



Via Website Posting and Email

January 15, 2023

Attention: All Bidders

Dear Sir/Madam:

Re: CL2023-41 - Orono Arena and Community Centre - Indoor Rink Refurbishment

Addendum Number 2

Question and Answer

1. **Question:**

Request that North West Rubber's Reaction be approved as an alternate to Mondo Ramflex.

Answer:

The proposed alternative is not acceptable.

2. **Question:**

We would like to submit a substitution request for RHINO 7000 as an approve equal from Rhinotek Entrance Solutions.

Answer:

The alternative is acceptable.

3. **Question:**

We would like to propose an equivalent for section 09 65 66.13 Resilient Athletic Flooring. Product: NorthWest Rubber ReAction Skate Tile by Westpoint.

Answer:

Refer to Question 1 response.

4. **Question:**

Please advise if there is union requirement for subcontractors.

Answer:

The Municipality does not have a union requirement for this work.

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5. **Question:**

Will a new scoreboard be required for this refurbishment?

Answer:

No, this is not a requirement.

6. **Question:**

We kindly request Northwest Rubber ProXL as an equal to Mondo Ramflex for section 09 65 66.13

Answer:

The proposed alternative is not acceptable.

7. **Question:**

The Electrical specifications include a Supplementary Tender Form. Are we to submit this with our regular tender submission?

Answer:

The electrical sub-tender breakdown is not part of the project tender and is not required.

8. **Question:**

Please include MaxFlor+ by Advantage Sport in section 09 65 66.13.

Answer:

The proposed alternative is not accepted for this project.

9. **Question:**

What information is to be provided under the upload additional document field?

Answer:

This is not a requirement and has been removed.

10. **Question:**

Provide spec for FRP Panels (C2). I do not see it in Section 09 51 13.

Answer:

The FRP is will be a standard white smooth sheet adhered to the underside of the gypsum board. The FRP is a standard sheet having a minimum thickness of 0.09" thickness or better.

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11. **Question:**

Detail 1/A702 shows fastening of the maple wood slats to the angle with non-ferrous fasteners from below. Detail 4/A702 shows fastening via 10mm diameter stainless steel carriage bolts. Please clarify.

Answer:

Stainless steel carriage bolt fasteners.

12. **Question:**

Detail 1/A203 and 5/A701 shows a new toilet partition for WC 121B. Please provide specification.

Answer:

Refer to attached specification for the washroom partition.

13. **Question:**

Detail 1/A203 and 7/A701 shows a new double stack metal locker. Please provide specification.

Answer:

See attached specification.

14. **Question:**

We would like to request of one (2) weeks extension of questions and submission deadlines.

Answer:

Refer to Addendum 1.

15. **Question:**

Please confirm if the following items are required:

- Wattstopper on site services as per dwg E-1.2 note N-15/N-16 and dwg E-3.1 notes N-13/N-23/N-25
- 3rd party engineer to verify light levels as per dwg E-1.2 note N-16 and spec 26 60 02 item 3.9
- Does the contractor do the actual drawing edits AutoCAD for as built drawings including associated fees noted in spec 26 05 00 item 1.20
- Full electrical system studies noted in spec 26 60 02
- 3rd party ULC-S1001 integrated system testing noted in spec 28 31 00.01 item 1.1.6

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Answer:

Bullets 1 – 4 are required. Bullet 5 is not required.

16. **Question:**

If the additional scope identified in the following notes are not use during construction, will a credit be requested from the contractor?

- Dwg E2.1 note N-14
- Dwg E3.1 notes N-9, N-22 & N-28
- Dwg E5.1 note N-3

Answer:

A credit for the un-used scope will be requested.

17. **Question:**

Section 13 18 00 2.7.2 calls for Quick Release Supports which are typically used in facilities that do multiple changeovers and not in community rinks which may need to remove glass for events only occasionally. These supports are much more expensive than standard fastened face plate supports. Would standard fastened supports be acceptable for this project?

Answer:

Quick release is required.

18. **Question:**

Drawing A201-1. Demolition plan legend (10) Remove and replace existing rubber skate tile, extent to be confirmed. Can you please confirm the extent of the rubber replacement on this side of the rink?

Answer:

The extent limit is defined by the extents limit shown for this demolition item on the plan.

19. **Question:**

Please confirm extents of backer panel required.

Answer:

Backer panel is required around the entire perimeter of the new dasher boards. Additionally, the lobby wall which is currently acting as the dasher boards at the south end of the rink shall be re-faced with new plastic laminate puck board and top closure see attached sketch SKA-02.

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20. **Question:**

Drawing A201 note#12 calls to replace puck paneling. Could you please provide specifications and details.

Answer:

Refer to meeting minutes and scope clarification.

21. **Question:**

Drawing A201 note#6 calls for preparation of purlins for new paint. Please describe preparation process and what is required.

Answer:

The exterior purlins being repainted must be prepared (cleaned) to receive primer and finish coats in accordance with the manufacturers written instruction and specifications. Refer to the exterior painting specifications for additional information.

22. **Question:**

Demolition notes on drawing A201 calls for dust protection since the building will be operational and occupied. Could you please let us know which areas will be occupied and what type of activities will be performed.

Answer:

Refer to meeting minutes and scope clarification.

23. **Question:**

Please confirm that ice line painting is not part of this contract.

Answer:

Ice painting is not included as part of the project scope.

24. **Question:**

Drawing A203, room 115 shows locker. Please provide specifications.

Answer:

Refer to meeting minutes and scope clarification.

25. **Question:**

Drawing A203 calls for C2 ceiling type which is fiberglass reinforced plastic (FRP) paneling on gypsum board. Could you please provide specifications for this item.

Answer:

Refer to meeting minutes and scope clarification.

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26. **Question:**

Drawing A203 shows toilet partitions. Please provide specifications.

Answer:

Refer to meeting minutes and scope clarification.

27. **Question:**

S101 slab on grade notes call for saw cutting, could you please confirm it is not required.

Answer:

Slab cutting will be part of this project refer to the drawings for the scope work.

28. **Question:**

Drawing S202 Foundation Plan Notes. Please confirm notes 8 and 15 is not required for this project.

Answer:

These notes are not applicable to the project scope of work.

