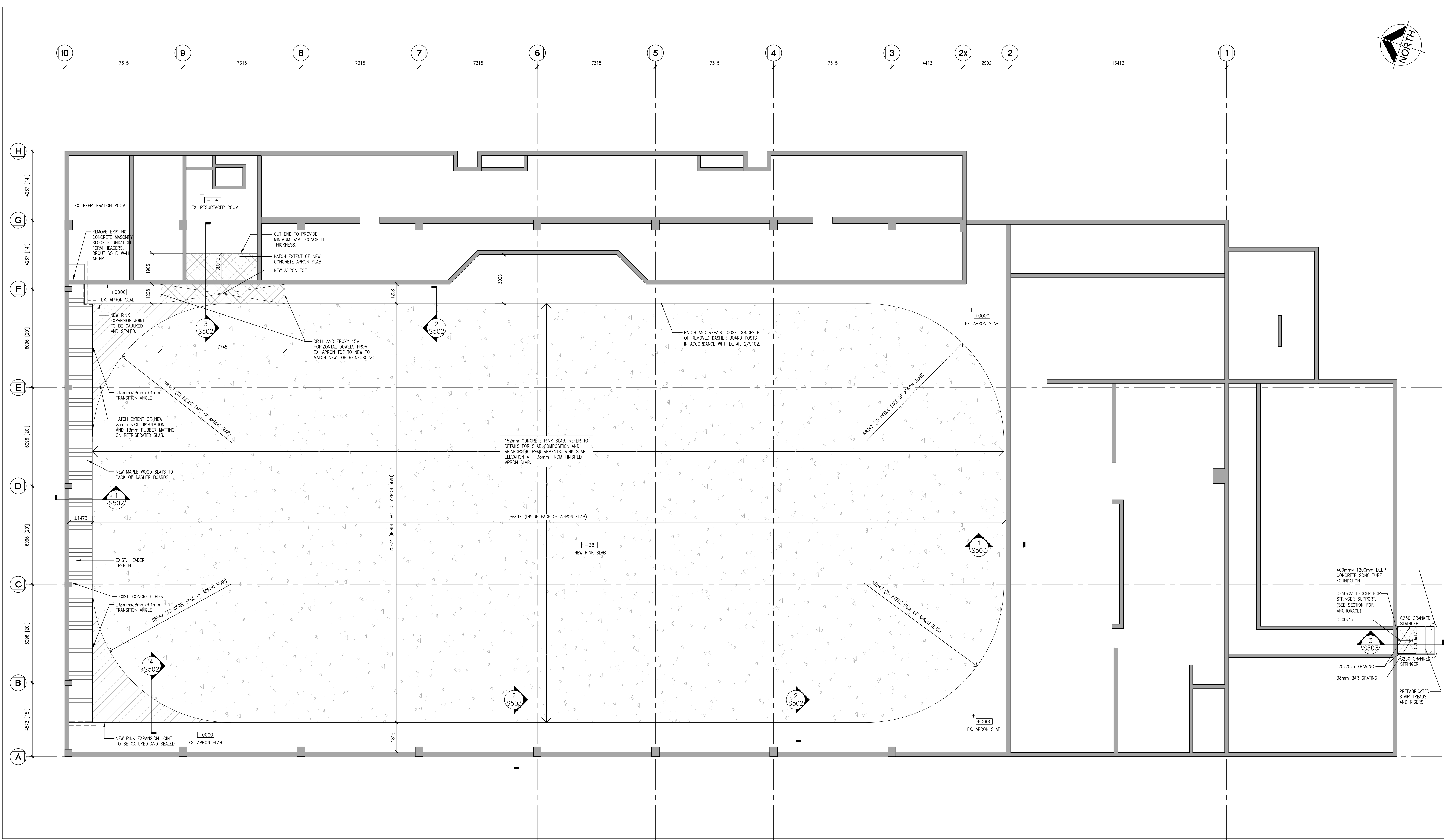
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D.P. McLAUGHLIN  
100161893  
PROVINCE OF ONTARIO

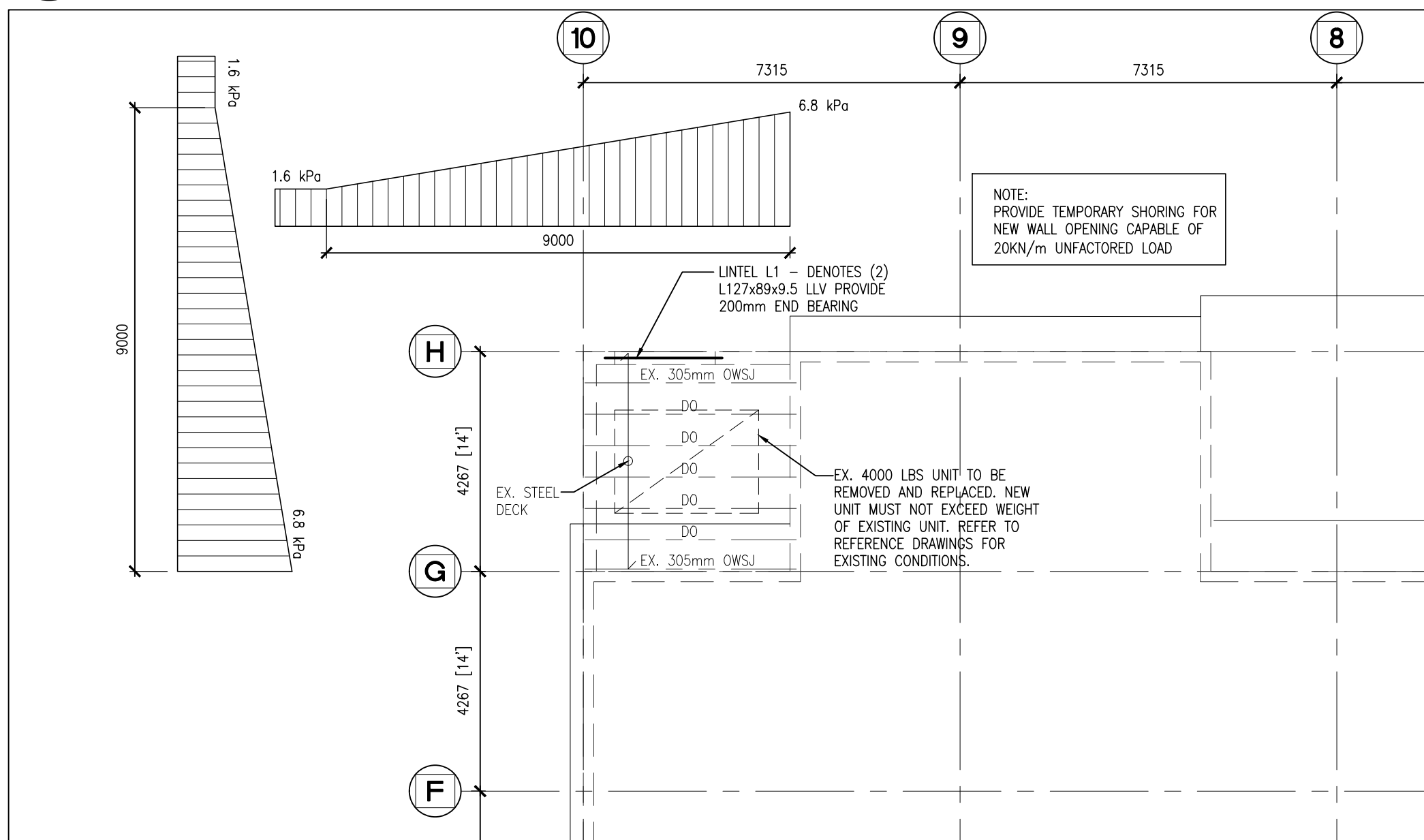
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PROJECT NO:  
**22119B**

DRAWING NO:  
**S202**



**1 RINK FOUNDATION PLAN**  
S202  
1:100



**2 PART ROOF FRAMING PLAN**  
S202  
1:100

**FOUNDATION PLAN NOTES:**

- FINISHED GROUND FLOOR IS AT ELEVATION 0.00 EXCEPT AS CROSSED AND NOTED. ELEVATIONS FOR AREAS CROSSED AND NOTED ARE TO BE READ FROM FINISHED FLOOR ELEVATION 0.00.
- ALL EXTERIOR FOOTINGS SHALL HAVE A MINIMUM SOIL COVER OF 1200mm AND SHALL BE LOWERED AS REQUIRED TO ENSURE THIS RESULT.
- ALL FOOTINGS TO BE CENTERED UNDER PIERS, WALLS AND OR COLUMNS EXCEPT AS NOTED ON PLAN.
- SEE COLUMN SCHEDULE FOR ELEVATION OF UNDERSIDE OF BASE PLATE.
- ALL FOOTINGS SHALL BEAR ON UNDISTURBED NATIVE SOIL AS APPROVED BY THE GEOTECHNICAL ENGINEER. REPORT ANY DOUBTFUL BEARING CONDITIONS TO THE STRUCTURAL ENGINEER BEFORE PLACING FOOTINGS. REFER TO SOILS REPORT FOR EXCAVATION, BACKFILLING AND DOWNTIGHT PROCEDURES WHERE APPLICABLE.
- ALL LOADS INDICATED ON THE DRAWINGS ARE UNFACTORED UNLESS NOTED OTHERWISE.  
  
LATERAL LOADS SEISMIC:  $S_d(0.2) = 0.188$   $S_d(0.5) = 0.107$   $S_d(1.0) = 0.058$   $S_d(2.0) = 0.029$   $PGA = 0.119$   
WIND:  $q_{30} = 0.48kPa$   
SNOW:  $S = 1.44kPa$   $S_r = 0.44kPa$   
  
BUILDING HAS NORMAL IMPORTANCE CATEGORY PER NBC TABLE 4.1.2.1
- FOUNDATION BEARING CAPACITY IS ASSUMED AND MUST BE VERIFIED DURING CONSTRUCTION.
- CONTRACTOR TO REMOVE PAVEMENT STRUCTURE, FILL AND LOOSE SAND DEPOSITS FROM BELOW THE BUILDING ADDITION AND REBUILD WITH STRUCTURAL ENGINEERED FILL PLACED IN 300mm THICK LIFTS COMPACTED TO 100% STANDARD PROCTOR MAX DRY DENSITY (SPMDD).
- CONTRACTOR SHALL VERIFY PROPOSED FOOTING ELEVATIONS WITH SITE SERVICE ELEVATIONS PRIOR TO PROCEEDING WITH WORK AND NOTIFY CONSULTANTS OF ANY DISCREPANCIES. REFER TO MECHANICAL AND CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- LOWER FOOTINGS TO ACCOMMODATE NEW MECHANICAL ELECTRICAL OR CIVIL SERVICES. SEE MECHANICAL ELECTRICAL AND CIVIL DRAWINGS FOR ELEVATIONS OF SAME. FOOTINGS ARE NOT TO BE UNDERMINED BY EXCAVATION FOR SERVICES PITS, ETC.
- PROTECT ALL EXISTING SUB GRADE SERVICES DURING INSTALLATION OF FOUNDATIONS.
- REFER TO GENERAL NOTES AND TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
- PROVIDE 125mm SLAB ON GRADE REINFORCED WITH SINGLE LAYER WIRE MESH TYPICAL UNLESS NOTED OTHERWISE.
- FOOTING ELEVATIONS ON PLAN DENOTE 1/5 OF FOOTING.
- REMOVE AND DISPOSE ALL ORGANIC MATERIALS FROM THE SITE. EXCAVATE THE EXISTING FILL MATERIAL TO SOUND NATIVE MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER. BRING UP GRADES WITH COMPACTED GRANULAR 'B' TO 100% SPMDD. SLABS ON GRADE SHALL BE PLACED ON 200mm GRANULAR 'A' LATER COMPACTED TO 100% SPMDD.
- SLAB REINFORCING AND STRUCTURAL STEEL SHALL BE GROUND. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS.

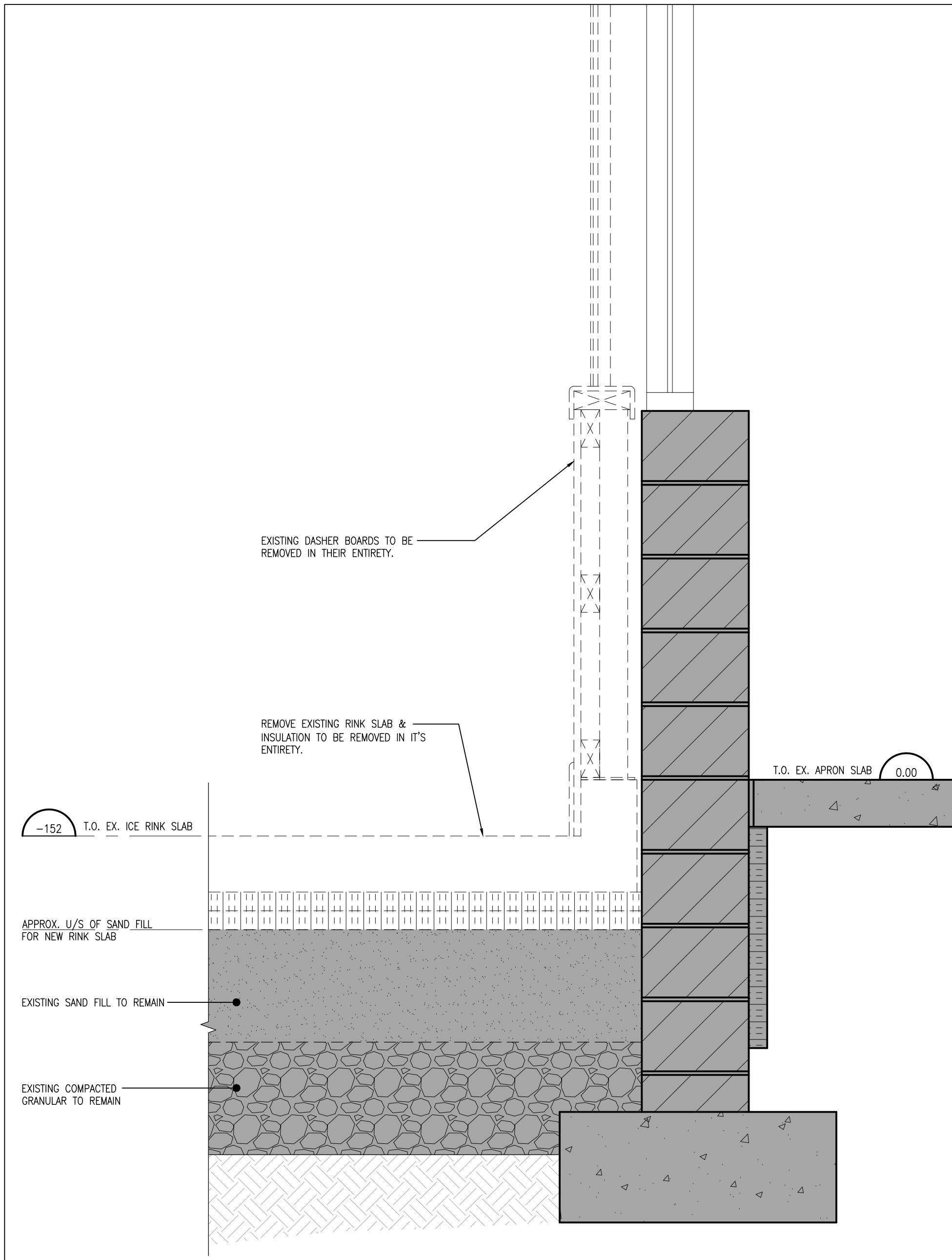
**ROOF LOADING**

- DEAD: 1.25 kPa  
BASIC SNOW: 1.60 kPa
- ADDITIONALLY SNOW LOAD DUE TO SLIDING DO NOT APPLY. SNOW FROM UPPER ROOF PREVENTED FROM SLIDING BY SNOW GUARDS.

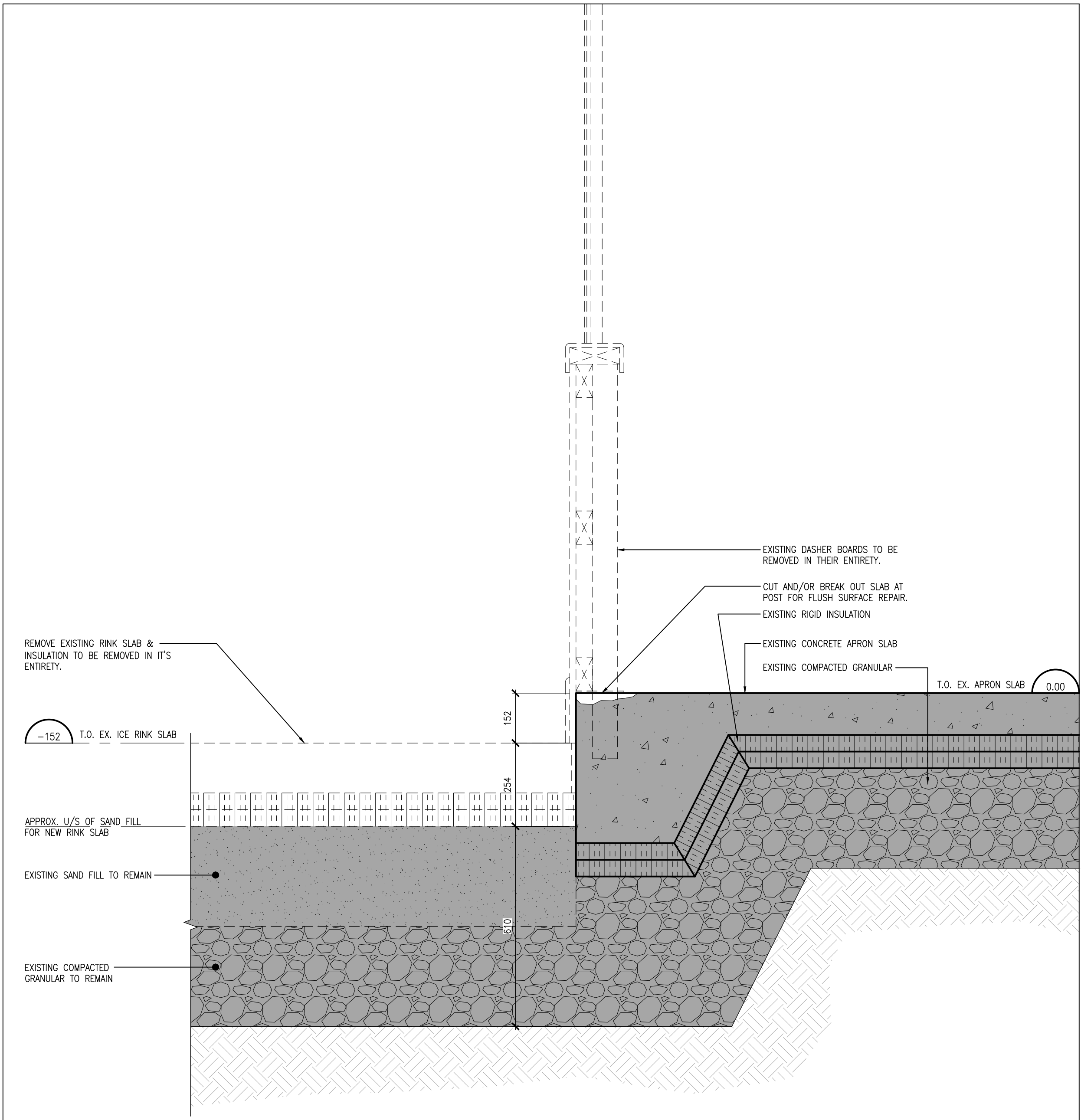
**HATCH LEGEND**

- HATCH EXTENT OF NEW 152mm REFRIGERATED CONCRETE RINK SLAB.
- HATCH DENOTES EXTENT OF NEW 25mm RIGID INSULATION AND 13mm RUBBER MATTING ON REFRIGERATED SLAB.
- HATCH EXTENT OF NEW CONCRETE APRON SLAB THICKNESS TO MATCH EXISTING.
- SHADED AREA DENOTES EXISTING TO REMAIN (NOT IN CONTRACT)

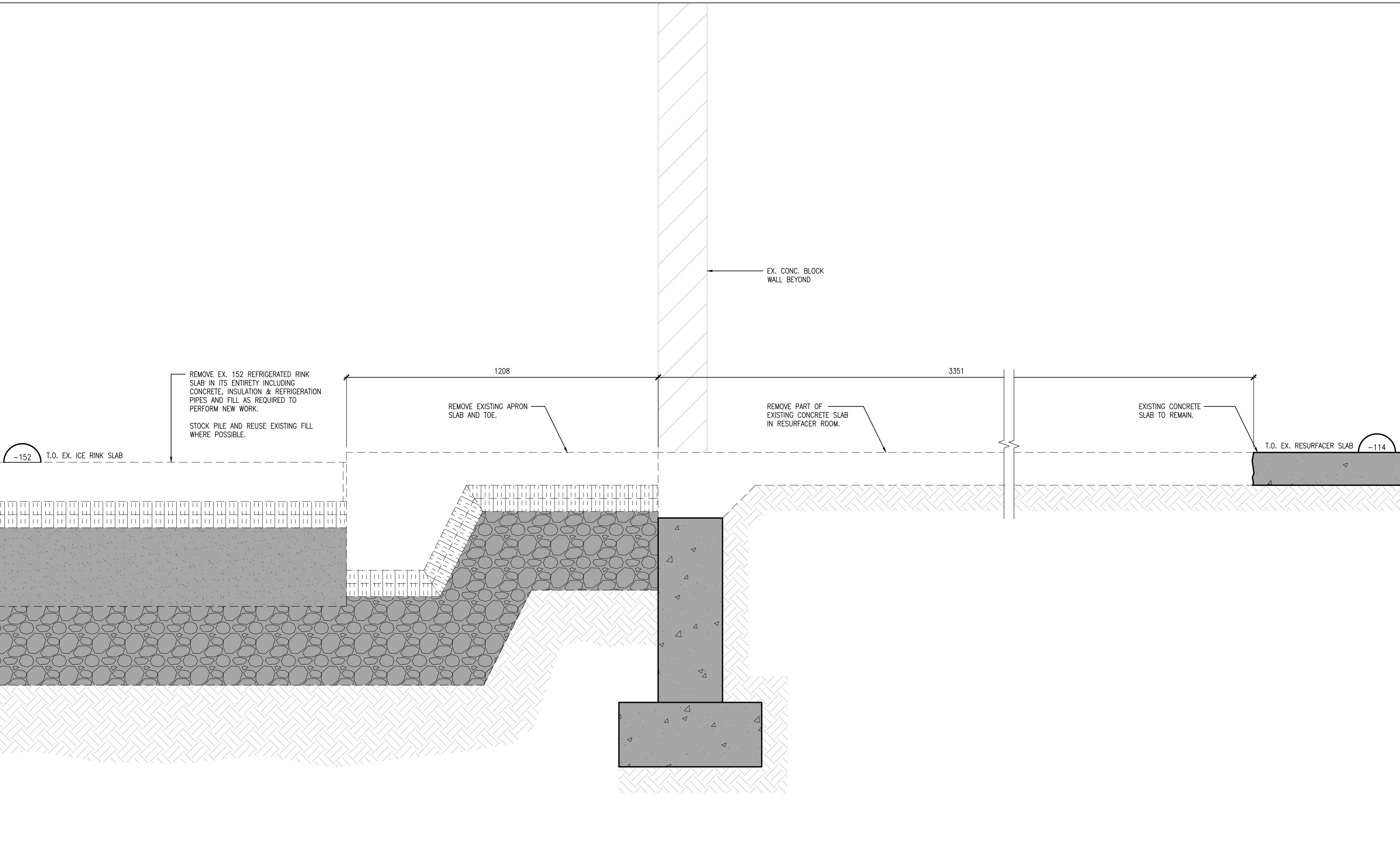




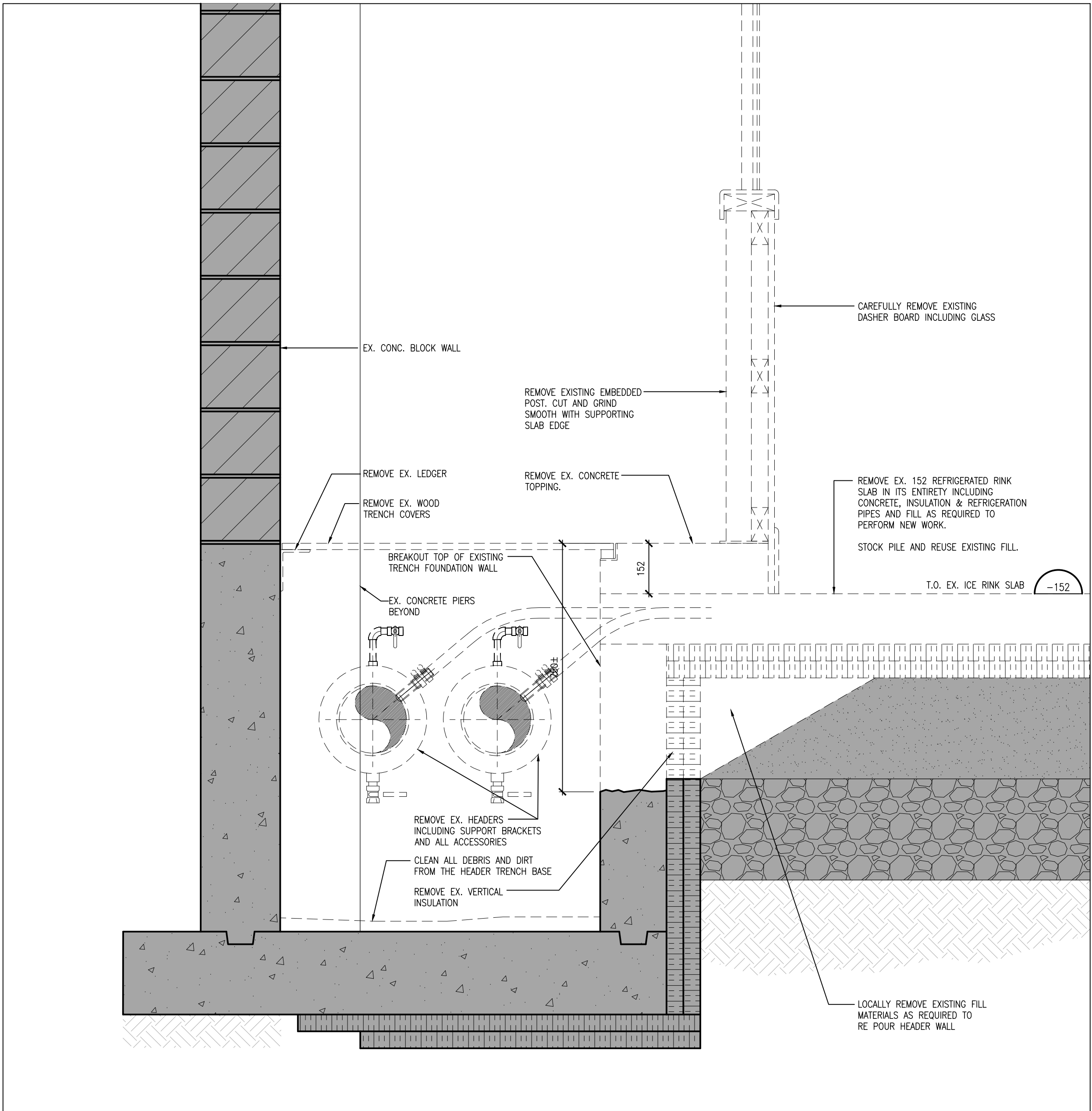
4  
S501  
EXISTING RINK SLAB DEMOLITION SECTION  
1:10



2  
S501  
EXISTING RINK SLAB DEMOLITION SECTION  
1:10



3  
S501  
EXISTING RINK SLAB DEMOLITION SECTION @ RESURFACER  
1:10



1  
S501  
EXISTING HEADER TRENCH DEMOLITION SECTION  
1:10

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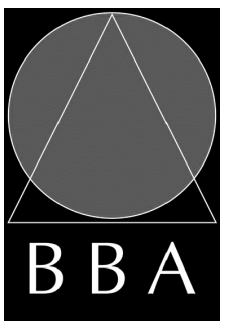
**Clarington**

NO.	ISSUES	DATE	BY
1	ISSUED FOR PRICING	AUG. 17, 2023	BBA
2	ISSUED FOR PERMIT & TENDER	DEC. 4, 2023	BBA
3	ISSUED FOR CONSTRUCTION	FEB 5, 2024	BBA

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

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CHECKED BY:  
DM  
DATE:  
JULY 2023  
SCALE:  
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FILE:

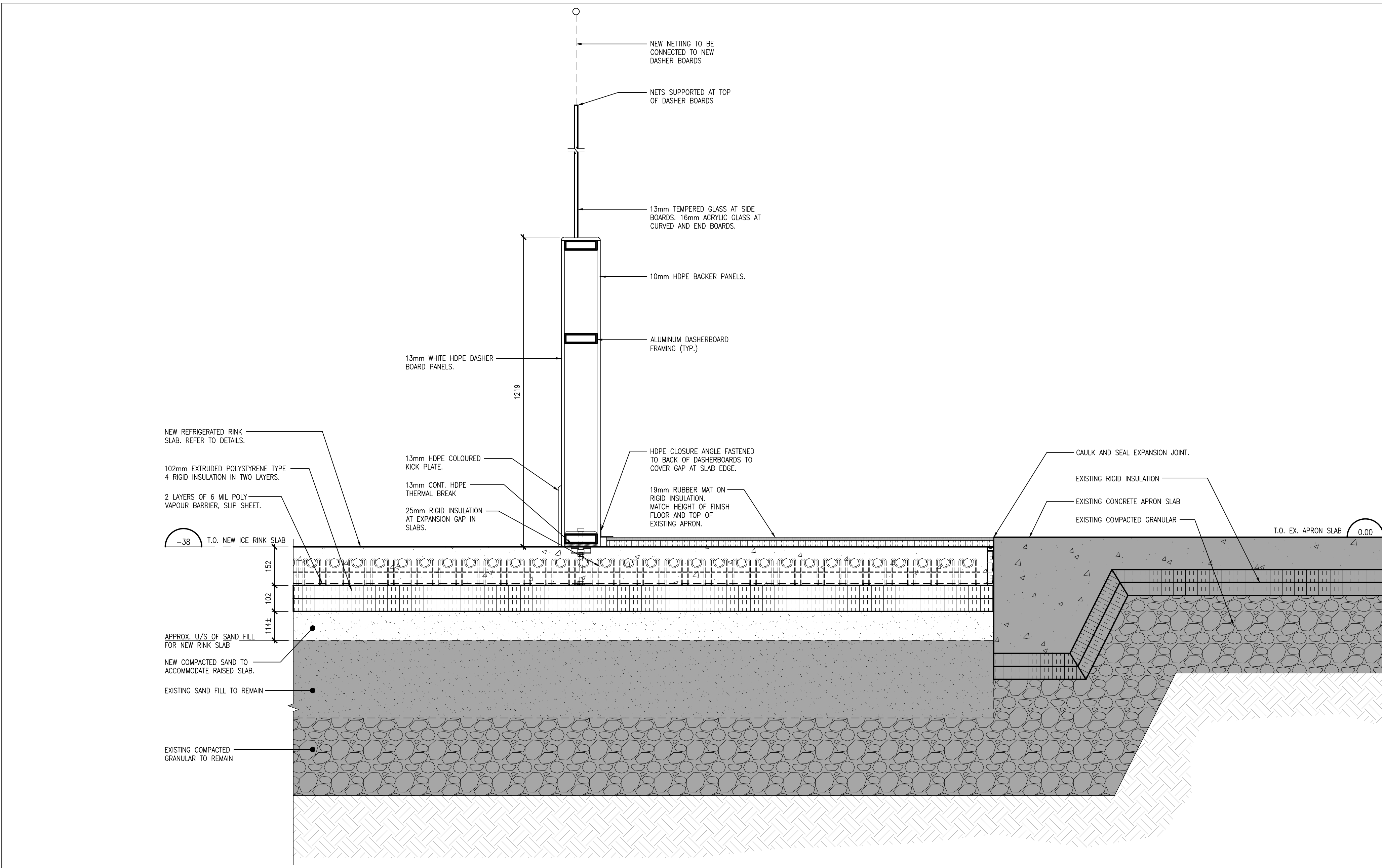
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**22119B**

