

*Report*

BERNIER CARR & ASSOCIATES PC

**CITY OF WATERTOWN**  
Ice Arena Study  
Project No. 2008-020



*Prepared for:*

City of Watertown  
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**SECTION 1**  
**Site Evaluation**

The Watertown Ice arena is situated on City property as part of an approximately 90 acre complex serving numerous recreation fields, baseball park, as well as the city's sewage treatment plant.

The arena site is accessed directly off Coffeen Street. The address of the facility is 600 William T. Field Drive.

## **A. PARKING AND VEHICULAR ACCESS**

The main access to the arena entrance is via a circle drive which allows pickup and drop off at the main entrance and emergency vehicle access. No parking is permitted on the circle drive.

Parking for the arena includes a paved parking lot of 113 spaces, which includes 5 handicapped spaces. The condition of the paved lot is generally good. The parking lot is drained utilizing catch basins and storm sewer piping which ultimately drains to the Black River located immediately to the northeast of the arena. Concrete walks provide access from the parking lot to the main entry doors located at the West end of the facility.

An unmarked parking lot is located adjacent to the skate park. This lot can accommodate approximately 50 cars.

Current zoning requirements recommend that skating rinks have 2 spaces for each 1,000 square feet of area. This would equate to approximately 40 spaces for the 43,700 square foot facility.

Public assembly parking recommendations are 200 square feet for every four seats of assembly. For an event of 3,000 attendees, or 150,000 square feet, or approximately 500 spaces.

During events that require more than the available paved parking, the adjacent athletic fields are utilized. Future RV parking is planned at the skate park.

## **B. STORM DRAINAGE**

Storm drainage is provided for the site via an 18 inch diameter storm sewer which discharges to the Black River. Three catch basins collect runoff from the southeastern parking lot, and are connected via 12 inch diameter piping.

Roof drains are connected to the storm drainage piping via an 8 inch diameter storm drain connecting to a manhole immediately adjacent to the northern corner of the facility.

## **C. SUMMARY**

In summary, the city should consider the following improvements:

1. Increase hard surface parking.
2. Increase parking in vicinity of pool.
3. Re-design drop off and handicap parking areas in front of the arena to be more efficient.

**SECTION 2**  
**Site Utilities**

### A. POTABLE WATER SERVICE

According to available records, the Ice arena is served by an 8 inch diameter cast iron water main. This main is fed from a 10 inch diameter line on VanDuzee Street, which is fed from the 12 inch diameter main on Coffeen Street.

Two fire hydrants are in the vicinity of the arena, one located off the northern corner of the facility adjacent to the circle drive, and a second hydrant located adjacent to the southern corner of the property on Earl Street. The water service enters the building on the western end of the pool bathhouse portion of the building. There are currently no problems with the water service.

### B. SANITARY SEWER

Sanitary sewage service is provided to the site via a 36" diameter trunk sewer located on the western portion of the property. The lateral from the building exits the bathhouse portion of the building and connects to the 36 inch sewer at a manhole off the western corner of the building. Records indicate the depth of this manhole of approximately 17 feet below grade.

**SECTION 3**  
**Environmental Considerations**

The existing refrigeration piping in the concrete slab is low density polyethylene with steel headers. Sections of the headers have been replaced with new flanged sections. No significant leaks have been reported which would be considered an environmental problem depending on the nature of the brine.

Since the building was constructed in 1974-1975 (pre 1977), a hazardous material assessment should be conducted prior to any demolition work. This evaluation should include testing for asbestos containing materials and lead based paint. Additionally, attention should be given to the presence of PCB's, given the heightened awareness of the risks of caulks and mastics containing PCB's.

The arena has no chemical bulk storage.

**SECTION 4**  
**Building**

**A. OVERVIEW**

The City of Watertown's Ice Arena is a steel framed structure constructed in 1974-1975 as an open sided structure connected to the pool which was built in 1973. Evaluation of the pool is not part of this study. It consists of a steel frame, steel purlins, a standing seam metal roof that was later coated with a urethane system, and a poured concrete slab-on-grade floor. The structural system of the building (consisting of the steel frame, connecting purlins, and concrete foundations supporting the steel frame) all appear to be in good condition. The locker room area is constructed of load bearing concrete block walls with pre-cast concrete plank roofs. The existing concrete slab shows no evidence of movement nor does the floor exhibit any signs of leaking from the under slab piping. Supporting areas were constructed in 1974-1975 and included changing rooms, men's and women's restrooms, concession area, official waiting room, and mechanical rooms.

The original sloped roofing system over the arena area is still in place and is a steel roof installed directly over the structural steel purlins. The total roof area is approximately 40,000 square feet. The original roof was installed in 1974-1975. It is our understanding, in that the arena was originally built as an open air facility, the original roof construction did not incorporate insulation. The City subsequently added rigid insulation to the underside of the roofing system to improve energy loss/gain through the roof system.

In 2000, the City installed a spray applied polyurethane foam retrofit system over the existing steel roof. The City received bids for two (2) alternatives; the first a spray system applied directly to the steel for approximately \$ 117,000, and a second alternative to include a one inch layer of spray applied insulation, for a total installed cost of \$ 177,000. It is our understanding the basic coating only option was selected. This coating system was installed by A to Z Coatings, Inc., of Orangeburg, NY. The product used was manufactured by Truco Inc., and began showing signs of failure in 2004. Efforts to enforce the warranty have been unsuccessful. Since that time, the roof coating has continued to delaminate.

In 2004, a proposal was received from Monolithic Coatings to re-coat the roof for \$8,640. However, that proposal was not accepted. An inspection of the roof in March 2009 showed that the roof coating continues to deteriorate, and there is surface rusting on the roof edges in some locations. Also in 2004, the roof vent cover was replaced by Allside Roofing. There have been reported periodic instances of the roof leaking. Inspection of the roof vent in March 2009 showed that there were gaps where the top and sides fasten as well as gaps in the caulking on the west end.

The arena was enclosed in 1978 with brick infill walls and a window strip between the top of the wall and the roof eave.

In the northwest corner of the building, there is a concrete block office area that was constructed for the Parks and Recreation Department in 1988. The main entrance to the building is located between the pool building and the arena on the northwest end. Currently, it is the only public entrance to the building, forcing spectator and team traffic to pass through a pair of single doors. For some events one of the west end sets of (3) double doors is utilized as an entrance.

In 1986, the City made greater use of the available space in the pool building to create more locker room space, skate rental, and conference room.



The strip of windows around the building under the eaves has been covered with rigid insulation as has the underside of the roof. The main entrance doors are aluminum with full glass. The exit doors are insulated fiberglass units with small vertical vision panels. The non-exit interior doors have knob type hardware while the exterior exit doors have panic bars and self-closers.

The interior of the building finishes are mostly painted concrete block, except for the recreation office.

The dasher boards are manufactured by Crystaplex and were new in 1996. They are in good condition with special safety glass held in place with aluminum tubing at the top of the boards. There are 11 sections of retractable and movable wood bleacher type seating (10 tiers high) which are located around the ice sheet. The majority of the floor finish is either rubber mats for protection from ice skates and sealed concrete.

The current configuration of the arena with the pool and shared spaces has some serious program and circulation issues that should be addressed. These can be broken down as follows:

1. Lack of an easily identifiable and convenient entrance into the building.
  - a. Because the arena began life as an open structure connected to the pool building, it never had a strong entrance with enough space for the public. Although there is plenty of emergency exiting, the public for the most part must exit the same as they came in through a pair of single doors, into a small lobby space down a narrow ramp into another small lobby and out into the arena. Ticketing for public skating was done from the same counter as the pool when the arena opened in 1975. Additionally, because of ice and snow coming from the roof, the doors on the south side cannot be used unless it is an emergency.
2. Lack of separation between the public, the players, and the officials.
  - a. Because there were only two original locker rooms, the pool locker rooms which had toilets and showers were made available and became the default locker rooms if only two were needed. However, either set of locker rooms meant that the teams (home and opposing) must first pass through the spectators to get to the ice. This offers the potential for teams to be subject both verbal and physical assault when excitement levels are high. Teams using the other two locker rooms must pass through the lobby to get to one of the other locker rooms to use a shower. Additionally, the referees must also pass through the spectator area to get to the ice.
3. Lack of facilities for performers at events.
  - a. There are currently no areas available for performers unless the locker rooms are used which then have the same issues as above. The performer's contracts often require that they be secured away from the public. This requires additional expense to rent trailers for them.
4. Lobby and Concession stand too small.
  - a. The current lobby areas are too small to effectively handle people entering the building who need to get tickets, warm up during the game, or access the concession stand.

5. Restroom facilities.
  - a. Currently, there are a set of male and female toilet rooms available to the public (4 toilets in the women's room, 3 toilets and 2 urinals in the men's room) with more toilets in the two lockers rooms which are effectively not available to the public. (unless you are on a team) The number of toilets available is far below what is currently required by Code.
  
6. Lack of potential revenue space for arcade, pro-shop, and party rooms which limits growth.
  - a. Lack of space is a recurring theme. Potential for office uses is not being realized due to lack of space.

**SECTION 5**  
**Mechanical, Plumbing, and Electrical Systems**

## Section 5

## Mechanical, Plumbing, and Electrical Systems

### A. GENERAL

As previously mentioned, the City of Watertown's recreation facility at the Fair Grounds consists of an open air pool, locker rooms, mechanical rooms, storage rooms, ice arena, office space and public toilet facilities.

The pool facility was originally constructed in 1973 and included an outdoor pool and stand alone 4,000 square foot building consisting of men's and women's locker rooms storage rooms and pool mechanical room.

The ice arena was opened 1975 and enclosed in 1978. In 1988, an office area for Parks and Recreation was constructed by City forces. These offices were constructed within the footprint of the existing arena.

The current facility consists of the pool/ice arena and office area areas which are approximately 45,400 square feet of which the arena area is approximately 37,000 square feet and the supporting areas are approximately 8,400 square feet. The current layout of the facility is as shown below in Figure No. 1.

