

Outdoor Rink Redevelopment BUSINESS CASE



Summary

The Sandstone MacEwan Community Association (SMCA, formerly known as Sandstone Valley CA) has been a registered Community Association with the Province of Alberta since 1986. Through a group of dedicated volunteers, the CA strives to enrich the lives of residents by providing strong leadership and management of community-based facilities, programs, and services to over 10K residents within the communities of Sandstone Valley and MacEwan Glen.

As part of its mission, the SMCA is responsible for maintaining both a large outdoor rink facility and a pleasure rink as well as hosting community events such as composting, 'community clean up', beautification projects throughout the neighbourhood, community festivals and programs like outdoor hockey, skating, basketball, and soccer.

The large 27-year-old outdoor rink is at the end of its lifecycle and SMCA must replace the facility in its entirety as soon as possible, as necessitated, by its annual lifecycle review and License of Occupation requirements.

Problem Statement

The Sandstone MacEwan Community Association, in collaboration with Parks Foundation Calgary needs to replace the 27-year-old outdoor rink which serves as the hub of the community as soon as possible, as necessitated by several safety related issues.

Per our Community Association partnership with the City of Calgary, our License of Occupation requires regular review of all physical assets with the LOC as part of a 2022 Lifecycle Report. This report includes the SMCA Outdoor Hockey Rink and has concluded that the rink is at the end of its useful life.

This is backed by the physical and visual inspection of the rink, whereby the team of volunteers have identified failures starting to occur, including rink boards, fencing, screw heads, metal fatigue, crumbling asphalt and so on. It is estimated that the CA has spent approximately \$10,000 over the past few years in efforts to keep the rink safe and in a useable condition.

Problem Analysis

As a CA without a building, the outdoor rink is the heart of the community and serves as one of the two outdoor public rink facilities in all of Ward 3. If the outdoor rink is not revitalized, SMCA must look at removing the rink entirely. This will have a significant impact on the 10.5K residents within the community as well as residents in surrounding areas who rely on this public facility and utilize it on a regular basis. This facility offers a space for families to come together and participate in outdoor activities, helping members of the community of all age demographics stay physically active.

Recommended Solution

In July 2021, to resolve and respond to this issue, the SMCA board of directors formed a Rink Replacement Committee and the SMCA board of directors approved the committee's recommendation to move forward with replacing the rink in its entirety.

Since then, SMCA has worked with the City of Calgary through its Capital Conservation Grant – specifically the Engineering Consultant Program. Through one of the city's engineering partners, Morrison Hershfield, a detailed concept design was developed, and a bid tendering process was initiated in the spring of 2023.

Table 1 below shows the costs identified in Spring 2023s bid tendering process, based on the (redacted) bids received from the firms engaged by Morrison Hershfield.

Table 1:

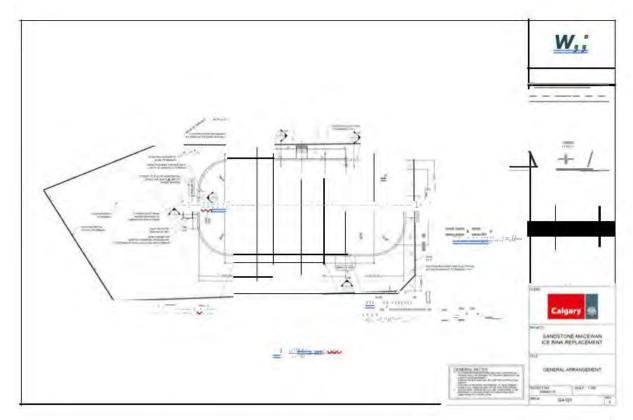
							Bidder				
No.	Description										
Sched	ule 1 – General Conditions										
4.5310.5	1.1 Mobilization, temporary facilities, meetings, and site/contractor management	S	7,500.00	S	10,220.00	5	108,500.00	\$	80,262.00	S	15,097.5
	1.2 Permits (including Building Permit and all required trade permits)	5	THE PROPERTY OF	- 2	NO ASSESSMENT		8.940.00	100	00,202.00	S	12,320.0
	1.3 Performance bond (50%) and Labour & Materials Bond (50%)	S	The state of the state of the state of	5	and the second second	5	12,720.00		15,379.00	5	19,040.0
	Total of Schedule 1	\$		_		_	130,160.00	_	95,641.00	_	46,457.5
Sched	ule 2 – Civil										
	2.1 Demolition and disposal	\$	54,000.00	\$	7,665.00	S	20,700.00	5	42,646.00	\$	53,648.0
	2.2 Site grading and preparation	S	23,000.00	5	12,775.00	S	42,860.00	5	27,029.00	S	24,780.0
	2.3 As-built survey	S			15,329.00	S	4,130,00		THE R. P. LEWIS CO., LANSING, MICH.	S	13,440.0
	Total of Schedule 2	\$		_	35,769.00	_	67,690.00	_	74,395.00		91,868.0
Sched	ule 3 – Structural										
	3.1 Demolition and disposal	\$	32,200.00	\$	98,999.00	\$	14.	\$	115,502.00	\$	9,270.0
	3.2 Screw piles	S	41,000.00	\$	65,787.00	5	36,100.00	5	51,526.00	\$	48,591.2
1	3.3 Concrete (incl. rink foundations and rink surface, not incl. "Rinkwater" pad)	\$	369,000.00	S	344,900.00	\$	280,528.00	\$	441,987.00	\$	676,032.0
	3.4 Timber deck and stairs	\$	36,000.00	S	44,710.00	5	37,500.00	\$	31,584.00	5	42,814.2
	Total of Schedule 3	\$	478,200.00	\$	554,396.00	\$	354,128.00	\$	640,599.00	\$	776,707.4
Sched	ule 4 – Rink Items										
	1.1 Supply and installation of boards	\$	116,000.00	\$	140,515.00	\$	108,000.00	S	131,655,00	\$	114,144.8
	4.2 Supply and Installation of fencing	\$	37,000.00	5	87,672.00	\$	39,700.00	\$	49,038.00	\$	41,890.2
	4.3 Supply and installation of basketball hoops	\$	11,500.00	\$	40,877.00	\$	20,600.00	5	25,430,00	\$	29,787.5
4	4.4 Supply and installation of benches	\$	2,000.00	\$	4,982.00	\$	1,450,00	\$	5,425.00	\$	1,477,2
4	4.5 Line painting	\$	18,500.00	\$	5,110.00	\$	2,650.00	\$	16,388.00	\$	4,444.1
	Total of Schedule 4	\$	185,000.00	\$	279,156.00	\$	172,400.00	\$	227,936.00	\$	191,744.0
5 345	ule 5 – Closeout		0'030189		No cape of		V = 10/21		50/122/22		52/2/20
	5.1 Cleanup, demobilization, closeout documents, redlines, O&Ms	\$			12,775.00		4,840.00	_	29,356.00	_	22,047.0
	Total of Schedule 5	\$	8,800.00	\$	12,775.00	\$	4,840.00	\$	29,356.00	\$	22,047.0
	ule 6 - "Rinkwater" system (Optional Pricing)										
(5.1 Concrete pad	.\$	1,800.00	\$		5	3,500.00	\$	8,364.00		3,920.0
	5.2 Water line relocation	5	4,500.00	5	3,833.00	\$	16,700.00	\$	13,111.00	\$	3,920.0
(5.3 Installation, startup and testing of owner-supplied "Rinkwater" equipment	\$	1000000000	5		\$	1,175	S	29,500.00		2,800.0
	5.4 New electrical cabinet, panel and circuits	\$				\$	7,100.00	\$	9,177.00		5,615.9
(5.5 Heat trace demolition	\$	1,000.00	\$	1,278.00			\$	983.00	_	3,920.0
	Total of Schedule 6	\$	16,550.00	\$	16,354.00	\$	27,300.00	\$	61,135.00	\$	20,175.9
	Door Copys Tatal (Cabadillas 1 E) Lifts 207	4	010 105 00		052 000 00	¢	705 070 00		4 494 302 25	+	1 405 005 5
	Base Scope Total (Schedules 1-5) with GST		810,495.00						1,121,323.35		1,185,265.2
	Optional Scope Total (Schedule 6) with GST	_	17,377.50	_		_	28,665.00	_		_	21,184.7
	Project Total	\$	827,872.50	\$	970,200.00	ş	794,343.90	2	1,185,515.10	2	1,206,449.

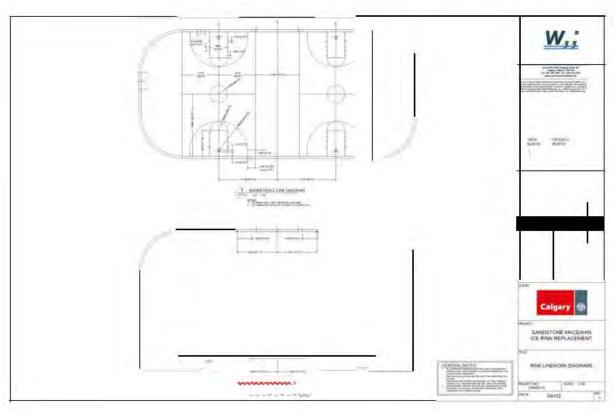
Project Design

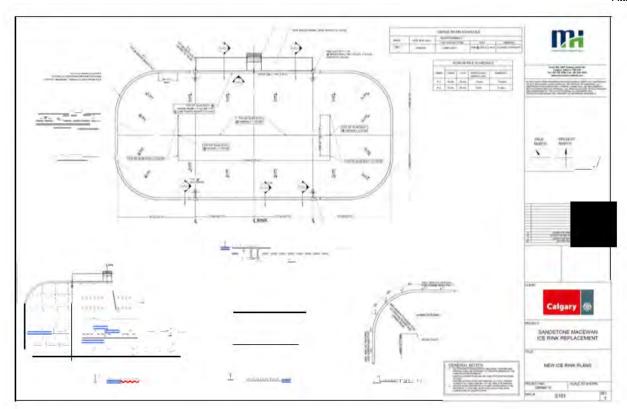


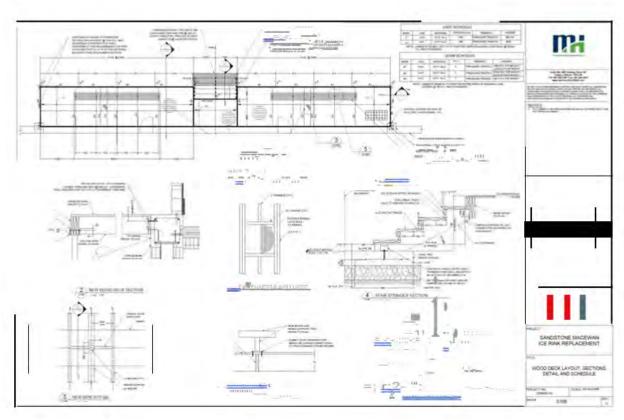
The following is a subset of the design documentation & blueprints that were submitted to the City of Calgary development permit process, which can be independently verified at https://dmap.calgary.ca/?find=DP2023-02337.











Financial Overview

Financial support has been the primary obstacle for this project. SMCA has asked AGLC to retain a portion of its Use of Proceeds. However, like most not-for-profit community associations, gaming proceeds are used not only to fund capital projects, but also to help support day-to-day operational costs to keep the lights on. The rink replacement is the largest capital project in SMCA's history; therefore the CA has been seeking external financial support for a capital project of this magnitude.

SMCA has entered a collaboration with Parks Foundation Calgary (PFC). Through its Project Support Program (PSP), the Parks Foundation can assist with money management of the project. As a charitable organization, PFC can issue tax receipts for donations made directly towards the project. Detailed information about the PSP can be found at Project Support Program — Parks Foundation Calgary (parksfdn.com).

SMCA has already hosted numerous fundraising campaigns to raise additional funds to support this project with additional campaigns scheduled in 2024. A Community Facilities Enhancement Program (CFEP) grant has been awarded for 15% of the total project cost bringing our total fundraising efforts to 27% of the total project costs to-date. We have been unsuccessful to-date with other external fundraising streams and our internal fundraising efforts are limited. The outdoor rink cannot be built until all funds have been raised; it is now a race against time before the existing facility will need to be torn down.

Estimated Project Expenses (based on Tender Bid)

Item	Description of Work	Anticipated
rtein	Description of Work	Expenses
General	Mobilization, temporary facilities, meetings, and site/contractor	\$130,160.00
Conditions	management	
	Permits (including Building Permit and all required trade permits)	
	Performance bond (50%) and Labour & Materials bond (50%)	
Civil	Demolition and disposal	\$67,690.00
	Site grading and preparation	
	As-built survey	
Structural	Demolition and disposal	\$354,128.00
	Screw piles	
	Concrete (including rink foundations and rink surface, not including	
	'Rinkwater' pad)	
	Timber deck and stairs	
Rink Items	Supply and installation of boards	\$172,400.00
	Supply and installation of fencing	
	Supply and installation of basketball hoops	
	Supply and installation of benches	
	Line Painting	
Closeout	Cleanup, demobilization, closeout documents, redlines, O&Ms	\$4,840.00
'RinkWater'	Concrete pad	\$27,300.00
system	Water line relocation	
(OPTIONAL	Installation, startup and testing of owner supplied 'RinkWater' equipment.	
PRICING)	New electrical cabinet, panel, and circuits	
	Heat trace demolition	
	Base Scope Total with GST	\$765,678.90
	Optional Scope Total with GST	\$28,665.00
	PROJECT TOTAL – based on project bid May 2023	\$794,343.90
2024		
Projection	10% cost increase due to inflation (projected)	\$79,434.39
2024		

Projection	15% contingency	\$131,066.74
	2024 PROJECTED TOTAL	\$1,004,845.03
	(remove optional pricing, total = \$968,583.81)	

^{*}Project costs above pulled from the Project Tender bid in May 2023. Costs above was the lowest tender bid. Tender was redacted due to the SMCA unable to provide funding for the higher than originally predicted cost.

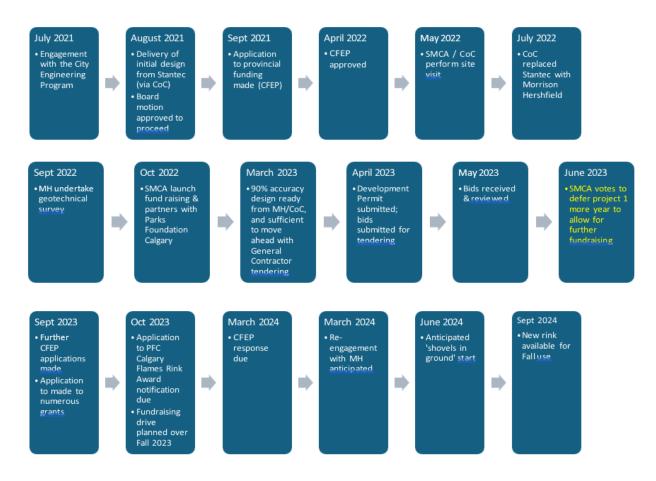
Total Project Revenue (as of November 2023)

Revenue Sources	Confirmed	Pending	Total
SMCA Fundraising	\$71,900		\$71,900
SMCA Project Donations	\$20,000		\$20,000
External Grant Funding Support (CFEP)	\$120,000	\$675,000	\$495,000
Council Community Fund (CCF)		\$300,000	\$300,000
Additional Fundraising Required		\$117,945.03	\$117,945.03
Total Projected Revenue			\$1,004,845.03

^{*}This includes a 10% projected inflation costs and 15% (total of 35% increase) contingency of the total project costs (\$210,501.13).

Implementation Timeline

The SMCA committee has been engaged on the project since July 2021 and continues to work with the city, fundraising partners & other groups to make the rink rebuild a reality. A summary timeline of our project can be found as follows:



Additional Project Resources

Further information about the SMCA Rink Replacement Project can be found here:

- a) SMCA Outdoor Rink Build Project:
 Sandstone MacEwan Rink Rebuild Sandstone MacEwan Community Association
- b) LiveWire Calgary:
 Cherished Calgary rink rebuild is postponed for the third time | LiveWire Calgary
- Parks Foundation Calgary:
 Building Communities Sports and Other (etapestry.com)

Conclusion

While there is a significant financial cost to replacing the SMCA outdoor rink; it directly impacts all 10.5K residents within the communities of Sandstone and MacEwan. Not only does this rink facility affect SMCA residents, but it impacts grassroot community organizations and the surrounding schools who rely on this facility for additional program opportunities. With only two publicly available outdoor rinks for the entirety of Ward 3 (a population of 85.6K), the removal of this facility would be significant. Having an outdoor rink is an established tradition in communities. These facilities provide a safe environment for many learning opportunities and community gatherings. If the SMCA outdoor rink is not revitalized, these types of activities and events will slowly disappear, along with the communities' sense of pride and spirit.



Guidelines for Electronic Circulation of Planning & Development Applications

This document is intended to provide guidelines on the proper use of electronic materials that are circulated as part of the application review process.

- The information included in the circulation package may be subject to copyright and must only be used for the review of the submitted application.
- Application materials are provided to you for the specific and sole purpose of allowing (i) members of the Community Association Planning Committee and/or Board of Directors and (ii) members of the public who would be directly affected by the application's approval (collectively, the "Identified Recipients") to review and comment on the application for a development permit for a proposed project in your area of business/residence. Please note that use of these materials for any other purpose or making further reproduction or distribution beyond the Identified Recipients is strictly prohibited and may constitute an offense under the Copyright Act (Canada). Accordingly, any distribution of the materials to the Identified Recipients must be accompanied with the following instructions in writing:

"Application materials are provided to you for the specific and sole purpose of allowing you to review and comment on the application for a development permit for a proposed project in your area of business/residence. Please note that use of these materials for any other purpose or making further reproduction or distribution of them is strictly prohibited and may constitute an offense under the Copyright Act (Canada)."

The City will not be responsible or liable for any claim that may arise as a result of any misuse or unauthorized reproduction or distribution of the application materials by you or any Identified Recipients.

- Citizens who wish to view the plans can do so at the Municipal Building (800 Macleod Trail S.E.) by contacting either the File Manager or the Circulation Department at 403.268.5744 or dp.circ@calgary.ca
- The information provided must not be made available on the internet.

Should anyone wish to obtain additional information regarding the application, please contact the File Manager directly.



Application Notice DP2023-02337

April 28, 2023

A new Development Permit Application has been submitted at the below noted address(es), and we are sending this information for comments.

If you have questions or concerns related to this application, please contact the file manager directly at any point in the process.

Application Details

File Number: DP2023-02337

File Manager: RUI LIU Phone: 403-519-9055 eMail: Rui.Liu@calgary.ca

Address: 355 SANDARAC DR NW Legal: 9110492;27;101MSR

Land Use Bylaw: 1P2007 L.U.D.: S-SPR

Community: SANDSTONE VALLEY Ward: 03

Application Description: Changes to Site Plan: Outdoor Recreation Area

Thank you for taking the time to respond. Your input is greatly appreciated.

Please note that any written submissions made in response to the application will form part of the official record, and upon final decision of the application the correspondence will be available for public viewing.

Please submit your response through the **Development Map link**.

Comments are due by: May 19, 2023

This information is released and may only be used for the sole purpose of your organizations meeting to discuss the recommendations of comments to be made to the City of Calgary on this permit.



SANDSTONE / MacEWAN COMMUNITY ASSOCIATION LICENSE OF OCCUPATION (BOARDED RINK)

SITE MAP

Legend

Existing LOC Boundary

Land Use Boundary w/ Code

Class B - PARIS Turf

Ice Area - PARIS Sport Surface

Practice Area - PARIS Sport Surface

Tennis - PARIS Sport Surface

Planting Bed - PARIS
PARIS Fall Surface

×-- × Fence - DAS Fence

Water Source -PARIS Water Source

Utility Controller Cabinet - PARIS Controller Cabinet

Water Main & Service

Storm Pipe
Sanitary Pipe

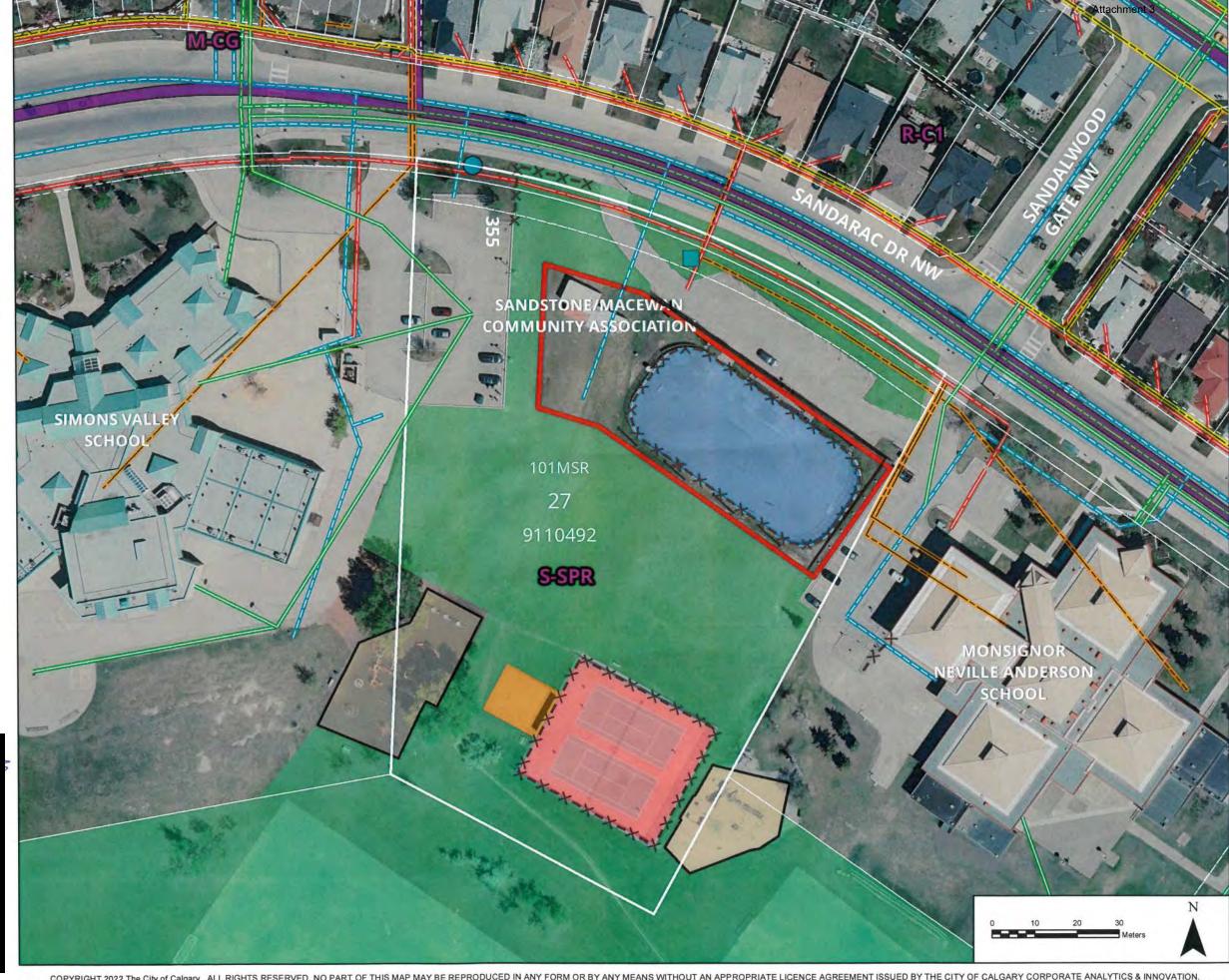
TELUS Cable

--- SHAW Cable

ENMAX Cable

--- ATCO (Gas) Pipeline

DATE OF PHOTOGRAPHY: MAY/JUNE 2021



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SANDSTONE MACEWAN ICE RINK REPLACEMENT

Project Number. 2200403.10

DRAWING LIST

ELECTRICAL LAYOUT

GA100 SPECIFICATIONS
GA101 GENERAL ARRANGEMENT
GA102 RINK LINEWORK DIAGRAMS
GA103 BASKET BALL AND FENCE ELEVATIONS

S100 STRUCTURAL GENERAL NOTES
S101 STRUCTURAL GENERAL NOTES CONT'D
S102 DEMOLITION PLAN
S103 NEW ICE RINK PLANS
S104 SECTIONS AND ELEVATION
S105 WOOD DECK LAYOUT, SECTIONS, DETAIL AND SCHEDULES
S106 BASKET BALL HOOP AND DASHER BOARD DETAIL

C101 SITE SERVICING
C102 GRADING AND SURFACE FEATURES

E100 ELECTRICAL GENERAL NOTES AND SPECIFICATIONS
E101 ELECTRICAL SINGLE LINE DIAGRAM

Sandstone Outdoor Rink

REV 0 APRIL 3 202

DASHERBOARDS & SPECTATOR PROTECTIVE SHIELDING (DASHER BOARDS MOUNTED CHAIN LINK FENCE) 1.1 INTENT WORK INCLUDED IN THIS SECTION IS AS FOLLOWS: .1 ANCHORS SET INTO CONCRETE GRADE BEAM DONE BY OTHERS, OR .2 PREFABRICATED STRUCTURAL STEEL DASHER BOARD FRAMES .3 UV STABILIZED HIGH DENSITY POLY ETHYLENE (HDPE) CLADDING OR APPROVED EQUIVALENT .4 GALVANIZED STEEL POST AND MESH PROTECTIVE SHIELDING RELATED WORK SPECIFIED ELSEWHERE IS AS FOLLOWS: .1 PAINTING 1.2 QUALITY QUALIFICATIONS: .1 DASHER BOARD SUPPLIER WILL EMPLOY PERSONS THAT ARE SKILLED IN THIS TRADE AND PROFICIENT IN THE USE OF SPECIFIED MATERIALS .2 ALL WORK WILL BE PERFORMED WITHIN STRICT ACCORDANCE TO LOCAL, PROVINCIAL AND FEDERAL CODES AND SAFETY PRACTICES .3 DASHER BOARD MANUFACTURER SHALL HAVE A MINIMUM OF 5 YEARS' EXPERIENCE IN THE MANUFACTURING, DESIGN AND INSTALLATION OF DASHER BOARD PROJECTS 1.3 SUBMITTALS SAMPLES: .1 DASHER BOARD SUPPLIERS WILL SUBMIT SAMPLES, WHEN REQUESTED, OR MATERIAL THICKNESS AND COLORS FOR MORRISON HERSHFIELD TO REVIEW .1 DRAWINGS WILL BE SUBMITTED TO MORRISON HERSHFIELD FOR REVIEW AND APPROVAL DRAWINGS ARE TO SHOW THE FOLLOWING: .1 SIZES AND LOCATIONS OF DOORS, LIFT GATES, MACHINE GATES, REMOVABLE SECTIONS .2 MODULAR BOARD SYSTEM LAYOUT .3 TYPICAL MANUFACTURING DETAILS .4 ANCHORAGE TO FOUNDATION INCLUDING ANCHORAGE REACTIONS 1.5 PRODUCT DELIVERY, STORAGE AND HANDLING .1 DELIVER ONSITE IN A SAFE MANNER .2 DELIVER AND STORE MATERIALS PACKAGED IN PROTECTIVE WRAPPING TO PREVENT DAMAGE TO FINISHES AND SURFACES .3 MATERIALS TO BE OFFLOADED BY EXPERIENCED OPERATOR USING PROPER EQUIPMENT

.4 MATERIALS TO BE STORED ONSITE IN A CLEAN, DRY SPACE, FREE OF STANDING WATER

.1 PERIMETER SURFACE AND FREEZING SURFACE ARE TO BE IN PLACE AND CURED PRIOR TO COMMENCEMENT OF WORK .2 MAXIMUM FOUNDATION SURFACE VARIANCE TO BE A MAXIMUM OF 6MM ABOVE OR BELOW ELEVATION GIVEN ON PLANS

.3 ALL SUBCONTRACTORS IN AREA ARE RESPONSIBLE FOR THE PROTECTION OF THE DASHER BOARDS IF DASHER BOARDS MAY BE DAMAGED BY THEIR WORK 1.7 GUARANTEE

.1 SUBMIT A WRITTEN GUARANTEE AGAINST DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF NO LESS THAN TWO YEARS COMMENCING ON DATE OF SUBSTANTIAL COMPLETION SIGNED OFF BY PURCHASER/REPRESENTATIVE AND DASHER BOARD SUPPLIER. GALVANIZED STEEL FRAMES TO CARRY LIMITED LIFETIME WARRANTY AGAINST DAMAGE TO WELDS AND CORROSION

2.1 MATERIALS

.1 DASHER PANELS SHALL BE FABRICATED IN DEMOUNTABLE SECTIONS OF NOMINAL 2.44 M LENGTHS WHEN POSSIBLE. FRAMES ARE TO BE OF WELDED CONSTRUCTION. ALL OTHER DASHER BOARD SECTIONS INCLUDING ACCESS GATES, RADIUS FRAMES AND CUSTOM LENGTHS SHALL BE FABRICATED IN THE SAME MANNER

2.2 STEEL SECTIONS AND PLATES SHALL BE CAN/CSA -G40.20/G40.21 AND AS FOLLOWS: .1 H.S.S.: GRADE 350W CLASS C

.2 OTHER STRUCTURAL SHAPES AND PLATES: GRADE 300W .3 ROUND HSS SECTIONS: ASTM A500 GRADE C

.4 PIPE: ASTM A53 GRADE C

.5 ALL STEEL FRAMES ARE HOT DIP GALVANIZED AFTER FABRICATION TO MEET CSA-G-164

.1 ANCHORING OF THE NEW BOARD SYSTEM TO THE CONCRETE GRADE BEAM IS TO BE BY THE DASHER BOARD SUPPLIER AND SHALL BE POST-INSTALLED 2.4 DASHER BOARD CLADDING

.1 PUCK BOARD SHALL BE HDPE (HIGH DENSITY POLYETHYLENE) IN THE SPECIFIED THICKNESS, OF CONSISTENT COLOR AND DENSITY .2 ALL OFFICIAL LINE MARKINGS SHALL BE 300 MM WIDE (RED, BLUE) AND SHALL BE FULLY INSET VERTICALLY AND FLUSH INTO THE MAIN BOARD SURFACE. ALL LINES ARE

CONTINUOUS FROM THE ICE SURFACE TO THE SILL .3 TOP SILLS ARE 165 MM X 9.5 MM THICK HIGH DENSITY POLYETHYLENE FROM MANUFACTURER'S COLORS. ALL EDGES SHALL HAVE A RADIUS OF 9.5 MM

.4 KICK STRIPS ARE 200 MM HIGH AND MANUFACTURED FROM 9.5 MM COLORED PUCK BOARD FROM THE MANUFACTURER'S STANDARD COLOR RANGE. THE TOP EDGE WILL HAVE A RADIUS OF 9.5 MM

.5 ALL PUCK BOARD WILL BE TREATED WITH A HINDERED AMINE LIGHT STABILIZER TO PREVENT DEGRADATION

.6 FASTENERS FOR BOARD CLADDING ARE TO BE 6.4 MM COLOR-MATCHED, ROBERTSON FLAT HEAD MACHINE SCREWS.