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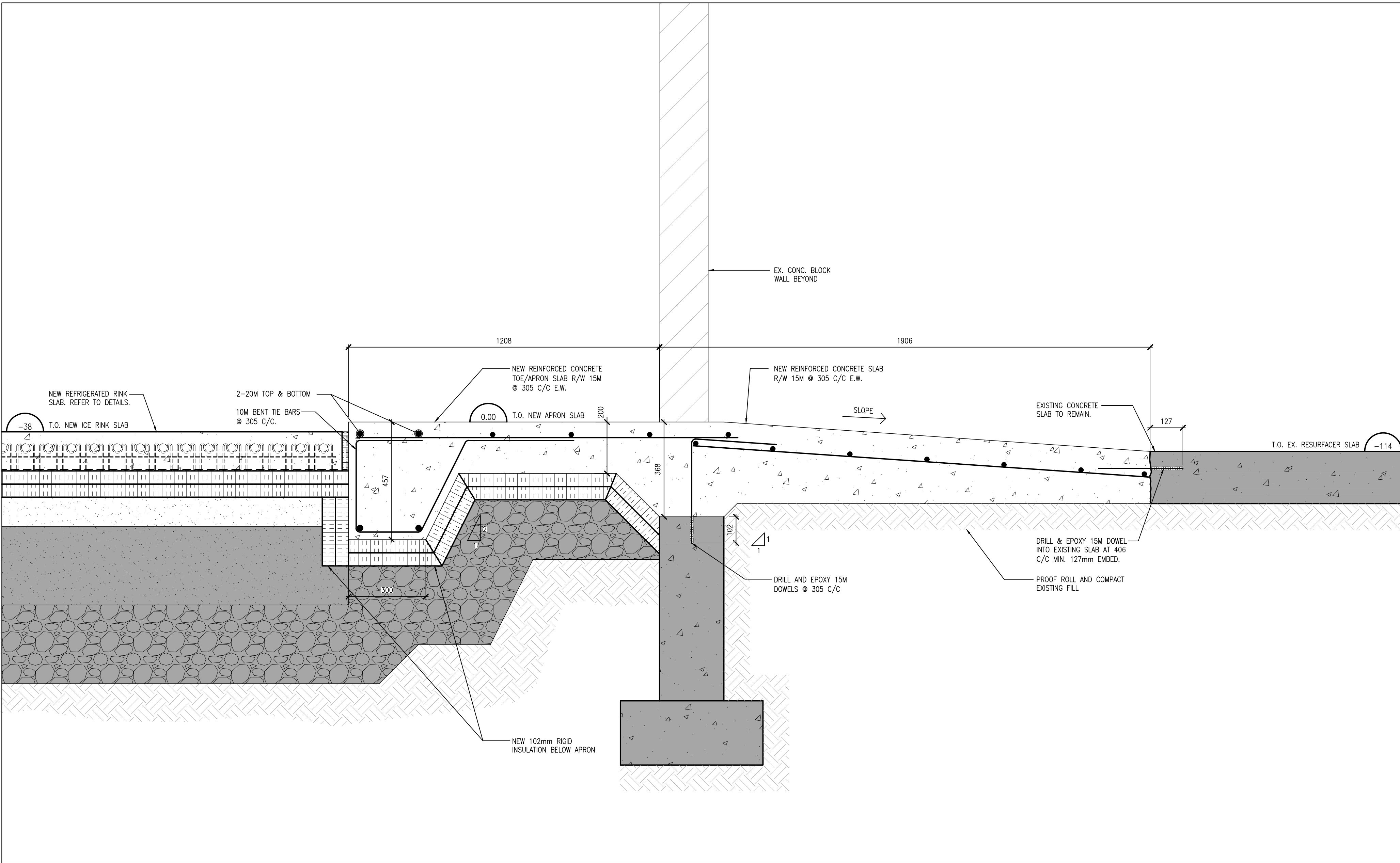
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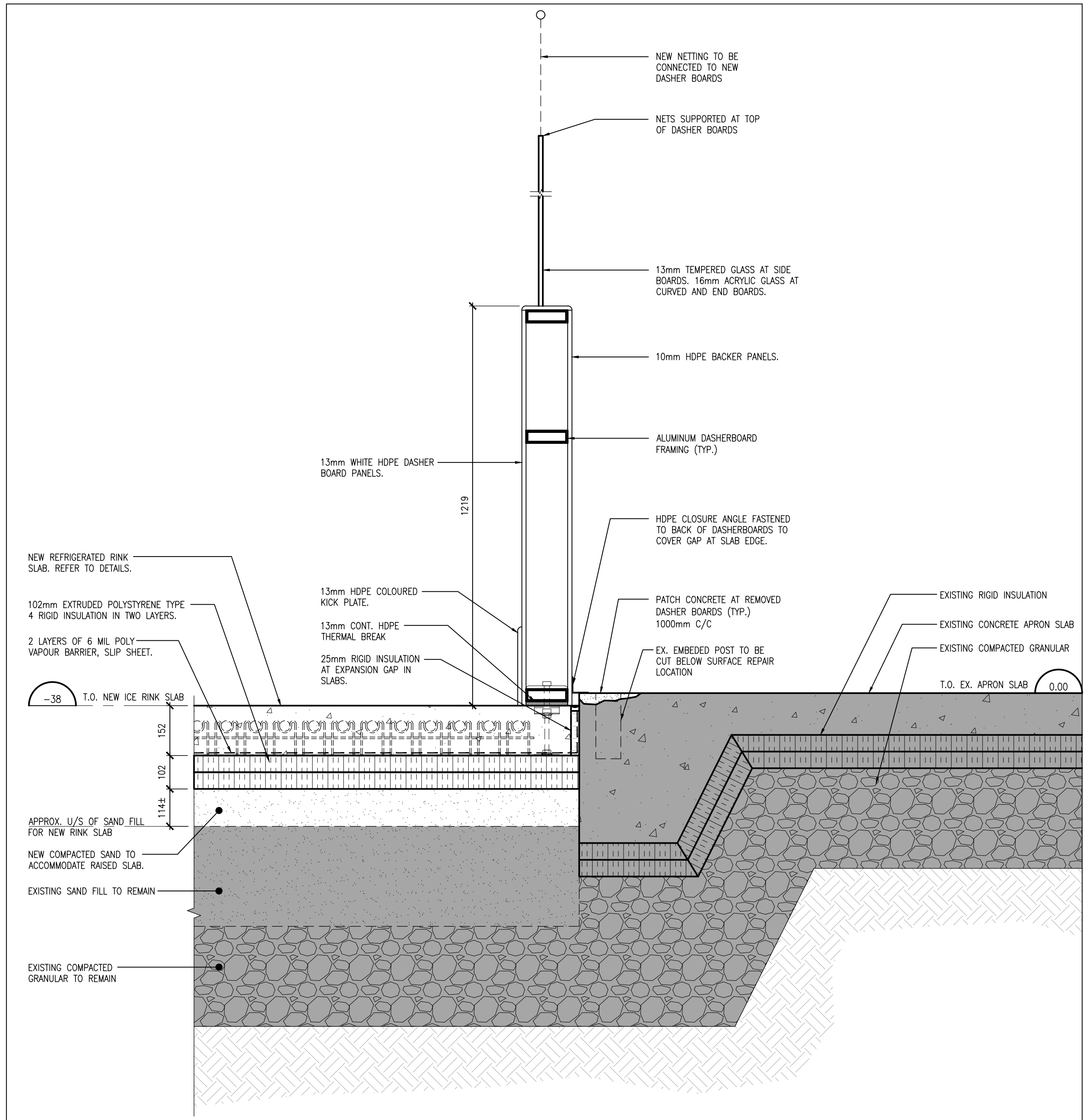
4 NEW CORNER RINK SLAB SECTION

S502 1:10



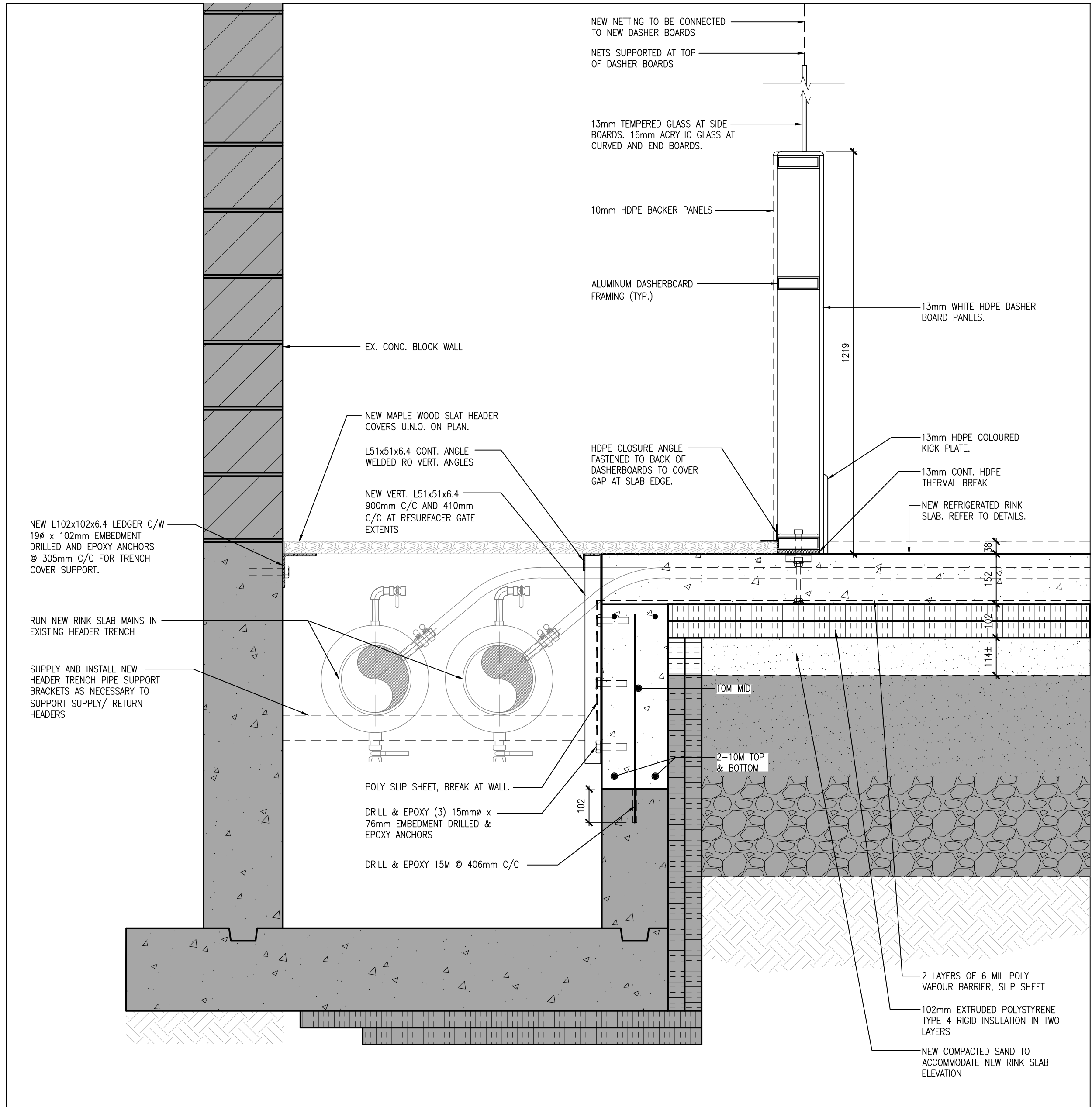
3 RINK SLAB SECTION @ RESURFACER

S502 1:10



2 NEW RINK SLAB SECTION

S502 1:10



1 HEADER TRENCH SECTION

S502 1:10

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3	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA

NO.	REVISIONS	DATE	BY

PROJECT:  
**ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO.**

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ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

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DRAWN BY: LS  
CHECKED BY: DM  
DATE: JULY 2023  
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FILE:

PROJECT NO:  
**22119B**

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**S502**



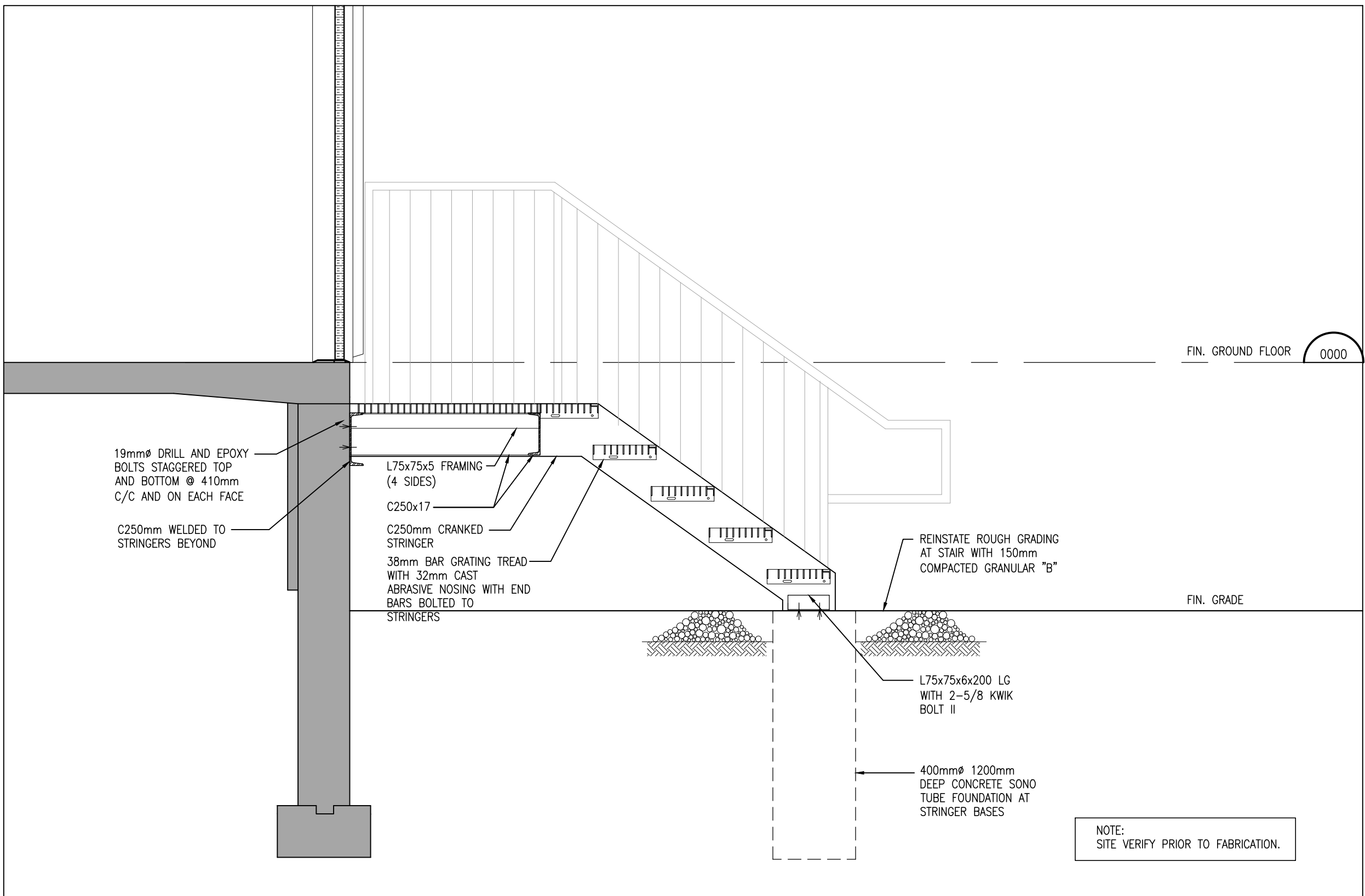
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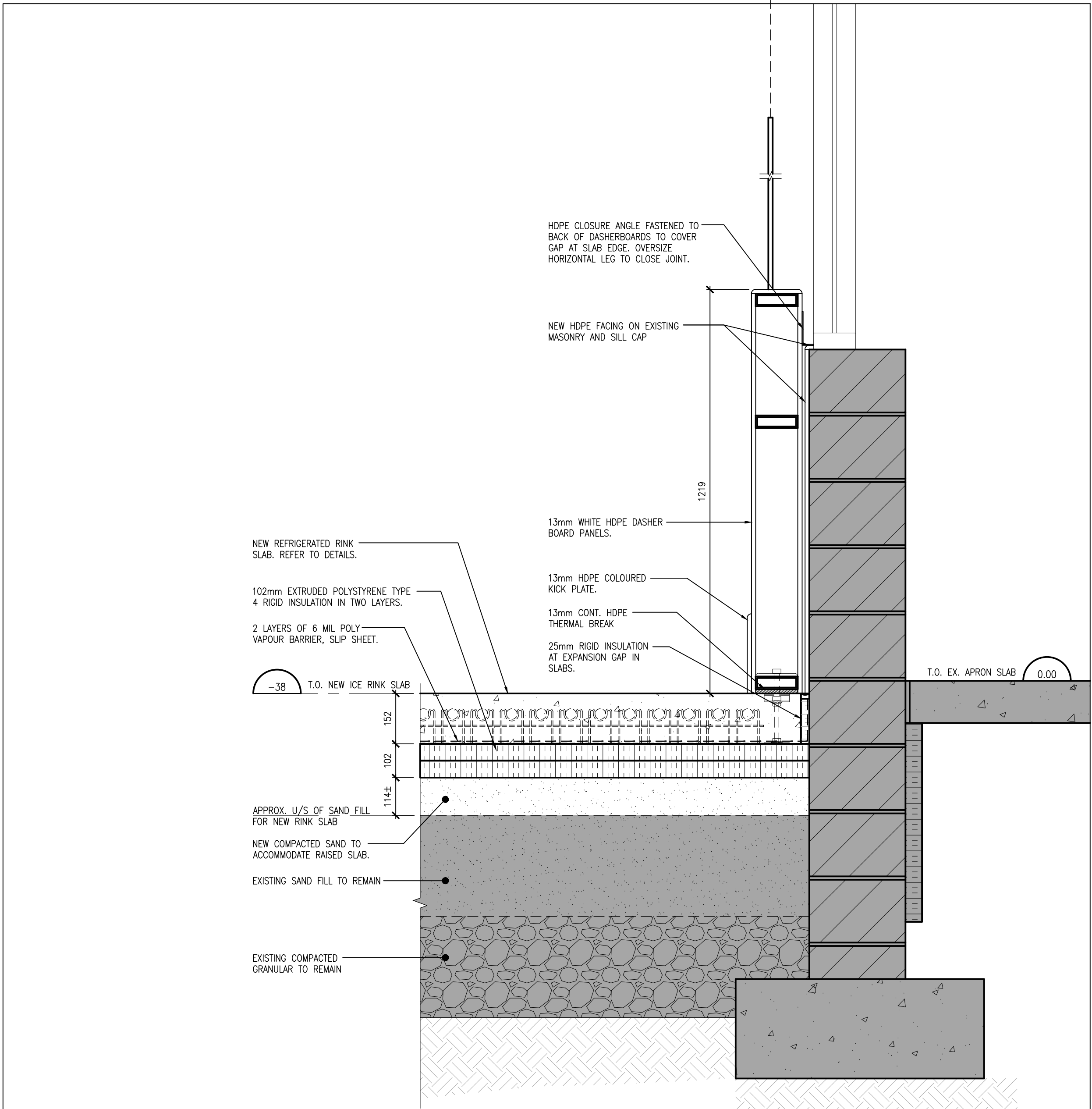
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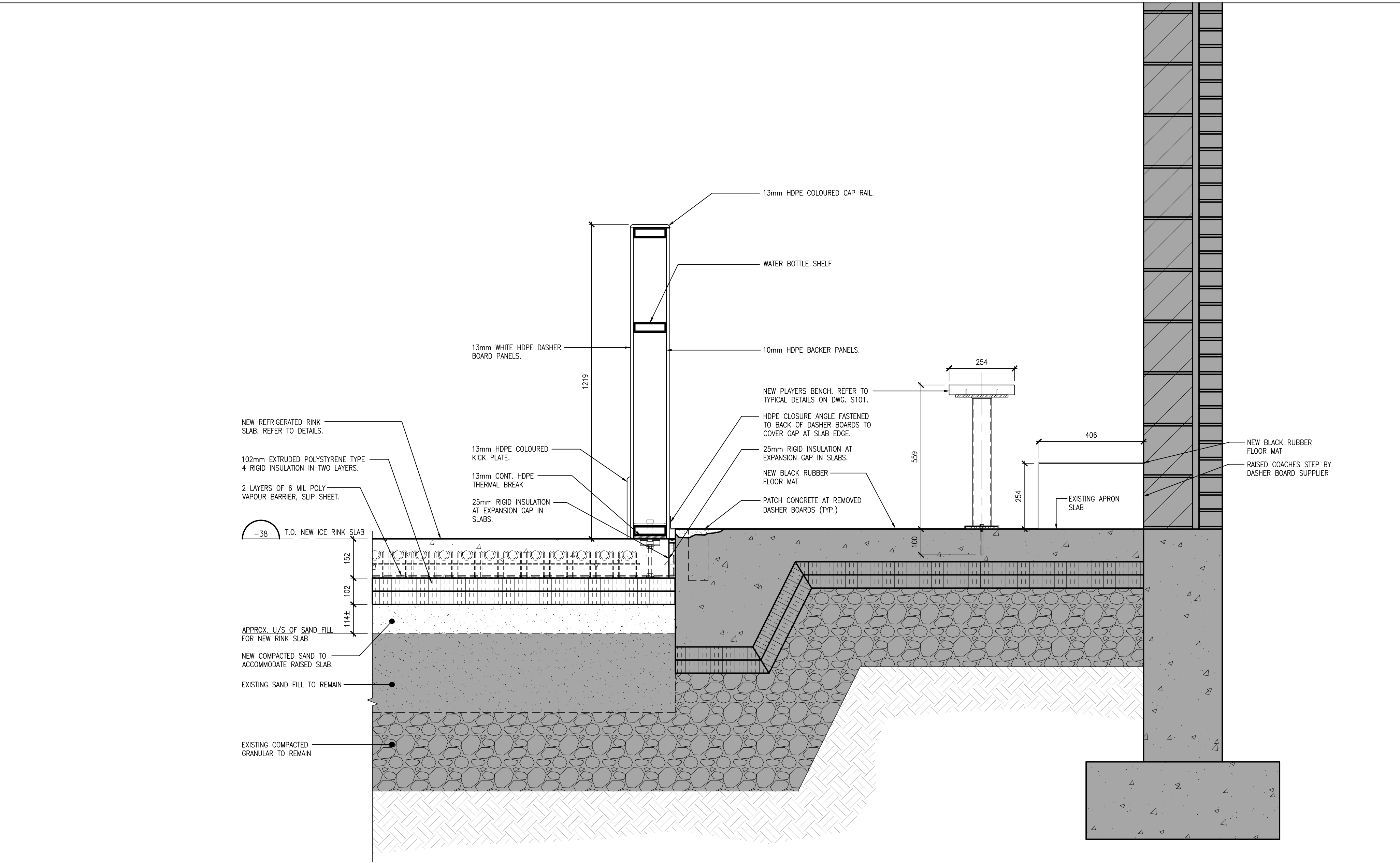
NO.	ISSUES	DATE	BY
1	ISSUED FOR PRICING	AUG. 17, 2023	BBA
2	ISSUED FOR PERMIT & TENDER	DEC. 4, 2023	BBA
3	ISSUED FOR CONSTRUCTION	FEB. 5, 2024	BBA



3 SECTION  
S503 1:20



1 SECTION @ VIEWING AREA  
S503 1:10



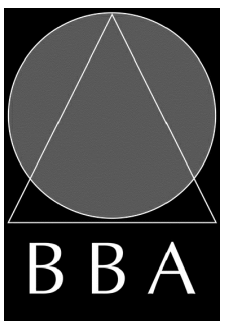
2 PLAYERS BENCH SECTION  
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PROJECT:  
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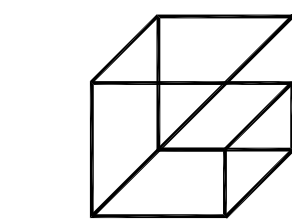


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FILE:

PROJECT NO:  
**22119B**

DRAWING NO:  
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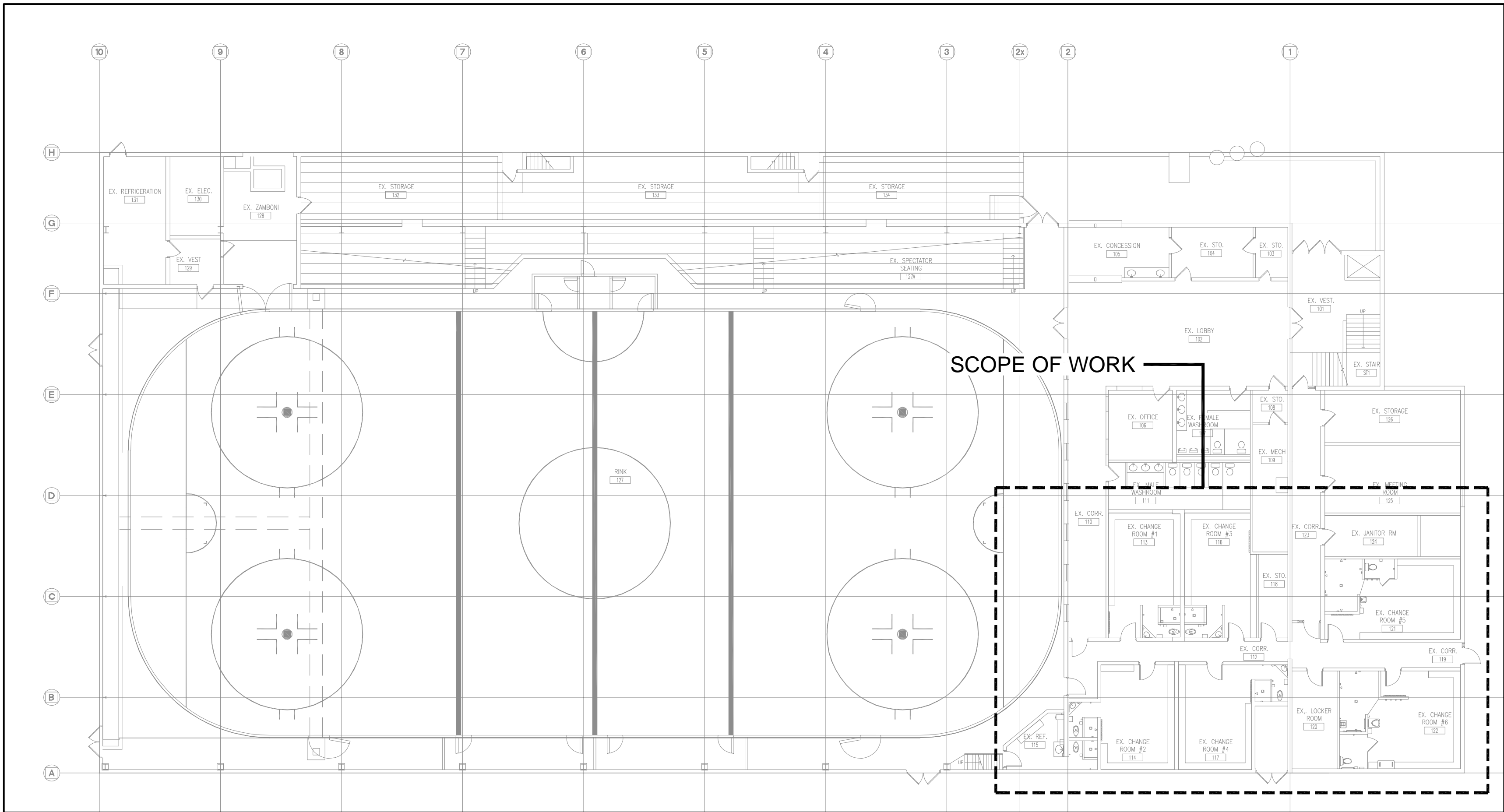
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1	ISSUED FOR REVIEW	OCT. 03 2023	SW
2	ISSUED FOR PERMIT AND TENDER	DEC. 04 2023	SW
3	ISSUED FOR CONSTRUCTION	FEB. 05 2024	SW

DRAWING LIST

DWG. NO.	DRAWING NAME
M-0	TITLE SHEET
M-1.1	MECHANICAL SPECIFICATIONS I
M-1.2	MECHANICAL LEGEND, SCHEDULES & DETAILS
M-2.1	PART FLOOR PLAN - HVAC DEMOLITION
M-2.2	PART FLOOR PLAN - HVAC NEW
M-3.1	PART FLOOR PLAN - PLUMBING & DRAINAGE DEMOLITION
M-3.2	PART FLOOR PLAN - PLUMBING & DRAINAGE NEW
M-4.1	PART FLOOR PLAN - FIRE PROTECTION DEMOLITION
M-4.2	PART FLOOR PLAN - FIRE PROTECTION NEW



1  
M-0  
KEYPLAN  
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PROJECT:

**ORONO ARENA AND  
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2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
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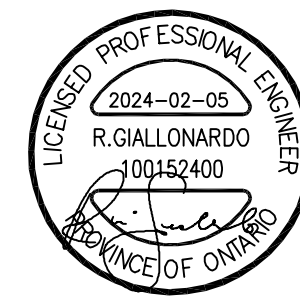
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DATE: SEP 2023	
SCALE: AS SHOWN	
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PROJECT NO:

