

INVITATION TO BID

The City of Rochester, New Hampshire is accepting sealed bids for construction of the **Structural Reinforcing of Roof System** project within the limits of the City's existing Rochester Arena facility located at 63A Lowell Street in Rochester. Bids must be submitted in a sealed envelope plainly marked:

Rochester Ice Arena - Structural Reinforcing of Roof System

Bid # 17-29

City of Rochester
31 Wakefield Street
Rochester, NH 03867
Attn: Purchasing Agent

All bids must be received no later than **February 2, 2017** at 2:30 **PM** Actual bid opening will be at Rochester City Hall, 31 Wakefield Street in Rochester NH, at **2:45 PM**. No late bids, faxed, e-mailed or telephone bids will be accepted. Bid proposals and specifications may be obtained by visiting www.rochesternh.net, or emailing purchasing@rochesternh.net, or by contacting the Purchasing Agent at City Hall, 31 Wakefield Street, Rochester, NH 03867, (603) 335-7602. All bid questions must be submitted in writing (email preferred) to the Purchasing Agent. Bidders are to monitor website for addendums, and postings of all bid questions and answers. All bid proposals must be made on the bid proposal forms supplied, and the bid proposal forms must be fully completed when submitted.

A mandatory site visit to review the requirements for the proposed Structural Reinforcing of The Roof System project will be held on January 19, 2017 at 9:00am. Bidders will meet at the Rochester Arena (in main entrance) located at 63A Lowell Street, Rochester, NH 03867. All prospective Bidders must attend in order to have their bids considered.



HARRIMAN

Rochester Recreation Arena
Structural Reinforcing of Roof
System
Rochester, New Hampshire

Project No. 16598

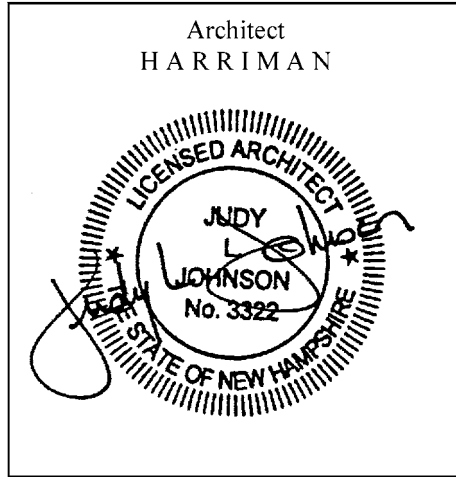
January 04, 2017

Construction Documents

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PROFESSIONAL SEAL PAGE

Architect
HARRIMAN



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ROCHESTER RECREATION ARENA
STRUCTURAL REINFORCING OF ROOF SYSTEM
ROCHESTER, NEW HAMPSHIRE

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- S1 REINFORCING ROOF PLAN, DATED 11/06/15
- S2 REINFORCING DETAILS, DATED 11/06/15

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SECTION 000200 - INFORMATION AVAILABLE TO BIDDERS

PART 1 GENERAL

1.1 INFORMATION FOR BIDDERS

- A. The information being provided is for the bidder's convenience and does not relieve the bidders from doing their own investigation to determine the accuracy of the information.
- B. Existing conditions and reinstallation instructions.
- C. Structural reinforcing plans by others; JSN Associates, dated 11/06/15.

END OF SECTION 000200

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000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

General: The following photos were taken as a record of existing conditions and shall be part of the construction documents. They shall be used in conjunction with all project drawings, specifications, addenda, revisions and approved submittals. The column designations locate columns as referred to on the structural and architectural drawings. Means and methods of construction are solely the responsibility of the General Contractor (GC).

The intent is to describe items to be removed, demolished, relocated, reinstalled and/or replaced, as required to access existing metal frame for the following: reinforcement, bracing, additional purlins and/or blocking as shown on the drawings and as specified.

GC to protect all finishes, fixtures, furnishings and equipment in the facility. Bleachers recently installed by Hussey Manufacturing shall be partially dismantled and reinstalled to access columns beneath the bleachers by manufacturer's certified installer by Owner. GC to coordinate with Owner.

ARENA AREA *Note: From column line 1 to column line 11*

Remove light fixtures, speakers, ductwork, and reflective insulation with metal stud track and metal perimeter stud. Light fixtures, speakers, ductwork, metal stud track and metal perimeter stud to be reinstalled after completion of structural reinforcing. Install new reflective insulation at ceiling and two end walls.

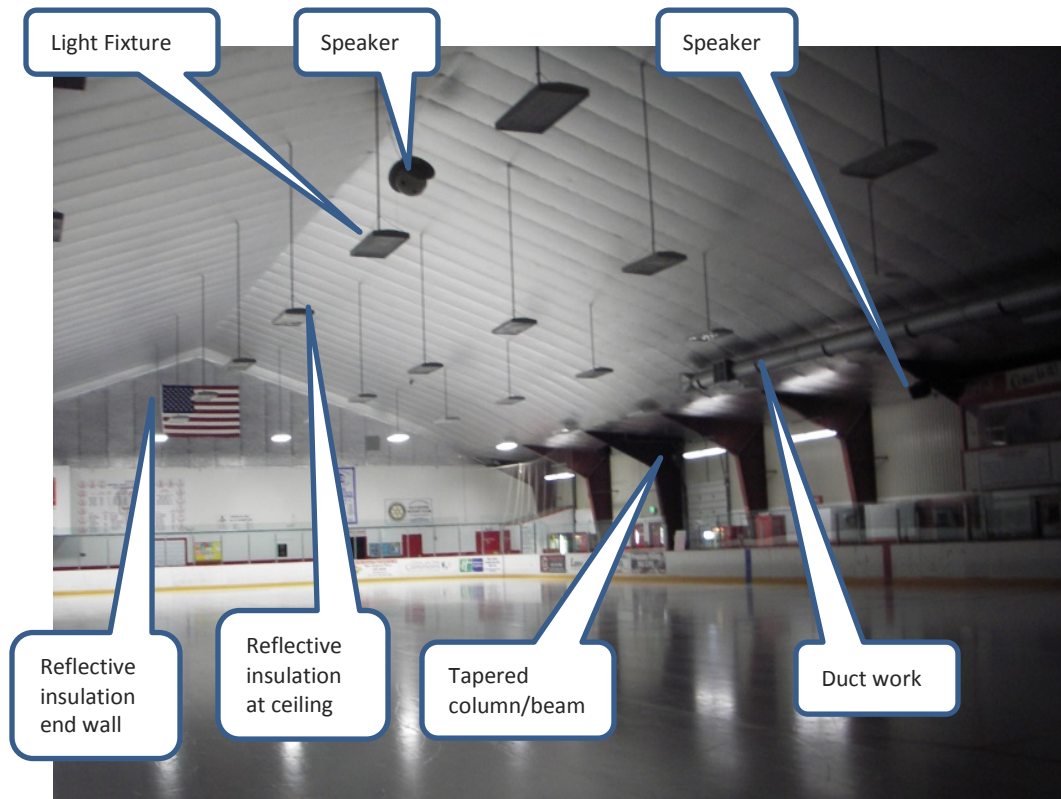
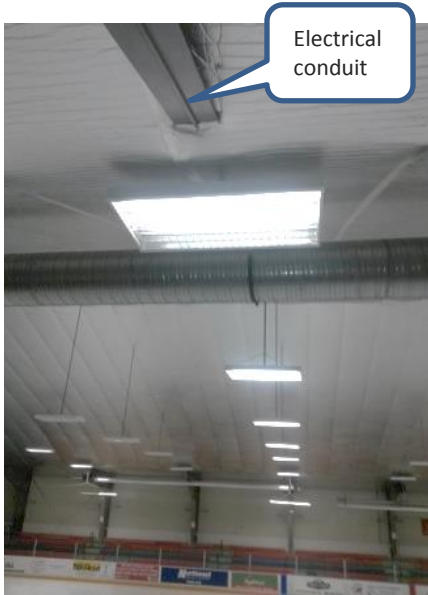


Photo taken of arena area with ice; during construction existing concrete slab will be exposed.



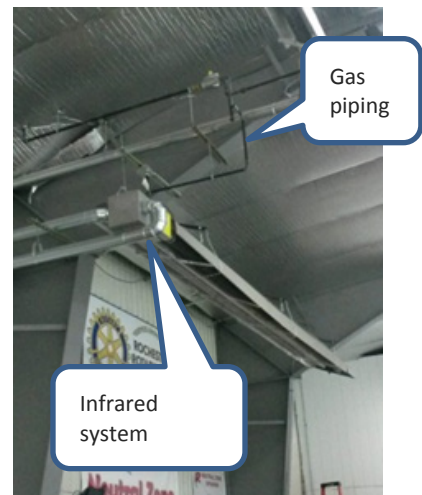
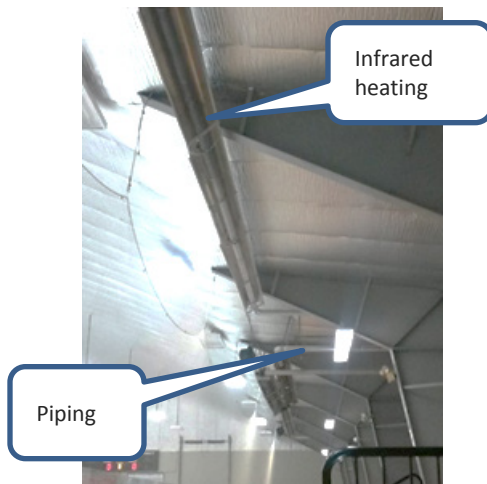
000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

General Removals/Reinstallation:



Light fixture reinstallation may require new elevation adjustment. To be coordinated with reinstallation of reflective ceiling insulation. Electrical conduit to be centered at new WT15 reinforcing. If required, new light fixture standards and/or new conduit to be part of the work at no additional cost to Owner.

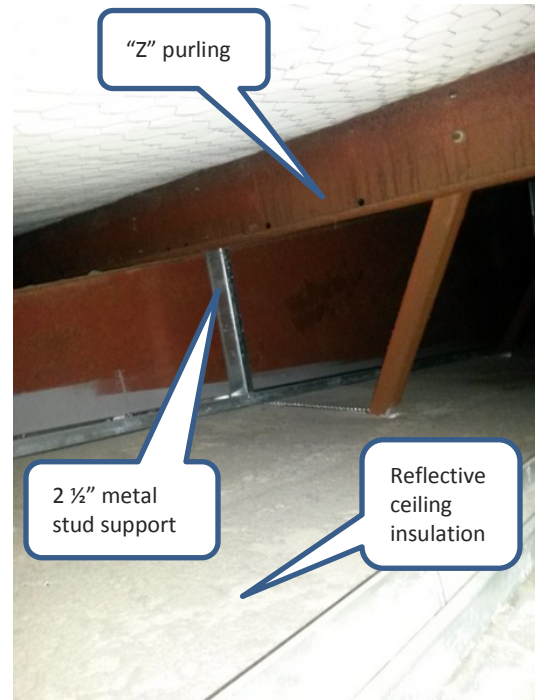
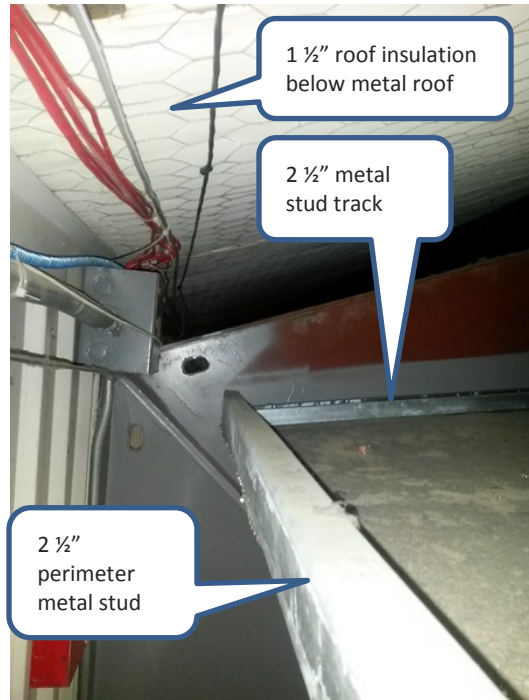
Ductwork reinstallation may require new elevation adjustment. To be coordinated with reinstallation of reflective ceiling insulation. Ductwork through exterior wall may require new transition and new ductwork supports. If the above is required, to be part of the work at no additional cost to Owner.



Infrared heating system above bleachers to be removed and reinstalled - typical. Adjust height after new WT15 reinforcing to include inferred heating, gas piping, system piping, conduits, etc.



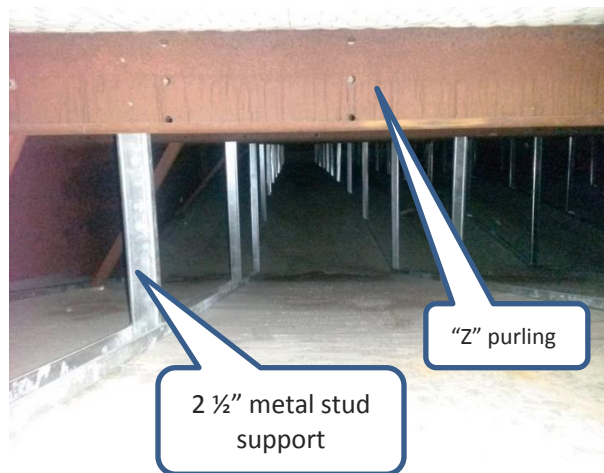
000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Remove 2 ½" perimeter metal stud and stud track. Perimeter metal stud and stud track to be reinstalled.

2 ½" metal stud support to remain. Remove reflective ceiling insulation and replace with new reflective ceiling insulation.

Photos taken above reflective ceiling insulation. For details see architectural drawings.



See notes above.



See notes above.

Photos taken above reflective ceiling insulation. For details see architectural drawings.



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Bleachers recently installed by Hussey Manufacturing. To access columns beneath, the bleachers shall be partially dismantled and reinstalled by manufacturer's certified installer by Owner. GC to coordinate with Owner.

Existing Conditions At Columns In Arena Area:

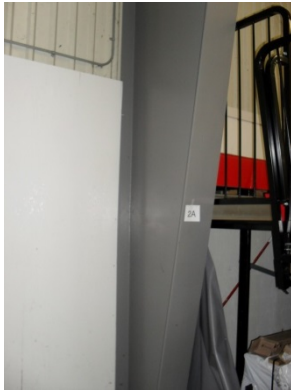


End wall 1, no reinforcement added to frame. Remove reflective ceiling insulation to install new purlins.

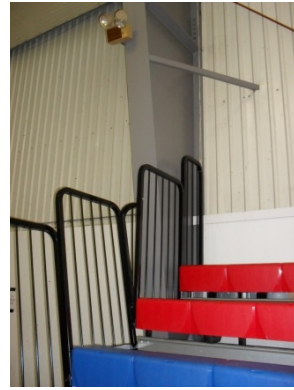
Column A1



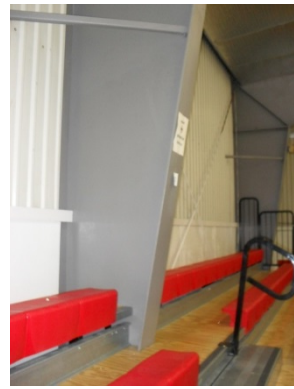
000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



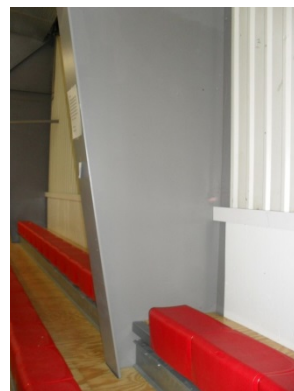
Column A2



Column A3



Column A4





000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



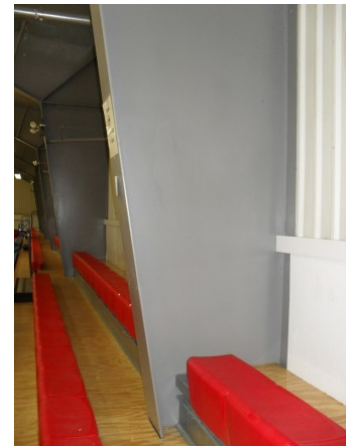
Column A5



Remove and reinstall
conduit & emergency
light fixture – typical.



Column A6



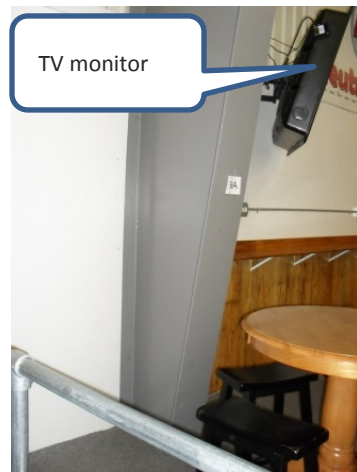
Column A7



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Column A8



TV monitor



Wainscoting
with coat
hooks



Infrared
heating
system

Remove wainscoting with coat hooks, conduit and reinstall. Owner to remove TV monitor. Infrared heating system above to be removed and reinstalled, refer to photos above under general removals/reinstallation.

Column A9



Wainscoting
with coat
hooks



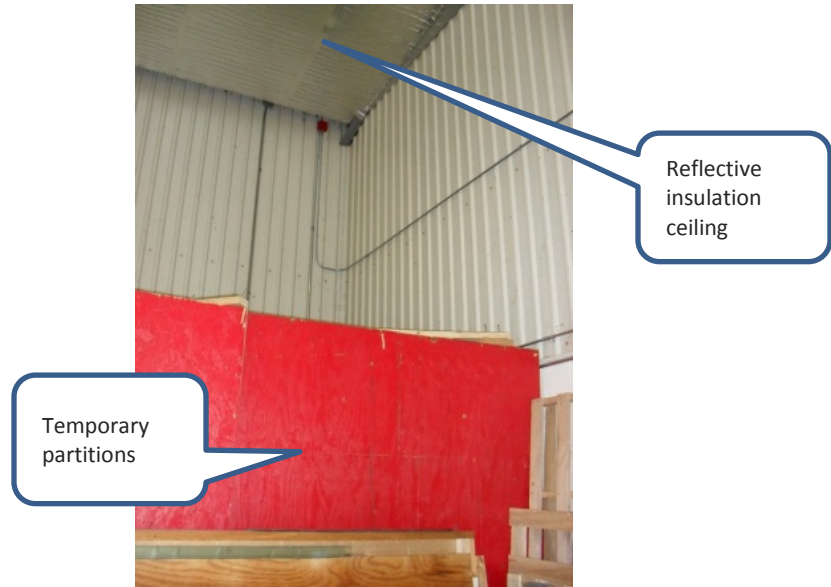
Railing

Remove wainscoting with coat hooks, railing and reinstall.

Column A10

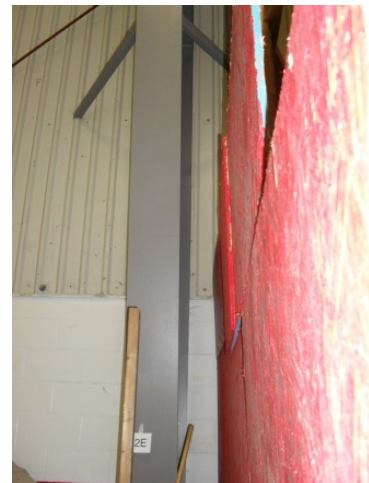


000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Temporary partition to be removed by Owner. End wall 1 no reinforcement added to frame. Remove reflective ceiling insulation to install new purlins.

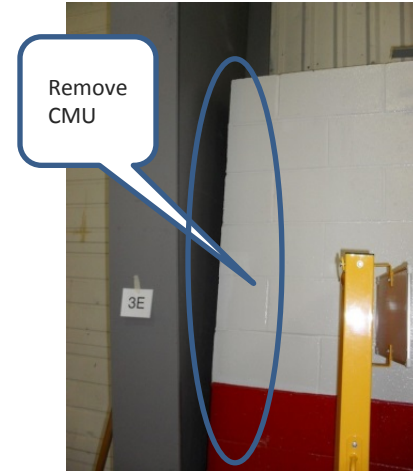
Column E1



Temporary partition to be removed by Owner
Column E2

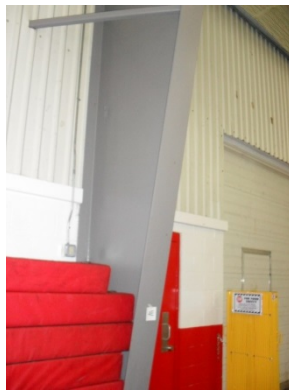


000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

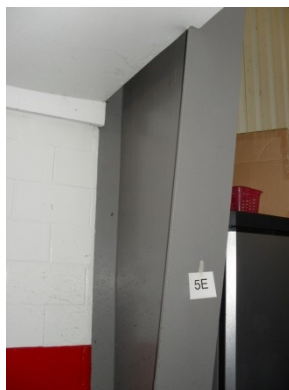


Remove portion of CMU as required to access outside column flange. Replace CMU to match existing.

Column E3



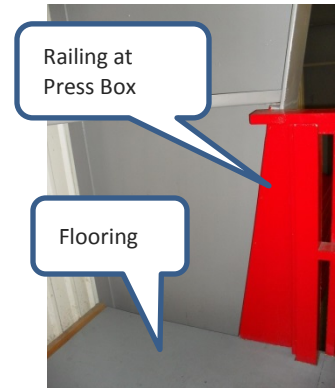
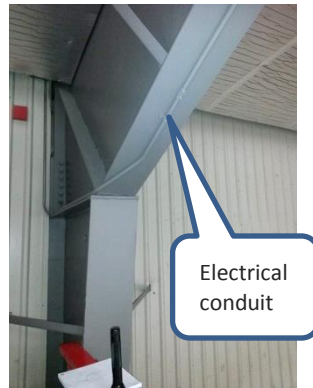
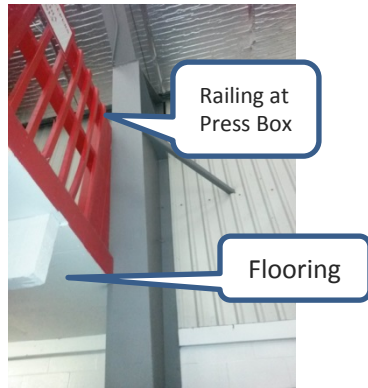
Column E4



Column E5



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Remove railing and flooring at Press Box and electrical conduit. Shore Press Box floor structure as required. Reinstall railing, flooring and conduit.

Column E5

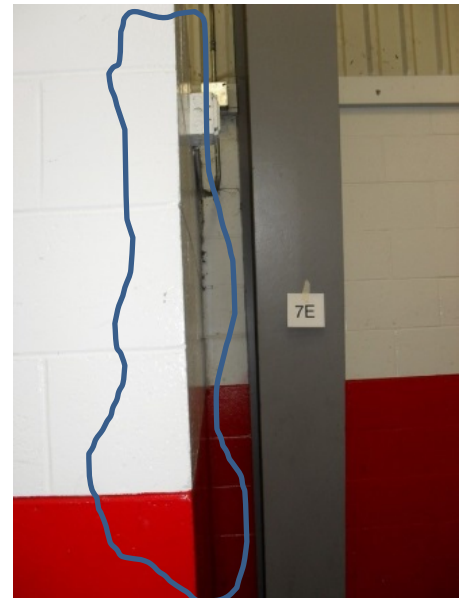
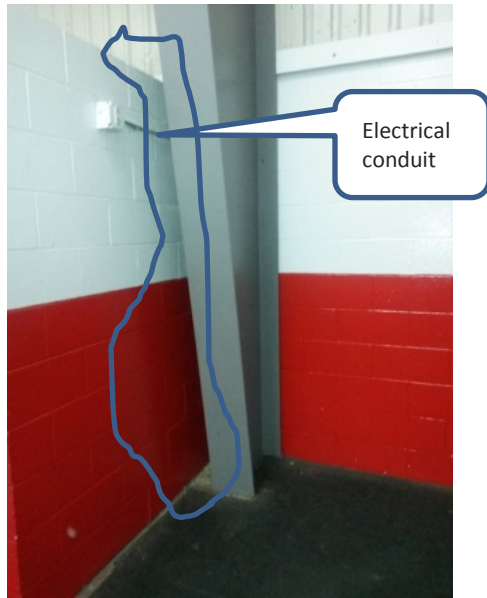


Remove portion of CMU walls, Press Box stud wall and flooring to access column. Shore Press Box floor structure as required. Replace CMU and wood stud wall to match existing.

Column E6



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Remove portion of CMU walls and electrical conduit to access column. Replace CMU wall to match existing. Reinstall electrical conduit.

Column E7



Remove and reinstall fire extinguisher. Owner to remove cabinet and hockey puck vending machine.

Column E8



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Owner to remove lockers.



Column E9



Owner to remove vending machine.

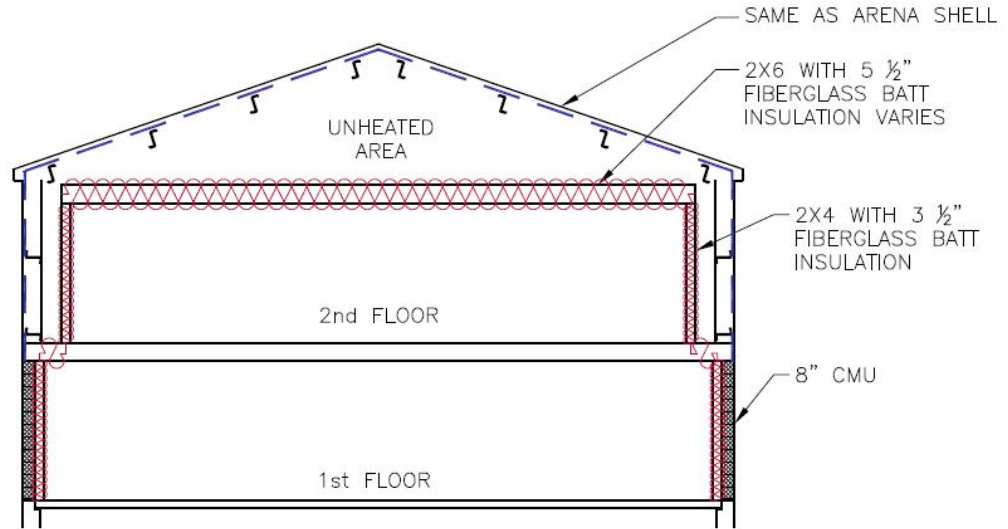


Column E10



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

TWO STORY AREA *Note: From column line 11 to column line 13*



ARENA – TWO STORY
N.T.S.

NOTE:

TWO FLOORS HEATED.