.7 FASTENERS THAT ARE INSET TO ANGLE WILL BE SECURED WITH A 6.4 MM NYLON NUT. ALL FASTENERS WILL BE SET FLUSH TO THE EXPOSED SURFACE OF THE DASHER BOARDS BY WAY OF COUNTERSINKING

2.5 THRESHOLDS

.1 GATE THRESHOLDS SHALL BE MANUFACTURED FROM HIGH-DENSITY STRESS RELIEVED, POLYETHYLENE. THICKNESS SHALL BE 25 MM X 162 MM. THRESHOLDS COVER THE ENTIRE WIDTH OF THE GATE OPENING. FASTENERS ARE COUNTERSUNK 12 MM DEEP AND THE FRONT EDGE OF THE THRESHOLD HAS A RADIUS OF 9.5 MM

2.6 HARDWARE .1 FASTENERS SHALL BE ZINC PLATED 6.4 MM MACHINE SCREWS COLOR-MATCHED TO THE BOARD SURFACE

.2 ALL STEEL HARDWARE IS HOT DIP GALVANIZED OR ELECTROPLATED AS REQUIRED

.3 ACCESS GATE LATCHES SHALL BE FABRICATED FROM 9.5 MM X 50 MM STRAP STEEL, EASILY OPENED BY A PLAYER'S GLOVED HAND WITH DOWNWARD MOVEMENT .4 ACCESS GATE HINGES SHALL BE SELF-LUBRICATING LIFT OFF TYPE

.5 MACHINE GATE HINGES SHALL BE ZINC PLATED OR GALVANIZED HEAVY-DUTY ADJUSTABLE TYPE

.6 ICE SIDE OPENER DEVICES SHALL BE INSTALLED AT ALL LOCATIONS WHERE PROTECTIVE SHIELDING IS PRESENT

.7 HEAVY DUTY SPRING LOADED CASTOR WHEELS OF THE PHENOL OR PNEUMATIC TYPE ARE TO BE INSTALLED AT ALL GATE LOCATIONS EXCEEDING 1220 MM IN WIDTH

.8 CLOSURE BARS ARE TO BE SLIDING TYPE MANUFACTURED FROM 38 MM X 75 MM X 2.5 MM H.S.S. TUBE SECURED TO ONE LEAF OF THE MACHINE GATE. THIS SLIDE BAR WILL SLIDE INTO CUSTOM BRACKETS LOCATED ON OPPOSITE LEAF. TWO CLOSURE BARS PER GATE WILL BE USED .9 ALL ACCESS GATES AND MACHINE GATES ARE LOCKABLE WITH A HASP TO ACCOMMODATE A 9.5 MM DIAMETER PADLOCK SHACKLE (PADLOCKS SUPPLIED BY CLIENT)

2.7 SPECTATOR PROTECTIVE SHIELDING .1 ALL MESH IS TO BE INSTALLED TO SPECIFIED HEIGHT, 6 GAUGE 50 MM X 50 MM GALVANIZED STEEL FABRIC

.2 ALL PROTECTIVE MESH AND ACCESSORIES TO BE GALVANIZED TO CSA-G-164

3 VERTICAL SUPPORT STANCHIONS TO BE CONSTRUCTED OF 60 MM DIAMETER X 3.9 MM WALL GALVANIZED PIPE

.4 VERTICAL SUPPORT STANCHIONS TO BE INSERTED THROUGH CENTER OF TOP SILL AND MUST BE EXTENDED TO THE HORIZONTAL MIDDLE STRINGER AND SECURED USING GALVANIZED WELDED PLATE AND MINIMUM 2 FASTENERS

.5 SPACING OF VERTICAL SUPPORT STANCHIONS NOT TO EXCEED 2440 MM O.C. ON STRAIGHT AREAS OF RINK, AND NOT TO EXCEED 1830 MM IN RADIUS OF RINK .6 HORIZONTAL FRAME MEMBERS AND CONTINUOUS TOP RAIL TO BE 42 MM DIAMETER X 3.5 MM WALL GALVANIZED PIPE

.7 RADIUS TOP RAIL IS TO BE ROLLED AND INSTALLED IN AN UNINTERRUPTED MANNER USING SWEDGED ENDS

.8 INTERMEDIATE HORIZONTAL SUPPORT TUBE TO BE INSTALLED IN BACK STRAIGHTS OF RINK 610 MM ABOVE SILL

.9 9 GAUGE ALUMINUM TIE WIRES TO BE USED TO FASTEN MESH TO SUPPORT SYSTEM

.10 ALL HARDWARE AND ACCESSORIES TO BE GALVANIZED STEEL (ALUMINUM IS NOT AN ACCEPTABLE SUBSTITUTE, EXCLUDING TIE WIRES) 2.8 EXTERIOR GRADE SKATE MATS

.1 EXTERIOR MATS TO BE MIN 12MM THICK RUBBER DESIGN FOR HIGH-IMPACT AND ABRASIVE APPLICATION .2 MATERIAL: SBR AND RECLAIMED RUBBER

.3 WEIGHT: 3.33LBS PER SQUARE FOOT MIN

.4 HARDNESS: 60 SHORE A NOMINAL .5 FLAME SPREAD LESS THAN 13MM PER MINUTE

.6 COMPRESSION MAX 36% @ 50 PSI .7 TENSILE STRENGTH: 600 PSI

.8 BLACK IN COLOUR

.9 UV STABILIZED RUBBER

PART 3 - EXECUTION 3.1 DELIVERY AND INSTALLATION

.1 MANUFACTURERS SHALL CONSTRUCT, FABRICATE AND DELIVER ALL MATERIALS TO THE JOB SITE AS PER PLANS AND SPECIFICATIONS. INSTALLATIONS SHALL BE IN STRICT CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS AND INSTRUCTIONS.

INSTALLATION OF THE DASHER BOARD SYSTEM SHALL BE COMPLETED IN ONE OF THREE FOLLOWING WAYS:

.a COMPLETE INSTALLATION BY THE MANUFACTURER

.b ON-SITE SUPERVISION BY THE MANUFACTURER

.c BY AN EXPERIENCED DASHER BOARD CONTRACTOR WHO IS APPROVED BY THE MANUFACTURER

B. OUTDOOR BASKETBALL BACKSTOPS EXTERIOR BASKETBALL POSTS, BACKBOARDS, AND HOOPS

1.0 GENERAL

1.1 SUBMITTALS

A. PROVIDE THE FOLLOWING DOCUMENTS AS PART OF A BASKETBALL EQUIPMENT SUBMITTAL:

LIST OF PROPOSED PRODUCTS AND PRODUCT DATA

SHOP DRAWINGS SHOWING DIMENSIONS, CONSTRUCTION AND CONNECTION DETAILS INCLUDING FOUNDATION REACTIONS AT BASE OF POSTS COPY OF WARRANTY REQUIRED

MANUFACTURER'S INSTALLATION INSTRUCTIONS 5. OPERATION AND MAINTENANCE MANUAL

A. PROVIDE 1-YEAR WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP UNLESS OTHERWISE SPECIFIED. B. PROVIDE LIFETIME WARRANTY AGAINST BREAKAGE OF FAN ALUMINUM BASKETBALL BACKBOARDS.

2.1 MATERIALS

A. STRUCTURAL STEEL TUBING: STEEL, MECHANICAL, ROUND TUBING CONFORMING TO ASTM A513 WITH GALVANIZED ZINC COATING

CONFORMING TO ASTM A653, DESIGNATION G90. B. ALUMINUM CASTINGS: ASTM B85

2.2 OUTDOOR BASKETBALL POSTS

A. TYPE: GOOSENECK STYLE WITH SINGLE, GALVANIZED STEEL POST EXTENDING BACKBOARD INTO COURT

POST DIAMETER: 114 MM 2. EXTENSION LENGTH: 1219 MM

2.3 BACKBOARD

A. TYPE: FAN SHAPED CAST ALUMINUM BACKBOARD WITH COMPETITION STRIPING.

OVERALL SIZE: 1372 MM WIDE BY 991 MM HIGH. C. CONSTRUCTION: CAST ALUMINUM WITH SMOOTH FRONT, BACKSIDE REINFORCING RIBS, AND 38 MM PERIMETER FLANGE. FURNISH 12 TAPPED HOLES ON BACK TO ACCOMMODATE STANDARD MOUNTING ATTACHMENT WITHOUT EXPOSED BOLT HEADS OF FRONT FACE. BACKBOARD DRILLED FOR FRONT MOUNT TYPE GOAL

D. FINISH: WHITE, NON-GLARE ENAMEL WITH 51 MM WIDE, ORANGE, COMPETITION TARGET AND BORDER LINES.

2.4 BASKETBALL HOOPS

A. TYPE: HEAVY DUTY STATIONARY GOAL WITH WEATHER-RESISTANT NET

GOAL SHALL SUPPORT 363 KG AT OUTER EDGE OF RING AND SHALL FLEX DOWNWARD 70 MM WITHOUT PERMANENT DAMAGE. RING: FABRICATED FROM 16 MM DIAMETER HIGH STRENGTH, COLD DRAWN ALLOY STEEL ROD FORMED INTO 457 MM RING. PROVIDE WITH 12 NO-TIE NET ATTACHMENT CLIPS WELDED TO RING. RIGIDLY BRACE RING WITH 16 MM DIAMETER HIGH STRENGTH STEEL ROD WELDED TO

MOUNTING PLATE. MOUNTING PLATE: 4.4 MM STEEL PLATE BRACKET WITH MOUNTING HOLES AND DESIGNED TO POSITION INSIDE OF RING 152 MM FROM

BACKBOARD. FINISH: ORANGE POWDER COAT

NET: WHITE BRAIDED NYLON G. MOUNTING HARDWARE: ZINC PLATED.

A. PROVIDE BACKSTOP WITH ALL HARDWARE REQUIRED FOR COMPLETE, FUNCTIONAL, RIGID ASSEMBLY AND INSTALLATION

PART 3 - EXECUTION

A. FIELD ASSEMBLE AND INSTALL BACKSTOPS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

COORDINATE INSTALLATION TO ENSURE: TOP OF GOAL RIM IS 3048 MM ABOVE ELEVATION OF FINISH BASKETBALL COURT SURFACE.

FACE OF BACKBOARD IS 1219 MM INSIDE PERIMETER COURT LINE.

CLIT POSTS AND WELD BASE PLATES TO POSTS PER CONSTRUCTION DRAWINGS. ANCHOR POSTS TO TOP OF CONCRETE FOUNDATIONS AS SHOWN ON CONSTRUCTION DRAWINGS. SLOPE TOP OF FOUNDATION FOR

DRAINAGE. VERIFY THAT POST IS CORRECTLY POSITIONED AND PLUMB. G. INSTALL BACKBOARDS AND GOALS POSTS PLUMB, LEVEL, AND RIGID USING MANUFACTURER PROVIDED ATTACHMENT HARDWARE. ENSURE BACKSTOPS ARE ACCURATELY POSITIONED AND FREE OF VIBRATIONS.

H. REMOVE PROTECTIVE WRAPPINGS, WASH SURFACES, AND ATTACH NETS.

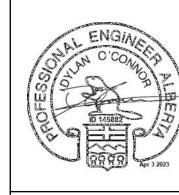


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PERMIT TO PRACTICE 03 April 2023 PERMIT NUMBER: P002277 Geoscientists of Alberta (APEGA)

CLIENT:



PROJECT:

SANDSTONE MACEWAN ICE RINK REPLACEMENT

TITLE:

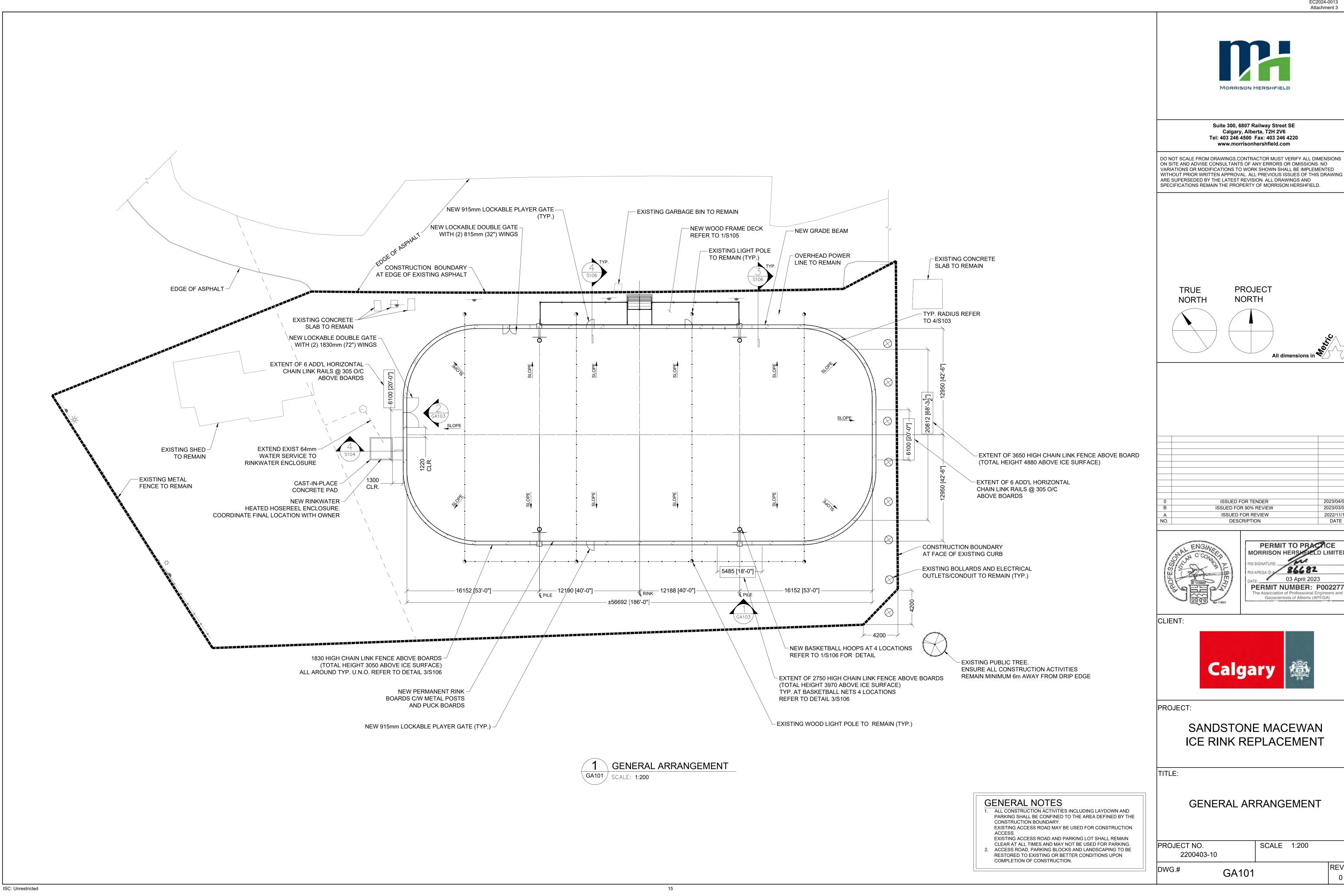
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SPECIFICATIONS

PROJECT NO. SCALE N.T.S. 2200403-10

GA100

REV



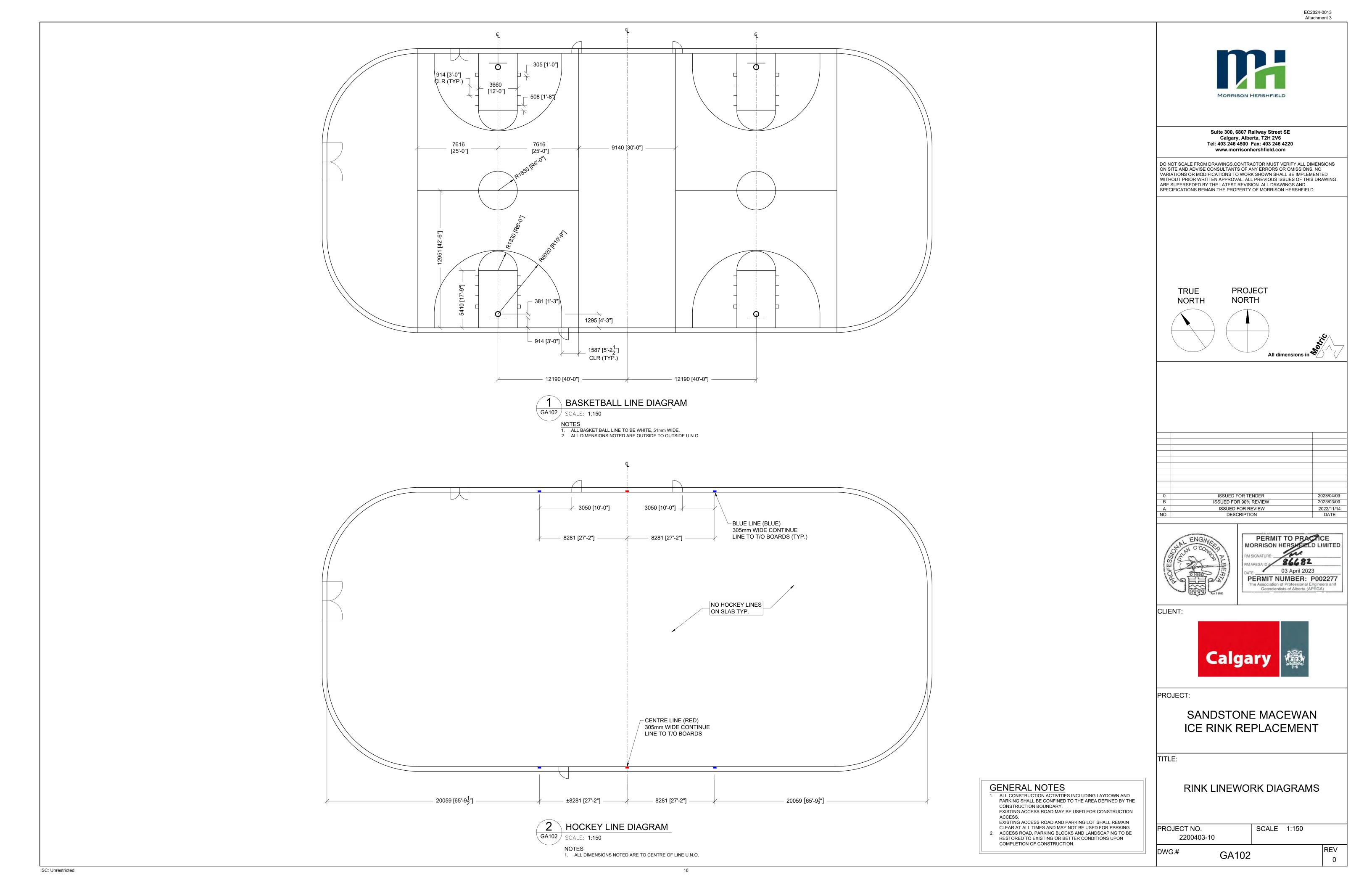
VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING

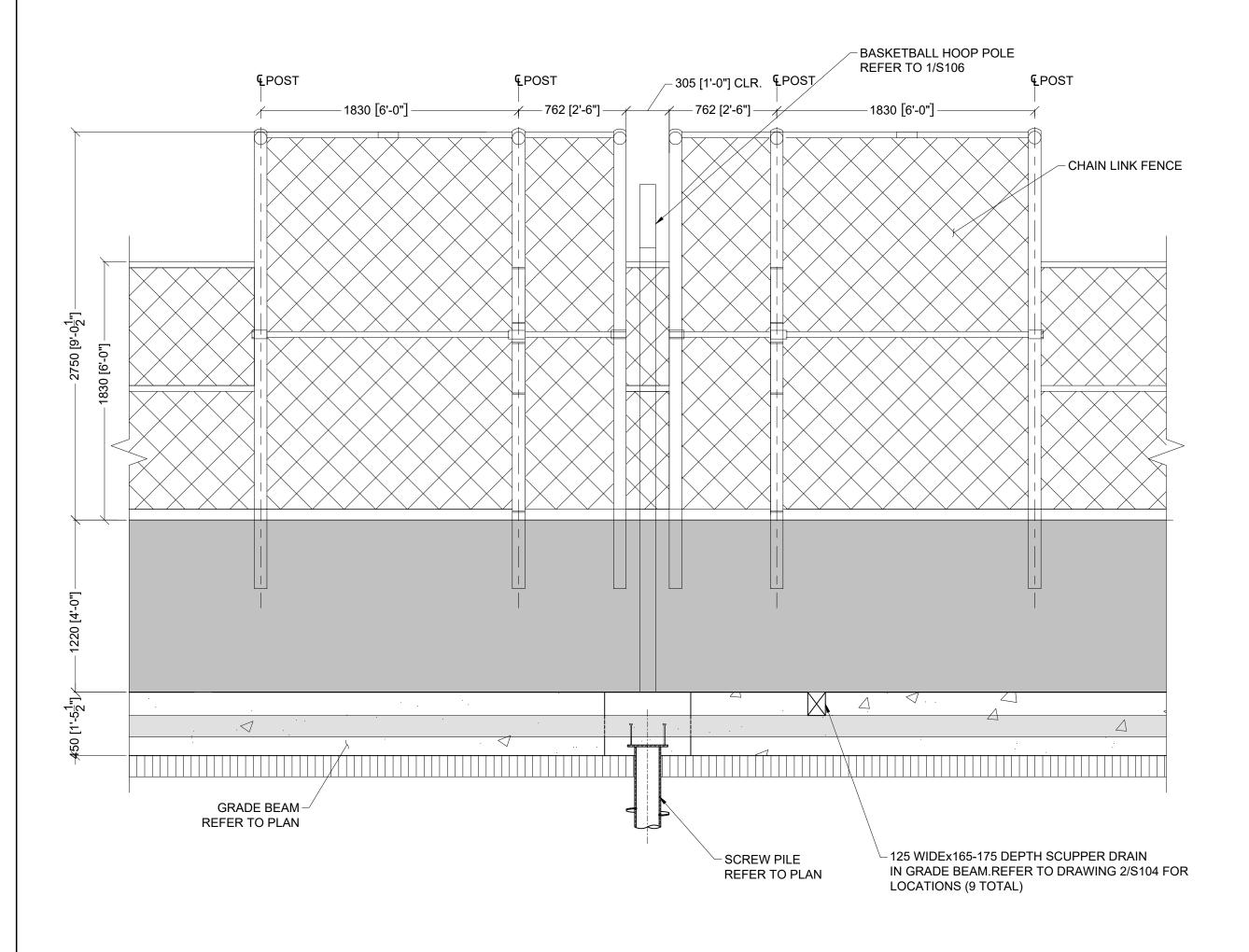
2023/04/03 2023/03/09 2022/11/14 DATE

> PERMIT NUMBER: P002277 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

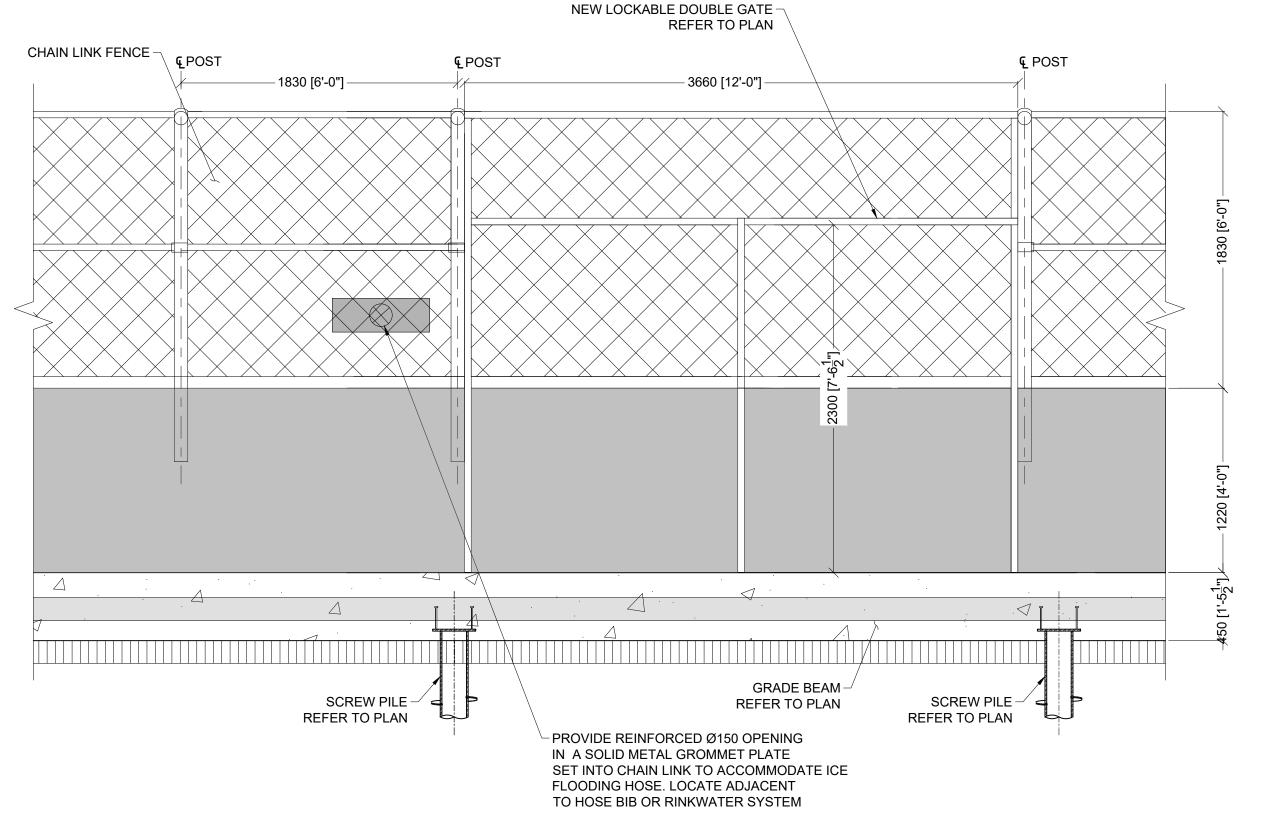


REV





BASKETBALL POLE ELEVATION GA103 | SCALE: 1:25



2 FENCE ELEVATION

GA103 | SCALE: 1:25

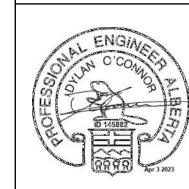


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ISSUED FOR TENDER 2023/04/03 2023/03/09 ISSUED FOR 90% REVIEW ISSUED FOR REVIEW DESCRIPTION 2022/11/14 DATE