**23-149**

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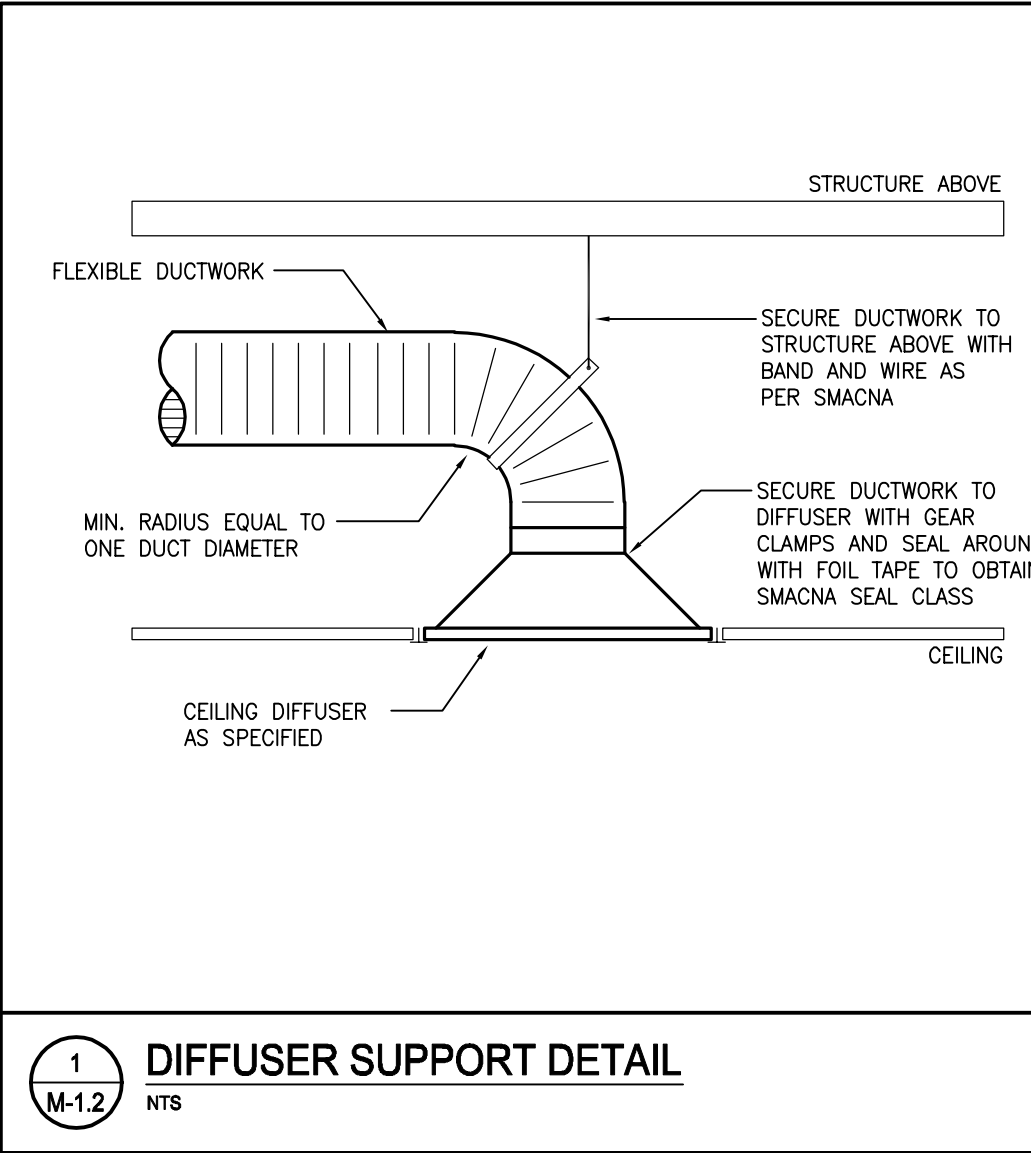
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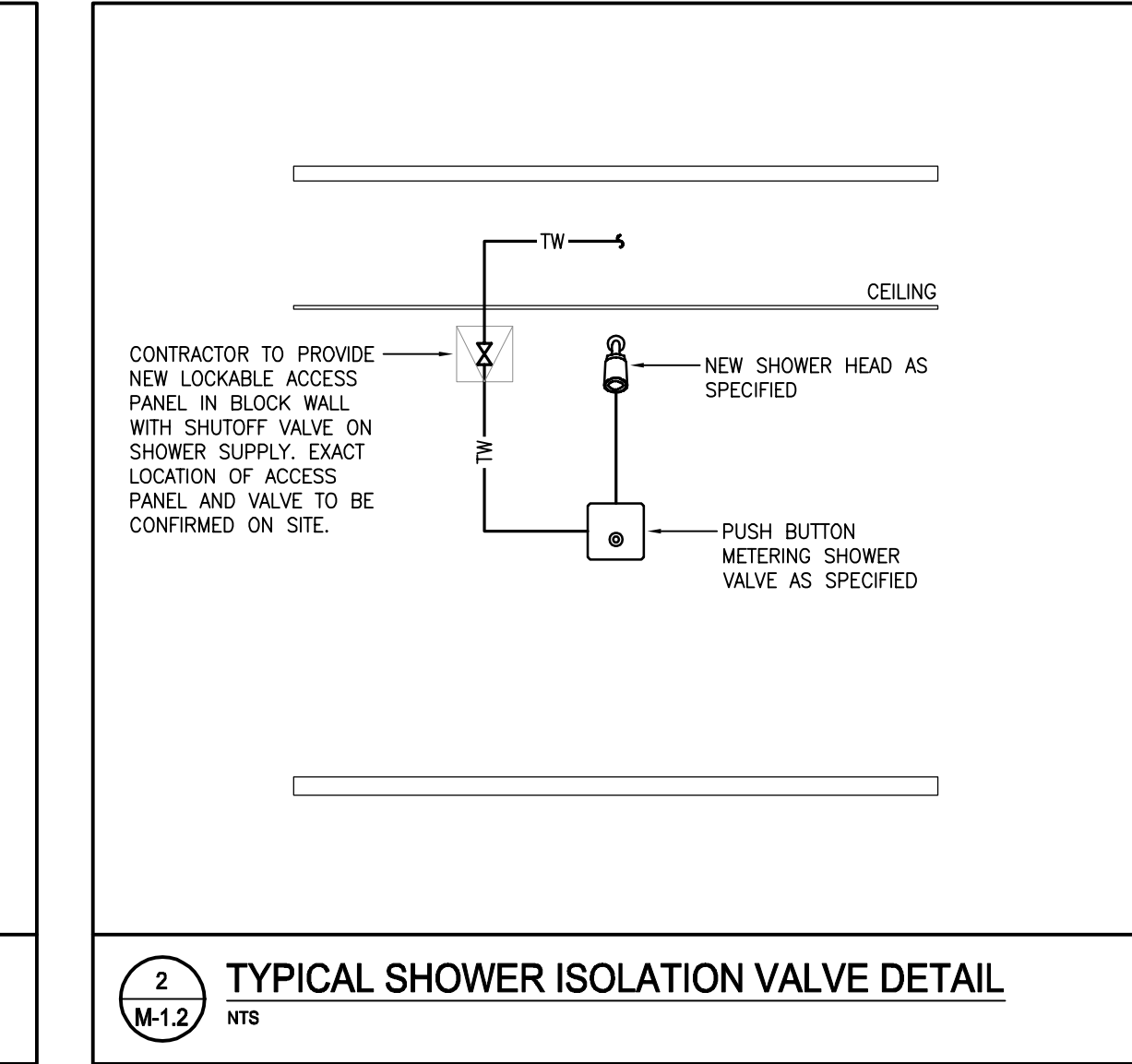
GENERAL SPECIFICATIONS	GENERAL SPECIFICATIONS	HVAC SPECIFICATIONS	HVAC SPECIFICATIONS	PLUMBING SPECIFICATIONS	FIRE PROTECTION SPECIFICATIONS
<p>1. GENERAL</p> <p>1.1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE ONTARIO BUILDING CODE, CSA, ASHRAE, NFPA, ETC. WHERE CODES/STANDARD ARE PRESENT FROM MULTIPLE SOURCES, THE MOST STRINGENT SHALL BE UTILIZED.</p> <p>1.2. THE FOLLOWING SPECIFICATIONS FORM AN ESSENTIAL PART OF THE CONTRACT DOCUMENTS. REFER AND COORDINATE WITH ALL OTHER DIVISIONS, SECTIONS AND SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION.</p> <p>1.3. FOR THE PURPOSE OF THESE SPECIFICATIONS, DRAWINGS AND CONTRACT DOCUMENTS, THE WORD "PROVIDE" REFERS TO THE SUPPLY, INSTALLATION AND TESTING OF THE RESPECTIVE EQUIPMENT/COMPONENTS.</p> <p>1.4. CONTRACTOR IS TO REPORT ALL APPARENT DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS OF ALL DIVISIONS PRIOR TO TENDER SUBMISSION. NO EXCEPTIONS WILL BE GIVEN TO CONTRACTORS WHO DO NOT COMPLETELY UNDERSTAND THE SCOPE OF WORK.</p> <p>1.5. ALL DIV.23 WORK SHALL BE COORDINATED AND SCHEDULED WITH ALL OTHER DIVISIONS.</p> <p>1.6. THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDERANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION, AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.</p> <p>1.7. PROVIDE NEW MATERIALS AND EQUIPMENT OF ACCEPTABLE QUALITY THAT ARE MANUFACTURED IN CANADA OR THE UNITED STATES AND BEAR THE APPROVAL OF RECOGNIZED NORTH AMERICAN STANDARD ASSOCIATIONS SUCH AS CSA, ASME, ETC. THE CONTRACTOR SHALL MAXIMIZE THE UTILIZATION OF CANADIAN EQUIPMENT, MATERIALS, ETC.</p> <p>1.8. ALL EQUIPMENT, MATERIALS, ETC. SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.</p> <p>1.9. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.</p> <p>1.10. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.</p> <p>1.11. IN NO CASE SHALL THESE DRAWINGS BE SOALED. ALL ROUGH-IN'S SHALL BE COORDINATED WITH OTHER DIVISIONS.</p> <p>1.12. DO NOT PROCEED WITH WORK OUTSIDE THE SCOPE OF THE DESIGN DRAWINGS AND SPECIFICATIONS WITHOUT WRITTEN CONSENT FROM THE OWNING. THIS APPLIES TO ALL DIV.23 CHANGE NOTICES AS ISSUED BY THE CONSULTANT.</p> <p>1.13. IN REGARDS TO DIV.23 CHANGE NOTICES, CONTRACTOR SHALL PROVIDE A BREAKDOWN INCLUDING, BUT NOT LIMITED TO, MATERIALS, LABOUR, MARK-UP, ETC. QUOTATIONS SHALL BE BASED ON ALTERNATIVE FOR EQUIPMENT AND THE MECHANICAL CONTRACTORS OF AMERICA, SMACNA, AND NATIONAL ELECTRICAL CONTRACTORS FOR LABOUR RATES.</p> <p>1.14. WHERE EQUIPMENT HAS BEEN PRE-PURCHASED, DIV.23 SHALL ACCEPT ALL RESPONSIBILITY FOR EQUIPMENT DELIVERY, INSTALLATION, TESTING AND WARRANTY, SIMILAR TO AS IF THE EQUIPMENT WAS PURCHASED BY DIV.23.</p> <p>1.15. THE CONTRACTOR SHALL WARRANTY ALL MATERIALS, EQUIPMENT, INSTALLATION AND QUALITY OF WORKSMANSHIP FOR A MINIMUM OF ONE (1) YEAR UNLESS OTHERWISE NOTED.</p> <p>1.16. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO PAY FOR ALL CHARGES AND DAMAGES ASSOCIATED WITH EQUIPMENT THAT IS NOT PROVIDED AS SPECIFIED AND INCLUDES NOT MEETING THE MANUFACTURER'S RATINGS, PUBLISHED DATA AND/OR THE APPLICABLE GOVERNING STANDARDS.</p> <p>1.17. THE CONTRACTOR MAY SUBMIT FOR ALTERNATE MATERIALS AND EQUIPMENT ONLY WHEN THE SPECIFIED ARE NOT AVAILABLE OR WILL ADVERSELY IMPACT THE COMPLETION SCHEDULE. THE CONTRACTOR SHALL COMPENSATE THE CONSULTANT FOR THEIR TIME REQUIRED TO REVIEW THE ALTERNATE SUBMITTALS.</p> <p>2. SUBMITTALS</p> <p>2.1. THE CONTRACTOR SHALL SUBMIT THREE (3) HARD COPIES OF MECHANICAL SHOP DRAWINGS TO THE CONSULTANT FOR REVIEW. ELECTRONIC SUBMISSION OF SHOP DRAWINGS SHALL BE DEEMED ACCEPTABLE UPON APPROVAL FROM CONSULTANT. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE DOCUMENT SUBMITTAL PROCESS.</p> <p>2.2. ALL SHOP DRAWINGS SUBMITTED FOR REVIEW MUST BEAR THE REVIEW STAMP OF THE MECHANICAL CONTRACTOR. SHOP DRAWINGS THAT DO NOT BEAR THE CONTRACTOR'S STAMP WILL, WITHOUT QUESTION, BE REJECTED BY THE CONSULTANT.</p> <p>2.3. SHOP DRAWINGS SHALL INCLUDE ALL INFORMATION REQUIRED FOR THE CONSULTANT TO PERFORM A REASONABLE REVIEW OF THE SUBMITTALS AS THEY PERTAIN TO THE MECHANICAL DESIGN DRAWINGS AND SPECIFICATIONS.</p> <p>2.4. SHOP DRAWINGS SHALL HAVE THE SAME IDENTIFYING NUMBER AS NOTED IN THE MECHANICAL DRAWINGS.</p> <p>2.5. PROVIDE SHOP DRAWINGS WITH TECHNICAL SUBMITTALS ON ALL TYPES OF INSULATION TO BE INSTALLED.</p> <p>2.6. THE CONTRACTOR SHALL MAINTAIN ON SITE ONE (1) RECORD OF MECHANICAL DRAWINGS THAT SHALL INDICATE WITH RED LINES ALL PROJECT CONDITIONS, LOCATIONS, CONFIGURATIONS AND ANY OTHER CHANGES OR DEVIATIONS WHICH MAY VARY FROM THE ORIGINAL CONTRACT DOCUMENTS AND DRAWINGS. IN ADDITION, THIS SET SHALL INCLUDE REVISIONS AS A RESULT OF ALL ADDENDAS, CHANGE NOTICES, SITE INSTRUCTIONS, ETC. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND ENGINEER ONE (1) COPY EACH OF A HARD COPY AND ELECTRONIC COPY (PDF) FOR REVIEW. ONE (1) SET OF BOTH COPIES SHALL ALSO BE INCLUDED IN THE CLOSEOUT DOCUMENT PACKAGE.</p> <p>2.7. TWO (2) COPIES OF OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW UPON PROJECT COMPLETION. THE MANUALS SHALL CONTAIN THE FOLLOWING WHERE APPLICABLE:</p> <ul style="list-style-type: none"><li>DESCRIPTION OF EACH SYSTEM</li><li>DESCRIPTION OF EACH MAJOR COMPONENT OF SYSTEM</li><li>ALL SHOP DRAWINGS WITH APPROVAL STAMPS</li><li>EQUIPMENT MANUFACTURER'S INSTALLATION AND OPERATION MANUALS AND SPARE PARTS LIST</li><li>WIRING DIAGRAMS</li><li>LUBRICATION SCHEDULE</li><li>EQUIPMENT IDENTIFICATION LIST WITH SERIAL NUMBERS</li><li>VALVE TAG SCHEDULES AND FLOW DIAGRAMS</li><li>FINAL AND REVIEWED BALANCING REPORTS (AIR AND WATER)</li><li>WATER TREATMENT PROCEDURE AND TESTS</li><li>CONTROL DRAWINGS AND SEQUENCES OF OPERATION</li><li>AS-BUILT DRAWINGS (HARDCOPY AND ELECTRONIC)</li><li>WARRANTY DOCUMENTATION</li></ul> <p>3. EXECUTION</p> <p>3.1. PERIODIC INSPECTIONS OF THE WORK WILL BE CONDUCTED OVER THE COURSE OF THE PROJECT. ALL REPORTED DEFICIENCIES SHALL BE RECTIFIED BY THE CONTRACTOR IN A TIMELY FASHION. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR NOT MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.</p> <p>3.2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL INSPECTIONS WITH CITY AND/OR MUNICIPAL OFFICIALS AND ALL OTHER AUTHORITIES HAVING JURISDICTION.</p> <p>3.3. IN REGARDS TO TEMPORARY SERVICES, PROVIDE, AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, TEMPORARY FIRE PROTECTION SYSTEMS. REFRAIN FROM USING INSTALLED SYSTEMS FROM THE CONTRACT DOCUMENTS AS A TEMPORARY SERVICES. THIS SHALL APPLY TO ALL MECHANICAL SYSTEMS INCLUDING HVAC, PLUMBING AND DRAINAGE, ETC.</p> <p>3.4. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND RESTORATION WHERE REQUESTED. THE CONTRACTOR SHALL CONTRACT THE SERVICES OF THE BASE BUILDING TRADES AT DIV.23 EXPENSE.</p> <p>3.5. PROVISIONS SHALL BE MADE FOR THE PROTECTION OF DIV.23 WORK UNTIL THE COMPLETION OF THE PROJECT. THIS MAY INCLUDE, BUT NOT LIMITED TO, COVERING OF EQUIPMENT OPENINGS AND DUCTWORK, PLUMBING FIXTURES, FLOOR DRAINS, ETC.</p> <p>3.6. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL MAKE ALL FINAL ADJUSTMENTS TO EQUIPMENT AS WELL AS REMOVE ALL PROTECTIVE MATERIAL. INSTALLATION SHALL BE CLEANED THOROUGHLY AND TESTED FOR PROPER OPERATION. CHANGE ALL AIR AND WATER FILTERS AS REQUIRED.</p> <p>3.7. IN REGARDS TO INTERRUPTION OF SERVICES, THE CONTRACTOR SHALL CARRY OUT THEIR WORK IN A MANNER THAT CAUSES THE LEAST DISTURBANCE TO THE OWNER. PROVIDE NOTIFICATION TO THE OWNER IN WRITING WITH AT LEAST 72 HOURS OF THE SCHEDULED INTERRUPTION.</p> <p>3.8. ARRANGE AND PAY FOR THE SAFE DISPOSAL OF REMOVED ITEMS AS SPECIFIED. PROVIDE PROOF OF SAFE DISPOSAL FOR ITEMS SUCH AS HVAC REFRIGERANT. COORDINATE THE TIME AND METHOD OF DISPOSAL WITH THE OWNER. FOR EXAMPLE, CLEARLY INDICATE THE ROUTE THAT WILL BE TAKEN FROM THE INSIDE OF THE BUILDING TO THE OUTDOORS, AS WELL AS THE STORAGE LOCATION OUTDOORS IF APPLICABLE.</p> <p>3.9. WHERE COMPONENTS ARE TO BE REUSED, THE CONTRACTOR SHALL CLEAN AND TEST THE COMPONENT TO ENSURE PROPER OPERATION. THE CONTRACTOR SHALL BE NOTIFIED IN THE EVENT THERE IS A DEFICIENCY WITH THE COMPONENT.</p>	<p>3.10. PERFORM WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL INSTALLATION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.</p> <p>3.11. WHERE CUTTING OR CORE DRILLING OF THE EXISTING CONCRETE STRUCTURE IS REQUIRED, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF AN EXPERIENCED AND REPUTABLE COMPANY TO CARRY OUT THE WORK. THE RESULTS SHALL BE SUBMITTED TO THE BASE BUILDING STRUCTURAL ENGINEER AND NOT OUTLETS OR CORING SHALL TAKE PLACE UNTIL WRITTEN APPROVAL IS RECEIVED. THE CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST TO PERFORM X-RAYING WITH AT LEAST 72 HOURS IN ADVANCE.</p> <p>4. IDENTIFICATION OF MECHANICAL SERVICES</p> <p>4.1. PROVIDE SMS MARK-WRAP ON ALL PIPE COVERINGS WITH FLOW ARROW AND ALTERNATING WORKING COVERS. COVERING COLOURS SHALL MATCH BASE BUILDING. IN THE CASE WHERE THERE IS NO EXISTING STANDARD, INDUSTRY STANDARDS SHALL BE FOLLOWED.</p> <p>4.2. USE STENCILS AND STENCIL PAINT ON DUCTWORK AND DUCTWORK INSULATION WITH BLACK CAPITALIZED LETTERS 2" (50 MM) HIGH AND SOLID BLACK FLOW ARROWS.</p> <p>4.3. IDENTIFICATION OF PIPING AND DUCTWORK SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS:</p> <ul style="list-style-type: none"><li>AT LEAST ONCE IN EACH ROOM</li><li>AT EACH PLACE OF EQUIPMENT</li><li>AT EACH BRANCH CLOSE TO THE CONNECTION POINT AT MAIN</li><li>AT NOT GREATER INTERVALS OF 50 FT. (15 M) ON STRAIGHT RUNS OF EXPOSED PIPING AND DUCTWORK</li><li>AT ENTRY AND LEAVING POINT TO PIPE AND DUCT CHASSES, OR OTHER CONCEALED SPACES</li><li>BOTH STARTERS PIPING AND DUCTWORK PASSES THROUGH WALL, PARTITIONS AND FLOORS</li><li>ON VERTICAL PIPES AND DUCTS APPROXIMATELY 6 FT. (1800 MM) A.F.F. BEHIND EACH ACCESS DOOR AND PANEL.</li></ul> <p>4.4. PROVIDE IDENTIFICATION FOR PIPING CONTAINING ELECTRICAL HEAT TRACING.</p> <p>4.5. TAG ALL VALVES, EXCEPT SMALL VALVES ISOLATING EQUIPMENT, WITH BRASS TAGS AND HIGH DIE-STAMPED BLACK LETTERS ATTACHED TO VALVES WITH 4" BRASS CHAINS.</p> <p>5. ACCESS DOORS AND PANELS</p> <p>5.1. PROVIDE ADEQUATE ACCESS TO CONCEALED EQUIPMENT AND COMPONENTS THAT REQUIRE ACCESS FOR MAINTENANCE, ADJUSTMENT AND INSPECTION. PROVIDE MARKING TO THE OWNER'S SATISFACTION THE LOCATIONS WHERE CONCEALED EQUIPMENT IS LOCATED.</p> <p>5.2. ENSURE THAT THE SIZE OF THE DOOR COMPLIES WITH THE MANUFACTURER'S SUGGESTED ACCESS REQUIREMENTS.</p> <p>5.3. COORDINATE ALL ACCESS DOOR AND PANEL SIZES AND LOCATIONS WITH ARCHITECT/INTERIOR DESIGNER.</p> <p>6. FLASHING, CURBS AND CONCRETE</p> <p>6.1. FLASHING SHALL BE CARRIED OUT AS SHOWN ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS AT THE EXPENSE OF DIV.23.</p> <p>6.2. ALL CURBS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE CARRIED OUT AS SHOWN ON ARCHITECTURAL AND/OR MECHANICAL DRAWINGS AT THE EXPENSE OF DIV.23. CURBS SHALL BE INSTALLED AT LEAST 14" ABOVE THE ROOF LEVEL.</p> <p>6.3. PREFABRICATED DUCTWORK CURBS SHALL BE SUPPLIED BY THE EQUIPMENT MANUFACTURER.</p> <p>6.4. PROVIDE 4" (100 MM) THICK CONCRETE HOUSEKEEPING PADS WHERE INDICATED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.</p> <p>7. FIRESTOPPING</p> <p>7.1. PROVIDE FIRE STOPPING SYSTEMS AND PRODUCTS FOR ALL DUCTS, PIPING, ETC. PENETRATING FIRE SEPARATIONS THAT ARE ULC LISTED AND COMPLY WITH CAN4-S1155 AND THE AUTHORITIES HAVING JURISDICTION.</p> <p>7.2. MAINTAIN ALL FLOOR AND WALL FIRE RATINGS TO COMPLY WITH BASE BUILDING STANDARDS AND THE AUTHORITIES HAVING JURISDICTION.</p> <p>8. PIPE, DUCT AND EQUIPMENT INSTALLATION</p> <p>8.1. INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT TO PROVIDE ADEQUATE CLEARANCES FOR SERVICES AS WELL AS MAXIMUM USABLE SPACE FOR ALL OTHER DIVISIONS.</p> <p>8.2. INSTALL PIPING AND DUCTWORK STRAIGHT, IN A NEAT AND CLEAN FASHION AND TIGHT TO STRUCTURES ABOVE (UNLESS OTHERWISE NOTED).</p> <p>8.3. TAKE MEASURES TO PROTECT COPPER PIPING CORROSION FROM CONTACT WITH DISSIMILAR METALS.</p> <p>9. HANGERS AND SUPPORTS</p> <p>9.1. PROVIDE HANGER SYSTEMS FOR ALL DUCTWORK, PIPING AND EQUIPMENT TO PROVIDE A SAFE AND FUNCTIONAL SUPPORT. HANGERS SHALL BE INSTALLED DIRECTLY ATTACHED TO THE STRUCTURE AND IN NO WAY SHALL BE ATTACHED TO OTHER MECHANICAL COMPONENTS OR CEILING SYSTEMS, WHERE COMPONENTS ARE TO BE SUSPENDED BETWEEN JOISTS OR BEAMS. PROVIDE ALUMINUM STEEL CHANNELS TO SUIT.</p> <p>9.2. FOR GENERAL CONDITIONS, PROVIDE ROUND STEEL THREADED RODS CONFORMING TO ASTM A-36, WHERE SPECIAL CONDITIONS EXIST, SUCH AS HIGH HUMIDITY OR EXPOSURE TO ELEMENTS, PROVIDE HANGER COMPONENTS TO SUIT.</p> <p>9.3. IN REGARDS TO ALL PIPING, PROVIDE SUPPORTS AT CONNECTION (SUCH AS HUB) AND AT EVERY CHANGE IN DIRECTION.</p> <p>10. STRUCTURAL AND SEISMIC</p> <p>10.1. WHERE THERE IS NO STRUCTURAL DIVISION AS PART OF THE PROJECT, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE STRUCTURAL REINFORCING FOR ALL DIV.23 INSTALLATIONS. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER WHO IS TO PROVIDE A DESIGN BEARING THEIR PROFESSIONAL SEAL. THE CONTRACTOR SHALL APPLY FOR BUILDING PERMIT AND ASSUME ALL RESPONSIBILITY AND COST FOR THE PERMIT PROCESS. UPON COMPLETION OF WORK, CONTRACTOR SHALL SUBMIT A LETTER FROM THE STRUCTURAL ENGINEER COMPLETE WITH PROFESSIONAL SEAL TO INDICATE THAT THE WORK HAS BEEN COMPLETED TO THE ONTARIO BUILDING CODE, ALL OTHER RELEVANT CODES AND STANDARDS AND TO THE AUTHORITIES HAVING JURISDICTION.</p> <p>10.2. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE REQUIREMENTS FOR SEISMIC BRACING AND SUPPORTS WITH STRUCTURAL DRAWINGS. DIV.23 SHALL CONTRACT THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER TO DESIGN SUPPORTS AND BRACING IN ACCORDANCE WITH ALL CURRENT CODES AND THAT MATCHES THE REQUIREMENT OF THE LOCATION IN WHICH THE SYSTEMS ARE BEING INSTALLED. UPON COMPLETION OF THE PROJECT, SEISMIC ENGINEER SHALL PROVIDE A LETTER BEARING THEIR PROFESSIONAL SEAL INDICATING THAT THE INSTALLATION MEETS THE SEISMIC DESIGN DOCUMENT AND CONFORMS TO THE INSTALLATION CODE AND THE AUTHORITIES HAVING JURISDICTION.</p> <p>11. ELECTRICAL</p> <p>11.1. ALL ELECTRICAL MOTORS, STARTERS, CONTACTORS, DISCONNECT SWITCHES AND CONTROL DEVICES FOR DIV.23 WORK SHALL BE PROVIDED BY DIV.23.</p> <p>11.2. DIV.26 SHALL BE RESPONSIBLE FOR POWERING LOAD SIDE OF STARTERS AND CONTACTORS. POWER FOR ELECTRICAL HEAT TRACING AND CONTROLS, LINE SIDE POWER TO LOOSE STARTERS AND DISCONNECTS.</p> <p>11.3. ALL LOW VOLTAGE WIRING AND CONNECTION IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR.</p> <p>11.4. WHERE THERE IS NO DIV.26 (ELECTRICIAN) AS PART OF THE PROJECT, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF A LICENSED ELECTRICAL CONTRACTOR AND OBTAIN THE APPROPRIATE INSPECTIONS AND APPROVALS FOR THE INSTALLATION OF ALL ELECTRICAL WORK REQUIRED FOR MECHANICAL SYSTEMS.</p> <p>12. PROJECT CLOSEOUT</p> <p>12.1. PRIOR TO THE ISSUING OF A PROJECT COMPLETION NOTICE OR A SIGN-OFF LETTER, THE FOLLOWING DOCUMENTS, AT A MINIMUM, MUST BE PROVIDED TO THE ENGINEER FOR REVIEW:</p> <ul style="list-style-type: none"><li>AIR BALANCING REPORT</li><li>NFPA-13 LETTER</li><li>APPLICABLE SYSTEM/EQUIPMENT TESTING REPORT</li></ul> <p>12.2. PROVIDE BALANCING OF ALL AIR AND WATER SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS. THE BALANCING CONTRACTOR SHALL HAVE A MINIMUM</p>	<p>1. PROVIDE ALL LABOUR AND MATERIALS TO SUPPLY AND INSTALL THE DUCTWORK AND SHEET METAL SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS. THIS INCLUDES INSULATION, ACCESSORIES, ASSOCIATED ITEMS AND ALL NECESSARY CONNECTIONS TO OUTLETS, INLETS AND EQUIPMENT TO PROVIDE A COMPLETE SYSTEM.</p> <p>2. UNLESS OTHERWISE NOTED, FABRICATE ALL DUCTWORK SYSTEMS, INCLUDING DUCTWORK, HOUSINGS, DAMPERS AND ACCESS DOORS, WITH GALVANIZED STEEL SHEET METAL MEETING ASTM A553 AND A524. CONSTRUCTION OF THE DUCTWORK SYSTEMS SHALL BE IN STRICT ACCORDANCE WITH SMACNA. SMACNA DUCT CLEANLINESS AND ASHRAE. ALL DUCTWORK SHALL BE SMOOTH ON THE INSIDE AND SHALL BE FREE FROM RATTLING OR VIBRATION. DUCTWORK NOT MEETING THESE STANDARDS WILL BE REPLACED AT NO EXTRA CHARGE TO THE OWNER.</p> <p>3. CONSTRUCT DUCTWORK AND SEAL ACCORDING TO THE APPROPRIATE SMACNA STANDARDS. LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED WITH THE ONE (1) INCH PRESSURE CLASSIFICATION AND ALL OTHER DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE THREE (3) INCH CLASSIFICATION. DUCT PRESSURES SHALL BE CLASSIFIED AS FOLLOWS:</p> <p>3.1. LOW: DUCT PRESSURES (LOW) OF 1/2" TO 2" W.C. AND NOT EXCEEDING AN AIR VELOCITY OF 2000 FPM.</p> <p>3.2. MEDIUM: DUCT PRESSURES EXCEEDING 2" W.C. OR AND AIR VELOCITY OF 2000 FPM.</p> <p>3.3. THREE INCH: ALL VARIABLE AIR VOLUME (VAV) SUPPLY AIR DUCT SYSTEMS AND AIR DUCTWORK SYSTEMS EXPOSED TO THE OUTDOORS.</p> <p>4. FLEXIBLE DUCTWORK</p> <p>4.1. PROVIDE, WHERE INDICATED ON MECHANICAL DRAWINGS, FLEXIBLE DUCTWORK EQUIVALENT TO FLEXIBLE DUCTWORK. FLEXIBLE DUCTWORK SHALL BE RATED TO THE DUCTWORK SHALL MATCH THE DUCTWORK SYSTEM TO WHICH IT IS ATTACHED. MATCH THE DUCTWORK SIZE TO THE CONNECTION OUTLET OF THE AIR TERMINAL.</p> <p>4.2. SECURE FLEXIBLE DUCTWORK USING GEAR CLAMPS WITH AN ADJUSTING WORM DRIVE TYPE SCREW. SEAL AROUND CONNECTION WITH DUCT TAPE TO OBTAIN THE APPROPRIATE SMACNA SEAL CLASS.</p> <p>4.3. MAXIMUM LENGTH OF FLEXIBLE DUCTWORK PERMITTED IN LOW PRESSURE SYSTEMS IS 10'-0" AND 4'-0" IN ALL OTHER HIGHER PRESSURE SYSTEMS.</p> <p>4.4. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR TO TAKE INTO ACCOUNT DUCT LINERS, ETC. WHEN PERFORMING TAKE-OFFS.</p> <p>4.5. MAKE ALL DUCT CONNECTIONS, CONCENTRIC AND ECCENTRIC TRANSITIONS, ETC., IN ACCORDANCE WITH SMACNA.</p> <p>4.6. PROVIDE DUCT ACCESS DOORS AT LOCATIONS AS SHOWN ON DRAWINGS, AS WELL AS AT THE LINKAGE AND OF AUTOMATIC DAMPERS, FIRE DAMPERS AND ANY OTHER SERVICE, BALANCE OR CONTROL DEVICE REQUIRING PERIODIC MAINTENANCE. THE DOORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA AND SHALL MATCH THE PRESSURE RATING OF THE DUCTWORK SYSTEM TO WHICH IT IS BEING INSTALLED.</p> <p>4.7. PROVIDE DUCT ACCESS DOORS AT LOCATIONS AS SHOWN ON DRAWINGS, AS WELL AS AT THE LINKAGE AND OF AUTOMATIC DAMPERS, FIRE DAMPERS AND ANY OTHER SERVICE, BALANCE OR CONTROL DEVICE REQUIRING PERIODIC MAINTENANCE. THE DOORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA AND SHALL MATCH THE PRESSURE RATING OF THE DUCTWORK SYSTEM TO WHICH IT IS BEING INSTALLED.</p> <p>4.8. PROVIDE FLEXIBLE CONNECTIONS AT THE INLET AND OUTLET CONNECTION FOR EACH FAN BETWEEN DUCTWORK AND INLET AND OUTLET COLLARS. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE NEOPRENE COATED FIBERGLASS. PROVIDE OUTDOOR ACCESS DOORS FOR DAMPER INSPECTION AND MAINTENANCE. THE DOORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA AND SHALL MATCH THE PRESSURE RATING OF THE DUCTWORK SYSTEM TO WHICH IT IS BEING INSTALLED.</p> <p>4.9. PROVIDE FIRE DAMPERS WHERE INDICATED ON MECHANICAL DRAWINGS. ALL DAMPERS SHALL BE SELECTED TO SUIT THE RATING OF THE FLOOR OR WALL ASSEMBLY IN WHICH IT WILL BE INSTALLED. FIRE DAMPERS SHALL BE ULC LISTED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, NFPA 90A AND THE AUTHORITIES HAVING JURISDICTION. TYPE A FIRE DAMPERS ARE PERMITTED FOR NON-DUCTED TRANSFER DUCTWORK. TYPE B FIRE DAMPERS SHALL BE USED IN ALL OTHER CASES UNLESS OTHERWISE NOTED.</p> <p>4.10. REMOVABLE DUCT SECTIONS FOR FIRE AND SMOKE DAMPER ACCESS: WHERE A MINIMUM 12"x12" ACCESS PANEL CAN NOT BE INSTALLED ON DUCTWORK, A REMOVABLE DUCTWORK SECTION FOR DAMPER INSPECTION AND MAINTENANCE SHALL BE PROVIDED. REMOVABLE DUCTWORK SECTION TO FUNCTION WITHOUT THE USE OF TOOLS AND SHALL NOT BE MORE THAN 4" AWAY FROM THE FIRE DAMPER SLEEVE BREAK AWAY CONNECTION.</p> <p>4.11. MANUAL BALANCING DAMPERS INSTALLED IN DUCTWORK NOT EXCEEDING 12" ON THE LONGEST SIDE SHALL BE CONSTRUCTED AS PER SMACNA. PROVIDE OPPOSED BLADE DAMPERS WHERE THE DIMENSION OF THE LONGEST SIDE OF THE DUCTWORK EXCEEDS 12". OPPOSED BLADE DAMPERS SHALL BE OF GALVANIZED STEEL CONSTRUCTION WITH LOCK SCREWS AT OPPOSITE ENDS. PROVIDE BALANCING DAMPERS WHERE SHOWN ON DRAWING AS WELL AS ON BRANCHES OFF OF MAIN DUCTWORK WITH ADEQUATE ACCESS.</p> <p>4.12. PROVIDE ALL DIFFUSERS, REGISTERS, GRILLES, ETC. OF TYPE AND SIZE AS INDICATED ON MECHANICAL DRAWINGS. CONFORM ALL AIR TERMINAL COLOURS WITH ARCHITECT/INTERIOR DESIGNER. REGARDLESS OF SPECIFICATION ON MECHANICAL DRAWINGS, MECHANICAL CONTRACTOR IS TO COORDINATE INSTALLATION OF DOOR GRILLES WITH ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR.</p> <p>4.13. PROVIDE DUCTWORK INSULATION AND LINERS WHERE NOTED ON MECHANICAL DRAWINGS, AS PER THE FOLLOWING:</p> <p>4.14. ACUSTIC LINING</p> <p>4.15. DUCT LINING SHALL COMPLY WITH NFPA 90A AND DUCT LINER MATERIALS STANDARD OF THE THERMAL INSULATION MANUFACTURER'S ASSOCIATION.</p> <p>4.16. RECTANGULAR DUCTWORK: PROVIDE ONE INCH (1") THICK ACUSTIC LINING EQUAL TO JOHNS MANVILLE LINAUSTIC RC COMPLETE WITH PERMACOTE ACRYLIC ANTI-MICROBIAL COATING.</p> <p>4.17. SPIRAL DUCTWORK: PROVIDE ONE INCH (1") THICK ACUSTIC LINING EQUAL TO JOHNS MANVILLE SPINAUSTIC PLUS ROUND DUCT LINER SYSTEM COMPLETE WITH PERMACOTE ANTI-MICROBIAL COATING.</p> <p>4.18. PROVIDE ACUSTIC LINING AS SPECIFIED ON ALL SUPPLY, RETURN AND EXHAUST FAN EQUIPMENT FOR 10'-0" (3.0 M) FROM THE INLET/OUTLET.</p> <p>4.19. THERMAL INSULATION</p> <p>4.20. PROVIDE THERMAL INSULATION WHERE NOTED ON MECHANICAL DRAWINGS. INSULATE ALL DUCTWORK LEAVING OR ENTERING THE BUILDING FOR THE FIRST 6 FT. FROM THE BUILDING PENETRATION WITH 2" OF THERMAL INSULATION.</p> <p>4.21. RECTANGULAR DUCTWORK: PROVIDE ONE INCH (1") JOHNS MANVILLE SERIES 814 SPIN-GLAS FIBER GLASS DUCT BOARD INSULATION WITH FSK FACING. IMPALE ON MECHANICALLY FASTENED PINS LOCATED AT NOT MORE THAN 12" ON CENTRE, AND SECURE WITH SPEED WASHERS.</p> <p>4.22. RIGID ROUND (SPIRAL) DUCTWORK: PROVIDE ONE INCH (1") JOHNS MANVILLE MICROLITE EQ FSK FIBER GLASS DUCT WRAP INSULATION WHERE INDICATED ON DRAWINGS. ADHERE INSULATION TO DUCT SURFACE AND LAP ALL EDGES AT LEAST 2". SEAL JOINTS WITH 4" WIDE ALUMINUM FOIL TAPE.</p> <p>4.23. FLEXIBLE DUCTWORK: PROVIDE ONE INCH (1.25") JOHNS MANVILLE FLEX-GLAS EQ FLEXIBLE DUCTWORK INSULATION WITH FSK FACING. LAP JOINTS AND SEAL WITH 4" WIDE ALUMINUM FOIL TAPE.</p> <p>4.24. WHERE DUCTWORK IS INSTALLED OUTSIDE THE BUILDING OR EXPOSED TO THE ELEMENTS, PROVIDE TWO INCHES (2") OF THERMAL INSULATION, BUTT JOINTS TIGHTLY TOGETHER AND SEAL WASHERS, BREAKS AND JOINTS WITH SELF-ADHERING FOUR INCHES (4") WIDE PLAIN ALUMINUM TAPE, OR ADHERE FOIL WITH CHILDERS CP82 OR SKAGLITE 230-35 ADHESIVE.</p> <p>4.25. JACKETING</p> <p>4.26. RECOVER ALL DUCTWORK OUTSIDE THE BUILDING OR EXPOSED TO THE ELEMENTS WITH ALUMINUM JACKETING TO ASTM B209 WITH MOISTURE BARRIER, THICKNESS 0.50MM SHEET, STUCCO EMBOSSED FINISH, JACKET BANDING AND MECHANICAL SEALS 12MM WIDE AND 0.5MM THICK STAINLESS STEEL.</p> <p>4.27. HVAC BALANCING</p> <p>4.28. PROVIDE BALANCING OF ALL AIR AND WATER SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS. THE BALANCING CONTRACTOR SHALL HAVE A MINIMUM</p>	<p>OF FIVE (5) YEARS EXPERIENCE AND BE NEBB CERTIFIED. ALL BALANCING, TESTING ADJUSTING AND REPORTING SHALL BE CARRIED OUT IN ACCORDANCE WITH NEBB. PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS. WHERE APPLICABLE, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF THE BASE BUILDING APPROVED TAB CONTRACTOR.</p> <p>13.2. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE CURRENT EDITION OF THE NEBB STANDARDS. MARK EQUIPMENT AND BALANCING DEVICE SETTING WITH PAINT OR OTHER SUITABLE PERMANENT IDENTIFICATION MATERIAL TO SHOW FINAL SETTINGS.</p> <p>13.3. BALANCE AIRFLOW AND HYDROIC FLOW QUANTITIES WITHIN +/- 10% OF THE DESIGN CRITERIA. IN THE EVENT THAT A CONDITION OR DEFICIENCY IS PREVENTING THE ACCEPTANCE RANGE FROM BEING ACHIEVED, IT SHALL BE NOTED WITH DESCRIPTION ON THE TAB REPORT. UPON COMPLETION, SUBMIT A FINAL TAB REPORT TO THE CONSULTANT FOR REVIEW.</p> <p>14. CONTROLS</p> <p>14.1. PROVIDE ALL CONTROLS, WIRING, CONDUIT, ACCESSORIES, ETC. AND INTERLOCK WITH EQUIPMENT/STARTERS AS INDICATED ON DRAWINGS.</p> <p>14.2. WHEN INSTALLED IN CEILING PLENUMS, CABLE MAY BE FREE-AIR, UNLESS OTHERWISE NOTED. PROVIDING THE WIRING IS FT-6 PLENUM RATED.</p> <p>14.3. WHEN INSTALLED IN OPEN AREAS, PROVIDE EMT CONDUIT, FITTINGS, MOUNTING ACCESSORIES, ETC. TO DELIVER A NEAT AND CLEAN INSTALLATION.</p> <p>14.4. MOUNTING HEIGHTS:</p> <p>14.4.1. OCCUPANT ADJUSTABLE: MOUNT AT 3'-11" (1200 MM) A.F.F.</p> <p>14.4.2. NON-ADJUSTABLE (SENSOR ONLY): MOUNT AT 5'-0" (1500 MM) A.F.F.</p> <p>14.4.3. "THROW" TYPE: "A", UP TO 2'6" - 1" THICK, 2-1/2"2" AND UP - 1-1/2" THICK</p> <p>14.4.4. "HORIZONTAL" TYPE: "A", 1/2" THROUGHOUT</p> <p>14.4.5. "CONFIRM MOUNTING HEIGHTS WITH CONSULTANT PRIOR TO INSTALLATION.</p> <p>14.5. COORDINATE INSTALLATION OF ALL CONTROL DEVICES/SENSORS WITH ARCHITECTURAL DRAWINGS.</p> <p>14.6. INSTALL CONTROL DEVICES/SENSORS CLEAR OF DIMMERS SO AS TO AVOID INTERFERENCE.</p> <p>14.7. THE MECHANICAL CONTRACTOR SHALL TEST ALL CONTROLS/INTERLOCKS FOR GOOD OPERATION PRIOR TO PROJECT CLOSE-OUT. PROVIDE A REPORT FOR REVIEW TO THE ENGINEER INDICATING DEFICIENCIES.</p> <p>14.8. WIRE ALL DEVICES TO THEIR RESPECTIVE MAGNETIC STARTERS AND PROVIDE POWER TO DIV.23 CONTROL PANELS FROM NEAREST AND MOST SUITABLE ELECTRICAL PANEL.</p> <p>14.9. CONTRACT THE SERVICES OF THE BASE BUILDING APPROVED CONTROLS CONTRACTOR WHERE APPLICABLE.</p> <p>14.10. PNEUMATIC CONTROLS</p> <p>14.10.1. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.10.2. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.11. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.12. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.13. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.14. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.15. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.16. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.17. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.18. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.19. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.20. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.21. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.22. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.23. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.24. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.25. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.26. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.27. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.28. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.29. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.30. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.31. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.32. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.33. 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CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.49. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.50. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.51. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.52. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.53. 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CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.69. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.70. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.71. PROVIDE TYPE M SEAMLESS COPPER TUBING THAT COMPLIES WITH ASTM B280, WROUGHT COPPER FITTINGS THAT COMPLY WITH ANSI/ASME B16.22, AND JOINTS THAT COMPLY WITH ANSI/ASTM B32.</p> <p>14.72. CONCEAL TUBING, UNLESS LOCATED IN MECHANICAL ROOMS, AND MECHANICALLY FASTEN TO SUPPORTING STRUCTURES. PURGE TUBING WITH OIL-FREE COMPRESSED AIR BEFORE CONNECTING TO CONTROL INSTRUMENTS.</p> <p>14.73. 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HVAC LEGEND	
	EXISTING DUCTWORK/EQUIPMENT
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED
	NEW RIGID DUCTWORK
	EXISTING FLEXIBLE DUCTWORK
	NEW FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK UP
	SUPPLY AIR DUCTWORK DOWN
	RETURN AIR DUCTWORK UP
	RETURN AIR DUCTWORK DOWN
S/A	'SUPPLY AIR'
R/A	'RETURN AIR'
F/D	'FIRE DAMPER'
L BD	'BALANCING DAMPER'
BD	'BACKDRAFT DAMPER'
M/D	'MOTORIZED DAMPER'
	SQUARE SUPPLY AIR DIFFUSER
	SUPPLY AIR GRILLE
	RETURN AIR GRILLE
	SLOT DIFFUSER
	THERMOSTAT
	HUMIDISTAT
	CARBON DIOXIDE SENSOR
	CARBON MONOXIDE DETECTOR
	ZONE SENSOR
A-6* 150CFM	DIFF TYPE/SIZE 'AIR CAPACITY'
Typ.	'TYPICAL'
X-XX	EQUIPMENT TAG
C/E	'CONNECT TO EXISTING'
	FAN-POWERED TERMINAL UNIT
	VAV TERMINAL UNIT
	CABINET EXHAUST FAN
	INLINE EXHAUST FAN
	ELECTRIC DUCT HEATER
	CIRCULAR EXHAUST FAN
	BASEBOARD HEATER
	FORCE FLOW HEATER
	UNIT HEATER
	DUCTWORK WITH ACOUSTIC OR THERMAL INSULATION (SEE SPECS.)
	DUCTWORK WITH ACOUSTIC INSULATION
	DUCTWORK WITH THERMAL INSULATION
	CONTINUATION OF DUCTWORK/PIPING
	EXISTING CONTROL WIRING
	NEW CONTROL WIRING
	SPIN-ON DUCT CONNECTION WITH BALANCING DAMPER
	DRAWING NOTE
	ROUND SUPPLY AIR DIFFUSER
	LOUVERED FACE SUPPLY/RETURN GRILLE
CAP	CAP ON DUCTWORK
	BRANCH ON DUCTWORK