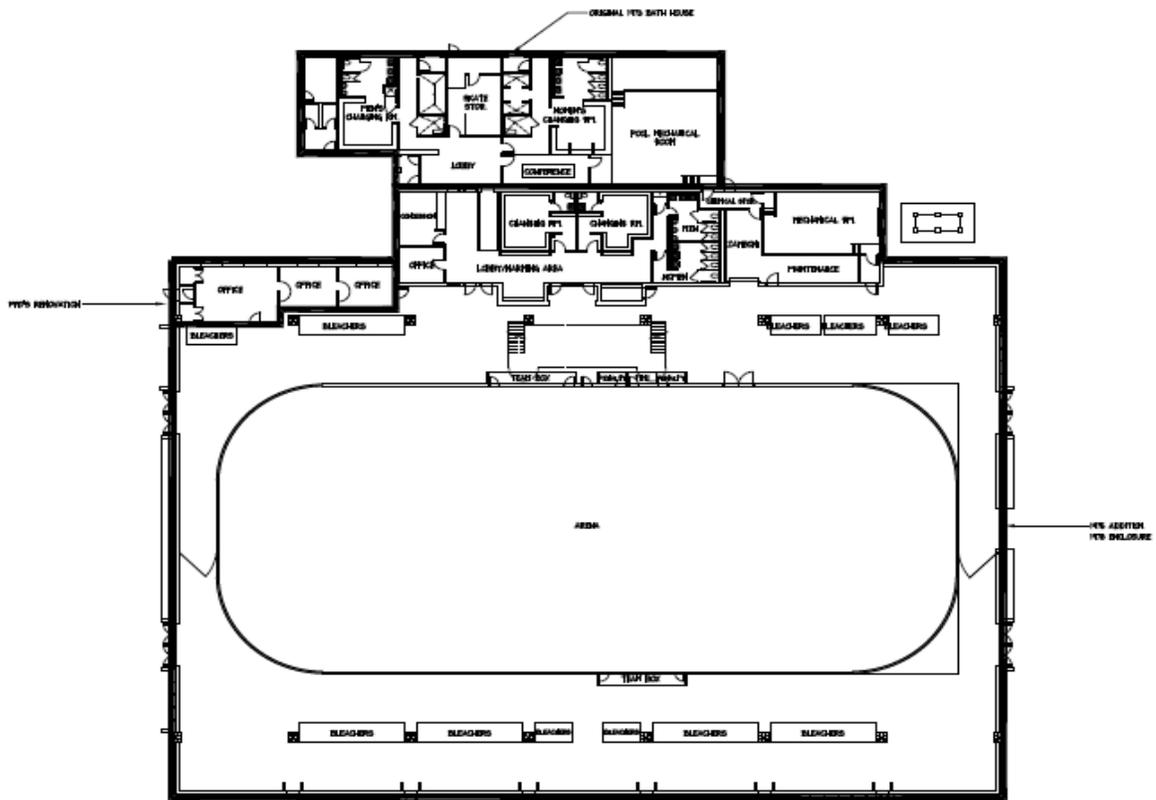


Figure 1 – Floor Plan

**B. HEATING, VENTILATION and AIR CONDITIONING SYSTEMS**

**1. Existing Conditions**

The heating system serving the supporting areas of this facility is a hot water hydronic system. This system consists of a central boiler, feed water pumps, hot water supply and return piping, and terminal heating units. The boiler is a natural gas fired, hot water, cast iron sectional, rated at 660 MBH. The feed water pumps are inline centrifugal. The hot water supply and return piping is copper insulated. The terminal heating units consist of ceiling hung unit heaters and fan coil units.

Hot water supply and return piping for heating runs exposed along the ceilings throughout the facility to the terminal heating units located within the individual spaces. The hot water supply and return piping is original except for the piping within the vicinity of the boiler which was replaced when the boiler was replaced in 1999. The feed water pumps were also replaced in 1999. The terminal heating units throughout the facility appear to be original.



*B1 – Boiler Plant*



*B2 – Hot Water Feed Pumps*



*B3 – Typical Terminal Heating Unit Lobby*



*B4 – Typical Terminal Heating Unit Locker Rooms*



*B5 – Typical Terminal Heating Unit Restrooms*



*B6 – Typical Terminal Heating Unit Mechanical Rooms*

The heating system serving the arena area consists of natural gas fired radiant heating units commonly referred to as co-ray-vac. These units run horizontal along the bottom of the structural steel roof members. These units are located over the spectator areas and ice surface. Radiant heat units were donated by the Watertown Industrial Center in 1996-97 after Car Freshener donated them. Empire Northeast was contracted to install the units for \$16,470 (materials and labor) in 1997. The units were used for early spring and late fall shows as well as during special ice events.



*B7 – Typical Radiant Heating Unit in Arena*



*B8 – Typical Radiant Heating Unit in Arena*

Mechanical ventilation to the supporting areas is only provided within the men's and women's locker rooms and lobby area outside the locker rooms. Outside ventilation air is introduced to these spaces through a fan coil unit located in the pool mechanical room and supply air ductwork. The ventilation air is exhausted from the locker rooms to the outdoors by means of a power roof exhauster.

The ventilation duct work to these areas is exposed as can be seen in the photo below.

## Section 5

## Mechanical, Plumbing, and Electrical Systems



*B9 – Locker Room Ventilation Ductwork*



*B10 – Locker Room Ventilation Ductwork*

Mechanical ventilation to the arena area is provided by means of supply louvers in the end walls of the arena structure and exhausted through an exhaust fan on the opposite end of the structure.



*B11 – Ventilation Supply Air Louver*



*B12 – Ventilation Exhaust Fan*

During period when the ice sheet is in place, ventilation of the arena area can cause problems. Excessive humidity is a problem with indoor rinks. Humidity causes fog, condensation, mildew, odors, and rust. The optimum moisture content is around 30 to 40 percent RH. A new humidification system was installed to eliminate humidity and moisture problems. The dehumidification unit for the ice arena is located on the east end, exterior of the building. This unit was installed in 2004.

Air conditioning is provided in only limited areas of the facility. The office area and arena area have air conditioning. The office area has a condensing unit serving a DX coil in the air handling unit serving the office area, and the arena has a packaged air handling unit serving its area. It is not known when the A/C unit for the office area was installed but assumes in 1998 when the offices were built. The A/C unit for the arena area was installed in 2004. The packaged air handling unit consists of the condensing compressors, DX coils, fans, and motors all in one unit. This unit is located on the east end, exterior of the building.

## Section 5

## Mechanical, Plumbing, and Electrical Systems



*B13 – Dehumidification Unit Arena*



*B14 – Dehumidification Unit Arena*



*B15 – Air Conditioning Unit Arena*



*B16 – Air Conditioning Unit Arena*



*B17 – Air Conditioning Unit Offices*

The air conditioning unit for the arena was installed to provide cooling when necessary during summer events that utilize the facility.

To produce ice in the arena requires the use of mechanical cooling within the floor of the skating rink for the ice to form. Chilled brine is circulated through a series of piping under the floor slab within the rink area. The piping under the slab is original 1975 low density polyethylene piping with steel headers. Over the 34 year life of the system, there have been relatively few leaks and the system has performed well. Some sections of the steel header have been replaced with new flanged sections. This brine is cooled through mechanical cooling via a chiller. The chiller for the arena was replaced in 2007 and is in excellent condition.



B18 – Arena Chiller

### 2. Deficiencies

The deficiencies noted in the heating, ventilation, and air conditioning systems are as follows.

- ♦ Existing heating piping in the pool mechanical room are showing signs of deterioration due to the corrosive environment within this space.
- ♦ Occupied spaces lack ventilation.
- ♦ The building HVAC control system is outdated.
- ♦ Unit heaters are approaching the end of their useful life.
- ♦ Radiant heating units are approaching the end of their useful life.
- ♦ Heating of arena space for non-ice events.
- ♦ Given the age of the under slab piping, future replacement must be considered.

Corrosive chemicals are used in the disinfection of the swimming pool. These chemicals are used and stored in the pool mechanical room. With up to 30 years of exposure to these chemicals, ferrous metals within the pool mechanical room are showing signs of deterioration. The heating piping within the pool mechanical room that is exposed to the elements, that was not replaced as part of the 1999 boiler replacement project, is deteriorating to a point where replacement should be considered.

The locker rooms were originally designed to have ventilation air provided through a fan coil unit located in the pool mechanical room. This unit provides 100 percent outside tempered air to the locker rooms and lobby through a series of duct work and is 100 percent exhausted. During our investigation, it was noted that this unit has not been operated in a number of years and was not clear if this unit is operable. Other occupied spaces (i.e., changing rooms, conference room, lobby/warming area, office, concession, maintenance room, and arena area) did not appear to have any means of ventilation. Current Building Codes require public occupied spaces to have ventilation air provided to control indoor air quality to the occupants. Toilet rooms, storage, and mechanical rooms are required to be exhausted to eliminate odors within the building.

Current ventilation and exhaust deficiencies are existing no-conforming Code issues and would need to be addressed should renovations be performed to this facility.

Current Code stipulated ventilation requirements are:

- ♦ Locker and Changing Rooms      0.5 cfm/s.f.
- ♦ Shower Rooms                      50 cfm/shower head
- ♦ Public Spaces  
  (lobby area/office)                15 cfm/person
- ♦ Ice Rinks                            0.5 cfm/s.f.
- ♦ Public Assembly                    15 cfm/person

Current Code stipulated exhaust requirements are:

- ♦ Toilet Rooms                        75 cfm/fixture
- ♦ Mechanical Rooms                 0.05 cfm/s.f.

These Code stipulated ventilation and exhaust requirements will have a major impact on the existing HVAC equipment when implemented. The ventilation requirements for public occupied areas will add to the energy usage of this facility in both electrical and fossil fuels.

The building HVAC controls appear to be original. Heating throughout the building is controlled through individual thermostats. The dehumidification and arena A/C units have individual controls and are controlled manually as needed. Installation of programmable thermostats and/or sensors tied into a building management system could reduce operational costs in reducing the indoor temperature during non-occupied times during the heating season and monitor CO<sub>2</sub> levels to assist in controlling the indoor air quality.

The unit heaters and cabinet unit heaters throughout the building are approaching the end of their useful life. Although functioning as originally intended, these units are industrial in nature and detract from the architectural features of the public spaces. These units do not have the ability to provide ventilation air to the public spaces within the building. Hot water piping supplying these units is exposed with the insulation showing wear. These units do not provide for ventilation to the spaces served. Rooftop heating and ventilation units would better serve these spaces in that they would remove the units from the interior environment and provide the ventilation requirements needed within these spaces during occupied times. Unit heaters within the mechanical and storage spaces with exposed piping are adequate for these areas.

### **3. Suggested Improvements**

It is suggested that the following system improvements be implemented:

- ♦ Replace all heating equipment in locker rooms, lobby waiting areas, toilet rooms, and changing rooms with heating and ventilation units.
- ♦ Replace original heating supply and return piping in pool mechanical room.
- ♦ Replace exhaust systems in toilet rooms and mechanical rooms.

- ♦ Replace radiant heating in ice rink area.
- ♦ Add ventilation and heating to ice rink area.

### C. PLUMBING SYSTEMS

#### 1. Existing Conditions

The plumbing systems within the arena complex consist of the following:

- ♦ Domestic water supply.
- ♦ Domestic water heating.
- ♦ Domestic water piping.
- ♦ Toilet room fixtures.
- ♦ Pool filtration system.

The domestic water for the facility is from a municipal source. The domestic water enters the building in the pool mechanical room. From there the water is supplied throughout the building to the locker, toilet and other rooms.



*C1 – Water Entrance*

Hot water is produced in the pool mechanical room by means of gas fired domestic water heaters. There are two (2) water heaters, one (1) for domestic hot water to the toilet rooms, concessions, and locker rooms and one (1) for the hot water to the Zamboni room. From the heaters, the water is stored in tanks ready for usage.

## Section 5

## Mechanical, Plumbing, and Electrical Systems

The domestic water heaters and storage tanks were replaced in 1992.



*C2 – Domestic Hot Water Heaters*



*C3 – Domestic Hot Water Storage*

From the pool mechanical room domestic hot and cold water is supplied throughout the building. The supply piping is copper with fiberglass insulation. The supply piping is exposed within the locker rooms and mechanical spaces.



*C4 – Domestic Water Piping Shower Room*



*C5 – Domestic Water Piping Locker Room*

There are toilet facilities and showers in both the men's and women's locker rooms and men's and Women's public restrooms off the lobby area. The fixtures in all the toilet rooms are not original and the date of replacement is unknown.