Section taken from Facility Analysis dated, December 4, 2012

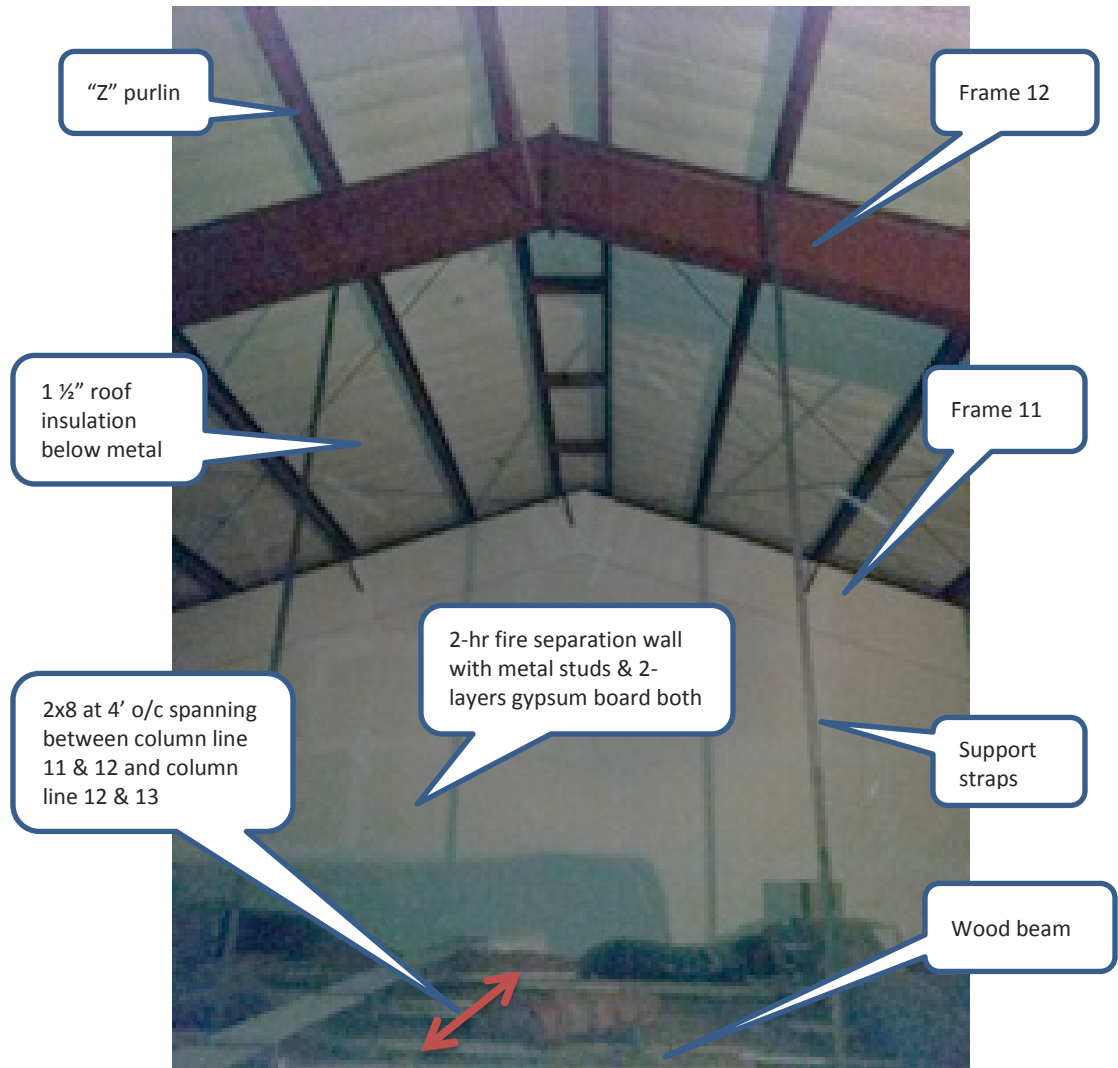
General Removals/Reinstallation:

To access column and beams remove CMU walls, gypsum board walls, gypsum board ceilings, plywood floor, as required. The following photos locate some of these conditions; however, the GC shall access all framing as required, providing all reinforcing and new purlins as noted on structural drawings. Shore second floor structure and second floor ceiling framing as required. All CMU and gypsum board surfaces removed to be replaced with new materials, including associated framing and supports.



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

Existing Conditions Above Ceiling At Second Floor:

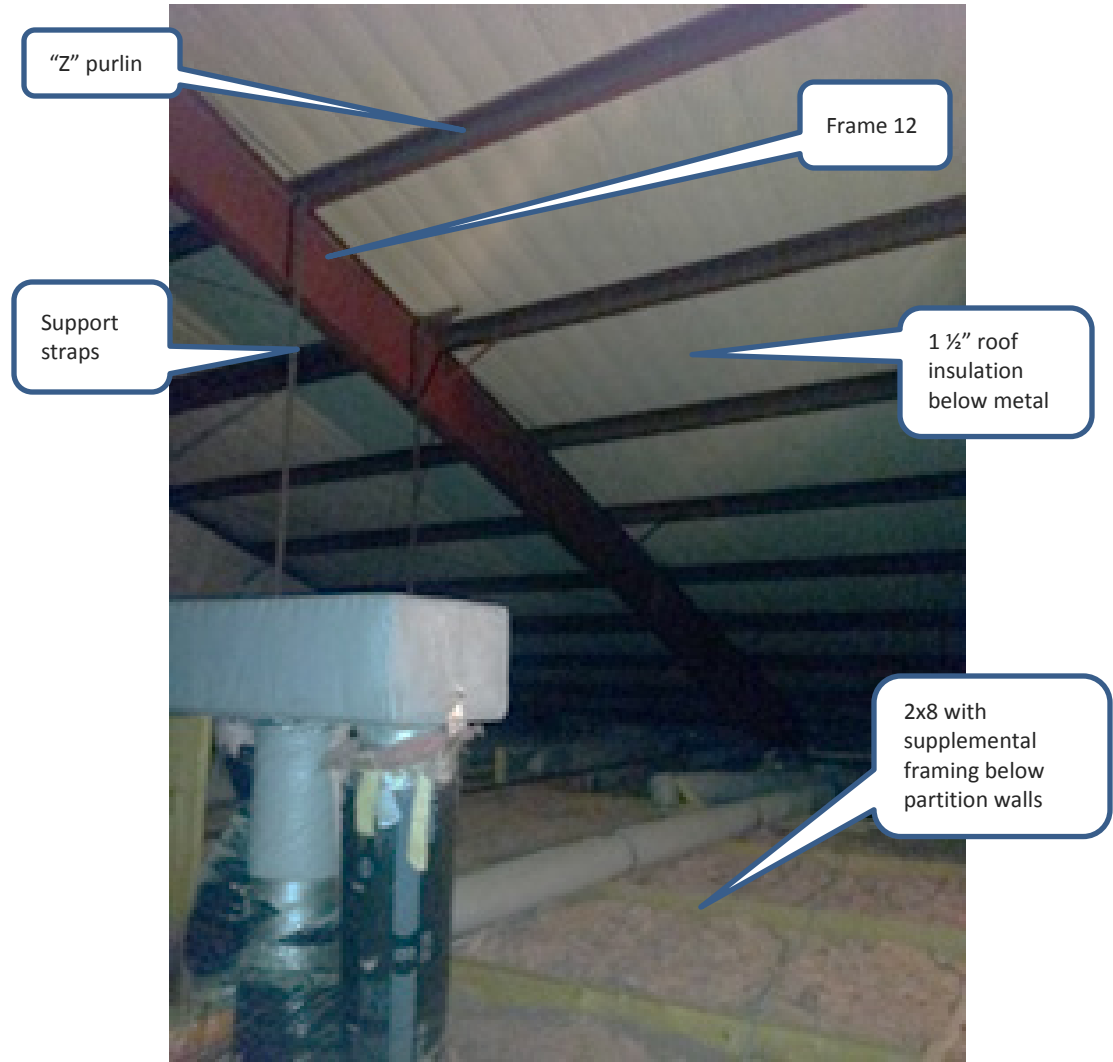


Program Room on second floor below. Second floor suspended acoustical ceiling supported by 2x8 framing. Fiber batt insulation between framing with strapping at underside of framing. Strapping at 2' o/c.

Photo taken of ridge at end wall 13 towards frame 12 and 11. Frame line 11 with infill 2-hour fire separation wall separating Arena from two-story area.



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Shower, dressing, offices, toilet, storage on second floor below (similar towards column line E). Second floor suspended acoustical ceiling supported by mixed 2x6 and 2x8 framing from wood stud partition walls. Fiber batt insulation between framing with wood strapping at underside of framing. Strapping at 2' o/c.

Photo taken of ridge at end wall 13 towards column line A.



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



Photos taken above second floor ceiling towards end wall 13.



Misc. photos taken above second floor ceiling.



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

Existing Conditions At Columns In Two Story Area:



From Concession, remove counter, piping, sink, electrical conduit, etc. to access column for reinforcing. Reinstall counter, piping, sink, electrical conduit, etc. per original condition.

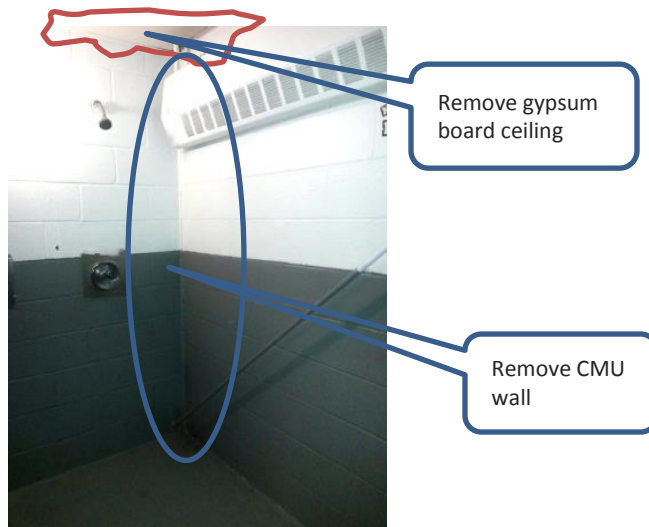
Note: Owner to remove appliances.



From Concession, remove gypsum board ceiling and framing to access column for reinforcing. Shore second floor structure as required. Provide new gypsum board and reinstall framing. Provide new framing as required.

Note: This is typical at all two story locations at columns A12, A13, E11, E12 and E13.

Column A11 – First Floor



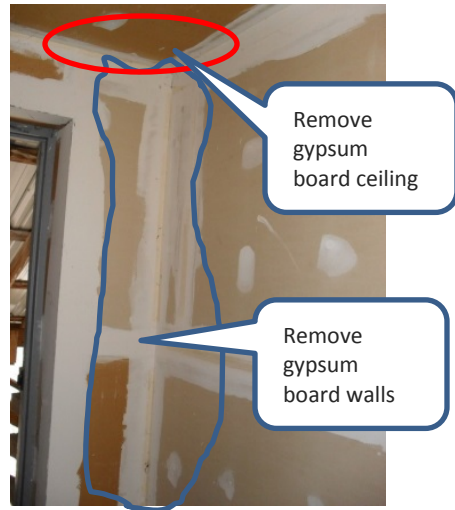
From shower, remove CMU walls and gypsum board ceiling to access column.

Note: If required remove and reinstall plumbing fixtures, plumbing in wall and fin tube radiation.

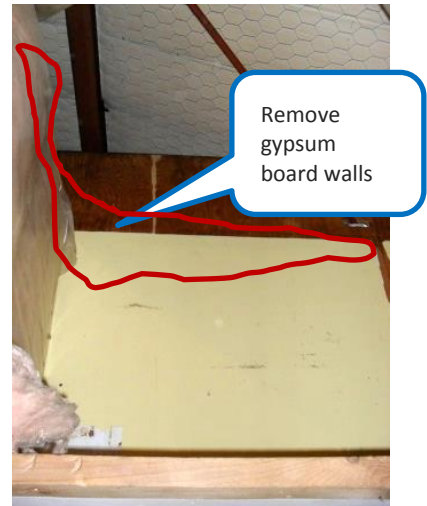
Column A11 – First Floor



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

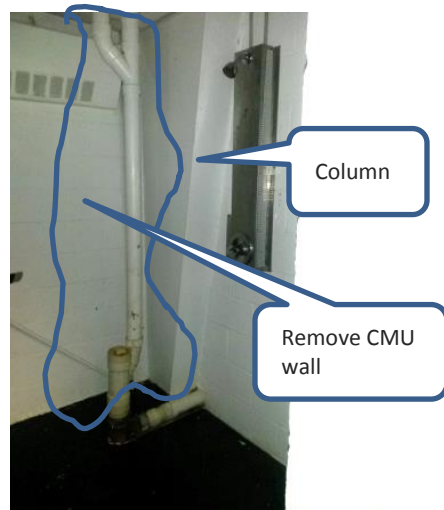


From Corridor, remove gypsum board walls and ceiling to access column and beam.



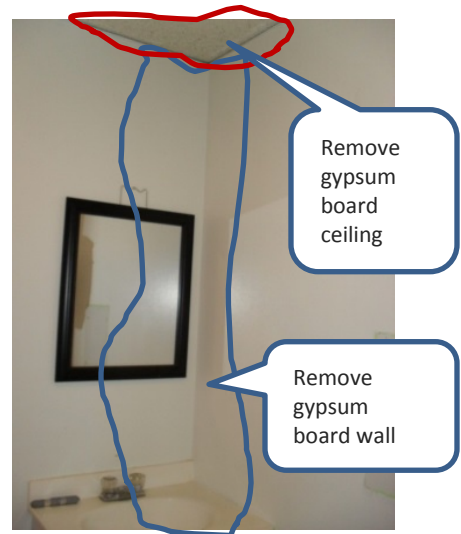
From Mechanical Room, remove gypsum board walls to access column and beam.

Column A11 – Second Floor



From shower, remove CMU walls and gypsum board ceiling.

Note: If required remove and reinstall plumbing, shower, and fin tube radiation.



From toilet room, remove gypsum board wall and ceiling.

Note: If required remove and reinstall lavatory.

Column A12 – First Floor



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM

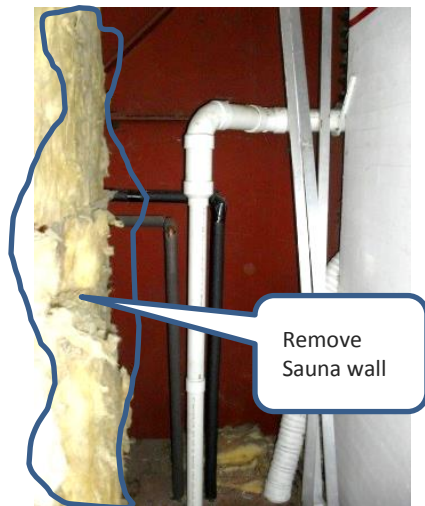


From Mechanical, remove portion on Sauna walls as required.

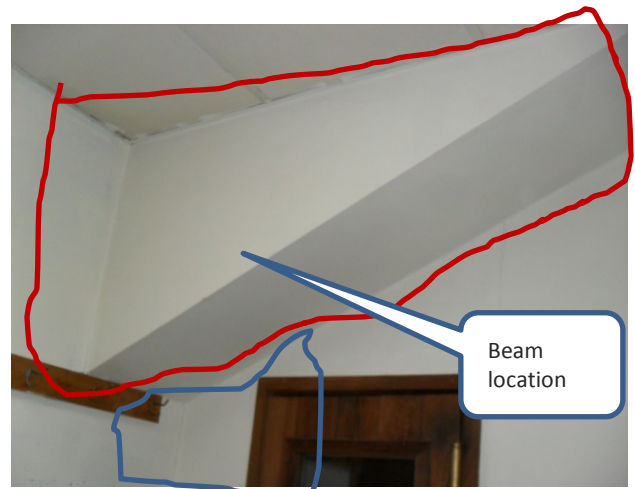


From Mechanical, remove wood strapping. *Note: if required remove and reinstall plumbing.*

Column A12 – Second Floor



From Storage, remove portion on Sauna walls as required. *Note: if required remove and reinstall plumbing.*

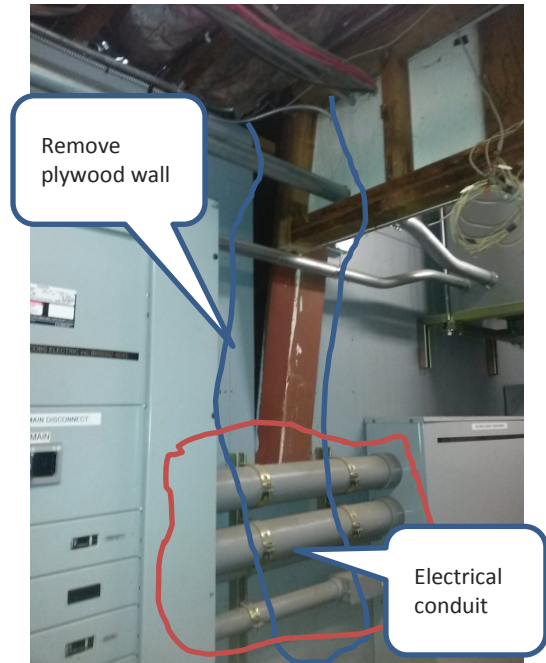
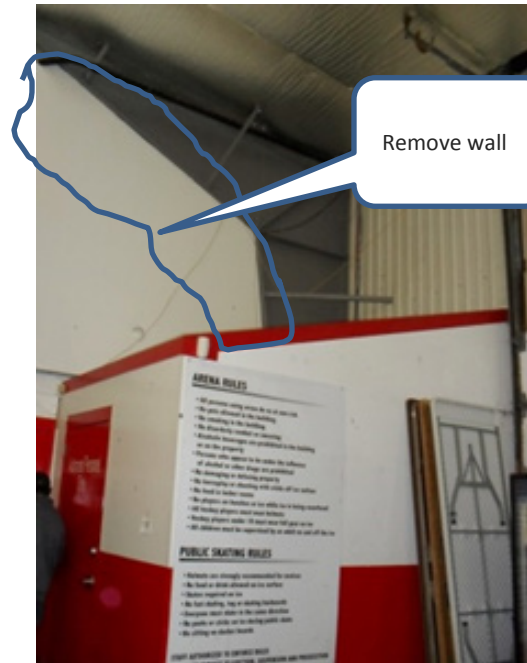


From Shower, remove portion on Sauna walls as required. Do not reinstall door. Remove gypsum board around beam. Provide new gypsum board.

Column A12 – Second Floor



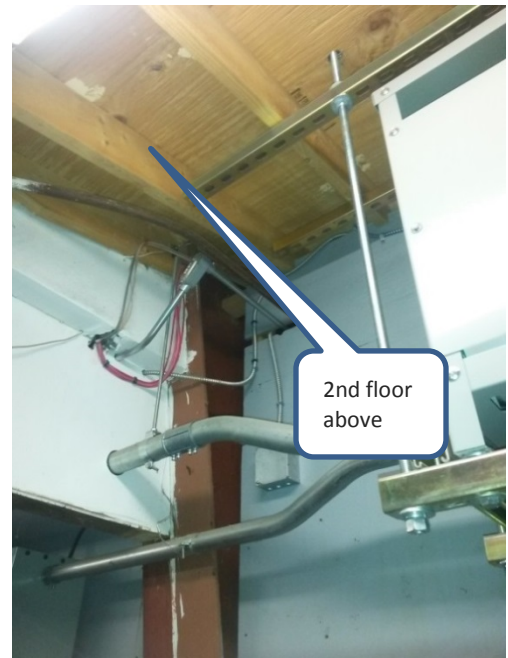
000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



From Arena facing Electrical room, remove portion of 2-hr fire separation wall with metal studs and 2-layers gypsum board type “X” both sides. Reinstall with new material.

From Electrical room, remove plywood wall. *Note: If required remove and reinstall electrical conduits.*

Column E11 – First Floor



From Electrical room, remove plywood wall. *Note: If required remove and reinstall electrical conduits and wiring.*

From Electrical room: Note floor & framing from 2nd floor above. *Note: If required remove and reinstall electrical conduits.*

Column E11 – First Floor



000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



From Mechanical room, remove tower sump tank. Reinstall. Coordinate with Owner.



From Mechanical room, remove entire abandoned chimney from the floor up through roof. Infill at roof and second floor to match existing.

Column E12 – First Floor

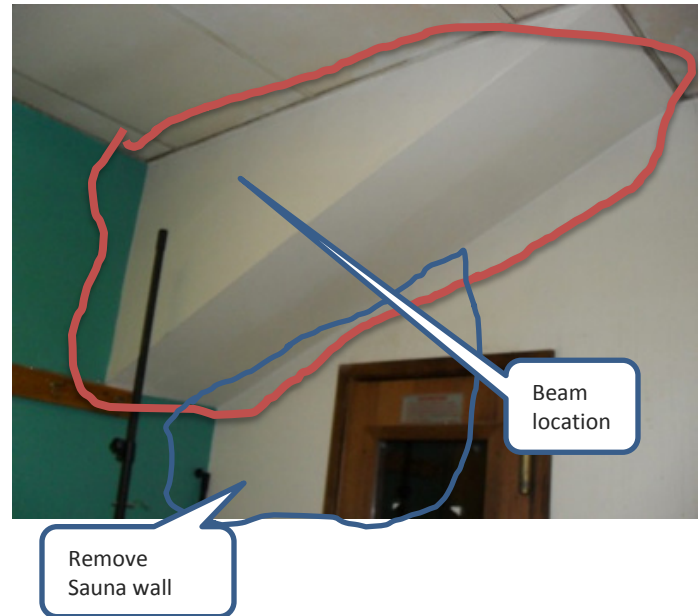


From Mechanical room, remove tower sump tank and chimney.
Note: If required remove and reinstall piping and conduit wiring.

Column E12 – First Floor



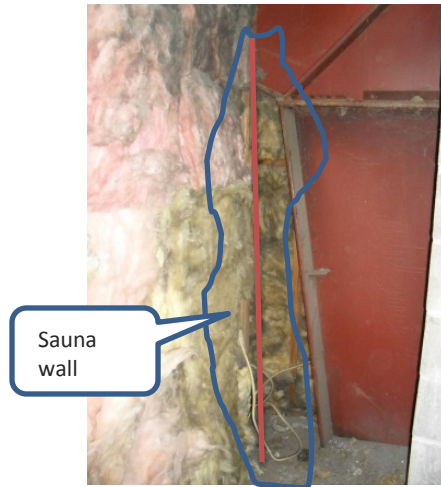
000200 – EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS
ROCHESTER RECREATION ARENA – STRUCTURAL REINFORCING OF ROOF SYSTEM



From Storage Room, remove entire abandoned chimney from the 1st floor up through roof. Infill at roof and second floor to match existing. Note: If required remove and reinstall plumbing pipe.

From Sauna room, remove portion on Sauna walls as required. Do not reinstall door. Remove gypsum board around beam. Provide new gypsum board.

Column E12 – Second Floor



From Storage room, remove portion on Sauna wall and wall under beam.

From Storage room, remove chimney.

Column E12 – Second Floor

INVITATION TO BID

The City of Rochester, New Hampshire is accepting sealed bids for construction of the **Structural Reinforcing of Roof System** project within the limits of the City's existing Rochester Arena facility located at 63A Lowell Street in Rochester. Bids must be submitted in a sealed envelope plainly marked:

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Bid # 17-29

City of Rochester
31 Wakefield Street
Rochester, NH 03867
Attn: Purchasing Agent

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A mandatory site visit to review the requirements for the proposed Structural Reinforcing of The Roof System project will be held on January 19, 2017 at 9:00am. Bidders will meet at the Rochester Arena (in main entrance) located at 63A Lowell Street, Rochester, NH 03867. All prospective Bidders must attend in order to have their bids considered.

SCOPE OF WORK:

The City of Rochester intends to reinforce the existing Arena structure as shown on Drawings S1 - Reinforcing Roof Structure and S2 - Reinforcing Details within the existing footprint of the Rochester Arena. Also includes additional roof purlins, blocking, bracing by means of welding and fasteners. Special care to protect bleachers, rink batter boards, fixtures, fixtures and finishes.

Furnish and installation of new reflective insulation at ceiling and side walls to access existing metal framing. Existing metal stud supports to remain and metal stud channels to be removed and reinstall after metal frames are reinforced and new purlins are added. General Contractor can provide new metal stud channels for ease of reinstallation at no cost to the Owner.

Work to include demolition and/or removal of walls, partitions, ceilings, flooring, counters, light fixtures, ductwork, electrical conduit, speakers, infrared heating system, etc., to access existing metal framing. Reinstalled or rebuilt to meet or exceed original conditions including finishes; painting reinstall or new walls, partitions, ceilings, surfaces to blend in and match existing finishes.

The City retained the architectural firm of Harriman Associates to prepare the attached construction plans, 5 sheets, the summary is as follows:

- A05.1 Existing Conditions & Removals First Floor Plan
- A05.1 E Existing Conditions & Removals Second Floor Plan
- A10.1 Reinstallation First Floor Plan
- A10.2 Reinstallation Second Floor Plan
- A30.1 Details

The City retained the structural engineering firm of JSN Associates, Inc. to provide separate construction plans, 2 sheets dated 11/06/15, the summary is as follows:

- S1 Reinforcing Roof Plan
- S2 Reinforcing Details

The City will be responsible for bleacher dismantling and reinstallation to allow access to metal frames.

A mandatory site visit to review the requirements for the proposed construction at the Rochester Arena will be held on January 19, 201 at 9:00am. Bidders will meet at the Rochester Arena (in main entrance) located at 63A Lowell Street, Rochester, NH 03867. All prospective Bidders must attend in order to have their bids considered.

All work shall conform to City of Rochester Code requirements, as can be found at the weblink below:
<http://www.rochesternh.net/building-zoning-and-licensing-services/pages/codes-currently-enforced>

Please note references to New Hampshire State Building Code (2009 IBC w/ NH amendments), National Electric code 2014, and Life Safety Code NFPA 101, 2009 Edition.

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002113 - INSTRUCTION TO BIDDERS

PREPARATION OF BID PROPOSAL

1. The Bidder shall submit her/his proposal upon the form(s) furnished by the City (attached). The bidder shall specify a lump sum bid. All figures shall be in ink or typed.
2. If a lump sum bid already entered by the bidder on the proposal form is to be altered it should be crossed out with ink, the new lump sum bid entered above or below it, and initialed by the bidder, also with ink. In case of discrepancy between the prices written in words and those written in figures, the prices written in words shall govern.
3. The bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture, by one or more officers of a corporation, or by an agent of the contractor legally qualified and acceptable to the owner. If the proposal is made by an individual, his name and post office address must be shown, by a partnership the name and post office address of each partnership member must be shown; as a joint venture, the name and post office address of each must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles, and business addresses of the President, Secretary, and Treasurer.
4. All questions shall be submitted in writing to and received by the Purchasing Agent at the below address, a minimum of 7 days prior to the scheduled bid opening. The Purchasing Agent, will then forward both the question and the city's response to the question to all known prospective bidders.

IRREGULAR PROPOSALS

Bid proposals will be considered irregular and may be rejected for any of the following reasons:

1. If the proposal is on a form other than that furnished by the Owner or if the form is altered or any part thereof is detached.
2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
3. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
4. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.

DELIVERY OF BID PROPOSALS

When sent by mail, the sealed proposal shall be addressed to the City of Rochester, Purchasing Agent, 31 Wakefield Street, Rochester, NH 03867. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals received after the time for opening of the bids will be returned to the bidder, unopened. Emailed or faxed bid proposals are not acceptable.

WITHDRAWAL OF BID PROPOSALS

A bidder will be permitted to withdraw his proposal unopened after it has been deposited if such request is received in writing prior to the time specified for opening the proposals.

PUBLIC OPENING OF BID PROPOSALS

Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

DISQUALIFICATION OF BIDDERS

Either of the following reasons may be considered as being sufficient for the disqualification of a bidder and the rejection of her/his bid proposal(s):

1. Evidence of collusion among bidders.
2. Failure to supply complete information as requested by the bid specifications.

CONSIDERATION OF PROPOSALS

1. Bids will be made public at the time of opening and may be reviewed only after they have been properly recorded. In case of discrepancy between the prices written in words and those written figures, the prices written in words shall govern. In case of a discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and unit bid prices, the latter shall govern.
2. The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals, if in the judgment of the City, the best interest of the City of Rochester will be promoted thereby.
3. Bid results will be available on the website at www.rochesternh.net within 48 hours of the bid opening.