PLUMBING LEGEND	
	EXISTING ABOVE GROUND SANITARY DRAINAGE PIPING
	EXISTING UNDERGROUND SANITARY DRAINAGE PIPING
	ABOVE GROUND SANITARY DRAINAGE PIPING
	UNDERGROUND SANITARY DRAINAGE PIPING
	EXISTING ABOVE GROUND STORM DRAINAGE PIPING
	EXISTING UNDERGROUND STORM DRAINAGE PIPING
	ABOVE GROUND STORM DRAINAGE PIPING
	UNDERGROUND STORM DRAINAGE PIPING
	EXISTING ABOVE GROUND VENT PIPING
	EXISTING UNDERGROUND VENT PIPING
	ABOVE GROUND VENT PIPING
	UNDERGROUND VENT PIPING
	EXISTING CONDENSATE DRAINAGE PIPING
	CONDENSATE DRAINAGE PIPING
	EXISTING DOMESTIC COLD WATER PIPING
	EXISTING DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER PIPING
	EXISTING DOMESTIC HOT WATER RETURN PIPING
	DOMESTIC HOT WATER RETURN PIPING
	EXISTING GAS PIPING
	LOW PRESSURE GAS PIPING
	HIGH PRESSURE GAS PIPING
	EXISTING PIPING/EQUIPMENT TO BE REMOVED
SSSS	HEAT TRACING ON PIPE
	CONTINUATION OF DUCTWORK/PIPING
	FLOOR DRAIN/FUNNEL FLOOR DRAIN
HD	HUB DRAIN
AD	AREA DRAIN
RD	ROOF DRAIN
CB	CATCH BASIN
CD	BURIED CLEANOUT
CO	EXPOSED CLEANOUT
	SANITARY 'P' TRAP
	PIPE UP
	PIPE DOWN
VTR	VENT THROUGH ROOF
CAP	CAP ON PIPING
	DRAWING NOTE
	ISOLATION VALVE
	PIPING DROPDOWN
	WATER METER



FIRE PROTECTION LEGEND	
	UPRIGHT SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
	RECESSED PENDENT SPRINKLER HEAD
	CONCEALED SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	FIRE EXTINGUISHER
FHC	FIRE HOSE CABINET
	DRAWING NOTE

FIRE PROTECTION LEGEND	
	UPRIGHT SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
	RECESSED PENDENT SPRINKLER HEAD
	CONCEALED SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	FIRE EXTINGUISHER
FHC	FIRE HOSE CABINET
	DRAWING NOTE

PLUMBING FIXTURE SCHEDULE					
TAG	FIXTURES		PIPE CONNECTION		
	SPECIFICATION		TRAP	COLD WATER	HOT WATER
WC1	FLOOR MOUNTED TANK TYPE TOILET – VITREOUS CHINA – MANUAL	ZURN Z5535–K TOILET – HIGH PERFORMANCE TWO PIECE WATER CLOSET, VITREOUS CHINA, AT 381 MM (15 IN) HEIGHT, ELONGATED BOWL, SIPHON JET ACTION, 76 MM (3 IN) FLUSH VALVE, 51 MM (2 IN) COMPLETELY GLAZED TRAPWAY, CHROME FINISH METAL HANDLE, BOLT CAPS, 4.8 L (1.28 US GAL) PER FLUSH. ZURN Z59555S–AM–STS SEAT – SOLID PLASTIC ELONGATED SEAT FOR INTENSIVE USE WITH ANTI-MICROBIAL PROTECTION, OPEN FRONT, COVERLESS, MOLDED BUMPER GUARD, STAINLESS STEEL CHECK HINGES, WHITE.	75#	12#	–
WC2	BARRIER FREE FLOOR MOUNTED TANK TYPE TOILET – VITREOUS CHINA – MANUAL	ZURN Z5555–K TOILET – HIGH PERFORMANCE TWO PIECE WATER CLOSET, VITREOUS CHINA, AT 425 MM (16–23/32 IN) HEIGHT, ELONGATED BOWL, SIPHON JET ACTION, 76 MM (3 IN) FLUSH VALVE, 51 MM (2 IN) COMPLETELY GLAZED TRAPWAY, CHROME FINISH METAL HANDLE, BOLT CAPS, 4.8 L (1.28 US GAL) PER FLUSH. ZURN Z59575S–AL SEAT – HEAVY DUTY SOLID PLASTIC ELONGATED SEAT, OPEN FRONT, WITH COVER, MOLDED BUMPER GUARD, STAINLESS STEEL CHECK HINGES, WHITE.	75#	12#	–
WC3	FLOOR MOUNTED TOILET – VITREOUS CHINA – FLUSHOMETER – EXPOSED – MANUAL	ZURN Z5865–BW–L–AM TOILET – VITREOUS CHINA ELONGATED BOWL WITH SMARTSILVER SURFACE (ANTIMICROBIAL FINISH), 425 MM (16–3/4 IN) IN HEIGHT, SIPHON JET ACTION, 54 MM (2–1/8 IN) COMPLETELY GLAZED TRAPWAY, BOLT CAPS, 38 MM (1–1/2 IN) TOP SPUD CONNECTION, 6 L (1.6 US GAL) OR 4.8 L (1.28 US GAL) PER FLUSH. ZURN Z59565S–AM SEAT – SOLID PLASTIC ELONGATED SEAT FOR SUPER-INTENSIVE USE WITH ANTI-MICROBIAL PROTECTION, OPEN FRONT, COVERLESS, MOLDED BUMPER GUARD, STAINLESS STEEL CHECK HINGES AND FASTENERS, WHITE.	75#	25#	–
L1	WALL HUNG LAVATORY – SINGLE HANDLE MANUAL FAUCET	ZURN Z6000AV–HET–BG FLUSH VALVE – EXPOSED QUIET FLUSH VALVE FOR WATER CLOSETS, TPE CHLORAMINE RESISTANT DUAL SEAL DIAPHRAGM WITH TRIPLE FILTER BY-PASS, ADA COMPLIANT OSCILLATING BIOGUARD HANDLE, CONTROL STOP OF DN 1" SWEAT CONNECTION, WITH VANDAL RESISTANT STOP CAP, CAST WALL FLANGE, 38 MM (1–1/2 IN) VACUUM BREAKER TUBE, POLISHED CHROME FINISH, 4.8 L (1.28 US GAL).	32#	12#	12#
L2	WALL HUNG LAVATORY – SINGLE HANDLE MANUAL FAUCET	ZURN Z5321 LAVATORY – VITREOUS CHINA WALL HUNG LAVATORY FOR BARRIER-FREE APPLICATION, 581 X 514 MM ( 22–7/8 X 20–1/4 IN), BACKSPASH, FRONT OVERFLOW, PRE-DRILLED FOR CONCEALED ARMS, DRILLED SINGLE HOLE. ZURN Z82200–XL–3M FAUCET – SINGLE LEVER FAUCET, LOW LEAD, WITH AN INTEGRAL 127 MM (5 IN) CAST SPOUT, CAST BRASS BODY, QUARTER-TURN CERAMIC DISC CARTRIDGE, LEVER HANDLE, SINGLE HOLE INSTALLATION, POLISHED CHROME FINISH, ADJUSTABLE HIGH TEMPERATURE LIMIT STOP, 1.9 L/MIN. (0.5 USGPM) PRESSURE COMPENSATING AERATOR, STAINLESS STEEL BRAIDED HOSES.	32#	12#	12#
L3	DROP-IN LAVATORY – SINGLE HANDLE MANUAL FAUCET	ZURN Z82200–XL–3M FAUCET – SINGLE LEVER FAUCET, LOW LEAD, WITH AN INTEGRAL 127 MM (5 IN) CAST SPOUT, CAST BRASS BODY, QUARTER-TURN CERAMIC DISC CARTRIDGE, LEVER HANDLE, SINGLE HOLE INSTALLATION, POLISHED CHROME FINISH, ADJUSTABLE HIGH TEMPERATURE LIMIT STOP, 1.9 L/MIN. (0.5 USGPM) PRESSURE COMPENSATING AERATOR, STAINLESS STEEL BRAIDED HOSES.	32#	12#	12#
SH1	WALL MOUNT SHOWER HEAD – THERMOSTATIC SHOWER VALVE	LEONARD 170–LF MIXING VALVE – 127 MM X 120 MM (5 X 4") THERMOSTATIC POINT OF USE MIXING VALVE, 3/8" INLETS, 3/8" OUTLET, COMPRESSION CONNECTIONS, BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH POLYMER THERMOPLASTIC SHUTTLE, STAINLESS STEEL SPRINGS, BUNA-N O-RINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS, COMPRESSION FITTINGS ON INLETS AND OUTLET, MINIMUM FLOW: 1.9 L/MIN (0.5 USGPM), MAXIMUM PRESSURE: 125 PSI (8.6 BAR), MAXIMUM HOT WATER TEMPERATURE: 93°C (200 °F).	–	12#	12#
SH2	WALL MOUNT SHOWER HEAD – HAND SHOWER – THERMOSTATIC SHOWER VALVE	ZURN Z82200–XL–3M FAUCET – SINGLE LEVER FAUCET, LOW LEAD, WITH AN INTEGRAL 127 MM (5 IN) CAST SPOUT, CAST BRASS BODY, QUARTER-TURN CERAMIC DISC CARTRIDGE, LEVER HANDLE, SINGLE HOLE INSTALLATION, POLISHED CHROME FINISH, ADJUSTABLE HIGH TEMPERATURE LIMIT STOP, 1.9 L/MIN. (0.5 USGPM) PRESSURE COMPENSATING AERATOR, STAINLESS STEEL BRAIDED HOSES.	–	12#	12#
SH3	WALL MOUNT SHOWER HEAD – METERED PUSH BUTTON SHOWER VALVE	LEONARD 170–LF MIXING VALVE – 127 MM X 120 MM (5 X 4") THERMOSTATIC POINT OF USE MIXING VALVE, 3/8" INLETS, 3/8" OUTLET, COMPRESSION CONNECTIONS, BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH POLYMER THERMOPLASTIC SHUTTLE, STAINLESS STEEL SPRINGS, BUNA-N O-RINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS, COMPRESSION FITTINGS ON INLETS AND OUTLET, MINIMUM FLOW: 1.9 L/MIN (0.5 USGPM), MAXIMUM PRESSURE: 125 PSI (8.6 BAR), MAXIMUM HOT WATER TEMPERATURE: 93°C (200 °F).	–	12#	12#
SD	SHOWER DRAIN	ZURN Z8743–PC DRAIN – STRAINER DRAIN ASSEMBLY, CAST BRASS BODY, 32 MM (1–1/4 IN), POLISHED CHROME FINISH.	75#	–	–
FD	FLOOR DRAIN	ZURN Z8700–8–PC–BD P–TRAP – 32 MM (1–1/4") CAST BRASS ADJUSTABLE P–TRAP, WITH DEEP WALL FLANGE AND CLEANOUT, CHROME PLATE FINISH.	75#	–	–
TSP	AUTOMATIC TRAP SEAL PRIMER (AS REQUIRED FOR REMOTE FLOOR DRAINS)	ZURN Z1231 CARRIER – BACK TO BACK CONCEALED WALL HUNG CARRIER, STEEL UPRIGHTS WITH WELDED FEET, CAST IRON ADJUSTABLE HEADERS, CONCEALED ARMS, ALIGNMENT TRUSS AND MOUNTING FASTENERS.	–	12#	–

DIFFUSER SCHEDULE				
TAG	MAKE/MODEL	FINISH	REMARKS	
A	EH PRICE MODEL SCD 24/24 SQUARE S/A DIFFUSER	–	3 CONE, STEEL CONSTRUCTION FOR T–BAR LAY–IN. SIZE NECK AND BALANCE AS INDICATED ON DRAWINGS.	
B	EH PRICE MODEL 520 LOUVERED SUPPLY GRILLE	–	STEEL CONSTRUCTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, FOR T–BAR LAY–IN C/W OPPOSED BLADE DAMPER. SIZE AND BALANCE AS INDICATED ON DRAWINGS.	
C	EH PRICE MODEL 530 LOUVERED FACE RETURN GRILLE	–	STEEL CONSTRUCTION, 45° DEFLECTION, 3/4" BLADE SPACING, FOR T–BAR LAY–IN OR SURFACE MOUNTING C/W OPPOSED BLADE DAMPER. SIZE AS INDICATED ON DRAWINGS.	
D	EH PRICE MODEL 80 EGG CRATE GRILLE	–	CORE ONLY, 1/2"x1/2"x1/2" ALUMINUM GRID CORE, FOR T–BAR LAY–IN. SIZE AS INDICATED ON DRAWINGS.	
E	EH PRICE MODEL 90 HEAVY DUTY RETURN GRILLE	–	STEEL CONSTRUCTION, 3/8" BLADE SPACING, 45° DEFLECTION, FOR SURFACE MOUNTING. SIZE AS INDICATED ON DRAWINGS.	
NOTES:				
1. TITUS AND NALOR WILL BE CONSIDERED EQUAL GIVEN THAT THE PERFORMANCE DATA IS EQUIVALENT.				
2. SIZE ALL GRILLES, DIFFUSERS, ETC. AS PER MECHANICAL DRAWINGS.				
3. CONFIRM ALL FINISHES WITH ARCHITECT/INTERIOR DESIGNER.				

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DISCLAIMER

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This drawing shall be read in conjunction with the architectural, structural, electrical and all other consultant's drawings prior to proceeding with the work. Do not scale the drawings.

The contractor is to verify and accept responsibility for all dimensions and conditions on site and must notify GIALLONARDO ENGINEERING INC. of any variations from the drawings.