*C6 – Plumbing Fixtures Locker Room*



*C7 – Plumbing Fixtures Locker Room*

## Section 5

## Mechanical, Plumbing, and Electrical Systems



C8 – Plumbing Fixtures Public Rest Rooms



C9 – Plumbing Fixtures Public Rest Rooms

The pool filtration system is located in the pool mechanical room. The system consists of filter, strainer, circulation pump, chemical feed, and chemical control, and circulation piping. The filter is pressure sand and appears to be original equipment. The strainer is cast iron and appears to be original equipment. The circulation pump is closed coupled centrifugal end suction and was replaced around 2002. The chemical feed system consists of chemical feed pumps and chemical storage tanks. The age of these components is unknown. The chemical controller consists of sensor probes in the filtered water return to monitor the chlorine residual and PH of the water and a control panel. The control panel is connected to the chemical feed pumps and controls the pumps for chemical feed to the pool water. This system is not original and its age is unknown.



C10 – Pool Filter



C11 – Pool Strainer



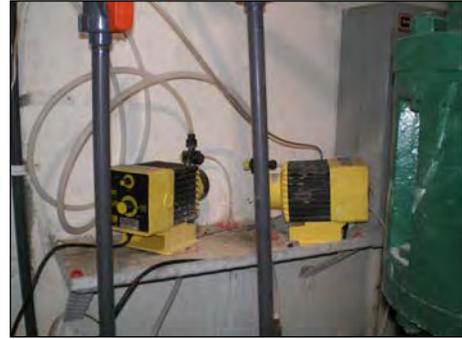
C12 – Pool Circulation Pump



C13 – Chemical Storage



C14 – Chemical Feed Controller and



C15 – Chemical Feed Pumps

## 2. Deficiencies

The pool filtration system is in fair condition. The pool filter has been maintained well, yet is outdated and need of replacement. The strainer is outlived it useful life and in need of replacement. The pool pump is relatively new and in good condition. The chemical storage and feed system is relatively new and is functioning properly. Other alternatives to liquid chlorine and acid should be investigated for use as a disinfectant and PH control. The chemical control system appears to be in good condition. There was no indication that this system was not operating properly. The chemical feed and probes were replaced in 1988.

The chemicals for disinfection and PH control for the pool are stored in the pool mechanical room. The corrosiveness of these chemicals is causing premature deterioration of equipment within this space.

## 3. Suggested Improvements

It is suggested that the following systems improvements be implemented:

- ♦ Replace water supply piping in pool mechanical room that was not replaced at the time the water heaters were replaced.
- ♦ Replace and repair water supply piping insulation throughout facility.
- ♦ Replace pool filter.
- ♦ Replace strainer.
- ♦ Replace chlorine and acid feed system with alternative system.
- ♦ Construct chemical storage room.

## D. ELECTRICAL SERVICE DISTRIBUTION

### 1. Power Distribution

There are two (2) electrical services within this facility. There is an electrical service within the pool mechanical room and within the chiller mechanical room.

## Section 5

## Mechanical, Plumbing, and Electrical Systems

The electrical service to the pool mechanical room is 120/208 volt three phase. The main disconnect within this room is 400 amp. Adjacent to the main disconnect is the main distribution panel. Located within the pool mechanical room are power and lighting distribution panels. These panels provide the power for lighting and equipment for the pool area and pool mechanical room. These main disconnect main, distribution panel and power and lighting panels are original.



*D1 – Main Disconnect and Distribution Panel*



*D2 – Power Distribution Panel*

The electrical service to the chiller mechanical room is 277/480 volt three phase. The main disconnect within this room is 800 amp. Adjacent to the main disconnect is the main distribution panel. Located within the chiller mechanical room are power and lighting panels, 480/208 volt step-down transformers and metering equipment. These main disconnect, distribution panel, power and lighting panels and step-down transformers are original equipment other than a main distribution section that was added during the chiller replacement.



*D3 – Main Disconnect Chiller Mechanical Room*



*D4 – Main Distribution Panels Chiller Mechanical Room*



*E5 – Power and Lighting Distribution Panel*



*E6 – Power and Lighting Distribution Panel*



*E7 – Step-down Transformers*

**2. Deficiencies**

The main disconnect, main distribution, and power and lighting panels in the pool mechanical room are showing deterioration due to the corrosive environment in this room.

**3. Suggested Improvements**

It is suggested that the following improvement be implemented:

- ♦ Combine electrical service entering the building.

**E. LIGHTING**

**1. Interior Lighting**

The lighting within the arena facility is a combination of surface mounted fluorescents, incandescent and metal halide. The fluorescents and incandescent lighting are in the interior spaces of the facility with the metal halide lighting in the ice rink area. The lighting in the rink area was replaced in 1980's.



*E1 – Lighting in Conference Room*



*E2 – Lighting in Lobby and Warming Room*



*E3 – Lighting in Shower Rooms*



*E4 – Lighting in Ice Rink*

**2. Deficiencies**

There are no deficiencies. The lighting appears to be original, yet in fair to good condition.

**3. Suggested Improvements**

It is suggested that the following improvement be implemented:

- ♦ Replace fixtures utilizing high-efficiency fluorescent fixtures.
- ♦ Replace fixtures within the ice rink utilizing high-efficiency high output fluorescent fixtures.
- ♦ Install occupancy sensors throughout the facility.

These suggested improvements to the lighting system will provide economic benefit in energy savings to the City.

**F. EXIT AND EMERGENCY LIGHTING**

There is exit lighting and emergency lighting throughout the facility. The majority of areas requiring emergency and exit lighting have adequate coverage. There are areas within the facility that Code prescribed emergency lighting coverage is lacking. The Code requires the means of egress pathway have an average of one (1) foot-candle along the egress path.



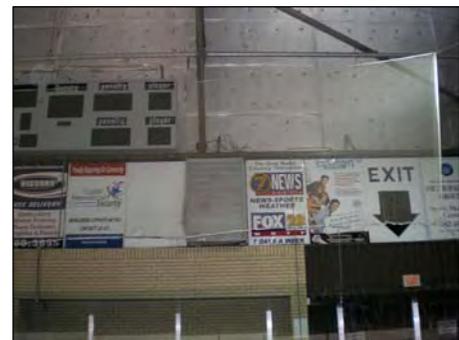
*F1 – Emergency Lighting Lobby*



*F2 – Emergency Lighting Locker Room*



*F3 – Exit and Emergency Lighting Lobby*



*F4 – Exit Lighting Ice Rink*

**1. Suggested Improvements**

It is suggested that the following improvements be implemented:

- ♦ Provide emergency lighting in areas with inadequate coverage.
- ♦ Replace exit lighting with higher efficient fixtures.

**SECTION 6**  
**Special Systems**

**A. PUBLIC ADDRESS SYSTEMS**

**1. Existing Conditions**

The original public address system consists of a tuner with amplification in the office and speakers hung in the middle of the arena for the ability to broadcast music and announcements within the ice rink area. Music was played directly from the tuner with announcements from microphones plugged into wall jacks. With the addition of the viewing booth, portable equipment was added to provide flexibility in the use of the sound system for a number of venues carried out at the arena. The portable equipment is wired into the existing tuner/amplifier through a connect cable strung between the two locations.



*A1 – Tuner/Amplifier*



*A2 – Tuner/Amplifier*



*A3 – Portable Sound Equipment*



*A4 – Portable Sound Equipment*



*A5 – Sound/Public Address Speakers*



*A6 – Sound/Public Address Speakers*

The original tuner/amplifier is 1970's vintage. The portable equipment age is unknown. The sound/ public address system has outlived its useful life. A digital system with wireless microphone technology is suggested as replacement of the existing equipment.

The system is currently being replaced by City personnel.

**B. Telephone and Data System**

**1. Existing Conditions**

The telephone and data systems were installed in 2005 and are an interconnected system consisting of telephones with voice over internet protocol and data connection back to the main hub at City Hall. The interconnect is through the City's fiber optics network.

This system also has pay-as-you-go wireless internet access for vendors attending shows and/or events sponsored at the arena.

In conjunction with the telephone and data systems installed in 2005, there is an analog Verizon demarcation in the pool mechanical room. This is the land line back-up for the arena, sewer plant, and newer street facility should the data connection to City Hall be disconnected. This system also provides fax service to the Parks & Recreation Offices.



*B1 – Telephone and Data Equipment Rack*



*B2 – Telephone and Data Equipment*



*B3 – Verizon Analog Demarcation in Pool Mechanical Room*

**2. Deficiencies**

The Verizon analog demarcation and associated equipment in the pool mechanical room is in poor condition due to the corrosive environment within this room.

**3. Suggested Improvements**

It is suggested that the following improvement be implemented:

- ♦ Relocate analog telephone demarcation to the data closet where the new telephone/data system currently resides.

**C. FIRE PROTECTION SYSTEMS**

**1. Existing Conditions**

The fire protection system for the Arena Facility consists of a sprinkler system in the ice rink area. There are no other means of fire protection within this facility.



*C1 – Sprinkler System Control Valve*



*C2 – Sprinkler System Piping*

**2. Deficiencies**

The ancillary spaces of this facility should have fire detection and alarm system consisting of smoke and heat detection, visual and audible alarms and pull stations. The ice rink area should include visual and audible alarms and pull stations.

**3. Suggested Improvements**

It is suggested that the following improvement be implemented:

- ♦ Install fire detection and alarm system throughout the facility.

**SECTION 7**  
**Code Compliance and Life Safety**

## Section 7

## Code Compliance and Life Safety

The City of Watertown's Arena is a 43,700 square foot structure that was built in 1975 and enclosed in 1978. The building has a current Certificate of Compliance as a place of public assembly for 3,074 people. Under the current Code, the primary occupancy of the building is A-4 Assembly, Intended for Viewing Indoor Sporting Events, as defined under the Building Code of the State of New York. Incidental occupancies included within the building are offices, storage areas, concession area, and mechanical rooms.

The current NYS Building Code was adopted in 2007. Obviously, the existing arena building was built before the adoption of the current Code requirements and, in effect, is grandfathered for many of the current conditions.

The existing arena building construction classification is Type IIB, construction which is non-combustible, unprotected structure. The current building construction consists of a steel frame supported on poured concrete foundations, a poured concrete slab on grade floor, exterior brick siding, and a steel roof. The locker rooms are Type IB construction with concrete block walls and a pre-cast concrete plank roof. Under the current Code, no combustible interior construction (wood) would be allowed. The building is partially sprinklered (the arena area only). However, under the Code, in order to realize an increase in square footage for the sprinklers the entire building would need to be sprinklered.

Under the NYS Building Code for the Type IIB construction, the maximum fire area allowed would be 9,500 square feet plus a 33 percent increase due to the building fronting on a public way on three sides.

This additional 3,125 square feet would bring the total allowable square footage to 12,725 square feet. Currently, the entire building is 43,700 square feet, exceeding the allowable fire area for the building type. If the arena could be separated from the rest of the building by a fire wall, the arena space allowable square footage in the sprinkler would be 31,725. The current arena building, excluding the pool building, is 33,000 square feet. The capacity for the building under the current Code would be as follows.