AWARD OF CONTRACT

The City holds the right, in its judgment, to award the contract to the bidder, which it feels is in the best interest of the City. If a contract is to be awarded, the Contractor/Vendor selection shall be based in part on possession of the necessary experience, organization, technical and professional qualifications, skills and facilities, reference checks, project understanding, approach, ability to comply with proposed or required time to completion or performance, licensing or certification, in good standing with Federal, State and Local agencies, possession of satisfactory record of performance, cost and to a responsible and qualified bidder whose proposal complies with all the requirements prescribed as soon as practical after the bid opening. No bid shall be withdrawn for a period of (60) sixty days subsequent to the opening of bids without the consent of the City of Rochester. The successful bidder will be notified, by the form mailed to the address on his proposal, that his bid has been accepted and that he has been awarded the contract.

CANCELLATION OF AWARD

The City reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability or other claim against the City.

BID EVALUATION

In addition to the bid amount, additional factors will be considered as an integral part of the bid evaluation process, including, but not limited to:

1. The bidder's ability, capacity, and skill to perform within the specified time limits.
2. The bidder's experience, reputation, efficiency, judgment, and integrity.
3. The quality, availability and adaptability of the supplies and materials sold.
4. The bidder's past performance.
5. The sufficiency of bidder's financial resources to fulfill the contract.
6. The bidder's ability to provide future maintenance and/or services.
7. Any other applicable factors as the City determines necessary and appropriate (such as compatibility with existing equipment).

CONDITIONS AT SITE

Bidders shall be responsible for having ascertained pertinent local conditions, such as: location, accessibility and general character of the site. The character and extent of existing work within or adjacent to the site and any other work being performed thereon at the time of the submission of her/his bid.

LAWS, PERMITS AND REGULATIONS

1. The Contractor shall obtain and pay for all licenses and permits as may be required of him by law, and shall pay for all fees and charges for connection to outside services, and use of property other than the site of the work for storage of materials or other purposes.
2. The Contractor shall comply with all State and Local laws, ordinances, regulations and requirements applicable to work hereunder, including building code requirements. If the Contractor ascertains at any time that any requirement of this Contract is at variance with applicable laws, ordinances, regulations or building code requirements, she/he shall promptly notify the City of Rochester in writing.

CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

1. The Contractor shall deliver with bid documents; certificates of all insurance required hereunder. The certificate shall state that the companies issuing insurance will endeavor to mail to the City of Rochester ten (10) days notice of cancellation, alteration or material change of any listed policies. The Contractor shall keep in force the insurance required herein for the period of the Contract. At the request of the City of Rochester, the Contractor shall promptly make available a copy of any and all listed insurance policies. The requested insurance must be written by a Company licensed to do business in New Hampshire at the time the policy is issued.

2. The City of Rochester, NH shall be listed as additional insured on all the Certificates of Insurance.
3. The Contractor shall require each Subcontractor employed on the Project to maintain the coverage listed below unless the Contractor's insurance covers activities of the Subcontractor on the Project.
4. No operations under this Contract shall commence until certificates of insurance attesting to the below listed requirements have been filed with and approved by the Department of Public Works, and the Contract approved by the City Manager.
 - a. Workmen's Compensation Insurance
Limit of Liability - \$100,000.00 per accident
 - b. Commercial General Liability
Limits of Liability
Bodily Injury: \$1,000,000.00 per occurrence, \$1,000,000.00 aggregate
Property Damage: \$500,000.00 per occurrence, \$200,000.00 aggregate
Combined Single Limit, Bodily Injury and Property Damage:
\$2,000,000.00 aggregate
 - c. Automobile Liability
Limits of Liability - \$500,000.00 per accident.
 - d. The Contractor shall indemnify, defend, and save harmless the City of Rochester and its agents and employees from and against any suit, action or claim of loss or expenses because of bodily injury. Including death at any time resulting there from, sustained by any person or persons or on account of damage to property, including loss of use thereof, whether caused by or contributed to by said City of Rochester, its agents, employees or others.

ACCIDENT PROTECTIONS

It is a condition of this Contract, and shall be made a condition of each subcontract entered into pursuant to the Contract. That a Contractor and any Subcontractors shall not require any laborer or mechanic employed in the performance of the Contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to health or safety, as determined by construction safety and health standards of the Occupational Safety and Health Administration, United States Department of Labor, which standards include, by reference, the established Federal Safety and Health regulations for Construction. These standards and regulations comprise Part 1910 and Part 1926 respectively of Title 29 of the Code of Federal Regulations and are set forth in the Federal Register. In the event any revisions in the Code of Federal Regulations are published, such revisions will be deemed to supersede the appropriate Part 1910 and Part 1926, and be effective as of the date set forth in the revised regulation.

SUBCONTRACTS

1. Nothing contained in the Specifications or Drawings shall be construed as creating any

contractual relationship between any Subcontractor and the City of Rochester. The Division or Sections of the Specifications are not intended to control the Contractor in dividing the work among Subcontractors or to limit the work performed by any trade.

2. The Contractor shall be as fully responsible to the City of Rochester for the acts and omissions of Subcontractors and of persons employed by her/him, as she/he is responsible for the acts and omissions of persons directly employed by her/him.

PROTECTION OF WORK AND PROPERTY

The Contractor shall, at all times, safely guard the City's property from injury or loss in connection with this Contract. She/he shall, at all times, safely guard and protect her/his own work and that of adjacent property from damage. All passageways, guard fences, lights and other facilities required for protection by State or Municipal laws, regulations and local conditions must be provided and maintained.

USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor expressly undertakes at his own expense:

1. To take every precaution against injuries to persons or damage to property;
2. To comply with the regulations governing the operations of premises which are occupied and to perform his Contract in such a manner as not to interrupt or interfere with the operation of the Institution;
3. To perform any work necessary to be performed after working hours or on Sunday or legal holidays without additional expense to the City, but only when requested to do so by the City;
4. To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other Contractors;
5. Daily to clean up and legally dispose of (away from the site), all refuse, rubbish, scrap materials and debris caused by his operation. Including milk cartons, paper cups and food wrappings left by his employees, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
6. All work shall be executed in a workmanlike manner by experienced mechanics in accordance with the most modern mechanical practice and shall represent a neat appearance when completed.

MATERIALS AND WORKMANSHIP

1. Unless otherwise specified, all materials and equipment incorporated into the work under the Contract shall be new. All workmanship shall be first class and by persons qualified in their respective trades.
2. Where the use of optional materials or construction method is approved, the requirements for workmanship, fabrication and installation indicated for the prime material or construction method shall apply wherever applicable. Required and necessary modifications and

adjustments resulting from the substitution or use of an optional material or construction method shall be made at no additional cost to the City.

STANDARDS

1. Materials specified by reference to the number, symbol or title of a specific standard, such as a Commercial Standard, a Federal Specification, Department's Standard Specifications, a trade association standard or other similar standard. Shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of advertisement, except as limited to type, class or grade or modified in such reference.
2. Reference in the Specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. In such cases the Contractor may, at his option, use any articles, device, product, material fixture, form or type of construction that, in the judgment of the City expressed in writing to all Bidders before opening of bids as an addendum, is an acceptable substitute to the specified.
3. Substitution During Bid Time: Whenever any particular brand or make of material or apparatus is called for in the Specifications, a Bidder's Proposal must be based upon such material or apparatus, or upon a brand or make which has been specifically approved as a substitution in an Addendum issued to all Bidders during the bidding time.
4. The intent is that the brand or make of material or apparatus that is called for herein establishes a standard of excellence that, in the opinion of the Consultant and Engineer, is necessary for this particular Project.
5. Substitution After Bid Opening: No substitutions will be considered after bids have been opened unless necessary due to strikes, lockouts, bankruptcy or discontinuance of manufacture, etceteras. In such cases, the Contractor shall apply to the City, in writing within ten (10) days of his realizing his inability to furnish the article specified, describing completely the substitution he desires to make.

EXTRAS

Except as otherwise herein provided, no charge for any extra work or material will be allowed unless the Director of Public Works has ordered the same, in writing.

GUARANTEE OF WORK

1. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for one (1) year from the Date of Final Acceptance.
2. Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
3. In any case, wherein fulfilling the requirements of the Contract or of any guarantee, should the Contractor disturb any work guaranteed under another contract, the Contractor shall restore such disturbed work to a condition satisfactory to the Director of Public Works. And guarantee such restored work to the same extent as it was guaranteed under such other contracts.

4. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the City of Rochester may have the defects corrected and the Contractor shall be liable for all expense incurred.
5. All special guarantees applicable to definite parts of the work that may be stipulated in the Specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

DEFAULT AND TERMINATION OF CONTRACT

If the Contractor:

1. Fails to begin work under Contract within the time specified in the notice to proceed; or
2. Fails to perform the work with sufficient workers and equipment, or with sufficient materials to assume prompt completion of said work; or
3. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable; or
4. Discontinues the prosecution of the work; or
5. Fails to resume work, which has been discontinued, within the time frames included in specifications; or
6. Becomes insolvent or has declared bankruptcy, or commits any act of bankruptcy or insolvency; or
7. Makes an assignment for the benefit of creditors; or
8. For any other causes whatsoever, fails to carry on the work in an acceptable manner the City of Rochester will give notice, in writing, to the Contractor for such delay, neglect, and default.

If the Contractor does not proceed in accordance with the Notice, then the City of Rochester will have full power and authority without violating the Contract to take the prosecution of the work out of the hands of the Contractor. The City of Rochester may enter into an agreement for the completion of said Contract according to the terms and conditions thereof, or use such other methods as in the City's opinion will be required for the completion of said Contract in an acceptable manner.

All extra costs and charges incurred by the City of Rochester as a result of such delay, neglect or default, together with the cost of completing the work under the Contract will be deducted from any monies due or which may become due to said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor shall be liable and shall pay to the City of Rochester the amount of such excess.

OBTAINING BID RESULTS

Bid results will be available on the website at www.rochesternh.net within 48 hours of the bid opening.

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**Recreation Department – Structural Reinforcing of Roof System
Bid #17-29**

The work as described in these documents and per the drawing by Harriman Associates and JSN Associates, Inc. shall be furnished, installed, and completed for the Total Lump Sum below.

This will include all materials, labor, trim, finishes, certifications, etc. to ensure a complete reinforcing of the existing structure and reinstallation of all items noted at the Rochester Arena.

\$ _____
(cost in numbers)

\$ _____
(cost in words)

COMPANY NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

TELEPHONE# _____ FAX# _____ E-MAIL _____

SIGNATURE: _____

Bid results will be posted after 48 hours on the City of Rochester's web site:
www.rochesternh.net or will be available by request via e-mail at the following address:
purchasing@rochesternh.net

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SECTION 011000 - DIVISION 01 GENERAL REQUIREMENTS - LIMITED SCOPE

1.1 SECTION INCLUDES

- A. Table of Contents
- B. Related Documents
- C. Summary of Work
- D. Applications for Payment
- E. Modification Procedures
- F. Project Coordination
- G. Reference Standards and Definitions
- H. Project Meetings
- I. Submittals
- J. Temporary Facilities and Protection
- K. Materials and Equipment
- L. Execution Requirements
- M. Cutting and Patching
- N. Maintenance and Instructions
- O. Project Closeout
- P. Project Record Documents
- Q. Warranties

1.2 RELATED DOCUMENTS

- A. General provisions of Contract, including General Conditions apply to this Division and to General Contractor (also known as Contractor), Subcontractors and other persons supplying materials and/or labor, entering into the Project site and/or premises, directly or indirectly.
- B. This Division is intended to provide additional details and procedures for the implementation of requirements prescribed in the Agreement.

1.3 SUMMARY OF WORK

- A. Project Description:
 - 1. Construction starts on or about March 13, 2017. Date of completion on or about September 1, 2017.

2. Work to include but not limited to: The City of Rochester intends to reinforce the existing structure within the existing footprint of the Rochester Arena. Also includes additional roof purlins, blocking, bracing by means of welding and fasteners. Special care to protect bleachers, rink batter boards, fixtures and finishes.
3. Furnish and installation of new reflective insulation to access existing metal framing. Existing metal stud supports to remain and metal stud channels to be removed and reinstall after metal frames are reinforced and new purlins are added. General Contractor can provide new metal stud channels for ease of reinstallation at no cost to the Owner.
4. Work to include demolition and/or removal of walls, partitions, ceilings, counters, light fixtures, ductwork, electrical conduit, speakers, infrared heating system, etc., to access existing metal framing. Reinstalled or rebuilt to meet or exceed original conditions including finishes; painting reinstall or new walls, partitions, ceilings, surfaces to blend in and match existing finishes.
5. Owner has provide two structural drawing sheets labeled S1 and S2, dated 11/06/15 as follows:
 - S1, Reinforcing Roof Plan
 - S2, Reinforcing Details
6. The Work shall include all labor, materials, supplies, equipment, components and labor required to complete the Project as specified and reasonably inferred by the Contract Documents, without exception, and all Work or portions of the Work normally required by accepted trade practices in projects of similar type, scope and locale, without which the Work could not be completed and without which the Work would not function properly.

B. General:

1. The Owner: City of Rochester, 31 Wakefield Street, Rochester, NH 03867 Attn: Purchasing Agent. See invitation to bid.
2. Project location: 63A Lowell Street, Rochester, New Hampshire 03867.
3. The Architect for the Project: Harriman, 33 Jewell Court, Suite 101, Portsmouth, NH 03801, Attn.: Daniel Bisson Tel 603-626-1242, email dbisson@harriman.com
4. The Work will be constructed under proposals submitted to the Contractor on behalf of the Owner based on drawings and specifications, addendums and any clarifications during bidding.
 - a. The Work provided by the Contractor's, subcontractors and other persons supplying materials and/or labor, will be constructed under single contract between the Contractor and the Owner.

C. Contractor Use of Premises: Limit use of the premises to construction activities in the building and surrounding immediate site area. Portions of the site beyond areas in which construction operations to be indicated by the Owner are not to be disturbed. Keep all driveways and entrances serving the premises clear at all times.

1. The Owner will occupy the site and portion of the existing building during construction. Perform the Work so as not to interfere with the Owner's operations and use by staff and the public.
 - a. Notify Owner at least 48 hours before any temporary interruptions.
2. Provisions are to be made for the convenience, safety and comfort of staff within all designated usable areas. The public will not be accessing the facility during construction activities.
3. Normal working hours for on-site activities shall be 7 AM to 7 PM, seven days a week. Contractor may, at his discretion and at no extra cost to Owner, before or after 7 AM to 7 PM.
4. Smoking is prohibited inside the facility and within 30 feet of the entrance.

- D. Use of Existing Building: Maintain building in a weather-tight condition throughout the construction period. Take all precautions necessary to protect the building and its occupants during construction. Repair damage caused by construction operations.
 - 1. Provide dust-proof, secure barriers between occupied and work areas of building.
 - 2. Use of Owner's dumpsters will not be allowed.
 - 3. Keep all building entrances clear and accessible at all times.
- E. Owner Occupancy Requirements: The Owner will be responsible for operation, maintenance and custodial service for occupied portions of the building.
 - 1. Contractor shall obtain a Building Permit and a Certificate of Occupancy from local building officials prior to commencement of the work and Owner occupancy.
- F. Services and Work Performed by Owner: Bleacher dismantling bleachers and reinstallation.
 - 1. Provide Owner access to Project site for Owner's consultant and construction forces.
 - 2. Contractor to coordinate construction and operations of the Work with work performed by Owner's consultant and construction forces.
 - a. Construction Schedule: Inform Owner and Architect of preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner and Architect if changes to schedule are required due to differences in actual construction progress.

1.4 APPLICATIONS FOR PAYMENT

- A. Schedule of Values: Submit the Schedule of Values to Owner at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 1. Format and Content: Break down labor and material cost. Separate cost of bleachers and raised platform.
- B. Applications for Payment: Progress payment dates and the period of construction Work covered by each Application for Payment to be agreed to by the Owner.
 - 1. Submit Application for Payment to the Architect and Owner so that the Application will be received by the Architect and Owner no later than 5 business days prior to the indicated date for each progress payment.
 - 2. Payment Application Forms: Use AIA Documents G702 "Application and Certification for Payment" and G703 "Continuation Sheet" or another form acceptable to the Architect. Provide documentation and verification as required by Owner.
 - 3. Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to the Architect and Owner by means ensuring receipt within 24 hours. Each copy shall be complete, including waivers of lien and similar attachments.
 - 4. Waivers of Mechanic's Lien: (may require for each Application for Payment) The Owner or Architect may request at an Application for Payment submission of waivers of mechanic's liens from the Contractor including subcontractors, and suppliers for construction period covered by the previous applications. Submit waivers of lien on forms, and executed in a manner acceptable to the Owner.
 - 5. Final Payment Application: This application shall reflect Certificates of Completion issued previously for Owner occupancy of designated portions of the Work.
 - a. Administrative actions and submittals which must precede or coincide with submittal of the final Application for Payment include the following:
 - 1) Completion of Project closeout requirements.
 - 2) Assurance that unsettled claims will be settled.

- 3) Assurance that Work not complete and accepted will be completed without undue delay.
- 4) Proof taxes, fees and similar obligations have been paid.
- 5) Removal of surplus materials, rubbish and similar elements.
- 6) Submit waivers of mechanics lien from every entity who is lawfully entitled to file a lien related to the Work covered by the Payment.

1.5 MODIFICATION PROCEDURES

A. Minor Changes in the Work

1. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, may be issued by the Architect or Owner.

B. Change Order Proposal Requests

1. Owner Initiated Proposals: The Architect or Owner will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications. Proposal requests issued by the Architect are for information only.
 - a. Unless otherwise indicated in the proposal request, within 5 business days of receipt of the proposal request, submit to the Architect for the Owner's review an itemized estimate of cost including related costs necessary to execute the proposed change.
 - 1) Include a statement indicating the effect the proposed change will have on the Contract Time.
2. Contractor Initiated Proposal: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.
 - a. Provide a complete description of proposed change. Indicate the reasons for the change and the effect of the change on the Work. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 - b. Include an itemized list of products required and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Comply with requirements for product substitutions if the proposed change in the Work requires the substitution of one product or system for a product or system specified.

C. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect or Owner may issue a Construction Change Directive on AIA G714 "Construction Change Directive", instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

D. Change Order Procedures: Upon the Owner's approval of a Change Order Proposal Request, the Architect or the Contractor, if so required by the Architect or Owner, will issue a Change

Order on AIA G701 "Change Order" for signatures of the Owner and Contractor, as provided in the Conditions of the Contract.

1. Provide minimum of three (3) original copies with documentation, as required by Architect.

1.6 PROJECT COORDINATION

- A. Layout: The Contractor is responsible for all layout of all Work, even if such layout is done by others.
- B. Coordination: The Contractor shall coordinate construction to assure efficient and orderly installation of each part of the Work. The Contractor shall also coordinate construction operations that are dependent upon each other for proper installation, connection, inspections and approvals, accessibility and operation including work by Owner.
- C. Superintendent: The Contractor's superintendent shall be on site at any time Work is being done.
- D. On-Site Documents: The Contractor shall provide in a visible and accessible location on the site:
 1. Complete, currently updated set of Specifications, Change Orders and other Modifications, and approved Shop Drawings, Product Data, Samples and similar submittals.
 2. Permits and notifications required by law, regulation, etc.
 3. List of Owner, Architect, Contractor, superintendent, subcontractors, etc. Include name of contact person, telephone and mobile phone numbers. Include telephone numbers for police, ambulance and fire departments.
- E. Administrative Procedures: The Contractor shall coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work.
- F. General Installation Provisions
 1. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected to meet acceptable industry standards and/or manufacturer's written recommendations and requirements.
 - a. Should Contractor direct and require Installer to perform Work without correction of such unsatisfactory condition, Contractor shall be responsible for correction of any unacceptable Work resulting from conducting Work in such unsatisfactory condition.
 2. Recheck field measurements and dimensions, before starting any work.
 3. Project alterations: Remove, cut, and patch Work in a manner to minimize damage, to provide smooth transitions, and to provide means of restoring Products and finishes to specified condition.
 - a. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Architect or Owner for review.
 - b. Validate that existing substrates are sound and secured to accept new work. Contractor to adjust or supplement existing substrates as required.

4. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration.
 - a. Control accumulation of waste materials and rubbish. Remove from work areas at least daily.
 - b. Control dust and debris from construction work at all times so it shall not adversely affect the condition of adjacent areas.
 - c. All temporary enclosures shall protect occupants, to minimize noise, dust, odors, rain, heat and cold from entering the existing buildings.
 - d. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period.
5. Limiting Exposures: Supervise construction activities to ensure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

1.7 REFERENCE STANDARDS AND DEFINITIONS

- A. General: Definitions specific to individual Specifications are included in the appropriate Specification.
 1. "Inspect", "inspection" when used in conjunction with the Architect's activities is the visual observation of construction to permit the Architect to render his/her professional opinion as to whether the Contractor is performing the Work in a manner indicating that, when completed, the Work will be in accordance with the Contract Documents. Such observations shall not be relied upon by any party as acceptance of the Work, nor shall they relieve any party from fulfillment of customary and contractual responsibilities and obligations.
 2. "Certify", "certification" when used in conjunction with the Architect's observation of the Site and the work means the Architect's opinion based on his/her observation of conditions, knowledge, information and beliefs. It is expressly understood that the Architect's certification of a conditions existence relieves no other party of any responsibility or obligation he/she has accepted by contract or custom.
 3. "Furnish" means supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
 4. "Install" describes operations at the Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, and finishing, curing, protecting, cleaning, and similar operations.
 5. "Provide" means to furnish and install, complete and ready for the intended use.
- B. Industry Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
 1. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Where copies of standards are needed to perform a required construction activity, each entity is responsible for obtaining copies of each standard from the publication source.
- C. Governing Regulations and Regulations: The Owner has contacted local authorities having jurisdiction where necessary to obtain information to prepare Contract Documents. Contractor to contact authorities having jurisdiction directly for information and decisions regarding the Work.

- D. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

1.8 PROJECT MEETINGS

- A. Preconstruction Conference: The Contractor shall schedule a preconstruction conference and organizational meeting at the Project site or other convenient location prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments. The Architect and Owner will review Contract requirements.
 - 1. Attendees: The Owner, Architect, and their appropriate consultants, the Contractor and his superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
 - 2. Preconstruction conference shall be recorded as progress meeting number 1.
- B. Progress Meetings: The Contractor shall conduct progress meetings at the Project site as required. Schedule and conduct meetings and conferences at Project site, unless otherwise indicated. Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times. Prepare the meeting agenda. Distribute the agenda to all invited attendees. The Architect shall provide meeting minutes and record minutes of significant discussions and agreements achieved.
 - 1. Reporting: No later than 3 days after each progress meeting date, the Architect shall submit meeting minutes to the Contractor and Owner. All issues, progress of the work, etc. shall be noted. Items shall be noted needing action and remain on the meeting notes until remediated, corrected or resolve. Review and correct or approve minutes of previous progress meeting.
 - 2. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 3. Conduct coordination meetings with the Owner and Owner's sub-contractors for work by Owner. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1.9 SUBMITTALS

- A. Administrative Submittals: Specific requirements for administrative submittals are located elsewhere in this Division 01 and/or on the drawings specifications.
- B. Submittal Procedures: The Contractor will be responsible for the completeness of all submittals. Specified items shall be clearly marked and indicated of each submittal. Unnecessary, extraneous, superficial and otherwise unusable information shall be removed or clearly marked to indicate what is and is not intended as part of the submittal.
 - 1. Do not proceed with Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals prior to receiving approval from the Architect.

2. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittal.
 - a. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
 4. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 - a. Use arrows or similar means to designate items. Do not use highlighter as it does not copy or reproduce.
 5. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
 - a. Transmittal Form: Use AIA G810, or another form acceptable to the Architect.
 6. Re-submittals: Identify all changes made since previous submission.
- C. Contractor's Construction Schedule
1. Schedule: Prepare a simple, readable, Contractor's construction schedule showing data for entire construction period. Submit within 10 business days of the date established for "Commencement of the Work".
 - a. When revisions are made, distribute to the same parties and post in the same locations.
- D. Construction Reports
1. The Contractor's superintendent shall maintain an on-site daily construction log, recording information concerning events at the site. Allow access to the Owner and Architect for review.
- E. Shop Drawings: Shop Drawings include installation drawings, setting diagrams, templates and similar drawings.
1. Submit newly prepared information, drawn to accurate scale. Encircle, place arrows or otherwise indicate deviations from the Contract Documents. Do not use color highlight due to some reproducing methods not able to pick up color. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
 2. Sheet Size: Except for templates, patterns and similar full size Drawings, submit Shop Drawings on sheets at least 8 1/2" x 11" but no larger than 24" x 36".
 3. Submittal: Electronic submittals must be sent to Submittals@harriman.com. This email address is set up so that multiple people can access incoming shop drawings to ensure timely and proper processing. Submittals that are sent directly to a certain discipline's or individual's email may not be processed properly or timely if the recipient is out of the office. Marked up submittals will be returned electronically.
 - a. Submittal attachments will be in pdf format.
 - b. All submittals must be accompanied by transmittal that includes:
 - 1) Contractor contact information,
 - 2) Indication of a submittal for approval,
 - 3) Full project name and location,
 - 4) A description of all item(s) included in submittal.

- c. Each transmittal will cover one spec section division's item(s) (for example, if you have electrical (Division 26) and plumbing (Division 22), they will require separate transmittals).
 - d. All copies of submittals must have a signed, dated Contractor's stamp, this includes drawings.

- F. Approval Drawings: Whenever Contractor or subcontractor is required to submit Shop Drawings to an authority having jurisdiction over the Project for review Contractor shall submit to the Architect and Owner one (1) copy each of the approved Shop Drawing including the authorities stamp and approving signature.

- G. Required Stamps: Do not use or take on submittals without approval stamp by Architect indicating action taken in connection with construction.

- H. Product Data:
 - 1. Products Specified by Manufacturer and Model Number: For products specifically indicated by manufacturer and model number which will be provided as specified with no deviations, submit for approval a letter for each product certifying that it will be provided as specified with no deviations from Contract Documents.
 - 2. Collect Product Data into a single submittal. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, material test reports, standard color charts. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings".
 - a. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information.
 - b. Submittals: Refer to "Submittals" in E. Shop Drawings; above.
 - c. Submit Product Data before or concurrent with Samples.
 - d. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, and others required for performance of construction activities. Show distribution on transmittal forms.
 - 1) Do not proceed with installation until an applicable copy of Product Data is in the installer's possession.

- I. Samples: Provide samples of Reflexive Insulation. Refer to Section 072153 – REFLECTIVE INSULATION. Submit Samples to the site for review of kind, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

- J. Manufacturer's Instructions: When specified in individual Specifications or specifically requested by Architect, submit printed instructions for delivery, storage, assembly, installation and maintenance.

- K. Architect's Action: Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
 - 1. The Architects where required, will complete the Action portion of the Stamp will be appropriately marked, as follows, to indicate the action taken and comments may be provided on the back of the Form:
 - a. Final Unrestricted Release: Where submittals are marked "Approved", that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

- b. Final But Restricted Release: When submittals are marked “Approved as Noted”, that part of the Work covered by the submittal may proceed, provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
- c. Returned for Re-submittal: When submittal is marked “Not Approved, Revise and Resubmit”, do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - 1) Do not permit submittals marked "Not Approved" or “Revise and Resubmit” to be used at the Project site, or elsewhere where Work is in progress.
- d. Rejected: When submittal is marked “Rejected”, do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Do not resubmit that product.
- e. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, stamped “Received for information only”.