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	OCT. 03 2023	SW
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3	ISSUED FOR CONSTRUCTION	FEB. 05 2024	SW

NO.	REVISIONS	DATE	BY
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PROJECT:

**ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

**MECHANICAL LEGEND, SCHEDULES & DETAILS**

BARRY BRYAN ASSOCIATES

Architects  
Engineers  
Project Managers

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DESIGN BY:  
SW

DRAWN BY:  
SW

CHECKED BY:  
JH

DATE:  
SEP 2023

SCALE:  
AS SHOWN

FILE:

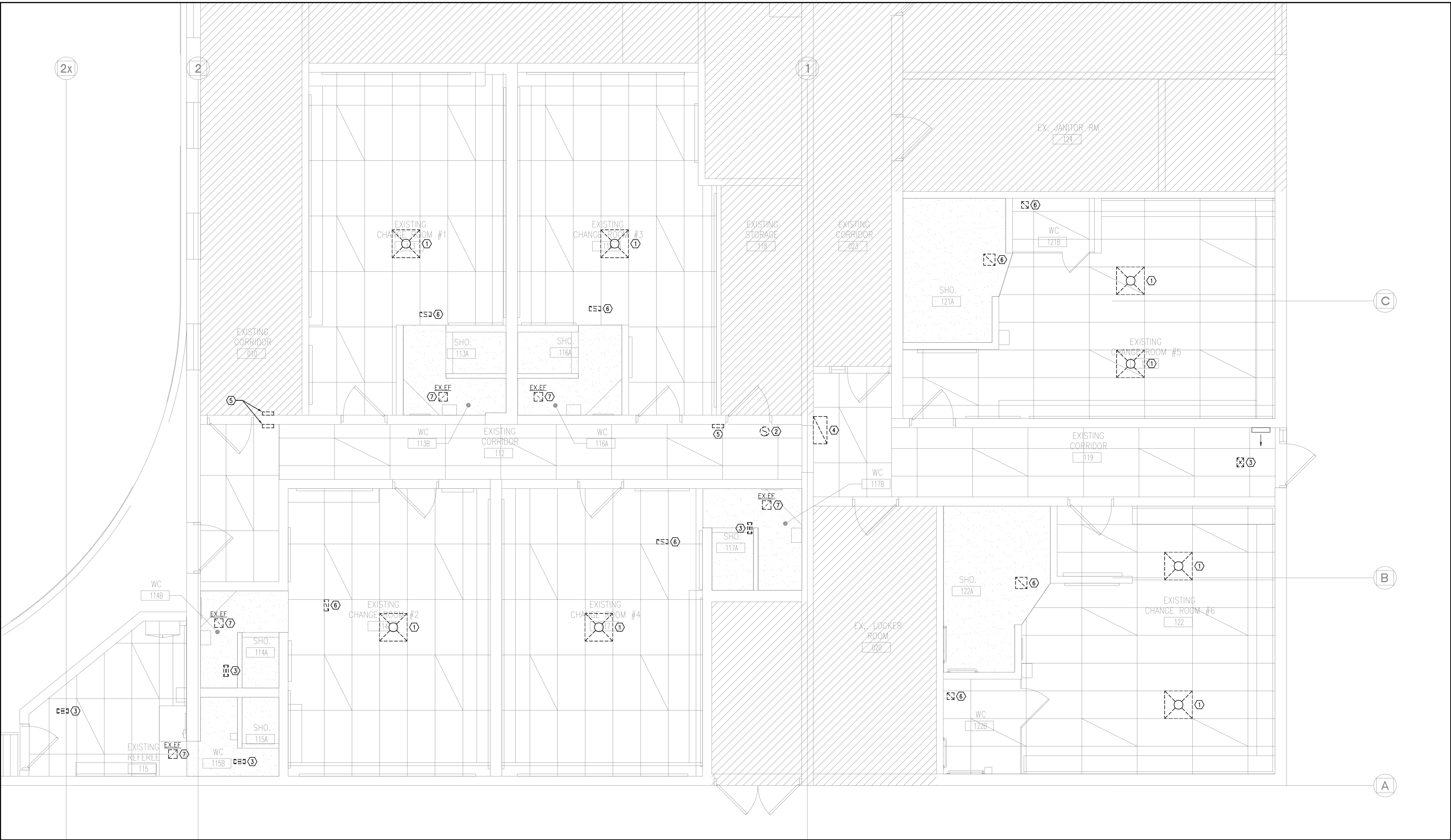
PROJECT NO:

**23-149**

DRAWING NO:

**M-1.2**





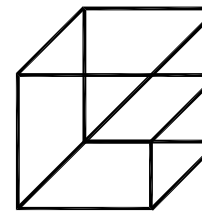
1 PART FLOOR PLAN - HVAC DEMOLITION  
M-2.1 1:50

#### HVAC NOTES

- EXISTING SQUARE CONE DIFFUSER AND ASSOCIATED FLEXIBLE DUCTWORK (WHERE APPLICABLE) TO BE REMOVED AND DISPOSED OF.
- EXISTING S/A DROP TO BE REMOVED BACK TO MAIN. PREPARE FOR CONNECTION OF NEW FLEXIBLE DUCTWORK. REFER TO NEW PLANS.
- EXISTING S/A GRILLE TO BE REMOVED AND DISPOSED OF.
- EXISTING R/A GRILLE TO BE REMOVED AND DISPOSED OF.
- EXISTING T/A GRILLE TO BE REMOVED AND DISPOSED OF.
- EXISTING E/A GRILLE TO BE REMOVED AND DISPOSED OF.
- EXISTING CABINET EXHAUST FAN TO REMAIN. ASSOCIATED FAN GRILLE TO BE REMOVED AND DISPOSED OF.

#### GENERAL HVAC NOTES

- WHERE COMPONENTS ARE TO BE REUSED, THE CONTRACTOR SHALL CLEAN AND TEST THE COMPONENT TO ENSURE PROPER OPERATION. THE CONSULTANT SHALL BE NOTIFIED IN THE EVENT THERE IS A DEFICIENCY WITH THE COMPONENT.
- PERFORM DEMOLITION WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL DEMOLITION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.
- THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
- THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.
- THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDRANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.



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#### PROJECT:

**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

#### DRAWING:

**PART FLOOR PLAN -  
HVAC DEMOLITION**



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SW

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JH

DATE:  
SEP 2023

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FILE:

PROJECT NO:

**23-149**

DRAWING NO:

**M-2.1**





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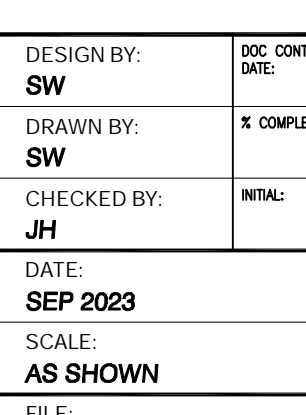
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PROJECT:  
**ORONO ARENA AND  
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2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

PART FLOOR PLAN -  
HVAC NEW

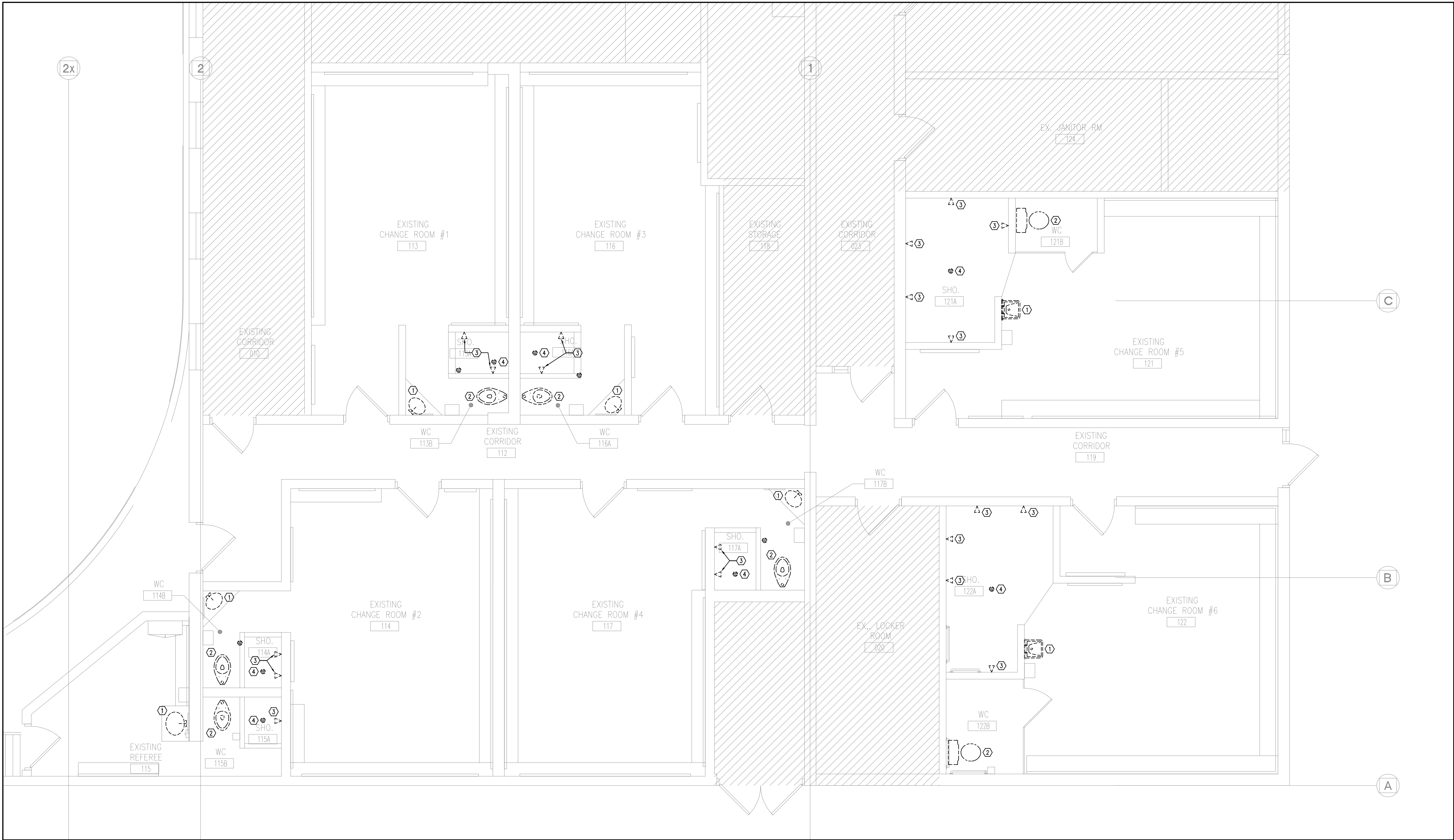
PROJECT NO.

23-149

DRAWING NO:

## M-2.2





1 PART FLOOR PLAN - PLUMBING & DRAINAGE DEMOLITION  
M-3.1 1:50

PLUMBING & DRAINAGE DRAWING NOTES

① EXISTING LAVATORY, FAUCET, P-TRAP, ANGLE STOPS AND FLEXIBLE RISERS TO BE REMOVED AND DISPOSED OF. PREPARE FOR INSTALLATION OF NEW LAVATORY. REFER TO NEW PLANS.

② EXISTING WATER CLOSET TO BE REMOVED AND DISPOSED OF. THOROUGHLY CLEAN AND REPAIR EXISTING TOILET FLANGE AND PREPARE FOR INSTALLATION OF NEW WATER CLOSET. REFER TO NEW PLANS.

③ EXISTING SHOWER VALVE AND SHOWER HEAD TO BE REMOVED AND DISPOSED OF. PREPARE FOR INSTALLATION OF NEW SHOWER. REFER TO NEW PLANS.

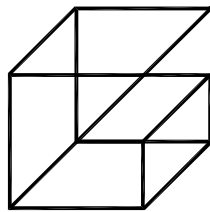
④ EXISTING FLOOR DRAIN TO BE REMOVED AND DISPOSED OF. PREPARE FOR INSTALLATION OF NEW FLOOR DRAIN. REFER TO NEW PLANS (TYPICAL).

GENERAL NOTES

1. PROVIDE VENTING SYSTEMS IN ACCORDANCE WITH PART 7 OF THE ONTARIO BUILDING CODE.

2. PROVIDE ADEQUATE ACCESS FOR ALL EQUIPMENT, VALVES, ETC. LOCATED BEHIND WALLS AND CEILINGS. REFER TO SPECIFICATIONS.

3. ALL EXISTING SERVICES SHOWN ARE A GENERAL REPRESENTATION ONLY OF ACTUAL ONSITE CONDITIONS. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING SERVICES PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO ENGINEER IN A TIMELY MANNER.



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PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**PART FLOOR PLAN -  
PLUMBING & DRAINAGE  
DEMOLITION**



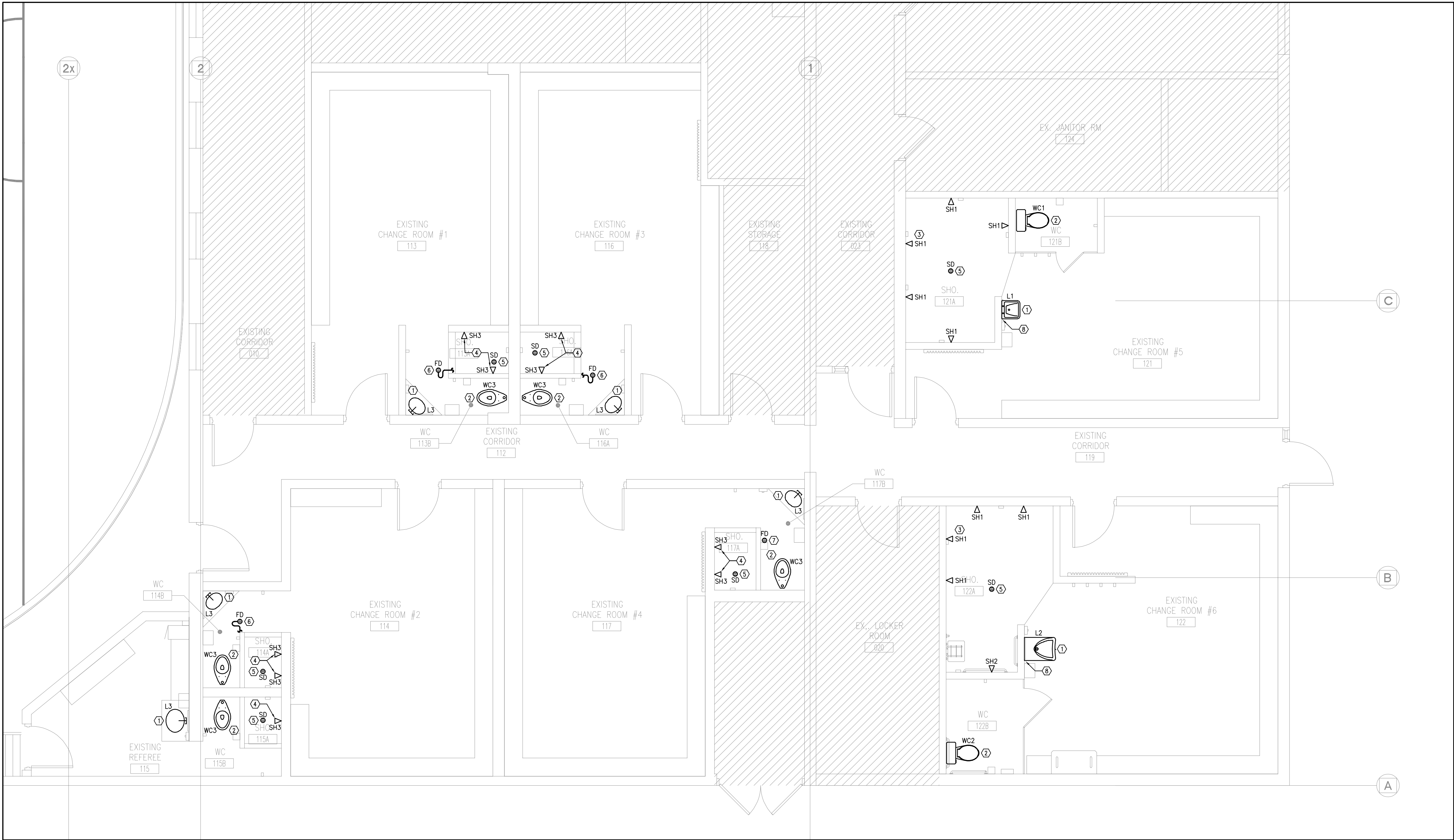
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DATE: <b>SEP 2023</b>	
SCALE: <b>AS SHOWN</b>	
FILE:	

PROJECT NO: <b>23-149</b>	DRAWING NO: <b>M-3.1</b>
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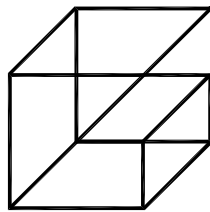




1 PART FLOOR PLAN - PLUMBING & DRAINAGE NEW  
M-3.2 1:50

- PLUMBING & DRAINAGE DRAWING NOTES
1. PROVIDE NEW LAVATORY C/W FAUCET, P-TRAP, ANGLE STOPS AND FLEXIBLE RISERS AS SPECIFIED. REWORK EXISTING DOW/DHW PIPING AND PROVIDE NEW SANITARY DRAINAGE PIPING AS REQUIRED TO SUIT NEW INSTALLATION.
  2. PROVIDE NEW WATER CLOSET AS SPECIFIED. REWORK EXISTING DOW PIPING AS REQUIRED AND REPAIR/REPLACE TOILET FLANGE IF NECESSARY TO SUIT NEW INSTALLATION.
  3. PROVIDE NEW SHOWER VALVE AND SHOWER HEAD AS SPECIFIED. REWORK EXISTING DOW/DHW PIPING AS REQUIRED TO SUIT NEW INSTALLATION.
  4. PROVIDE NEW PUSH BUTTON METERING SHOWER VALVE AND SHOWER HEAD AS SPECIFIED. REWORK EXISTING TEMPERED WATER PIPING AS REQUIRED TO SUIT NEW INSTALLATION. PROVIDE ISOLATION VALVE C/W ACCESS PANEL AS PER DETAILS.
  5. PROVIDE NEW SHOWER DRAIN AS SPECIFIED. CONNECT TO EXISTING SANITARY DRAINAGE PIPING.
  6. PROVIDE NEW FLOOR DRAIN AS SPECIFIED IN NEW LOCATION. PROVIDE NEW UNDERGROUND SANITARY DRAINAGE PIPING AND CONNECT TO EXISTING AT PREVIOUS FLOOR DRAIN LOCATION. CONTRACTOR TO ENSURE VENTING AND TRAP SEAL PRIMING ARE INSTALLED AS PER OBC REQUIREMENTS.
  7. PROVIDE NEW FLOOR DRAIN AS SPECIFIED IN EXISTING LOCATION. CONNECT TO EXISTING BURIED SANITARY DRAINAGE PIPING.
  8. CONTRACTOR TO INVESTIGATE CONDITION/SUITABILITY OF EXISTING CARRIER AND REUSE WHERE POSSIBLE. OTHERWISE, PROVIDE NEW CARRIER AS SPECIFIED.

- GENERAL NOTES
1. PROVIDE VENTING SYSTEMS IN ACCORDANCE WITH PART 7 OF THE ONTARIO BUILDING CODE.
  2. PROVIDE ADEQUATE ACCESS FOR ALL EQUIPMENT, VALVES, ETC. LOCATED BEHIND WALLS AND CEILINGS. REFER TO SPECIFICATIONS.
  3. ALL EXISTING SERVICES SHOWN ARE A GENERAL REPRESENTATION ONLY OF ACTUAL ONSITE CONDITIONS. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING SERVICES PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO ENGINEER IN A TIMELY MANNER.



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PROJECT:  
**ORONO ARENA AND  
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2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**PART FLOOR PLAN -  
PLUMBING & DRAINAGE  
NEW**



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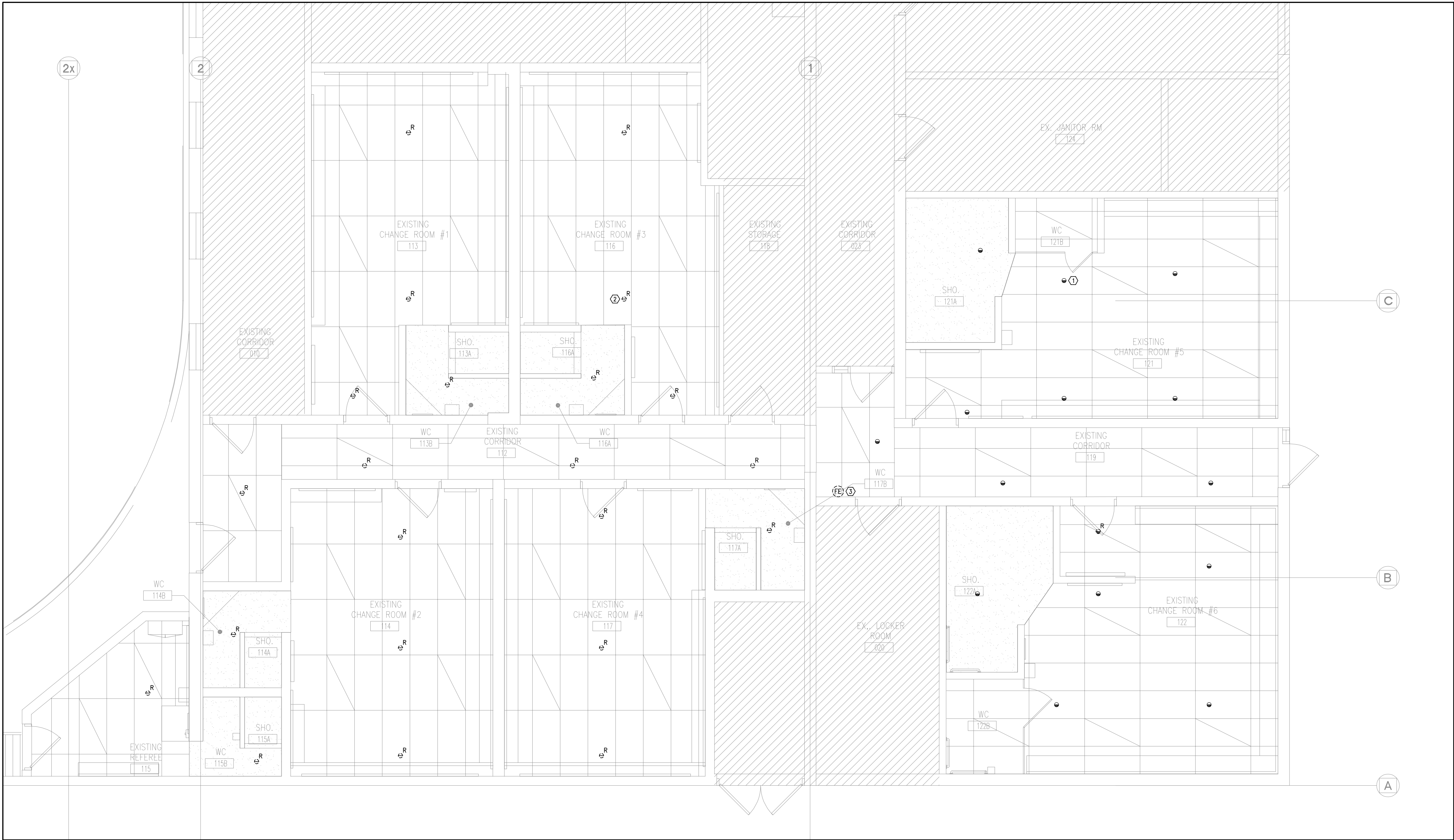


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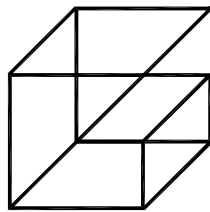
PROJECT NO:  
**23-149**

DRAWING NO:  
**M-3.2**





- FIRE PROTECTION DRAWING NOTES
- EXISTING RECESSED PENDENT SPRINKLER HEAD TO REMAIN. CONTRACTOR TO REMOVE AND RETAIN ESCUTCHEON PLATE TO FACILITATE T-BAR REMOVAL (TYPICAL).
  - EXISTING PENDENT SPRINKLER HEAD TO BE REMOVED AND DISPOSED OF (TYPICAL).
  - EXISTING FIRE EXTINGUISHER AND WALL HOOK TO BE REMOVED AND RETAINED FOR REINSTALLATION.



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2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**PART FLOOR PLAN -  
FIRE PROTECTION  
DEMOLITION**



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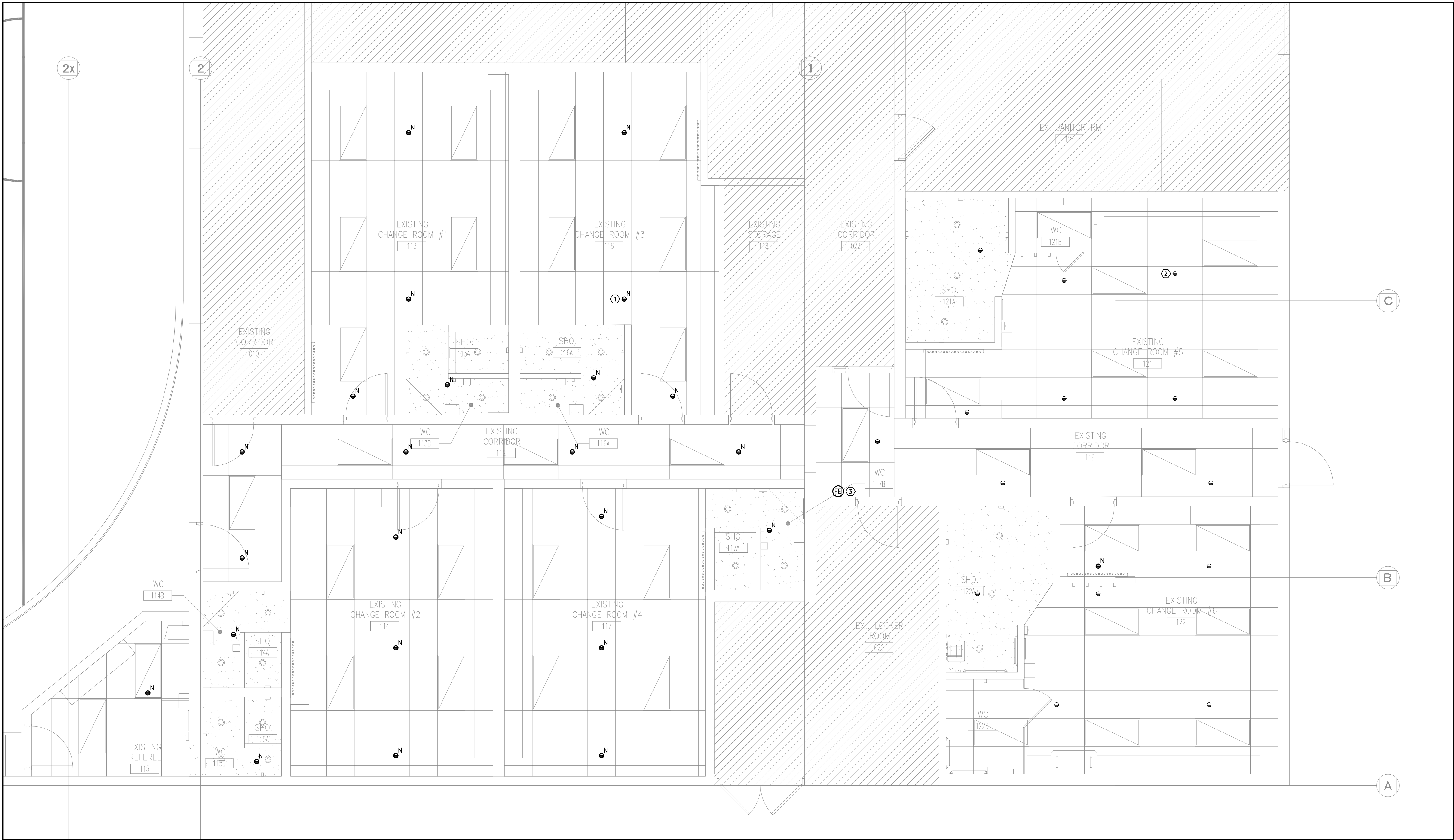


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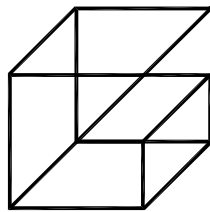
DRAWING NO:  
**M-4.1**





1 PART FLOOR PLAN - FIRE PROTECTION NEW  
M-4.2 1:50

- FIRE PROTECTION DRAWING NOTES
- ① PROVIDE NEW RECESSED PENDENT SPRINKLER HEAD IN T-BAR/DRYWALL CEILING TO MATCH BASE BUILDING (TYPICAL).
  - ② ESCUTCHEON PLATE FOR EXISTING RECESSED PENDENT SPRINKLER HEAD TO BE REINSTALLED UPON INSTALLATION OF NEW T-BAR CEILING (TYPICAL).
  - ③ REINSTALL EXISTING FIRE EXTINGUISHER AND WALL HOOK IN EXISTING LOCATION.
- GENERAL FIRE PROTECTION NOTES
1. SPRINKLER HEAD LOCATIONS ARE APPROXIMATE AND A GENERAL REPRESENTATION. SHOP QUALITY DRAWINGS AND HYDRAULIC CALCULATIONS (WHERE REQUIRED) SHALL BE PROVIDED BY A LICENSED FIRE SPRINKLER ENGINEER IN THE PROVINCE OF ONTARIO AT THE EXPENSE OF DIV.23. REFER TO SPECIFICATIONS.
  2. ALL SPRINKLER HEADS SHALL BE INSTALLED TO PROVIDE COVERAGE IN ACCORDANCE WITH THE NATIONAL FIRE CODE AND NFPA 13.
  3. WHERE BEAM POCKETS ARE PRESENT, CONTRACTOR SHALL PROVIDE SPRINKLER HEADS SO AS NOT TO IMPINGE ON THE PROPER COVERAGE, REGARDLESS OF THE SPRINKLER HEAD LOCATIONS ON THE MECHANICAL DRAWINGS.
  4. COORDINATE ALL EXTINGUISHER TYPES AND LOCATIONS WITH THE FIRE MARSHALL AND/OR THE AUTHORITY HAVING JURISDICTION.