PERMIT TO PRACTICE
MORRISON HERS JEJELD LIMITED PERMIT NUMBER: P002277
The Association of Professional Engineers and
Geoscientists of Alberta (APEGA)

CLIENT:



PROJECT:

SANDSTONE MACEWAN ICE RINK REPLACEMENT

DWG.#

BASKETBALL AND FENCE **ELEVATIONS**

PROJECT NO. 2200403-10

GA103

REV

0

SCALE 1:25

A. GENERAL NOTES

- 1. THE GENERAL NOTES AND TYPICAL DETAILS ARE APPLICABLE TO ALL PARTS OF THE PROJECT AND SHALL BE READ IN CONJUNCTION WITH THE DRAWINGS AND SPECIFICATIONS.
- 2. USE ONLY THE LATEST ISSUES OF ANY GOVERNMENT CODES, STANDARDS OR REGULATIONS MENTIONED IN THE FOLLOWING NOTES, UNLESS NOTED OTHERWISE.
- 3. NEW STRUCTURAL ELEMENTS SHOWN ON THESE DRAWINGS ARE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE (ALBERTA EDITION) 2019. ALL CONSTRUCTION, EXCEPT WHERE NOTED OTHERWISE, SHALL COMPLY WITH THAT SAME CODE AND THE CODE STANDARDS REFERENCED THEREIN.
- 4. VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE
- 5. VERIFY LOCATIONS AND DIMENSIONS OF ALL OPENINGS, PIPE SLEEVES, ETC.
- . THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DIMENSIONS AND FOR COORDINATION OF SUB-TRADES.
- 7. DO NOT SCALE THE DRAWINGS. USE FIGURE DIMENSIONS ONLY.
- 8. MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION STRESSES AND FOR SUFFICIENT TEMPORARY BRACING AND SHORING TO KEEP THE STRUCTURE PLUMB AND LEVEL DURING ALL PHASES OF WORK.
- 9. ALL DESIGN LOADINGS INDICATED ON THESE DRAWINGS ARE SPECIFIED (I.E., UNFACTORED SERVICE) LOADINGS UNLESS NOTED OTHERWISE
- 10. ALL CONNECTION FORCES AND BRACING FORCES SHOWN ON THESE DRAWINGS ARE THE CRITICAL FACTORED FORCES UNLESS NOTED OTHERWISE.
- 11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SAFEGUARD ALL EXISTING STRUCTURES AFFECTED BY THIS CONSTRUCTION.ON ANY NEW STRUCTURE, DO NOT EXCEED THE DESIGN LOADINGS INDICATED ON THESE DRAWINGS.
- 12. ALL STRUCTURAL MEMBERS SHOWN ARE NEW UNLESS NOTED OTHERWISE.
- 13. ALL DIMENSIONS SHOWN IN STRUCTURAL DRAWINGS ARE METERS AND MILLIMETRES UNLESS NOTED OTHERWISE.
- 14. DRAWINGS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MODIFICATIONS TO THE DESIGN NECESSARY TO SUIT SITE DIMENSIONS OR CONDITIONS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL BEFORE PROCEEDING.
- 15. THE SCHEDULING OF ALL WORK SHALL BE COORDINATED AND AGREED WITH THE OWNER PRIOR TO COMMENCEMENT.
- 16. ANY DEVIATION FROM THE SEQUENCE OF WORK INDICATED ON THE DRAWINGS SHALL BE APPROVED BY THE CONSULTANT PRIOR TO COMMENCEMENT
- 17. COORDINATE WORK WITH CIVIL, MECHANICAL AND ELECTRICAL TRADES REGARDING ANY EXISTING UNDERGROUND OR ABOVE GRADE CIVIL, MECHANICAL AND ELECTRICAL SERVICES ADJACENT TO THE WORK.
- 18. DO NOT CUT THROUGH, CORE-DRILL OR OTHERWISE ALTER ANY EXISTING OR NEW PART OF THE STRUCTURE UNLESS SHOWN ON THE STRUCTURAL DRAWINGS, OR UNLESS APPROVED BY THE CONSULTANT. PROVIDE ADDITIONAL REINFORCING OR FRAMING AT OPENINGS AS SHOWN OR DIRECTED, PRIOR TO MAKING ANY OPENINGS.
- 19. THE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE CONSULTANT AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT WRITTEN AUTHORIZATION.
- 20. WHERE THE REQUIREMENTS OF CODES, STANDARDS, DRAWINGS AND SPECIFICATIONS DIFFER, THE MOST STRINGENT OF THE REQUIREMENTS SHALL APPLY.
- 21. <u>DESIGN LOAD:</u> LOCATION: CALGARY, AB, CANADA
- DESIGN CATEGORY "NORMAL'
 - 1. BASIC GROUND SNOW LOAD
 - $S_r = 0.1 \text{ kPa}$
 - 2. DESIGN LIVE LOADS = 4.8 kPa
 - WIND LOAD $Q(\frac{1}{10}) = 0.37 \text{ kPa}$
 - $Q(\frac{1}{50}) = 0.48 \text{ kPa}$ SEISMIC LOAD
 - $S_a(0.2) = 0.192$ $S_a(0.5) = 0.126$ $S_a(1.0) = 0.072$
 - $S_a(1.0) = 0.072$ $S_a(2.0) = 0.036$ $S_a(5.0) = 0.012$ $S_a(10.0) = 0.0048$

PGA = 0.098

- SEISMIC SITE CLASS C
- B. PROTECTION, SHORING AND BRACING
- . CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROTECTION OF EXISTING STRUCTURES AND OCCUPANTS DURING ALL PHASES OF CONSTRUCTION.
- 2. PROVIDE ALL NECESSARY HOARDING AND SECURITY MEASURES TO RESTRICT ACCESS OF THE PUBLIC TO THE WORK
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF TEMPORARY SHORING, BRACING, AND HOARDING. KEEP THE NEW AND EXISTING STRUCTURES PLUMB, LEVEL AND FREE OF CRACKS OR OTHER DISTRESS DURING ALL PHASES OF THE WORK, MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION STRESSES.
- 4. SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY SHORING, BRACING, AND HOARDING. DRAWINGS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
- 5. CONTRACTOR SHALL CARRY OUT A PRE-CONSTRUCTION VISUAL SURVEY OF THE SITE CONDITIONS PRIOR TO COMMENCEMENT. DURING PROCESS OF WORK, CONTRACTOR SHALL MONITOR STRUCTURE (VISUALLY AND USING SURVEY EQUIPMENT) FOR SIGNS OF MOVEMENT, CRACKING OR DISTRESS. MONITORING TO BE TWICE WEEKLY OR MORE FREQUENTLY, IF DETERMINED BY THE CONSULTANT RESPONSIBLE FOR SHORING DESIGN. PROTECTION IS TO BE DESIGNED TO PREVENT ANY MOVEMENT OF EXISTING STRUCTURES.
- 6. DO NOT DEVIATE FROM OR FIELD-ALTER SHORING AND BRACING INDICATED ON REVIEWED SHOP DRAWINGS WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER RESPONSIBLE FOR SHORING DESIGN. NOTIFY CONSULTANT OF ANY
- 7. DO NOT COMMENCE WORK UNTIL ALL REQUIRED SHORING AND BRACING IS IN PLACE AND HAS BEEN INSPECTED BY THE ENGINEER RESPONSIBLE FOR SHORING DESIGN.
- 8. DO NOT REMOVE TEMPORARY SHORING OR BRACING UNTIL APPROVED BY THE ENGINEER RESPONSIBLE FOR SHORING
- 9. MAKE GOOD ANY DAMAGE RESULTING FROM WORK, TO THE SATISFACTION OF THE OWNER AND THE CONSULTANT.
- 0. VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND SERVICES THAT MAY INTERFERE WITH THE WORK, AND COORDINATE WITH THE OWNER, CONSULTANT AND OTHER AUTHORITIES AS MAY BE REQUIRED FOR THE PROTECTION, REMOVAL OR RELOCATION OF SUCH BURIED SERVICES
- 11. THE GEOTECHNICAL ENGINEERING CONSULTANTS TO BE CONSULTED FOR ALL REQUIRED EXCAVATIONS, AND TEMPORARY SUPPORT STRUCTURE.
- 12. WHERE TEMPORARY SHORING IS WITHIN THE PROXIMITY OF OPEN EXCAVATIONS, THE CONTRACTOR'S SHORING ENGINEER SHALL VERIFY, WITH GEOTECHNICAL ENGINEERING CONSULTANTS, THAT THE SHORING LOADS MAY BE SAFELY SUPPORTED ON GRADE, WITHOUT CAUSING SLOPE INSTABILITY OR COMPROMISING THE SAFETY OF THE ADJACENT EXCAVATIONS
- DRAWINGS SUBMITTED FOR REVIEW WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT AND FOR GENERAL DIMENSIONS, WITH ANY COMMENTS MADE FOLLOWING THAT REVIEW BEING INTENDED TO ASSIST THE CONTRACTOR IN PREVENTING ERRORS. CONSULTANT ASSUMES NO RESPONSIBILITY FOR TEMPORARY SHORING
- 14. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C. FOUNDATION

- 1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS OF GEOTECHNICAL INVESTIGATION REPORT NO. CA0898 ENTITLED "GEOTECHNICAL INVESTIGATION REPORT, SANDSTONE MACEWAN OUTDOOR RINK DEVELOPMENT, 355 SANDARAC DRIVE NW, CALGARY, ALBERTA. PREPARED BY PARKLAND GEO, DATED OCTOBER 26, 2022. FOUNDATIONS ARE DESIGNED AS DRIVEN STEEL PIPE PILES WITH A ULS (ULTIMATE LIMIT STATE) FACTORED GEOTECHNICAL END-BEARING RESISTANCE AND SKIN FRICTION SPECIFIED IN SECTION 6.4 OF THE GEOTECHNICAL REPORT.
- ALL FOUNDATIONS AND EARTHWORKS TO BE COMPLETED UNDER THE SITE SUPERVISION OF GEOTECHNICAL ENGINEER. OBTAIN WRITTEN APPROVAL OF GEOTECHNICAL ENGINEER FOR PRE-DRILLING AND SUBGRADE PREPARATION PRIOR TO INSTALLATION OF PILES, GRADE BEAM, ICE RINK SLAB OR OTHER STRUCTURAL CONCRETE IN CONTACT WITH SOIL.
- REFER TO GEOTECHNICAL REPORTS FOR REQUIREMENTS AND RECOMMENDATIONS FOR EXCAVATION, BACKFILLING PROTECTION, DEWATERING AND SUBGRADE PREPARATION.
- SLABS-ON-GRADE TO BE PLACED OVER A 200mm THICK LAYER OF 20mm CRUSHED GRANULAR BASE OVER COMPACTED SUBGRADE. GRANULAR BASE AND SUB-GRADE TO BE COMPACTED TO 98% SPMDD. REFER TO GEOTECHNICAL INVESTIGATION REPORT FOR FULL SUB-GRADE PREPARATION REQUIREMENTS FOR SLABS ON CRADE LLN O
- 5. WHEN BACKFILL IS REQUIRED ON BOTH SIDES OF A WALL, THE BACKFILL LEVEL SHALL BE RAISED SIMULTANEOUSLY ON BOTH SIDES WITH THE DIFFERENCE IN HEIGHT BETWEEN THE TWO SIDES NOT TO EXCEED 600 mm.
- 6. PROVIDE 150 mm THICK POLYSTYRENE COMPRESSIBLE VOID FORM BELOW ALL GRADE BEAMS.

D. CONCRETE

- 1. ALL CONCRETE TO CONFORM TO THE REQUIREMENTS OF CSA STANDARD A23.1-14 AND THE CONCRETE SECTIONS OF THE SPECIFICATIONS FOR THIS CONTRACT.
- 2. ALL CONCRETE FORMWORK AND FALSEWORK TO CONFORM TO CSA-S269.1-1975-(R2003).
- 3. ALL CONCRETE IS TO HAVE THE MINIMUM SPECIFIED 28 DAY COMPRESSIVE STRENGTH, WATER/CEMENTING MATERIALS RATIO, AND AIR CONTENT IN ACCORDANCE WITH THE REQUIREMENTS OF CSA STANDARD A23.1. SLUMP SHALL BE DETERMINED BY THE CONCRETE SUPPLIER TO MEET WORKABILITY REQUIREMENTS FOR CONCRETE PLACEMENT FOR THE PROJECT.
- 4. ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa, UNLESS NOTED OTHERWISE. THIS MINIMUM DOES NOT APPLY WHERE CONCRETE EXPOSURE CLASSIFICATIONS DICTATE A GREATER MINIMUM COMPRESSIVE STRENGTH REQUIREMENT.
- 5. ALL CONCRETE WHICH WILL BE SUBJECTED TO FREEZING AND THAWING OR SUBJECTED TO APPLICATIONS OF DE-ICING CHEMICALS IS TO HAVE THE 28 DAY COMPRESSIVE STRENGTH, WATER/CEMENTING MATERIALS RATIO, AND AIR CONTENT IN ACCORDANCE WITH THE REQUIREMENTS OF CSA STANDARD A23.1-14. EXPOSURE CLASS C U.N.O.
- ALL CONCRETE SHALL BE NORMAL DENSITY CONCRETE AND CONFORMING TO THE FOLLOWING UNLESS NOTED OTHERWISE:

	LOCATION	EXPOSURE CLASS	MIN. fc (MPa) (28 DAYS UNO)	AIR CONTENT	FINISH	CEMENT TYPE
a.	SLAB ON GRADE	C-1	35	CATEGORY-1	NON-SLIP (BROOMED) TROWELLED	HS
b.	GRADE BEAMS	S-2	32	CATEGORY-1	TROWELLED	HS

- 7. CONCRETE SHALL BE SUPPLIED AND PROPORTIONED IN ACCORDANCE WITH "ALTERNATIVE 1" (PERFORMANCE SPECIFICATION), PER TABLE 5 OF CSA A23.1-14. CONCRETE SUPPLIER TO BE CERTIFIED BY ALBERTA READY MIXED CONCRETE ASSOCIATION. CONCRETE SUPPLIER SHALL SUBMIT:
 - MIX DESIGNS FOR EACH CLASS OF CONCRETE TO BE USED ON THE PROJECT. (CONSULTANT AGREES TO MAINTAIN CONFIDENTIALLY OF MIX DESIGN SUBMITTALS)
- CERTIFICATION THAT PLANT, EQUIPMENT, MATERIALS, PRODUCTION AND DELIVERY CONFORM TO CSA A23.1-14
- CERTIFICATION THAT MIX DESIGN AND CONCRETE COMPLIES WITH CSA A23.1-14 AND WILL PROVIDE REQUIRED STRENGTH, DURABILITY AND PERFORMANCE.
 WRITTEN QUALITY-ASSURANCE PLAN PER CLAUSE J7.2 OF CSA A23.1-14.
- 8. ADMIXTURES THAT CONTAIN CHLORIDES SHALL NOT BE USED.
- 9. FLY ASH CONTENT SHALL NOT EXCEED 30% OF TOTAL CEMENTITIOUS MATERIALS.
- UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING CLEAR CONCRETE COVER (mm) FOR REINFORCING STEEL:

LOCATION	SPECIFIED COVER (mm)
ALL CONCRETE CAST AGAINST EARTH	75 (TO TIES)
GRADE BEAMS	50 (TO TIES)
FOUNDATION WALLS	40 (EXTERIOR FACE), 25 (INSIDE FACE)
SLABS-ON-GRADE	40

- 11. DO NOT PLACE BEAMS, WALLS AND SLABS IN ONE CONTINUOUS POUR THAT WOULD EXCEED 20 METERS IN LENGTH. CONTRACTOR TO SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS FOR APPROVAL PRIOR TO START OF
- 12. CHAMFERS TO BE 20 mm FOR ALL EXPOSED CONCRETE EDGES, U.N.O.
- 13. OPENINGS AND SLEEVES:
 - a. ALL OPENINGS SHALL BE FORMED OR SLEEVED PRIOR TO PLACING CONCRETE
 - b. PROVIDE ADDITIONAL REINFORCING AT OPENINGS AS SHOWN OR DIRECTED
 c. OBTAIN CONSULTANT APPROVAL FOR ANY OPENINGS REQUIRED BUT NOT SHOWN ON STRUCTURAL DRAWINGS
- 14. PROVIDE MINIMUM SEVEN (7) DAY WET BURLAP CURE AT > 10°C TO ALL EXPOSED CONCRETE ELEMENTS (SLAB,
- 15. DO NOT MACHINE-TROWEL FINISH AIR ENTRAINED CONCRETE.

E. REINFORCING STEEL

- 1. CONFORM TO THE REQUIREMENTS OF CSA STANDARDS A23.1-14 & A23.3-14.
- 2. REINFORCING STEEL SHALL BE DEFORMED BAR CONFORMING TO CSA STANDARD G30.18-M92, GRADE 400R, UNLESS NOTED OTHERWISE. REINFORCING STEEL SPECIFIED TO BE WELDED SHALL CONFORM TO CSA STANDARD G30.18-M92, GRADE 400W, UNLESS NOTED OTHERWISE
- 3. WELDED WIRE FABRIC SHALL HAVE A MINIMUM YIELD STRENGTH OF 450 MPa AND SHALL CONFORM TO ASTM A185. SUPPLY IN FLAT
- 4. REINFORCING STEEL IS TO BE DETAILED AND BENT AS OUTLINED IN THE REINFORCING STEEL MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA.
- 5. SUBMIT SHOP DRAWINGS SHOWING PLACEMENT AND DETAILS OF ALL REINFORCING STEEL. DRAW ALL WALLS IN FULL ELEVATION, AND SLABS WITH TOP AND BOTTOM BARS ON SEPARATE PLANS.
- 6. DO NOT FIELD-CUT OR FIELD-BEND BARS WITHOUT CONSULTANT'S APPROVAL.
- 7. PROVIDE CHAIRS, SPACER BARS, SUPPORT BARS AND OTHER ACCESSORIES TO SUPPORT REINFORCING IN ACCORDANCE WITH CSA A23.1 AND CSA A23.3. ALL THE WIRE, CHAIRS AND BAR SUPPORTS FOR FOUNDATIONS AND FOR EXPOSED CONCRETE SHALL BE NON-METALLIC
- 8. PROVIDE CLASS 'B' TENSION LAP SPLICES UNLESS NOTED OTHERWISE. ALL SPLICE LOCATIONS SHALL BE TO THE APPROVAL OF
- 9. LAP SPLICES IN WELDED WIRE MESH SHALL NOT BE LESS THAN 200 mm, AS MEASURED BETWEEN THE OUTERMOST CROSS-WIRES
- 10. DOWELS TO EXISTING CONCRETE SHALL USE THE HILTI "RE500" DOWELING SYSTEM. COMPLY WITH MANUFACTURER'S WRITTEN
- 11. PROVIDE ONE 15M NOSING BAR FOR ALL SILLS, LEDGES, AND STEPS, UNLESS NOTED OTHERWISE.
- 12. PROVIDE ONE CONTINUOUS 15M TOP AND BOTTOM REINFORCING BARS AT ALL EDGES OF SLABS. THIS REINFORCING MAY BE PROVIDED BY MODIFYING THE BARS SHOWN ON PLAN OR SCHEDULE, OR BY PROVIDING ADDITIONAL REINFORCING.
- 13. PROVIDE MINIMUM 2-20M VERTICAL AT EACH END, TEE AND CORNER OF ALL REINFORCED CONCRETE WALLS UNLESS NOTED OTHERWISE.
- 14. ALL REINFORCING BARS AND ANCHOR BOLTS TO BE TIED IN PLACE PRIOR TO CONCRETE PLACEMENT. WET SET PLACEMENT OF REBAR / ANCHOR BOLTS IS NOT ACCEPTABLE.
- 15. CONTRACTOR SHALL ADVISE DESIGNATED INSPECTION AGENCY OF PLACEMENT OF ALL REINFORCING STEEL FOR REINFORCED CONCRETE, AT LEAST 48 HOURS PRIOR TO PLANNED TIME OF CONCRETE PLACEMENT. DO NOT PLACE OR CONCRETE UNTIL BAR PLACEMENT HAS BEEN APPROVED BY INSPECTOR.

F. GROUT

1. NON-SHRINK GROUT: PREMIXED CEMENTIOUS COMPOUND , NONMETALLIC AGGREGATES, 50 MPa COMPRESSIVE

G. STRUCTURAL STEEL

- DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO CAN/CSA-S16-14, CISC CODE OF STANDARD PRACTICE, AND THE STRUCTURAL STEEL SECTION OF THE SPECIFICATIONS FOR THIS CONTRACT.
- 2. ALL STRUCTURAL STEEL TO CONFORM TO CAN/CSA- G40.20-04/G40.21-04, WITH THE FOLLOWING GRADES:
 - 350W, FOR WELDED OR ROLLED W-SECTIONS 300W, FOR CHANNELS, ANGLES AND PLATES
- · 350W, FOR ALL OTHER SECTIONS, UNLESS NOTED OTHERWISE.
- ALL BOLTS ARE TO BE HIGH TENSILE STEEL CONFORMING TO ASTM A325 REQUIREMENTS.
 USE BEARING TYPE CONNECTIONS (MINIMUM 2- M20 BOLTS PER CONNECTION) UNLESS NOTED OTHERWISE.
 BOLT THREADS MUST BE EXCLUDED FROM SHEAR PLANES.
- ANCHOR BOLTS: (ASTM F1554 GR.36 U.N.O).
- HILTI CONCRETE ANCHOR BOLTS SHALL BE HIGH STRENGTH 'HAS.E THREADED' ROD MATERIAL MEETING THE REQUIREMENTS OF ASTM A193 GRADE B7, UNO AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. ALL RODS AND HARDWARE TO BE ZINC PLATED TO ASTM B633 SC1. STAINLESS HAS RODS AND HARDWARE REQUIRED FOR ALL AREAS EXPOSED TO WEATHER, CHLORIDES OR OTHER CORROSIVE CHEMICALS AND WHERE NOTED ON DRAWINGS.
- WELDING: a. WELDING WORK TO BE IN ACCORDANCE WITH CSA STANDARDS W55.3-1965(R2003) AND W59-03.

 b. FUSION WELDING ONLY TO BE UNDERTAKEN BY A FABRICATOR CERTIFIED TO CSA-W47.1-03 FOR DIVISION 1 OR 2.
 - c. RESISTANCE WELDING TO COMPLY WITH CSA-W55.3.
- d. EXPOSED WELDS SHALL BE CONTINUOUS AND GROUND SMOOTH

SELECT APPROPRIATE ELECTRODES AND PRE-HEATING TO SUIT SITE CONDITIONS.

- ALL EXTERIOR STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED TO CAN/CSA-G164-M92(R2003), WITH A MINIMUM ZINC COATING OF 600 g/sq.m. ALL OTHER STEEL TO BE PRIME PAINTED UNLESS NOTED OTHERWISE.
- 9. REPAIR DAMAGED AREAS OF GALVANIZED SURFACES WITH TWO-COATS OF ZINC-RICH PAINT.

H. TESTING AND INSPECTION

- 1. TESTING AND INSPECTION SERVICES FOR THE FOLLOWING WORK SHALL BE PERFORMED BY A THIRD PARTY AGENCY, HIRED BY THE OWNER AND CO-ORDINATED BY THE CONTRACTOR FOR SCHEDULING PURPOSES:
 - CEOTECHNICAL:
 - a. GEOTECHNICAL:
 PERFORM ALL TESTING AND INSPECTION (COMPACTION, BEARING CAPACITY, PILE INSTALLATION, SOIL PREPARATION
 ETC.) PER THE REQUIREMENTS OF THE DRAWINGS AND THE GEOTECHNICAL ENGINEERING REPORT. ALL PILE
 INSTALLATION TO BE REVIEWED AND MONITORED BY THE FIELD GEOTECHNICAL ENGINEER.
 - b. CONCRETE:
 TESTING FOR CONCRETE TO BE DONE BY THE THIRD PARTY TESTING AGENCY ENGAGED BY THE OWNER. COSTS
 ASSOCIATED WITH RETESTING OF CONCRETE DUE TO FAILED SAMPLES OR REJECTED WORK IS THE RESPONSIBILITY
 OF THE CONTRACTOR. CONCRETE TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1 AND
 A23.2, INCLUDING THE REQUIREMENTS FOR AIR, SLUMP AND AGE PRIOR TO BEING USED. CONTRACTOR TO MAINTAIN
 RECORDS OF POUR DATES, TESTING PERFORMED, CLASS OF CONCRETE USED AND TEST RESULTS FOR ALL ITEMS
 PLACED. ALL MIX DESIGNS TO BE REVIEWED AND APPROVED BY TESTING AGENCY.
 - c. REINFORCING STEEL: (FOR CONCRETE)
 PERFORM VISUAL INSPECTION OF BAR SIZE, GRADE, SPACING, COVER, CHAIRS, TIES AND COATINGS (IF ANY). BASIS
 - OF INSPECTION SHALL BE FINAL REVIEWED SHOP DRAWINGS.
 - TESTING FOR STEEL AND CONNECTIONS TO BE CARRIED OUT BY THIRD PARTY TESTING AGENCY ENGAGED BY THE OWNER. PERFORM VISUAL INSPECTION OF ALL WELDS, TORQUE TESTING OF BOLTED CONNECTIONS AND CHECK ON BEARING, PLUMBNESS, ALIGNMENT AND PAINTING. BASIS OF INSPECTION SHALL BE FINAL REVIEWED SHOP DRAWINGS. PERFORM NON-DESTRUCTIVE TESTING (NDT) OF 10% OF FIELD WELDS. PERFORM VISUAL INSPECTION OF 100% OF FIELD AND SHOP WELDS.

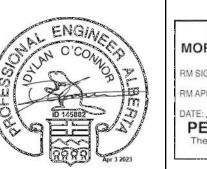


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PERMIT TO PRACTICE
MORRISON HERSHELLD LIMITEI

RM SIGNATURE:

RM APEGA ID # 86682

DATE: 03 April 2023

PERMIT NUMBER: P002277

The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

CLIENT:



PROJECT:

SANDSTONE MACEWAN ICE RINK REPLACEMENT

TITLE:

DWG.#

STRUCTURAL GENERAL NOTES

PROJECT NO. 2200403-10

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SCALE N.T.S.

I. HELICAL SCREW PILE

- STEEL PIPE PILE SHAFTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A252, STRAIGHT WELDED OR SEAMLESS
- 2. PILE CAP MATERIAL SHALL CONFORM TO CSA G40.21, GRADE 300W. HELIX PLATE MATERIAL SHALL CONFORM TO CSA G40.21,
- 3. ALL PILES SHALL BE NEW MATERIAL UNLESS OTHERWISE APPROVED BY CONSULTANT.
- WELDING SHALL CONFORM TO CSA W59 AND CSA W47.1 WELD TENSILE STRENGTH = 490MPa. ALL WELDS SHALL BE MINIMUM
- THE SCREW PILE CONTRACTOR SHALL DESIGN, SUPPLY AND INSTALL THE SCREW PILES TO THE LOADS SPECIFIED IN THIS DRAWING. PENETRATION DEPTH AND PILE TENSION CAPACITY MUST BE SUFFICIENT TO RESIST UPLIFT INCLUDING FROST HEAVE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- PROVIDE 12mm DIAMETER VENT HOLES (MAX 2-HOLES) ON PILE CAP, AS REQUIRED.
- PILE SHALL BE SCREWED CONTINUOUSLY WITHOUT INTERRUPTION TO THE REFUSAL DEPTH. WHERE PILES ARE NOT SCREWED TO THE MINIMUM DEPTH WITH REFUSAL, CONSULTANT SHALL BE INFORMED IMMEDIATELY TO DECIDE IF
- 8. REFUSAL TORQUE VALUES SHALL BE DETERMINED BY SCREW PILE CONTRACTOR.
- 9. THE CONTRACTOR SHALL MAINTAIN PILE RECORDS INCLUDING BUT NOT LIMITED TO DATE, TIME AND TORQUE VALUES
- 10. NO PRE-DRILLING IS PERMITTED WITHOUT PRIOR REVIEW AND APPROVAL BY CONSULTANT.
- 11. THE CONTRACTOR SHALL FIELD CONFIRM ALL DIMENSIONS AND ELEVATIONS AND REPORT ANY DISCREPANCIES TO CONSULTANT PRIOR TO CONSTRUCTION.
- 12. THE CONTRACTOR SHALL REVIEW THE PROJECT GEOTECHNICAL REPORT.
- 13. INSTALLED PILE TOLERANCES:
- MAXIMUM 1° OUT OF PLUMB AND THE TOP PILE WITHIN 50mm (2") OUT OF POSITION ON PLAN.
- 14. SCREW PILE CONTRACTOR SHALL PROVIDE PILE DESIGN CALCULATIONS AND SHOP DRAWINGS TO TO CONSULTANT FOR APPROVAL, SCREW PILE DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA. SHOP DRAWINGS SHALL CLEARLY SPECIFY: EXPECTED INSTALLATION TORQUES, MINIMUM INSTALLATION TORQUE
- 15. PILE LOADS AND SCREW PILE SIZES GIVEN BELOW ARE FOR INFORMATION PURPOSES ONLY AND SHALL BE CONFIRMED WITH VENDOR'S LOADS, AND ARE TO BE DESIGNED BY SCREW PILE CONTRACTOR.