29. **Question:**

Can the closing date be extended?

Answer:

Refer to Addendum 1.

30. **Question:**

Section 13 18 30 item 1.5.6 says to re-use ammonia, item 1.5.10 says to charge new ammonia. Please confirm that new ammonia shall be charged.

Answer:

Refer to meeting minutes and scope clarification.

31. **Question:**

Section 13 18 30 items 1.5.10 and 3.3 say to supply a new brine charge, item 2.8.2 says to re-use the brine charge. Please confirm if the existing brine charge shall remain or be replaced.

Answer:

Refer to meeting minutes and scope clarification.

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32. **Question:**

Section 13 18 30 item 1.5.12 says to install new ammonia and brine insulation. Please confirm that only piping replaced as part of this project requires new insulation, all other existing insulation on existing piping to remain.

Answer:

Correct, on replaced piping required new insulation.

33. **Question:**

Section 13 18 30 item 1.4.1 says to remove cold brine pump, condenser water pump, condenser water tank, and cold brine expansion tank. These 'removed' equipment are not detailed for installation of new. Please confirm if those equipment are to remain or to be replaced.

Answer:

Refer to meeting minutes and scope clarification.

34. **Question:**

Please confirm that ammonia piping replacement extent shall follow section 13 18 30 item 2.5.4 and 2.5.5, and not that of section 13 18 30 item 1.5.6.

Answer:

Refer to meeting minutes and scope clarification.

35. **Question:**

Please confirm that brine/water piping replacement extent shall follow section 13 18 30 item 2.6, and not that of section 13 18 30 item 1.5.6.

Answer:

Section 13 18 30 item 2.6 is correct.

36. **Question:**

Please confirm that refrigeration equipment electrical reconnection extent shall follow section 13 18 30 item 1.5.9, and not that of section 13 18 30 item 2.9.1.

Answer:

Section 13 18 30 item 1.5.9 is correct.

37. **Question:**

Please confirm the extent of the Skate Tile to be removed and replaced on the apron slab. (Note 10 A201).

Answer:

Refer to meeting minutes and scope clarification.

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38. **Question:**

Please confirm if there is any painting required in the rink area (RM 127).

Answer:

No interior painting in the rink space.

39. **Question:**

Please confirm if the west elevation needs to be painted. If yes, please provide elevations for reference.

Answer:

West elevation is not included.

40. **Question:**

We would like to ask for an equal on the rubber skate tile, we would like to offer Tarkett Dropzone Flex/Impact as an equal.

Answer:

The proposed alternative is not accepted for this project.

41. **Question:**

Rubber + Insulation at rink apron corners by dasherboard suppliers?

Answer:

Refer to meeting minutes and scope clarification.

42. **Question:**

What is the extent of rubber flooring to be installed in rink apron, is it simply replacing existing? Nothing listed on finish schedule.

Answer:

Refer to meeting minutes and scope clarification.

Pre-Bid Meeting Minutes

1. The project requires extensive sequencing of the work to maintain the continued facility operations. Multiple mobilizations and demobilizations of sub-trades should be expected to facilitate the construction work to meet the project schedule.
2. All work for the rink must be completed and ready for operation / occupancy by September 1st, 2024, as outlined in the bid documents. This includes all inspections necessary for full or partial occupancy complete by the turnover date.
3. The Municipality reserves the right to request the contractor to undertake an open book bid process for the supply and installation of work identified in the cash allowances (e.g security, hardware, testing inspection etc.).
4. Alternative or equivalent products must be approved by addendum prior to the tender closing. Product substitutions after the award will only be considered if they demonstrate a benefit to the Municipality in contract price or contract time.
5. The contractor is responsible for completing utility locates. Costs for locates shall be included in the base bid and are not included in the cash allowance.
6. General demolition extents and elements are shown on the demolition plan. However, the scope of the demolition work is as required to complete the new project scope of work. The general contractor shall include coordination of the demolition works as part of the base bid scope of work to complete and execute the overall project intent. This includes slab removals; contractors must anticipate working around locates in the slab and include for hand removals at live conduit as part of their base bid.
7. Contractors were made aware of the of the tight working spaces and the importance of organized sub-trade coordination for the new foundation scope of work mechanical / electrical. It is the contractor's responsibility to coordinate sub-trades mobilization and re-mobilization around the sequenced work plan. The Municipality will not entertain additional costs for re-mobilization costs resulting from sequencing of the work.
8. The Contractor can use the existing building facilities for a construction office and washrooms. The contractor is responsible for cleaning areas used for construction purposes.
9. It was recommended that all access doors and hatches be supplied by the mechanical sub-trade and installed by the ceilings.

Scope Clarification

1. The project shall be extended to January 19th, 2024, at 2:00pm.
2. The Municipality of Clarington will not accept costs and/or claims for material cost

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escalations from the time of bid from the general contractor or subtrades after the award of tender.

3. The windows being replaced from the lobby to the rink surface shall include removal of the tile sill and replacement with a new plywood and PLAM sill. All surfaces around the windows being replaced shall be painted to match existing.
4. The existing receptacles in the dashboards shall be removed and re-instated in the new dashboards. Refer to HCC CCN No. E01 dated December 4th, 2023, for additional information. Note: locations of the receptacles as shown are to be site verified.
5. The painting scope shall be clarified to only include the exposed rigid frames and purlins on the exterior of the building over the outside seating area. The interior purlins and frames within the rink area are not included in the base bid scope of work.
6. The contractors must include proper sign off of specialty engineered products that require compliance by the 3rd party engineer who signed and sealed the submission. The 3rd party compliance is to confirm that their component of the design has been installed and completed in compliance with their engineered design. Examples of 3rd party engineered systems include but are not limited to miscellaneous metals, structural steel connections, glazing systems, dashboards etc. Provisions of this letters is a requirements of project closeout and must be provided prior to release of the project completion security. Note: multiple reviews may be required by these 3rd party engineers due to the phasing of the project.
7. The bidders must include for project close out and occupancy information as provided in the specifications such as fire alarm verification, ESA, emergency lighting reports etc. Where indicated the documents shall be stamped by a professional engineer for compliance in the bid documents it must be followed and will not be amended.
8. There are two (2) sloped concrete ramps at the stairs to the viewing area in the rink. These ramps must remain, the void between the new dashboards (located on the rink) and the existing concrete ramp must be sealed with a HDPE from the dashboard to edge of concrete or infilled with concrete to match the existing ramp profile and provide closure. Refer to Barry Bryan Associates SKA-01 for additional information.
9. The facility will remain operational during construction, the facility will utilize the main lobby, 2nd floor banquet, and office / administration spaces during construction. Services and utilities to the building must be maintained during construction and proper notice of shutdown provided to the Municipality of Clarington.
10. The Municipality reserves the right to request the contractor to undertake an open book bid process for the supply and installation of work identified in the cash allowances (e.g security, hardware, testing inspection etc.).
11. Consultants will complete periodic reviews of the work for general conformance with the