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2 PRINCESS STREET  
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MUNICIPALITY OF CLARINGTON

DRAWING:

PART FLOOR PLAN -  
FIRE PROTECTION  
NEW



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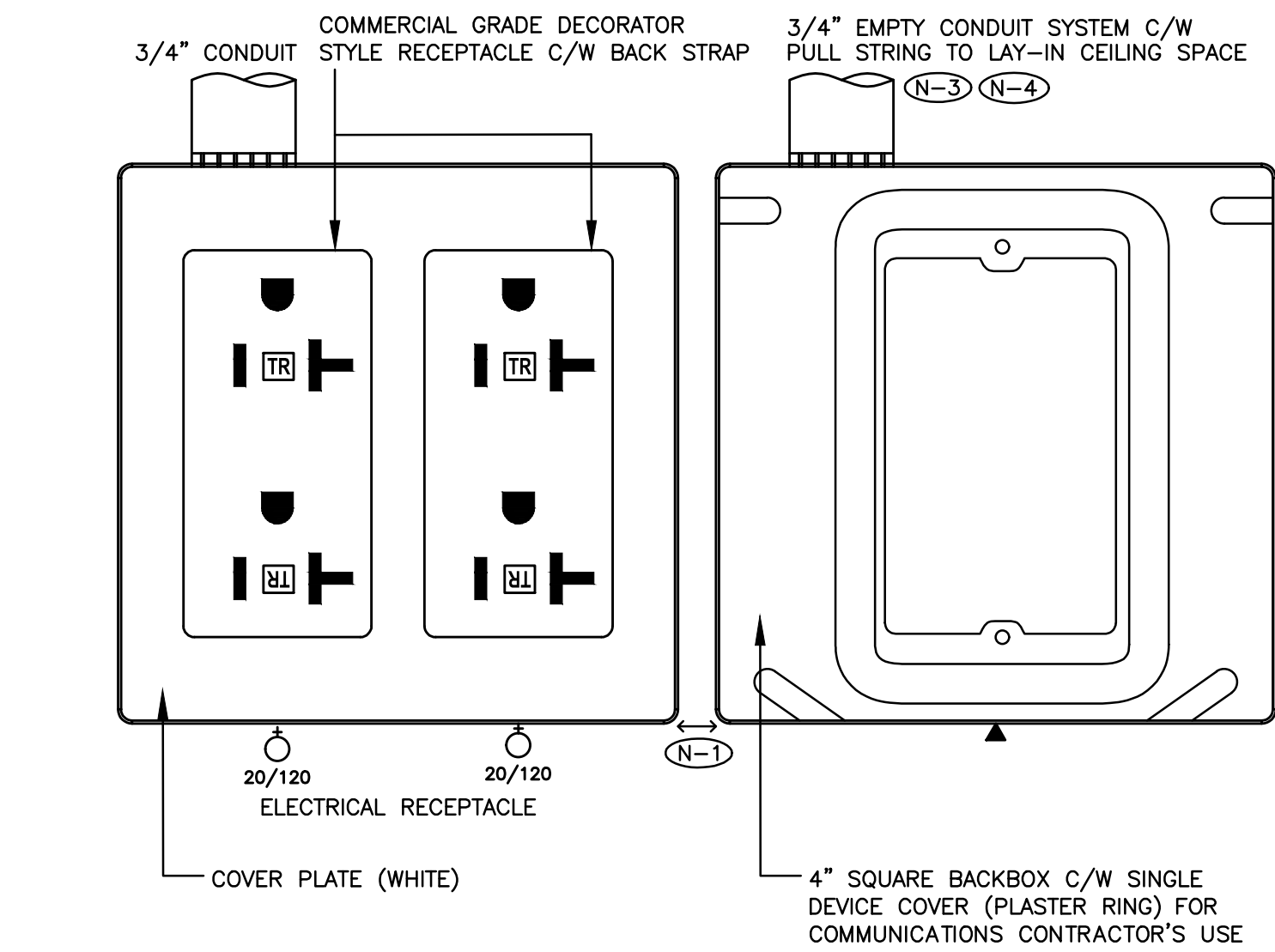
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23-149

DRAWING NO:

M-4.2



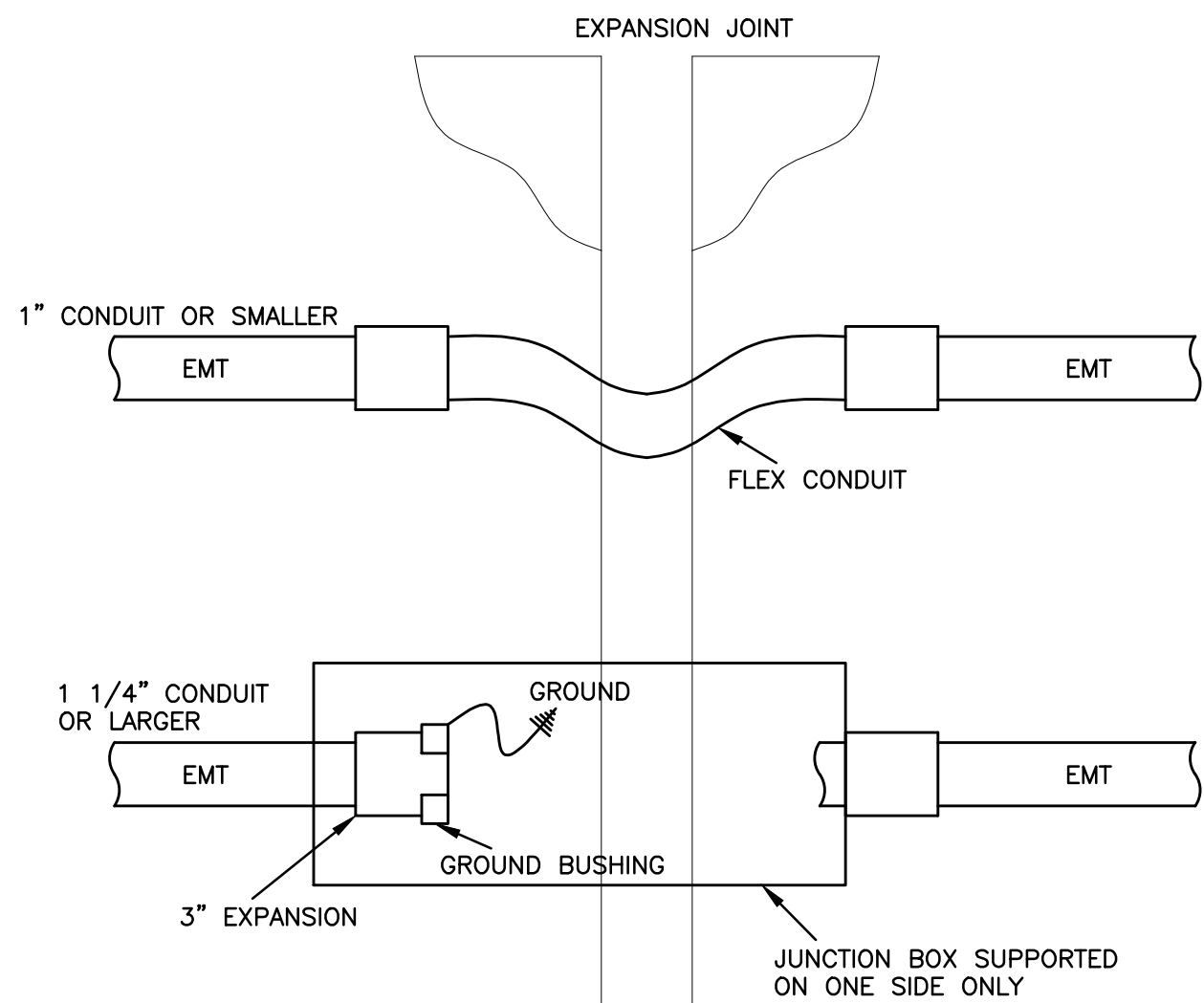


MOUNT RECEPTACLES  
GROUND PIN UP

- (N-1) MINIMUM CLEARANCE.
- (N-2) NEATLY LABEL ALL FLOOR MOUNTED AND WALL DEVICE BOX COVERS WITH CORRESPONDING PANEL NAMES AND CIRCUIT NUMBERS, UTILIZE SELF ADHESIVE MECHANICALLY PRINTED LABELS.
- (N-3) PROVIDE PUNCH OUTS IN BACKBOX TO ACCOMMODATE CONDUITS INDICATED.
- (N-4) TERMINATE CONDUIT WITH A 90 DEGREE BEND AND PLASTIC BUSHING IN THE ACCESSIBLE CEILING SPACE.
- (N-5) ALL RECEPTACLES PROVIDED AS PART OF THIS SCOPE OF WORK TO BE TAMPER RESISTANT TYPE UNLESS INDICATED OTHERWISE.

UTILITY CCT - WHITE

1 TYPICAL WALL MOUNTED DEVICE DETAIL  
E-1.1 SCALE: NTS



2 EXPANSION JOINT CROSSING DETAIL  
E-1.1 SCALE: NTS



- (N-1) PHOTO ILLUSTRATES EXISTING INSTALLATION OF FIRE ALARM SYSTEM CONTROL PANEL TO REMAIN AND EXISTING FIRE SAFETY PLAN TO BE RELOCATED AS PART OF THIS SCOPE OF WORK AND IS INCLUDED FOR REFERENCE PURPOSES ONLY.
- (N-2) RELOCATE EXISTING FIRE SAFETY PLAN TO ACCOMMODATE INSTALLATION OF FIRE ALARM SYSTEM BOOSTER PANEL PROVIDED AS PART OF THIS SCOPE OF WORK. REFER TO DRAWING NO. E-2.0 FOR ADDITIONAL REQUIREMENTS.

- 1 EXISTING RECESSED MOUNTED FIRE ALARM SYSTEM CONTROL PANEL.
- 2 EXISTING FIRE SAFETY PLAN TO BE RELOCATED AS PART OF THIS SCOPE OF WORK

3 EXISTING FIRE ALARM SYSTEM CONTROL PANEL AND FIRE SAFETY PLAN MOUNTING DETAILS  
E-1.1 SCALE: NTS

- SUBSTITUTES ARE NOT PERMITTED FOR ALL SPECIFIED PRODUCTS.
- SHOP DRAWINGS ARE REQUIRED FOR ALL PRODUCTS SPECIFIED FOR THIS PROJECT INCLUDING BUT NOT LIMITED TO ELECTRICAL PANELS, HAND DRYERS, FIRE ALARM SYSTEM DEVICES, LIGHTING CONTROL SYSTEM, LIGHTING FIXTURES, EXIT SIGNS, RECEPTACLES, COVER PLATES, ETC.
- ELECTRICAL CONTRACTOR AND ALL SUBCONTRACTORS MUST READ AND COMPLY WITH ELECTRICAL SPECIFICATIONS (ISSUED AS A SEPARATE DOCUMENT).
- CIRCUITING MUST BE COMPLETED AS SHOWN ON DRAWINGS. DO NOT CHANGE CIRCUIT NUMBERS.
- INSTALLATION AND MANUFACTURING OF ALL DEVICES AND SERVICES INCLUDING DISTRIBUTION, LIGHT FIXTURES, FEEDERS, BRANCH CIRCUITS, VARIOUS SYSTEMS, ETC. MUST COMPLY WITH ALL LOCAL SEISMIC RESTRAINT REQUIREMENTS.
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, MOUNTING HEIGHTS, CONSTRUCTION DETAILS, LOCATION OF LIGHT FIXTURES, FINISHES AND COLOURS.
- AS PART OF THIS SCOPE OF WORK AND PRIOR TO CONSTRUCTION, ELECTRICAL CONTRACTOR SHALL COORDINATE AND PAY FOR THE SERVICES OF THE FIRE ALARM MANUFACTURER, FIRE INSPECTOR AND BUILDING INSPECTOR TO THOROUGHLY REVIEW THE PROPOSED INSTALLATION LOCATIONS FOR EACH AND EVERY CONTROL PANEL, REMOTE ANNUNCIATOR PANEL, ANCILLARY DEVICE, FIELD DEVICE, ETC TO ENSURE THAT THE PROPOSED INSTALLATION IS FULLY COMPLIANT WITH CAN/ULC 5524:2019 AND ONTARIO BUILDING CODE. COMPLIANCE SHALL INCLUDE INTERFERENCE AND PROXIMITY TO NEW AND EXISTING DEVICES AND OBSTRUCTIONS (INCLUDING BUT NOT LIMITED TO LIGHT FIXTURES, SUPPLY AIR DUCTS, EXPOSED DUCT WORK, BEAMS, RACEWAYS, ETC.). SPACING BETWEEN FIELD DEVICES PROVIDED AS PART OF THIS SCOPE OF WORK IN PROPOSED INSTALLATION LOCATIONS, ETC.
- AS PART OF THIS SCOPE OF WORK AND PRIOR TO CONSTRUCTION, ELECTRICAL CONTRACTOR SHALL COORDINATE AND PAY FOR THE SERVICES OF THE BUILDING INSPECTOR TO REVIEW THE PROPOSED EXIT SIGN ORIENTATIONS, LOCATIONS, FACES (READ OR PICTOGRAM) AND CHEVRONS.
- REFER TO LANDLORD'S MOST CURRENT VERSION OF THE LEASEHOLD IMPROVEMENT MANUAL FOR ADDITIONAL REQUIREMENTS OVER AND ABOVE THOSE DETAILED IN THIS DRAWING PACKAGE AND IN THE ELECTRICAL SPECIFICATIONS BOOK. CONTRACTOR SHALL BE RESPONSIBLE FOR AND MUST INCLUDE IN BASE BID PRICE FOR ALL SCOPES OF WORK DETAILED IN THE LANDLORD'S DESIGN CRITERIA MANUAL, ELECTRICAL DRAWINGS AND ELECTRICAL SPECIFICATIONS BOOK.
- AS PART OF THE BASE BID PRICE ELECTRICAL CONTRACTOR SHALL PROVIDE A FIRE WATCH THROUGHOUT THE DURATION OF THE PROJECT.
- FIRE ALARM SYSTEM TESTING AND VERIFICATIONS MUST TAKE PLACE BETWEEN 11PM AND 5AM DURING THE WEEK.
- ALL SCOPES OF WORK REQUIRED TO BE COMPLETED IN OCCUPIED AREAS OF THE FACILITY MUST BE COMPLETED BETWEEN 11PM AND 5AM DURING THE WEEK. REMOVAL AND REINSTALLATION OF CEILING TILES TO ACCOMMODATE ALL SCOPES OF WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- AS BUILT DRAWING REQUIREMENTS:  
AS BUILT DRAWINGS TO BE PREPARED AND SUBMITTED IN AUTOCAD FORMAT BY THE ELECTRICAL CONTRACTOR.
  - ALL DEMOLITION SCOPES OF WORK ARE TO BE ERASED FROM AS BUILT DRAWINGS.
  - ROUTING OF ALL FEEDERS, BRANCH WIRING (LIGHTING, EMERGENCY LIGHTING, POWER, ETC.), LOW VOLTAGE WIRING, MISCELLANEOUS SYSTEMS WIRING, MISCELLANEOUS CONDUIT SYSTEMS, ETC., TO BE SHOWN ON AS BUILT DRAWINGS.
  - REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND FOR COSTS TO OBTAIN CAD FILES.
- ALL PANEL SCHEDULE DIRECTORIES MUST BE UPDATED WITH TYPEWRITTEN PANEL SCHEDULES. UTILIZE SELF ADHESIVE MECHANICALLY PRINTED LABELS FOR ALL LABELING AT ALL OUTLETS AND LAMACOIDS FOR ENCLOSURES.
- ELECTRICAL CONDUIT AND WIRING, INCLUDING CONDUIT AND WIRING FOR FEEDERS, BRANCH CIRCUITS, FIRE ALARM SYSTEM, LOW VOLTAGE SYSTEMS, ETC. SHALL NOT BE INSTALLED BENEATH THE NEW RINK SLAB.

BUILDING IS PROTECTED BY A WET SPRINKLER SYSTEM

#### DRAWING LIST

- E-1.1 - ELECTRICAL LEGEND AND DETAILS
- E-1.2 - ELECTRICAL DETAILS
- E-2.0 - ELECTRICAL FACILITY PLAN
- E-2.1 - ELECTRICAL PLAN
- E-3.1 - REFLECTED CEILING PLAN
- E-5.1 - ELECTRICAL DEMOLITION PLAN
- E-6.1 - REFLECTED CEILING DEMOLITION PLAN
- E-7.1 - ELECTRICAL SINGLE LINE DIAGRAM

## LEGEND

- EXISTING CEILING MOUNTED/SUSPENDED FIXTURE CONNECTED TO BASE BUILDING UTILITY LIGHTING CIRCUIT
- EXISTING CEILING MOUNTED/SUSPENDED FIXTURE CONNECTED TO NON-SWITCHED 24-HOUR NIGHT LIGHTING CIRCUIT
- CEILING MOUNTED/SUSPENDED FIXTURE. CONNECT TO BASE BUILDING UTILITY LIGHTING CIRCUIT
- CEILING MOUNTED/SUSPENDED FIXTURE. CONNECT TO NON-SWITCHED 24-HOUR NIGHT LIGHTING CIRCUIT
- RECESSED DOWNLIGHT/PENDANT FIXTURE. CONNECT TO BASE BUILDING UTILITY LIGHTING CIRCUIT.
- RECESSED DOWNLIGHT/PENDANT FIXTURE. CONNECT TO NON-SWITCHED 24-HOUR NIGHT LIGHTING CIRCUIT.
- CEILING OR WALL MOUNTED "EXIT" LIGHT.
- EMERGENCY BATTERY UNIT, TYPE 'D1', SOURCE 'M1'. BATTERY SHALL BE MOUNTED AT HIGH LEVEL.
- REMOTE EMERGENCY LIGHTING FIXTURE, TYPE 'D2' FED FROM SOURCE 'M2'.
- DECORATOR/TOGGLE STYLE LIGHT SWITCH C/W STAINLESS STEEL COVER PLATE, VOLTAGE AND CURRENT RATINGS AS REQUIRED.
- WALL MOUNTED ROOM LIGHT SWITCH WATT STOPPER LMSW-10X OR APPROVED EQUAL. 'OV1' DENOTES ONE (1) DIGITAL PUSH BUTTON. 'OV2' DENOTES TWO (2) DIGITAL PUSH BUTTONS. 'OV3' DENOTES THREE (3) DIGITAL PUSH BUTTONS. 'OV4' DENOTES FOUR (4) DIGITAL PUSH BUTTONS.
- WALL MOUNTED AREA LIGHT SWITCH WATT STOPPER LMSW-10X OR APPROVED EQUAL. 'OW2' DENOTES TWO (2) DIGITAL PUSH BUTTONS. 'OW3' DENOTES THREE (3) DIGITAL PUSH BUTTONS. 'OW4' DENOTES FOUR (4) DIGITAL PUSH BUTTONS. 'OW5' DENOTES FIVE (5) DIGITAL PUSH BUTTONS. 'OW6' DENOTES SIX (6) DIGITAL PUSH BUTTONS.
- 'TS' DENOTES WALL MOUNTED TIME SWITCH WATT STOPPER TS-400-24 C/W POWER PACK (VOLTAGE RATINGS TO SUIT LIGHTING LOADS) AND BOTH VISUAL AND AUDIBLE WARNING (TIMER PRESET AT 20 MINUTE TIME OUT SETTING).
- 15AMP/120VOLT, U-GROUND DUPLEX RECEPTACLE. GFI DENOTES OUTLET C/W GROUND FAULT INTERRUPT PROTECTION.
- 15AMP/120VOLT U-GROUND SPLIT RECEPTACLE.
- RECEPTACLE, REQUIREMENT AS NOTED
- 20A/120V DUPLEX RECEPTACLE, TAMPER RESISTANT, CSA 5-20R (T-SLOT), HUBBELL DR20TR SERIES
- DIRECT CONNECTION
- STARTER
- NON-FUSED HORSEPOWER RATED VISIBLE BLADE HEAVY DUTY DISCONNECT SWITCH C/W PADLOCK PROVISION IN OFF POSITION
- VISIBLE BLADE HEAVY DUTY DISCONNECT SWITCH C/W PADLOCK PROVISION IN OFF POSITION FUSED AT '15A'
- COMBINATION STARTER C/W FUSES, OVERLOAD PROTECTION, CONTROL TRANSFORMER, 2 NO AND 2 NC CONTACTS, PILOT LIGHT AND HOA. FUSED AT '15A'.
- CIRCUIT 'X' FED FROM RECEPTACLE PANEL 'A'. 'D' DENOTES DESIGNATED CIRCUIT FOR ISOLATED GROUND DUPLEX RECEPTACLE.
- EXISTING CIRCUIT 'X' FED FROM RECEPTACLE PANEL 'A'. 'D' DENOTES DESIGNATED CIRCUIT FOR ISOLATED GROUND DUPLEX RECEPTACLE.
- DENOTES EXISTING DEVICE TO REMAIN
- DENOTES EXISTING DEVICE TO BE REMOVED. REMOVE CONDUIT AND WIRE BACK TO SOURCE.
- DENOTES EXISTING DEVICE IN RELOCATED POSITION. PROVIDE CONDUIT AND WIRE BACK TO SOURCE.
- DENOTES EXISTING DEVICE TO REMAIN. RE-CIRCUIT AS SHOWN. REMOVE EXISTING CONDUIT AND WIRE BACK TO EXISTING SOURCE. PROVIDE CONDUIT AND WIRE BACK TO NEW SOURCE.
- DENOTES ROOF MOUNTED
- DENOTES NEMA TYPE 4X ENCLOSURE SUITABLE FOR HOSE DIRECTED WATER
- DENOTES DEVICE COMPLETE WITH PROTECTIVE WIRE GUARD
- DENOTES CEILING MOUNTED FLUSH WITH FINISH CEILING
- DENOTES MOUNTING HEIGHT TO BE IN LINE WITH LIGHT SWITCHES.
- 4" SQUARE BACKBOX C/W SINGLE DEVICE COVER (PLASTER RING) AND 3/4" EMPTY ZONE CONDUIT ASSEMBLY FOR COMMUNICATIONS CONTRACTOR'S USE. PROVIDE A PULL STRING IN CONDUIT.
- 6" FIRE ALARM SYSTEM BELL. CONNECT TO BASE BUILDING FIRE ALARM SYSTEM. 'G' DENOTES RECESS (WALL/CEILING) MOUNTED BACKBOX C/W FIELD PAINTABLE GRILL.
- FIRE ALARM SYSTEM STROBE LIGHT. CONNECT TO BASE BUILDING FIRE ALARM SYSTEM. RED IN COLOUR.
- MANUAL PULL STATION. CONNECT TO BASE BUILDING FIRE ALARM SYSTEM.
- END OF LINE RESISTOR. CONNECT TO BASE BUILDING FIRE ALARM SYSTEM.
- OCCUPANCY SENSOR C/W POWER PACK
- ROOM CEILING MOUNTED OCCUPANCY SENSOR WATT STOPPER LMDC-100. SENSOR PRESET AT 20 MINUTE TIME OUT SETTING C/W MANUAL ON AND AUTO OFF AND DEFAULT DETECTION TECHNOLOGY SETTING.
- NON-SWITCHED CORRIDOR CEILING MOUNTED OCCUPANCY SENSOR WATT STOPPER LMDC-100. SENSOR PRESET AT 20 MINUTE TIME OUT SETTING C/W AUTO ON AND AUTO OFF WALK THROUGH MODE ON AND DEFAULT SETTING.
- SHOWER CEILING MOUNTED OCCUPANCY SENSOR WATT STOPPER FS-305/FS-L2W WITH WEATHERPROOF ENCLOSURE AND POWER PACKS AS REQUIRED (VOLTAGE RATINGS TO SUIT LIGHTING LOADS). SENSOR PRESET AT 30 MINUTE TIME OUT SETTING C/W WALK-THROUGH MODE, STANDARD LOGIC, ENABLED LED AND SMARTSET PIR SENSITIVITY.
- DIGITAL ON/OFF/DIMMING ROOM CONTROLLER WATT STOPPER LMRC-212/LMRC-212-347 (VOLTAGE RATING AS REQUIRED TO SUIT LIGHTING LOAD).
- DIGITAL DIMMING ROOM CONTROLLER WATT STOPPER 120V LINE VOLTAGE LMRC-222 OR APPROVED EQUAL
- HANDICAP WAVE SENSOR C/W CONDUIT AND WIRES.
- THERMOSTAT SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE CONDUIT AND WIRE.

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# Clarington

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**HCC ENGINEERING**  
DESIGN AND TECHNOLOGY SERVICES GROUP

HCC ENGINEERING, LIMITED  
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TORONTO, ONTARIO, M4P 3A2  
T-1 (416) 932-2422

HCC PROJECT NO: 23153

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:

**ELECTRICAL LEGEND  
AND DETAILS**

**B B A**

**BARRY BRYAN  
ASSOCIATES**

Architects  
Engineers  
Project Managers

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Whitby, Ontario  
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Tel: (905) 666-5252  
Fax: (905) 666-5256  
email: info@barrybryan.com

DESIGN BY:  
PC

DRAWN BY:  
JVD

CHECKED BY:  
PC/HDC

DATE:  
AUG 2023

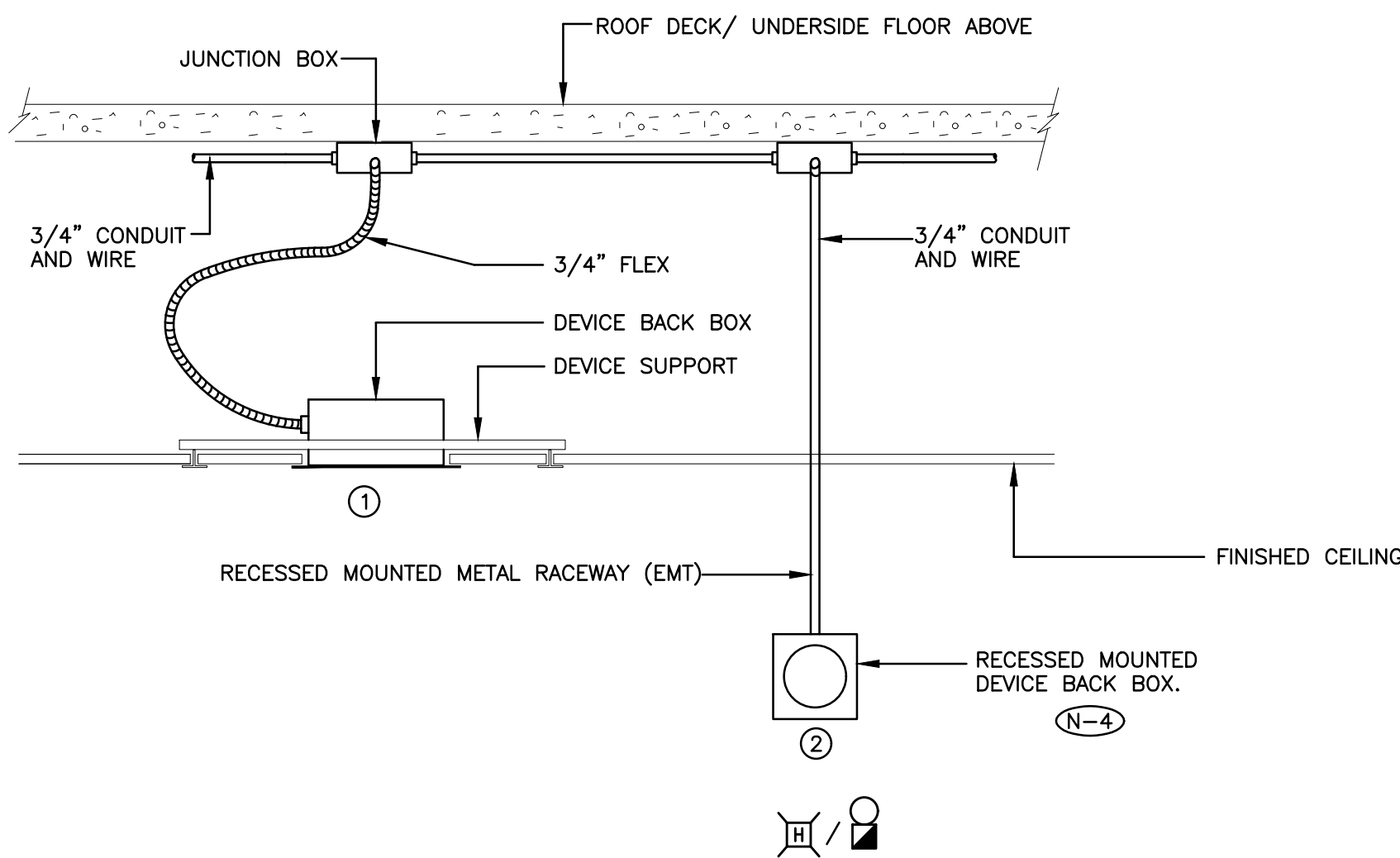
SCALE:  
AS SHOWN

FILE:

PROJECT NO:  
**22119B**

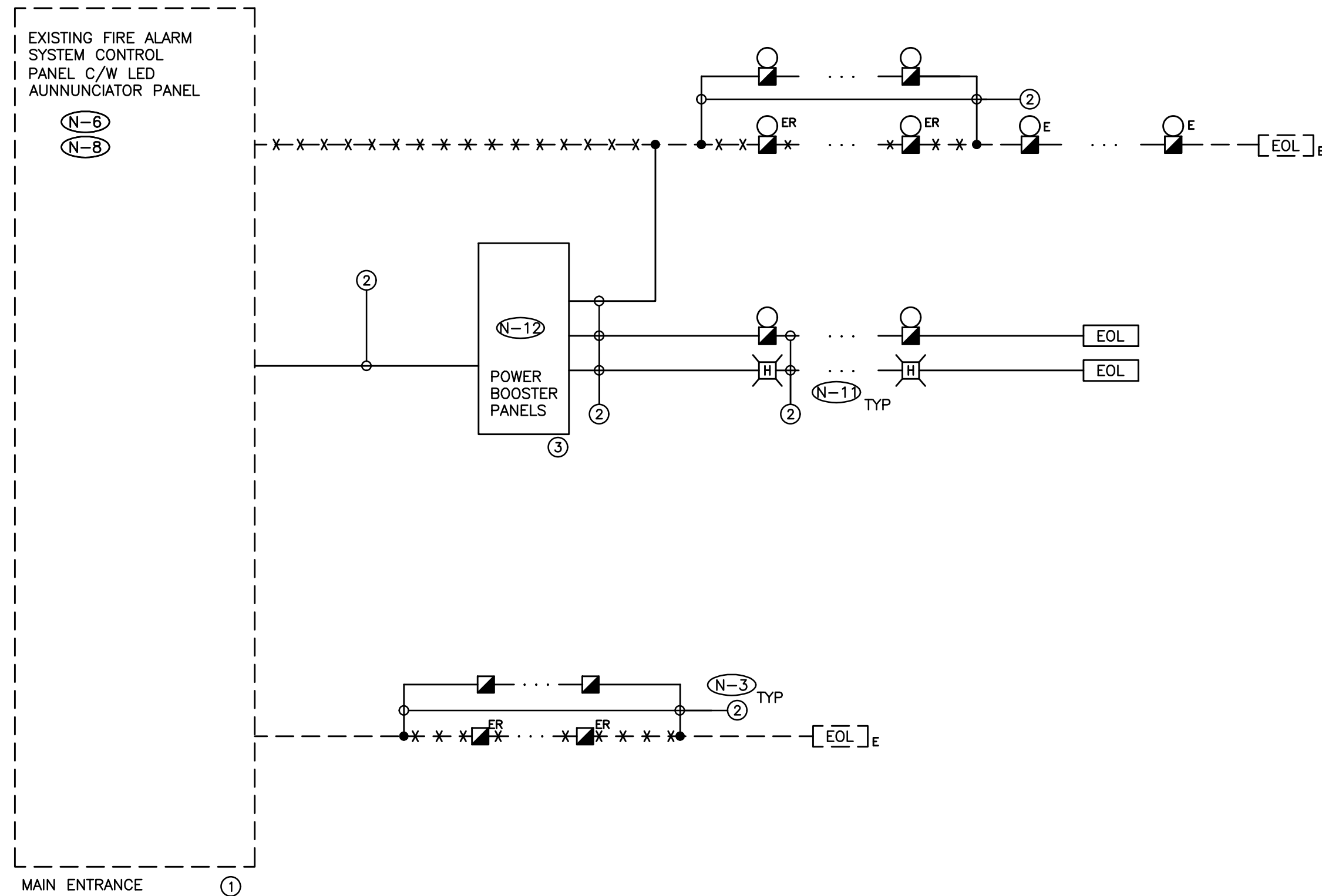
DRAWING NO:  
**E-1.1**





- N-1 DETAIL IS DIAGRAMMATIC ONLY.
- N-2 REFER TO FLOOR PLANS FOR EXACT QUANTITY AND LOCATION OF DEVICES.
- N-3 CONDUIT/TIE WIRE AND OTHER ASSEMBLY MEANS TO SUPPORT DEVICE BACKBOX IS NOT ACCEPTABLE.
- N-4 ALL WALL MOUNTED DEVICES TO BE RECESSED MOUNTED FOR ALL INTERIOR PARTITIONS.
- 1 CEILING MOUNTED FIRE ALARM SYSTEM SIGNALLING DEVICE.
- 2 WALL MOUNTED FIRE ALARM SYSTEM SIGNALLING DEVICE.