1.10 TEMPORARY FACILITIES AND PROTECTION

- A. Quality Assurance:
 - 1. Standards: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction.
 - 2. Regulations:
 - a. Comply with NFPA 241, 2009 edition “Building Construction and Demolition Operations”, ANSI-A10 Series standards for “Safety Requirements for Construction and Demolition.
 - b. All flammable and combustible liquids and gases needed for demolition or construction activities shall be stores as required by NFPA 30, 54 and 58. A list of all flammable and combustible liquids and gasses shall be maintained by the Contractor.
- B. Conditions of Use: Keep facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.
- C. Environmental Protection: Provide protection, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.
- D. Temporary Electric Power Service: Contractor may use existing electrical service and use charges will be paid by Owner. Coordinate with Owner prior to connection.
- E. Temporary Telephones: Not required to provide temporary telephone, however, contractor to have on site a cell phone during construction. Distribute phone number to Architect, Owner and other parties as required.

- F. Field Offices: Contractor may use space to be designated by Owner in existing building for field office.
 - 1. Parking: Arrange with Owner for temporary parking areas to accommodate construction personnel and visitors.
 - 2. Temporary Sanitary Facilities: Use of existing toilets, wash rooms and other facilities within the existing building will be allowed.
 - 3. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
 - 4. Empty dumpster when full. Do not overfill or allow debris to blow around area. Keep area around dumpster free of trash, glass, nails, etc.

- G. Security and Protection Facilities Installation:
 - 1. Partitions and Closures: Erect and maintain partitions and closures as required preventing spread of dust or fumes to occupied portions of the building. Temporary partitions and closures shall not block means of egress for existing building. Comply with requirements of NFPA 241.
 - 2. Temporary Enclosures: Provide temporary enclosures for protection of construction in progress and completed, from exposure, other construction operations and similar activities.
 - 3. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of adequate barricades. Barricades shall not block means of egress for existing building. Comply with requirements of NFPA 241.
 - 4. Security Enclosure and Lockup: Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
 - a. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup.

1.11 MATERIALS AND EQUIPMENT

- A. Submittals:
 - 1. Schedule of Long Lead Time Items: The Contractor shall schedule all long lead items for review and approval prior to ordering. Once approved, the Contractor shall pre order items in a timely manner as not to delay the progress of the Work.

- B. Quality Assurance:
 - 1. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

- C. Product Delivery, Storage, and Handling: Deliver, store and handle products in accordance with the manufacturer's written recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 - 1. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 - 2. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that quantities are correct and that products are undamaged and properly protected.

3. Inspect products for damage when removed from storage area. Repair or replace damaged products before installation. Manufacturer's representative shall certify all repairs as meeting manufacturer's original standards.
 4. Coordinate storage areas in locations that will not interfere with Owner's use of occupied spaces, the Work of any Contractor, Subcontractor, or other persons supplying materials to site.
- D. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects, except where otherwise specified.
- E. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous experience. Procedures governing product selection include the following:
1. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
 2. Compliance with Standards, Codes and Regulations: Where the Specifications only requires compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
 3. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Owner will select the color, pattern and texture from the product line selected.
- F. Installation of Products: Comply with manufacturer's written instructions and recommendations for installation of products in the applications indicated. Apply each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

1.12 EXECUTION REQUIREMENTS

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
1. General installation of products.
 2. Coordination of Owner dismantling and reinstalling of bleachers.
 3. Progress cleaning.
 4. Starting and adjusting.
 5. Protection of installed construction.
 6. Correction of the Work.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.

- c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 3. Examine walls and floors for suitable conditions where products and systems are to be installed.
 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.
- F. Installation: Locate the Work and components of the Work accurately, in correct alignment, as indicated.
 1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
 4. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
 5. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
 6. Do not use tools or equipment that produces harmful noise levels.
 7. Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
 8. Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 9. Allow for building movement, including thermal expansion and contraction.
 10. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
 11. Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- G. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous. No asbestos, lead or PCB's containing materials shall be used in the work.

- H. Owner Installed Products:
 - 1. Provide Owner access to Project site for Owner's construction forces and consultants.
 - 2. Coordinate construction and operations of the Work with work performed by Owner's construction forces.
 - a. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - b. Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.
- I. Progress Cleaning:
 - 1. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - a. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - b. Do not hold materials more than 7 days during normal weather.
 - c. Maintain Project site free of waste materials and debris.
- J. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work. It is the Contractor's responsibility for job site safety.
- K. Correction of Work: Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting, as required.
 - 2. Restore permanent facilities used during construction to their specified condition.
 - 3. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
 - 4. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
 - 5. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

1.13 CUTTING AND PATCHING

- A. This Section includes procedural requirements for cutting and patching.
 - 1. Correction of installed work.
- B. Definition:
 - 1. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
 - 2. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.
- C. Quality Assurance:
 - 1. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

- D. Operational and Miscellaneous Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or those results in increased maintenance or decreased operational life or safety. Operating elements include the following:
1. Primary operational systems and equipment.
 2. Air, water, vapor or moisture barriers.
 3. Membranes and flashings.
 4. Equipment supports.
 5. Mechanical and heating systems and ducts.
 6. Electrical wiring systems.
 7. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, may be issued by the Architect or Owner.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- F. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, using methods least likely to damage elements retained or adjoining construction.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing. Reinstalled or rebuilt to meet or exceed original conditions including finishes; painting reinstall or new walls, partitions, ceilings, surfaces to blend in and match existing finishes.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

1.14 MAINTENANCE AND INSTRUCTIONS

- A. Demonstration and Instructions: Demonstrate maintenance of products to Owner's personnel one week prior to date of final acceptance.
 - 1. Utilize maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of maintenance.
 - 2. Demonstrate best methods for protection, trouble-shooting, maintenance, and care.
 - 3. Prepare and insert additional data in maintenance manuals when need for additional data becomes apparent during instruction.

1.15 PROJECT CLOSEOUT

- A. Final Acceptance:
 - 1. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
 - a. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include waivers of lien, and certificates of insurance for products and completed operations where required.
 - b. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 - c. Submit to the Owner's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and the list has been endorsed and dated by the Owner.
 - d. Submit record drawings, maintenance manuals, damage or settlement survey, and similar final record information.
 - e. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Record Document Submittals:
 - 1. Miscellaneous Record Submittals: Refer to other Specifications for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work.
 - 2. Maintenance Manuals: Organize maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy duty, 3 ring vinyl covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder.
- C. Final Cleaning: Clean exposed surfaces. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection
 - a. Remove labels that are not permanent labels.
 - b. Clean exposed surfaced finishes to a dust free condition, free of stains, films and similar foreign substances.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1.16 PROJECT RECORD DOCUMENTS

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
 2. Record Product Data.
 3. Record Shop Drawings.
- B. Record Drawings: Comply with the following:
1. Number of Copies: Submit to the Owner two (2) sets of marked-up Record Prints and scan one set onto electronic media on CD-R in PDF format. Submit (1) one copy of the CD-R to the Owner.
 2. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 3. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Changes made by Change Order or Construction Change Directive.
 - d. Changes made following Architect's written orders.
 - e. Details not on the original Contract Drawings.
 - f. Field records for variable and concealed conditions.
 4. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 5. Mark record sets in red-colored pen or marker and cloud area so that if copies are made the cloud would appear (red written may not be evident when making copies or scans).
 6. Mark important additional information that was either shown schematically or omitted from original Drawings.
 7. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- C. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Owner's reference during normal working hours.

1.17 WARRANTIES

- A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- B. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

- C. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- D. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefitted from use of the Work through a portion of its anticipated useful service life.
- E. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- F. Owner's Right of Refusal: The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- G. Commencement Date of Warranties: Date of Owner expectation in writing designates a commencement date for warranties.
- H. Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor. Contractor shall compile all required documents from the subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Refer to individual Specifications for specific content requirements, and particular requirements for submittal of special warranties.
 - 2. Verify that documents are in proper form, contain full information, and are notarized. Co-execute submittals when required.
 - 3. When maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

END OF SECTION 011000

SECTION 072153 - REFLECTIVE INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Scope of Work:

1. The intent of this project is the reinforcing of the existing structure as shown on Drawings S1 - Reinforcing Roof Structure and S2 - Reinforcing Details. General Contractor will remove all existing reflective insulation on ceilings and side walls; and any obstructions, including signs, lights, ductwork, speakers, conduits, equipment, etc. to access the structural frames for reinforcing and additional purlins.
2. The work required under this section consists of area preparation, supply of all materials, related items and labor necessary to complete the work as described in the article 3.1 - INSTALLATION PROCEDURES.
3. The contractor must furnish and install Astro-Rink low emissivity reflective insulation. The material used for the reflective ceiling must be Astro-Rink, supplied by Energie Innovation Inc. 2970 Halpern, Saint-Laurent, Quebec, H4S 1R2, Tel (514) 334-3783; 1-800-363-0931 Fax (514) 334-3925. The present reflective insulation has been installed below the existing purlins and spaced 48 inches center to center and supported by galvanized steel U-bars (metal stud supports) to remain.
4. Installation must obtain a uniform surface with the least joints possible. All joints will have to be covered with reinforced aluminum tape.
 - a. It is also imperative to leave a minimum 9" air space along both sidewalls for the length of the building; this will allow for natural air circulation above the ceiling.
 - b. It is important that the reflective insulation is properly fastened to the steel U-bars (metal stud channels to be removed and reinstalled) to create a uniform finish and a thermal seal. The Contractor must therefore seal all ceiling openings with reinforced aluminum tape.
5. Refer to drawing A30.1, details A1 and A2 – Existing Conditions & Removal.
6. Refer to drawing A30.1, details B1 and B2 – For Reinstallation.

- ##### B. Preparation of Area:
- The area to be covered shall be clear of any obstructions, including signs, lights, ductwork, speakers, conduits, equipment, etc., which would hinder proper installation.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MATERIALS

- ##### A. Reflective Insulating Membrane:
- Astro-Rink is composed of two layers of bubble film with reinforced metalized aluminum films on both sides (MPET/Bubble/Bubble/MPET). The material is reinforced to prevent damages caused by pucks and other flying objects; therefore protective netting is not required.

Physical Properties	Values
Thickness	8mm (5/16 inch)
Weight	381 g/m ² (1.25 oz./ft ²)
Temperature Range	-50 to 82 °C (-58 to 180 °F)
Flame spread and Smoke Developed Index (ASTM E-84-05)	Class 1 / Class A, 0 and 15 respectively
Flame spread and Smoke Developed Value (CAN/ULC-S102)	0 and 33 respectively
MEA 21-08-M	Accepted
Heat Release, Flame Spread (NFPA 286 and IBC 803.2.1 2006 Edition)	Product Meets the Criteria
Puncture Resistance	3 200 kPa (464 lbs/in ²)
Emittance	4.7%
Reflectivity	95%

R-Values (Enclosed in a wall space between two 19mm (3/4 in) Furring Strips)	
➤ Down heat flow (summer)	R-15
➤ Horizontal heat flow (walls)	R-7.3
➤ Up heat flow (winter)	R-5.4

Note: **Astro-Rink's** ability to reflect heat in open applications is not fully measured in these tests. It is that extra reflective capability which makes it possible for **Astro-Rink** to keep people comfortable all year long as well as provide substantial energy savings on refrigeration costs.

- B. Steel U-Bars (metal studs; supports, channel and perimeter frame)
 - 1. Width: 2.5 inches
 - 2. Height: 1.25 inches
 - 3. Thickness: 25 gauge
 - 4. Material: galvanized steel

- C. Aluminum Sealing Tape
 - 1. Double Sided Tape: Echotape #SC-211US or equivalent.
 - 2. Aluminum Tape: Echotape 3" wide aluminum FS-K7730 or equivalent.

- D. Anchors
 - 1. Anchoring of the steel U-Bars (metal stud supports to remain) to the purlins by the use of 3/4" long HEX head self-drilling zinc coated screws.
 - 2. Anchoring of the Astro-Rink reflective insulating insulation onto steel framing is done by the use of 3/4" long HEX head sharp point zinc coated screws.

- E. Equipment: Contractor shall provide installation equipment, including ladders, boom or scissor lifts, swing stages, power hand tools, etc. as required to perform the work and achieve the results as specified herein.

PART 3 - EXECUTION

3.1 INSTALLATION PROCEDURES

A. Steel Framework

1. Most ceiling installations require the use of scissor lift for working over the arena area and a boom lift for reaching in corners and over the seating areas. Ice surface will not be present during construction and shall have exposed concrete slab. Job safety and means and methods of construction and installation are solely the responsibility of the general contractor.
2. Remove existing Horizontal U-Bars (metal stud track and perimeter stud frame). Option: save to be reinstalled or provide new. Either method shall not incur additional cost to the Owner.

B. Spacing and Attaching Steel U-Bars to Purlins

1. At the starting point, check attach existing pre-cut steel U-Bars vertically (metal stud supports) to purlins and tighten as required. If screws are stripped or additional fasteners are required use Hex head self-drilling zinc coated screws on the wide side of the steel purlins. Check for proper length and spacing at 48" centers. Horizontal U-Bars (metal stud channel & perimeter frame) will then be fastened to the vertical stud supports using sharp point screws. Once installed, the horizontal U-Bars will be used as the support system for the new reflective insulation. For a faster installation, it is recommended that the U-Bars be installed before the installation of the new reflective insulating membrane.
2. Note: Echotape SC-211US double-sided tape shall be applied to the wide face of the steel U-Bars before or after being installed. The protective paper on the tape shall be removed as the reflective insulated membrane is being installed.

C. Attaching Reflective Insulation to Steel U-Bars

1. The Astro-Rink reflective insulation must be installed from a single roll in each row of steel rails. The rolls will be 48" wide and long enough to cover the entire row. Mount the Foil roll on the lift in a manner that allows it to unroll as the lift moves along below the steel stud framing system. Remove the protective paper from the double-sided tape while the lift moves along. Beginning at least 9" from the wall, attach the first strip of reflective insulation to the tape on the U-Bars. Pull the sheet of foil tight and secure it with 3/4" Hex head sharp point zinc coated screws, spaced at 16" to 24" intervals on both sides of the sheet, to prevent any sagging of the material. Proceed in this manner by moving the lift a few feet at a time, pulling the foil tightly before pressing it onto the adhesive tape on the steel U-Bars and follow it up by fastening the screws at the proper spacing. Continue this procedure until the sheet is in place for the full width of the building but leaving a minimum 9" gap at the end of the row.

D. Obstructions

1. Prior to installation of new reflective insulation that will penetrate the new reflective insulation; general contractor shall reinstall all supports for light fixtures, ductwork, conduits, piping etc. Do not reinstall light fixtures, ductwork, infrared heaters, signs, etc., before new reflective insulation is installed.
2. There will be obstructions such as steel braces, lights supports, conduit, piping, etc., which involves the cutting of the Foil and fitting it around them. After the above has been completed, tightly seal around the damaged areas with Echotape 3" wide aluminum FS-K7730 tape

E. Applying Echotape Aluminum Tape To Joints

1. After the first sheet of Astro-Rink has been installed the full width of the building, each of the following sheets create a joint where they meet. Each such joint shall be sealed tightly with 3" wide Echotape FS-K7730 Aluminum Tape.
2. Note: All intrusions and joints must be carefully sealed with Echotape FS-K7730 Aluminum tape.

3.2 CLEAN-UP

- A. Upon completion of the contract, the contractor shall clean-up all surplus materials and debris from the site and deposit it in proper containers.
- B. The site of each project shall be left in the same order as at the start of the project, to the satisfaction of the Owner.

END OF SECTION 072153

SECTION 099000 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

~~Adjust list below to suit Project.~~

1. Exposed interior items and surfaces with low VOC coatings complying with New Hampshire DEP regulations (OTC regulations).
2. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified on Structural drawings.
 - a. All Structural Steel specified to receive one (1) shop coat rust inhibitive primer; refer to drawing S1.
 - b. All Purlins, light gage framing and accessories specified to be galvanized; refer to drawing S1.

1.3 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
 3. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
 4. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
 5. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.4 SUBMITTALS

- A. General: Submit in accordance with Division 01 Section "Submittal Procedures."
- B. Product Data: For each paint system indicated. Include block fillers and primers.
 1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
 3. Include printed statement of VOC content for each product.

- C. Schedule: Provide schedule of all surfaces to be coated, with prime and finish coat material listed, and manufacturer's recommended wet film thickness.
- D. Samples: For each type of exposed finish required, submit color chips, 3- by 5-inches, matching colors of adjoining surfaces as requested by Owner.

Retain paragraph and subparagraph below if low-emitting materials are required for LEED Credit EQ 4.2; coordinate with requirements selected in Part 2 for paints and coatings.

Retain paragraph below if "Manufacturer Qualifications" Paragraph is retained in "Quality Assurance" Article.

Coordinate paragraph below with qualification requirements retained in "Quality Assurance" Article.

- E. Qualification Data: For Applicator.
- F. Color Mix Code: For all colors used for Project to include in Owner's Manual.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced Applicator who has completed painting system applications similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers, primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

Delete paragraph and subparagraphs below if not required. If retaining, indicate location, size, and other details of mockups on Drawings or by inserts. Revise wording if only one mockup is required.

- C. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required. Duplicate finish of approved sample Submittals.
 - 1. Architect or Owner will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted.
 - a. Small Areas and Items: Architect or Owner will designate items or areas required.
 - 2. After permanent lighting and other environmental services have been activated, apply benchmark samples, according to requirements for the completed Work. Provide required sheen, color, and texture on each surface.
 - a. After finishes are accepted, Architect and Owner will use the surface to evaluate coating systems of a similar nature.

Revise subparagraph below if Architect reserves the right to make final color selection from benchmark samples.

- 3. Final approval of colors will be from benchmark samples.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.

7. Color name and number.
 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
1. Protect from freezing. Keep storage area neat and orderly.
 2. Remove oily rags and waste daily.
 3. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

- A. Apply paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- B. Do not apply paint when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
1. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before proceeding with or continuing coating operation.

1.8 EXTRA MATERIALS

Extra materials may not be allowed for publicly funded projects.

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
1. Quantity: Furnish Owner with not less than 1 gal., of each material and color applied for Owner's use during move in.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. California Paints (CP).
 2. Great Lakes Laboratories (GLL).
 3. Sherwin-Williams Co. (S-W).
 4. Tnemec Company, Inc. (Tnemec).

2.2 COATINGS MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best quality coating material of the various coating types specified that are factory formulated and recommended by manufacturer for application

indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers listed in the specification schedule. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
2. Where schedule says no substitution, use proprietary product only. Do not propose substitution, as the products from the other manufacturers have been considered, and are not acceptable.

C. VOC Compliance for Interior Paints and Coatings: Provide the manufacturer's formulation for the products specified below that are VOC compliant with the State of New Hampshire Department of Environmental Protection Regulations and the following chemical restrictions from the Ozone Transport Commission (OTC) expressed in grams per liter:

1. Flat Paints and Coatings: VOC content of not more than 100 g/L.
2. Non-Flat Paints and Coatings: VOC content of not more than 150 g/L.
3. Non-Flat Paints and Coatings - High Gloss: VOC content of not more than 250 g/L.
4. Anticorrosive (Rust Preventative) Coatings: VOC content of not more than 400 g/L.
5. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
6. Quick-Dry Enamels: VOC content of not more than 250 g/L.
7. Quick-Dry Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
8. Specialty Primers, Sealers, and Undercoaters: VOC content of not more than 350 g/L.

Retain first paragraph and subparagraphs below if low-emitting materials are required for LEED Credit EQ 4.2; coordinate with products selected. Below is based on chemical component limitations and restrictions in Green Seal's GS-11. For names of products that comply, see products listed as LEED compliant on MPI's approved product lists (available at www.paintinfo.com).

D. Colors: Provide colors that match adjoining surfaces and shall be approved by Architect or Owner.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator and drywall subcontractor present, under which painting will be performed for compliance with paint application requirements.
1. Inspect walls for dents and imperfections prior to painting. Inspect walls again after primer and first coat of paint applied, with Applicator and drywall subcontractor present. Drywall subcontractor shall touch-up as follows:
 - a. Touch-up visible gypsum board imperfections before priming of walls.
 - b. Touch-up imperfections found in field of boards and joints made visible from painting after first finish coat applied.

Delete subparagraph below if not required.

2. If unacceptable conditions are encountered, prepare written report, endorsed by Applicator, listing conditions detrimental to performance of work.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

4. Application of coating indicates Applicator's acceptance of surfaces and conditions within a particular area.
 5. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of specified finish materials to ensure use of compatible primers.
1. Notify Architect or Owner about anticipated problems when using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
 2. Existing Surfaces: Prepare existing surfaces as follows:
 - a. Scrape loose paint from surfaces indicated to be recoated. Sand edges of remaining paint to smooth out surface.
 - b. Existing painted surfaces shall be sanded to fully dull the surface.
 - c. Perform bond tests on existing painted surfaces to verify bond before proceeding with paint application.
 3. Existing Concrete Masonry Units: Clean previous coated concrete masonry units to remove dust, dirt, grease, oils and other containments detrimental to formation of a durable paint film.
 4. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood.
 - b. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 5. Ferrous Metals (Structural Steel): All Structural Steel specified to receive one (1) shop coat rust inhibitive primer. Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's standards.
 - a. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

- b. Clean field welds with nonpetroleum-based solvents complying with SSPC's standards so surface is free of oil and surface contaminants; and touch up with same primer as the shop coat.
 - c. Touch up bare areas and shop-applied prime coats that have been damaged. Clean with solvents recommended by paint manufacturer and SSPC SP2; and touch up with same primer as the shop coat.
 - 6. Galvanized Surfaces (Purlins): All Purlins, light gage framing and accessories specified to be galvanized. At field welds and damaged areas to be uniformly abrade adjoining galvanized surfaces with a palm sander and 60 grit aluminum oxide so surface is free of oil and surface contaminants. Remove pretreatment from galvanized metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied primers.
 - a. Clean field welds with nonpetroleum-based solvents complying with SSPC's standards so surface is free of oil and surface contaminants; and touch up with primer.
- D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
 - 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 - 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 - 3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
 - 1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
 - 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 - 3. Provide finish coats that are compatible with primers used.
 - 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, conduits, supports and structural steel below reflective ceiling, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
 - 5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 6. Primer of structural steel and purlins only required above reflective ceiling, second floor ceiling, and mechanical/electrical rooms.
 - 7. Sand lightly between each succeeding enamel coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - 1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.

2. Omit primer over metal surfaces that have been shop primed and touchup painted, unless otherwise indicated.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- C. Paint all exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. Colors and finishes shall match adjoining areas. Review with the Architect or Owner prior to submittals..
1. Painting includes field painting of exposed bare and covered pipes and ducts, hangers, exposed steel, and primed metal surfaces of mechanical and electrical equipment at all locations, except mechanical and electrical rooms.
- D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- E. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions. Walls shall have roller finish.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- F. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- G. Mechanical and Electrical Work: Painting of mechanical, plumbing, and electrical work is limited to items exposed in occupied spaces (outside mechanical and electrical rooms).
- H. Electrical items to be painted include, but are not limited to, the following:
1. Exposed conduit and fittings.
- I. Block Fillers: Apply block fillers to concrete masonry units at a rate to ensure complete coverage with pores filled.
- J. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime

coated by others. Recoat primed and sealed surfaces to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

- K. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.
- M. Interior Ferrous Metal Items to Be Painted Include, but Are Not Limited To, the Following:
 - 1. Exposed structural steel.
 - 2. Miscellaneous metal items.

3.4 CLEANING

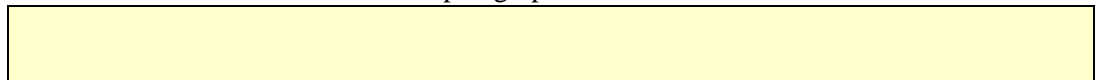
- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the Project site.
 - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect or Owner.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 - 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 LOW VOC INTERIOR COATINGS

- A. VOC Compliance, General: Provide the manufacturers' formulations for the products specified below that comply with the VOC requirements for the State of New Hampshire Department of Environmental Protection in as defined in paragraph 2.2.C of this Section.



- B. Concrete Masonry Units, New and Existing : Provide the following finish systems over interior concrete masonry block units:
 - 1. Semigloss, Acrylic Finish, Walls: 2 finish coats over a block filler.
 - a. Block Filler (New Block, Infill and Patches Only): High-build, latex-based, block filler applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.
 - 1) CP: ProPaint Block Filler No. 51500; 5 mils DFT.
 - b. First and Second Coats: Semigloss, interior acrylic latex finish with ceramic microspheres and antimicrobial protection; applied at spreading rate recommended

by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: Super- Scrub Ceramic Semi-Gloss 552XX Series; 1.4 mils DFT per coat.

C. Concrete Masonry Units, New and Existing (Showers Rooms): Provide the following finish systems over interior concrete masonry units:

1. Semigloss Water Based Epoxy Enamel Finish: 2 finish coats over a block filler.

a. Block Filler (New Block, Infill and Patches Only): High-build, latex-based, block filler applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: ProPaint Block Filler No. 51500; 5 mils DFT.

b. First and Second Coats: Semigloss, single component, pre-catalyzed waterborne acrylic epoxy applied at spreading rate recommended by the manufacturer to achieve a dry film thickness per coat of not less than indicated for product.

1) S-W: Pro Industrial Pre-Catalyzed Waterbased Epoxy K45-150 Series; 1.5 mils DFT per coat.

D. Gypsum Board, New and Existing: Provide the following finish systems over interior gypsum board:

1. Flat Acrylic Latex Finish, GPDW and Ceilings: 2 finish coats over a primer.

a. Primer (New and Patched Areas): Low-odor, low VOC, latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: ProPrime Undercoater Primer-Sealer, No. 54500; 1.2 mils DFT.

b. First and Second Coats: Low-odor, low VOC, flat, acrylic-latex-based, interior paint applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: Pro 2000 Latex Ceiling Flat White, No. 55500; 1.4 mils DFT.

2. Semigloss, Acrylic-Latex Finish, Ceilings and Walls Where Indicated: 2 finish coats over a primer. Provide in resident unit bathrooms and where indicated.

a. Primer (New and Patched Areas): Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: ProPrime Undercoater Primer-Sealer, No. 54500; 1.2 mils DFT.

b. First and Second Coats: Semigloss, interior acrylic latex finish with ceramic microspheres and antimicrobial protection, applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: Super- Scrub Ceramic Semi-Gloss 552XX Series; 1.4 mils DFT per coat.

E. Ferrous Metal, New and Existing: Provide the following finish systems over ferrous metal. Primer is not required on shop-primed items. Prime bare spots and cracks on ferrous metals.

1. Semigloss, Acrylic Latex Finish: 2 IMC finish coats over a primer.

a. Primer (Bare Spots and Welded areas): Quick-drying, corrosion resistant, acrylic primer, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.

1) CP: Rust-Stop DTM Acrylic Latex Flat Primer/Finish, 1061 Series; 1.5 mils DFT.