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design drawings and specifications. Construction meetings will take place on a bi-weekly basis for the duration of the project, meeting minutes will be taken by the general contractor at each meeting and distributed to the project teams.

12. The general contractor will be required to complete an interference meeting with applicable sub-trades, consultants, and the Municipality to proactively identify site issues, constraints, and possible constraints for the project. Please note extensive existing and new servicing will be present in the change room ceiling space and special coordinated efforts will be required as part of the base bid scope of work for the mechanical / electrical rough ins with the masonry work. The contractor will be responsible for coordinating these efforts and schedule the work and forces accordingly to suit the completion dates.
13. Clarify below rink slab insulation as Hi-Load 40 compressive strength in accordance with Specification 07 21 13.
14. The rink slab shall only have one (1) 6 MIL poly slip sheet as indicated on 4/S101.
15. Existing cold brine pump shall be reused. Do not demolish or replace.
16. Existing cold brine expansion tank shall be reused. Do not demolish or replace.
17. Replace existing condenser water pump like for like replacement. Reuse condenser water pump motor starters and wiring.
 - Condenser Water Pump
 - One (1) Condenser Water Pump
 - S.A. Armstrong
 - Flow: 120 USGPM
 - Horsepower: 3HP
18. Replace existing condenser water tank like for like replacement.
 - Condenser Water Tank
 - One (1) Condenser Water Tank
 - ACO Containers
 - Sized to match existing
19. Section 13 18 30 Ice Rink item 2.5.4 page 8 of 12 shall be removed from scope of work.
20. Section 13 18 30 Ice Rink item 2.6.2, 2.6.4, 2.6.5, 2.6.6 and 2.6.7 page 9 of 12 shall be removed from scope of work.
21. Refrigeration contractor to supply and install a new 4" relief header complete with diffuser to the roof for the two (2) new compressors.

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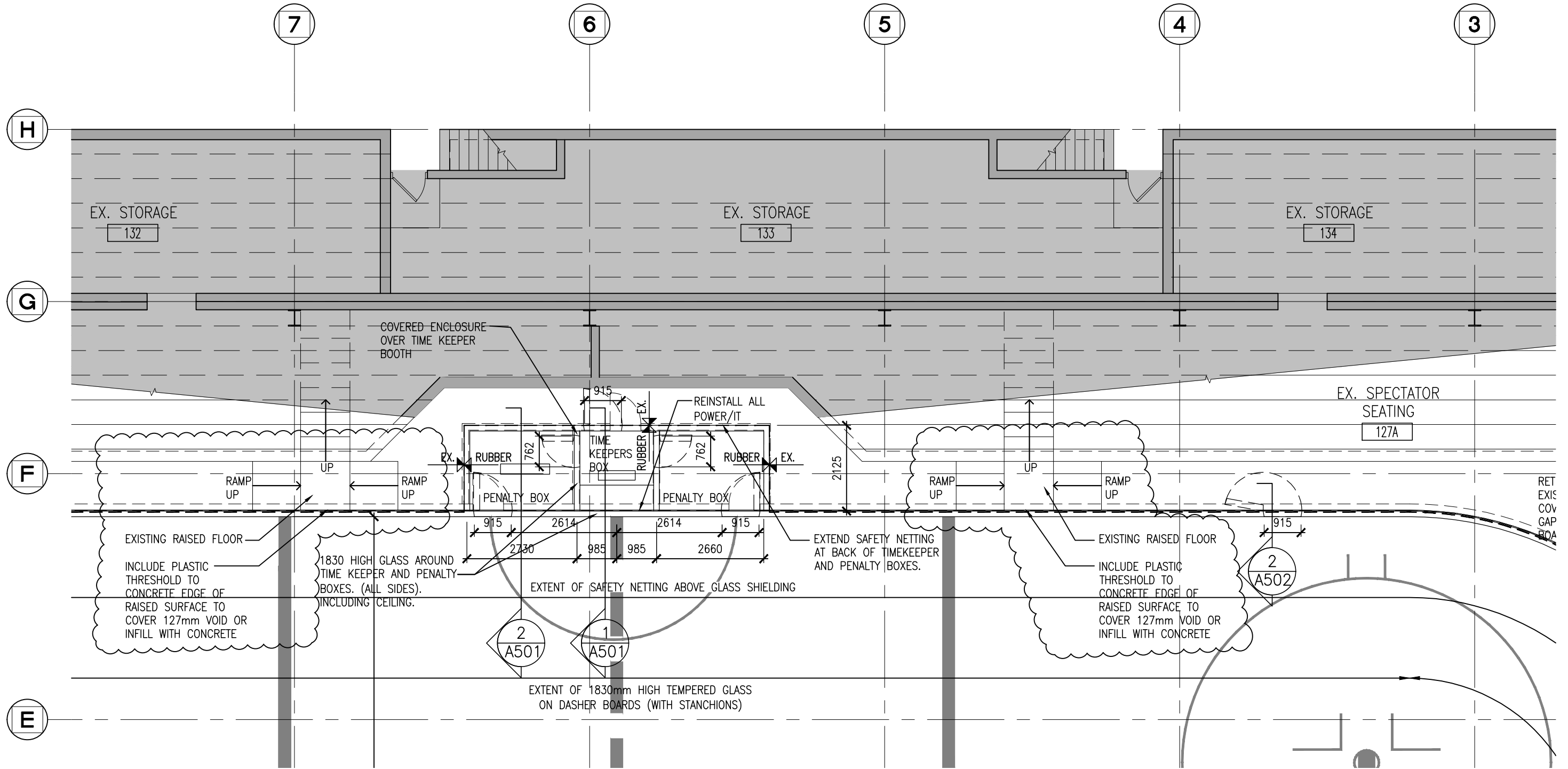
All submissions must be in accordance with this addendum and the addendum is to be acknowledged when submitting the proposal on-line.