1	Ice Area	16,500 s.f.	
2a	Sporting Use (16,500 s.f.)	50 s.f./pp	330 pp
2b(1)	Chairs for Event Use with Stage Area (1,400)	7 s.f. /pp	1,400 pp
2b(2)	Stage (2,500 s.f.)	15 s.f./pp	167 pp
3	Bleachers	260 l.f./1.5	1,312 pp
4	Standing Room (2,170s.f.) (assumes clear exit aisles of 44 inches)	5 s.f./pp	434 pp
5	Office (950 s.f.)	100 s.f./pp	10 pp
6	Mechanical and Storage Room (2,760 sq. ft.)	300 s.f./pp	9 pp
7	Locker Room(s) (2,230 s.f.)	50 s.f./pp	44 pp
8	Concession (200 s.f.)	200 s.f./pp	1 pp
9	Conference (270 s.f.)	7 s.f./pp	40 pp
<b>Total Capacity – Sporting Use</b>			<b>1,746</b>
<b>Total Capacity – Event Use</b>			<b>3,417</b>

The building currently has 10 exits with a total exit capacity of 3,960 people. Once again, even though there is a partial sprinkler system for the arena proper, the Code requires that the entire building be sprinklered in order for the higher exit capacity to be considered. If the building were entirely sprinklered, the capacity would be 5,280 people.

The current Code would require a minimum of three exits with a capacity of 900 people for sporting use or four exits with a capacity of 4,000 people for events. Currently, the exiting is in compliance for sporting use only.

The Code also requires a maximum 200 feet of travel to reach an exit. For all events, this can be met.

Currently, the building does not meet the accessibility standards for seating and toilet rooms.

It also does not meet the Plumbing Code for the number of fixtures. The Code requires one male water closet per 75 people for the first 1,500 people and then one per 120 people after that. For women, it is 1 per 40 people for the first 1,500 people and then 1 per 60 people after that. Lavatories for men are 1 per 200 people and one per 150 people for women.

Drinking fountains are also required. – 1 per 1,000 people. If we assume sporting event capacity of 1,700 (850 men/850 women), then 11 water closets for men and 21 for women are required. If we assume a maximum capacity of 3,000 people, the required male toilets would be 20 and the female toilets would be 38. Lavatories for men would be 8 and would be 10. Currently, there are only a total of 5 toilets and 5 urinals for the men and 8 toilets for the women.

If the building were to be renovated, it would fall under the existing NYS Building Code. Chapter EB-3 Classification of the work would be either Alteration Level 2 to comply with Chapters EB-5 and EB-6 or possibly Alteration Level 3 to comply with Chapter EB-5-7. Level 2 also requires any new construction to comply with the Code and requires compliance with accessibility - Chapter 11 of the building Code. If the work classification is Alteration Level 3, then automatic sprinkler protection would be required for the reconstruction work area. Under Section 903 – Automatic Sprinkler Systems, Section 903.2.1.4 – Group A4 Use, an automatic sprinkler system shall be provided for Group A4 occupancies if one of the following conditions exist:

1. Fire area exceeds 12,000 square feet.
2. Fire area has an occupant load of 100 or more.
3. Fire area is located on a floor other than the level of exit discharge.

**EXCEPTION:** Areas used exclusively as participant sport areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit. Our interpretation of this section would be that if the rink area ice surface area were to be exclusively used for a participant sport then the rink area could be excluded from the sprinkler system.

However, because of the multi-purpose of arena, it would seem that the entire building should be sprinklered. If the entire building were sprinklered, then under Section 506 – Area Modification, 506.3 – Automatic Sprinkler System Increase, where the building is protected throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, area limitation in Table 503 is permitted to be increased by 300 percent for a single story building.

Therefore, the building allowable square footage could be increased to 28,500. The building code under 506.2 also allows for a fire area increase of 33 percent for three sides fronting on a public way. The frontage increase is 3,125, making a total square footage of 31,725 square feet. The existing building is 43,700 square feet. Level 2 does not require a retroactive fire alarm system.

There is exit lighting and emergency lighting throughout the facility. The majority of areas requiring emergency and exit lighting have adequate coverage. There are areas within the facility that Code prescribed emergency lighting coverage is lacking. The Code requires the means of egress pathway have an average of one (1) foot-candle along the egress path.

**SECTION 8**  
**Programming and Potential Future Improvements**

## Section 8                      Programming and Potential Future Improvements

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### A.    PROGRAMMING

The current configuration of the arena with the pool and shared spaces has some serious program and circulation issues that should be addressed. These can be broken down as follows:

1.    Lack of an easily identifiable and convenient entrance into the building.
  - b.    Because the arena began life as an open structure that was later connected to the pool building, it never had a strong entrance with enough space for the public. Although there is plenty of emergency exiting, the public for the most part must exit as they came in through a pair of single doors, into a small lobby space down a narrow ramp into another small lobby and out into the arena.
  
2.    Lack of separation between the public, the players, and the officials.
  - a.    Because there were only two original locker rooms, the pool locker rooms which had toilets and showers were made available and became the default locker rooms if only two were needed. However, either set of locker rooms meant that the teams (home and opposing) must first pass through the spectators to get to the ice. This offers the potential for teams to be subject both verbal and physical assault when excitement levels are high. Additionally, the referees must also pass through the spectator area to get to the ice.
  
3.    Lack of facilities for performers at events.
  - a.    There are currently no areas available for performers unless the locker rooms are used which then have the same issues as above.
  
4.    Lobby and Concession stand too small.
  - a.    The current lobby areas are too small to effectively handle people entering the building who need to get tickets, warm up during the game, or access the concession stand.
  
5.    Restroom facilities.
  - a.    Currently, there are a set of male and female toilet rooms available to the public (4 toilets in the women's room, 3 toilets and 2 urinals in the men's room) with more toilets in the two lockers rooms which are effectively not available to the public. (unless you are on a team) The number of toilets available is far below what is currently required by Code.

### B.    POTENTIAL FUTURE IMPROVEMENTS

#### 1.    Roof Replacement

**Option 1 – Remove and Replace Existing Metal Roofing System.** This would include complete removal of the existing metal roofing and insulation below, and replacement with an insulated roofing system. The system types could range from a batt fiberglass insulated system, to a rigid foam “sandwich panel”, to an insulated single ply EPDM system over rigid insulation and metal deck as follows:

- ♦ Removal of existing roofing system.
- ♦ New concealed fastener steel or aluminum roof system over vinyl faced batt Insulation; or
- ♦ New sandwich panel; or
- ♦ New roof deck, rigid insulation, and single ply EPDM.

## Section 8                      Programming and Potential Future Improvements

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Costs could range from \$15 to \$30 per square foot for this type of complete removal and replacement. If this option is chosen, it may be prudent to evaluate painting the structural steel below as it will be readily accessible after removal of the existing roof system.

**Option 2 – Install New Metal or Single Ply Roofing System Over Existing Metal Roofing System.** This could include an insulating layer. New waterproof material could be either metal or single ply. Structure would need to be evaluated for additional dead load, in addition to pull out capacity of existing metal roof. The estimated cost range for this alternative would be \$8 to \$20 per square foot depending on selected system and extent of insulation. The advantage of this alternative other than cost is that it is of shorter duration and much less disruptive to activities at the arena. Recognize that these cost estimates are for comparison purposes only, and subject to a more detailed preliminary design. Typical warranties of up to 20 years would be available for this type of system depending on the manufacturer.

We would recommend that the arena structure be further evaluated for the installation of a retrofit roofing system over the existing roofing system. This evaluation will include inspecting the underside of the existing roofing panel for corrosion, conduct fastener pull out tests, and evaluate the top of purlins for corrosion and the ability to support a new roofing system. This would involve accessing the underside of the roofing system with a personnel lift from the interior, removing the rigid insulation in place on the underside of the deck, and visually inspect the underside of the deck and the top flange of the roof purlins.

It should be noted that if the proposed roofing system increased the original design loads by greater than 5 percent, a full structural evaluation may be warranted. It should also be noted that the existing structure may not be capable of withstanding current design live loads under the building code. If the existing structure cannot support current recommended loads, reinforcing of the structure or a variance from the code may be required.

It was also identified by the City that repainting the structural steel was a priority, of which we concur. We will continue to evaluate the options relative to repainting the structural steel and provide an estimate of costs for that work upon discussion of the alternatives with painting contractors. Additionally, the existing roof vent should be made weather tight.

### 2.    **Glazing Strips**

- a.    Existing aluminum and glass glazing strips from 1978 have been covered with insulation board.
  - 1)    Natural light, especially on south and west interferes with events and games
  - 2)    Current glazing is single pane and not thermally efficient; no shading control.
  
- b.    Recommend that the existing glazing be removed and replaced with an insulated panel system. Additionally, the panel area on the exterior could incorporate space for signage to advertise coming or current events.

## **Section 8                      Programming and Potential Future Improvements**

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### **3.     Bleachers**

- a.     The existing moveable wood bleachers are in fair condition.
- b.     The bleachers do not meet current safety and accessibility standards.
- c.     Recommend that the City consider phasing out the existing bleachers and buying new movable units to meet the current standards.

### **4.     Exterior Doors**

- a.     The existing exterior exit doors are relatively new and in good condition.
- b.     There is no vestibule or air lock at any of the exterior doors.
- c.     Recommend that a minimum of two vestibules be created, one at the current main entrance to the building and a second at one of the west exit doors on the circle drop off drive.

### **5.     Ceiling**

- a.     The existing ceiling is reflective insulation board with taped seams in fair condition.
- b.     Recommend that the City cover the existing insulation with a fire rated mildew and mold resistant gypsum board and paint with a low emissivity reflective coating. This will help to reduce the amount of heat that is radiated down to the ice sheet and will reduce a potentially dangerous fire situation.

### **6.     Zamboni Area**

- a.     The existing snow dump area for the Zamboni is on the side of the room and is not large enough. This has been a design flaw from the beginning as the original and current Zamboni is front dumping.
- b.     Recommend that a new addition for the Zamboni be built at the rear (northeast) of the building that would allow the Zamboni to exit the ice into an addition that would have a door directly to the outside with a large area to dump the snow.

### **7.     Entrance, Lobby, Toilets, Concession and Locker Areas**

- a.     The existing entrance, lobby, toilets, concession, and locker areas are inadequate for many reasons, including size, accessibility, and location with respect to separation and circulation of spectators and players.
- b.     Recommend that a new entrance addition be created to make finding the entrance easier, providing more space for the public, a warming area, larger concession, and new larger toilet rooms. As part of the new entrance, a separate entrance for players could be created leading directly to the locker room area without having to go through the public space. Additionally, more toilet rooms could be added by constructing an

## **Section 8                      Programming and Potential Future Improvements**

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addition specifically for them, remote from the primary toilets. These toilets would be open only as required. New locker rooms could be constructed out of the old lobby/changing room and toilet room areas extending out under the press box. The Zamboni could be moved and use a different entrance onto the ice.

As part of the addition space for areas such as a video arcade, pro-shop, and party/meeting, rooms could be included. These could provide additional revenue for the arena.

### **8.      Stage and Performance Spaces**

- a.      The space for summer performances currently has to be constructed over the rink floor on the east end for each performance. This arrangement also does not allow for mounting sound equipment high enough since ceiling trusses are not designed for this load. The dressing rooms (existing locker rooms) for performers are sub-standard and located too far from the stage. There is also a lack of space for storage of regular arena user equipment as well as a lack of a multi-purpose meeting/office/exercise area.
  
- b.      It is recommended that a new addition that contains a permanent stage suitable for multi-purpose use with storage space below be constructed including new performer dressing rooms on the east end. A new service entrance would also be needed on the east end.

**SECTION 9**  
**Budget Considerations**

## Section 9

## Budget Considerations

We have broken down the budget cost estimates into two categories. The first category is to upgrade the existing building and systems to bring up to current standards. The second is to build new additions and renovate existing areas.