J. WOOD FRAMING GENERAL

- ALL DESIGN, DETAILS, MATERIALS AND CONSTRUCTION PROCEDURES SHALL CONFORM TO CURRENT EDITIONS OF THE FOLLOWING AS A MINIMUM:
 - NATIONAL BUILDING CODE PART 4
 - CAN/CSA-086 ENGINEERING DESIGN IN WOOD - CAN/CSA-LO 4000 - PARALLAMS AND MICROLLAMS
 - CSA B111 WIRE NAILS, SPIKES, AND STAPLES
 - CAN/CSA-B34 MISCELLANEOUS BOLTS AND SCREWS
 - "WOOD DESIGN MANUAL" CANADIAN WOOD COUNCIL "WOOD BUILDING TECHNOLOGY" - CANADIAN WOOD COUNCIL
- USE ONLY PRODUCTS SUITABLE FOR THE INTENDED FINAL USE AND CONDITIONS PREVALENT DURING CONSTRUCTION. PROTECT ALL MATERIALS FROM THE WEATHER DURING STORAGE AND INSTALLATION.
- ANY CHANGES TO THE FRAMING SHOWN ON THESE DRAWINGS SHALL HAVE PRIOR WRITTEN APPROVAL OF MORRISON HERSHFIELD FRAMING CHANGES WHICH HAVE NOT BEEN SO APPROVED WILL BE REJECTED.
- 4. TIMBER NOT GRADE MARKED WILL BE REJECTED.
- DO NOT COVER WOOD FRAMING WITH FINISHES UNTIL MORRISON HERSHFIELD FRAMING REVIEW IS COMPLETE. PROVIDE 24 HOURS ADVANCE NOTIFICATION WHEN FRAMING REVIEWS ARE REQUIRED.
- NOTCHING AND DRILLING OF STRUCTURAL ELEMENTS SHALL FOLLOW THE GUIDELINES SET FORTH IN THE BUILDING CODE PART 9, UNLESS OTHERWISE APPROVED IN WRITING BY MORRISON HERSHFIELD.
- ALL WOOD FRAME CONSTRUCTION SHALL SATISFY THE FOLLOWING CONSTRUCTION TOLERANCES AS A MINIMUM, REFER TO ARCHITECTURAL AND WARRANTY REQUIREMENTS FOR ADDITIONAL TOLERANCE SPECIFICATIONS.
 - NOT MORE THAN 6mm IN 3000mm OUT OF LEVEL.

K. MATERIAL

- ALL EXTERIOR WOOD FRAMING MEMBERS AND SHEATHING TO BE CERTIFIED PWF PRESSURE TREATED WOOD (SPF #2 GRADE OR BETTER), U.N.O.
- ALL FRAMING LUMBER SHALL BE KILN DRIED TO A MOISTURE CONTENT OF LESS THAN 19% AT THE TIME OF MANUFACTURING.
- ALL DIMENSION LUMBER TO BE SURFACED FOUR SIDES ('S4S').
- TIMBER CONNECTION HARDWARE TO BE SIMPSON STRONG-TIE, OR EQUIVALENT APPROVED BY MH. COMPLETE WITH NAILS SUPPLIED BY MANUFACTURER. DO NOT USE P NAILS.
- NAILS SHALL BE COMMON ROUND STEEL WIRE NAILS. NAILS ARE CALLED UP LENGTH AND SHALL CONFORM TO THE FOLLOWING TABLE:

LENGTH	DIAMETER	PENNY-WEIGHT			
2" (50 mm)	0.113" (2.9 mm)	6d			
2 1/2" (65 mm)	0.131" (3.3 mm)	8d			
3" (75 mm)	0.148" (3.8 mm)	10d			
3 1/4" (80 mm)	0.148" (3.8 mm)	12d			
3 1/2" (90 mm)	0.162" (4.1 mm)	16d			
4" (100 mm)	0.192" (4.9 mm)	20d			
4 1/2" (115 mm)	0.207" (5.3 mm)	30d			
5" (125 mm)	0.255" (5.8 mm)	40d			
NOTE: SPIRAL OR PNEUMATIC NAILS MAY BE USED IF THEY CONFORM TO THE TABLE ABOVE					

- ALL FASTENERS AND CONNECTION HARDWARE THROUGH PRESERVATIVE TREATED MATERIALS OR OUTSIDE OF THE
- MOISTURE BARRIER TO BE HOT DIPPED GALVANIZED OR STAINLESS STEEL, STEEL AS SPECIFIED.
- NAILING OF BUILT-UP STUD POSTS SHALL CONFORM TO THE FOLLOWING SCHEDULE. EACH STUD OF BUILD-UP POST SHALL BE NAILED.
- 8. PWF TREATED LUMBER SHALL NOT BE CUT LENGTHWISE OR NOTCHED.
- WHERE IT IS NECESSARY TO FIELD CUT PWF LUMBER, ALL CUTS, HOLES AND INJURIES TO THE SURFACE OF TREATED MATERIALS MUST BE PROTECTED BY TWO APPLICATIONS OF PRESERVATIVE CONFORMING TO CSA 080.3 (COPPER NAPHTHENATE PRESERVATIVE SOLUTION CONTAINING A MINIMUM OF 2% OF COPPER METAL).
- 10. BUILT-UP BEAMS SHALL BE NAILED TOGETHER WITH 2 ROWS OF 76 mm NAILS, EACH ROW WITH NAILS AT 300 C/C, INDIVIDUAL MEMBERS MAY NOT BE SPACED BETWEEN SUPPORTS.
- 11. JOISTS AND BEAMS ARE TO HAVE TOP SURFACES FLUSH AT CONNECTIONS U.N.O. USE JOIST HANGERS OR FRAMING ANCHORS TO CONNECT JOISTS.
- 12. PLYWOOD TO BE DOUGLAS FIR, SHEATHING GRADE.
- 13. STUDS AND BUILT-UP POSTS TO BE SPF No.1/No.2 GRADE OR BETTER.
- 14. WALL PLATES TO BE SPF No. 3 GRADE OR BETTER.
- 15. RE-TREAT SURFACES EXPOSED BY CUTTING, TRIMMING OR BORING WITH LIBERAL BRUSH APPLICATION OF PRESERVATIVE BEFORE INSTALLATION.

- . RECORD DRAWINGS
- CONTRACTOR SHALL MAINTAIN TWO SETS OF RECORD DRAWINGS, SHOWING AND CERTIFYING AS-BUILT CONDITIONS OF ALL ASPECTS OF THE STRUCTURE.
- MAKE DRAWINGS AVAILABLE ON SITE FOR REVIEW DURING CONSTRUCTION, AND SUBMIT 1 COPY TO CONSULTANT UPON COMPLETION.

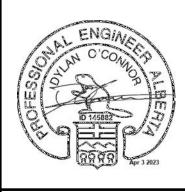


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CLIENT:



PROJECT:

SANDSTONE MACEWAN ICE RINK REPLACEMENT

STRUCTURAL GENERAL NOTES CONT'D

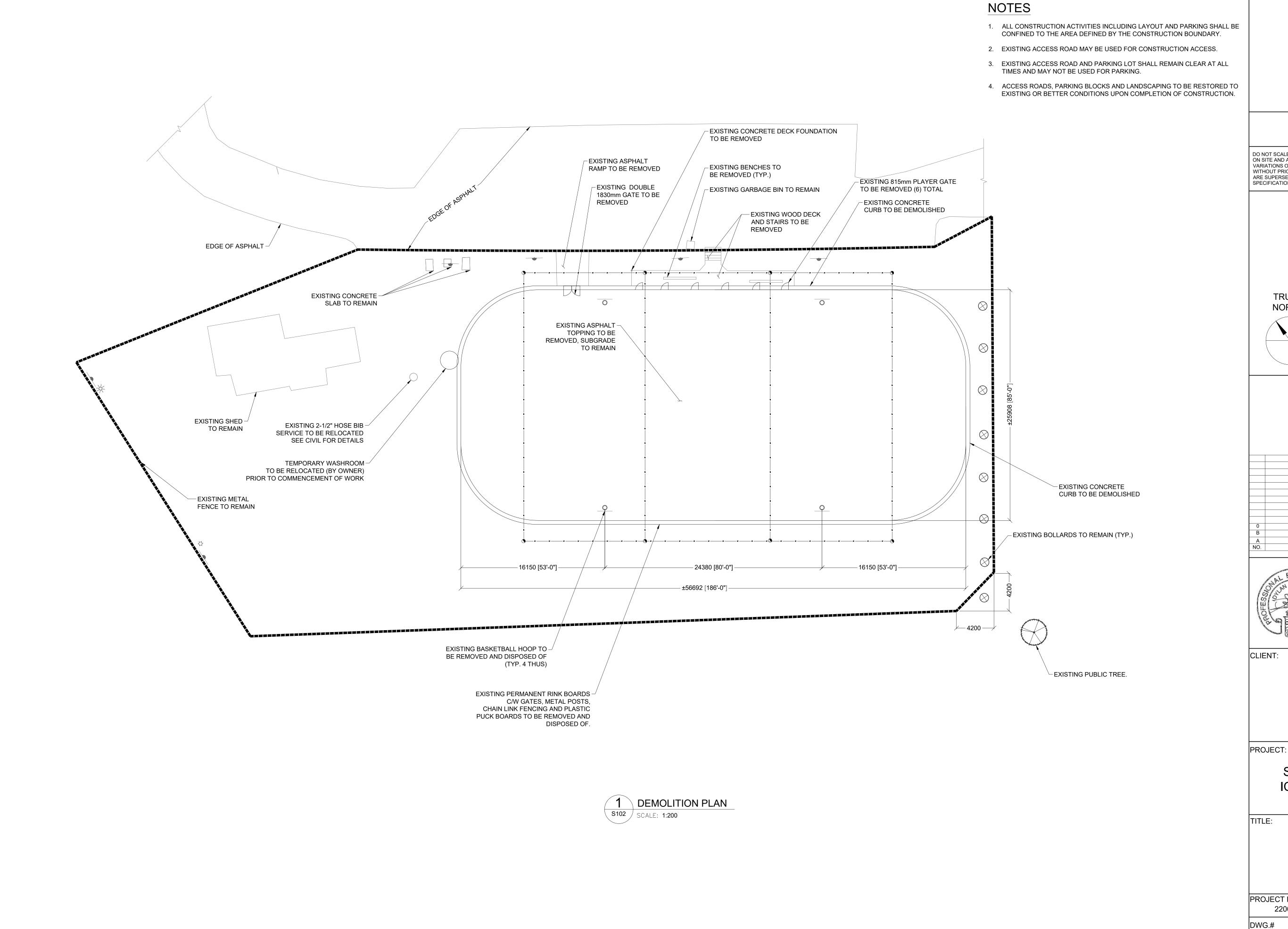
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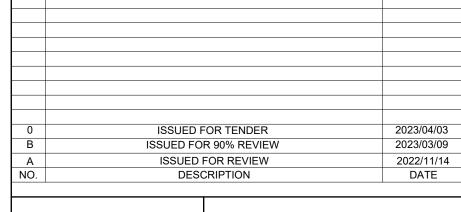
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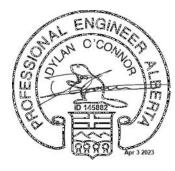


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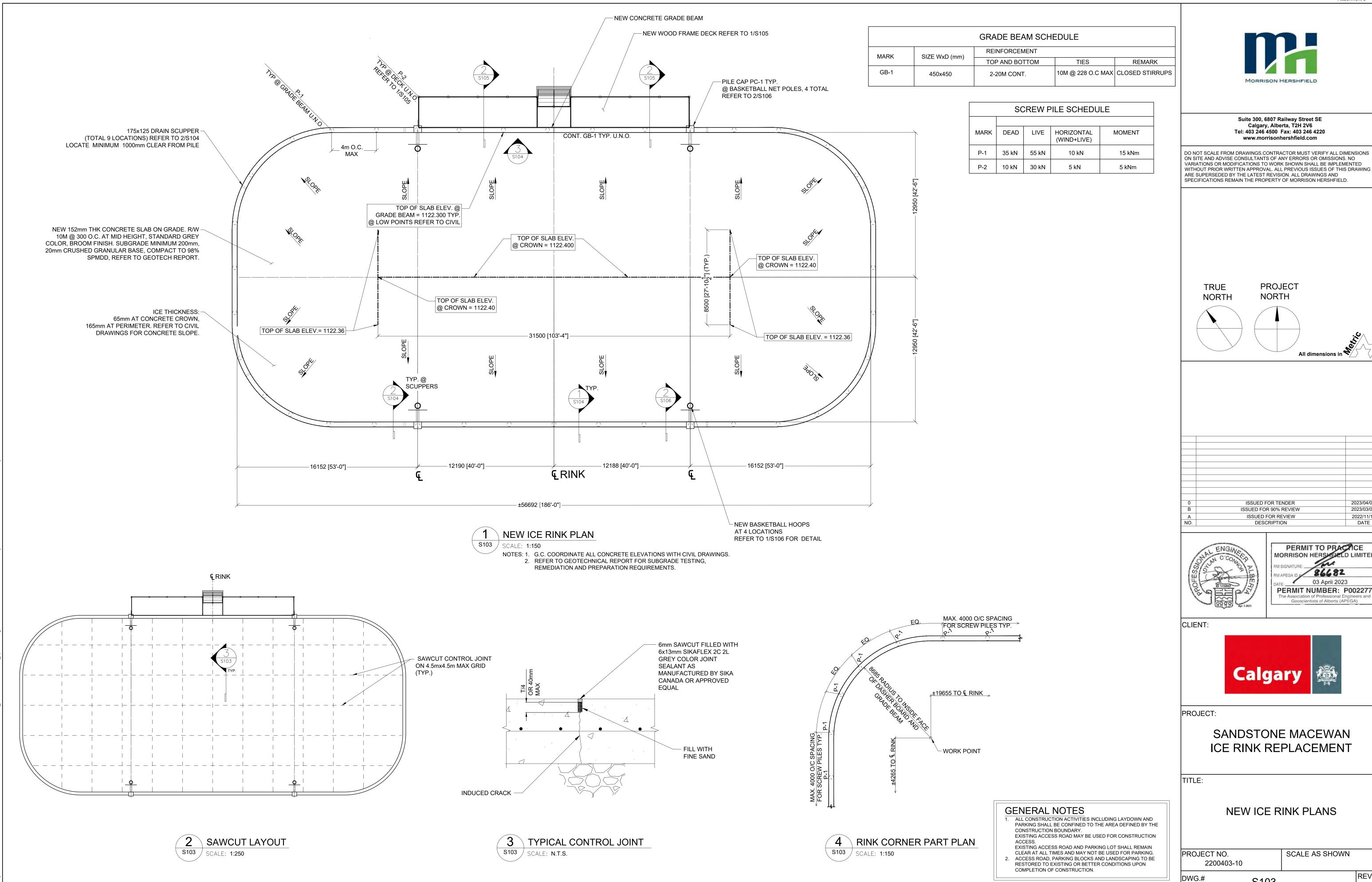
SANDSTONE MACEWAN ICE RINK REPLACEMENT

DEMOLITION PLAN

PROJECT NO. SCALE 1:200 2200403-10

S102

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ON SITE AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND

2023/04/03 2023/03/09 2022/11/14 DATE

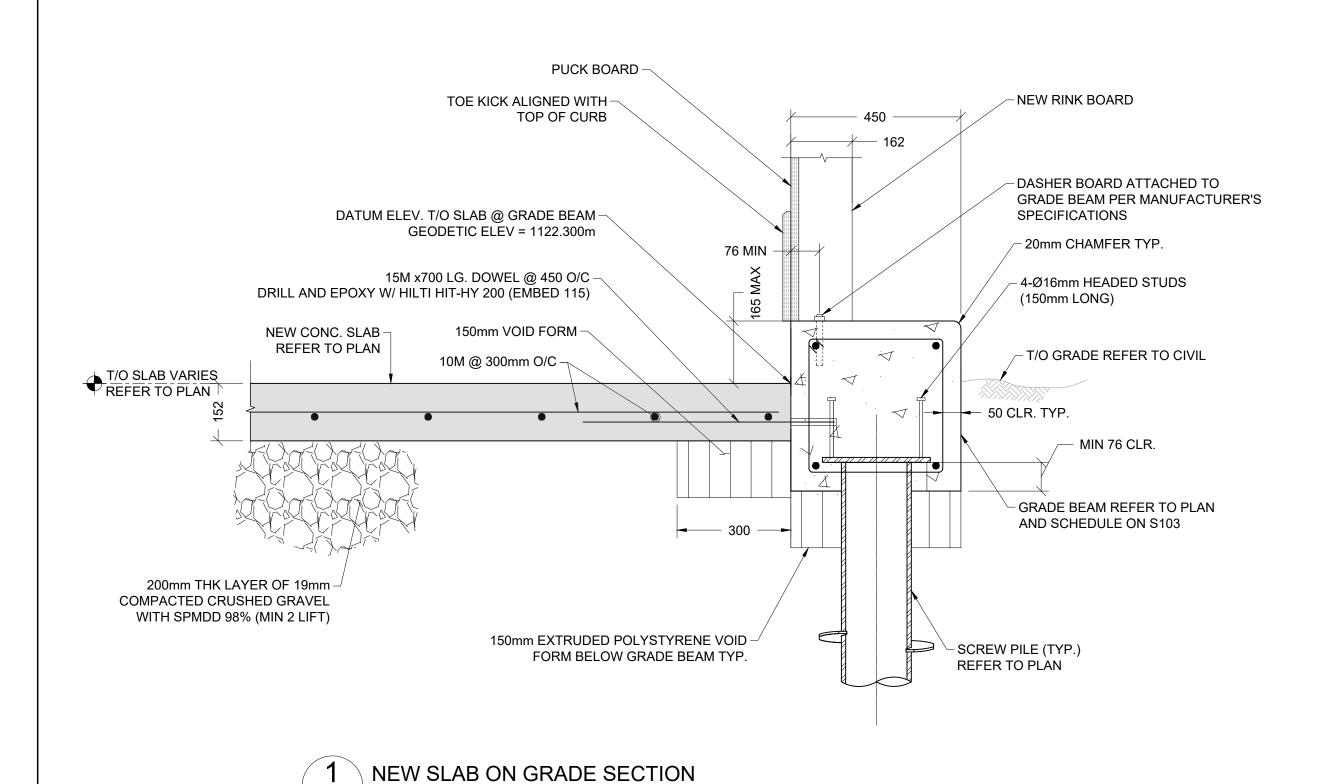
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SANDSTONE MACEWAN ICE RINK REPLACEMENT

NEW ICE RINK PLANS

SCALE AS SHOWN REV DWG.# S103



NEW RINK BOARD TOE KICK ALIGNED WITH-TOP OF CURB - DASHER BOARD ATTACHED TO GRADE BEAM PER MANUFACTURER'S SPECIFICATIONS DATUM ELEV. T/O SLAB @ GRADE BEAM -TOP OF GRADE BEAM BEYOND GEODETIC ELEV = 1122.300m - 125 WIDEx165-175 DEPTH SCUPPER DRAIN IN GRADE BEAM.REFER TO DRAWING 1/S103 FOR 15M x700 LG. DOWEL @ 450 O/C -LOCATIONS (9 TOTAL) DRILL AND EPOXY W/ HILTI HIT-HY 200 (EMBED 115) 4-Ø16mm HEADED STUDS (150mm LONG) 76 MIN 20mm CHAMFER TYP. 150mm VOID FORM-NEW CONC. SLAB-10M @ 300mm O/C -REFER TO PLAN T/O GRADE REFER T/O SLAB VARIES
REFER TO PLAN TO CIVIL → 50 CLR. TYP. - MIN 76 CLR. GRADE BEAM REFER TO PLAN AND **——** 300 SCHEDULE ON S103 200mm THK LAYER OF 19mm -COMPACTED CRUSHED GRAVEL WITH SPMDD 98% (MIN 2 LIFT) 150mm EXTRUDED POLYSTYRENE VOID -FORM BELOW GRADE BEAM TYP. SCREW PILE (TYP.) REFER TO PLAN

NEW SLAB ON GRADE SECTION WITH SCUPPER DRAIN DETAIL
S104 SCALE: 1:10

- 125 WIDEx165-175 DEPTH SCUPPER DRAIN 10M CARRY BAR (TYP.) IN GRADE BEAM.REFER TO DRAWING 1/S103 FOR LOCATIONS (9 TOTAL) - 2-20M EXT. 2125mm LONG 165 TO 175 REFER TO SECTION 2/S103 - 2- ADD'L 10M CLOSED STIRRUP BELOW SCUPPER OPENING GRADE BEAM REINFORCEMENT - 150mm EXTRUDED POLYSTYRENE - INSTALL 1-ADD'L STIRRUP E.S. OF REFER TO SCHEDULE ON S103 **VOID FORM** SCUPPER OPENING (TYP.)

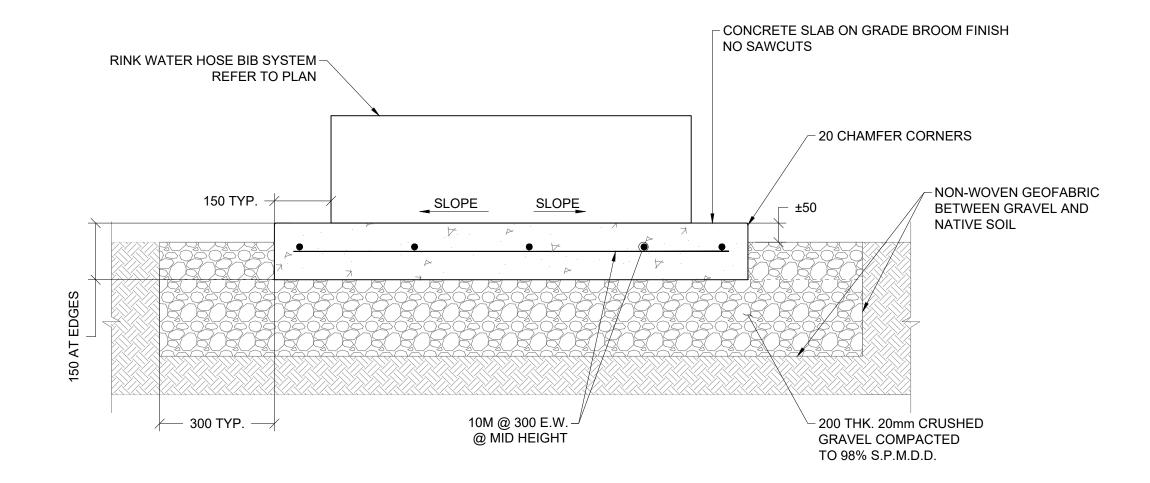
NEW GRADE BEAM ELEVATION WITH SCUPPER DRAIN DETAIL

S104 SCALE: 1:10

NOTE: RINK BOARD, PUCK BOARD AND CHAIN LINK FENCE NOT SHOWN FOR CLARITY

S104

SCALE: **1:10**



4 CONCRETE PAD DETAIL
S104 SCALE: 1:10

NOTE: G.C TO COORDINATE WITH MECHANICAL INSTALLER FOR SLEEVES FOR WATER SERVICE AND CONDUIT AS REQUIRED

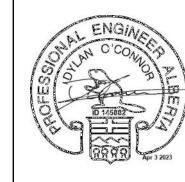
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RM APEGA ID # 866.82

DATE: 03 April 2023

PERMIT NUMBER: P002277

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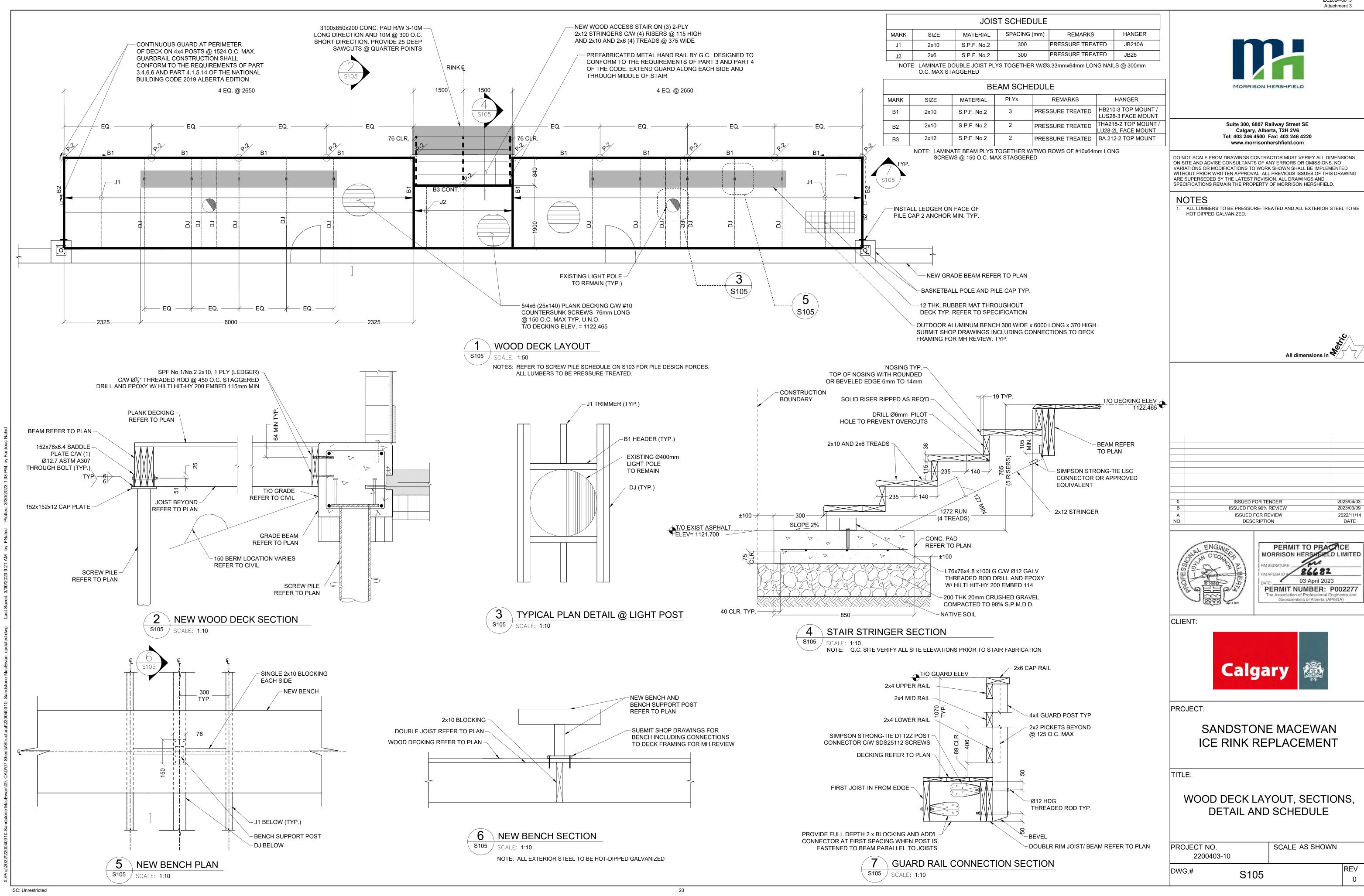
SANDSTONE MACEWAN ICE RINK REPLACEMENT