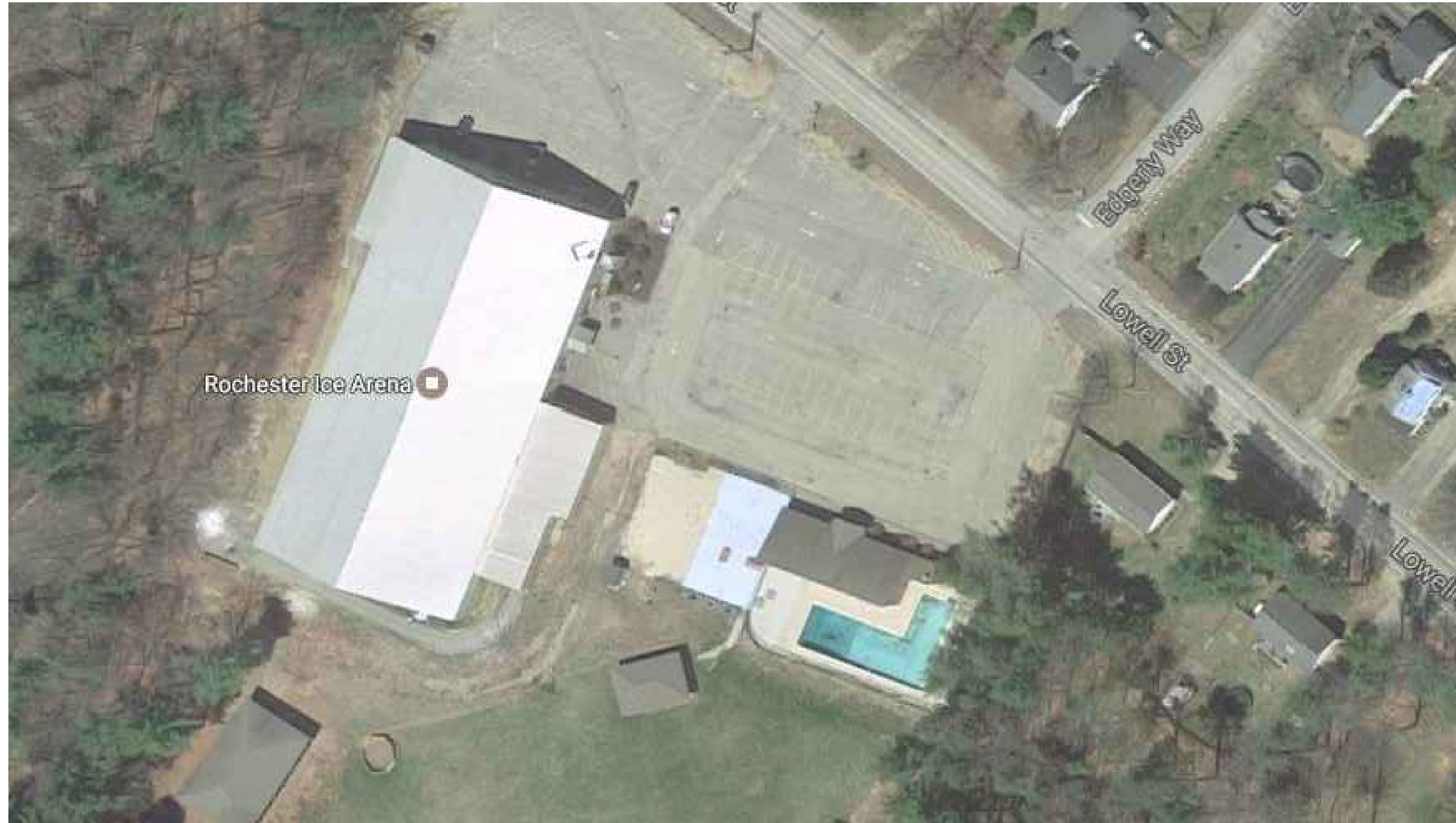
- b. First and Second Coats: IMC Semigloss, interior acrylic latex finish, applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.
 - 1) CP: Novus DTM 100% Acrylic Latex Semi-Gloss, No. 466XX; 1.4 mils DFT per coat.

- F. Zinc-Coated Metal, New: Provide the following primer over welded areas, scratches and bare spots finish systems over zinc-coated (galvanized) metal surfaces:
 - 1. Primer only on new purlins, light gage framing and accessories:
 - a. Primer (Touch up Welded areas, Bare Spots on Surfaces): Quick-drying, corrosion resistant, metal primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than indicated for product.
 - 1) CP: Rust-Stop DTM Acrylic Latex Flat Primer/Finish, 1061 Series; 1.5 mils DFT.

END OF SECTION 099000

ROCHESTER RECREATION ARENA STRUCTURAL REINFORCING OF ROOF SYSTEM

ROCHESTER, NEW HAMPSHIRE



CONSTRUCTION DOCUMENTS

JANUARY 04, 2017

LIST OF DRAWINGS

COVER SHEET

ARCHITECTURAL DRAWINGS

A05.1 EXISTING CONDITIONS □ REMOVALS
FIRST FLOOR PLAN

A05.2 EXISTING CONDITIONS □ REMOVALS
SECOND FLOOR PLAN

A10.1 REINSTALLATION FIRST FLOOR PLAN

A10.2 REINSTALLATION SECOND FLOOR
PLAN

A30.1 DETAILS

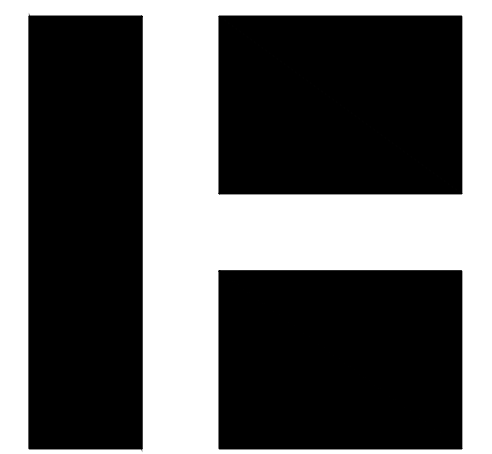
STRUCTURAL DRAWINGS BY OTHERS (JSN
ASSOCIATES, INC) UNDER SEPARATE
CONTRACT DIRECTLY WITH OWNER

S1 REINFORCING ROOF PLAN, DATED
11/06/15

S2 REINFORCING DETAILS, DATED
11/06/15

DISCLAIMER:

THE DOCUMENTS TO BE ISSUED FOR THE "STRUCTURAL REINFORCING OF ROOF SYSTEM" PROJECT AT THE ROCHESTER ARENA BUILDING PROVIDE INSTRUCTION TO COMPLETE PARTIAL REINFORCEMENT OF THE EXISTING ROOF STRUCTURAL SYSTEM TO MEET IBC 2009 BUILDING CODE GRAVITY LOAD REQUIREMENTS. THE REINFORCEMENTS ARE LIMITED TO STRENGTHENING THE INTERIOR RIGID FRAMES AND ROOF PURLINS. THE GABLE END WALLS AND FOUNDATION SYSTEM ARE NOT INCLUDED IN THIS PROJECT SCOPE, AND WILL BE EVALUATED AND REINFORCED AT A FUTURE DATE PER OWNER AUTHORIZATION. STRUCTURAL REINFORCEMENT DRAWINGS INCLUDED IN THIS PACKAGE HAVE BEEN DEVELOPED BY AN INDEPENDENT STRUCTURAL ENGINEERING CONSULTANT HIRED DIRECTLY BY THE OWNER. HARRIMAN TAKES NO RESPONSIBILITY FOR THE DESIGN OF THE STRUCTURAL REINFORCEMENTS, AND INCLUDES THE STRUCTURAL DOCUMENTS IN THIS SET AT OWNER REQUEST TO SIMPLIFY BIDDING PROCEDURES ONLY.



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Auburn, ME 04210
207.784.5100

33 Jewell Court, Suite 101
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617.426.5050

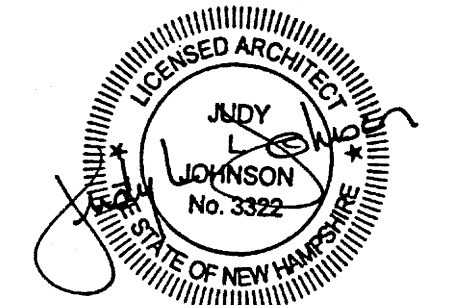
Harriman Project No. 16598

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Seal of Civil Engineer

NOT USED

Seal of Architectural Drafter



Seal of Structural Drafter

NOT USED

Seal of Professional Drafter

NOT USED

Seal of Fire Protection Drafter

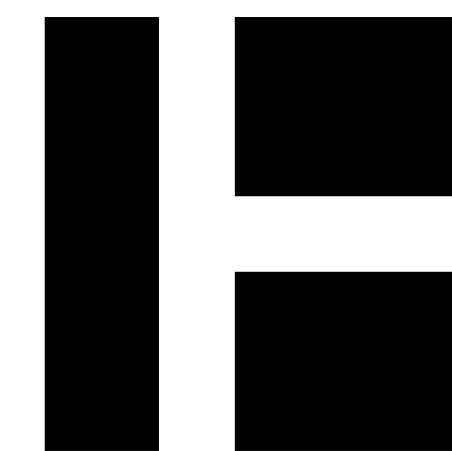
NOT USED

Seal of Mechanical Drafter

NOT USED

Seal of Electrical Drafter

NOT USED



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AUBURN PORTLAND PORTSMOUTH BOSTON

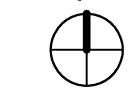
ROCHESTER RECREATION ARENA
STRUCTURAL REINFORCING OF ROOF SYSTEM

ROCHESTER, NEW HAMPSHIRE

Harriman Project No. 16598

Key Plan

Proj North



REMOVALS GENERAL NOTES:

1. THE CITY RETAINED THE STRUCTURAL ENGINEERING FIRM OF JSN ASSOCIATES, INC. CONSTRUCTION PLANS AS FOLLOW:

S1 - REINFORCING ROOF PLAN

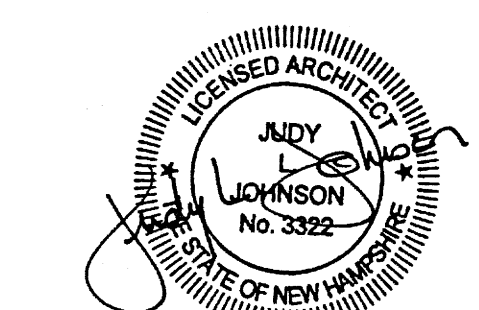
S2 - REINFORCING DETAILS

2. GC TO PROTECT ALL FINISHES, FIXTURES AND EQUIPMENTS.

3. FOR ADDITIONAL EXISTING CONDITIONS, REFER TO SPECIFICATION SECTION 000200 INFORMATION AVAILABLE TO BIDDERS EXISTING CONDITIONS AND REINSTALLATION INSTRUCTIONS.

Issues and Revisions

Mark	Date	Description
-	12-14-16	FINAL REVIEW
-	01-04-17	CONSTRUCTION DOCUMENTS

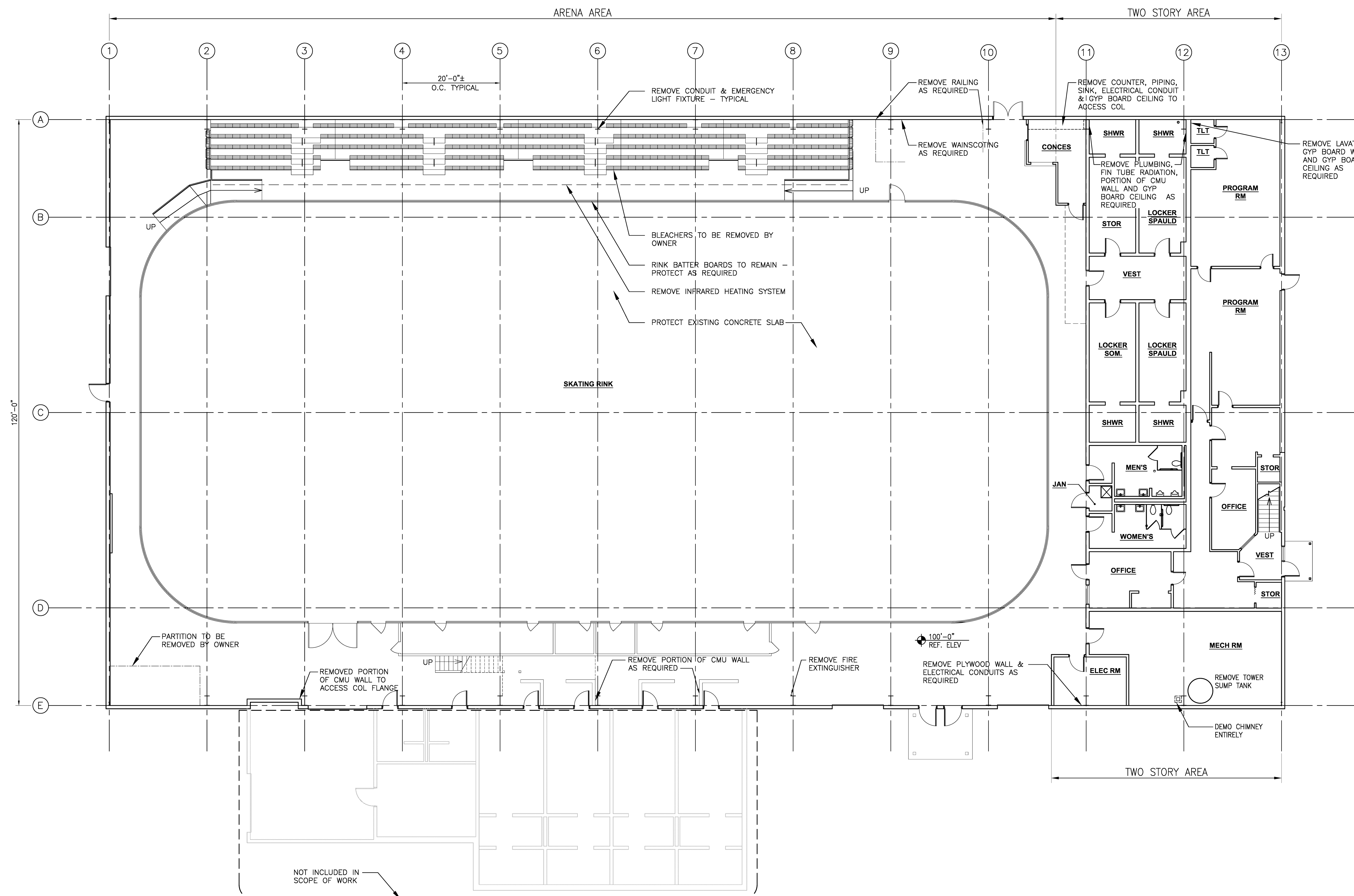


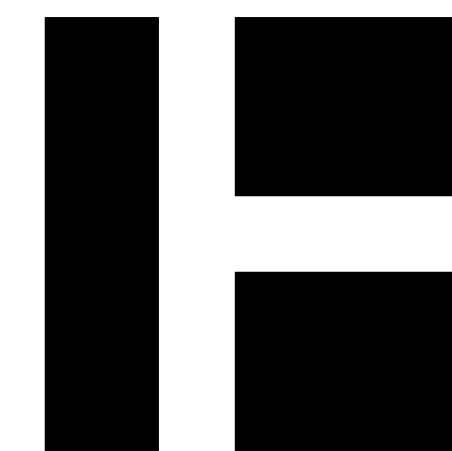
Drawing Scales 0 4' 8' 16'
3/32" = 1'-0"

PA / PE: JLJ © 2017
Drawn By: NAB Harriman Associates

EXISTING CONDITIONS & REMOVALS
FIRST FLOOR PLAN

A05.1





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ROCHESTER RECREATION ARENA
STRUCTURAL REINFORCING OF ROOF SYSTEM

ROCHESTER, NEW HAMPSHIRE

Harriman Project No. 16598

Key Plan

Prog North

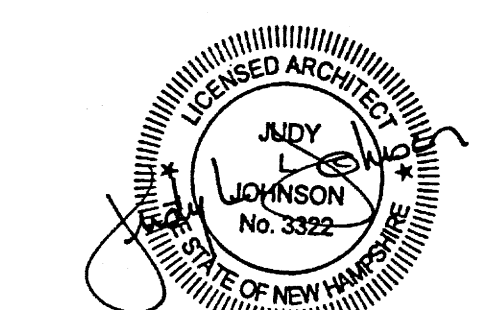


GENERAL NOTES:

1. THESE AREAS UNHEATED WITH WALLS AND CEILINGS TO ADJOINING SPACES WITH INSULATION IN WALL CAVITY AND BETWEEN CEILING JOIST.

Issues and Revisions

Mark	Date	Description
-	12-14-16	FINAL REVIEW
-	01-04-17	CONSTRUCTION DOCUMENTS

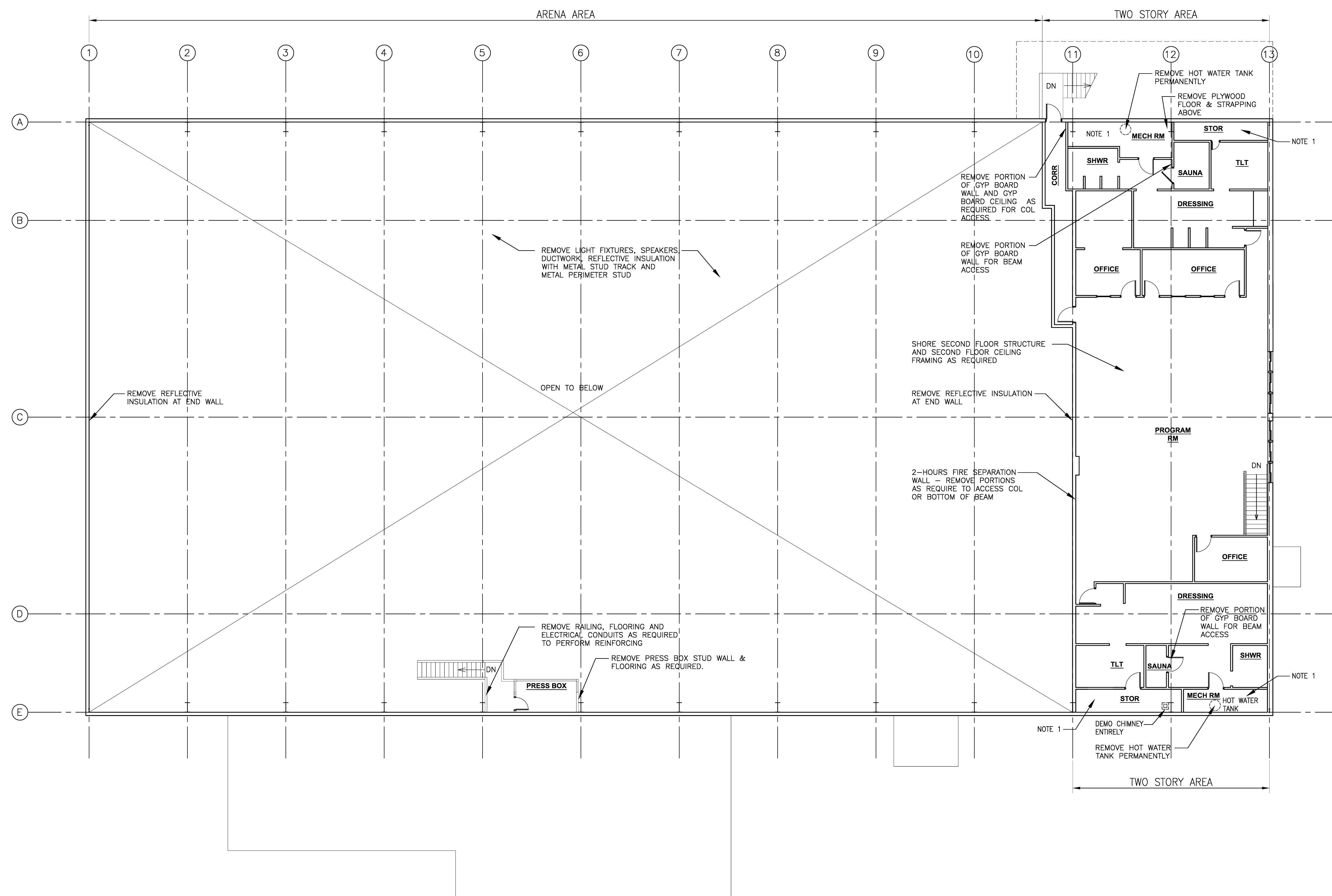


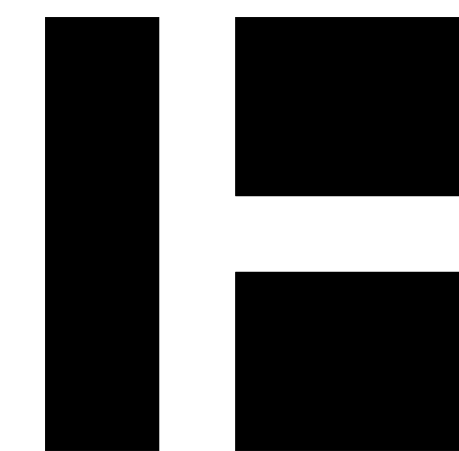
Drawing Scales 0 4' 8' 16'
3/32" = 1'-0"

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EXISTING CONDITIONS & REMOVALS
SECOND FLOOR PLAN

A05.2





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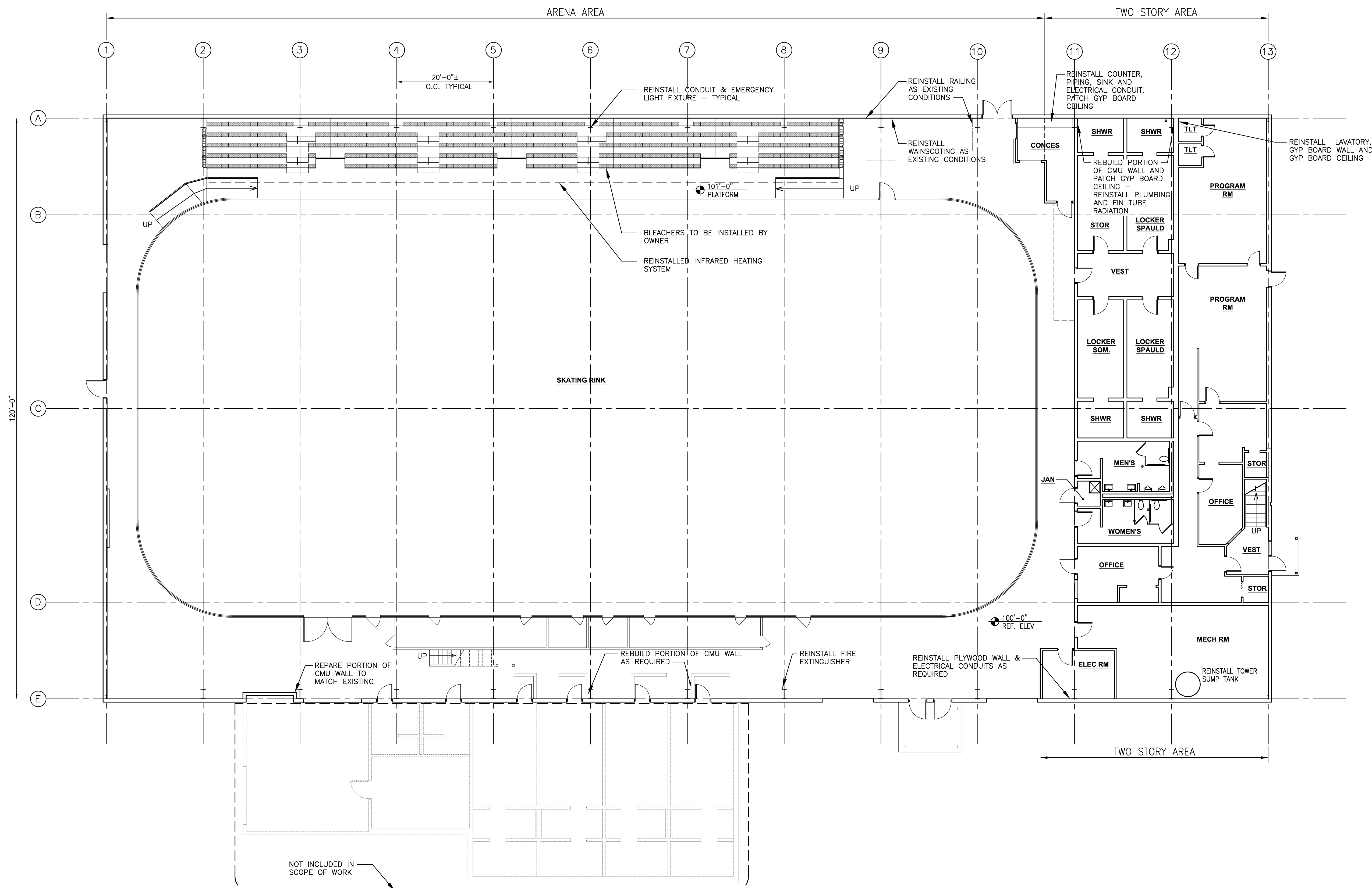
ROCHESTER RECREATION ARENA
STRUCTURAL REINFORCING OF ROOF SYSTEM

ROCHESTER, NEW HAMPSHIRE

Harriman Project No. 16598

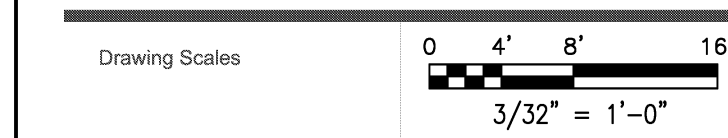
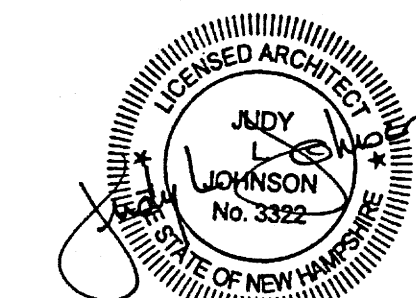
Key Plan

Proj North



Issues and Revisions

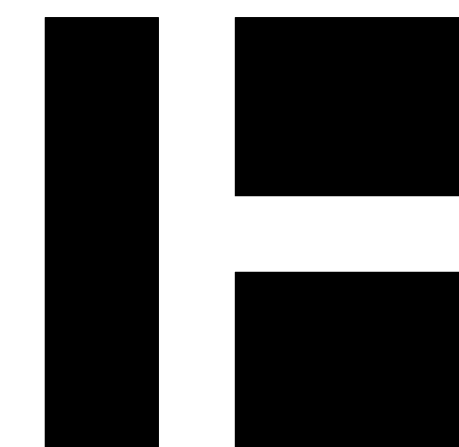
Mark	Date	Description
-	12-14-16	FINAL REVIEW
-	01-04-17	CONSTRUCTION DOCUMENTS



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REINSTALLATION
FIRST FLOOR PLAN

A10.1



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ROCHESTER RECREATION ARENA
STRUCTURAL REINFORCING OF ROOF SYSTEM

ROCHESTER, NEW HAMPSHIRE

Harriman Project No. 16598

Key Plan

Proj North

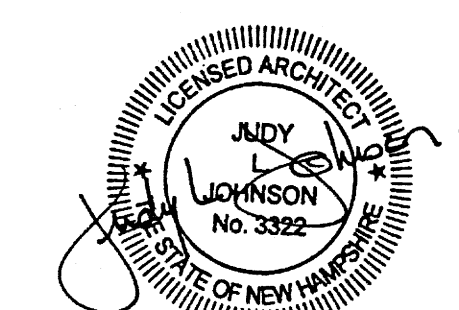


GENERAL NOTES:

1. THESE AREAS UNHEATED SPACES, SEE NOTE 1 ON SHEET A05.2.
2. MAINTAIN INSULATION WALLS AND CEILING WHEN REINSTALLING WALLS AND CEILING BETWEEN UNHEATED AND HEATED SPACES.