### Option 1 - Existing Building Upgrades

A. Site Improvements	\$	425,000
B. Building		
1) Roof replacement	\$	800,000
2) Re-paint existing steel and install new ceilings	\$	600,000
3) Replace glazing strips with new insulated panels	\$	120,000
4) Create vestibules (2)	\$	50,000
5) Construct new Zamboni room	\$	100,000
6) New bleachers	\$	180,000
7) Replace slab and under slab piping (future)	\$	500,000
C. Mechanical Systems		
1) Ventilation, heating, and air conditioning for locker and toilet rooms and office	\$	110,000
2) Ventilation of arena space	\$	100,000
3) Arena infrared heating	\$	20,000
D. Electrical		
1) Panel and switch gear replacement	\$	55,000
2) Arena lighting replacement	\$	50,000
3) Locker, toilet, lobby lighting	\$	20,000
4) Exit and emergency lighting	\$	20,000
E. Fire Protection Systems		
1) Fire alarm system	\$	40,000
2) Sprinkler system upgrade	\$	80,000

**Total Option 1 \$ 3,270,000**

### Option 2 - New Additions and Major Renovations

A. New entrance, lobby, offices, and concession	\$	790,000
B. New lockers	\$	270,000
C. New toilets	\$	110,000
D. Toilet room addition	\$	70,000
E. Renovate lockers	\$	185,000
F. New stage	\$	670,000
G. 2nd floor space	\$	1,102,000
C. Miscellaneous	\$	150,000

**Total Option 2 \$ 3,347,000**

**SECTION 10**  
**10 Year Capital Improvement Plan /**  
**Recommendations Summary**

## Section 10

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The Watertown arena, although designed as an ice skating facility, has been serving as a multi-purpose building with multiple users trying to make the best out of the existing conditions. Although some improvements have been made over the years, the basic infrastructure has not changed.

However, because of the nature of how the building was originally developed as an open air facility connected to the pool, the limitations on the existing infrastructure, primarily the space available to support the main activities in the arena are difficult to work around.

Another major issue for the facility is that the existing support spaces and the arena itself are deficient in requirements such as ventilation, lighting, fire detection, and life safety. Generally, the building envelope is in fair condition with the roof needing the most attention.

Our preliminary analysis of the building, the functions that occur in the building, and the available space and configurations would lead us to believe that there are some options that could be explored for providing additional space and renovating existing space to mitigate many of the issues that were raised during the user interviews.

We have included one such option for consideration by the City of Watertown and the budget estimates to go along with that work. This work could be completed in phases; the cost estimates have been prepared in such a way that phasing the work could be identified for the project.

It is our recommend that the City consider the following 10 Year Improvement Plan:

- Years 1 through 3:
  - ♦ Replace roof
  - ♦ Replace glazing
  - ♦ Add ceiling in arena
  - ♦ Add fire alarm system
  - ♦ Upgrade electrical system
  - ♦ Decide on renovation vs. renovation and addition project
  - ♦ Revise front drive/parking
  
- Years 4 through 6:
  - ♦ Renovate locker rooms
  - ♦ Upgrade sprinkler system
  - ♦ Ventilation improvements
  - ♦ Bleacher Replacement
  - ♦ Lighting upgrades
  - ♦ Construct Zamboni addition
  
- Years 7 through 10:
  - ♦ Construct stage addition
  - ♦ Construct lobby addition
  - ♦ Construct toilet room addition
  - ♦ Floor replacement

**APPENDIX A**  
**Site Plan**

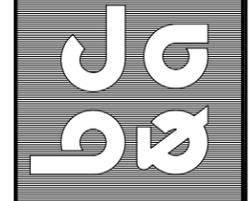


**EXISTING SITE PLAN**

SCALE: 1" = 120'-0"

Contract Drawing Reference No.

<p><b>EXISTING SITE PLAN</b></p>
<p><b>WATERTOWN MUNICIPAL ARENA BUILDING EVALUATION</b></p>
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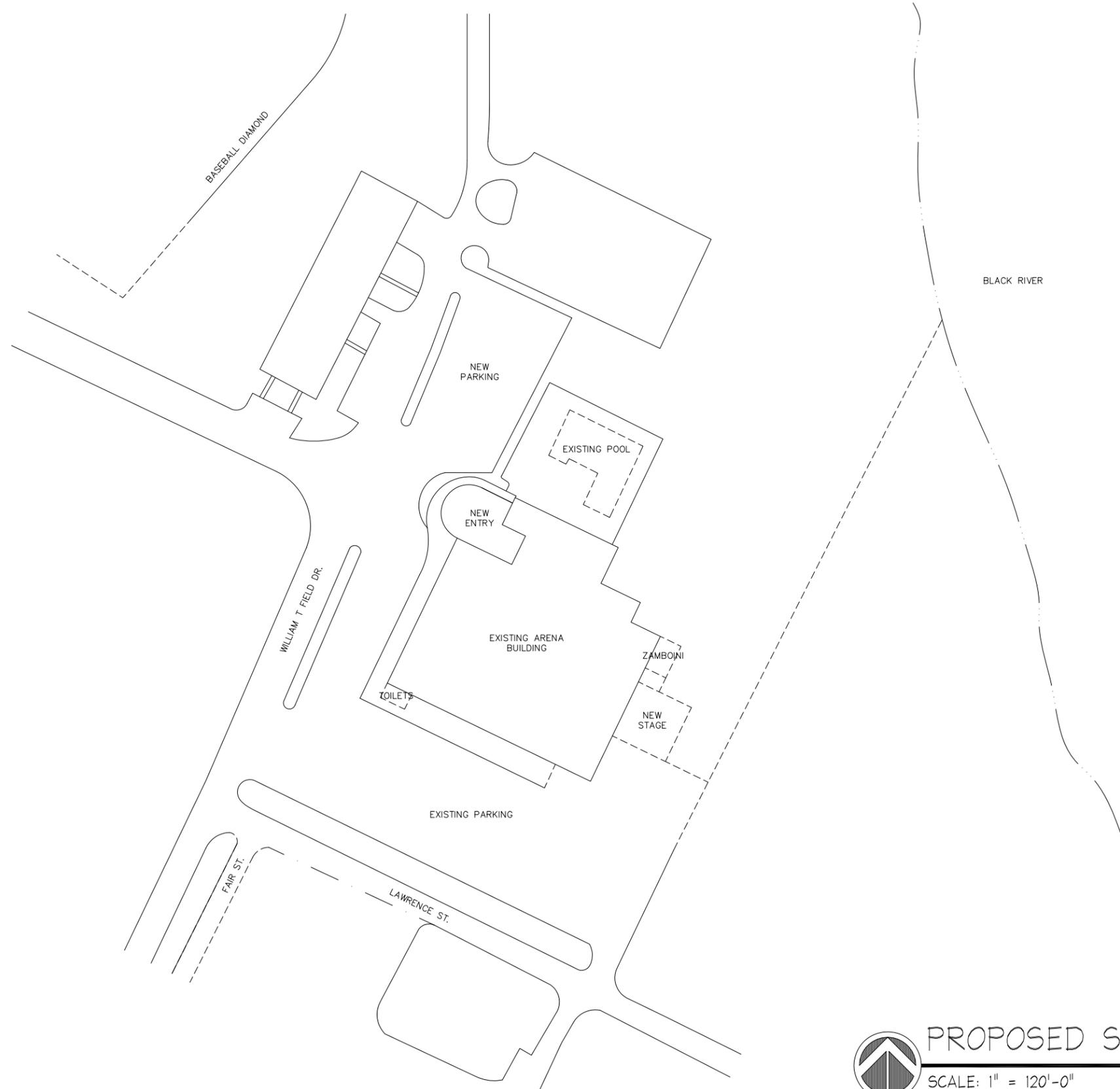
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Sheet No.  
**A-002**



## PROPOSED SITE PLAN

SCALE: 1" = 120'-0"

### SITE PLAN

## WATERTOWN MUNICIPAL ARENA BUILDING EVALUATION

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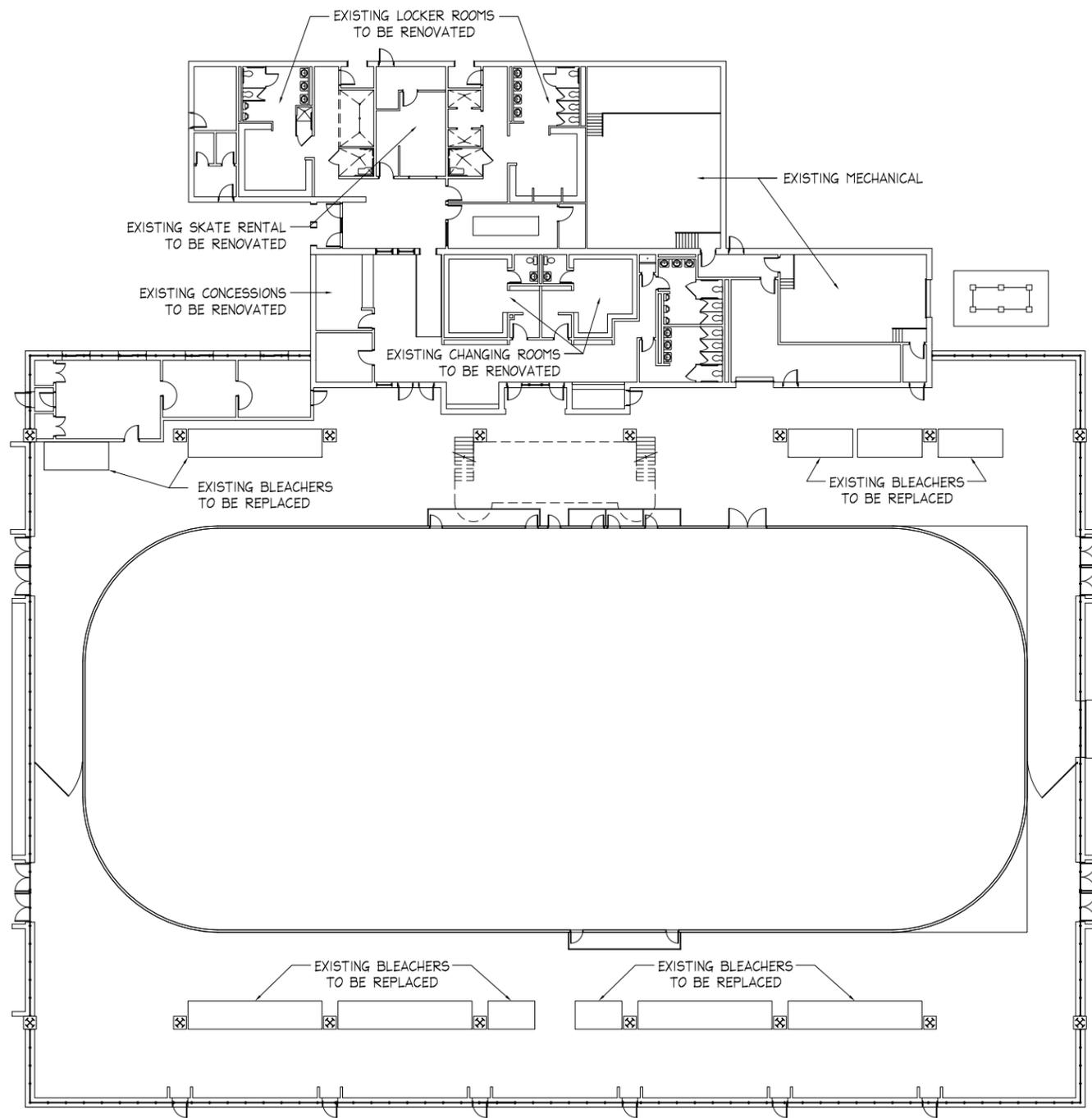
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Sheet No.