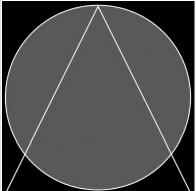
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Thank you,
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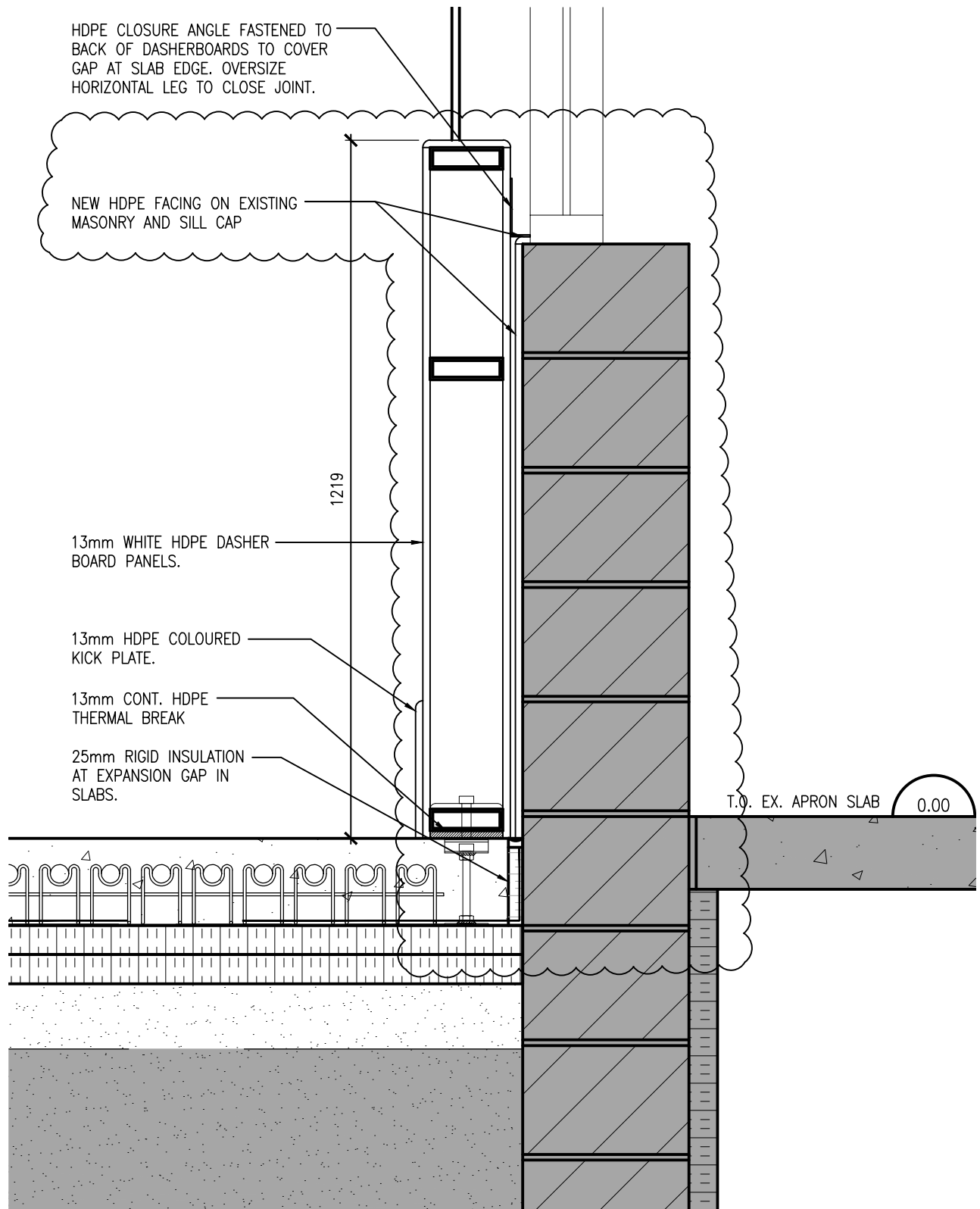
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Revised Drawings



PROJECT: ORONO ARENA AND COMMUNITY CENTRE RINK REPLACEMENT AND CHANGEROOM RENO. 2 PRINCESS STREET ORONO, ONTARIO LOB 1M0 MUNICIPALITY OF CLARINGTON	DRAWING: REVISED FIRST FLOOR PLAN 1/A202	 BBA	DESIGN BY: BBA	IFC CONTROL DATE:
			DRAWN BY: LQ	% COMPLETE:
		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-archeng.com	CHECKED BY: DM	INITIAL:
			DATE: JAN. 10, 2024	
			SCALE: 1:100	
		PROJECT NO: 22119B	DRAWING NO: SKA-01	

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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

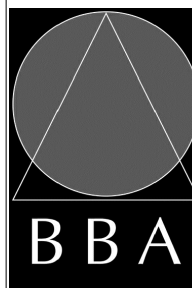
DRAWING:

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VIEWING AREA**

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**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-archeng.com

PROJECT NO:

22119B SKA-02

DESIGN BY:
BBA

DRAWN BY:
LQ

CHECKED BY:
DM

DATE:
JAN. 11, 2024

SCALE:
1:10

FILE:

DOC CONTROL
DATE

% COMPLETE:

INITIAL:

DRAWING NO:

HCC ENGINEERING LIMITED

Design and Technology Services Group

40 Eglinton Avenue East

Suite 600

Toronto, Ontario

M4P 3A2

Tel: (416) 932-2423

Contemplated Change Notice - CCN #E-01

Orono Arena and Community Centre

2 Princess Street

Orono, Ontario

HCC Project #23153

BCIN# 28954

Date: December 1, 2023

From: Phoenix Chen

Contractor:

Distribution: BBA

Submit detailed, itemized costs for each addition, deletion and/or revision listed below. Include profit, overhead and service charges, if applicable.