Issues and Revisions

Mark	Date	Description
-	12-14-16	FINAL REVIEW
-	01-04-17	CONSTRUCTION DOCUMENTS

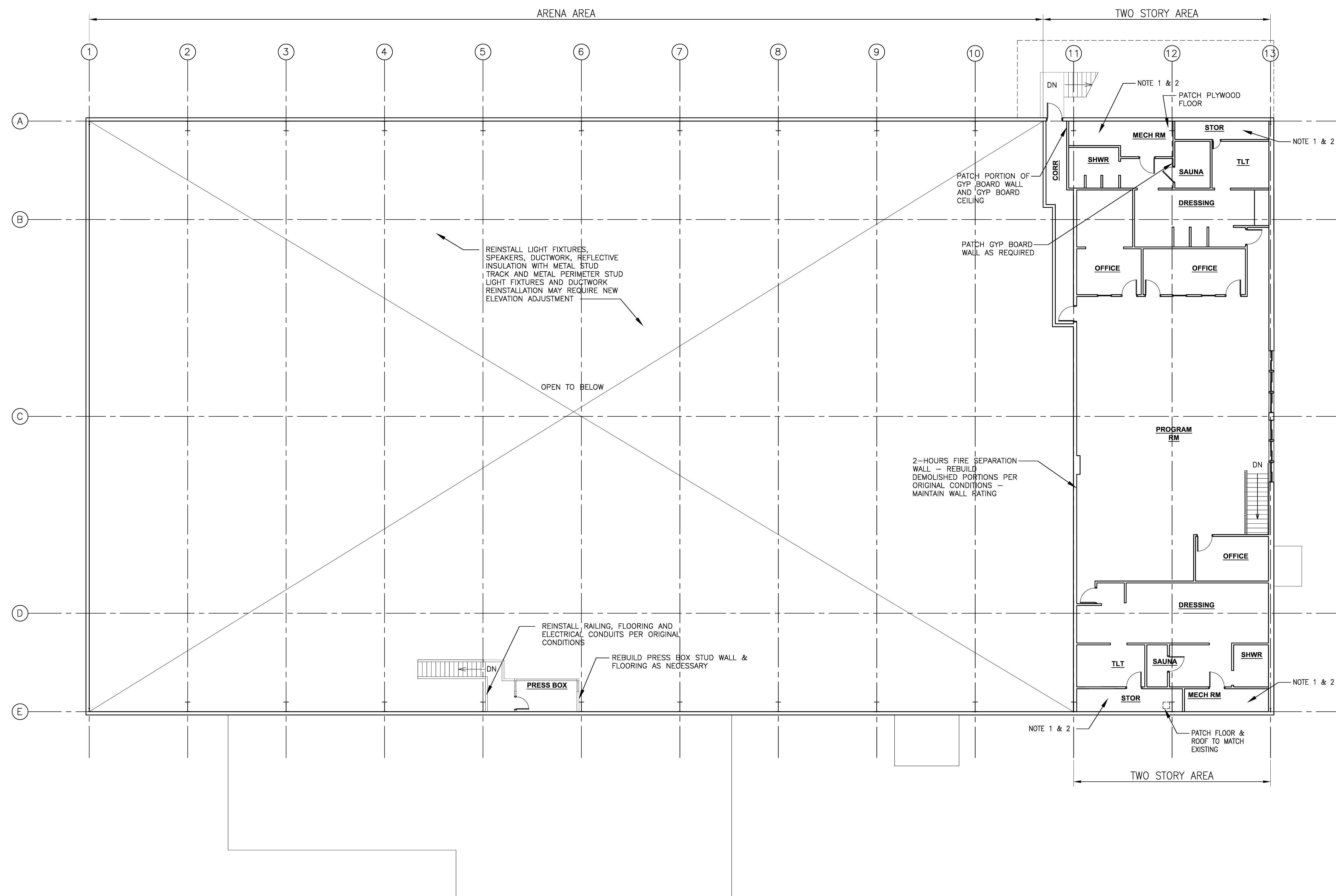


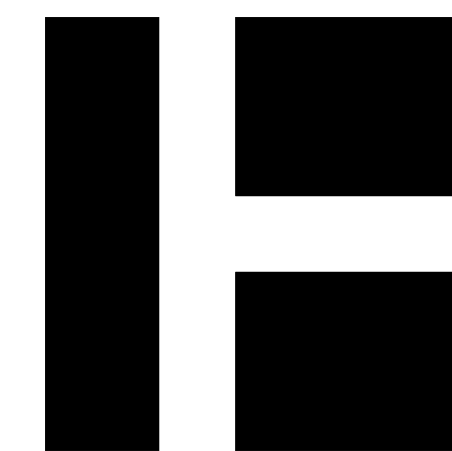
Drawing Scales 0 4' 8' 16'
3/32" = 1'-0"

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REINSTALLATION
SECOND FLOOR PLAN

A10.2





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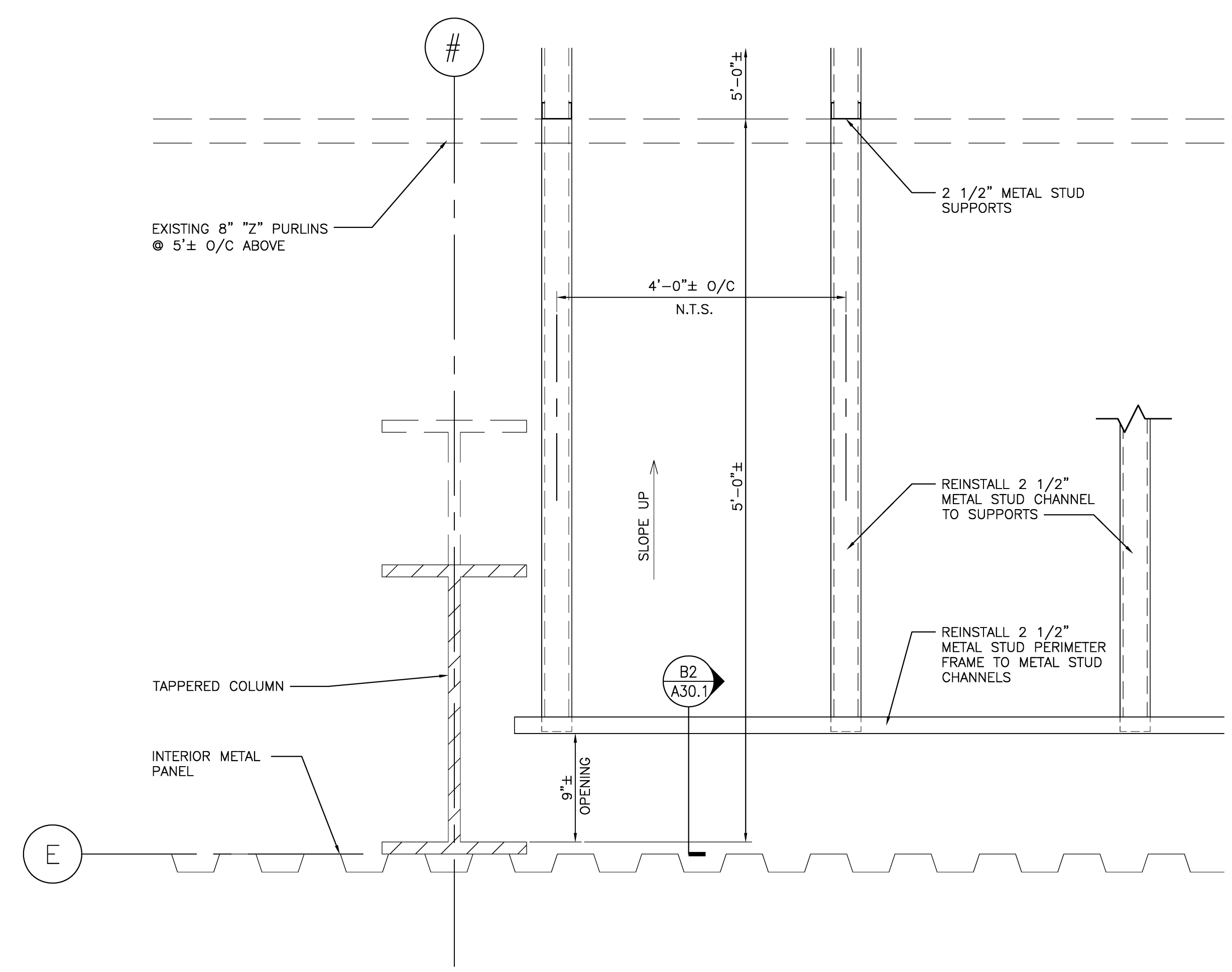
AUBURN PORTLAND PORTSMOUTH BOSTON

ROCHESTER RECREATION ARENA
STRUCTURAL REINFORCING OF
ROOF SYSTEM

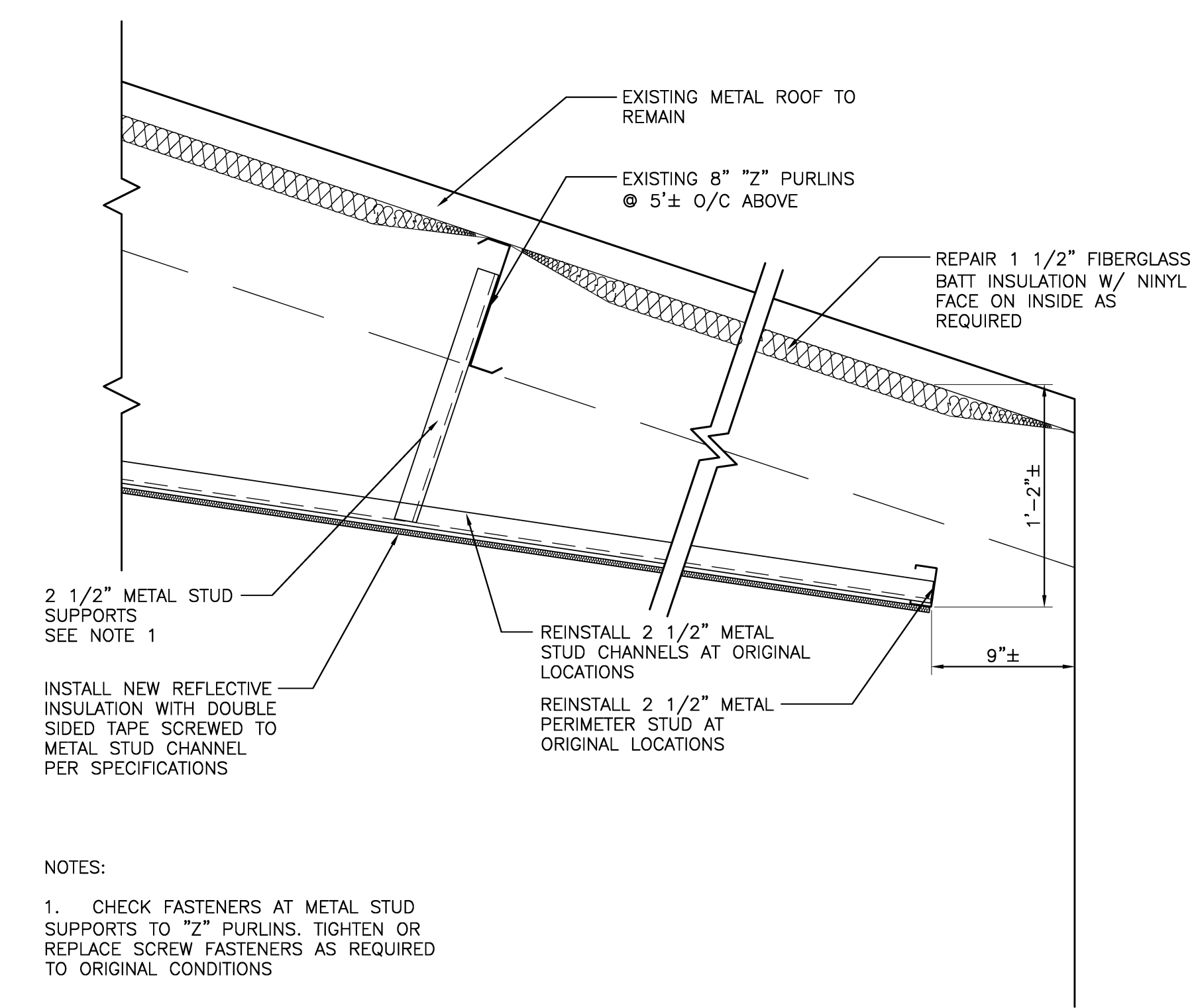
ROCHESTER, NEW HAMPSHIRE

Harriman Project No. 16598

Key Plan Proj North

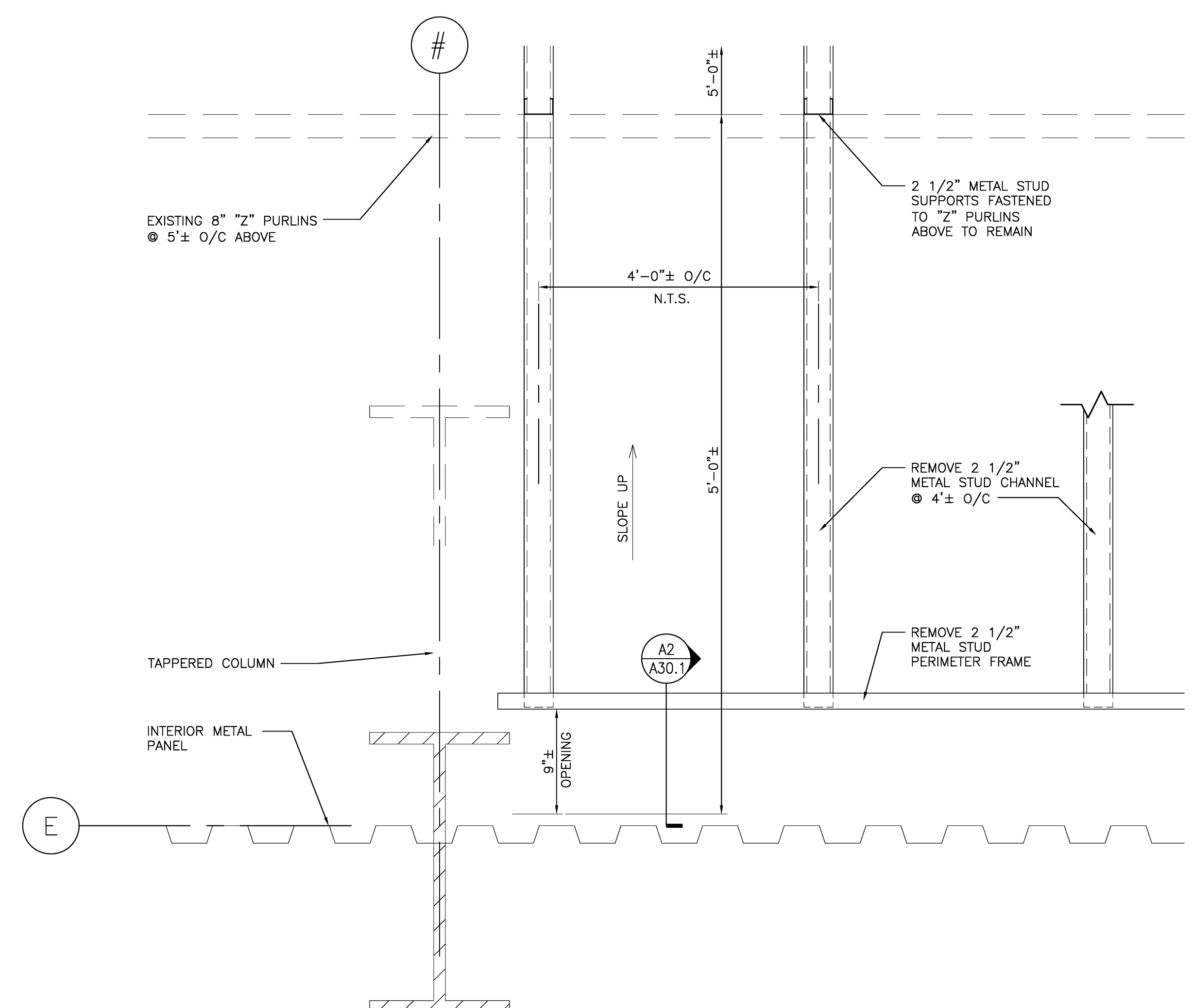


B1 PLAN DETAIL - FOR REINSTALLATION
SCALE: 1-1/2"=1'-0"

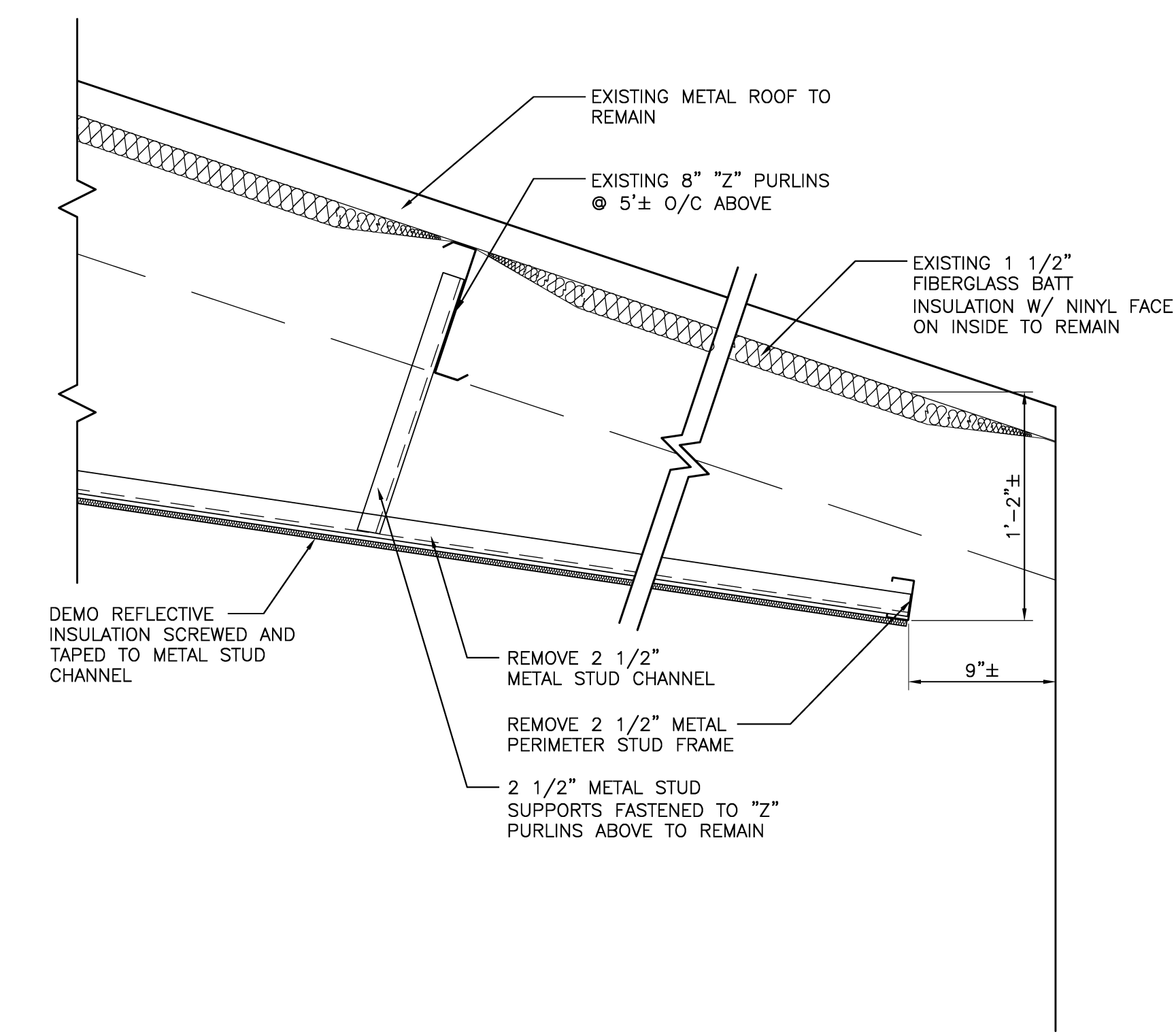


NOTES:
1. CHECK FASTENERS AT METAL STUD SUPPORTS TO "Z" PURLINS. TIGHTEN OR REPLACE SCREW FASTENERS AS REQUIRED TO ORIGINAL CONDITIONS

B2 SECTION DETAIL - FOR REINSTALLATION
SCALE: 1-1/2"=1'-0"

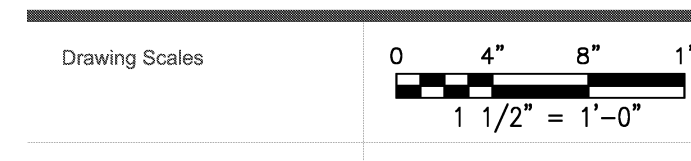
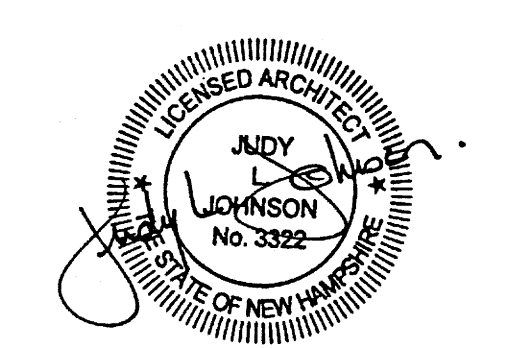


A1 PLAN DETAIL - EXISTING CONDITIONS & REMOVALS
SCALE: 1-1/2"=1'-0"



A2 SECTION DETAIL - EXISTING CONDITIONS & REMOVALS
SCALE: 1-1/2"=1'-0"

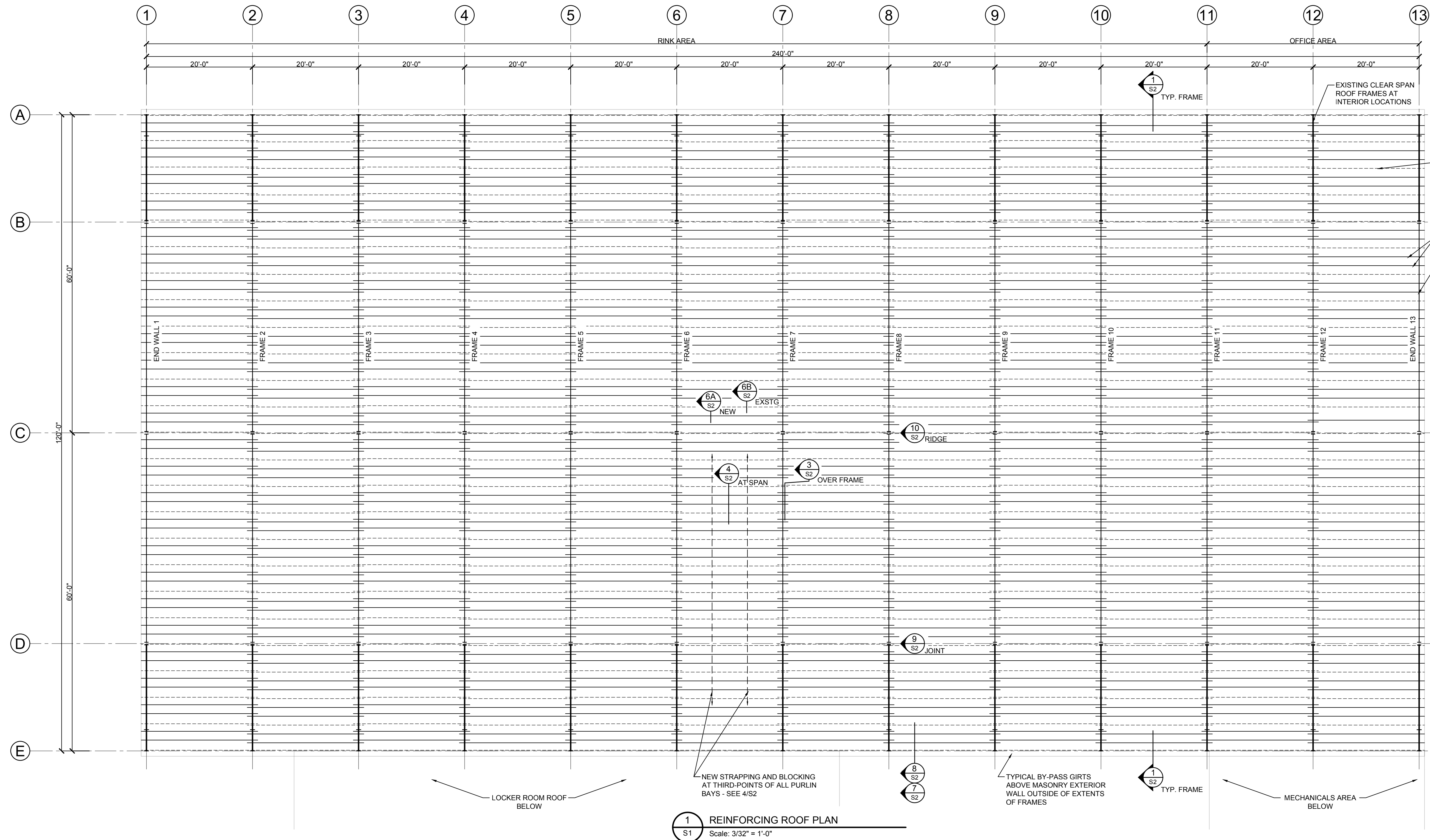
Issues and Revisions		
Mark	Date	Description
-	12-14-16	FINAL REVIEW
-	01-04-17	CONSTRUCTION DOCUMENTS



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Drawn By: NAB

DETAILS

A30.1



NOTE:

- THESE DRAWINGS PROVIDE INFORMATION FOR REINFORCING THE EXISTING CLEAR SPAN STEEL FRAMES AND ADDING PURLINS, TO INCREASE THEIR STRUCTURAL CAPACITIES TO SUPPORT A BALANCED SNOW LOAD OF 58.9 PSF. THIS DESIGN ALLOWS FOR A TOTAL ROOF DEAD LOAD OF 8 PSF, FOR THE EXISTING ROOF WITH A NEW ROOFING OVERLAD.
- THE REINFORCING OF THE STRUCTURE IS LIMITED TO CLEAR SPAN STEEL FRAMES AND PURLINS. THESE DRAWINGS DO NOT ADDRESS REINFORCING OR REPLACEMENT OF OTHER BUILDING COMPONENTS.
- THIS REINFORCING PROJECT WAS PROMPTED BY A PLAN TO PROVIDE NEW ROOFING OVER THE EXISTING ROOFING AND THE DESIRE TO INCREASE THE SNOW LOAD CAPACITY TO LESSEN THE NEED FOR CLEARING SNOW BY SHOVELING. THE EXISTING 40+ YEAR OLD STRUCTURE AND FOUNDATION DO NOT SHOW SIGNS OF DISTRESS OR OVERLOADING.