1 WALL/CEILING MOUNTED FIRE ALARM SYSTEM SIGNALLING DEVICE DETAIL  
E-1.2 SCALE: NTS



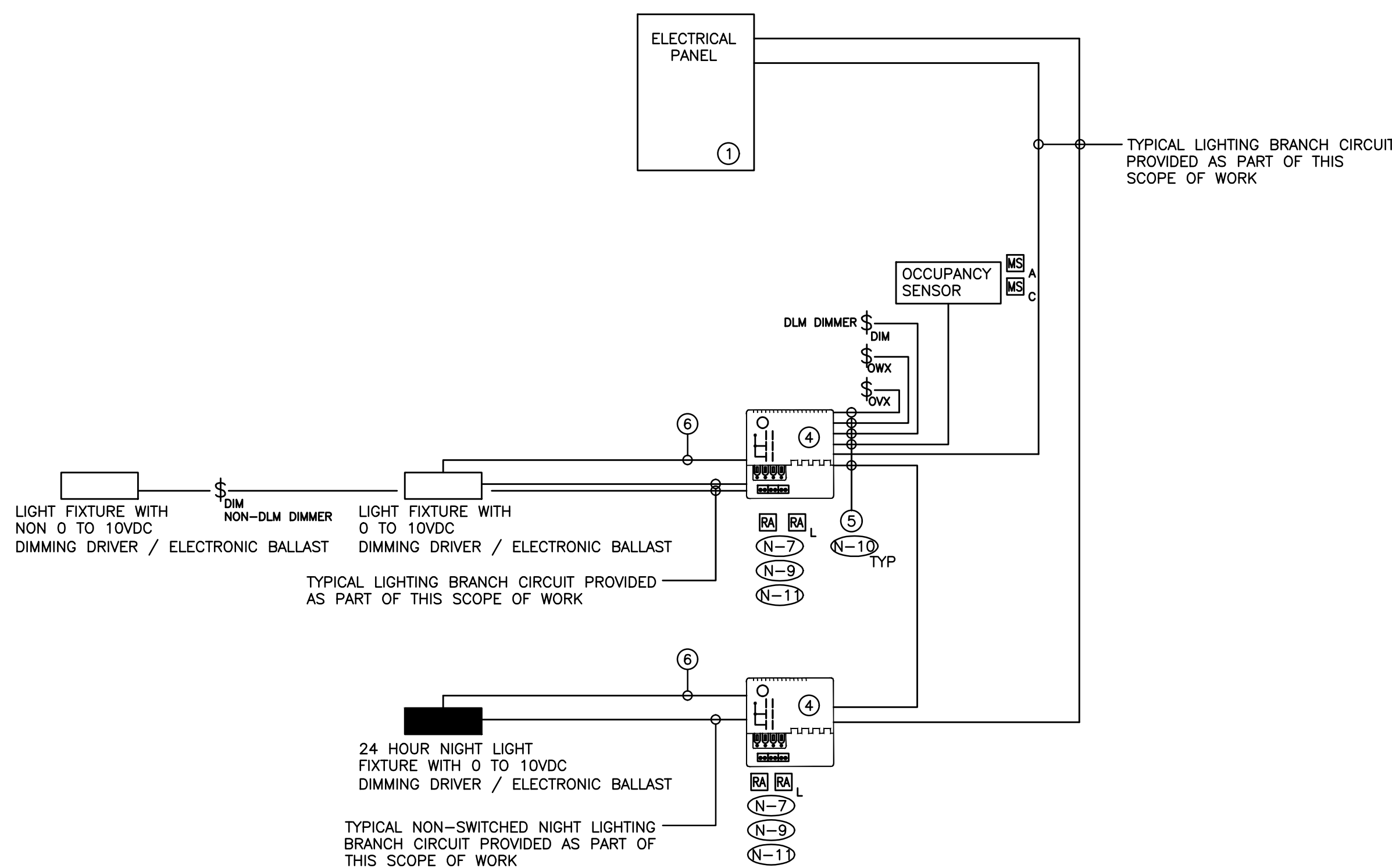
- N-1 RISER IS DIAGRAMMATIC ONLY. PROVIDE QUANTITY OF STROBE LIGHT CIRCUITS, BELL CIRCUITS, INITIATING DEVICE CIRCUITS, HARDWARE, MODULES, ACCESSORIES, DEVICES, CONDUIT, WIRE, ETC., TO ENSURE A FULLY OPERATIONAL FIRE ALARM SYSTEM.
- N-2 REFER TO FLOOR PLANS AND REFLECTED CEILING PLANS FOR EXACT QUANTITY AND LOCATION OF DEVICES, DEVICE PERIPHERALS AND ACCESSORIES (IE. WIRE GUARD, EXPLOSION PROOF DEVICES, WEATHER PROOF DEVICES, ETC.).
- N-3 PROVIDE POWER, CONDUIT, BACKBOX AND WIRING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MINIMUM CONDUIT SIZE 3/4".
- N-4 PROVIDE DEDICATED CORE DRILLED FLOOR AND WALL PENETRATIONS ON EVERY FLOOR AS REQUIRED FOR FIRE ALARM SYSTEM CONDUITS/MI CABLE. EXACT LOCATION OF ALL CORE DRILLS TO BE DETERMINED BY X-RAYING RESULTS.
- N-5 NOT USED.
- N-6 MODIFY, REWORK AND PROVIDE ALL COMPONENTS AND ACCESSORIES FOR CONTROL PANEL AS REQUIRED TO ACCOMMODATE ALL SCOPES OF WORK AS NOTED ON DRAWINGS AND IN SPECIFICATION.
- N-7 NOT USED.
- N-8 PROVIDE ADDITIONAL BATTERIES IN EXISTING CONTROL PANEL AS REQUIRED TO SUPPORT THE TOTAL LOAD REQUIREMENTS AT THE COMPLETION OF THIS PROJECT.
- N-9 PROVIDE 24VDC CIRCUITS FOR STROBES AND OTHER 24VDC DEVICES. MAXIMUM LOAD ON EACH CIRCUIT SHALL NOT EXCEED 70%. CIRCUIT REQUIREMENTS NOT SHOWN ON RISER DIAGRAM.
- N-10 AS PART OF THE BASE BID PRICE ELECTRICAL CONTRACTOR SHALL PROVIDE A FIRE WATCH THROUGHOUT THE DURATION OF THE PROJECT.
- N-11 PROVIDE STROBE CIRCUIT SYNCHRONIZATION MODULES.
- N-12 PROVIDE REMOTE ULG APPROVED BOOSTER PANELS AND POWER SUPPLIES, C/W BATTERIES APPROVED FOR THE SIGNALING DEVICES PROVIDED AS PART OF THIS SCOPE OF WORK. REFER TO FLOOR PLANS AND REFLECTED CEILING PLANS FOR LOCATION AND QUANTITY OF SIGNALING DEVICES. PROVIDE INPUT MODULE TO MONITOR THE TROUBLE RELAY.
- N-13 DO NOT REUSE EXISTING FIELD WIRING, FIRE ALARM DEVICES, ETC., REMOVED AS PART OF THIS SCOPE OF WORK.

- 1 EXISTING FIRE ALARM SYSTEM CONTROL PANEL - MIRCOM FA-102T
- 2 CONDUIT AND WIRE PER MANUFACTURER'S REQUIREMENTS
- 3 FIRE ALARM SYSTEM BOOSTER PANEL PROVIDED AS PART OF THIS SCOPE OF WORK - MIRCOM INX-10A

BASE BUILDING FIRE ALARM SYSTEM MANUFACTURER  
MIRCOM  
KRISTAL NICHOLAS (647) 460-2449 /  
KNicholas@mircomgroup.com

- DENOTES NEW PROVIDED BY ELECTRICAL CONTRACTOR
- DENOTES EXISTING TO REMAIN
- X-X-X-X-X- DENOTES EXISTING TO BE REMOVED BY ELECTRICAL CONTRACTOR

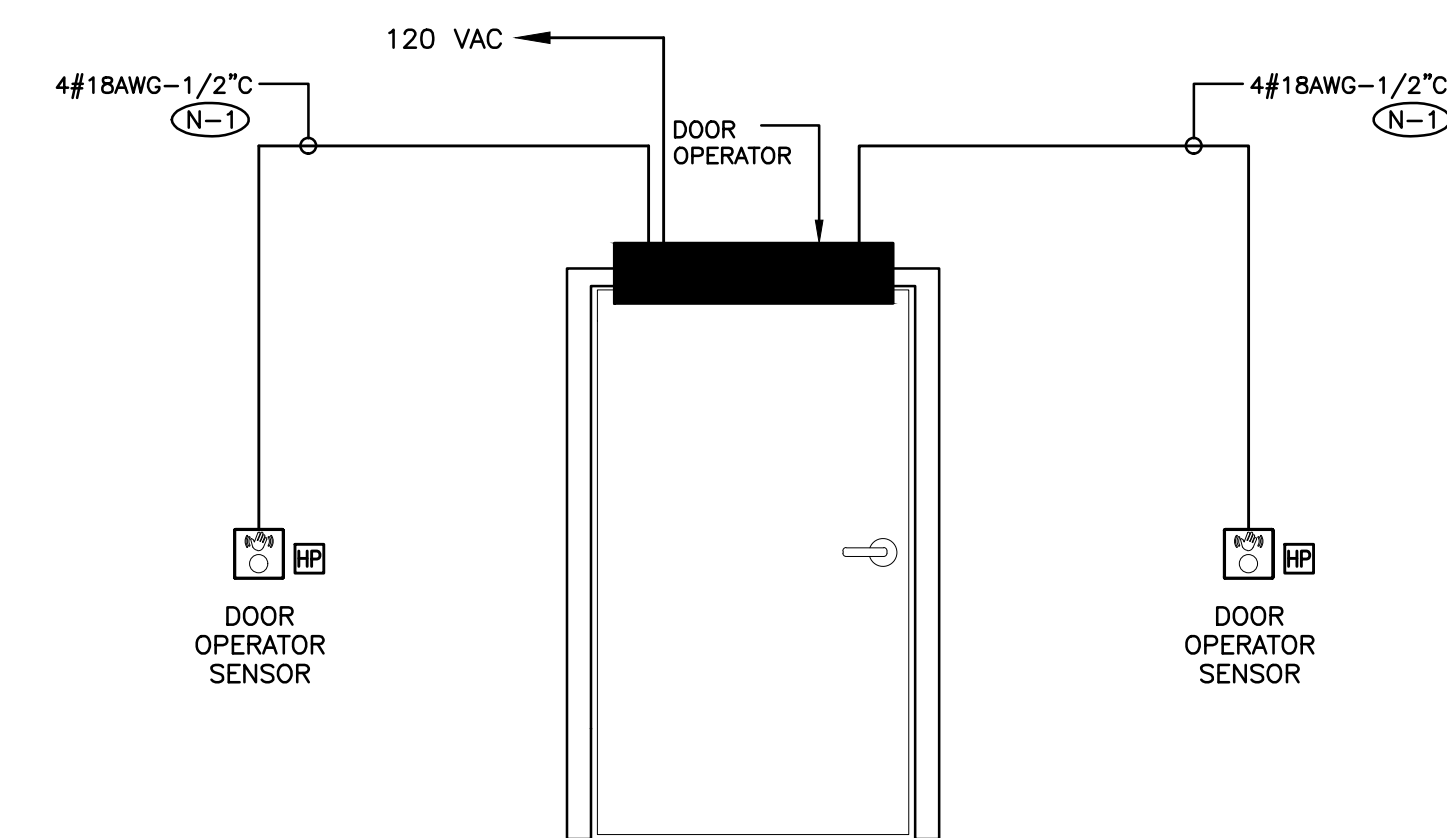
2 PARTIAL BASE BUILDING FIRE ALARM SYSTEM RISER DIAGRAM  
E-1.2 SCALE: NTS



INSTALL LOW VOLTAGE CONTROL SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, ASHRAE 90.1 2013, ONTARIO BUILDING CODE, ELECTRICAL SAFETY CODE AND THESE DOCUMENTS.

- N-1 SCHEMATIC IS DIAGRAMMATIC ONLY. REFER TO FLOOR PLANS AND REFLECTED CEILING PLANS FOR DEVICE QUANTITY AND LOCATIONS. PROVIDE QUANTITY OF HARDWARE, ROOM CONTROLLERS, SENSORS, DEVICES, CONDUIT, WIRE, CONFIGURATION TOOLS, ETC. TO ENSURE A FULLY OPERATIONAL LOW VOLTAGE LIGHTING CONTROL SYSTEM.
- N-2 NOT USED.
- N-3 NOT USED.
- N-4 ALL LOW VOLTAGE WIRING TO BE INSTALLED IN AN ENCLOSED CONDUIT SYSTEM.
- N-5 PROVIDE POWER, CONDUIT, BACKBOX AND WIRING IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. MINIMUM CONDUIT SIZE 3/4".
- N-6 PROVIDE DEDICATED CORE DRILLED WALL AND FLOOR PENETRATIONS ON EVERY FLOOR. EXACT LOCATION OF ALL CORE DRILLS TO BE DETERMINED BY X-RAY RESULTS. ALL X-RAYS MUST BE REVIEWED AND APPROVED BY LANDLORD PRIOR TO CORE DRILLING.
- N-7 PROVIDE ROOM CONTROLLERS TO ACCOMMODATE ALL LIGHTING ZONES IN CLOSED ROOMS (IE. OFFICES, MEETING ROOMS, ETC.) PROVIDED AS PART OF THIS SCOPE OF WORK. MAXIMUM OF TWO (2) SWITCH LESS PER ROOM CONTROLLER.
- N-8 NOT USED.
- N-9 ROOM CONTROLLERS TO BE INSTALLED IN CEILING MOUNTED VENTILATED JUNCTION BOXES.
- N-10 TERMINATE AND TEST ALL LOW VOLTAGE CONTROL CABLES PROVIDED AS PART OF THIS SCOPE OF WORK. PROVIDE TEST RESULTS FOR ALL LOW VOLTAGE CONTROL CABLES PROVIDED AS PART OF THIS SCOPE OF WORK AT THE END OF CONSTRUCTION. TEST RESULTS SHALL BE INCLUDED AS PART OF THE CLOSE OUT DOCUMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- N-11 REFER TO MANUFACTURER'S INSTALLATION GUIDELINES FOR ADDITIONAL INSTALLATION REQUIREMENTS OVER AND ABOVE THOSE DETAILS ON THIS SCHEMATIC.
- N-12 NOT USED.
- N-13 NOT USED.
- N-14 PROVIDE POWER PACKS, AS REQUIRED FOR A FULLY OPERATIONAL SYSTEM. POWER PACKS NOT SHOWN ON REFLECTED CEILING PLANS.
- N-15 ELECTRICAL CONTRACTOR'S BASE BID PRICE SHALL INCLUDE FOUR (4) HOURS OF ON SITE COORDINATION TIME WITH LIGHTING CONTROL SYSTEM MANUFACTURER PRIOR TO ORDERING LIGHTING SYSTEM COMPONENTS TO CONFIRM DEVICES AND WIRING REQUIREMENTS. ALL CHANGES TO BE REVIEWED AND APPROVED BY CONSULTANT ON SITE PRIOR TO EXECUTION.
- N-16 LIGHT LEVEL OUTPUT (IE. DIMMING LEVEL) FOR EACH AND EVERY FIXTURE PROVIDED AS PART OF THIS SCOPE OF WORK IN ROOMS/AREAS/CORRIDORS/ETC., WITH DLM CONTROL TO BE FIELD ADJUSTED ON SITE WITH CLIENT POST OCCUPANCY. TARGET LIGHT LEVELS FOR EACH LOW VOLTAGE LIGHTING ZONE TO BE PROVIDED BY THE CLIENT POST OCCUPANCY. PROCURE (COORDINATE AND PAY FOR) THE SERVICES OF WATTSOPPER TO ADJUST, PROGRAM AND COMMISSION THE LIGHTING CONTROL SYSTEM.
- AS PART OF THIS SCOPE OF WORK PROCURE THE SERVICES OF A THIRD PARTY PROFESSIONAL ENGINEER TO MEASURE AND RECORD LIGHTING LEVELS IN FOOT CANDLES THROUGHOUT THE ENTIRE SCOPES OF WORK AREAS WITH A CALIBRATED LIGHT METER, AFTER ALL FIELD ADJUSTMENTS HAVE BEEN COMPLETED. READINGS SHALL BE TAKEN BASED ON A MINIMUM OF ONE READING FOR EVERY 20' CENTER IN OPEN OFFICE AREAS AND CORRIDORS / HALLWAYS AND ONE READING IN EACH CLOSED OFFICE, MEETING ROOM, BOARDROOM, ETC.. ALL LIGHT LEVEL READINGS ARE TO BE TAKEN DURING NON-DAYLIGHT HOURS. PROVIDE A SEALED REPORT IDENTIFYING LIGHT LEVEL READINGS.
- 1 TYPICAL RECEPTACLE / LIGHTING PANEL. REFER TO DRAWING NO. E-7.1 FOR ADDITIONAL REQUIREMENTS
- 2 NOT USED
- 3 NOT USED
- 4 ON / OFF / DIMMING ROOM CONTROLLER
- 5 PLENUM RATED 4 PAIR CAT6 UTP CABLE AS MANUFACTURED BY LIGHTING CONTROL SYSTEM MANUFACTURER
- 6 0 TO 10VDC CONTROL WIRING PER MANUFACTURER'S RECOMMENDATIONS
- DENOTES NEW PROVIDED BY ELECTRICAL CONTRACTOR
- DENOTES EXISTING TO REMAIN
- X-X-X-X-X- DENOTES EXISTING TO BE REMOVED BY ELECTRICAL CONTRACTOR

3 LOW VOLTAGE LIGHTING CONTROL SYSTEM WIRING SCHEMATIC  
E-1.2 SCALE: NTS



- N-1 PROVIDE WIRE, CONDUIT AND BACKBOXES INDICATED.
- N-2 COORDINATE THE ROUGH-IN REQUIREMENT WITH DOOR MANUFACTURER PRIOR TO CONSTRUCTION.

4 AUTOMATIC DOOR OPERATOR SYSTEM DETAIL  
E-1.2 SCALE: NTS

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HCC PROJECT NO: 23153

**PROJECT:**  
**ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO.**

2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

**DRAWING:**  
**ELECTRICAL DETAILS**

<p><b>BARRY BRYAN ASSOCIATES</b> Engineers Project Managers</p> <p>250 Water Street Suite 201 Whitby, Ontario L1N 0G5 Tel: (905) 666-5252 Fax: (905) 666-5256 email: info@barrybryan.com</p>	DESIGN BY: PC	ISC CONTROL: PAC
	DRAWN BY: JVD	IN COMPLETE:
	CHECKED BY: PC/HDC	INITIAL:
	DATE: AUG 2023	SCALE: AS SHOWN
PROJECT NO: <b>22119B</b>	DRAWING NO: <b>E-1.2</b>	



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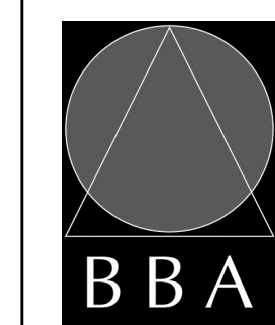
HCC ENGINEERING LIMITED  
40 EGLINTON AVENUE EAST, SUITE 600  
TORONTO, ONTARIO, M4P 3A2  
TEL: (416) 932-2425

HCC PROJECT NO: 23153

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET L0B 1M0  
MUNICIPALITY OF CLARINGTON

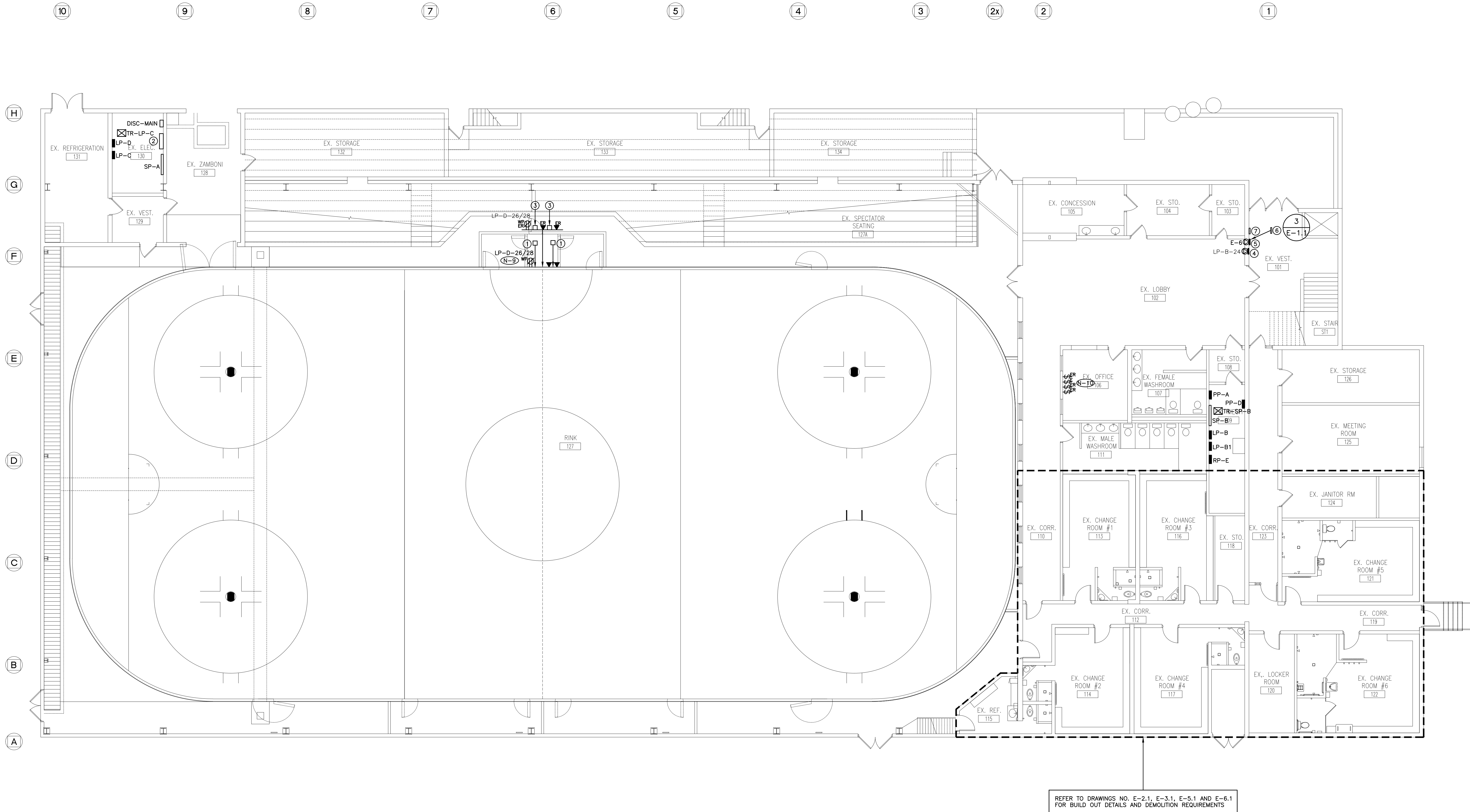
DRAWING:  
**ELECTRICAL  
FACILITY PLAN**



**BARRY BRYAN  
ASSOCIATES**  
Architects  
Engineers  
Project Managers  
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DESIGN BY: PC	DOC CONTROL JMS
DRAWN BY: JVD	% COMPLETE
CHECKED BY: PC/HDC	REVIEW
DATE: AUG 2023	
SCALE: 1 : 100	
FILE:	

PROJECT NO: <b>22119B</b>	DRAWING NO: <b>E-2.0</b>
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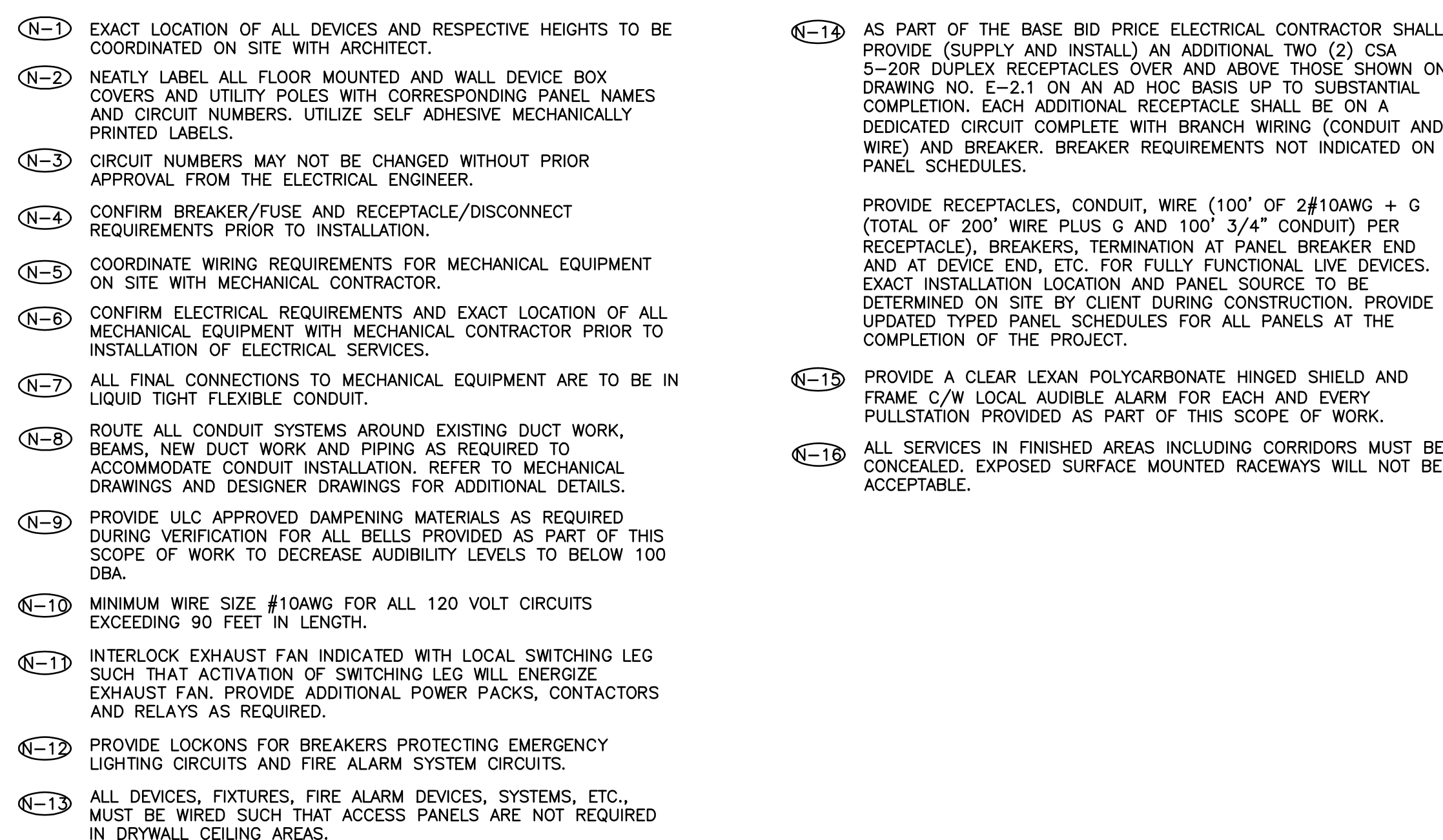


- (N-1) EXACT LOCATION OF ALL DEVICES AND RESPECTIVE HEIGHTS TO BE COORDINATED ON SITE WITH ARCHITECT.
- (N-2) NEATLY LABEL ALL FLOOR MOUNTED AND WALL DEVICE BOX COVERS AND UTILITY POLES WITH CORRESPONDING PANEL NAMES AND CIRCUIT NUMBERS. UTILIZE SELF ADHESIVE MECHANICALLY PRINTED LABELS.
- (N-3) CIRCUIT NUMBERS MAY NOT BE CHANGED WITHOUT PRIOR APPROVAL FROM THE ELECTRICAL ENGINEER.
- (N-4) CONFIRM BREAKER/FUSE AND RECEPTACLE/DISCONNECT REQUIREMENTS PRIOR TO INSTALLATION.
- (N-5) ROUTE ALL CONDUIT SYSTEMS AROUND EXISTING DUCT WORK, BEAMS, NEW DUCT WORK AND PIPING AS REQUIRED TO ACCOMMODATE CONDUIT INSTALLATION. REFER TO MECHANICAL DRAWINGS AND DESIGNER DRAWINGS FOR ADDITIONAL DETAILS.
- (N-6) MINIMUM WIRE SIZE #10AWG FOR ALL 120 VOLT CIRCUITS EXCEEDING 90 FEET IN LENGTH.
- (N-7) PROVIDE LOCKONS FOR BREAKERS PROTECTING EMERGENCY LIGHTING CIRCUITS AND FIRE ALARM SYSTEM CIRCUITS.
- (N-8) USE GALVANIZED RIGID STEEL CONDUIT IN ALL OUTDOOR LOCATIONS AND IN AREAS THAT ARE NOT ENVIRONMENTALLY CONTROLLED INCLUDING THE RINK.
- (N-9) PROVIDE NEW GFCI BREAKERS IN PANEL LP-D FOR CIRCUITS INDICATED.
- (N-10) FOR LOCATION INDICATED PROVIDE NEW 4 GANG FACEPLATE C/W DUMMY PLATES/BLANK FILLERS TO ACCOMMODATE THE REMOVAL OF THREE (3) EXISTING SWITCHES AS PART OF THIS SCOPE OF WORK.
- (N-11) REWIRE ALL EXISTING TO REMAIN DEVICES AS REQUIRED TO ENSURE CONTINUITY OF SERVICES. EXISTING TO REMAIN DEVICES NOT SHOWN ON DRAWING.