Reason for change: Requested by Owner.

1. Remove nine (9) existing receptacles and existing associated junction boxes (9 in total) in existing dasher boards to accommodate the removal of dasher boards to accommodate architectural upgrades. Cap and make safe all wiring to be reused after architectural upgrades.
2. Provide nine (9) 6" x 6" x 4" pull boxes Hammond Manufacturing C4XSC664SS at slab level to accommodate joints between existing wiring made safe during demolition and new wiring provided as part of this scope of work to receptacles in upgraded dashboards.
3. Provide one (1) single gang RAB box (9 in total) c/w single gang flip weatherproof cover (Bell model MX1050Z) (9 in total) at each new junction box location.
4. Provide nine (9) 15A/120V u-ground split receptacles.
5. Provide eighteen (18) 15A GFCI breakers in Panel LP-D in Electrical Room 130 to protect all circuits associated with the above noted receptacles.

End of CCN #E-01

Part 1 General

1.1 General

- .1 Conform to the requirements of Division 1.

1.2 Related Sections

- .1 Section 06 10 00 Rough Carpentry
- .2 Section 06 20 00 Finish Carpentry

1.3 References

- .1 ASTM International (ASTM)
 - .1 ASTM A1008/A1008M-20 Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

1.4 Submittals

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit detailed shop drawings of metal lockers.
 - .1 Provide layout plans and elevations of banks of lockers.
 - .2 Clearly indicate type and class of locker, materials, thickness of metals, fabricating and assembly methods, assembled banks of lockers, trim, shelves, tops, end panels, filler panels, bases, doors, hardware, numbering, locking assemblies, ventilation method, installation methods and finishes.
- .3 Submit samples of locker components, finishes and fastening devices.
- .4 Submit triplicate colour charts showing full range of manufacturer's standard colours for selection by the Consultant.
- .5 Maintenance Data: Submit manufacturer's written instructions for cleaning and operation of lockers for inclusion in Operation and Maintenance manuals specified in Section 01 78 00 – Closeout Submittals.

1.5 Shipping, Handling and Storage

- .1 Refer to Section 01 61 00 – Common Product Requirements.
- .2 Deliver, handle and store materials in accordance with manufacturer's printed

instructions.

- .3 Deliver lockers only after closing-in of building.
- .4 Handle products to prevent bending, racking or otherwise damaging lockers. Protect refinished surfaces from marring. Damaged products shall not be installed and shall be removed from project site.

1.6 Waste Management and Disposal

- .1 Refer to Section 01 74 19 – Construction Waste Management and Disposal.

1.7 Warranty

- .1 Warrant the work of this Section against defects of workmanship and material, for a period of two years from the date of Substantial Performance and agree to make good promptly any defects which occur or become apparent within the warranty period.

PART 2 PRODUCTS

2.1 General

- .1 Lockers:
 - .1 Single full-height and double tier lockers as indicated, 305 mm and 406 mm wide.
 - .2 All lockers shall be mounted on 100 mm high concrete curbs as detailed.
 - .3 All welded construction.
 - .4 Lockers shall be all powder coat painted steel.
 - .5 Full height piano hinges.

2.2 Painted Steel Lockers

- .1 Cold-Rolled Steel Sheet: ASTM A1008, Commercial Steel (CS) Type B, suitable for exposed applications.
- .2 Locker Bodies: Locker sides, backs, tops, bottoms, bases, end closers, and shelves shall be fabricated from pre-painted cold rolled, electro-zinc coated sheet steel. Edges to be suitable formed to provide a rigid assembly when bolted or riveted together. Tops, bottoms and shelves shall be flanged on all sides. Sides

shall be double ribbed their entire length to ensure a stiff, rigid installation. Tops to be sloped.

- .3 Frames to be 1.60 mm specially formed channel sections of prime cold rolled steel with 16 mm wide full closure strike, full height of door. Doors to close flush with outside face of frame.
- .4 Top, Bottom, Backs and Shelves: 0.81 mm pre-painted steel.
- .5 Sides: 0.60 mm painted steel.
- .6 The locker bottom shall have a 1.60 mm support bracket installed across the center of the locker bottom.
- .7 Tiers:
 - .1 Double Tier 305 x 915 x 455 mm deep.
 - .1 Complete with three (3) hooks at each compartments on each wall.
 - .2 Complete with a wall shelf in each compartment
 - .3 Complete with filler and closure pieces at corners and end units as necessary.

2.3 Doors

- .1 Doors shall be double skin, minimum 21 mm thick with 1.60 mm outer panel and 0.60 mm inner panel welded together to form a rigid box.
- .2 Honeycomb filler for locker doors shall contain minimum 18% recycled content.

2.4 Accessories

- .1 Locker numbers: Engraved plastic or aluminum number plates with black numerals. Locker numbering to Owner's requirements.
- .2 Provide manufacturer's standard sloping top, fillers and trim required to complete the installation.
- .3 Ventilation shall be by louvres in the top and bottom frame members.

- .4 Fillers: Provide sheet metal trim finished to match lockers for closure and transition of lockers to adjacent surfaces as detailed on drawings and approved shop drawings.
- .5 End panels: Provide exposed ends of locker modules with sheet metal end panels finished to match lockers.
- .6 Interior Equipment: Each locker to be provided complete with a shelf located approximately 350 mm below the top of the locker and 3 round tip, zinc plated metal coat hooks attached with 2 bolts per hook.
- .7 Provide lockers complete with all hardware necessary for a complete installation. Hardware for each locker includes, but is not limited to, one recessed chrome plated steel or aluminum pocket for padlock locking, flush face, rubber bumpers on strike jamb of frame, and concealed nylon friction action door stop.
- .8 Hinges: 1.60 mm continuous integral one piece steel hinge, painted to match lockers.
- .9 Fastenings shall be concealed where possible. Exposed fastenings shall be neatly executed and shall be of the same material and finish as the base metal on which they occur.
- .10 Mounting hardware: Provide brackets, perforated ventilation strips, fasteners, and other hardware of type and size recommended by manufacturer for type of substrate.