1 REINFORCING ROOF PLAN
 Scale: 3/32" = 1'-0"

DESIGN LOADS

1. THE REINFORCING OF THE EXISTING STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 2009 INTERNATIONAL BUILDING CODE TO SUPPORT THE DEAD LOADS OF THE VARIOUS STRUCTURAL AND ARCHITECTURAL SYSTEMS AND THE FOLLOWING MINIMUM LIVE LOADS:

SNOW
 BASIC GROUND SNOW LOAD $P_g = 63.7$ PSF AT 200' (70 PSF AT 500')
 BALANCED SNOW LOAD $P = 58.9$ PSF
 SNOW EXPOSURE FACTOR $C_e = 1.0$
 THERMAL FACTOR $C_t = 1.2$ FOR ICE RINK
 LOAD IMPORTANCE FACTOR $I_s = 1.1$ FOR 300' ASSEMBLY

GENERAL

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE STATE AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO:
 2009 INTERNATIONAL BUILDING CODE
 ANSIA/SCE 7-05 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"
 AISI STEEL CONSTRUCTION MANUAL, 13TH EDITION
 AISI COLD FORMED STEEL DESIGN MANUAL, 2008
 ANY DISCREPANCIES BETWEEN THE ABOVE LISTED CODES AND THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH AFFECTED WORK.
- ALL WORK SHALL BE PERFORMED BY PERSONS QUALIFIED IN THEIR TRADE AND LICENSED TO PRACTICE SUCH TRADE IN THE STATE IN WHICH THE PROJECT IS LOCATED.
- THESE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ANY OTHER PROJECT DRAWINGS BY OTHER DISCIPLINES, IN ADDITION TO SPECIFICATIONS AND SHOP DRAWINGS PROVIDED BY SUBCONTRACTORS AND SUPPLIERS.
- ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS SHALL BE VERIFIED IN THE FIELD BY THE GENERAL CONTRACTOR (G.C.) AND ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE AFFECTED PART OF WORK.
- UNLESS OTHERWISE NOTED, DETAILS, SECTIONS, AND NOTES SHOWN ON THESE DRAWINGS SHALL BE CONSIDERED TYPICAL FOR ALL SIMILAR DETAILS.
- ALL SHOP DRAWINGS PROVIDED BY OTHERS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO THE FABRICATION OF MATERIAL OR THE PURCHASE OF NON-RETURNABLE STOCK. QUANTITY AND DIMENSIONAL REVIEW IS THE CONTRACTOR'S RESPONSIBILITY.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING AND/OR SHORING NEEDED TO HOLD THE STRUCTURE IN A SAFE AND STABLE POSITION UNTIL THE BUILDING IS COMPLETE. CONSULT AN INDEPENDENT ENGINEER IF DESIGN ASSISTANCE OR REVIEW IS NEEDED. JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- THE BUILDING PERMIT APPLICANT (E.I. OWNER, CONTRACTOR) MUST PROVIDE SPECIAL INSPECTIONS PER THE REQUIREMENTS OF CHAPTER 17 OF THE 2009 INTERNATIONAL BUILDING CODE AND FURNISH INSPECTION REPORTS TO THE CODE OFFICIAL AND TO THE ENGINEER OF RECORD. THE TESTING/INSPECTION AGENCY(S) MUST BE APPROVED BY THE ENGINEER OF RECORD. SEE THE SCHEDULE OF SPECIAL INSPECTIONS.

STRUCTURAL STEEL

- STRUCTURAL STEEL WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE.
- STRUCTURAL STEEL WORK SHALL CONFORM TO "SPECIFICATIONS FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS (AISC CURRENT EDITION)", "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS (AISC CURRENT EDITION)", AND "STRUCTURAL WELDING CODE (AWS D1.1-04)".
- STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:
 A. ROLLED SHAPES AND PLATES - ASTM A36 (EXCEPT AS NOTED BELOW)
 B. WT SHAPES - MINIMUM 36 KSI (ASTM A992, 50 KSI IS ACCEPTABLE)
- WELDED CONNECTIONS SHALL BE MADE BY AWS QUALIFIED WELDERS USING FILLER MATERIAL CONFORMING TO E70XX, LOW HYDROGEN.
- PROVIDE TEMPORARY ERECTION BRACING TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN PLACE. MAINTAIN BRACING UNTIL FULLY INSTALLED. BRACING REQUIREMENTS ARE NOT PROVIDED BY THE E.O.R.
- STRUCTURAL STEEL SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE WELDED.
- FIELD CUTTING OF STRUCTURAL STEEL OR ANY MODIFICATIONS SHALL NOT BE MADE WITHOUT APPROVAL BY ENGINEER.
- ALL STRUCTURAL STEEL SHALL RECEIVE ONE (1) SHOP COAT OF RUST INHIBITIVE PRIMER, UNLESS WAIVED BY OWNER.
- THE STEEL FABRICATOR SHALL BE AISC CERTIFIED, OR BE ABLE TO DEMONSTRATE TO THE ENGINEER'S SATISFACTION THAT ALL AISC PROCEDURES FOR FABRICATION, QUALITY CONTROL, AND RECORD KEEPING ARE STRICTLY ADHERED TO. THE ENGINEER SHALL DETERMINE IF FABRICATOR QUALIFICATIONS ARE ACCEPTABLE.
- SHOP DRAWINGS SHALL BE PREPARED BY FABRICATOR. PHOTO COPIES OF STRUCTURAL DRAWINGS ARE NOT ACCEPTABLE.
- THE TESTING AGENCY (TO BE APPROVED BY JSN ASSOCIATES, INC.) MUST PERFORM A VISUAL INSPECTION OF ALL SHOP AND FIELD WELDS. ADDITIONALLY, ALL SHOP AND FIELD FILLET AND PARTIAL PENETRATION WELDS MUST BE SPOT TESTED AT A RATE OF ONE TEST PER MEMBER USING THE MAGNETIC PARTICLE METHOD. ONE HUNDRED PERCENT (100%) OF ALL FIELD AND SHOP FULL PENETRATION WELDS MUST BE TESTED USING THE ULTRASONIC METHOD.

STEEL STUD MANUFACTURER'S ASSOCIATION
 LIGHT GAGE STEEL COMPONENTS

600S162-43 18-GAGE STUD, 6" DEEP, 1-5/8" FLANGE, 1/2" LIP RETURN
 600T125-43 18-GAGE TRACK, 6" DEEP, 1-1/4" FLANGE

LIGHT GAGE STEEL MATERIAL THICKNESS

20-GAGE = 0.0349" / 33-MILS 18-GAGE = 0.0451" / 43-MILS 16-GAGE = 0.0568" / 54-MILS
 14-GAGE = 0.0713" / 68-MILS 13-GAGE = 0.0897" / 83-MILS 12-GAGE = 0.1017" / 97-MILS

COLD-FORMED LIGHT GAGE STEEL FRAMING

- INSTALLATION OF THE LIGHT GAGE STEEL PURLINS AND OTHER FRAMING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- ALL STEEL PURLINS AND LIGHT GAGE FRAMING AND ACCESSORIES SHALL BE MADE OF THE TYPE, SIZE, GAGE, AND SPACING SHOWN ON THE DRAWINGS. ALL PURLINS SHALL BE MANUFACTURED BY AN AISI CERTIFIED MANUFACTURER. ALL LIGHT GAGE STEEL FRAMING AND ACCESSORIES SHALL BE MANUFACTURED BY MARINOWARE OR APPROVED EQUAL.
- ALL STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", S100-07.
- ALL PURLINS SHALL BE MANUFACTURED FROM STEEL HAVING A MINIMUM YIELD STRENGTH OF $F_y = 57$ KSI (MINIMUM $F_u = 67.7$ KSI). ALL LIGHT GAGE FRAMING AND ACCESSORIES SHALL BE MANUFACTURED PER ASTM C955. ALL LIGHT GAGE FRAMING AND ACCESSORIES SHALL BE GALVANIZED TO HAVE A MINIMUM G-60 COATING IN CONFORMANCE WITH ASTM C955. LIGHT GAGE FRAMING AND ACCESSORIES 16 GAGE OR HEAVIER SHALL BE FORMED FROM SHEET STEEL CONFORMING TO ASTM A653, FY=50 KSI. THOSE 18 GAGE OR LIGHTER SHALL BE FORMED OF SHEET STEEL CONFORMING TO ASTM A653, FY=33 KSI.
- REFER TO MARINOWARE TECHNICAL PUBLICATION "STUD-RITE LIGHTWEIGHT STEEL FRAMING SYSTEM" FOR TECHNICAL INFORMATION, RECOMMENDATIONS, DETAILS, SUGGESTED SPECIFICATIONS, ERECTION, AND BRACING.
- ALL LIGHT GAGE FRAMING SHALL BE CLEARLY IDENTIFIED WITH STANDARD INDUSTRY MARKINGS OR COLOR CODING.
- FIELD CUTTING OF LIGHT GAGE FRAMING MUST BE ACCOMPLISHED BY SAWING OR SHEARING. TORCH CUTTING OF COLD-FORMED MEMBERS IS NOT ACCEPTABLE.
- NOTCHING OR COPING OF LIGHT GAGE FRAMING IS NOT PERMITTED UNLESS SPECIFICALLY PERMITTED PER THE LIGHT GAGE SHOP DRAWINGS.
- LIGHT GAGE MEMBERS MAY NOT BE SPLICED UNLESS SPECIFICALLY PERMITTED PER THE SHOP DRAWINGS.
- FOR SCREWS, MAINTAIN A MINIMUM 3/4" CLEARANCE FROM ALL EDGES OF STEEL MEMBERS. MAINTAIN A MINIMUM 3/4" ON CENTER SPACING BETWEEN ADJACENT SCREWS.
- IF REQUIRED, ALL WELDED CONNECTIONS MUST CONFORM TO THE REQUIREMENTS OF AWS D1.3 "SPECIFICATIONS FOR WELDING SHEET STEEL IN STRUCTURES", (PER EDITION REFERENCED IN THE APPLICABLE BUILDING CODE). REFER TO AWS D19.0 "WELDING ZINC COATED STEEL" AND ANSI Z49.1 FOR INFORMATION REGARDING SAFE WELDING PROCEDURES.
- MINIMUM WELD THROAT THICKNESS MUST MATCH OR EXCEED THE BASE METAL THICKNESS OF THE THINNEST CONNECTED PART UNLESS NOTED OTHERWISE.
- LIGHT GAGE FRAMING SHALL BE OF UNPUNCHED MEMBERS.
- PURLIN SHOP DRAWINGS SHALL DETAIL DIMENSIONS OF WEB, FLANGES, RETURNS, GAGE, AND SHOW CONNECTIONS.
- ALL PURLINS SHALL RECEIVE BRIDGING AND BRACING INSTALLED PER THESE DRAWINGS. ALL BRIDGING AND BRACING SHALL BE INSTALLED BEFORE APPLICATION OF LOADS.

SCHEDULE OF SPECIAL INSPECTIONS

PROJECT: ARENA ROOF REINFORCING FOR SNOW LOADS
 LOCATION: ROCHESTER ARENA, ROCHESTER, NEW HAMPSHIRE

OWNER: CITY OF ROCHESTER, NEW HAMPSHIRE
 OWNERS ADDRESS: 31 WAKEFIELD STREET, ROCHESTER, NEW HAMPSHIRE

STRUCTURAL ENGINEER OF RECORD (SER): JEFFREY S. NAWROCKI, PE

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS A CONDITION FOR PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE. IT INCLUDES A SCHEDULE OF SPECIAL INSPECTION SERVICES APPLICABLE TO THIS PROJECT AS WELL AS THE NAME OF SPECIAL INSPECTORS AND THE IDENTITY OF OTHER APPROVED AGENCIES INTENDED TO BE RETAINED FOR CONDUCTING THESE SERVICES.

THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND STRUCTURAL ENGINEER OF RECORD. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR.

A FINAL REPORT OF SPECIAL INSPECTIONS BY THE SPECIAL INSPECTOR(S) DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY.

THE SPECIAL INSPECTOR, WHO IS GENERALLY EMPLOYED BY THE PRIMARY TESTING AGENCY, MAY USE VARIOUS INSPECTORS WHO ARE FAMILIAR WITH EACH CATEGORY OF WORK. IF SPECIAL INSPECTIONS ARE ALSO PERFORMED BY AGENTS WHO ARE NOT EMPLOYED BY THE PRIMARY TESTING AGENCY, EACH OF THESE ADDITIONAL SPECIAL INSPECTORS SHALL ISSUE A FINAL REPORT FOR THEIR CATEGORY OF INSPECTION. ONLY AFTER THE FINAL REPORT(S) HAS(HAVE) BEEN ISSUED BY THE SPECIAL INSPECTOR(S) CAN THE EOR ISSUE FINAL AFFIDAVITS FOR THE PROJECT COMPLETION.

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION ACTIVITIES ARE SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED. IT IS RECOMMENDED THAT THE PERSON ADMINISTERING THE SPECIAL INSPECTIONS PROGRAM BE A PROFESSIONAL ENGINEER EXPERIENCED IN THE DESIGN OF BUILDINGS.

SCHEDULE OF SPECIAL INSPECTION SERVICES

THE FOLLOWING TABLES COMPRISE THE REQUIRED SCHEDULE OF SPECIAL INSPECTIONS FOR THIS PROJECT. THE CONSTRUCTION DIVISIONS WHICH REQUIRE SPECIAL INSPECTIONS FOR THIS PROJECT ARE AS FOLLOWS:

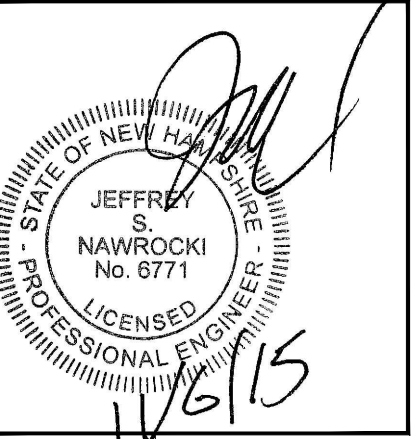
INSPECTION AGENTS	FIRM	ADDRESS
1. SPECIAL INSPECTOR	TBD	TBD
2. STRUCTURAL ENGINEER	JSN ASSOCIATES, INC.	ONE AUTUMN STREET PORTSMOUTH, NH 03801 (603) 433-8639

STRUCTURAL STEEL

ITEM	AGENT NO.	SCOPE
1. FABRICATOR CERTIFICATION/QUALITY CONTROL PROCEDURES	1	VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES WHICH CONFORM TO THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S QUALITY CERTIFICATION PROGRAM. AISC CERTIFICATION SATISFIES THIS.
2. MATERIAL CERTIFICATION	1	REVIEW MILL CERTIFICATES FOR PLATES AND SHAPES. REVIEW BOLT MANUFACTURER'S CERTIFICATES OF COMPLIANCE FOR HIGH-STRENGTH BOLTS. REVIEW WELD MANUFACTURER'S CERTIFICATE OF COMPLIANCE FOR WELD FILLER MATERIAL.
4. WELDING	1	PERFORM VISUAL INSPECTION OF ALL WELDS IN ACCORDANCE WITH AWS D1.1. SUBMIT WELDER QUALIFICATION STATEMENTS. ADDITIONALLY, THE TESTING AGENCY (TO BE APPROVED BY JSN ASSOCIATES, INC.) MUST PERFORM A VISUAL INSPECTION OF ALL FIELD WELDS. MULTI-PASS WELDS OR WELDS GREATER THAN 5/16" MUST BE SPOT TESTED AT A RATE OF ONE TEST PER MEMBER USING THE MAGNETIC PARTICLE METHOD. ONE HUNDRED PERCENT (100%) OF ALL FIELD AND SHOP FULL PENETRATION WELDS MUST BE TESTED USING THE ULTRASONIC METHOD.
6. STRUCTURAL DETAILS	1, 2	(1) VERIFY THAT THE GENERAL GEOMETRY OF THE ERECTED STEEL FRAME CONFORMS TO THE CONSTRUCTION DOCUMENTS AND APPROVED SHOP DRAWINGS. (2) RANDOM REVIEW.

COLD-FORMED LIGHT GAGE STEEL FRAMING

ITEM	AGENT NO.	SCOPE
1. FABRICATOR CERTIFICATION	1	VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES WHICH CONFORM TO THE REQUIREMENTS OF THE AMERICAN IRON AND STEEL INSTITUTE, COLD FORMED STEEL DESIGN MANUAL.
2. MATERIAL CERTIFICATION	1	(1) REVIEW MATERIAL GRADE USED FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. VERIFY THAT MEMBER SIZES INCLUDING DEPTH, FLANGE WIDTHS, AND MATERIAL GAGE COMPLY WITH CONSTRUCTION DOCUMENTS.
3. CONNECTIONS	1	VERIFY THAT CONNECTIONS COMPLY WITH CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS. VERIFY THAT SIZE AND QUANTITY OF LIGHT GAGE FASTENERS COMPLY WITH CONSTRUCTION DOCUMENTS.
4. FRAMING AND DETAILS	1, 2	(1) VERIFY THAT FRAMING CONFIGURATION IS AS SPECIFIED ON THE CONSTRUCTION DOCUMENTS. (2) RANDOM OBSERVATION.

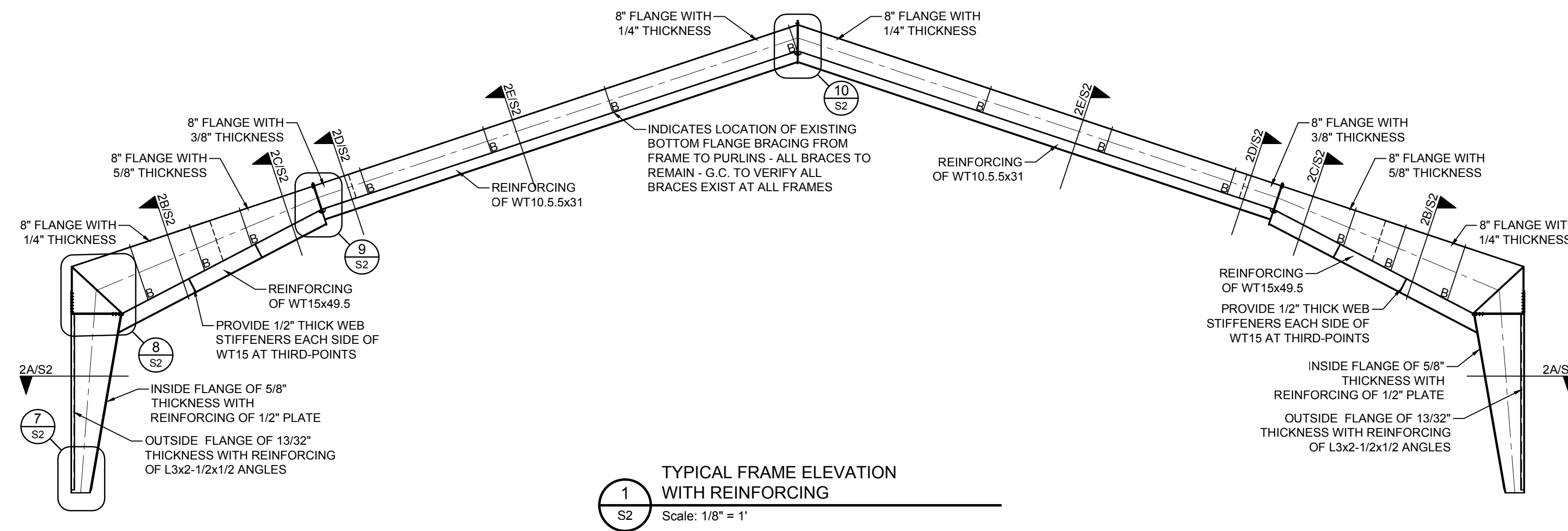


Date: 11/06/15
 Scale: As Noted
 Design By: MJA
 Approved By: JSN

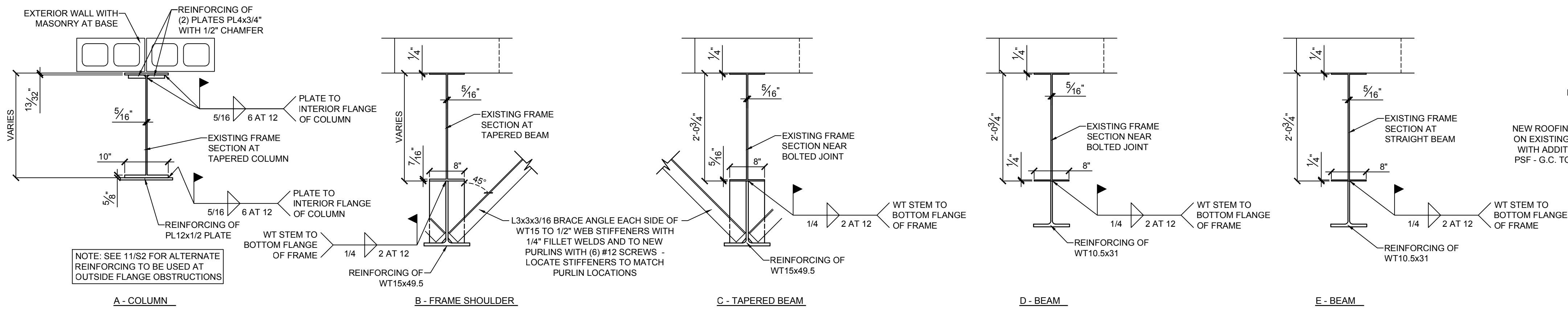
Revisions

NO.	DESCRIPTION

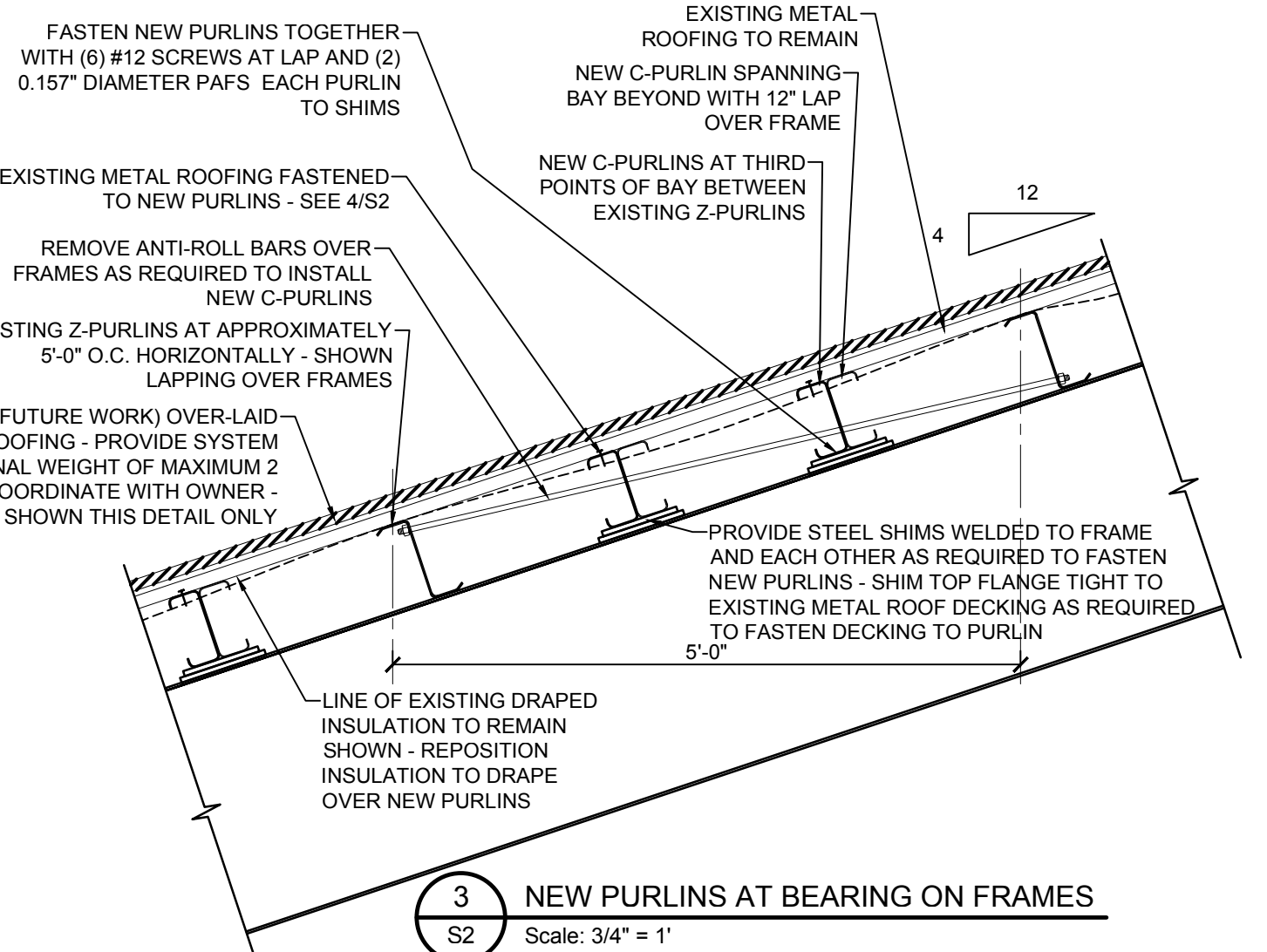
Revisions



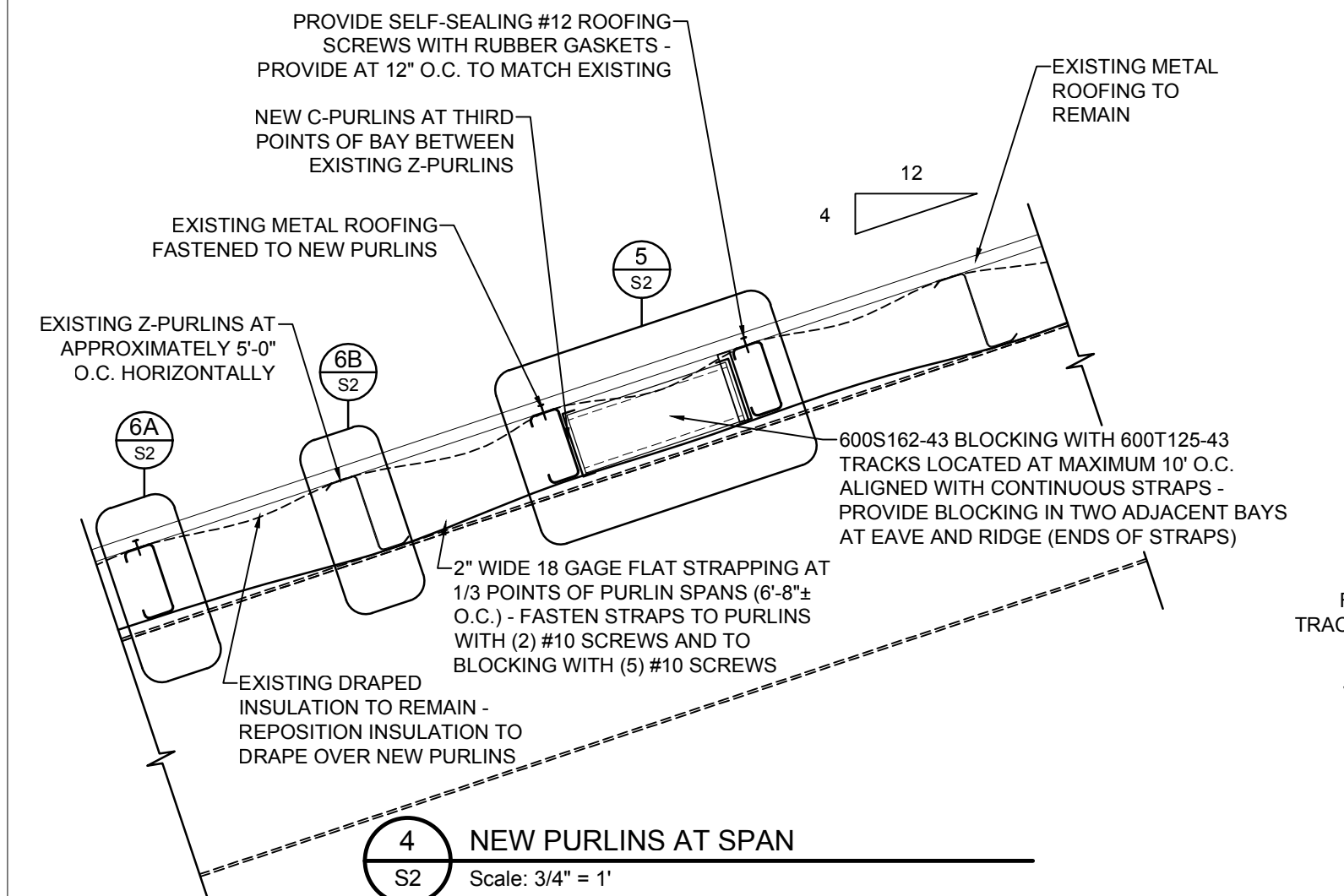
1
S2
 TYPICAL FRAME ELEVATION WITH REINFORCING
 Scale: 1/8" = 1"