- ① 6" X 6" X 6" NEMA 4X JUNCTION BOX - HAMMOND MANUFACTURING CSXSC686SS
- ② EXISTING UTILITY CABINET C/W METER AND METER BASE
- ③ EXISTING 6" X 6" X 6" PULL BOX TO BE REMOVED AS PART OF THIS SCOPE OF WORK
- ④ EXISTING FIRE ALARM SYSTEM CONTROL PANEL
- ⑤ FIRE ALARM SYSTEM BOOSTER PANEL PROVIDED AS PART OF THIS SCOPE OF WORK
- ⑥ EXISTING FIRE SAFETY PLAN TO BE RELOCATED AS PART OF THIS SCOPE OF WORK
- ⑦ EXISTING FIRE SAFETY PLAN IN RELOCATED POSITION

REFER TO DRAWINGS NO. E-2.1, E-3.1, E-5.1 AND E-6.1  
FOR BUILD OUT DETAILS AND DEMOLITION REQUIREMENTS





FIRE ALARM SYSTEM AUDIBILITY TESTING TO  
BE COMPLETED WITH ALL DOORS OPEN

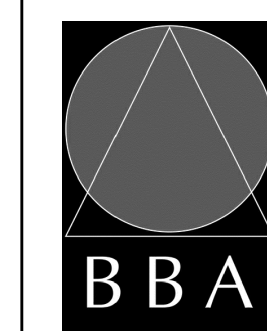
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PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET  
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DRAWING:  
ELECTRICAL PLAN



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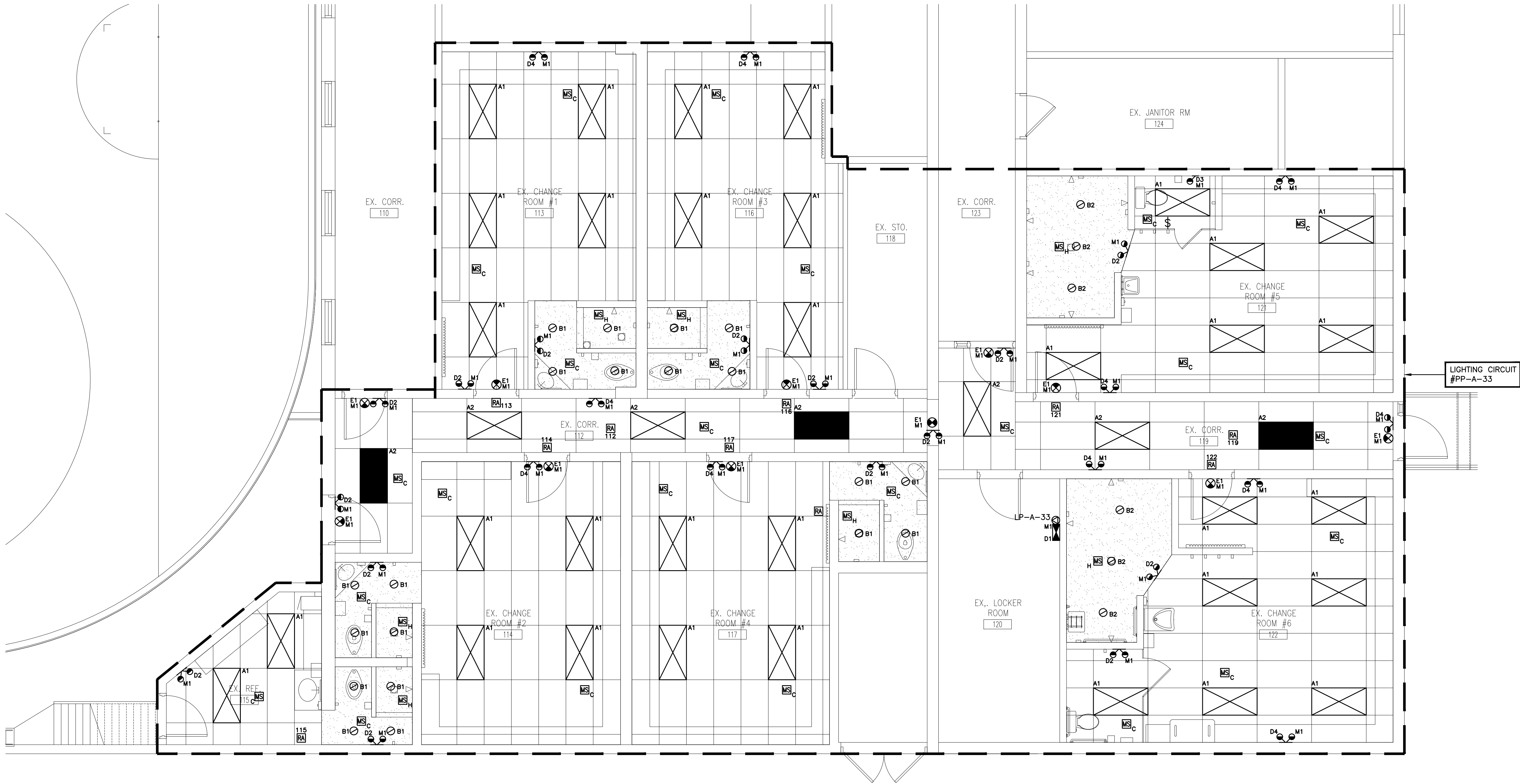
PROJECT NO.

**22119B**

DRAWING NO:

## E-2.1





FIXTURE SCHEDULE

TYPE A1	2' X 4' RECESSED LED FIXTURE SUITABLE FOR DAMP LOCATIONS C/W IN LINE POWER DISCONNECT, POWER SUPPLY, 347V 0 TO 10VDC DIMMING DRIVER, HIGH TRANSMISSION PMMA FROSTED LENS AND LAMP (4000K, 80% CRI). ILP VPAN24-33L/44L/55L-U-40 SD347 SET LUMEN OUTPUT TO 3300 LUMEN
TYPE A2	2' X 4' RECESSED LED FIXTURE SUITABLE FOR DAMP LOCATIONS C/W IN LINE POWER DISCONNECT, POWER SUPPLY, 347V 0 TO 10VDC DIMMING DRIVER, HIGH TRANSMISSION PMMA FROSTED LENS AND LAMP (4000K, 80% CRI). ILP VPAN24-33L/44L/55L-U-40 SD347 SET LUMEN OUTPUT TO 4400 LUMEN
TYPE EA1	1' X 4' RECESSED FLOURESCENT FIXTURE SUITABLE FOR LAY-IN CEILING C/W ACRYLIC LENS, BALLAST AND 2 X T8 LAMPS
TYPE EA2	2' X 4' RECESSED FLOURESCENT FIXTURE SUITABLE FOR LAY-IN CEILING C/W ACRYLIC LENS, BALLAST AND 2 X T8 LAMPS
TYPE EA6	4' SURFACE MOUNTED FLOURESCENT FIXTURE C/W FROSTED LENS, BALLAST AND 2 X T8 LAMPS
TYPE B1	4" LED DOWNLIGHT GASKETED SUITABLE FOR WET LOCATIONS C/W IN LINE POWER DISCONNECT, POWER SUPPLY, 347V 0 TO 10VDC DRIVER, MICRO-PRISMATIC LENS AND LAMP (4000K, 90% CRI). INTER-LUX WG-100RPTDLF-RBT-M-940-D010-347-RRC-MPL-41-W-WL
TYPE B2	4" LED DOWNLIGHT GASKETED SUITABLE FOR WET LOCATIONS C/W IN LINE POWER DISCONNECT, POWER SUPPLY, 347V 0 TO 10VDC DRIVER, MICRO-PRISMATIC LENS AND LAMP (4000K, 90% CRI) FOR WET LOCATION. INTER-LUX WG-100RPTDLF-RBT-XH-940-D010-347-RRC-MPL-65-W-WL
TYPE D1	EMERGENCY LIGHTING SYSTEM C/W 10 YEAR 24VOLT/720W/0.5 HOUR/BATTERY UNIT/120/347 VOLT INPUT/LUMACELL RGS SERIES.
TYPE D2	2 X 4W MR16 LED 24V LUMACELL MQM-NX SERIES MQM2NXL13. NEMA-4X RATED SUITABLE FOR COLD WEATHER INSTALLATION, VANDAL RESISTANT. WHITE IN COLOUR.
TYPE D3	1 X 4W MR16 LED 24V LUMACELL MQM-NX SERIES MQM1NXL13. NEMA-4X RATED SUITABLE FOR COLD WEATHER INSTALLATION, VANDAL RESISTANT. WHITE IN COLOUR.
TYPE D4	2 X 6W MR16 LED 24V LUMACELL MQM-NX SERIES MQM2NXL14. NEMA-4X RATED SUITABLE FOR COLD WEATHER INSTALLATION, VANDAL RESISTANT. WHITE IN COLOUR.
TYPE D5	1 X EMERGENCY LIGHTING SYSTEM DC REMOTE HEAD
TYPE D6	2 X EMERGENCY LIGHTING SYSTEM DC REMOTE HEADS
TYPE E1	PICTOGRAM LED EXIT SIGN C/W 120/347VAC/24VDC LED. NEMA-4X RATED SUITABLE FOR COLD WEATHER INSTALLATION, VANDAL RESISTANT. LUMACELL LN2XWUCW, WHITE IN COLOUR (CONFIRM VOLTAGE DURING SHOP DRAWING PROCESS).
TYPE E2	EXIT SIGN, READ TYPE.

- N-1 REFER TO ARCHITECTS DRAWINGS FOR EXACT LOCATION AND HEIGHTS FOR MOUNTING OF FIXTURES, OCCUPANCY SENSORS, LIGHT SWITCHES, FIRE ALARM DEVICES, ETC.
- N-2 NOT USED.
- N-3 PROVIDE NEW LIGHTING FIXTURES, EXIT SIGNS, SWITCHES, OCCUPANCY SENSORS, FIRE ALARM DEVICES, ETC. TO SUIT NEW REFLECTED CEILING PLAN.
- N-4 PROVIDE NEW SWITCHING LEGS SHOWN ON DRAWING. REWIRE EXISTING FIXTURES IN RESPECTIVE ROOMS AS REQUIRED.
- N-5 UTILIZE CCT #PANEL PP-A-33 (DC SOURCE M1) TO POWER EXIT SIGN AC BULBS AND 24 HOUR LIGHTING.
- N-6 NOT USED.
- N-7 COORDINATE INSTALLATION OF FIXTURES WITH MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT AND DUCT WORK.
- N-8 CHAIN HANG ALL RELOCATED AND NEW FIXTURES PROVIDED AS PART OF THIS SCOPE OF WORK FROM SLAB (RETROFIT FIXTURES ACCORDINGLY).
- N-9 AS PART OF THE BASE BID PRICE ELECTRICAL CONTRACTOR SHALL PROVIDE (SUPPLY AND INSTALL) AN ADDITIONAL ONE (1) TYPE E1 EXIT SIGNS COMPLETE WITH 75"-0" OF CONDUIT AND WIRING OVER AND ABOVE THOSE SHOWN ON DRAWING NO. E-3.1 POST CITY FIRE / BUILDING DEPARTMENT INSPECTIONS.
- N-10 NOT USED.
- N-11 ELECTRICAL CONTRACTOR SHALL REMOVE AND REINSTALL EXISTING FIXTURES THROUGHOUT THE FLOOR AS REQUIRED TO ACCOMMODATE INSTALLATION OF CONDUITS PROVIDED AS PART OF THIS SCOPE OF WORK.
- N-12 LOCATE AND POSITION EXIT SIGNS SUCH THAT THEY DO NOT INTERFERE WITH ADJACENT EXIT SIGNS AND EMERGENCY LIGHTING COVERAGE.
- N-13 AS PART OF THIS SCOPE OF WORK EMPLOY AND PAY FOR THE SERVICES OF A CERTIFIED WATT STOPPER SERVICE CONSULTANT TO COMMISSION ALL CEILING MOUNTED OCCUPANCY SENSORS PROVIDED AS PART OF THIS SCOPE OF WORK. COMMISSIONING AND DOCUMENTATION SHALL BE COMPLETED; DETAILED AS REQUIRED TO DEMONSTRATE LEED COMPLIANCE.
- N-14 DO NOT REUSE EXISTING EXIT SIGNS, OCCUPANCY SENSORS, DIMMERS, SWITCHES OR PHOTOCELLS REMOVED AS PART OF THIS SCOPE OF WORK.
- N-15 REMOVE AND REINSTALL EXISTING FIXTURES AS REQUIRED TO ACCOMMODATE BUILD OUT OF PARTITIONS BY GENERAL CONTRACTOR.
- N-16 MOUNTING STYLE (CEILING/WALL), HEIGHT AND LOCATION OF EXIT SIGNS TO BE DETERMINED BY ARCHITECT ON SITE. COORDINATE AND REVIEW ALL EXIT SIGN LOCATIONS WITH ARCHITECT PRIOR TO ORDERING EXIT SIGNS.
- N-17 PROVIDE LOCK ON FOR BREAKERS PROTECTING EMERGENCY LIGHTING SYSTEMS.
- N-18 CONNECT 120 VOLT FIXTURES TO 347V LIGHTING CIRCUITS UTILIZING STEP DOWN TRANSFORMERS UNLESS INDICATED OTHERWISE. TRANSFORMERS TO BE PROVIDED AND MOUNTED IN ELECTRICAL ROOM AS PART OF THIS CONTRACT.
- N-19 NOT USED.
- N-20 ALL DEVICES, FIXTURES, FIRE ALARM DEVICES, SYSTEMS, ETC. MUST BE WIRED SUCH THAT ACCESS PANELS ARE NOT REQUIRED IN DRYWALL CEILING AREAS.
- N-21 NOT USED.

- N-22 AS PART OF THE BASE BID PRICE ELECTRICAL CONTRACTOR SHALL PROVIDE (SUPPLY AND INSTALL) AN ADDITIONAL ONE (1) DIGITAL DIMMING ROOM CONTROLLERS OVER AND ABOVE THOSE SHOWN ON DRAWING NO. E-3.1 ON AN AD HOC BASIS UP TO SUBSTANTIAL COMPLETION.
- N-23 PROVIDE WATT STOPPER LMRC-212 C/W CONDUIT, WIRE (75' OF 2#12AWG + G (TOTAL OF 150' WIRE PLUS G, 75' CONDUIT) PER ROOM CONTROLLER), TERMINATIONS, ETC. FOR FULLY FUNCTIONAL LIVE DEVICES. EXACT INSTALLATION LOCATION AND SWITCH LEGS TO BE DETERMINED ON SITE DURING CONSTRUCTION.
- N-24 AS PART OF THIS SCOPE OF WORK ELECTRICAL CONTRACTOR TO HAVE WATT STOPPER SERVICE CONSULTANT ONSITE AFTER LIGHTING AND HVAC INSTALLATION IS COMPLETE AND PRIOR TO INSTALLATION OF SENSORS PROVIDED AS PART OF THIS SCOPE OF WORK TO CONFIRM PLACEMENT OF SENSORS.
- N-25 CEILING MOUNTED OCCUPANCY SENSORS PROVIDED AS PART OF THIS SCOPE OF WORK MUST BE INSTALLED AT LEAST 6' AWAY FROM ALL SUPPLY AIR DIFFUSERS AND RETURN AIR GRILLS. COORDINATE EXACT INSTALLATION LOCATION WITH WATT STOPPER LIGHTING CONTROL SERVICE CONSULTANT AND MECHANICAL CONTRACTOR PRIOR TO COMMENCING WORK.
- N-26 AS PART OF THIS SCOPE OF WORK EMPLOY AND PAY FOR THE SERVICES OF A CERTIFIED WATT STOPPER SERVICE CONSULTANT TO COMMISSION ALL CEILING MOUNTED OCCUPANCY SENSORS PROVIDED AS PART OF THIS SCOPE OF WORK. COMMISSIONING AND DOCUMENTATION SHALL BE COMPLETED; DETAILED AS REQUIRED TO DEMONSTRATE LEED COMPLIANCE.
- N-27 ALL ROOM CONTROLLERS PROVIDED AS PART OF THIS SCOPE OF WORK MUST BE INSTALLED WITHIN CEILING MOUNTED JUNCTION BOXES PROVIDED AS PART OF THIS SCOPE OF WORK.
- N-28 SWITCH/DIMMING LEGS SHALL BE WIRED SUCH THAT LEG IS CONTROLLED BY OCCUPANCY SENSORS IN RESPECTIVE SPACE ENCLOSED BY CEILING HEIGHT PARTITIONS. OPERATION OF SAME LIGHT BRANCH CIRCUIT IN ADJACENT AREAS/ROOMS SHALL NOT AFFECT OPERATION OF LIGHTING IN RESPECTIVE AREA. REWIRE EXISTING FIXTURES AS REQUIRED.
- N-29 AS PART OF THE BASE BID PRICE ELECTRICAL CONTRACTOR SHALL PROVIDE (SUPPLY AND INSTALL) AN ADDITIONAL ONE (1) TYPE "C" CEILING MOUNTED OCCUPANCY SENSORS, 75"-0" OF CONDUIT AND WIRING OVER AND ABOVE THOSE SHOWN ON DRAWING NO. E-3.1 POST SUBSTANTIAL COMPLETION.

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HCC PROJECT NO: 23153

PROJECT:  
**ORONO ARENA AND  
COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**

2 PRINCESS STREET LOB 1M0  
ORONO, ONTARIO  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**REFLECTED CEILING  
PLAN**

**BBA**

**BARRY BRYAN  
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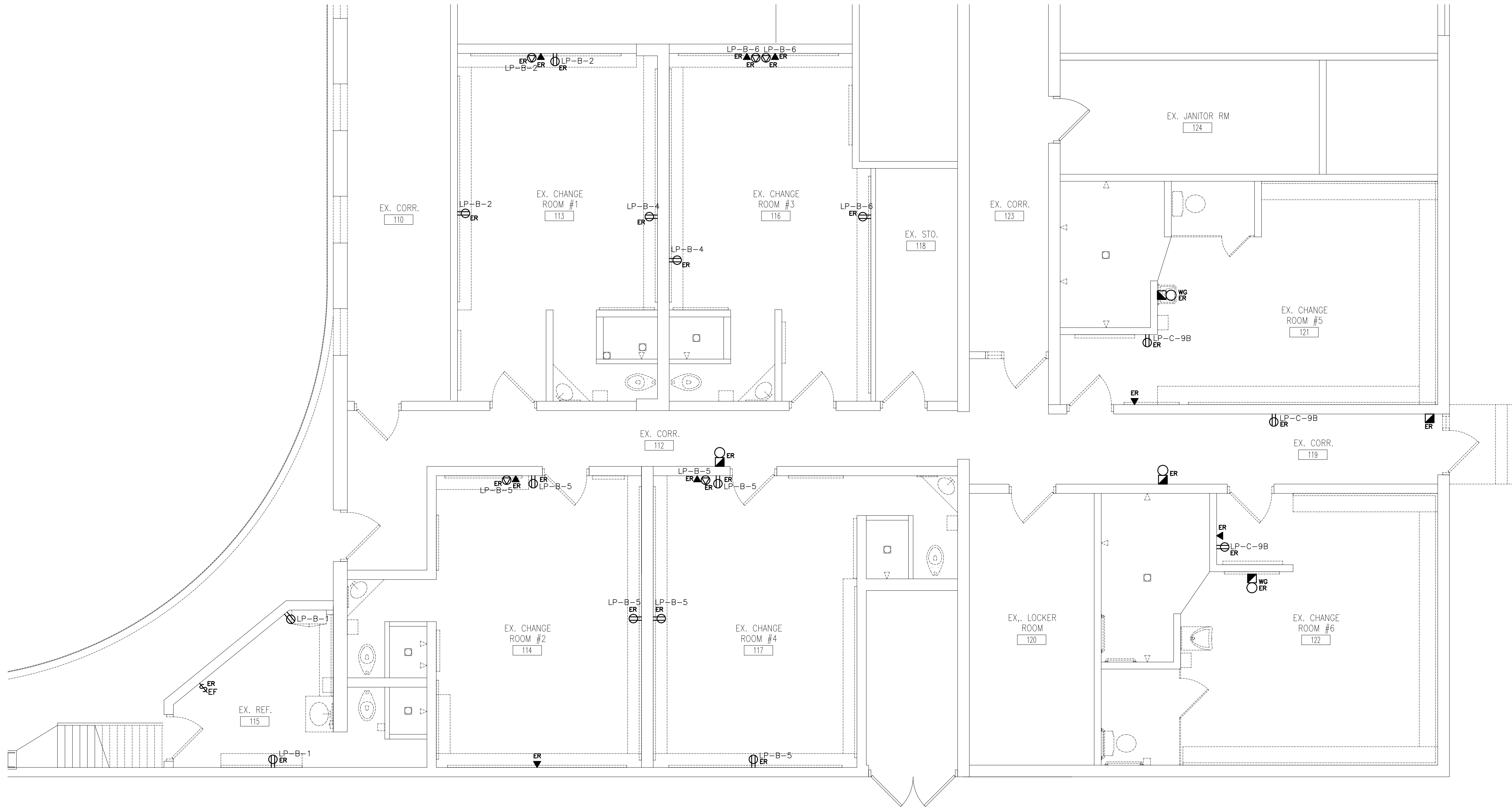
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DATE: AUG 2023  
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FILE:

DOC CONTROL: JVD  
% COMPLETED: 100%

PROJECT NO:  
**22119B**

DRAWING NO:  
**E-3.1**





- (N-1) ALL EXISTING BRANCH WIRING AND RACEWAYS, INCLUDING THOSE COILED IN CEILING SPACE SHALL BE REMOVED BACK TO SOURCE PANEL. REFER TO SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS. DO NOT REUSE EXISTING WIRING OR CONDUIT SYSTEMS.
- (N-2) REMOVE ALL ABANDONED ZONE CONDUITS INCLUDING THOSE IN CEILING SPACE. EXISTING ZONE CONDUITS NOT SHOWN ON DRAWING.
- (N-3) BASE BID PRICE SHALL INCLUDE FOR THE REMOVAL OF 4 ADDITIONAL RECEPTACLES, COMMUNICATIONS ROUGH-INS, ETC. OVER AND ABOVE THOSE SHOWN ON THIS DRAWING. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- (N-4) CONFIRM DEMOLITION REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO DISCONNECTING MECHANICAL EQUIPMENT.
- (N-5) DO NOT REUSE ANY DEVICES, BACKBOXES, ETC REMOVED AS PART OF THIS SCOPE OF WORK.
- (N-6) REWIRE ALL EXISTING TO REMAIN DEVICES AS REQUIRED TO ENSURE CONTINUITY OF SERVICES. EXISTING TO REMAIN DEVICES NOT SHOWN ON DRAWING.

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PROJECT:  
**ORONO ARENA AND COMMUNITY CENTRE  
RINK REPLACEMENT AND  
CHANGEROOM RENO.**  
2 PRINCESS STREET  
ORONO, ONTARIO L0B 1M0  
MUNICIPALITY OF CLARINGTON

DRAWING:  
**ELECTRICAL  
DEMOLITION PLAN**

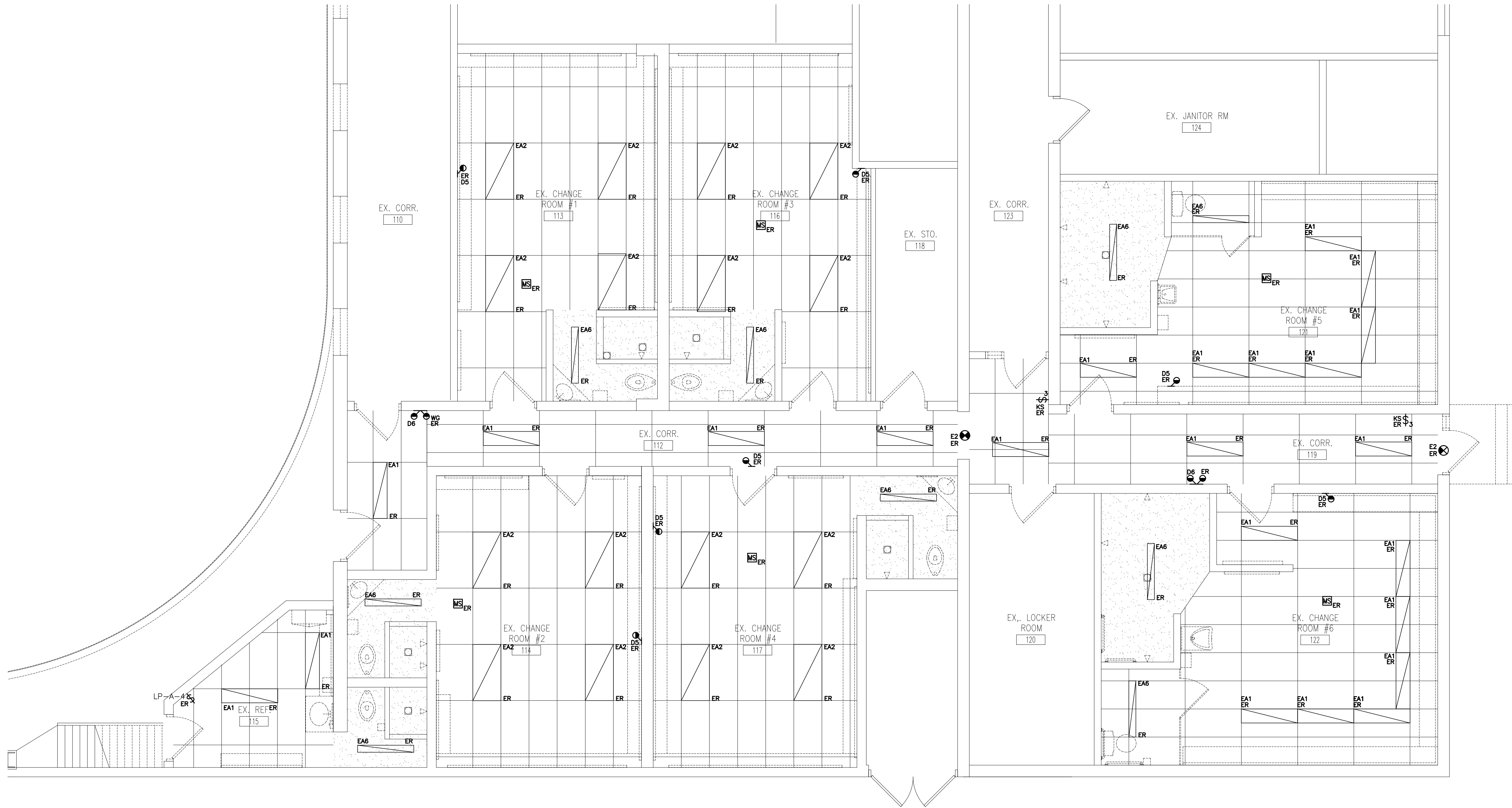
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PROJECT NO:  
**22119B**

DRAWING NO:  
**E-5.1**





- N-1** LIGHTING AND FIRE ALARM LAYOUT SHOWS EXISTING REFLECTED CEILING PLAN ONLY. REFER TO DRAWING NO. E-3.1 FOR NEW LAYOUT AND FOR ADDITIONAL DEMOLITION REQUIREMENTS.
- N-2** BASE BID PRICE SHALL INCLUDE FOR THE REMOVAL OF 3 ADDITIONAL FIXTURES AND FIRE ALARM DEVICES OVER AND ABOVE THOSE SHOWN ON DRAWING NO. E-6.1.
- N-3** DISPOSE OF ALL FIXTURES (EXCLUDING BASE BUILDING FIXTURES) REMOVED AS PART OF THIS SCOPE OF WORK. RECYCLE ALL APPLICABLE COMPOUNDS AS DETAILED IN 'GREEN MEASURES' REQUIREMENTS. PROVIDE DOCUMENTATION SUPPORTING RECYCLING MEASURES.
- N-4** REWIRE ALL EXISTING TO REMAIN FIXTURES TO ENSURE CONTINUITY OF SERVICES.
- N-5** DO NOT REUSE EXISTING DIMMERS, SWITCHES, LAMPS, FIRE ALARM DEVICES, ETC DENOTED AS EXISTING TO BE REMOVED AS PART OF THIS SCOPE OF WORK.
- N-6** AS PART OF THIS SCOPE OF WORK ELECTRICAL CONTRACTOR MUST PROCURE (ORDER AND PAY FOR) THE SERVICES OF AETIAS TO DISPOSE OF ALL LAMPS AND BALLASTS REMOVED AS PART OF THIS SCOPE OF WORK IN COMPLIANCE WITH MINISTRY STANDARDS AND ENVIRONMENTALLY SAFE METHODS. ELECTRICAL CONTRACTOR SHALL PROVIDE A SUBMISSION (LETTER) STATING THAT LAMPS AND BALLASTS WERE DISPOSED OF THROUGH ENVIRONMENTALLY SAFE METHODS. THE SUBMISSION BY THE ELECTRICAL CONTRACTOR SHALL INCLUDE THE WAYBILL DETAILING LOCATION OF DISPOSAL AND QUANTITY OF LAMPS AND BALLASTS THAT WERE DISPOSED.

REFER TO DRAWING NO. E-3.1 FOR FIXTURE SCHEDULE.

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PROJECT:  
**ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO.**

2 PRINCESS STREET  
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DRAWING:  
**REFLECTED CEILING DEMOLITION PLAN**

**BARRY BRYAN ASSOCIATES**

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**ORONO ARENA AND  
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RINK REPLACEMENT AND  
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Architects Engineers Project Managers	DRAWN BY: JVD	% COMPLETE:
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Fax: (905) 666-5256	NTS
e-mail: bba@bba-archeng.com	FILE:

(N-2) PROVIDE DEDICATED CORE DRILLED WALL AND FLOOR PENETRATIONS ON EVERY FLOOR. EXACT LOCATION OF ALL CORE DRILLS TO BE DETERMINED BY X-RAY RESULTS. ALL X-RAYS MUST BE REVIEWED AND APPROVED BY LANDLORD PRIOR TO CORE DRILLING.