2.5 Finishes

- .1 Finish: all cold rolled surfaces shall be thoroughly cleaned before painting with a phosphoric acid based cleaner. The parts shall be finished with an abrasion and graffiti resistant electrostatically applied polymer powder coating baked with the proper temperature/time relationship to ensure a tough, durable finish.
- .2 Colours: Locker sides, backs, tops, bottoms and shelves shall be manufacturer's standard colour. Doors, frames, bases, end closers and sloping tops to be of colours as selected by the Consultant from the manufacturers full range of standard colours. Up to four (2) colours may be selected.

PART 3 EXECUTION

3.1 Fabrication

- .1 Verify all dimensions on the site prior to proceeding with shop fabrication.
- .2 Fabricate the work true to dimensions, square, plumb, and level. Accurately fit members with hairline joints.
- .3 Secure intersecting members with appropriate fasteners.
- .4 Fabricate the finished work free from distortion and defects detrimental to appearances and performance.
- .5 Lockers shall be completely factory assembled by riveting frames and doors to body.
- .6 Frame: Welded overlapping construction with double material thickness for lock housing.
- .7 Body: Flanged, reinforced and back ventilated.
- .8 Base: none required.

3.2 Installation

- .1 Prior to installation, check and verify work of other sections on which lockers are to be mounted. Report any discrepancies to the Consultant.
- .2 Wood furring for lockers shall be installed as specified in Section 06 10 00.
- .3 Assemble and install lockers in accordance with manufacturer's written instructions.
- .4 Securely fasten lockers to grounds and nailing strips.
- .5 Install filler panels (false fronts) where indicated and where obstructions occur.
- .6 Arrange locker modules in sequence of locker numbers.
- .7 Install locker numbers.
- .8 Provide all metal trim and closures necessary for a complete, finished installation.

- .9 Securely anchor lockers in place, true and plumb. Method of fastening shall ensure that lockers are capable of withstanding expected loads without movement.
- .10 Install lockers secure, plumb, square, and in line.
- .11 Position lockers with 25 mm air flow space between module and wall and 51 mm space between back-to-back lockers. Install perforated filler strip at top of air spaces.
- .12 Anchor lockers at spacing indicated on approved shop drawings with appropriate anchor devices to suit adjacent materials and finishes:
 - .1 For each locker module, install minimum of 1 locker-to-wall bracket.
 - .2 Bolt adjoining locker modules together to provide rigid installation with stainless steel bolts of type, size, and spacing as recommended by manufacturer.
- .13 Install filler panels, end panels, filler, sloping tops and trim to completely close off openings.

3.3 Adjustment

- .1 Test mechanisms, hinges, locks and latches and where necessary, adjust and lubricate and ensure that accessories are in perfect working order.

3.4 Cleaning

- .1 Proceed in accordance with Section 01 74 11 – Cleaning.
- .2 Upon completion of the work remove all traces of protective coatings or paper.
- .3 Wash exposed surface using a solution of mild detergent in warm water, applied with soft, clean cloths. Do not use abrasives.

End of Section

Part 1 General

1.1 General

- .1 Conform to the requirements of Division 1.

1.2 Related Sections

- .1 Section 05 50 00 Metal Fabrications
- .2 Section 10 28 10 Toilet and Bath Accessories

1.3 References

- .1 ASTM International (ASTM)
 - .1 ASTM A480/A480M-20a Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
 - .2 ASTM E84-21a Standard Test Method for Surface Burning Characteristics of Building Materials
- .2 CSA Group (CSA)
 - .1 CSA-B651-12 Accessible Design for the Built Environment.
- .3 American National Standards Association (ANSI)
 - .1 ANSI/NEMA LD 3-2005 High-Pressure Decorative Laminates (HPDL)
- .4 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102 Surface Burning Characteristics of Building Materials and Assemblies
- .5 Accessibility for Ontarians with Disabilities Act (AODA)

1.4 Submittals

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product Data: Submit manufacturer's data sheets for each product specified.
- .3 Shop Drawings: Submit manufacturer's shop drawings for each product specified, including the following:
 - .1 Plans, elevations, details of construction and attachment to adjacent construction.
 - .2 Show anchorage locations and accessory items.
 - .3 Verify dimensions with field measurements prior to final production of the toilet compartments.
- .4 Samples:
 - .1 Submit duplicate 300 x 300 mm samples of panel showing finish on both sides, two finished edges and core construction.

- .5 Submit duplicate representative samples of each hardware item, including brackets, fastenings and trim.
- .6 Provide maintenance data for toilet compartments for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 Quality Assurance

- .1 Manufacturer: Provide products manufactured by a company with a minimum of 10 years successful experience manufacturing similar products.
- .2 Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.
- .3 Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to AODA, ADA and ICC/ANSI A117.1 requirements as applicable.

1.6 Shipping, Handling and Storage

- .1 Refer to Section 01 61 00 – Common Product Requirements.
- .2 Deliver, store, and handle materials and products in strict compliance with manufacturer's instruction and recommendations. Protect from damage.
- .3 Protect finished surfaces during shipment and installation. Do not remove until immediately prior to final inspection.

1.7 Waste Management and Disposal

- .1 Refer to Section 01 74 19 – Construction Waste Management and Disposal.

1.8 Warranty

- .1 Warrant the work of this Section against defects of workmanship and material, for a period of ten years from the date of Substantial Performance and agree to make good promptly any defects which occur or become apparent within the warranty period.

Part 2 Products

2.1 Approved Manufacturers

- .1 Basis-of-Design Products: Specifications are based on the products of Bobrick, www.bobrick.com.
- .2 Equivalent products by other manufacturer's will be considered subject to compliance with specifications.