# C-100

Contract Drawing Reference No.

**APPENDIX B**  
**Floor Plans**



OPTIONS TO INCLUDE:

1. RENOVATION OF EXISTING LOCKER ROOMS (APPROX. 1,500 SF)
2. RENOVATION OF EXISTING CHANGING ROOMS (APPROX. 700 SF)
3. REPLACEMENT OF EXISTING BLEACHERS
4. SOLUTION TO EXISTING EXTERIOR WINDOWS IN ARENA AREA (APPROX. 4,600 SF)
5. NEW LOCKER ROOMS (APPROX 530 SF EACH)
6. NEW OFFICE CONFIGURATION (800 SF)
7. NEW ARCADE
8. NEW CONCESSIONS
11. NEW ENTRY
12. NEW STORAGE SPACE
13. NEW STAGE 2,400 SF +/-



ARENA FLOOR PLAN WITH OPTIONS

SCALE: 1/32" = 1'-0"

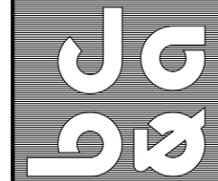
OVERALL FLOOR PLAN WITH OPTIONS

WATERTOWN MUNICIPAL ARENA  
BUILDING EVALUATION

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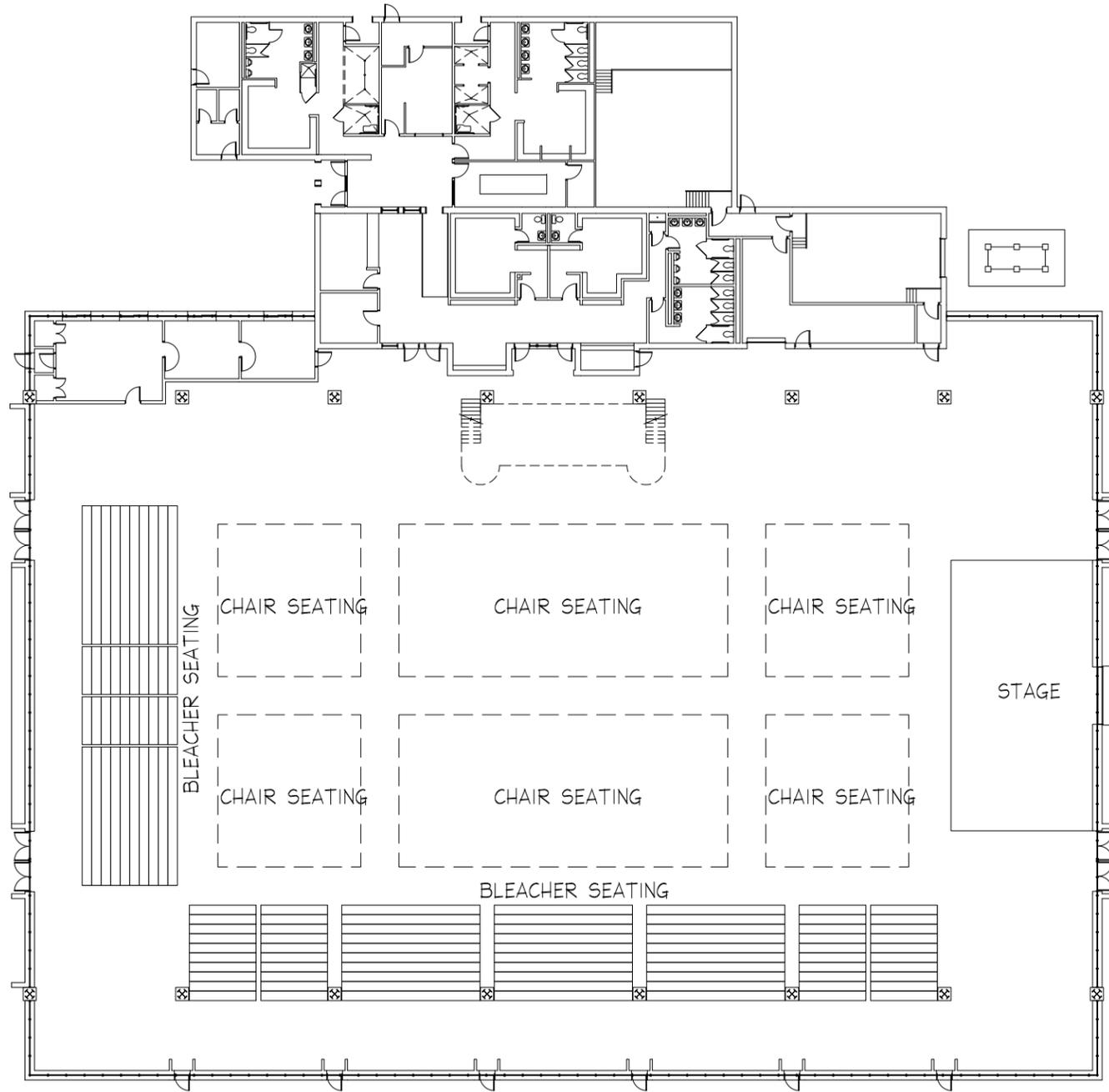
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A-001



ARENA OCCUPANCY AND EGRESS:  
 MAX. OCCUPANCY +/- 3,000 PEOPLE  
 14 EXITS PROVIDED  
 66' OF EXIT WIDTH TOTAL



# ARENA SEATING FLOOR PLAN

SCALE: 1/32" = 1'-0"

## ARENA SEATING FLOOR PLAN

### WATERTOWN MUNICIPAL ARENA BUILDING EVALUATION



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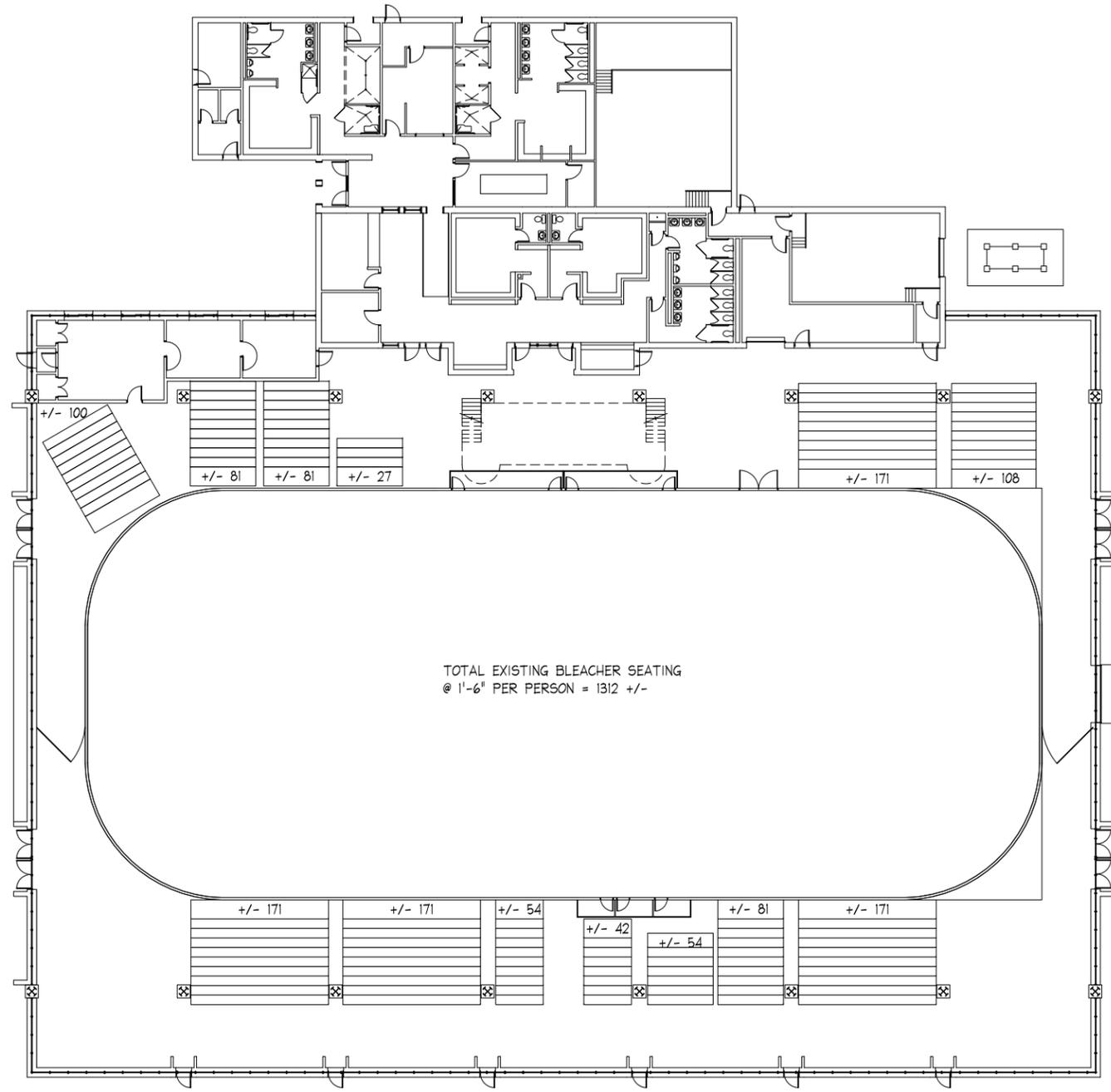
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Sheet No.

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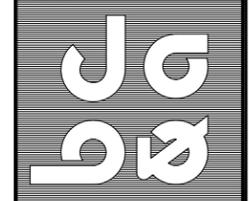
# ARENA BLEACHER LAYOUT PLAN

SCALE: 1/32" = 1'-0"

Contract Drawing Reference No.