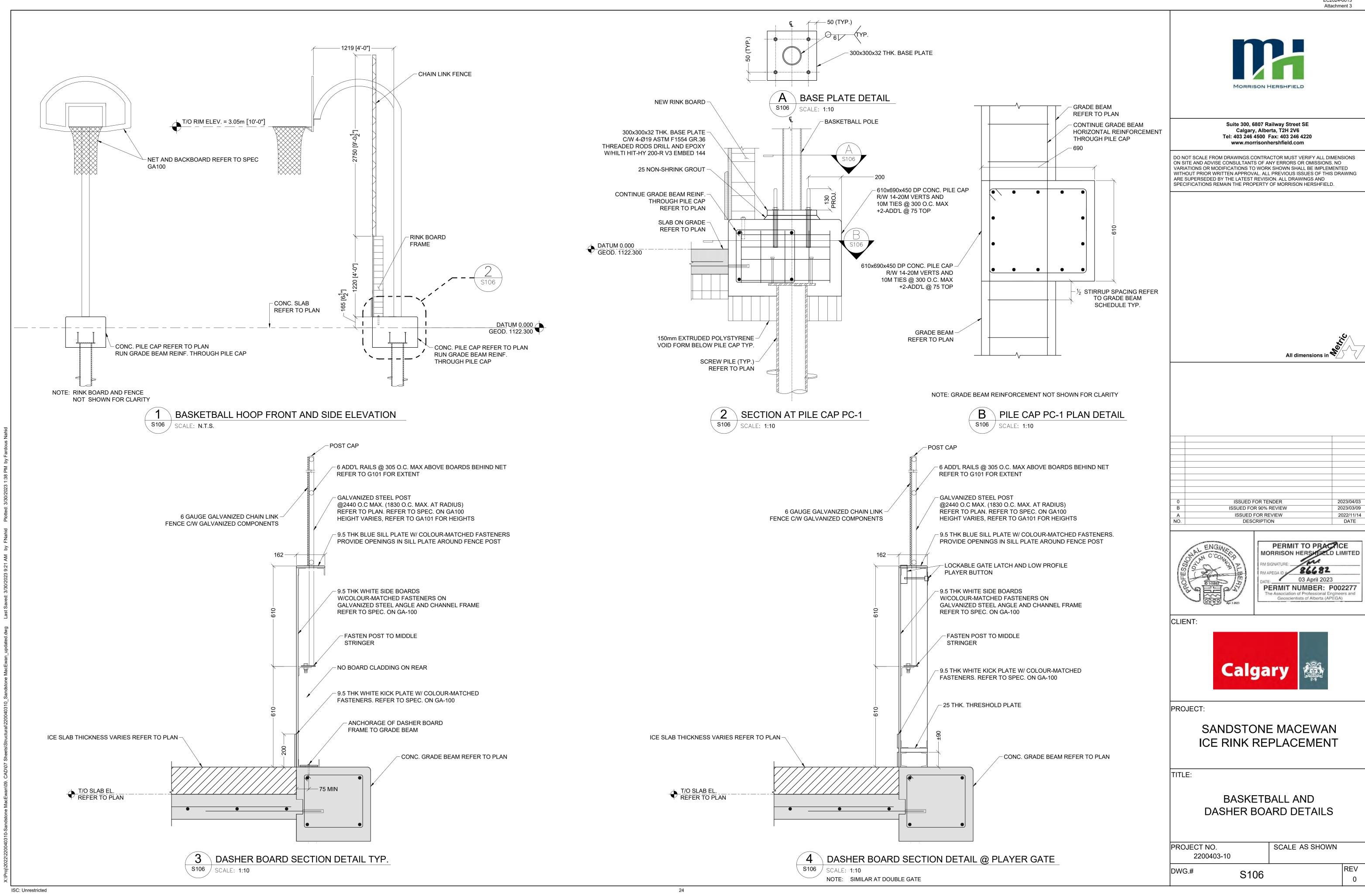
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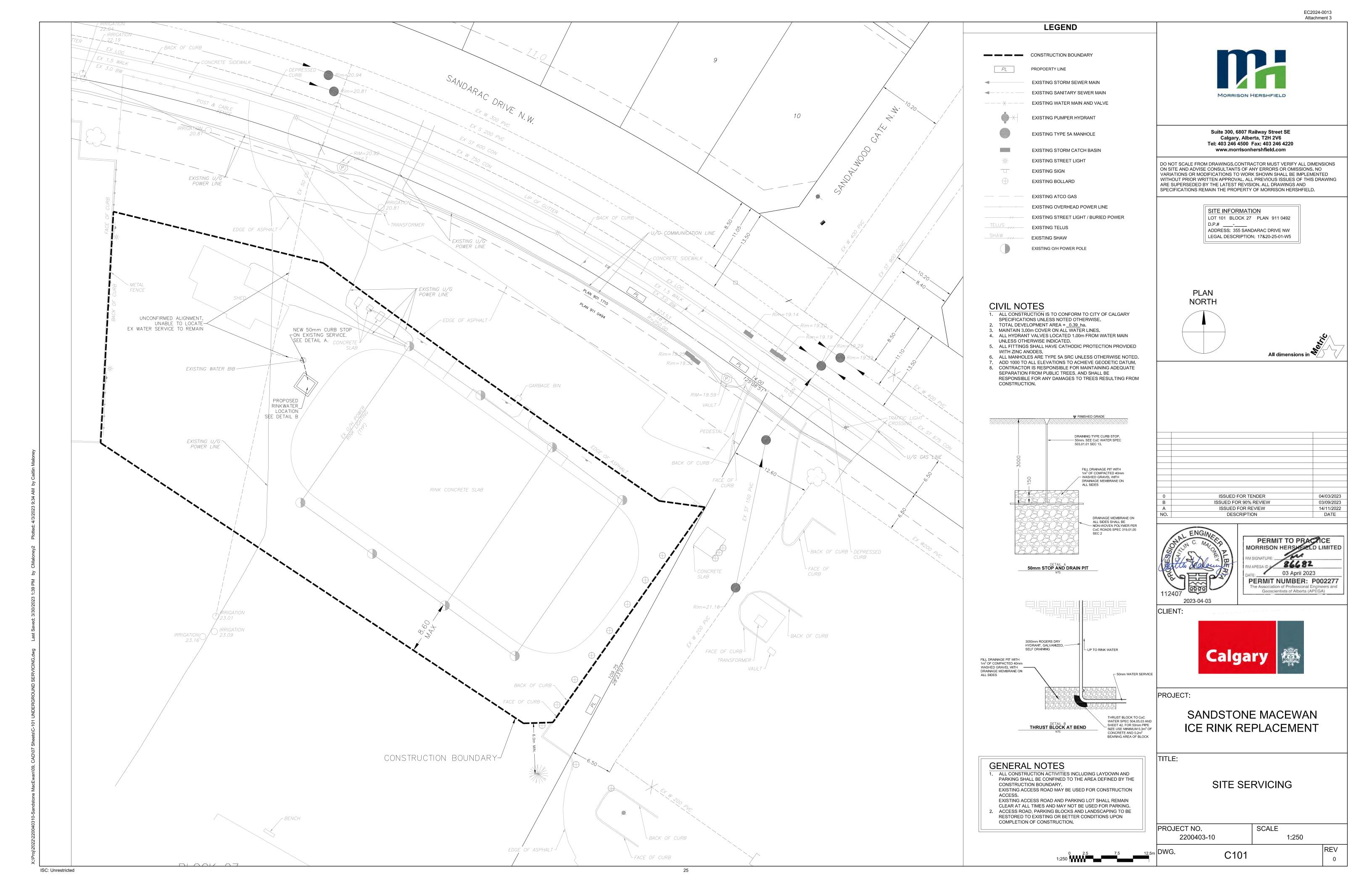
SECTIONS AND ELEVATIONS

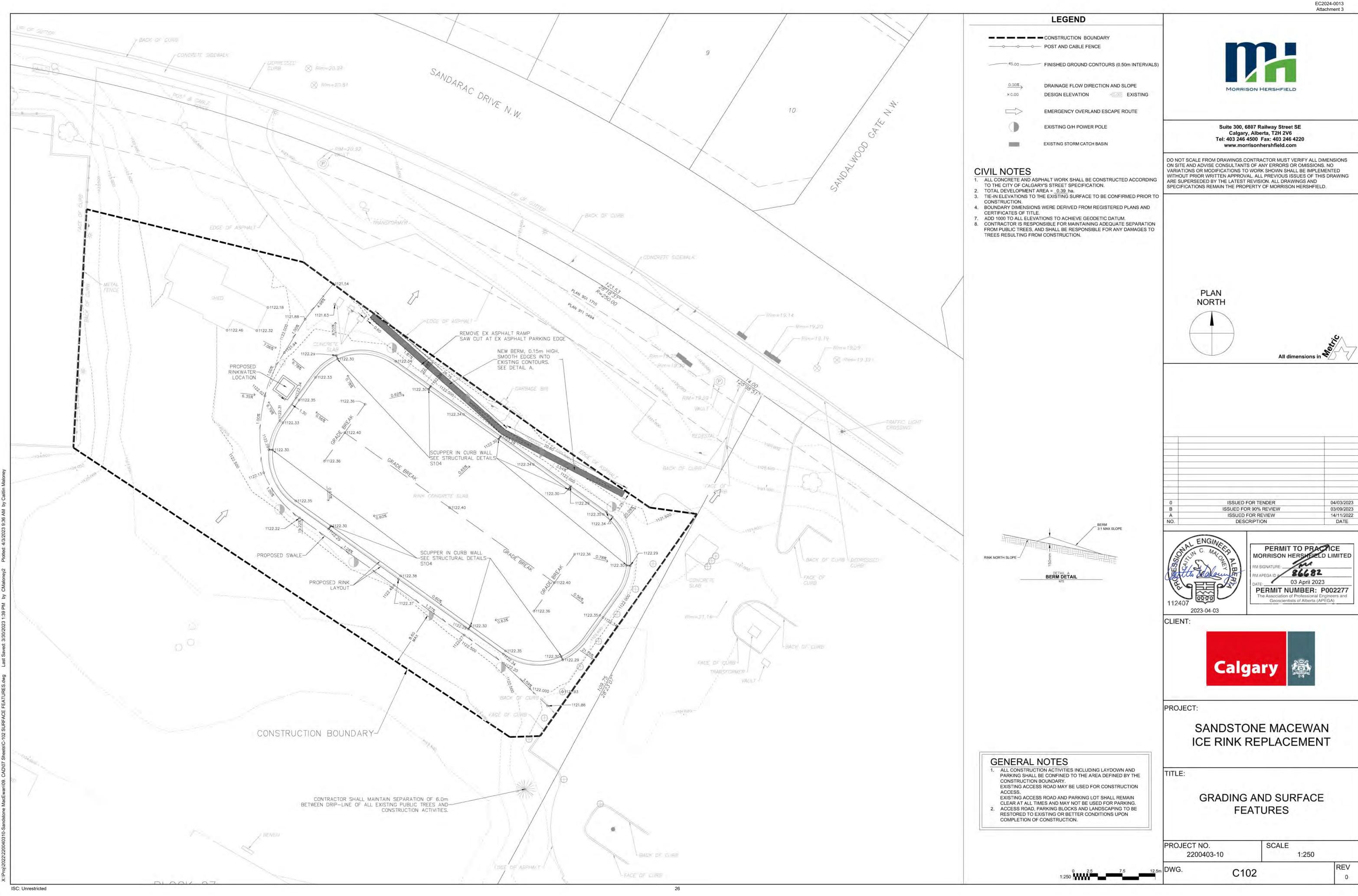
PROJECT NO. SCALE 1:10 2200403-10

DWG.# S104 REV









DIVISION 26

PART 1 - GENERAL

- 1. SUPPLY, INSTALL AND REMOVE ALL MATERIAL DESCRIBED THEREIN AND ON THE DRAWINGS SO AS TO FORM A COMPLETE AND OPERATIONAL JOB. TOP QUALITY WORKMANSHIP IS EXPECTED. COORDINATE WITH ALL OTHER TRADES AS REQUIRED
- PRIOR TO TENDERING VISIT THE SITE TO REVIEW CONDITIONS AND REPORT ANY DISCREPANCIES TO THE
- 3. ALL WORK SHALL BE PERFORMED BY A CERTIFIED ELECTRICIAN AND PER THE LATEST VERSION OF THE CEC IN
- FORCE FOR THIS JURISDICTION AND THE AUTHORITY HAVING JURISDICTION (AHJ).
- ALL EQUIPMENT SHALL BE NEW AND CSA APPROVED (OR AN AHJ APPROVED ALTERNATE).
- 5. OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS, ETC., AS REQUIRED.
- 6. REPAIR AND MAKE GOOD ALL ITEMS AFFECTED BY ANY ELECTRICAL REMOVALS OR INSTALLATIONS.
- 7. SCHEDULE ALL WORK DISRUPTIONS AND OUTAGES WITH THE MH PROJECT MANAGER PRIOR TO COMMENCING.
- 8. ALTERNATE PRODUCTS MUST MEET OR EXCEED STANDARD OF ACCEPTANCE. 9. PROVIDE A 1 YEAR GUARANTEE AT THE COMPLETION OF THE PROJECT.
- 10. PROVIDE SHOP DRAWINGS FOR ALL EQUIPMENT FOR REVIEW BY THE ENGINEER BEFORE ORDERING.
- 11. DURING CONSTRUCTION AND AT THE COMPLETION OF THIS PROJECT, THE SITE SHALL BE LEFT NEAT, TIDY AND FREE OF DEBRIS. 12. AT THE COMPLETION OF THIS PROJECT, TEST AND OPERATE ALL EQUIPMENT TO ENSURE IT OPERATES AS
- EXPECTED AND CORRECT AND REPAIR ANY ITEMS AS REQUIRED AT THAT TIME. TESTS ARE TO BE DOCUMENTED FOR REVIEW BY THE ENGINEER IF REQUESTED. INCLUDE THE FOLLOWING:
- 12.1. DATE
- 12.2. TIME
- 12.3. PERSONNEL PRESENT 12.4. LOCATION (SITE, BUILDING, ROOM #, ETC.)
- 12.5. SYSTEM
- 12.6. DESCRIPTION
- 12.7. RESULT 12.8. ADDITIONAL COMMENTS
- 13. PROVIDE RECORD DRAWINGS AT THE COMPLETION OF THE PROJECT.
- 14. PROVIDE OPERATION AND MAINTENANCE MANUALS AT THE COMPLETION OF THE PROJECT. INCLUDE SHOP DRAWINGS, GUARANTEES, AND MANUFACTURER'S VERIFICATIONS.
- 15. DO NOT SCALE THE DRAWINGS. ALL DIMENSIONS ARE TO BE CONFIRMED WITH OTHER TRADES.
- 16. ALL CUTTING, PATCHING, AND PAINTING ARE TO BE INCLUDED BY THIS CONTRACTOR. 17. CONDUIT RUNS ARE DIAGRAMMATIC ONLY. CONFIRM INSTALLATION WITH OTHER TRADES AND MH PROJECT
- MANAGER BEFORE PROCEEDING. 18. RUN ALL INTERIOR CONDUITS AND CABLES PARALLEL OR PERPENDICULAR TO BUILDING LINES.
- 19. ALL CONDUITS AND CABLES SHALL BE RUN CONCEALED IN FINISHED AREAS. WHERE THIS IS IMPOSSIBLE. PROVIDE AESTHETIC TYPE SURFACE RACEWAY.
- 20. ALL SPARE CONDUIT RUNS SHALL CONTAIN A PULL CORD TO ACCOMMODATE FUTURE INSTALLATIONS. 21. ALL CABLES AND CONDUITS SHALL BE SUPPORTED INDEPENDENTLY OF EXISTING PIPES, CONDUITS AND EQUIPMENT. CONDUITS AND CABLE SHALL NOT LAY DIRECTLY UPON THE CEILING FOR SUPPORT. CABLES AND CONDUITS SHALL RUN A MINIMUM OF 6" FROM HOT WATER LINES.
- 22. SUPPORT OF ELECTRICAL SYSTEMS RACEWAY SHALL BE INDEPENDENT OF ANY TYPE OF SUSPENDED CEILING SUPPORT RODS, WIRES, ETC. AND MECHANICAL PIPING OR DUCT SYSTEMS. ALL SUSPENDED TYPES OF JUNCTION, PULL AND OUTLET BOXES TO BE WITH "MINIMUM" SIZE 3/8" THREADED ROD. NUTS AND FLAT WASHERS. THREADED RODS TO BE SECURED TO BOXES WITH ONE FLAT WASHER AND NUT INSTALLED ON BOTH SIDES OF BOX. "ONE" ROD REQUIRED FOR ALL BOXES SIZED UP TO AND INCLUDING 4 11/16" SQUARE. "TWO" RODS REQUIRED FOR BOXES LARGER THAN 4 11/16" SQUARE, UP TO AND INCLUDING 8" X 8" SQUARE. CONCEALED JUNCTION, PULL, OUTLET, ETC. TYPE BOXES LOCATED IN CEILING SPACES ARE NOT TO BE GREATER THAN 30"
- ABOVE FINISH CEILING ELEVATION 23. SECURING OF SURFACE AND CONCEALED CONDUITS TO STRUCTURE FOR SIZES UP TO AND INCLUDING 11/4" DIAMETER MAY BE DONE UTILIZING "ONE_HOLE" STEEL STRAPS. "TWO_HOLE" STEEL STRAPS SHALL BE USED FOR
- ALL SIZES 11/2" AND LARGER. 24. STEEL SET SCREW COUPLINGS AND CONNECTORS SHALL BE USED ON EMT CONDUITS. CONDUIT FITTINGS SHALL BE THREADED TYPE. THREADED PLASTIC OR METAL BUSHINGS TO BE INSTALLED ON ALL EMT CONNECTORS
- SIZED 11/4" AND LARGER. NYLON INSULATED THROATS ARE NOT REQUIRED ON EMT CONNECTORS. 25. ALL CONDUITS AND JUNCTION/PULL BOXES SHALL BE IDENTIFIED USING THE FOLLOWING COLOUR CODING:
- 25.1. POWER 0 TO 250 V YELLOW
- 25.2. GROUND OR BOND GREEN
- IDENTIFY CONDUIT AT 50' INTERVALS OR WHERE THEY ENTER WALLS, CEILING OR FLOORS.
- 26. ALL CABLES SHALL BE TAGGED AT BOTH ENDS USING PANDUIT PLD TYPE LABELS.
- 27. TOGGLE BOLTS ARE NOT TO BE USED TO SECURE EQUIPMENT TO PLASTERBOARD TYPE CEILINGS OR WALLS. 28. ALL "SURFACE" TYPE BOXES LARGER IN SIZE THAN 4-11/16" SQUARE ARE TO BE TYPE "E" C/W HINGED TYPE
- 29. ALL "FLUSH" INSTALLED BOXES ARE TO BE TYPE "D" AND HAVE THEIR FINISH COVER PLATES SIZED A MINIMUM OF 1" LARGER THAN ACTUAL BOX DIMENSIONS.
- 30. CAST TYPE "FS" OR "FD" BOXES ARE TO BE UTILIZED FOR ALL SURFACE WIRING OF DEVICES INSTALLED LOWER THAN 8' AFF, (REGARDLESS OF SYSTEMS TYPE INVOLVED) C/W MATCHING STEEL TYPE "FS" METAL DEVICE PLATES UNLESS SPECIFICALLY INDICATED OTHERWISE.

PART 2 - POWER DISTRIBUTION

MOTORS AND VIBRATING EQUIPMENT.

- 1. COORDINATE INSTALLATION WITH LOCAL POWER UTILITY AND INCLUDE FOR ALL COSTS. PROVIDE ALL HARDWARE
- AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. 2. WIRING ON CIRCUITS EXCEEDING 50 VOLTS TO GROUND, SHALL BE OF SOFT DRAWN, STRANDED COPPER OF 98% CONDUCTIVITY AND OF FULL AWG SIZE AS FOLLOWS:
- 2.1. INSULATION TYPE SHALL BE RW90 X LINK, RATED AT 600 VOLTS. 2.2. INSULATION COVERINGS FOR GROUND AND/OR BOND CONDUCTORS TO BE THERMOPLASTIC TYPE "TW75"
- RATED AT 600 VOLTS. 2.3. MINIMUM WIRE SIZE UNLESS NOTED OTHERWISE SHALL BE #12 AWG.
- 2.4. ALL INTERIOR POWER WIRES SHALL BE STRANDED RW90 COPPER IN EMT CONDUIT UNLESS OTHERWISE NOTED. USE STEEL SET SCREW CONNECTORS FOR EMT. 2.5. ALL EXTERIOR POWER WIRES SHALL BE STRANDED RW90 COPPER IN RIGID PVC CONDUIT (THICKWALL - CSA
- C22.2 #211.2) UNLESS OTHERWISE NOTED. AC90 (BX) MAY BE USED FOR CONCEALED BRANCH CIRCUIT WIRING. EMT SHALL BE USED FOR HOME RUNS. 2.7. LIQUID TIGHT FLEXIBLE METAL CONDUIT OR TECK 90 CABLE SHALL BE USED FOR CONNECTIONS TO ALL
- GROUNDING/BONDING 3.1. GROUND CONDUCTORS RUN IN UTILITY ROOMS MAY BE BARE STRANDED COPPER. OTHERWISE, UTILIZE
- GREEN INSULATED COPPER IN CONDUIT.
- 3.2. WALL MOUNTED GROUND BUS TO BE MINIMUM 450MM (18") X 50MM (2") X 6MM (1/4") COPPER MOUNTED ON INSULATED SUPPORTS. EXACT LOCATION TO BE DETERMINED ON SITE.
- GROUND RODS ARE TO BE COPPER CLAD STEEL., 3M LONG. MAIN GROUND RESISTANCE IS TO BE MEASURED AND A REPORT SUBMITTED TO THE ENGINEER. PROVIDE
- ADDITIONAL GROUND RODS UNTIL 50 OHMS IS ACHIEVED. MAIN GROUNDING AND GROUND BUS CONNECTIONS ARE TO BE THERMIT WELDED OR COMPRESSION TYPE. 3.6. SUPPLY AND INSTALL A GREEN INSULATED BOND #12 AWG MIN. IN ALL NEW POWER CONDUIT RUNS.
- 4. TEST THAT ALL POWER WIRES ARE FREE OF SHORTS, GROUNDS, ETC. AND THAT INSULATION VALUES ARE PER
- 5. WIRE SIZES TO BE INCREASED TO MEET CEC REQUIREMENTS FOR VOLTAGE DROP OR AS OTHERWISE NOTED, WHICHEVER IS LARGER. 5.1. THE FOLLOWING TABLE IS TO BE USED TO COMPENSATE FOR VOLTAGE DROP FOR ALL 120 VOLT, 15 AMP BRANCH CIRCUIT WIRING, AND IS TO INCLUDE BOTH "VERTICAL" AND "HORIZONTAL" LENGTHS OF
 - CONDUCTOR RUNS. CIRCUIT LENGTH PHASE WIRE BOND WIRE LENGTH OF RUN SIZE SIZE 1 TO 23M 24 TO 37M #10
- 38 TO 56M THE FOLLOWING TABLE IS TO BE USED TO COMPENSATE FOR VOLTAGE DROP FOR ALL 120 VOLT, 20 AMP BRANCH CIRCUIT WIRING, AND IS TO INCLUDE BOTH "VERTICAL" AND "HORIZONTAL" LENGTHS OF CONDUCTOR RUNS.
- CIRCUIT LENGTH PHASE WIRE BOND WIRE LENGTH OF RUN SIZE SIZE 1 TO 17M 18 TO 27M 28 TO 42M
- 6. ALL STRANDED CONDUCTORS PRIOR TO TERMINATING UNDER DEVICE BOLTS SUCH AS CIRCUIT BREAKERS, LIGHT SWITCHES, RECEPTACLES, ETC. ARE TO BE TWISTED TOGETHER SO AS TO FORM A SINGLE CONDUCTOR TO
- ENSURE A RELIABLE MECHANICAL CONNECTION. 7. TYE WRAPPING OF THE NEUTRAL WITH ITS RESPECTIVE PHASE CONDUCTORS IS TO BE MADE AT THE CLOSEST
- POINT OF ENTRY TO PANELBOARDS, PULLBOXES AND JUNCTION BOXES. 8. ALL FEEDERS OR BRANCH CIRCUITS WHICH DO NOT HAVE NEUTRAL CONDUCTORS ARE TO HAVE THEIR RESPECTIVE PHASE CONDUCTORS TYE WRAPPED TOGETHER IN ACCORDANCE TO THE METHODS DESCRIBED
- 9. ALL PHASE CONDUCTOR SIZES UP TO AND INCLUDING #2 AWG AND NEUTRALS, BONDS AND GROUND
- CONDUCTORS UP TO AND INCLUDING #3/0 AWG SHALL HAVE COLOUR CODED INSULATION AS FOLLOWS: PHASE "A"
- PHASE "B" BLACK PHASE "C" BLUE NEUTRAL WHITE OR GREY
- GROUND 10. PROVIDE LAMICOID IDENTIFICATION FOR ALL POWER DISTRIBUTION EQUIPMENT INCLUDING WALL OUTLETS.
- 11 PANELBOARDS 11.1. EACH NEW AND EXISTING PANELBOARD BRANCH CIRCUIT SHALL BE CLEARLY IDENTIFIED ON A TYPEWRITTEN
- DIRECTORY, WITH DIRECTORY BEING PROTECTED BY A CLEAR PLASTIC COVER.
- 11.2. BRANCH CIRCUIT PANELBOARDS ARE TO BE FITTED WITH LOCK TYPE DOORS.
- 11.3. PANELBOARDS ARE TO BE C/W FACTORY INSTALLED BONDING TERMINAL STRIPS.
- 11.4. PANELBOARD ENCLOSURES ARE NOT TO BE LESS THAN 20" IN TOTAL WIDTH.
- 11.5. WHERE MORE THAN ONE BONDING TERMINAL STRIP IS PRESENT IN ANY ONE PANEL, BOTH SHALL BE HARD-WIRED TOGETHER USING IDENTICAL SIZE BONDING CONDUCTOR AS ONE ACCOMPANYING THE PANEL FEEDER CONDUCTORS.
- 11.6. BREAKERS ARE TO HAVE SUFFICIENT INTERRUPTING CAPACITY TO WITHSTAND THE AVAILABLE FAULT 11.7. COMPLETE WITH MAIN BREAKERS WHERE INDICATED ON DRAWINGS.
- 11.8. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE ONLY. MULTI-POLE BREAKERS ARE TO HAVE SINGLE HANDLE. TIE-BARS ARE NOT PERMITTED
- 11.9. UNDER NO CIRCUMSTANCES ARE THE USE OF "MINI" TYPE CIRCUIT BREAKERS ACCEPTABLE. 11.10. EATON PRL1A/3A SERIES, SCHNEIDER NQ/NF SERIES OR APPROVED EQUAL.
- 11.1. EACH NEW AND EXISTING LOADCENTRE BRANCH CIRCUIT SHALL BE CLEARLY IDENTIFIED ON A TYPEWRITTEN DIRECTORY, WITH DIRECTORY BEING PROTECTED BY A CLEAR PLASTIC COVER.
- 11.6. BREAKERS ARE TO HAVE SUFFICIENT INTERRUPTING CAPACITY TO WITHSTAND THE AVAILABLE FAULT

12. LOADCENTRES

11.7. NEMA 1 ENCLOSURE. 11.8. EATON CCPL108 SERIES OR APPROVED EQUAL.

GENERAL NOTES - DEMOLITION:

- ALL ABANDONED CONDUITS AND WIRING TO BE REMOVED, UP TO SOURCE, WHERE POSSIBLE.
- 2. INFORMATION SHOWN IS FOR REFERENCE PURPOSES ONLY TO ASSIST THE CONTRACTOR. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXTENT OF DEMOLITION WORK.
- 3. ELECTRICAL CONTRACTOR SHALL CONDUCT A THOROUGH SURVEY OF THE EXISTING AREAS AND SHALL CAREFULLY TRACE EXISTING WIRES AND CONDUITS PRIOR TO WORK PROGRESS, TO AVOID FUTURE CONFLICT AND ISSUES CONTRACTOR TO ENSURE THAT ELECTRICAL REMOVALS SHALL NOT AFFECT ADJACENT AREAS NOT
- 4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT. 5. ALL EXISTING ELECTRICAL EQUIPMENT THAT WILL NOT BE RE-USED SHALL BE TURNED OVER TO THE CLIENT FOR
- RIGHT OF FIRST REFUSAL. ITEMS REFUSED BY THE CLIENT SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- 6. ELECTRICAL CONTRACTOR SHALL COORDINATE THIS WORK WITH OTHER TRADES/DISCIPLINES PRIOR TO START OF WORK PROGRESS TO AVOID CONFLICTS
- 7. PATCH AND REPAIR ALL SURFACES. ALL SURFACES AFFECTED BY THE DEMOLITION SHALL BE MADE TO MATCH EXISTING CONDITIONS.