2.2 Compartments with Aluminum Frame and Pedestal Support

- .1 Substrate Material:
 - .1 Compact Grade Laminate (Phenolic Black Core)
 - .1 Materials: Solidly fused plastic laminate with matte-finish melamine surfaces; integrally bonded colored face sheets and black phenolic-resin core
 - .2 Edges: Black; brown edges not acceptable
 - .3 Colour: Charcoal 0077-FH
 - .4 Optional Dividing Panel Size: Panel up to 1829 mm deep to be one-piece panels
 - .2 Toilet Compartments:
 - .1 Configuration: Floor-anchored, Overhead-braced toilet cubicles.
 - .2 Basis-of-Design: Bobrick Evolve Toilet Cubicles
 - .3 Door Hardware and Pedestal: clear anodized aluminum
 - .1 Standard Height: Overall height from finished floor to top of headrail is 2083 mm consisting of 229 mm floor clearance, 1811 mm doors, and 25 mm headrail.
 - .4 Fire Resistance:
 - .1 Class A
 - .1 Flame Spread Index (ASTM E 84): No more than 25 for panels, doors, and fascia panels
 - .2 Smoke Developed Index (ASTM 84): No more than 450 for panels, doors, and fascia panels
 - .3 National Fire Protection Association/International Building Code Interior Wall and Ceiling Finish: Class A
 - .4 Uniform Building Code: Class I
 - .5 Frame:
 - .1 Headrail: Secured to the top of the fascia for stability
 - .2 Mounting Brackets and Fasteners: Clear anodized aluminum U-Channel brackets.
 - .3 Privacy:

- .1 Full-length clear anodized aluminum frame provides built-in, no-sightline privacy on hinge and keeping-sides of the door.
- .4 Continuous clear anodized aluminum U-Channels fasten divider and fascia panels to the wall.
- .6 Hardware:
 - .1 Compliance:
 - .1 Door handle shall be operable with one hand, without tight grasping, pinching, or twisting of the wrist, force to operate shall not exceed 5 pounds. Door pull: Barrier-free type suited for out-swinging doors, stainless steel. Conform to AODA and Ontario Building Code requirements.
 - .2 Floor Clearance: 229 mm high minimum clearance maintained under fascia panel and side divider panels
 - .3 Keyed Emergency Access: Latch shall allow door to be opened from the outside of the compartment with a 3mm Allen wrench in emergency release slot in the indicator
 - .4 Fastening: Hardware secured to door and fascia by stainless steel sheet metal screws
 - .5 Door-closing:
 - .6 Standard: Clear anodized aluminum pedestal secured beneath door incorporates a spring closing mechanism, creating a soft door close and includes (+/-) 25 mm adjustment.
 - .7 Door Hardware Type:
 - .1 Locking: clear anodized aluminum door handle located directly into the vertical keeping extrusion. Integral rubber door bumper shall cushion doors when closing.
 - .2 Occupancy indicator: Clear anodized aluminum circular escutcheon with red and white indicator.
 - .3 Standard: Cylindrical pedestal supports divider panels and shall maintain a 229 mm high floor clearance under fascia panel and side divider panels and include (+/-) 25 mm adjustment.
 - .4 Robe hook: Clear anodized aluminum in matte finish.

Part 3 Execution

3.1 Manufacturer's Instructions

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 Preparation

- .1 Prepare substrates including, but not limited to, blocking and supports in walls at points of attachment using methods recommended by the manufacturer for achieving the best results for the substrates under the project conditions
 - .1 Inspect areas scheduled to receive compartments scheduled to receive compartments for correct dimensions, plumbness of walls, and soundness of surfaces that would affect installation of mounting brackets
 - .2 Verify spacing of plumbing fixtures to assure compatibility with installation of compartments.
 - .3 If preparation is the responsibility of another installer, notify the Consultant in writing of deviations from manufacturer's recommended installation tolerances and conditions
- .2 Do not proceed with installation until substrates have been properly prepared with blocking, supports in walls at points of connections, and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitute acceptance of conditions

3.3 Installation

- .1 Installation must be performed by a manufacturer trained and certified installer.
- .2 Do work in accordance with CSA-B651.
- .3 Install products in strict compliance with manufacturer's written instructions and recommendations, include the following:
 - .1 Verify blocking and supports in walls have been installed properly at points of attachment
 - .2 Verify location does not interfere with door swings or use of fixtures
 - .3 Use fasteners and anchors suitable for substrate and project conditions
 - .4 Install compartments rigid, straight, plumb, and level
 - .5 Conceal evidence of drilling, cutting, and fitting to room finish
 - .6 Test for proper operation
 - .7 Verify that gaps between fascia panels and doors are blocked and ensure privacy
- .4 Adjust hardware for proper operation after installation. Verify the doors self-close from the 90-degree position and door closes in no fewer than 4 seconds

3.4 Cleaning

- .1 Proceed in accordance with Section 01 74 11 – Cleaning.

Project: 22119B
Description: Orono Arena and Community Centre
2 Princess Street, Orono, ON

Compartments
And Cubicles
Section 10 21 13

- .2 Touch-up, repair or replace damaged products.
- .3 Clean exposed surfaces of compartments, hardware, and fittings.

End of Section

Part 1 General

1.1 General

- .1 Conform to the requirements of Division 1.

1.2 Related Sections

- .1 Section 03 10 00 Concrete Forming and Accessories
- .2 Section 03 20 00 Concrete Reinforcing
- .3 Section 03 30 00 Cast-in-Place Concrete
- .4 Section 07 26 00 Vapour Retarders
- .5 Section 31 23 10 Excavating, Trenching and Backfilling

1.3 References

- .1 ASTM International (ASTM)
 - .1 ASTM C518-15 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
 - .2 ASTM C578-15 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
 - .3 ASTM D1621-10 Standard Test Method for Compressive Properties of Rigid Cellular Plastics
 - .4 ASTM D1623-09 Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
 - ASTM E84-15a Standard Test Method for Surface Burning Characteristics of Building Materials
- .2 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC S701, Thermal Insulation, Polystyrene, Boards and Pipe Covering
 - .2 CAN/ULC-S702 Thermal Insulation Mineral Fibre for Buildings
 - .3 CAN/ULC S704 Thermal Insulation Polyurethane and Polyisocyanurate, Boards, Faced.
- .3 Canadian General Services Board (CGSB)
 - .1 CGSB 71-GP-24M Adhesive, Flexible, for Bonding to Cellular Polystyrene Insulation.

1.4 Submittals

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit manufacturer's literature.
- .3 Submit minimum 8" x 8" samples of each type of insulation specified.