## BLEACHER LAYOUT PLAN

### WATERTOWN MUNICIPAL ARENA BUILDING EVALUATION



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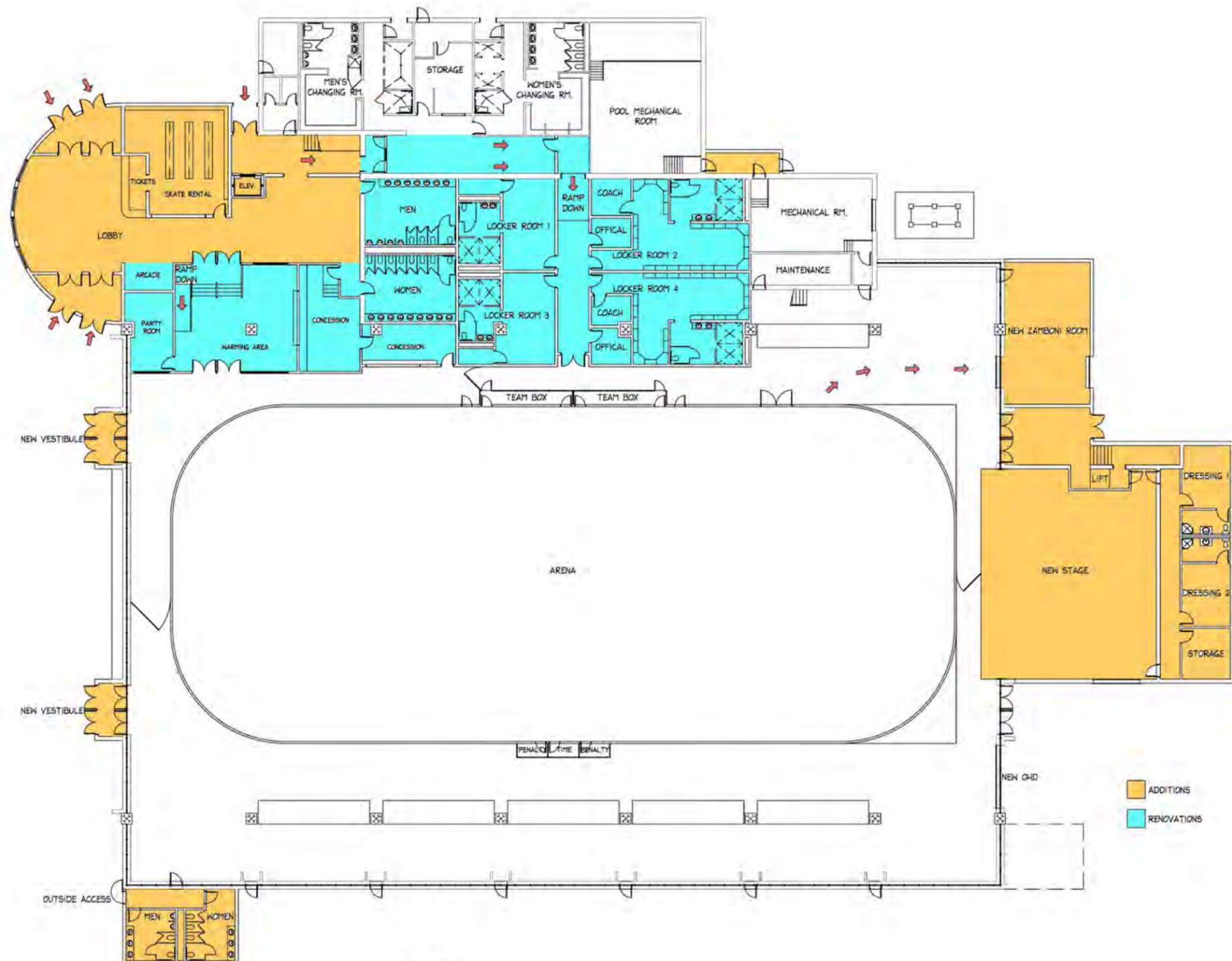
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Scale Scale	Date 4-9-09
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File No. 2008-020

Sheet No.

# A-004



**PROPOSED FIRST FLOOR ADDITIONS AND RENOVATIONS**

SCALE: 1/32" = 1'-0"

**RENOVATED FLOOR PLAN OPTION**

**WATERTOWN MUNICIPAL ARENA  
BUILDING EVALUATION**

**THE BERNIER CARR GROUP**

**BERNIER, CARR & ASSOCIATES, P.C. • MACH ARCHITECTURE + ENGINEERING, P.C.**  
engineers • architects • planners • surveyors • construction managers



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Contract Drawing Reference No.

Revisions:

THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AT THE SITE & NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.

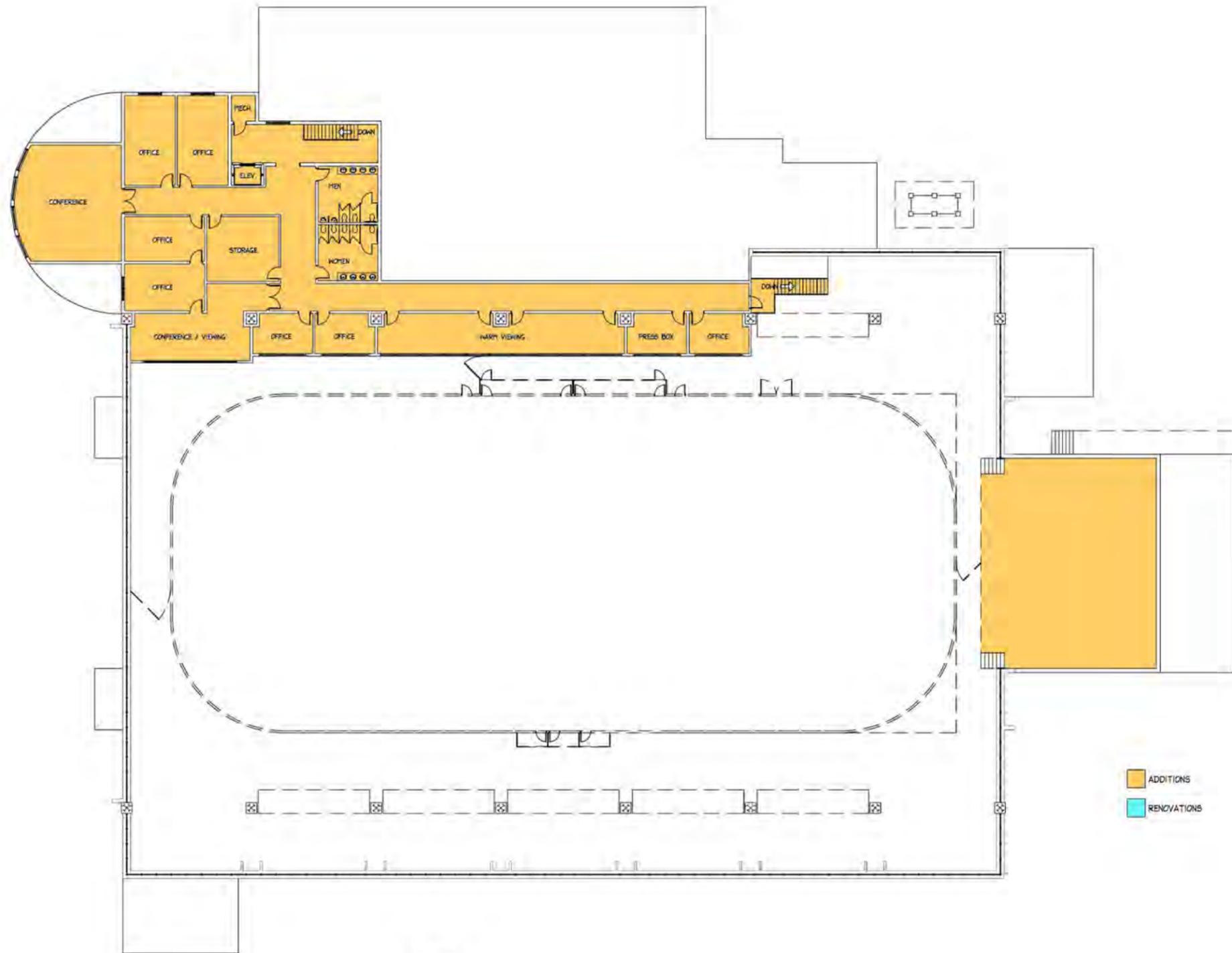
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Scale 1/32" = 1'-0"	Date 4-9-09
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File No. 2008-020

Sheet No.

**A-100**



**PROPOSED SECOND FLOOR ADDITIONS AND RENOVATIONS**

SCALE: 1/32" = 1'-0"

RENOVATED SECOND FLOOR PLAN OPTION

WATERTOWN MUNICIPAL ARENA  
BUILDING EVALUATION



THE BERNIER CARR GROUP

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Drawn By B.N.T.	Checked By R.W.T.
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Scale 1/32" = 1'-0"	Date 4-9-09
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File No. 2008-020

Sheet No.

**A-101**

Contract Drawing Reference No.

**APPENDIX C**  
**Photographs**







*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 1 – Arena, West Facade



Photo 2 – Arena, Main Entrance

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 3 – Arena, South Facade



Photo 4 – Arena, East Facade

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 5 – Arena, Mechanical Northeast Corner



Photo 6 – Pool Area, North Facade

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 7 – Arena, Southwest Corner Showing Glazing Strip



Photo 8 – Arena Glazing Strips on South Façade

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 9 – Roof Vent Showing Separation



Photo 10 – Missing and Loosened Roof Fasteners

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 11 – Deteriorate Caulk Seal



Photo 12 – Peeling Roof Coating

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 13 – Arena Glazing Strip Detail

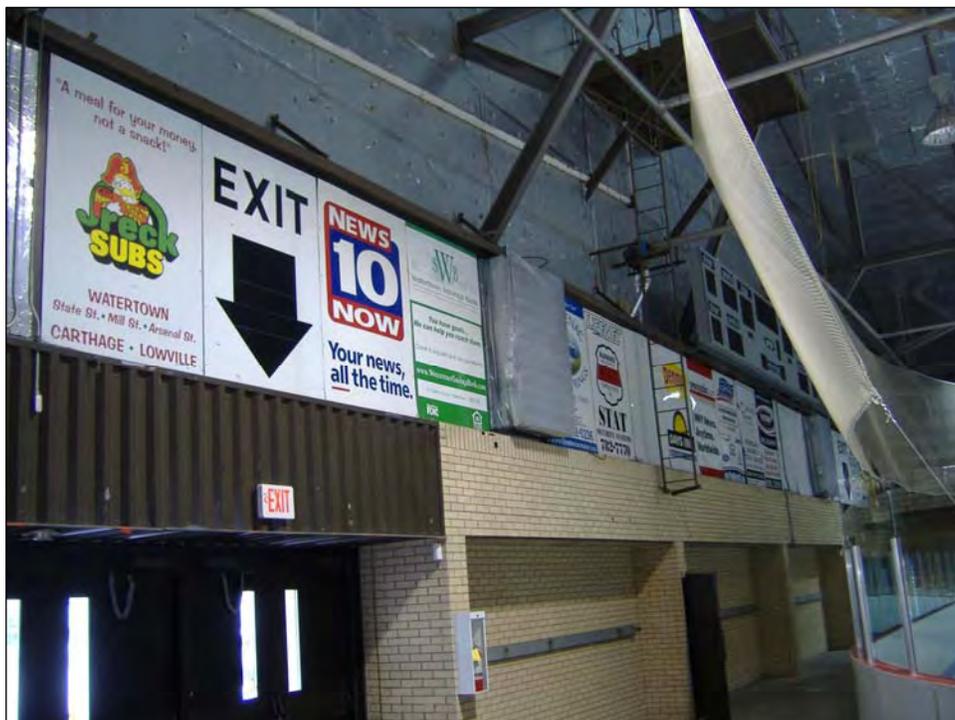


Photo 14 – Glazing Strip, Interior Covered by Signage

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 15 – Arena Glazing Strip, Interior



Photo 16 – Arena Interior Looking Northwest

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 17 – Arena Interior Looking North



Photo 18 – Arena Press Bos

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 19 – Arena Interior Looking Northeast