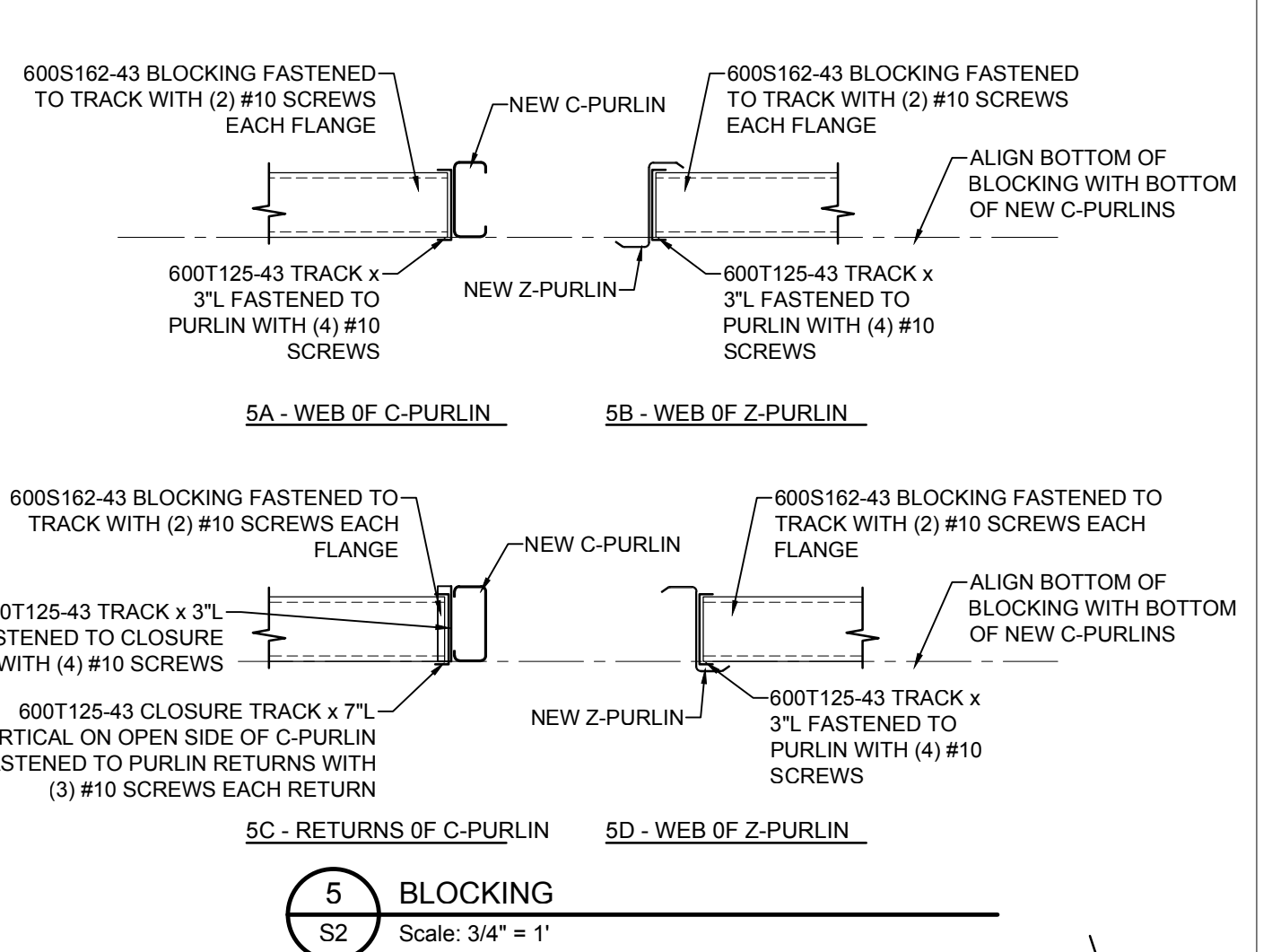
2
S2
 SECTION REINFORCING DETAILS
 Scale: 3/4" = 1"



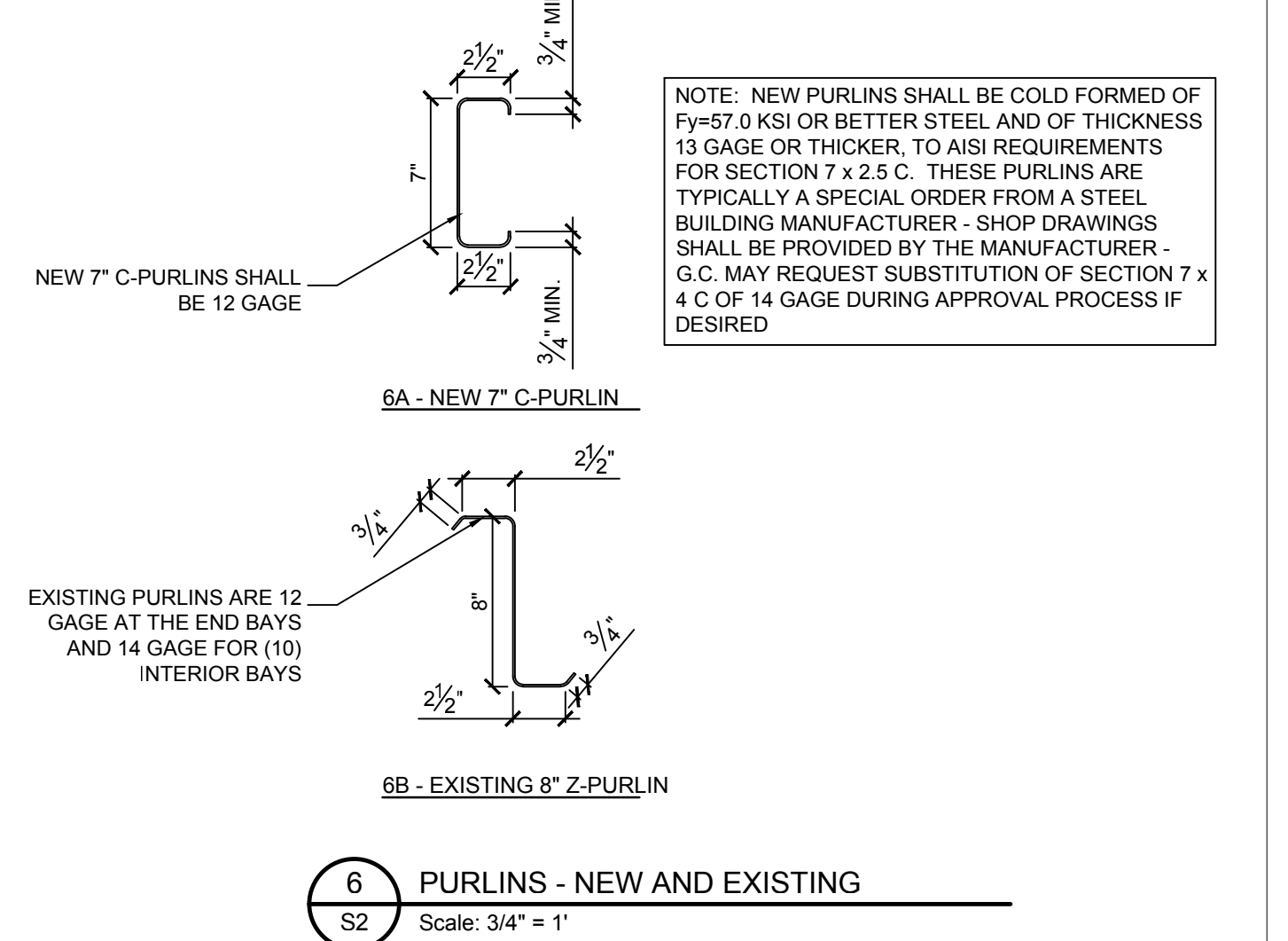
3
S2
 NEW PURLINS AT BEARING ON FRAMES
 Scale: 3/4" = 1"



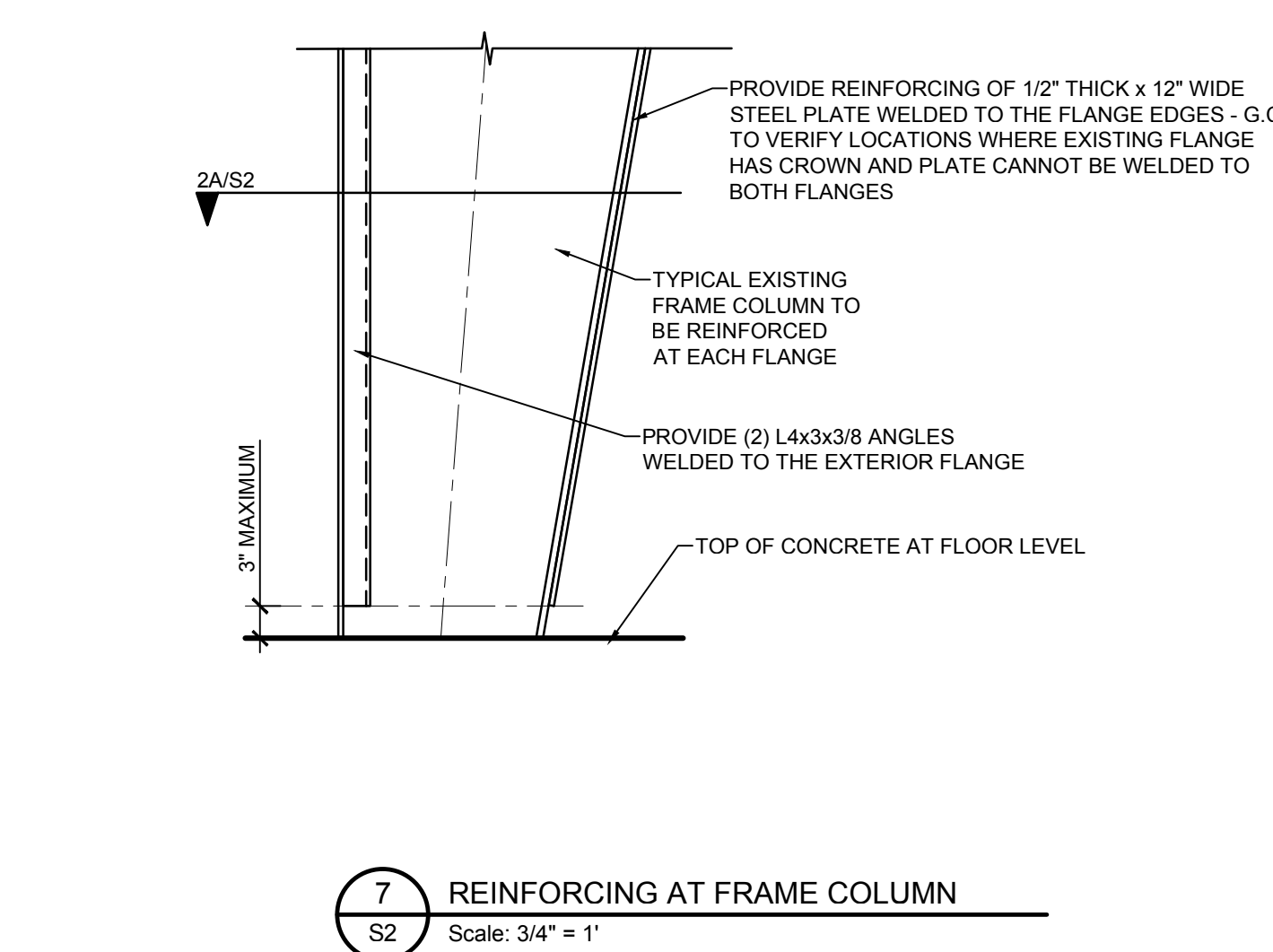
4
S2
 NEW PURLINS AT SPAN
 Scale: 3/4" = 1"



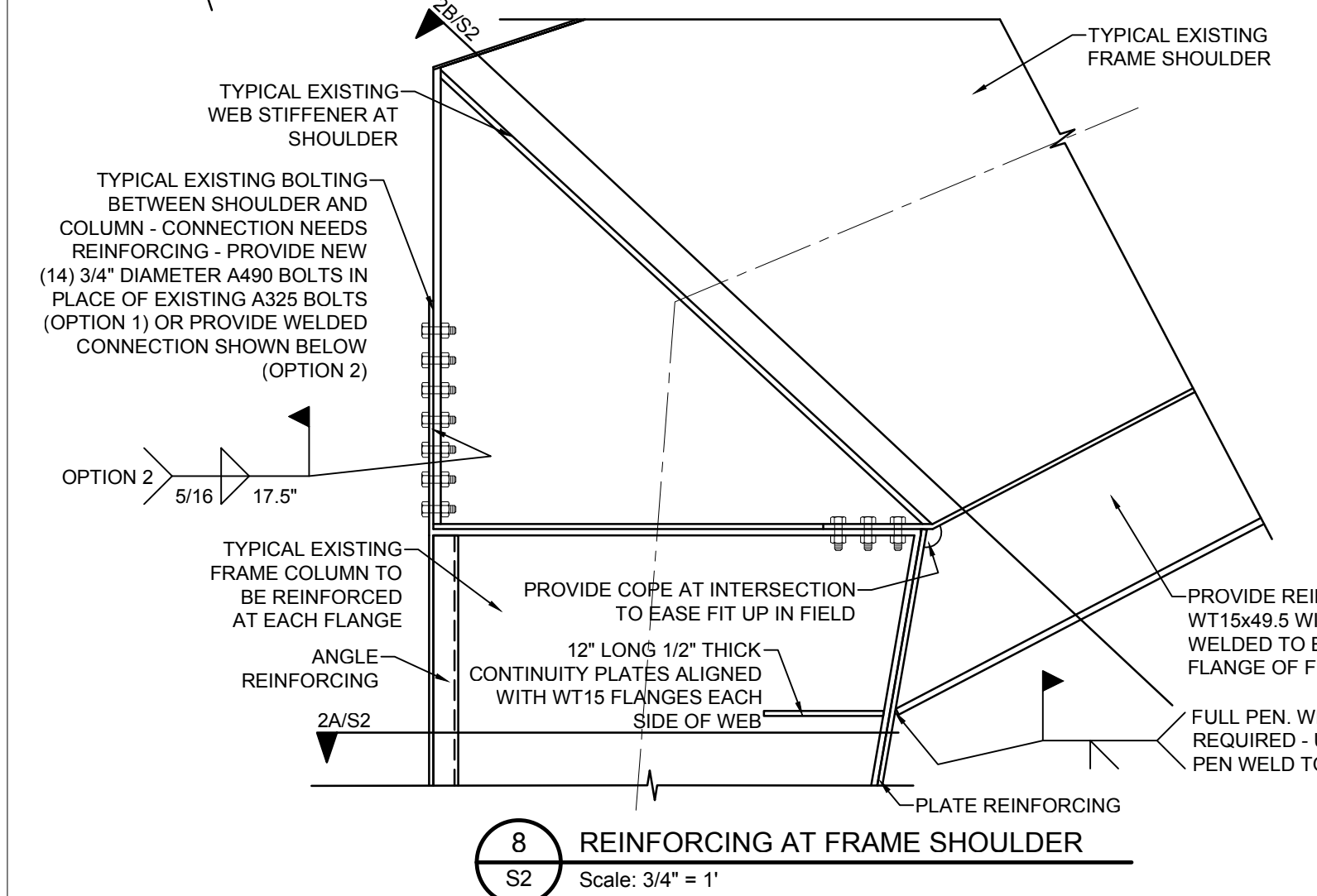
5
S2
 BLOCKING
 Scale: 3/4" = 1"



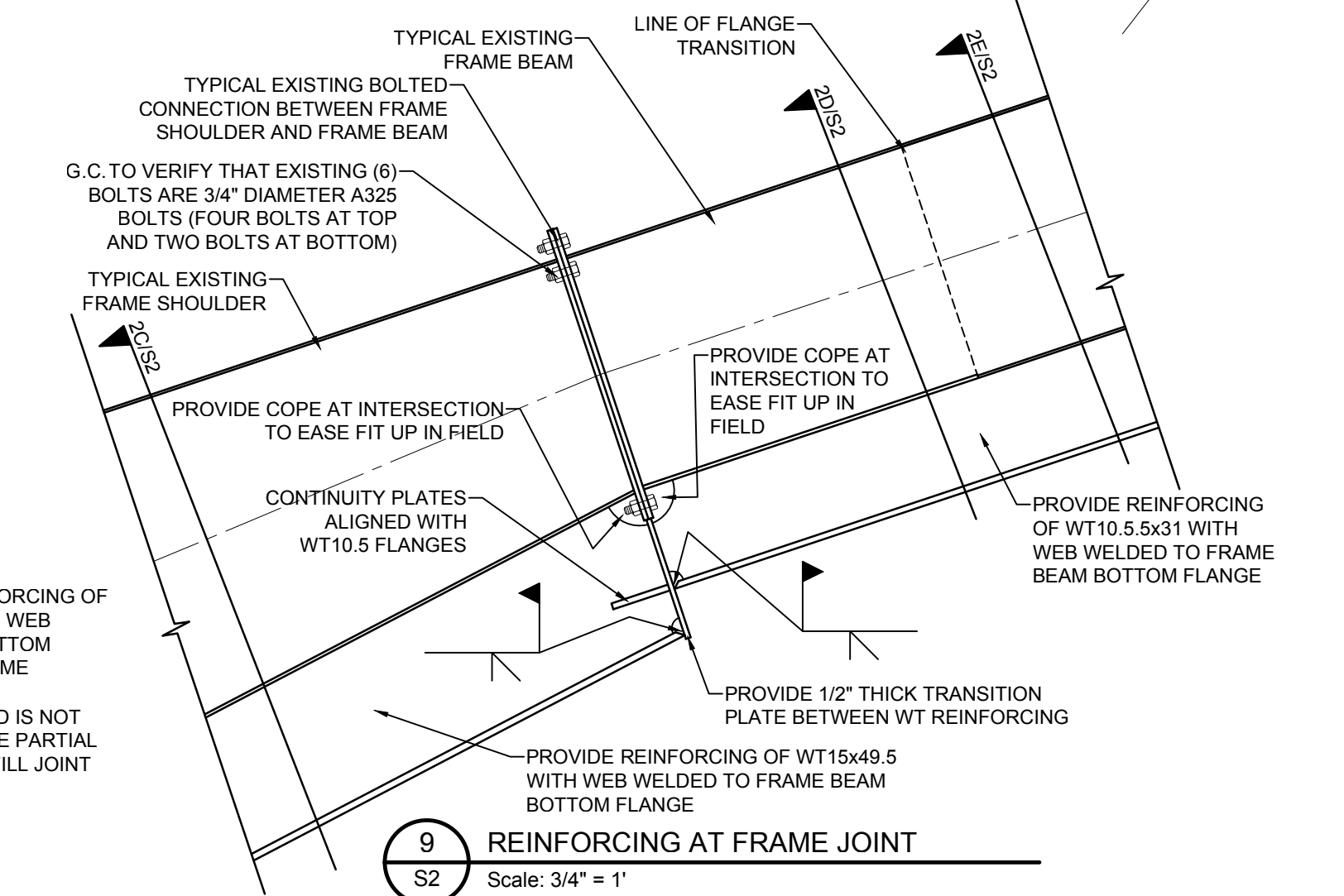
6
S2
 PURLINS - NEW AND EXISTING
 Scale: 3/4" = 1"



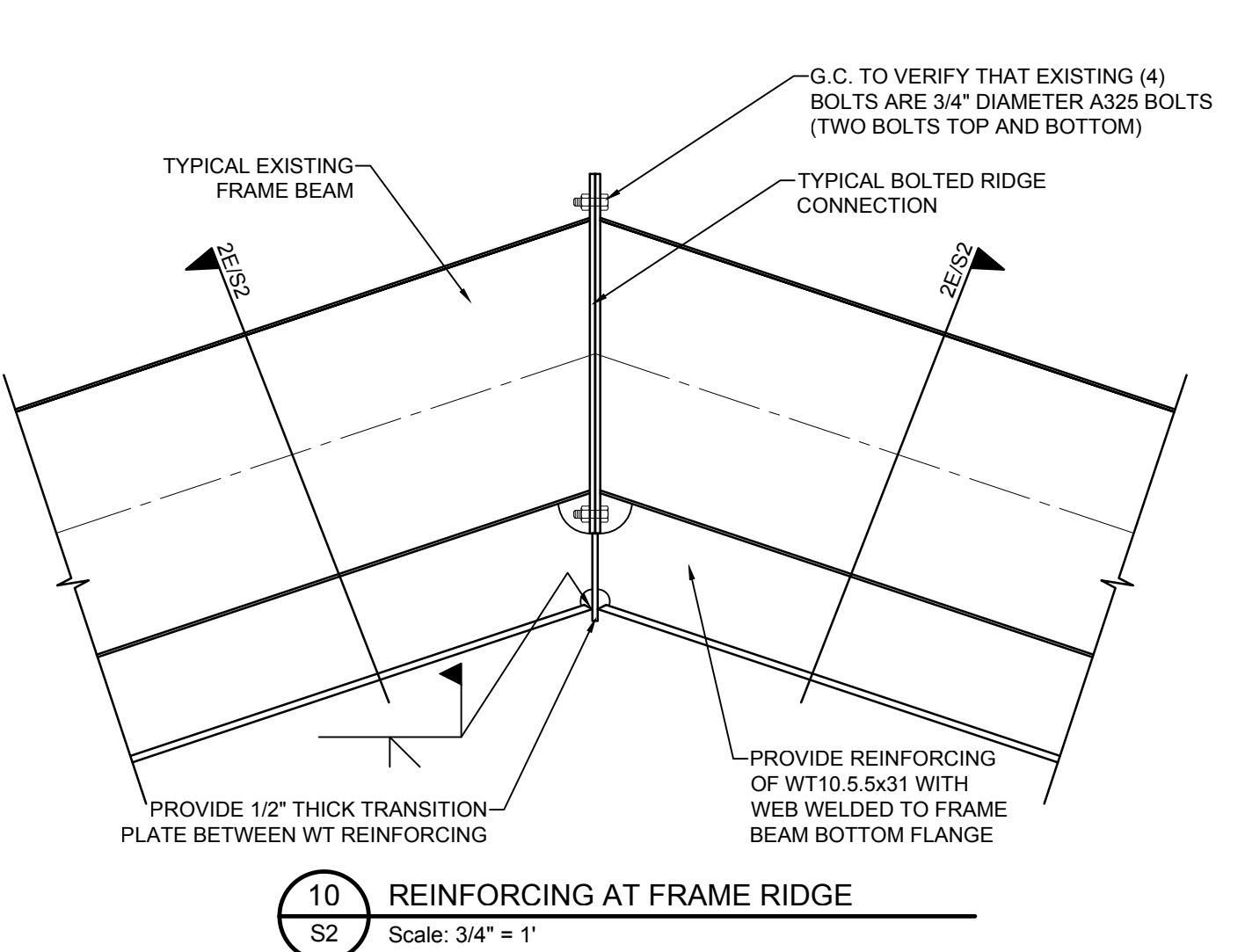
7
S2
 REINFORCING AT FRAME COLUMN
 Scale: 3/4" = 1"



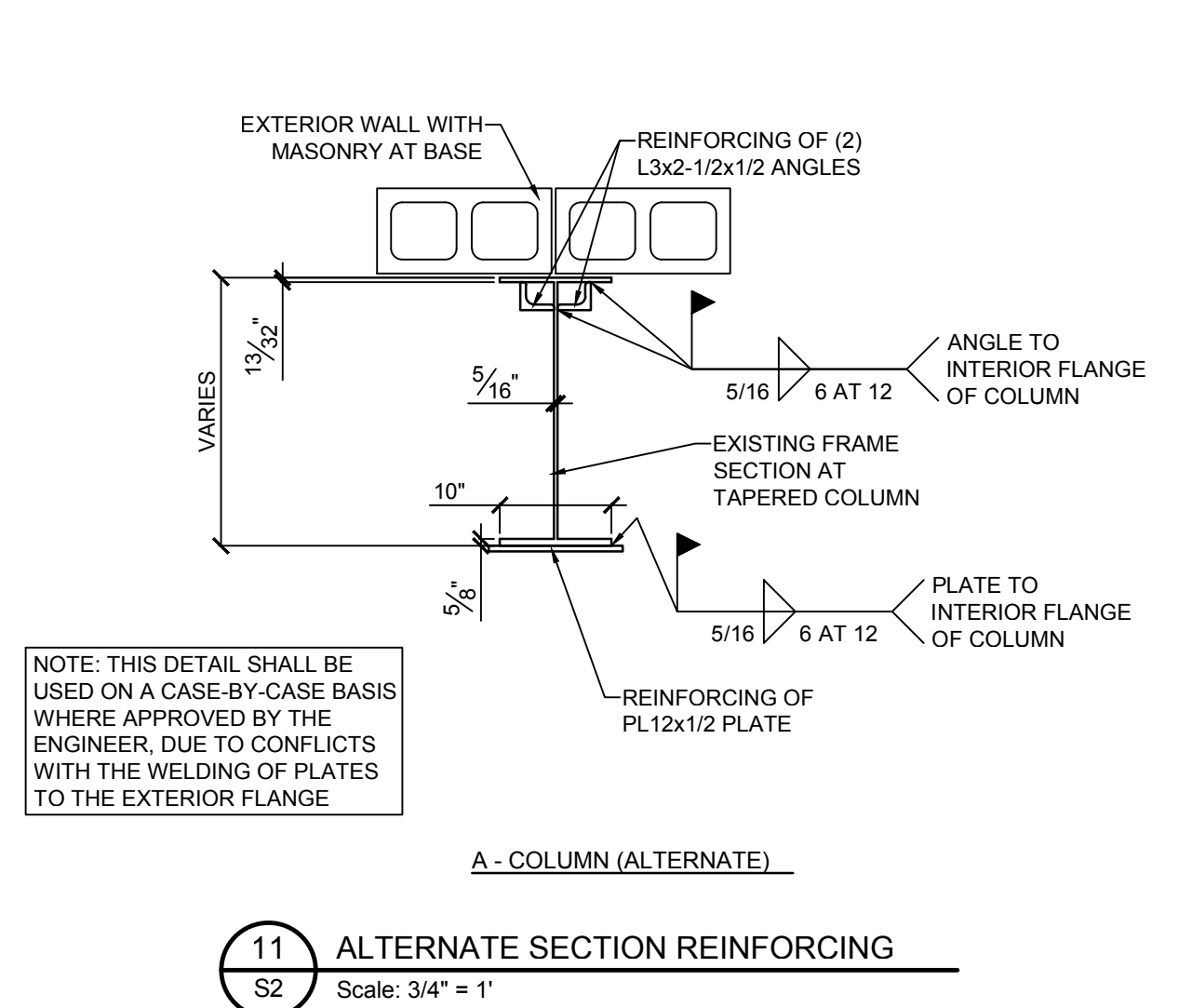
8
S2
 REINFORCING AT FRAME SHOULDER
 Scale: 3/4" = 1"



9
S2
 REINFORCING AT FRAME JOINT
 Scale: 3/4" = 1"



10
S2
 REINFORCING AT FRAME RIDGE
 Scale: 3/4" = 1"



11
S2
 ALTERNATE SECTION REINFORCING
 Scale: 3/4" = 1"

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