1.5 Quality Assurance

.1 Pre-Construction Conference:

- .1 Attend a rink slab pre-installation conference with the Owner, Consultant, Structural Engineer, General Contractor, reinforcing installer, floor finishing contractor, concrete supplier, manufacturer of admixture products, refrigeration contractor, and independent testing agency, to establish correct procedures and methods for placing insulation below concrete rink slabs. The meeting will be held within seven days prior to the placing of rink slab concrete. Refer to Section 03 30 00.

1.6 Shipping, Handling and Storage

- .1 Refer to Section 01 16 00 – Common Product Requirements.
- .2 Deliver, handle and store materials in accordance with manufacturer's printed instructions.
- .3 Deliver material to the site in the original unbroken packages bearing the name of manufacturer.
- .4 Store materials in an approved manner at the site preceding application and protect from damage at all times.
- .5 Remove damaged or deteriorated materials from site

1.7 Waste Management and Disposal

- .1 Refer to Section 01 74 10 – Cleaning.

Part 2 Products

2.1 Rigid Insulation

- .1 Refrigerated Rink Slab Insulation: Rigid Insulation below refrigerated rink slabs and apron slabs shall conform to ASTM C578-15 Type VII 40 psi minimum compressive strength, 2.20 lb/cu. ft. (35 kg/cu. m). Thickness shall be 2 layers, 2" thickness each; 16" x 8'-0" boards with butt edges. Material shall have the following characteristics when tested to the reference standards:
 - .1 Tensile Strength: ASTM D1623: 590 kPa.
 - .2 Compressive Strength: ASTM D1621 415 kPa.
 - .3 Shear Strength: ASTM C273 310 kPa.
 - .4 Flexural Strength: ASTM C203 585 kPa.

- .5 Water Absorption: ASTM D2842 less than 0.7% by volume.
- .6 Thermal resistance RSI: ASTM C518: 0.87/25mm
- .7 Blowing Agent Formulation: Zero ozone depleting.
- .8 Surface Burning Characteristics (ASTM E 84): Flame spread less than 25, smoke developed less than 450, certified by independent third party such as Underwriters Laboratories (UL).
- .9 Acceptable Product:
 - .1 Styrofoam Hi Load-40 Insulation, as manufactured by DuPont de Nemours Inc.
 - .2 Celfortec Foamular 400 as manufactured by Owens Corning.
- .2 Rigid insulation at perimeter of ground floor slab and below grade: extruded expanded polystyrene to ULC S701.1 TYPE 4. Thickness as detailed, 400 x 2440 mm boards with butt edges. Material shall have the following characteristics when tested to the reference standards:
 - .1 Compressive Strength: ASTM D1621: 207 kPa.
 - .2 Water Absorption: ASTM D2842: maximum 0.7% by volume.
 - .3 Water Absorption: ASTM C272: maximum 0.3% by volume.
 - .4 Water Vapour Permeance, ASTM E96: 90 ng/Pa•s•m²
 - .5 Coefficient of Linear Thermal Expansion, ASTM D696: 6.3 x 10⁻² mm/m•°C
 - .6 Thermal resistance RSI: ASTM C518: 0.87/25 mm
 - .1 Styrofoam SM Insulation as manufactured by DuPont de Nemours Inc

2.2 Accessories

- .1 Vapour Retardant/Slip Sheet: As specified in Section 07 26 00.
- .2 Adhesives: As recommended by material manufacturer, compatible with insulation and substrate membrane, waterproof, conforming to CGSB 71-GP-24M.
- .3 Primer for concrete and masonry surfaces recommended by the adhesive manufacturer for the materials to be adhered.

Part 3 Execution

3.1 Installation, General

- .1 Install insulation in accordance with the requirements of the reference standards.

- .2 Install insulation after building substrate materials are dry.
- .3 Cut and trim insulation neatly to fit spaces. Butt joints tightly; offset vertical joints. Use only insulation board materials free from chipped or broken edges.
- .4 Do not enclose or conceal insulation until it has been inspected by the Consultant.

3.2 Installation of Insulation Below Rink Slab

- .1 Prior to installation, examine base course of sand fill specified in Section 31 23 10 and remove any large or sharp materials which may damage the insulation.
- .2 Commence installation of insulation at one end of the slab, working sequentially across the extent of the rink.
- .3 Install insulation in two layers. Offset joints by one half the board dimension in each direction. Bring each sheet of insulation into continuous contact with adjacent sheets all around the perimeter of each sheet.
- .4 Set and maintain insulation exactly level with the underside of the concrete slab, to the tolerances specified below.
- .5 Place insulation to a tolerance of 4.5 mm +/-.
- .6 Bring each sheet of insulation into continuous contact with adjacent sheets all around the perimeter of each sheet.
- .7 Place perimeter insulation as specified on drawings around the rink slab.
- .8 Provide high density rigid insulation over all header piping in the trench back to the refrigeration room. Coordinate installation with refrigeration subcontractor.

3.3 Perimeter Insulation

- .1 Do not proceed with installation until concrete surfaces are dry and cured, and water proofing membranes have been inspected and approved.
- .2 Install perimeter insulation vertically just prior to backfilling.
- .3 Prime porous concrete surfaces.

- .4 Apply adhesive in gobs or pads to the back of the insulation board in accordance with manufacturer's instructions. Joints shall be left dry with joints brought into tight contact. Apply insulation to the wall with a slight sliding motion to ensure good contact.
- .5 Protect insulation from damage until time for backfilling.
- .6 Following backfilling and prior to placement of underslab vapour barriers, install horizontal insulation. Install rigid insulation at perimeter of all exterior walls and for extent as indicated. Tightly butt joints.

3.4 Survey

- .1 Use a surveyor's level or laser system to check and maintain the required elevation and provide a surveyed record of elevations on a 5'-0" x 5'-0" grid at the completion of the work and prior to placement of rink slab piping and reinforcement.
- .2 Submit to the Consultant, elevation survey of insulation surface and correct areas that do not meet specifications, before proceeding with construction of the rink slab.
- .3 The refrigeration contractor will be required to review the survey and accept the elevations prior to placing the refrigeration piping.

3.5 Cleaning

- .1 Proceed in accordance with Section 01 74 10 – Cleaning.

End of Section