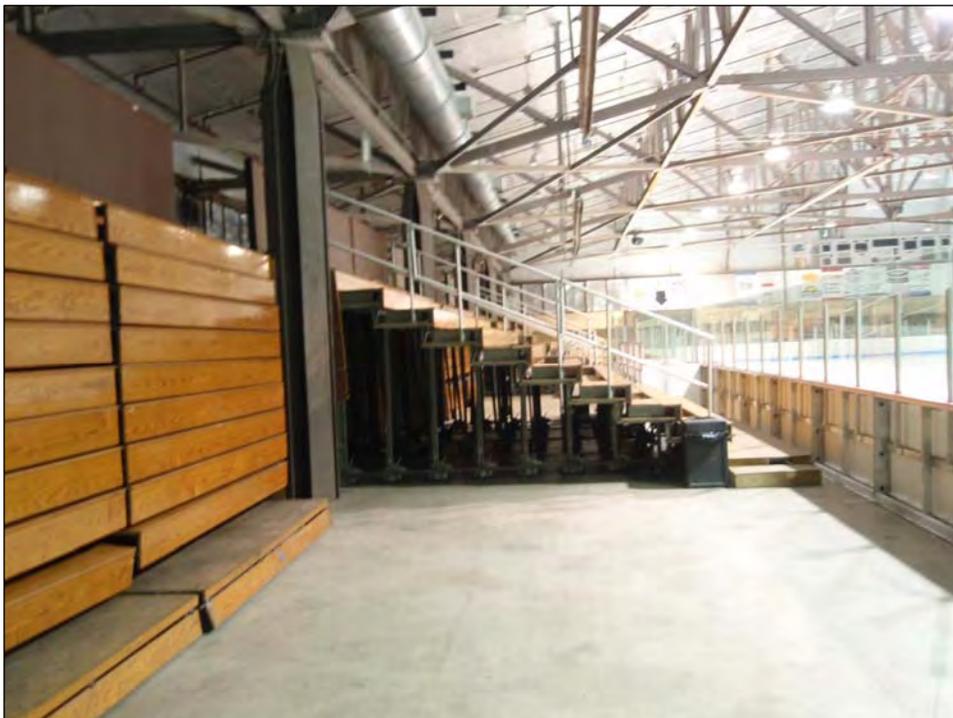


Photo 20 – Existing Wood Bleachers

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020

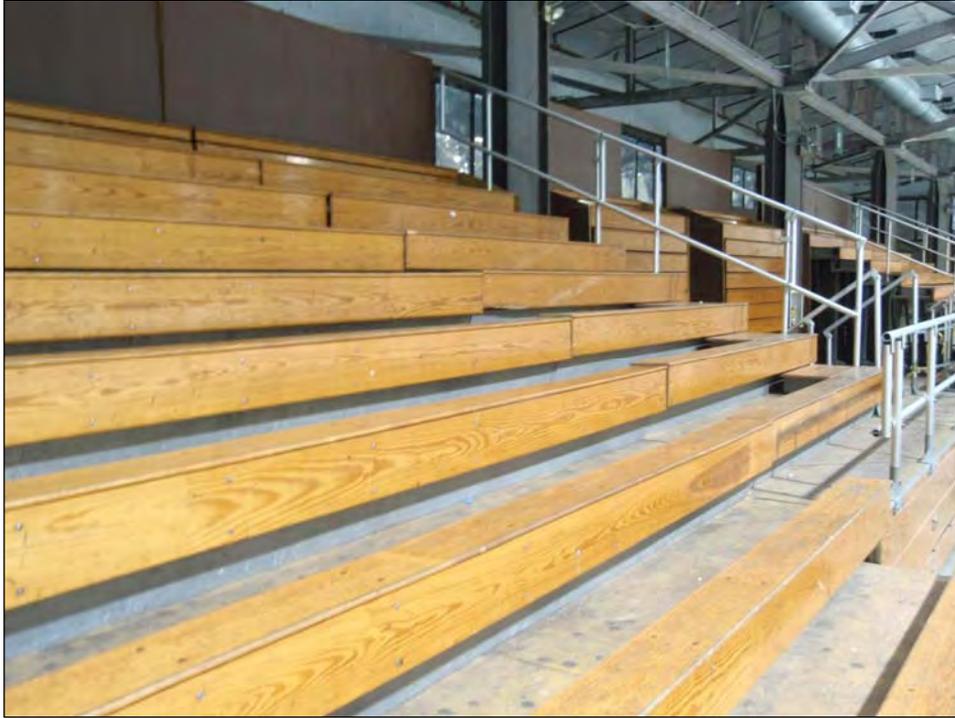


Photo 21 – Existing Wood Bleachers



Photo 22 – Arena Ceiling Insulation

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 23 – Men's Room



Photo 24 – Men's Room

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 25 – Men's Room



Photo 26 – Women's Room

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 27 – Women's Room



Photo 28 – Lobby Looking Toward Toilet Rooms

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 29 – Lobby at Arena



Photo 30 – Concession Area

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 31 – Concession and Ramp to Entrance



Photo 32 – Main Entrance Looking West

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 33 – Entrance Lobby Looking East to Conference Room



Photo 34 – Skate Rental

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 35 – Locker Room No. 4



Photo 36 – Locker Room No. 3

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 37 – Zamboni



Photo 38 – Zamboni Snow Pump

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 39 – Work Room



Photo 40 – Chemical Storage

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 41 – Pool Room



Photo 42 – Refrigeration Room

*Ice Arena Study*  
**City of Watertown**  
Project No. 2008-020



Photo 43 – Electrical Panel

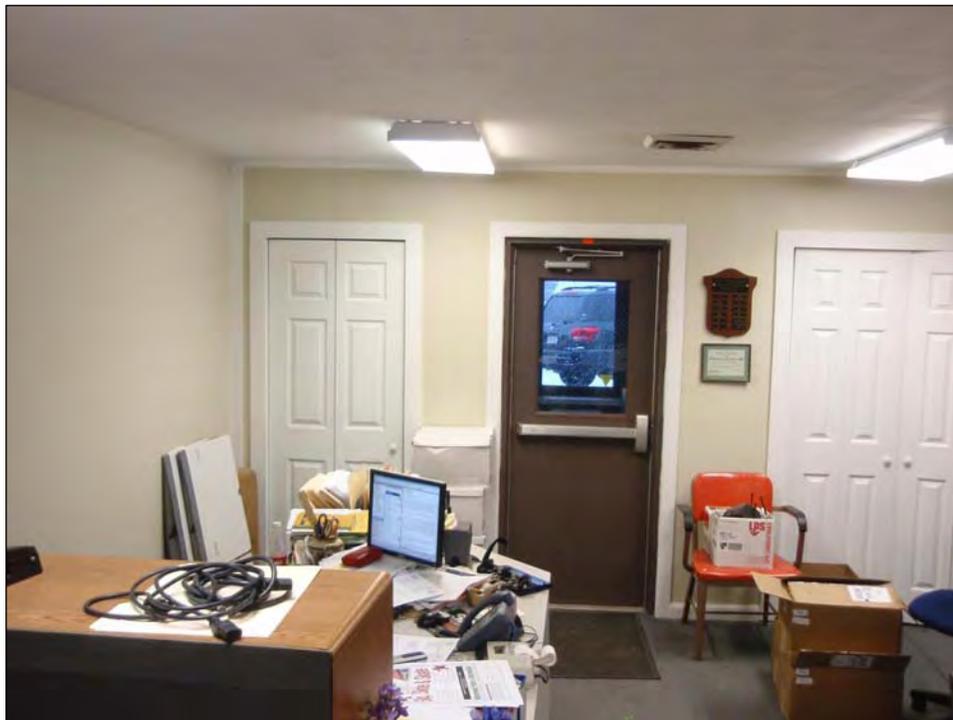


Photo 44 – Rec. Offices

**APPENDIX D**  
**Window Wall Options**



WINDOW INFILL  
EXISTING CONDITION



**b  
& a** METAL SIDING  
OPTION C





ADVERTISING SCREEN  
OPTION B





INSULATED PANEL  
OPTION A



**APPENDIX E**  
**Arena Events**

# EVENTS AT THE WATERTOWN MUNICIPAL ARENA

## PUBLIC SKATING



## FIGURE SKATING



## SLIP SLIDE AND SKATE



## MINOR HOCKEY



# EVENTS AT THE WATERTOWN MUNICIPAL ARENA

## IHC HIGHSCHOOL HOCKEY



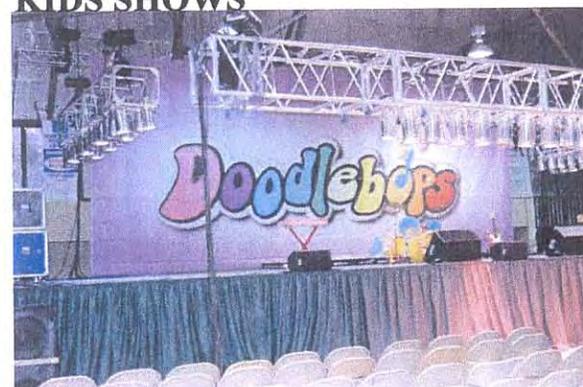
## ROCK N SKATE



## READY SET FUN



## KIDS SHOWS



# EVENTS AT THE WATERTOWN MUNICIPAL ARENA

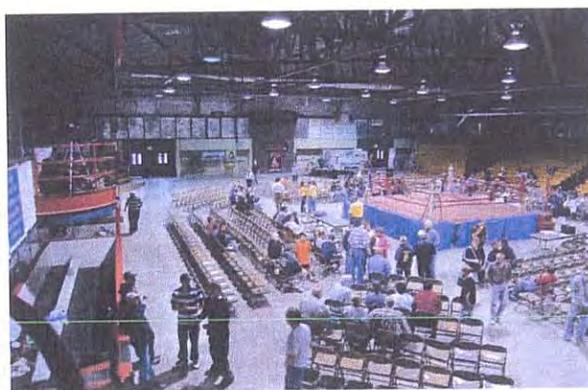
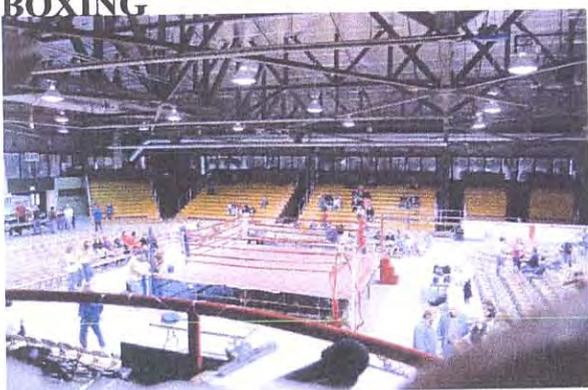
## CONCERTS



## CIRCUS



## BOXING

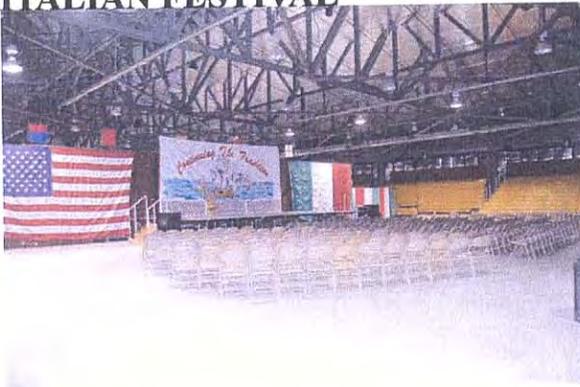


## WRESTLING



# EVENTS AT THE WATERTOWN MUNICIPAL ARENA

## ITALIAN FESTIVAL



## HEART WALK



## NNY BUILDERS HOME SHOW



## OTHER EVENTS AT THE ARENA INCLUDE

- THE JEFFERSON COUNTY FAIR
- SCINTA NIGHT CLUB SHOW
- BROOM BALL
- PLAYGROUND USE
- WRATTEN TRAILER & RV SHOW
- SENIOR FAIR
- ANTIQUE SHOW
- ADULT HOCKEY GROUPS