GENERAL NOTES - CONSTRUCTION:

- 1. FOR CONDUIT SIZES, REFER TO THE CONDUIT TRADE SIZES TABLE IN THE CEC PREFACE.
- UON, ALL DEVICES SHOWN ARE TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- 3. CONDUITS SHALL BE RUN THROUGH CORRIDORS CONCEALED ABOVE THE CEILING. 4 RENOVATION:
- 4.1. PRIOR TO CORING THROUGH SLAB, PERFORM AN X-RAY SCAN OR GPR (GROUND PENETRATING RADAR). COORDINATE WITH OWNER FOR EQUIPMENT SHUTDOWN SCHEDULING. PATCH AND REPAIR ALL SURFACES AFFECTED BY RENOVATION.
- 4.4. ALL CONDUIT PENETRATIONS ON THE WALLS, FLOORS & CEILINGS SHALL BE PROPERLY SEALED & FIRESTOPPED
- POWER & LOW VOLTAGE: REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL/HVAC EQUIPMENT.
- EXISTING PANEL SCHEDULES ARE TO BE REPLACED WITH TYPEWRITTEN AND UPDATED SCHEDULES TO REFLECT EXISTING AND NEW LOADS. TRACE EXISTING CIRCUITS AS REQUIRED. INCLUDE FOR ALL COSTS. PROVIDE LAMICOID LABELS TO ALL RECEPTACLES SHOWING THE PANEL SOURCE AND CIRCUIT NUMBERS. ALL CABLING FOR DATA & PHONE SHALL BE ROUTED THROUGH CABLE TRAY VIA ACCESSIBLE HUNG CEILING
- THROUGH CORRIDORS TO THE DATA ROOM. 6. COORDINATION: 6.1. ELECTRICAL CONTRACTOR SHALL COORDINATE THIS WORK WITH OTHER TRADES/DISCIPLINES PRIOR TO
- START OF WORK PROGRESS TO AVOID CONFLICTS. 6.2. ARCHITECTURAL
- 6.2.1. REFER TO ARCHITECTURAL DRAWINGS, ELEVATIONS & DETAILS FOR MOUNTING HEIGHTS & LOCATIONS
- COORDINATE WITH ARCHITECTURAL & MILLWORK/FURNITURE LAYOUT FOR ALL RECEPTACLES & DATA OUTLETS MOUNTED ON MILLWORKS/FURNITURE.
- 6.3. STRUCTURAL:
- REFER TO STRUCTURAL DRAWINGS & DETAILS FOR INFORMATION RELATED TO MOUNTING OF ELECTRICAL RACEWAYS & EQUIPMENT.
- COORDINATE WITH STRUCTURAL FOR ALL REQUIRED OPENINGS THROUGH STRUCTURAL COMPONENTS. COORDINATE WITH STRUCTURAL FOR ALL CONDUIT PENETRATIONS THROUGH AND/OR CONDUIT RUN
- INSIDE STRUCTURAL COMPONENTS FOR EXACT MOUNTING & LOCATION REQUIREMENTS. COORDINATE WITH STRUCTURAL FOR ALL CONNECTIONS OF SUPPORTS AND/OR HANGERS FROM CEILING/WALL COMPONENTS.

- COORDINATE EXACT SERVICE ENTRY REQUIREMENTS WITH UTILITY. ALL UTILITY CONNECTIONS ARE TO BE CONFIRMED BEFORE PROCEEDING WITH ANY UNDERGROUND INSTALLATIONS.
- 2. FOR THE SPACING BETWEEN POWER FEEDERS TO SANITATION & STORM SEWER LINES, HYDRANTS, CATCH BASINS AND MANHOLES, MAINTAIN A MINIMUM SEPARATION OF 3000mm (10 FEET).
- 3. FOR THE SPACING BETWEEN POWER FEEDERS TO WATER LINES MAINTAIN A MINIMUM SEPARATION OF 1800mm (6
- 4. FOR THE SPACING BETWEEN POWER FEEDERS TO GAS LINES, MAINTAIN A MINIMUM SEPARATION OF 1000mm (3.3

6. TYPICAL PULLBOXES SHOWN FOR INFORMATION PURPOSES ONLY. DETERMINE EXACT REQUIREMENTS ON SITE.

5. FOR THE SPACING BETWEEN POWER FEEDERS TO TELEPHONE DUCTS, MAINTAIN A MINIMUM SEPARATION OF

SYMBOL SCHEDULE

BRANCH CIRCUIT PANELBOARDS. SURFACE AND RECESSED MOUNTED

POWER AND MECHANICAL CONTROLS

ELECTRICAL MOTOR PROVIDED BY MECHANICAL,

JUNCTION BOX

WIRED BY ELECTRICAL CONTACTOR

NON-FUSIBLE DISCONNECT SWITCH, SIZE PER LOAD

FUSED DISCONNECT SWITCH, SIZE PER LOAD SERVED. NUMBER DENOTES FUSE SIZE

SYMBOL SCHEDULE

ABBREVIATIONS

SERVED.

- AUTO AUTOMATIC
- AWG AMERICAN WIRE GAUGE
- BND BOND
- CONDUIT (CIRCULAR RACEWAY)

CIRCUIT

- CAB CABINET

CCT

A, AMP AMPERES

- CIRCUIT BREAKER
- COPPER CU
- COMPLETE WITH C/W
- DWG DRAWING
- ELECTRICAL METALLIC TUBING
- **ENCL ENCLOSURE EXISTING TO REMAIN**
- EXISTING TO BE REMOVED
- FULL LOAD AMPERES
- GND GROUND kAIC SHORT CIRCUIT RATING (RMS SYM. AMPS)
- KW KILOWATTS
- MAX MAXIMUM

KVA

MCA MINIMUM CIRCUIT AMPERES

KILOVOLT-AMPERES

- MINIMUM
- POLE РН,ф
- PANEL
- EXISTING TO BE RELOCATED (IN DEMOLITION DRAWINGS RELOCATED EXISTING (IN CONSTRUCTION DRAWINGS)
- SINGLE LINE DIAGRAM
- TYP TYPICAL
- UNDERGROUND
- UNLESS OTHERWISE NOTED UON
- VOLTS
- **VOLT-AMPERES**
- WITH W/O WITHOUT

WEATHER-PROOF

GENERAL NOTES

CONSTRUCTION BOUNDARY

COMPLETION OF CONSTRUCTION.

ALL CONSTRUCTION ACTIVITIES INCLUDING LAYDOWN AND PARKING SHALL BE CONFINED TO THE AREA DEFINED BY THE

EXISTING ACCESS ROAD MAY BE USED FOR CONSTRUCTION EXISTING ACCESS ROAD AND PARKING LOT SHALL REMAIN CLEAR AT ALL TIMES AND MAY NOT BE USED FOR PARKING.

ACCESS ROAD, PARKING BLOCKS AND LANDSCAPING TO BE

RESTORED TO EXISTING OR BETTER CONDITIONS UPON

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DO NOT SCALE FROM DRAWINGS.CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPI EMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON HERSHFIELD.



ISSUED FOR TENDER

ISSUED FOR 90% REVIEW

DESCRIPTION



PERMIT TO PRACTICE MORRISON HERSHELD LIMITED 86682 03 April 2023 PERMIT NUMBER: P002277 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

03/03/2023

DATE

CLIENT:



PROJECT:

SANDSTONE MACEWAN ICE RINK REPLACEMENT

TITLE:

DWG.#

ELECTRICAL GENERAL NOTES AND SPECIFICATIONS

PROJECT NO. SCALE N.T.S. 2200403-10

E100

REV

0

KEYNOTES - PARTIAL SINGLE LINE DIAGRAM (DEMOLITION):

1 WIRE AND CONDUIT TO BE DEMOLISHED.

REMOVE EXISTING CABINET.

[3] REMOVE EXISTING 60A-2P DISCONNECT.

4 REMOVE EXISTING PANEL.

5 DISCONNECT & RECONNECT EXISTING METER.

6 ALL EXISTING LOADS IN THE EXISTING PANEL ARE TO BE DISCONNECTED AND RECONNECTED INTO THE NEW PANEL.

PARTIAL SINGLE LINE DIAGRAM 1 \ ELECTRICAL - DEMOLITION

TO EXISTING UTILITY CONNECTION

METER

KEYNOTES - PARTIAL SINGLE LINE DIAGRAM (CONSTRUCTION):

PROVIDE NEW OUTDOOR RATED CABINET. MODEL NO. HOFFMAN CSD 483610 -48x36x10 c/w INTERIOR BACKING OR APPROVED EQUAL. PROVIDE NECESSARY SUPPORTS FOR THIS CABINET.

B PROVIDE NEW 100A-2P DISCONNECT - BY OWNER.

PROVIDE NEW 2#3 + GND IN 41mmC - BY OWNER.

PROVIDE NEW 2#6 + GND IN 41mmC.

PROVIDE 10 NEW 20A-1P BREAKERS.

P D RINKWATER ENCLOSURE - BY OWNER NEW - BY OWNER NEW PANEL - BY OWNER 100A, 240/120V, 1Ø, 3W, 6CCT

EXTERIOR ELECTRICAL CABINET (A)

PARTIAL SINGLE LINE DIAGRAM 2 ELECTRICAL - CONSTRUCTION

MAIN PANEL 125A, 240/120V, 1Ø, 3W,

MODEL NO. EATON LOAD CENTRE CCPL108 OR APPROVED EQUAL

CONSTRUCTION):

1. SINGLE LINE DIAGRAM IS DIAGRAMMATIC & FOR REFERENCE PURPOSES ONLY. REFER TO DWGS & VERIFY IN FIELD FOR EXACT LOCATIONS OF ALL ELEC. EQPT.

GENERAL NOTES - PARTIAL SINGLE LINE DIAGRAM (DEMOLITION &

2. REFER TO DRAWING E-100 FOR OTHER GENERAL NOTES -DEMOLITION.

3. REFER TO DRAWING E-100 FOR OTHER GENERAL NOTES -CONSTRUCTION.

4. UON, EQUIPMENT AND DEVICES SHOWN ON LIGHTER LAYER ARE EXISTING TO REMAIN.

5. UON, EQUIPMENT AND DEVICES SHOWN ON DARKER LAYER ARE TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

6. SIZE OF GROUND AND BOND WIRES AS PER CEC.

7. ALL NEW EQUIPMENT & FEEDERS SHALL BE TESTED & COMMISSIONED PRIOR TO PROJECT TURNOVER.

DISCONNECT/RECONNECT ALL EXISTING EQUIPMENT TO ACCOMMODATE NEW CABINET INSTALLATION. CONNECT ALL EXISTING CIRCUITS TO THE NEW PANEL.

REMOVE AND REPLACE WITH NEW CABINET. REFER TO KEYNOTE A, DETAIL #2 ON THIS DRAWING REMOVE AND REPLACE WITH NEW DISCONNECT.

REMOVE AND REPLACE WITH NEW PANEL.

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DO NOT SCALE FROM DRAWINGS.CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON HERSHFIELD.

NOTES

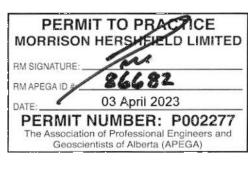
1. DO NOT SCALE FROM DRAWINGS. 2. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING

WITH WORK.



ISSUED FOR TENDER ISSUED FOR 90% REVIEW DESCRIPTION 03/03/2023 DATE





CLIENT:



PROJECT:

SANDSTONE MACEWAN ICE RINK REPLACEMENT

TITLE:

ELECTRICAL SINGLE LINE DIAGRAM

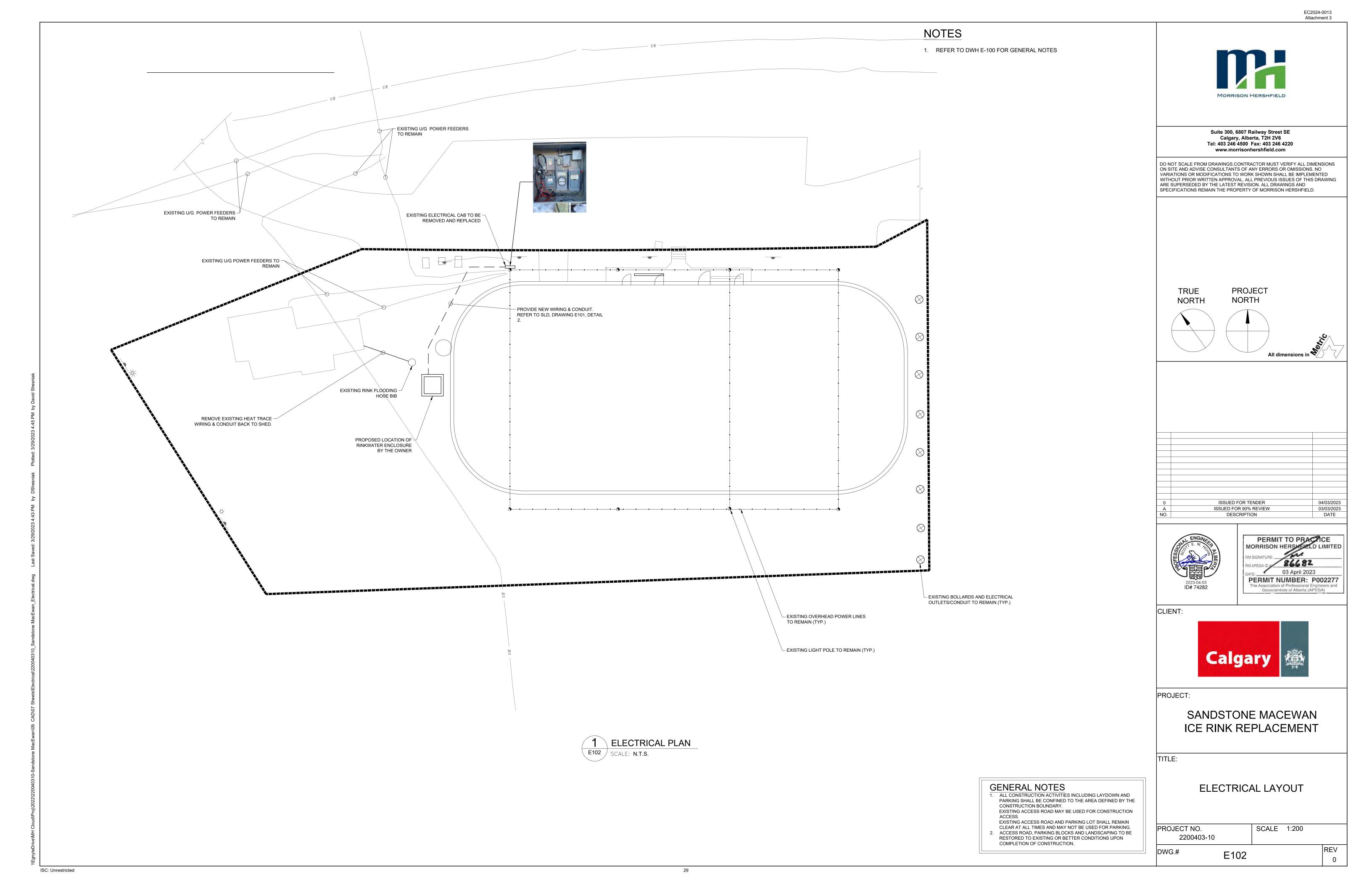
PROJECT NO. SCALE AS SHOWN 2200403-10

DWG.# E101 REV

GENERAL NOTES 1. ALL CONSTRUCTION ACTIVITIES INCLUDING LAYDOWN AND

PARKING SHALL BE CONFINED TO THE AREA DEFINED BY THE CONSTRUCTION BOUNDARY. EXISTING ACCESS ROAD MAY BE USED FOR CONSTRUCTION

EXISTING ACCESS ROAD AND PARKING LOT SHALL REMAIN CLEAR AT ALL TIMES AND MAY NOT BE USED FOR PARKING. ACCESS ROAD, PARKING BLOCKS AND LANDSCAPING TO BE RESTORED TO EXISTING OR BETTER CONDITIONS UPON COMPLETION OF CONSTRUCTION.





Sandstone MacEwan Community Association Building Condition Report

7/14/2023



Sandstone MacEwan Community Association

Group Name

Rink-Pleasure, Rink-Boarded

Building & Amenity Name(s)

1424, 1425

Amenity ID(s)

99 Sandstone Drive NW, 355 Sandarac Drive NW

Address

3

Ward

Outdoor Rink

Building Use Type

1997, 1997

Year of Construction

n/a

Building Floor Area (SQFT)

n/a

Storeys

Prepared for The City of Calgary

Facility Management

RFSO 18-2009

SLA A28

Prepared by

FCAPX, a division of Roth IAMS Ltd. - File No. 20075

Version	Description	Issue Date
1	Draft – Building Condition Report	September 23, 2022
2	Final – Building Condition Report	July 14, 2023

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Appendix A - Condition Assessment Details - Amenity #1424

Appendix B - Condition Assessment Details - Amenity #1425

Appendix C - Short-Term (5 Year) Lifecycle Plan

Appendix D - Long-Term (25 Year) Lifecycle Plan

1. Executive Summary

FCAPX, a division of Roth IAMS Ltd. (FCAPX) was contracted by The City of Calgary (the "client") to conduct a Building Condition Assessment (BCA) of leased amenities that correspond to the Sandstone MacEwan Association, in Calgary, Alberta (referred to herein as the "site" or "property"). The objective of the BCA was to provide an opinion of the overall physical condition of the site, amenities, and building systems, and to prepare opinions of cost to address major defects in materials or systems that may significantly affect the value of the property or continued operation of the facility, and to renew base building equipment / systems that have reached, or may reach their expected useful life over an evaluation period of 25 years.

Sandstone MacEwan Community Association covers two sites, located at 99 Sandstone Drive NW and 355 Sandarac Drive NW, Calgary, Alberta. The site at 99 Sandstone Drive NW comprises a grassed pleasure rink with a central landscaped island and lights. The site at 355 Sandarac Drive is composed of an outdoor boarded rink with an asphalt-paved surface and lights, with an entrance sign and four fiberglass modular buildings. The community association is not responsible for the parking lot at this location.

The site consists of the following amenities:

- 1424-Rink-Pleasure Grassed outdoor rink
- 1425-Rink-Boarded Outdoor Olympic sized rink, with an entrance sign and four fiberglass modular buildings

The BCA identified repairs and replacements that are anticipated over the next 25 years. The table below summarizes the total capital expenditures (in current year dollars) for the repairs and replacements that are anticipated over the course of the 25-year evaluation period.

Uniformat Division	Immediate 2022	Short-Term 2023 - 2027	Long-Term 2028 - 2046	Optional	Totals
A - Substructure	\$0	\$0	\$0	\$0	\$0
B - Shell	\$0	\$0	\$0	\$0	\$0
C - Interiors	\$0	\$0	\$0	\$0	\$0
D - Services	\$0	\$0	\$0	\$0	\$0
E - Equipment & Furnishings	\$0	\$0	\$0	\$0	\$0
F - Special Construction & Demolition	\$0	\$228,000	\$0	\$0	\$228,000
G - Building Sitework	\$0	\$166,021	\$306,445	\$0	\$472,466
Totals	\$ 0	\$394,021	\$306,445	\$0	\$700,466

The immediate and short-term costs represent 60% of the overall replacement value, given a Current Replacement Value of \$657,550. Overall, the amenities are considered to be in Fair to Poor condition.

7/14/2023

2. Immediate Action Summary

Based on the findings of the BCA, no immediate actions are recommended to be performed within the next 12 months to address any potential health and safety hazard or a suspected violation of applicable regulations/legislation, or to prevent further deterioration or a loss of service/occupancy to an amenity.

ISC: Unrestricted 35

3. Report Methodology

3. 1 Facility Reviewed

The pleasure rink is located west of 99 Sandstone Drive NW and bordered by municipally-owned parks to the west, south, and north. The boarded rink site is located southwest of 355 Sandarac Drive NW and is bordered by municipally-owned parks, and Monsignor Neville Anderson School on the southeast side.

The pleasure rink site was originally developed in 1997. The central landscaped island was constructed in 2018. An original storage shed located south of the rink has been demolished and will be replaced. Site amenities are surrounded by grass lawns.

The boarded rink site is developed with an outdoor boarded rink with an asphalt-paved surface and lights, an entrance sign, and four fiberglass modular buildings. The property was constructed in 1997. Site amenities are surrounded by grass lawns on the northwest and southwest sides, with paved parking lots being installed on the northeast and southeast sides, connecting to 355 Sandarac Drive NW. The parking lots are maintained and operated by others.

The property's assessed amenities are provided below.

3. 1. a Amenity ID# 1424 - Rink-Pleasure

Address	99 Sandstone Drive NW
Building Floor Area (Sq. M.)	-
Number of Storey(s)	-
Date of Original Construction	1997
Additions / Renovations	2018
Type of Facility	Skating Rink
Areas Reviewed	Pleasure rink area

3. 1. b Amenity ID# 1425 - Rink-Boarded

Address	355 Sandarac Drive NW
Building Floor Area (Sq. M.)	-
Number of Storey(s)	-
Date of Original Construction	1997
Additions / Renovations	-
Type of Facility	Hockey Rink
Areas Reviewed	Outdoor rink and surrounding amenities

All areas of the amenities were available for review.

3. 2 Scope of Work

The scope of work for the BCA was to assess the condition of the site and its amenities, to identify physical deficiencies pertaining to their systems and components, and to provide opinions of cost to address identified physical deficiencies or to replace building / site systems that are expected to achieve or surpass their expected useful life over the next 25 years.

The BCA carried out by FCAPX was generally based on the American Society for Testing and Materials (ASTM) Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process (E2018-15), and consisted of the following:

- Background information request and review
- Interview(s) with knowledgeable site staff
- Walk-through site assessment visit
- Preparation of opinions of cost to either remedy physical deficiencies or to replace components which will exceed their expected useful life (EUL) over the evaluation period
- Preparation of a Building Condition Report, organizing relevant information according to a Uniformat II Elemental Classification System

In addition to the foregoing, the scope of work included a high-level review of the site, amenities, and building(s) based on the City of Calgary 2016 Access Design Standards and building code/bylaws, in addition to a high-level identification of potential energy performance opportunities.

The ASTM defines a physical deficiency as a conspicuous defect or significant deferred maintenance of a site's material systems, components, or equipment as observed during the site assessor's walk-through site visit. Included within this definition are material systems, components, or equipment that are approaching, have reached, or have exceeded their typical EUL or whose remaining useful life (RUL) should not be relied upon in view of actual or effective age, abuse, excessive wear and tear, exposure to the elements, lack of proper or routine maintenance, etc. This definition specifically excludes deficiencies that may be remedied with routine maintenance, miscellaneous minor repairs, normal operating maintenance, etc., and excludes conditions that generally do not constitute a material physical deficiency of the site.

3. 3 Field Review

A site visit was performed on May 10, 2022, by the personnel presented below. The weather at the time of the site visit was sunny/overcast with light drizzle, with temperatures ranging between 12 and 15 °C.

Architectural, Structural, Building Envelope

Richard Jia FCAPX

Mechanical and Electrical

Richard Jia FCAPX

Owner and Tenant Representatives

Jennifer Schroeder Sandstone MacEwan Community Association

City of Calgary Representatives

Abhay Apte City of Calgary
Daniel Morrissey City of Calgary
Chris Scarcelli City of Calgary

3. 4 Method of Evaluation

3. 4. a Methodology

The review of the site was based on a visual walk-through review of the visible and accessible components of the property and related structures/amenities. The roof from ground level, exterior walls, and a representative sampling of the interiors of the related structures were visually assessed to check their condition and to identify physical deficiencies, where observed. No physical tests were conducted, and no samples of building materials were collected to substantiate observations made, or for any other reason.

The review of the mechanical, electrical, and fire & life safety systems at the property included discussions with the site representative(s) and a review of pertinent maintenance records that were made available. A visual walk-through assessment of these systems was conducted to determine the type of systems present, age, and aesthetic condition. No physical tests were conducted on these systems.

Unless requested by the client, the review of the site was limited to base-building systems and components. A review of moveable or operations/process-related equipment was generally excluded from the scope of our review. Salient observations made during the assessment were recorded via digital photography, a selection of which have been included in this report.

An evaluation of the property development's compliance with applicable national and/or provincial Building Codes and/or Fire Codes is not part of the scope work for this assessment. It is assumed that the site and and related structures/amenities were reviewed and approved by the local authorities having jurisdiction at the time of construction/commission, and/or during any subsequent renovation(s). However, information on outstanding notices of violation/non-compliance issued by the regulatory authorities may have been questioned/confirmed by persons interviewed during the BCA. Furthermore, applicable codes may have been used by FCAPX during the assessment as a reference to determine appropriate recommendations.

3. 4. b Opinions of Cost Preparation

Opinions of cost for replacements and repairs are based on unit rates published by Means Publishing, combined with local experience gained by FCAPX. The quantities associated with our recommendations and costs have been estimated during a walk-through site assessment and do not represent exact measurements or quantities. At the time of replacement, specific "scope of work" statements and quotations should be determined, and the budgetary items revised to reflect actual expenditures.

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Not included are costs for recommendations that would be addressed as routine maintenance. However, the Building Condition Report may include recommendations and costs which are currently managed under the operations and/or maintenance budgets for the site.

Opinions of costs for deficiencies that are individually less than \$1,000 are generally not included in the Building Condition Report. The exceptions are deficiency costs relating to fire and life safety concerns, or possible code infractions; costs for these items may be included regardless of the cost threshold.

3. 4. c Deviations from the Guide

The following items were not performed as part of the standard scope of work and represent deviations from ASTM E2018-15 for this project:

- A review of municipal/public records for zoning, building, and/or fire & life safety code/regulatory compliances.
- · A review of the site for building and/or fire & life safety code/regulatory compliance
- A review of records to confirm if the property resides in a designated flood plain
- Verification of the number of parking spaces
- Verification of gross/net usable areas of the building(s)
- Verification of the number of multi-family units in the building(s)

3. 4. d Limiting Conditions

This report has been prepared for the exclusive and sole use of The City of Calgary and the Sandstone MacEwan Community Association. Any reliance on this report by a third party, any decisions that a third party makes based on this report, or any use at all of this report by a third party is the responsibility of such third parties. FCAPX accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made, or actions taken, based on this report.

The assessment of the site components was performed using methods and procedures that are consistent with standard commercial and customary practice as outlined in ASTM Standard E2018-15 for Property Condition Assessments. As per this ASTM Standard, the assessment of the building/site components was based on a visual walk-through site visit, which captured the overall condition of the site at that specific point in time only. No legal surveys, soil tests, environmental assessments, geotechnical assessments, code compliance assessments, seismic assessments, engineering calculations, or quantity surveying compilations have been made. No responsibility, therefore, is assumed concerning these matters.

FCAPX did not design or construct the related structures and therefore will not be held responsible for the impact of any design or construction defects, whether or not described in this report. No guarantee or warranty expressed or implied, with respect to the property, building components, building systems, property systems, or any other physical aspect of the property is made. The recommendations, and our opinion of costs associated with these recommendations, as presented in this report, are based on walk-through non-invasive observations of the parts of the amenities which were readily accessible during our visual review. Conditions may exist that are not as per the general condition of the system being observed and reported in this report.

Opinions of costs presented in this report are also based on information received during interviews with operations and maintenance staff. In certain instances, FCAPX has been required to assume that the

Sandstone MacEwan Community Association Building

information provided is accurate and cannot be held responsible for incorrect information received during the interview process. Should additional information become available with respect to the condition of the building and/or site elements, FCAPX requests that this information be brought to our attention so that we may reassess the conclusions presented herein.

The opinions of costs presented herein are intended for global budgeting purposes only. The scope of work and the actual costs of the work recommended can only be determined after a detailed examination of the site element in question, understanding of the site restrictions, understanding of the effects on the ongoing operations of the site/building(s), definition of the construction schedule, and preparation of tender documents. We expressly waive any responsibilities for the effects of any action taken as a result of these endeavors unless we are specifically advised of prior to, and participate in the action, at which time, our responsibility will be negotiated.

3. 5 Definitions

The following is a list of terminology that is used frequently throughout the Building Condition Report, along with its corresponding definitions.

Assessment Cost

The cost of an event that is determined by multiplying a component's unit cost by its quantity and difficulty / regional / soft cost factors.

Building

A structure that is used or intended for supporting or sheltering any use, or occupancy.

Component

An aspect, feature, system, finish, or area of a facility.

Difficulty / Regional / Soft Cost Factors

Multipliers applied to base component unit costs to capture that are anticipated to contribute to higher event costs.

Evaluation Period

The 25-year period in which events that are recommended or anticipated for facility components have been created for the BCA.

Event

A recommended action corresponding to a component.

Event Triggers

An event classification that is used internally by the City of Calgary to define the primary purpose of a recommendation.

Expected Useful Life (EUL)

The typical amount of time in years that a component is estimated to function without material repair when installed new and assuming routine maintenance is practiced.

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Facility

A grouping of one or more Buildings and/or Land Improvements within a geographical boundary which function together to support Corporate service outcomes.

Facility Service Enhancement

The replacement or addition to an existing asset, system or component, or the creation of a new asset to enable an increased level of service provision to a customer.

Imminent/Immediate

Within the next 12 months.

Installation Year

The calendar year that establishes the installation, replacement, or major repair of a component.

Lifecycle

The replacement of an existing asset, system, or component with an appropriate functional equivalent due to age, condition, risk, regulation, or obsolescence.

Long Term

Greater than 5 years.

Maintenance

The activities required to ensure assets, systems and components are operating as intended and reach its Expected Useful Life.

Operations

The day-to-day activities which enable an asset, system, or component to support service outcomes.

Present Age

The age of the component. Estimated based on a variety of scenarios including either the original date of construction, most recent date of partial replacement, or existing conditions viewed at the time of the review.

(Recommendation) Type

An event classification that is used to establish the nature and priority of a recommendation.

Remaining Useful Life (RUL)

The estimated remaining useful life of an item, component, or system assuming a typical level of use, exposure, and maintenance from the time of inspection.

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Renewal Year

The recommended or anticipated calendar year for a component event.

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Short Term

The initial 5 years of the evaluation period.

Uniformat

Standardized alpha-numeric codes that are used to classify components common to most facilities, and provides consistency in the evaluation of building projects.

Unit Cost

The cost of a component's assigned unit of measure.

Upgrade

The replacement or addition to an existing asset, system, or component to provide an increased level of technical service.

3. 6 Condition Ratings

The condition of various components throughout the facility will be rated according to the following condition ratings:

1 - Critical

The asset shows signs of extreme deterioration. The asset may no longer be operational, or the operation is intermittent and/or has significantly diminished performance. There is a high degree of likelihood of an imminent failure, and/or the failure mode has increased severity due to the physical condition.

2 - Poor

The asset shows signs of deterioration beyond what regular maintenance can manage. There is a high degree of likelihood of failure. Asset operation may be intermittent and/or have diminished performance.

3 - Fair

The asset shows signs of deterioration due to use; the asset is still functional but there is likely increased risk of failure. Asset operation is still acceptable but may have decreased performance from new.

4 - Good

The asset is beginning to show some signs of deterioration due to use but is still fully operational, "worn in" condition.

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5 - Excellent

The asset is fully operational and shows no signs of deterioration, "new" or "like new" condition.

3. 7 Risk Ratings

The likelihood and consequences as a result of inaction is used to prioritize the recommendations for this Building Condition Report. The assessor determines the likelihood of a failure if no action is taken, and the consequence of that failure. An overall Risk Score is derived by multiplying the Likelihood and Consequence:

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Likelihood	1 – Low	2 – Medium	3 - High
Description	Low probability of failure	Medium probability of failure	High probability of failure

Consequence

Consequence 1 – Low		2 – Medium	3 - High
Description	No significant risk to people or property		Significant injury, loss of life, severe damage to property

Overall Risk Score

Likelihood X Consequence		Likelihood			
		1 – Low	2 – Medium	3 - High	
	3 - High	3	6	9	
Consequence	2 – Medium	2	4	6	
	1 – Low	1	2	3	

3. 8 Owner Supplied Reference Material

The following documents and drawings for the building were available for review:

- Drawings titled "1998 Pleasure Rink Shed", provided by Sandstone MacEwan Community Association, dated 1998.
- A report titled "Facility Assessment and Lifecycle Plan for Sandstone MacEwan Community Association", prepared by Morrison Hershfield, dated February 6, 2017.
- A document titled 'Sandstone MacEwan Community Association (Pleasure Rink) License of Occupation", prepared by The City of Calgary, dated March 20, 2018
- A document titled 'Sandstone MacEwan Community Association (Boarded Rink) License of Occupation", prepared by The City of Calgary, dated March 27, 2018

3. 9 Appendices

Capital expenditures that were developed for anticipated repairs or replacements are presented in further detail in this BCA report. The assessment details and expenditures are also summarized in appendices, and are described as follows:

- Appendix A Condition Assessment Details Amenity #1424
 Detailed condition assessment for the amenity.
- Appendix B Condition Assessment Details Amenity #1425
 Detailed condition assessment for the amenity.

Appendix C – Short-Term Lifecycle Plan

Provides a listing of actions that are recommended for the short-term of the evaluation period. The action costs are illustrated chronologically over the immediate term (next 12 months) and short-term (next five years).

Appendix D – Long-Term Lifecycle Plan

Provides a listing of systems and components observed during the BCA, along with their capital expenditures, that are illustrated chronologically over the short-term, and long-term. The long-term costs have been grouped together in five-year intervals for simplicity.

Building Condition Assessment – Amenity #1424

4. 1 Architectural Summary Amenity #1424

At the Rink-Pleasure, the grassed rink surface is provided with a central landscaped island.

Accessibility Review Amenity #1424

The amenity is without barrier free access.

Code Review Amenity #1424

No suspected code violations were observed or reported.

4. 2 Structural Summary Amenity #1424

The amenity is without structural systems.

4. 3 Building Envelope Summary Amenity #1424

The amenity is without building envelope systems.

4. 4 Mechanical Summary Amenity #1424

A below-grade water supply is understood to be provided to the rink via a buried municipal water main. A corrugated galvanized metal cylindrical box with two top lids is located east of the rink, which houses a water supply pipe with heater, a water shutoff valve, and hoses.

4. 5 Electrical Summary Amenity #1424

A buried, single-phase, 240-volt electrical service is provided to the site panel located southeast of the rink. Buried branch wiring is provided to link site exterior light poles and the central landscaped island. Pole-mounted floodlight fixtures that incorporate LEDs are installed on the rink perimeter.

4. 6 Heritage Summary Amenity #1424

The amenity does not hold a heritage designation.

4. 7 Environmental & Geotechnical Summary Amenity #1424

The scope of work for the BCA excluded environmental / geotechnical assessments.

4. 8 Energy Performance Summary Amenity #1424

The scope of work for the BCA included a high-level identification of potential energy performance opportunities as it pertains to the scope of the condition assessment. Operational opportunities are not included as the site review for the condition assessment did not go into this detail.

Current energy efficiency features exterior light fixtures fitted with LED technology.

The following is a list of potential energy performance opportunities observed during the condition assessment walkthrough:

None

Building Condition Assessment Amenity #1425 5.

5. 1 Architectural Summary Amenity #1425

The outdoor rink is bordered by curb-mounted, steel-framed dasher boards that are faced with highdensity polyethylene (HDPE) panels. Chain-link fencing is installed above the dasher boards on the rink perimeter. The rink is provided with an asphalt-paved playing surface. The site also includes an entrance sign, sports goals, benches, wood stairs with a deck, and four fiberglass modular buildings.

Damaged dasher boards and deteriorated asphalt-paved surfaces were observed. Reportedly, the rink has been planned for replacement in 2023.

Accessibility Review Amenity #1425

The amenity is without barrier free access.

Code Review Amenity #1425

No suspected code violations were observed or reported.

5. 2 Structural Summary Amenity #1425

The amenity is without structural systems.

5.3 Building Envelope Summary Amenity #1425

The amenity is without building envelope systems.

5.4 Mechanical Summary Amenity #1425

A below-grade water supply is understood to be provided to the rink via a buried municipal water main. A corrugated galvanized metal cylindrical box with two top lids is located northwest of the rink, which houses a water supply pipe with heater, a water shutoff valve, and hoses.

5 5 Electrical Summary Amenity #1425

A buried, single-phase, 240-volt electrical service is provided to the site panel located northwest of the rink. Overhead branch wiring is provided to link site exterior light poles. Pole-mounted floodlight fixtures that incorporate LEDs are installed on the rink perimeter.

5.6 Heritage Summary Amenity #1425

The amenity does not hold a heritage designation.

5 7 Environmental & Geotechnical Summary Amenity #1425

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The scope of work for the BCA excluded environmental / geotechnical assessments.

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5. 8 Energy Performance Summary Amenity #1425

The scope of work for the BCA included a high-level identification of potential energy performance opportunities as it pertains to the scope of the condition assessment. Operational opportunities are not included as the site review for the condition assessment did not go into this detail.

Current energy efficiency features include exterior light fixtures fitted with LED technology.

The following is a list of potential energy performance opportunities observed during the condition assessment walkthrough:

None.

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6. Current Replacement Value

A Current Replacement Value (CRV) was calculated for amenities assessed for the BCA. The CRVs are a representation of costs to re-construct the amenities as they currently exist at the site and do not reflect a real-estate, appraised, or insured value. The CRVs are presented in the table below and have been divided by amenity.

Amenity No. / Name	CRV
1424 - Rink-Pleasure	\$ 123,000
1425 – Rink-Boarded	\$ 534,550

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7. Closure

The findings of our BCA, based on the scope of work outlined in Section 3.0 of this report, are presented in the appendices that follow. The appendices are organized according to the amenities presented under Section 3.1 of this report, and include assessment summaries, component descriptions, assessment findings, recommendations with opinions of cost, and photographs of amenity components and salient observations. The short and long-term lifecycle plans that were described in Section 3.9 of this report are presented as subsequent appendices.

This report has been prepared exclusively for the client. Should new information come to light, FCAPX requests the opportunity to review this information, and our recommendations contained in this report.

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Appendix A

Condition Assessment Details – Amenity #1424

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G Building Sitework G20 Site Improvements

Element Description		
Name	G205010 - Planters - Concrete - Outdoor Rink Pleasure	
Installation Year	2018	
Condition	4 - Good	
Expected Useful Life	30 Years	
Remaining Useful Life	26 Years	
Renewal Year	2048	
Quantity / Unit of Measure	20 / SM	
Unit Cost	\$1,216.00	
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1	
Element Cost	\$24,320.00	
Location	Outdoor Rink	

Description

A split-face concrete block planter box is installed along the border of a central landscaped island in the grass rink.

Condition Narrative

No major deficiencies were observed or reported during the assessment.



Sandstone/MacEwan CA - Parking - Asphalt -G205010



Sandstone/MacEwan CA - Parking - Asphalt -G205010

G30 Site Mechanical Utilities

Element Description		
Name	G301024 - Water Supply Infrastructure - 150MM Outdoor Rink - Pleasure	
Installation Year	1997	
Condition	4 - Good	
Expected Useful Life	50 Years	
Remaining Useful Life	25 Years	
Renewal Year	2047	
Quantity / Unit of Measure	25 / LM	
Unit Cost	\$715.00	
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1	
Element Cost	\$17,875.00	
Location	Site Grounds	

Description

A below-grade water supply is understood to be provided to the rink via a buried municipal water main. A corrugated galvanized metal cylindrical box with two top lids is located east of the rink, which houses a water supply pipe with heater, a water shutoff valve, and hoses.

Condition Narrative

No major deficiencies were observed or reported during the assessment.



Sandstone/MacEwan CA - Parking - Asphalt -G301024

G40 Site Electrical Utilities

Element Description				
Name	G401010 - Electrical Service Single Phase - Outdoor Rink - Pleasure			
Installation Year	1997			
Condition	4 - Good			
Expected Useful Life	50 Years			
Remaining Useful Life	25 Years			
Renewal Year	2047			
Quantity / Unit of Measure	25 / LM			
Unit Cost	\$255.00			
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1			
Element Cost	\$6,375.00			
Location	Site Grounds			

Description

A buried, single-phase, 240-volt electrical service is provided to the site panel located southeast of the rink.

Condition Narrative

No major deficiencies were observed or reported during the assessment.

G401020 - Site Panelboards - Outdoor Rink - Pleasure
1997
4 - Good
40 Years
15 Years
2037
1 / Each
\$8,508.00
1.00 / 1 / 1
\$8,508.00
Outdoor Rink Southeast

An electrical panel and disconnect switch, along with an electrical meter, are installed within a post-mounted wood enclosure, located southeast of the entrance of the skate rink. The branch circuit panel is rated at 100A, 120/240 V, with eight circuits and six circuit breakers. The disconnect switch, which is manufactured by Square D, is rated for a 60A, 240V electrical service.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone/MacEwan CA - Parking - Asphalt -G401020



Sandstone/MacEwan CA - Parking - Asphalt - G401020

Recommendations #1 - Site Panelboards		
Туре	Lifecycle	
Year	2037	
Cost	\$10,635.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	1-Low	
Consequence	3-High	
Risk Score	3	
Event Triggers Beyond Useful Life		

Replace Site Panelboards

Element Description		
Name	G401021 - Site Branch Wiring and Devices Outdoor Rink - Pleasure	
Installation Year	1997	
Condition	4 - Good	
Expected Useful Life	40 Years	
Remaining Useful Life	15 Years	
Renewal Year	2037	
Quantity / Unit of Measure	200 / LM	
Unit Cost	\$126.00	
Difficulty / Regional / Soft Cost Factors	1.00/1/1	
Element Cost	\$25,200.00	
Location	Outdoor Rink	

Buried branch wiring is provided to link site exterior light poles, and the central landscaped island, where two outdoor electrical outlets (with one light timer) are mounted onto wood posts.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone/MacEwan CA - Parking - Asphalt -G401021



Sandstone/MacEwan CA - Parking - Asphalt -G401021

Recommendations #1 - Site Branch Wiring and Devices		
Туре	Lifecycle	
Year	2037	
Cost	\$31,500.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	1-Low	
Consequence	3-High	
Risk Score	3	
Event Triggers	Beyond Useful Life	

Replace Site Branch Wiring and Devices

Element Description	
Name	G402013 - Light Poles - Up to 7M - Outdoor Rink - Pleasure
Installation Year	1997
Condition	4 - Good
Expected Useful Life	30 Years
Remaining Useful Life	6 Years
Renewal Year	2028
Quantity / Unit of Measure	8 / Each
Unit Cost	\$3,175.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$25,400.00
Location	Outdoor Rink Perimeter

There are eight (8) steel poles installed around the rink perimeter to house floodlights. The poles are supported on concrete pile foundations.

Condition Narrative

No major deficiencies of the pole or concrete piles were observed or reported during the assessment. The steel poles are nearing the end of their expected useful life, and although its remaining useful life has been extended beyond the short-term of the evaluation period due to the absence of significant observed or reported deficiencies, the component is expected to require lifecycle replacement within the 25-year evaluation period. Lifecycle replacement includes repair of the concrete foundations as needed.



Sandstone/MacEwan CA - Parking - Asphalt -G402013

Recommendations #1 - Light Poles - 20' high	
Туре	Lifecycle
Year	2028
Cost	\$31,750.00
Priority	Priority 4: Proactive Replacement
Likelihood	1-Low
Consequence	2-Medium
Risk Score	2
Event Triggers	Beyond Useful Life

Replace Light Poles - 20' high

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Element Description	
Name	G402016 - Pole Light Fixtures - Outdoor Rink - Pleasure
Installation Year	2019
Condition	4 - Good
Expected Useful Life	25 Years
Remaining Useful Life	22 Years
Renewal Year	2044
Quantity / Unit of Measure	8 / Each
Unit Cost	\$1,905.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$15,240.00
Location	Outdoor Rink Perimeter

There are eight (8) pole-mounted floodlight fixtures that incorporate LEDs installed on poles on the rink perimeter. The fixtures were reportedly installed circa 2019.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone/MacEwan CA - Parking - Asphalt -G402016

Recommendations #1 - Pole Light Fixtures	
Туре	Lifecycle
Year	2044
Cost	\$19,050.00
Priority	Priority 4: Proactive Replacement
Likelihood	1-Low
Consequence	2-Medium
Risk Score	2
Event Triggers	Beyond Useful Life

Replace Pole Light Fixtures

Appendix B

Condition Assessment Details – Amenity #1425

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F Special Construction and Demolition F10 Special Construction

Element Description	
Name	F104024 - Ice Rink Dasher Boards (Outdoor) - Rink - Boarded
Installation Year	1997
Condition	2 - Poor
Expected Useful Life	20 Years
Remaining Useful Life	1 Year
Renewal Year	2023
Quantity / Unit of Measure	150 / LM
Unit Cost	\$1,216.00
Difficulty / Regional / Soft Cost Factors	1.00/1/1
Element Cost	\$182,400.00
Location	Outdoor Rink Perimeter

Description

The rink is bordered by curb-mounted, steel-framed dasher boards that are faced with high-density polyethylene (HDPE) panels. Chain-link fencing is installed above the dasher boards on the rink perimeter.

Condition Narrative

Surface corrosion was observed on the steel framing, with some posts appearing to have split, presumably due to freeze/thaw of entrapped moisture. The rink boards exhibited damage and deterioration, with some areas noted to be separating from the framing. The chain-link fencing appeared to have localized loose ties, damage, and corrosion. The component has exceeded its Expected Useful Life. Lifecycle replacement of the component has reportedly been planned in 2023.



Sandstone Macewan - Rink-Boarded - F104024



Sandstone Macewan - Rink-Boarded - F104024



Sandstone Macewan - Rink-Boarded - F104024



Sandstone Macewan - Rink-Boarded - F104024

Recommendations #1 - Ice Rink Dasher Boards - Outdoor		
Туре	Lifecycle	
Year	2023	
Cost	\$228,000.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	3-High	
Consequence	3-High	
Risk Score	9	
Event Triggers	Beyond Useful Life	

Replace Ice Rink Dasher Boards - Outdoor

G Building Sitework G20 Site Improvements

Element Description	
Name	G201021 - Asphalt Paved Surface - Roadway (Light Duty) - Rink - Boarded
Installation Year	1997
Condition	2 - Poor
Expected Useful Life	25 Years
Remaining Useful Life	1 Year
Renewal Year	2023
Quantity / Unit of Measure	20 / SM
Unit Cost	\$122.00
Difficulty / Regional / Soft Cost Factors	1.00/1/1
Element Cost	\$2,440.00
Location	Northeast of Outdoor Rink

Description

An asphalt paved ramp providing access for ice resurfacing equipment is constructed northeast of the outdoor rink.

Condition Narrative

The asphalt pavement exhibited deterioration and an aged appearance. The component has exceeded its Expected Useful Life. Lifecycle replacement of the component has reportedly been planned for 2023.



Sandstone Macewan - Rink-Boarded - G203021

Recommendations #1 - Asphalt Paved Surface - Roadway (light duty)	
Туре	Lifecycle
Year	2023
Cost	\$3,050.00
Priority	Priority 4: Proactive Replacement
Likelihood	3-High
Consequence	2-Medium
Risk Score	6
Event Triggers	Beyond Useful Life

Replace Asphalt Paved Surface - Roadway (light duty)

Element Description	
Name	G203021 - Asphalt Paved Surfaces - Rink - Boarded
Installation Year	1997
Condition	2 - Poor
Expected Useful Life	25 Years
Remaining Useful Life	1 Year
Renewal Year	2023
Quantity / Unit of Measure	1400 / SM
Unit Cost	\$61.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$85,400.00
Location	Outdoor Rink Playing Surface

The outdoor rink is provided with an asphalt paved playing surface.

Condition Narrative

The asphalt pavement exhibited deterioration and uneven surfaces. Water pooling was observed at localized surfaces. The component has exceeded its Expected Useful Life. Lifecycle replacement of the component has reportedly been planned for 2023.



Sandstone Macewan - Rink-Boarded - G203021



Sandstone Macewan - Rink-Boarded - G203021

Recommendations #1 - Asphalt Paved Walkway	
Туре	Lifecycle
Year	2023
Cost	\$106,750.00
Priority	Priority 4: Proactive Replacement
Likelihood	3-High
Consequence	2-Medium
Risk Score	6
Event Triggers	Beyond Useful Life

Replace Asphalt Paved Walkway

Element Description	
Name	G203025 - Exterior Site Stairs - Wood - Rink - Boarded
Installation Year	1997
Condition	2 - Poor
Expected Useful Life	20 Years
Remaining Useful Life	1 Year
Renewal Year	2023
Quantity / Unit of Measure	6 / Per Riser
Unit Cost	\$608.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$3,648.00
Location	Northeast side of Outdoor Rink

A set of wood steps bordered with wood guardrails, connecting with the wood deck, are located centrally on the northeast side of the ice rink.

Condition Narrative

The steps and guardrails exhibited a weathered and worn appearance. The component has exceeded its Expected Useful Life. Lifecycle replacement of the component has reportedly been planned for 2023.



Sandstone Macewan - Rink-Boarded - G203025



Sandstone Macewan - Rink-Boarded - G203025

Recommendations #1 - Exterior Site Stairs - Wood	
Туре	Lifecycle
Year	2023
Cost	\$4,560.00
Priority	Priority 4: Proactive Replacement
Likelihood	3-High
Consequence	2-Medium
Risk Score	6
Event Triggers	Beyond Useful Life

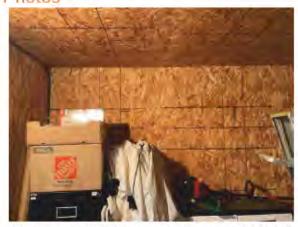
Replace Exterior Site Stairs - Wood

Element Description		
Name	G204040 - Miscellaneous Structures - Rink - Boarded - Modular Buildings	
Installation Year	1997	
Condition	4 - Good	
Expected Useful Life	20 Years	
Remaining Useful Life	6 Years	
Renewal Year	2028	
Quantity / Unit of Measure	4 / Each	
Unit Cost	\$12,154.00	
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1	
Element Cost	\$48,616.00	
Location	West of Outdoor Rink	

Four fiberglass modular buildings are located west of the rink, providing areas for equipment and ice resurfacer storage. The buildings have painted single or double doors. Oriented strand board sheathing and decking is provided on the building interiors. The buildings are powered with lights, and are without heating systems.

Condition Narrative

Minor leakage has reportedly occurred at isolated roof areas and has been repaired as part of maintenance activities. No major deficiencies were observed or reported during the assessment. The component has surpassed its expected useful life, and although its remaining useful life has been extended beyond the short-term of the evaluation period due to the absence of significant observed or reported deficiencies, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone Macewan - Rink-Boarded - G204040



Sandstone Macewan - Rink-Boarded - G204040

Recommendations #1 - Miscellaneous Structures		
Туре	Lifecycle	
Year	2028	
Cost	\$60,770.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	1-Low	
Consequence	2-Medium	
Risk Score	2	
Event Triggers	Beyond Useful Life	

Replace Miscellaneous Structures

72

Element Description		
Name	G204071 - Benches - Metal - Rink - Boarded	
Installation Year	1997	
Condition	2 - Poor	
Expected Useful Life	25 Years	
Remaining Useful Life	1 Year	
Renewal Year	2023	
Quantity / Unit of Measure	10 / LM	
Unit Cost	\$973.00	
Difficulty / Regional / Soft Cost Factors	0.25 / 1 / 1	
Element Cost	\$2,432.50	
Location	Outdoor Rink Deck	

Two metal benches are installed on the wood deck on the northeast side of the rink.

Condition Narrative

The component has exceeded its Expected Useful Life and is exhibiting wear and tear that is consistent with age including damaged enamel and worn paint finishes. Lifecycle replacement of the component has reportedly been planned for 2023. The difficulty factor has been adjusted based on the style of the benches.



Sandstone Macewan - Rink-Boarded - G204071



Sandstone Macewan - Rink-Boarded - G204071

Recommendations #1 - Benches - Metal		
Туре	Lifecycle	
Year	2023	
Cost	\$3,040.63	
Priority	Priority 4: Proactive Replacement	
Likelihood	3-High	
Consequence	2-Medium	
Risk Score	6	
Event Triggers	Beyond Useful Life	

Replace Benches - Metal

B12 07/14/2023

Element Description	
Name	G204086 - Pylon Sign - Rink - Boarded
Installation Year	1997
Condition	4 - Good
Expected Useful Life	25 Years
Remaining Useful Life	6 Years
Renewal Year	2028
Quantity / Unit of Measure	6 / SM
Unit Cost	\$4,254.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$25,524.00
Location	Northwest of Outdoor Rink

A metal-framed pylon sign, which is illuminated internally, is located northwest of the outdoor rink, close to the rink entrance. The signage displays the community rink name and website address. The sign is base-mounted on a concrete pad foundation. It was reported that the facing of the sign was replaced in 2014.

Condition Narrative

The metal base cap exhibited deformed and deteriorated surfaces. Repair is considered part of routine maintenance. No major deficiencies on the sign or concrete foundation were observed or reported during the assessment. The component is nearing the end of its expected useful life, and although its remaining useful life has been extended beyond the short-term of the evaluation period due to the absence of significant observed or reported deficiencies, the component is expected to require lifecycle replacement within the 25-year evaluation period. Lifecycle replacement costs include repairs to the concrete foundation as needed.



Sandstone Macewan - Rink-Boarded - G204086



Sandstone Macewan - Rink-Boarded - G204086

Recommendations #1 - Pylon Sign		
Туре	Lifecycle	
Year	2028	
Cost	\$31,905.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	1-Low	
Consequence	2-Medium	
Risk Score	2	
Event Triggers	Beyond Useful Life	

Replace Pylon Sign

Element Description	
Name	G204093 - Sports Goals - Rink - Boarded
Installation Year	1997
Condition	2 - Poor
Expected Useful Life	30 Years
Remaining Useful Life	1 Year
Renewal Year	2023
Quantity / Unit of Measure	4 / Each
Unit Cost	\$4,254.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$17,016.00
Location	Outdoor Rink Perimeter

Four (4) steel-framed basketball backstops are installed outboard of the skate rink perimeter.

Condition Narrative

Corrosion was noted on most metal surfaces. The component has exceeded its Expected Useful Life. Lifecycle replacement of the component has reportedly been planned for 2023.

Photos



Sandstone Macewan - Rink-Boarded - G204093



Sandstone Macewan - Rink-Boarded - G204093

Recommendations

Recommendations #1 - Sports Goals		
Туре	Lifecycle	
Year	2023	
Cost	\$21,270.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	3-High	
Consequence	2-Medium	
Risk Score	6	
Event Triggers	Beyond Useful Life	

Replace Sports Goals

Element Description	
Name	G204096 - Exterior Wood Decks - Rink - Boarded
Installation Year	1997
Condition	2 - Poor
Expected Useful Life	25 Years
Remaining Useful Life	1 Year
Renewal Year	2023
Quantity / Unit of Measure	40 / SM
Unit Cost	\$547.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$21,880.00
Location	Northeast of Outdoor Rink

A wood deck with integrated wood steps is located centrally on the northeast side of the ice rink.

Condition Narrative

The steps and guardrails exhibited a weathered and worn appearance. The seating area was reported to be too narrow. The component has exceeded its Expected Useful Life. Lifecycle replacement of the component has reportedly been planned for 2023.



Sandstone Macewan - Rink-Boarded - G204096



Sandstone Macewan - Rink-Boarded - G204096

Recommendations #1 - Exterior Wood Decks		
Туре	Lifecycle	
Year	2023	
Cost	\$27,350.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	3-High	
Consequence	2-Medium	
Risk Score	6	
Event Triggers	Beyond Useful Life	

Replace Exterior Wood Decks

G30 Site Mechanical Utilities

Element Description	
Name	G301024 - Water Supply Infrastructure - 150MM - Rink - Boarded
Installation Year	1997
Condition	4 - Good
Expected Useful Life	50 Years
Remaining Useful Life	25 Years
Renewal Year	2047
Quantity / Unit of Measure	50 / LM
Unit Cost	\$715.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$35,750.00
Location	Site Grounds

Description

A below-grade water supply is understood to be provided to the rink via a buried municipal water main. A corrugated galvanized metal cylindrical box with two top lids is located northwest of the rink, which houses a water supply pipe with heater, a water shutoff valve, and hoses.

Condition Narrative

No major deficiencies were observed or reported during the assessment.



Sandstone Macewan - Rink-Boarded - G301024



Sandstone Macewan - Rink-Boarded - G301024

G40 Site Electrical Utilities

Element Description		
Name	G401010 - Electrical Service Single Phase - Rink - Boarded	
Installation Year	1997	
Condition	4 - Good	
Expected Useful Life	50 Years	
Remaining Useful Life	25 Years	
Renewal Year	2047	
Quantity / Unit of Measure	50 / LM	
Unit Cost	\$255.00	
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1	
Element Cost	\$12,750.00	
Location	Site Grounds	

Description

A buried, single-phase, 240-volt electrical service is provided to the site panel located northwest of the rink.

Condition Narrative

No major deficiencies were observed or reported during the assessment.

Element Description	
Name	G401020 - Site Panelboards - Rink - Boarded
Installation Year	1997
Condition	4 - Good
Expected Useful Life	40 Years
Remaining Useful Life	15 Years
Renewal Year	2037
Quantity / Unit of Measure	1 / Each
Unit Cost	\$8,508.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$8,508.00
Location	Northeast of Outdoor Rink

A electrical enclosure is mounted on a light pole, located northwest of the entrance to the skate rink. The enclosure includes a main fused disconnect switch, an electrical meter, a single-phase branch circuit panel, and multiple timers. The disconnect manufacturer or electrical rating could not be confirmed during the assessment. The breaker panel is manufactured by Federal Pioneer and includes eight circuits. The electrical rating of the panelboard could not be determined during the assessment.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone Macewan - Rink-Boarded - G401020



Sandstone Macewan - Rink-Boarded - G401020

Recommendations #1 - Site Panelboards		
Туре	Lifecycle	
Year	2037	
Cost	\$10,635.00	
Priority	Priority 4: Proactive Replacement	
Likelihood	1-Low	
Consequence	3-High	
Risk Score	3	
Event Triggers	Beyond Useful Life	

Replace Site Panelboards

Element Description	
Name	G401021 - Site Branch Wiring and Devices - Rink - Boarded
Installation Year	1997
Condition	4 - Good
Expected Useful Life	40 Years
Remaining Useful Life	15 Years
Renewal Year	2037
Quantity / Unit of Measure	200 / LM
Unit Cost	\$126.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$25,200.00
Location	Outdoor Rink Perimeter

Overhead branch wiring is provided to link site exterior light poles.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone Macewan - Rink-Boarded - G401021



Sandstone Macewan - Rink-Boarded - G401021

Recommendations #1 - Site Branch Wiring and Devices								
Туре	Lifecycle							
Year	2037							
Cost	\$31,500.00							
Priority	Priority 4: Proactive Replacement							
Likelihood	1-Low							
Consequence	3-High							
Risk Score	3							
Event Triggers	Beyond Useful Life							

Replace Site Branch Wiring and Devices

85

Element Description	
Name	G402014 - Light Poles - Over 7M - Rink - Boarded
Installation Year	1997
Condition	4 - Good
Expected Useful Life	30 Years
Remaining Useful Life	6 Years
Renewal Year	2028
Quantity / Unit of Measure	8 / Each
Unit Cost	\$5,715.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$45,720.00
Location	Outdoor Rink Perimeter

There are eight (8) wood poles installed around the rink perimeter to support floodlights.

Condition Narrative

No major deficiencies were observed or reported during the assessment. The component is nearing the end of its expected useful life, and although its remaining useful life has been extended beyond the short-term of the evaluation period due to the absence of significant observed or reported deficiencies, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone Macewan - Rink-Boarded - G402014



Sandstone Macewan - Rink-Boarded - G402014

Recommendations #1 - Light Poles - 40' high							
Туре	Lifecycle						
Year	2028						
Cost	\$57,150.00						
Priority	Priority 4: Proactive Replacement						
Likelihood	1-Low						
Consequence	2-Medium						
Risk Score	2						
Event Triggers	Beyond Useful Life						

Replace Light Poles - 40' high

Element Description	
Name	G402016 - Pole Light Fixtures - Rink - Boarded
Installation Year	2019
Condition	4 - Good
Expected Useful Life	25 Years
Remaining Useful Life	22 Years
Renewal Year	2044
Quantity / Unit of Measure	8 / Each
Unit Cost	\$1,905.00
Difficulty / Regional / Soft Cost Factors	1.00 / 1 / 1
Element Cost	\$15,240.00
Location	Outdoor Rink Perimeter

There are eight (8) pole-mounted floodlight fixtures that incorporate LEDs installed on poles on the rink perimeter. The fixtures were reportedly installed circa 2019.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period.



Sandstone Macewan - Rink-Boarded - G402016



Sandstone Macewan - Rink-Boarded - G402016

FINAL

Recommendations

Recommendations #1 - Pole Light Fixtures								
Туре	Lifecycle							
Year	2044							
Cost	\$19,050.00							
Priority	Priority 4: Proactive Replacement							
Likelihood	1-Low							
Consequence	2-Medium							
Risk Score	2							
Event Triggers	Beyond Useful Life							

Replace Pole Light Fixtures

Element Description	
Name	G403099 - Other Site Communications and Security Systems - Rink - Boarded - Security Cameras
Installation Year	2010
Condition	4 - Good
Expected Useful Life	30 Years
Remaining Useful Life	18 Years
Renewal Year	2040
Quantity / Unit of Measure	1 / Lump Sum
Unit Cost	\$10,000.00
Difficulty / Regional / Soft Cost Factors	0.20 / 1 / 1
Element Cost	\$2,000.00
Location	Outdoor Rink Perimeter

There are two (2) pole-mounted security cameras installed on light poles on the rink perimeter.

Condition Narrative

No major deficiencies were observed or reported during the assessment. Based on age, the component is expected to require lifecycle replacement within the 25-year evaluation period. The difficulty factor has been adjusted based on the style and quantity of the units.



Sandstone Macewan - Rink-Boarded - G403099

Recommendations #1 - Other Site Communications and Security Systems									
Туре	Lifecycle								
Year	2040								
Cost	\$2,500.00								
Priority	Priority 4: Proactive Replacement								
Likelihood	1-Low								
Consequence	3-High								
Risk Score	3								
Event Triggers	Beyond Useful Life								

Replace Other Site Communications and Security Systems

Appendix C

Short-Term (5 Year) Lifecycle Plan

Short-Term (5 Year) Lifecycle Plan

Item No.	Amenity ID	Component Name	Location	Action Description	Action Type	Risk Rating	2022 Immediate	2023 Year 1	2024 Year 2	2025 Year 3	2026 Year 4	2027 Year 5	Total
1	1425 - Rink- Boarded	ice Rink Dasher Boards (Outdoor)	Outdoor Rink Perimeter	Replace Ice Rink Dasher Boards - Outdoor	Lifecycle	9	\$ -	\$ 228,000	\$ -	\$ -	5 -	\$ -	\$ 228,000
2	1425 - Rink- Boarded	Asphalt Paved Surfaces	Outdoor Rink Playing Surface	Replace Asphalt Paved Walkway	Lifecycle		\$ -	\$ 106,750	\$ -	\$ -	\$ -	ş ·	\$ 106,750
3	1425 - Rink- Boarded	Benches - Metal	Outdoor Rink Deck	Replace Benches - Metal	Lifecycle		\$ -	\$ 3,041	\$ -	\$ -	ş -	\$ -	\$ 3,041
4	1425 - Rink- Boarded	Asphalt Paved Surface - Roadway (Light Duty)	Northeast of Ouldoor Rink	Replace Asphalt Paved Surface - Roadway (light duty)	Lifecycle		\$ -	\$ 3,050	\$ -	\$ -	\$ -	ş ·	\$ 3,050
5	1425 - Rink- Boarded	Exterior Wood Decks	Northeast of Outdoor Rink	Replace Exterior Wood Decks	Lifecycle	6	\$ -	\$ 27,350	\$ -	\$ -	\$ -	\$ -	\$ 27,350
6	1425 - Rink- Boarded	Sports Goals	Outdoor Rink Perimeter	Replace Sports Goals	Lifecycle		\$ -	\$ 21,270	\$ -	\$ -	\$ -	\$ -	\$ 21,270
7	1425 - Rink- Boarded	Exterior Site Stairs - Wood	Northeast side of Outdoor Rink	Replace Exterior Site Stairs - Wood	Lifecycle	6	\$ -	\$ 4,560	\$ -	\$ -	5 -	\$ -	\$ 4,560

- | \$ 394,021 | \$

Appendix D

Long-Term (25 Year) Lifecycle Plan

Long-Term (25-Year) Lifecycle Plan

Item No.	Amenity ID	Component Name	Location	2022 Immediate	2023 Year 1	2024 Year 2	2025 Year 3	2026 Year 4	2027 Year 5	2028-2032 Years 6-10	2033-2037 Years 11-15	2038-2042 Years 16-20	2043-2046 Years 21-24		Total
1	1424 - Rink- Pleasure	Site Panelboards	Outdoor Rink Southeast	\$ -	\$ -	\$ -	ş -	ş -	ş -	\$ -	\$ 10,635		ş -	*	10,635
2	1424 - Rink- Pleasure	Sife Branch Wiring and Devices	Outdoor Rink	\$ -	ş -	ş -	ş -	ş -	ş -	\$ -	\$ 31,500	ş -	ş -	*	31,500
3	1424 - Rink- Pleasure	Light Poles - Up to 7M	Outdoor Rink Perimeter	\$ -	\$ -	\$ -	\$ -	ş -	ş -	\$ 31,750	\$ -	ş -	ş -	*	31,750
4	1424 - Rink- Pleasure	Pole Light Fixtures	Outdoor Rink Perimeter	\$ -	\$ -	\$ -	ş -	ş -	ş -	\$ -	\$ -	ş -	\$ 19,050	\$	19,050
5	1425 - Rink- Boarded	ice Rink Dasher Boards (Outdoor)	Outdoor Rink Perimeter	\$ -	\$ 228,000	\$ -	ş -	ş -	ş -	\$ -	\$ -	ş -	ş -	\$	228,000
6	1425 - Rink- Boarded	Asphalt Paved Surfaces	Outdoor Rink Playing Surface	\$ -	\$ 106,750	ş -	ş -	ş -	ş -	ş -	ş -	ş -	ş -	*	106,750
7	1425 - Rink- Boarded	Sife Panelboards	Northeast of Outdoor Rink	\$ -	\$ -	\$ -	\$ -	ş -	ş -	\$ -	\$ 10,635	ş -	ş -	\$	10,635
8	1425 - Rink- Boarded	Benches - Metal	Outdoor Rink Deck	\$ -	\$ 3,041	\$ -	\$ -	ş -	ş -	\$ -	\$ -	ş -	ş -	\$	3,041
9	1425 - Rink- Boarded	Light Poles - Over 7M	Outdoor Rink Perimeter	\$ -	\$ -	\$ -	ş -	ş -	ş -	\$ 57,150	\$ -	\$ -	ş -	\$	57,150
10	1425 - Rink- Boarded	Asphalt Paved Surface - Roadway (Light Duty)	Northeast of Outdoor Rink	\$ -	\$ 3,050	\$ -	\$ -	ş -	ş -	\$ -	\$ -	ş -	ş -	\$	3,050
11	1425 - Rink- Boarded	Exterior Wood Decks	Northeast of Outdoor Rink	\$ -	\$ 27,350	ş -	ş -	ş -	ş -	\$ -	ş -	ş -	ş -	\$	27,350
12	1425 - Rink- Boarded	Pole Light Fixtures	Outdoor Rink Perimeter	\$ -	\$ -	ş -	ş -	ş -	ş -	\$ -	\$ -	ş -	\$ 19,050	\$	19,050
13	1425 - Rink- Boarded	Pylon Sign	Northwest of Outdoor Rink	\$ -	\$ -	\$ -	\$ -	ş -	ş -	\$ 31,905	\$ -	ş -	ş -	*	31,905
14	1425 - Rink- Boarded	Site Branch Wiring and Devices	Outdoor Rink Perimeter	\$ -	\$ -	\$ -	ş -	ş -	ş -	\$ -	\$ 31,500	\$ -	ş -	\$	31,500
15	1425 - Rink- Boarded	Sports Goals	Outdoor Rink Perimeter	\$ -	\$ 21,270	\$ -	\$ -	ş -	ş -	\$ -	\$ -	ş -	ş -	*	21,270
16	1425 - Rink- Boarded	Exterior Site Stairs - Wood	Northeast side of Outdoor Rink	\$ -	\$ 4,560	\$ -	\$ -	ş -	ş -	\$ -	\$ -	\$ -	ş -	\$	4,560
17	1425 - Rink- Boarded	Miscellaneous Structures	West of Outdoor Rink	\$ -	\$ -	ş -	ş -	s -	ş -	\$ 60,770	\$ -	ş -	ş -	\$	60,770
18	1425 - Rink- Boarded	Other Site Communications and Security Systems	Outdoor Rink Perimeter	\$ -	\$ -	5 -	5 -	ş -	ş -	\$ -	\$ -	\$ 2,500	ş -	\$	2,500
			Totals	\$ -	\$ 394,021	\$ -	\$ -	\$ -	\$ -	\$ 181,575	\$ 84,270	\$ 2,500	\$ 38,100	\$	700,466

25 Year Lifecycle Plan Summary

LIFE CYCLE	Sendstone Mecewan Community																										
PLAN	Association																										
PLAN	Calgary, Alberta	2002	2023	2004	2005	2026	3027	2028	2029	2000	2051	2052	2005	2004	2005	2006	2017	3000	2009	2010	2041	2042	3045	2044	2015	2046	TOTAL
A30	FOUNDATIONS	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$.	\$ -	\$ -	\$ -	\$ -	\$.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
A20	BASEMENT CONSTRUCTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
830	SUPERSTRUCTURE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
020	EXTERIOR ENCLOSURE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -
830	ROOFING	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CSO	INTERIOR CONSTRUCTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
C20	STAIRS	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
C30	INTERIOR FINISHES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
000	CONVENING	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
020	PLUMBING	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
000	HWAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	ş -
D40	PIRE PROTECTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$.	\$ -	\$ -	\$ -		\$ -	\$ -
060	ELECTRICAL	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
E30	EQUIPMENT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
E30	FURNISHINGS	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
F10	SPECIAL CONSTRUCTION	\$ -	\$ 226,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 228,000
F20	SELECTIVE BUILDING DEMOUTION	\$ -	\$ -	\$ -	\$ -	\$	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
G10	SITE PREPARTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
620	SITE IMPROVEMENTS	\$ -	\$ 366,621	\$ -	\$ -	\$ -	\$ -	\$ 92,675	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 258,696
630	SITE MECHANICAL UTILITIES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
GAD	SITE BLECTRICAL UTILITIES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 66,900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 64,270	\$ -	\$ -	\$ 2,500	\$ -	\$ -	\$ -	\$ 36,300	\$ -	\$ -	\$ 213,770
630	OTHER SITE CONSTRUCTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	TOTAL	\$ -	\$ 394,021	\$ -	\$ -	\$ -	\$.	\$ 181,575	\$ -	\$.	\$ -	\$ -	5 -	\$ -	\$ -	\$ -	\$ 84,270	\$ -	\$.	\$ 2,500	5 -	\$ -	\$ -	\$ 34,100	\$ -	\$ -	\$ 700,466



November 30, 2023

Sue Coatham, President Sandstone MacEwan Community Association 300, 8120 Beddington Blvd. N.W. Calgary, AB T3K 2A8

Dear Sue:

Re: Project Support in Principle

We have received your request regarding your Outdoor Rink Redevelopment Project and support, in principle, your organization in proceeding to further investigate required approvals as per your current License of Occupation with The City of Calgary.

The City supports this project in principle only. Formal approval to proceed with this project, complete with a Letter of Authorization from the Landowner (if required), will only be provided after the following requirements have been met:

- Approved financial review. Please note that 90% of the project's funds, including 15% contingency for your project, must be in place.
- Approved technical review.
- Adherence to all terms and conditions, as outlined in Sections 10.2 to 10.6, and 13.1 of your current License of Occupation Agreement.
- Where applicable, site amendment and approval for any required extension to the boundary identified in Schedules "A" and "B" of your agreement.

Please be advised this Project Support in Principle is valid until November 30, 2025. If your organization is interested in pursuing this project after this date or for information on completing the above requirements, please contact your Neighbourhood Partnership Coordinator, Angela Williams at 403.807.5299 or awilliams@calgary.ca.

Sincerely,

Tim Mowrey

tuoung

Manager, Community Partners

Partnerships

The City of Calgary | Mail code #225

P.O. Box 2100, Station M

Calgary, AB Canada T2P 2M5

cc: Angela Williams, Neighbourhood Partnership Coordinator, Community Partners, Mail code #121
Tina Brillantes, Team Lead, Community Partners, Mail code #121
Bruce Furlong, Team Lead, Capital Conservation Grant, Mail code #8133
Chris Scarcelli, Facility Operations Coordinator, Capital Conservation Grant, Mail code #8133
Sue de Caen, Grant Coordinator, Capital Conservation Grant, Mail code #8133



Office of the Honourable Josephine Pon

Minister of Seniors and Housing MLA Calgary-Beddington



Legislature Office 404 Legislature Building 10800 97 Avenue NW Edmonton, AB T5K 2B6 Tel: (780) 415-9550

Tel: (780) 415-9550 Fax: (780) 415-9411

Constituency Office

Beddington Co-op Centre

#106 – 8220 Centre Street NE

Calgary, AB T3K 1J7

Tel: (403) 215-7710 Fax: (403) 216-5410

September 15, 2021

Dear Sandstone-MacEwan Community Association (SMCA),

Thank you for reaching out to my office and requesting an opportunity to share with me your initiative to apply for the Government of Alberta Community Facility Enhancement Program (CFEP) Grant. It is an honour to serve you and your members within the Calgary-Beddington constituency.

I deeply appreciate the commitment and dedication of the SMCA to advocate for the maintenance and improvement of critical community infrastructure. One of such projects is the Sandstone outdoor community ice rink. The rink, located at 355 Sandarac Drive NW in my constituency of Calgary-Beddington, has been a beloved and popular feature pleasure destination for countless of my constituents, as well as many other Calgarians. It serves as a community hub for ice skating, recreational hockey, summer lacrosse, elementary school skating lessons, community basketball lessons, pick-up basketball, and many others. During the COVID-10 pandemic, rink use has increased exponentially, as residents look to the rink to remain physically active and healthy, while providing this opportunity for their family and neighbours.

Unfortunately, the rink has reached the end of its lifecycle. Various components have required replacement maintenance, or repair work to keep the rink usable. The SMCA has been pursuing a rink replacement project since 2018. In 2019/2020, the SMCA initiated a community survey to determine support for a rink replacement project. The response from the community was overwhelmingly supportive. Meanwhile, the SMCA has been working with the City of Calgary to develop a scope for the rink replacement and is hoping to complete grant applications soon for the replacement project itself. Currently, SMCA is seeking to establish a Project Manager to oversee the development of this important community project, to support and assist the SMCA volunteer Board of Directors. Recent Calgary community rink projects, including in Parkdale and Hidden Valley, each engaged a project manager to assist with the day-to-day work to ensure that the project was successful.

I am pleased to provide my full support to the Sandstone MacEwan Community Association in your application for the Community Facility Enhancement Program (CFEP) Grant. Your continued efforts to make our community better and strengthen critical local infrastructure, such as the Sandstone outdoor community ice rink, are greatly appreciated by the people of Calgary-Beddington. Thank you for your thoughtful consideration to inform me of your intent to apply for this grant. I wish you all the best as you move forward with this initiative.

Sincerely,

Honourable Josephine Pon Minister of Seniors and Housing MLA Calgary-Beddington

Proudly serving the communities of Calgary-Beddington
Beddington Heights • Huntington Hills • Sandstone Valley
MacEwan Glen • Country Hills • Hidden Valley

Dear Sandstone-MacEwan Community Association (SMCA),

Thank you for sharing with us your plans to enhance our communities with this proposed project. It is my view that this is a worthy use of the Government of Alberta's Community Facility Enhancement Program (CFEP) Grant. Certainly, this view is shared by the many community members who would benefit from such a wonderful gathering space.

I commend the efforts of the SMCA to pursue this project and maintain the vision regardless of the challenges faced in such an undertaking. This project will breathe life back into this well loved but past due infrastructure which will inevitably reinvigorate the neighborhoods which it serves. I appreciate that the sole focus of the SMCA is to bring our communities together by providing much needed "third places" within the constituency of Calgary-Beddington and to pair that with well run-programming which provides countless opportunities for our neighbors to lead active, healthy, and meaningful lives.

This project in many respects is long overdue. It is critical for the health and vitality of our communities to have these public gathering spaces which can do so much to bring us all closer together. I want to sincerely thank all the tireless efforts of the SMCA Board, all volunteers, City of Calgary stakeholders and engaged members of the community who have kept this dream alive and surely will see it through to the end.

I am pleased to offer my full support to the SMCA in your application for the CFEP Grant. It is my hope that this much needed assistance makes it into the hands of these folks who will make the absolute most of the provided resources. This new Sandstone-MacEwan rink will be well loved by countless Calgarians, and I cannot wait to join them.

I wish you all the very best in your continued efforts on this initiative and look forward to seeing this project come to fruition.

Sincerely,



MLA Calgary-Beddington

Mohkinstsis, Treaty 7 Territory

ET

106-8220 Centre St NE (403) 215-7710 T3K 1J7



SANDSTONE MACEWAN Community Association

Project: SMCA Outdoor Hockey Rink

Colin May & Jennifer Bidlake-Schroeder

- Co-Chairs, SMCA Rink Rebuild Committee
- Contact: colin@myfi.org / jeffjen@telus.net
- Alternative: SMCA Rink Committee rinkbuild@sandstonemacewan.com

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Community letters of support

The SMCA board & rink project committee invited community members to provide their feedback, and the following is a sample based on the responses given.

Email addresses are kept confidential for privacy reasons, but are available if the individual permits us to release them. SMCA Info is contactable at info@sandstonemacewan.com – the CAs primary contact email address.

From: COLIN ALEXANDER

Date: September 2, 2023 at 11:04:31 MDT

To: SMCA Info

Subject: Hockey Rink Rebuild Donation

Hello,

I have made a donation (\$1000) through the Parks Foundation Calgary and want to make sure the funds have been received.

I am currently a scout with the Pittsburgh Penguins and grew up skating on my local community outdoor rink when I was a young boy. Those opportunities were some of the best days of my youth and I want to help ensure that future youth have the opportunity to skate with their friends and family for years to come.

Please confirm that you have received the donation through PFC.

Thank you.

Colin Alexander

From: Dale Struksnes

Date: September 18, 2023 at 12:01:34 MDT **To:** SMCA Info; Colin May; Willa Wu

Subject: Support for Sandstone MacEwan Rink Rebuild Project

To Whom it May Concern:

As a long time resident and volunteer in the Sandstone MacEwan community, I would like to provide my support for the proposed Sandstone MacEwan Rink Rebuild project. This facility has been extremely well used by the community over its lifecycle, and is desperately in need of an upgrade. We received a substantial increase in usage

during the initial 2020 Covid year, as families were looking for a safe and cheap outdoor pursuit to keep their families healthy and engaged. It was very gratifying to see this increase in usage, which has continued to this day.

The facility is showing its age, with the uneven/undulating rink surface making it difficult to flood, and causing premature exposure of high spots in the spring which accelerates the melting of the entire ice surface, shortening the effective season for ice skating. The boards are in a state of disrepair, and need to be fixed or replaced in order to minimize water melting and draining out of the rink. The excessive melt water due to the deteriorating boards and uneven rink surface causes significant additional water usage in order to keep the rink properly flooded. With water consumption coming under increased scrutiny, future rinks need to be designed to minimize water usage. Further, the boards, if left to deteriorate, may provide a safety hazard in the future which necessitates additional ongoing expenditures for patchwork fixes.

To summarize, the facility is well utilized for both winter and summer sports, and needs to be upgraded in order to provide a better quality experience for users. A new rink surface and boards that are well designed will provide a more reliable and efficient rink operation as well.

Thanks,
Dale Struksnes
Sandstone MacEwan Rink Maintenance Volunteer
(403) 835-XXXX (cell)

From: R S

Date: September 18, 2023 at 17:43:07 MDT

To: SMCA Info

Subject: Sandstone Rink

As a coach within the McKnight hockey association, I understand the importance of having an outdoor facility that our players can play on. This enhances a love of the game through unstructured play. It also helps our children learn a level of responsibility is supporting and maintaining this type of outdoor facility.

It has become apparent that this facility is used extensively throughout the entire year and due to that pressure, impacts to maintaining the faculty become greater.

It is my hope that the Sandstone community association is successful in their grant applications, and fundraising efforts, to assist with the maintenance of this outdoor facility.

Sincerely,

Robb Shewchuk

From: Lili Law

Sent: Sunday, September 17, 2023 11:45 AM

To: SMCA Info

Subject: Letter of recommendation

Hi there,

My name is Lili and I've lived in Sandstone now for 6 years. I have 2 young girls. We try our best to spend our evenings outside. Revitalizing the rink would not only enhance the safety of our community members, but will provide a vital space for recreation and exercise in the winter and summer for many years to come.

Thank you.

Lili Law

From: Gina Fryer

Sent: Saturday, September 16, 2023 2:09 PM

To: SMCA Info

Subject: Letter of Support

I have three kids that grew up in this community, all skaters and though short, frequently also basketball players. We have spent COUNTLESS hours enjoying the rink, and I just had to let you know how much I appreciate that our community has a rink to go to! I would love to be able to enjoy an updated rink for years to come. I also know that Beddington residents come to Sandstone to use the rink.

Thank you, and good luck with the funding! Gina Fryer

From: Shelly Bruce

Sent: Fri, September 15, 2023 at 8:18 PM

To: SMCA Info

Subject: Rink Building support

I am happy to show my support for the rink building initiative as needed from the community association. The rink has been a staple part of this community. It is a very important facility that it is needed. The rebuild is needed as the rink has deteriorated.

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Personally, my family and I used the rink throughout the years as they grew up. The schools used the rink to give skating lessons, there were tons of pickup shinny games. As I drive by the rink, even now, I see the rink being used regardless of seasons. As a community, we all benefit as people are using it to exercise, to meet each other for friendship and good times.

Shelly Bruce

From: lora risk

Date: September 17, 2023 at 19:00:15 MDT

To: SMCA Info

Subject: Support letter

September 17, 2023

To whom it may concern,

As a member of the sandstone neighborhood, I would like to share how valuable the community rink on sandarac drive is. Through all the seasons the rink is constantly being used by children, teens, and adults. As a parent of a now 14 year old, I have seen him grow up on that rink. From barely able to stand on skates to now playing shinny with adults. He's also used it for skateboarding, basketball and street hockey. I'm hoping for improvements to the rink so children, teens, and adults can continue to safely enjoy these recreational activities.

Thank you, Lora Risk-Ronak

From: Joanne Meyer

Date: September 18, 2023 at 14:21:35 MDT

To: SMCA Info

Subject: Sandstone outdoor rink

Dear Sandstone MacEwan Community Association,

We have heard that community is looking to build a new outdoor arena. We think this is a wonderful and much needed project!

We have used the current arena to get our son and his friends out to play some lacrosse during the spring and summer. They also utilize the rink a lot during the winter to play some shinny & we consider it an important meeting place for the boys to congregate and enjoy their sports.

Thank you, David and Joanne Meyer (403)990-XXXX



Office of the Councillors
COUNCILLOR J. MIAN

December 19, 2023

RE: Support for The Sandstone MacEwan Community Association's Outdoor Community Rink Application – The Council Community Fund

To Whom It May Concern,

As the City Councillor for Ward 3, I would like to express my support for the Sandstone MacEwan Community Association's (SMCA's) application for the Council Community Fund (CCF). I commend SMCA for their continual efforts to enrich the communities of Sandstone, MacEwan, and neighbouring areas. I have seen firsthand the many hours local residents have volunteered, through fundraising efforts and collaborations with the City of Calgary, to ensure this 25+ year old outdoor rink is a wonderful ammenity for all to enjoy.

After a lifecycle review of all physical assets of the Community Association, the City of Calgary found that the boarded rink had reached the end of its lifespan. The Community Association has invested \$10,000 of its own operating funds to resolve immediate safety concerns, but the full rink needs to be replaced in order to maintain functionality and safety standards. Since July 2021, the SMCA board has engaged with the City on design and development work. The final costs are estimated to be approximately \$800,000 in total.

The Community Association fully recognizes the privilege of this grant, and to assure the sustainability of the rink long-term, they are actively working on a long term budgeting and marketing strategy so that future board members can maintain the quality and safety of the rink. They have a proven track record of managing their community assets. This rink is one of only two publically available outdoor rinks in the entirety of Ward 3, which has a significant impact on local individuals and wide array of community programming.

The Sandstone MacEwan Community Association continues to be steadfast in their efforts to make Calgary a wonderful place to live and play. This incredible grassroots initiative will bring long lasting benefits to the neighbourhood and its residents. Please contact me if you have any questions about my support for this project.

Sincerely,

Jasmine Mian Councillor, Ward 3

Jasmine Mian