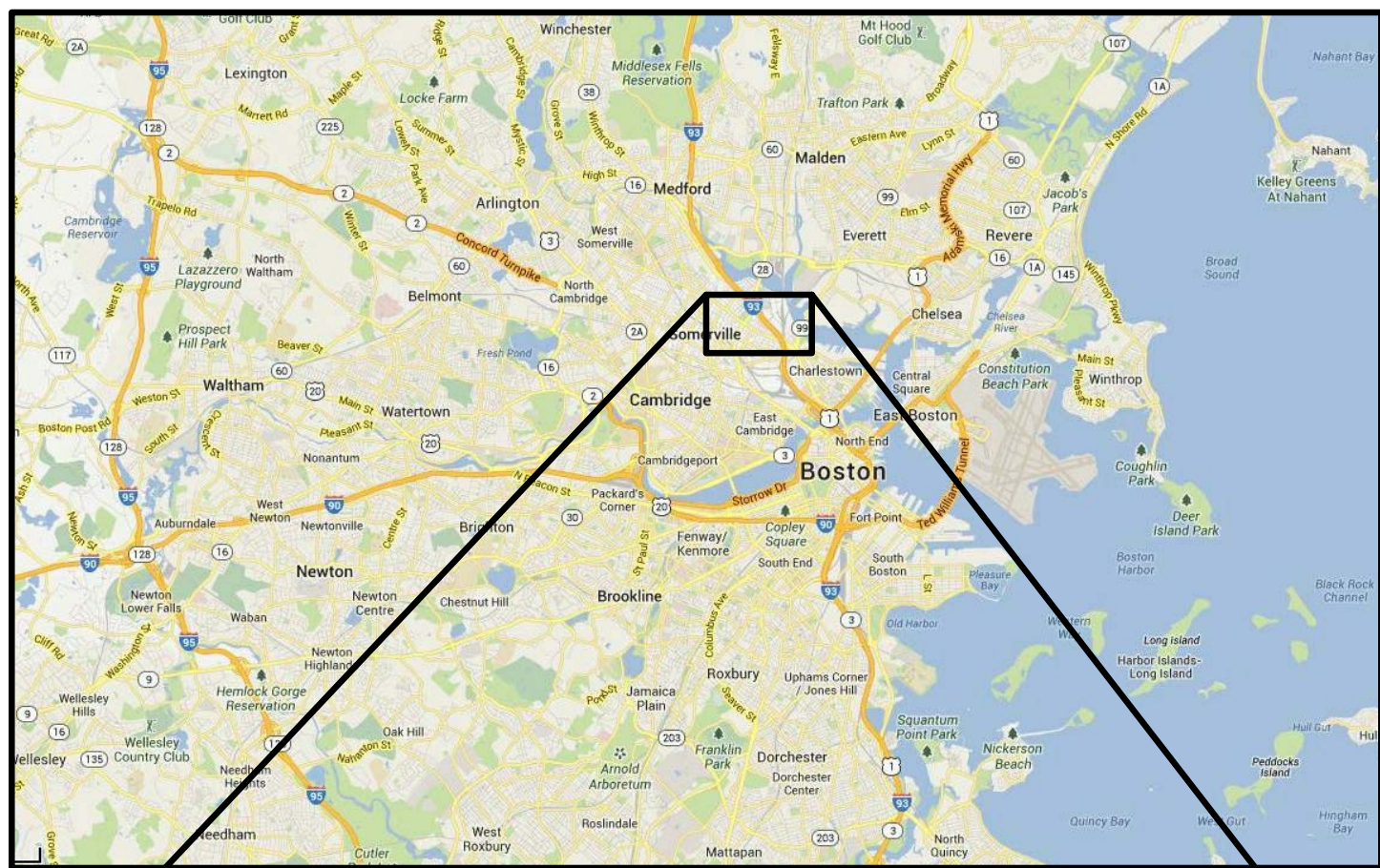


City of Somerville

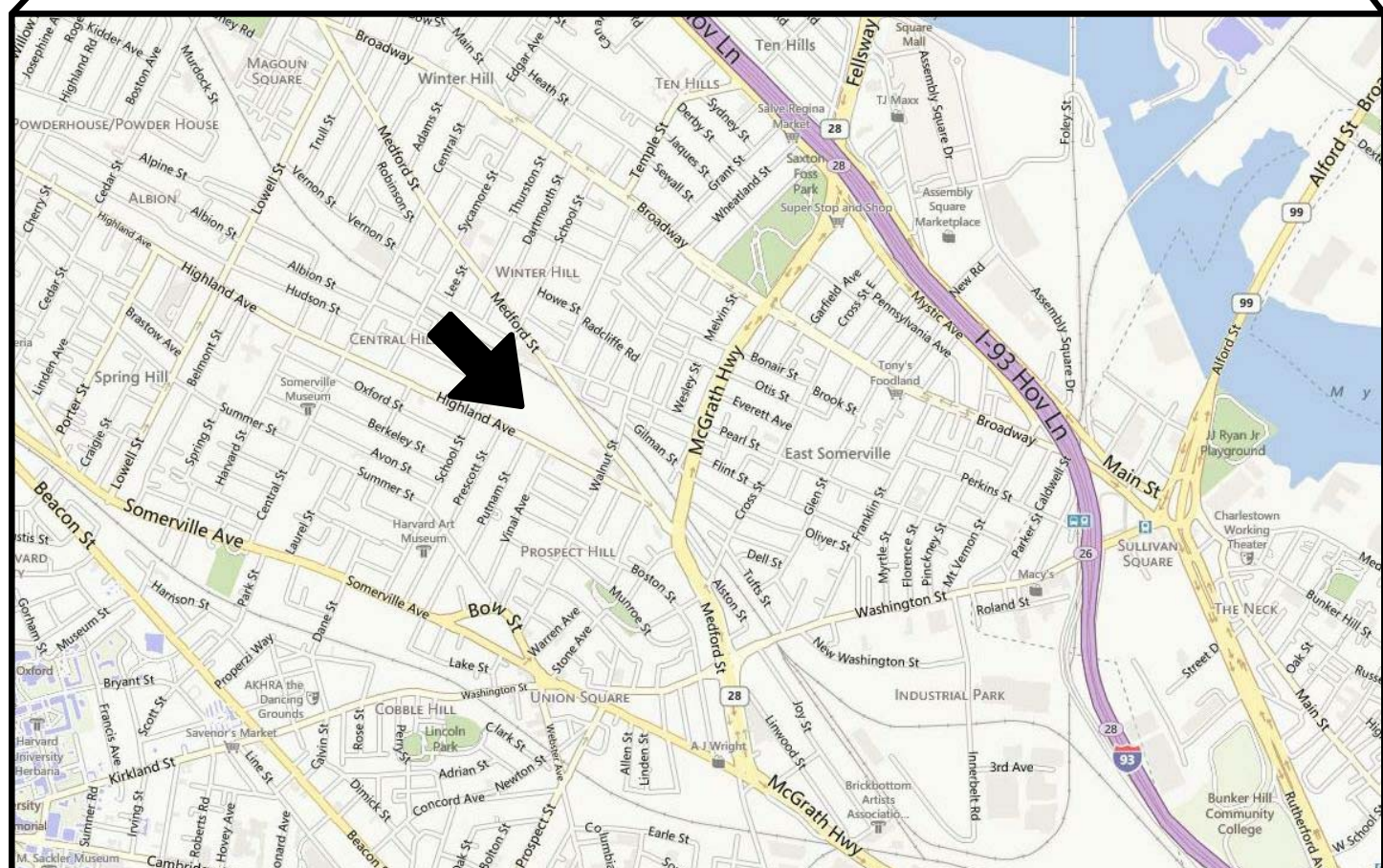
Repairs to Somerville High School

Auditorium, Kitchen and Cafeteria

81 Highland Avenue, Somerville, MA 02143



VICINITY MAP



LOCUS MAP



OVERVIEW

OWNER

City of Somerville
Skip Bandini, Director
Capital Projects and Planning
1 Franey Road
Somerville, MA 02145
Tel - 617-625-6600
Fax - 617-625-0999

SOMERVILLE PUBLIC SCHOOLS

Tony Pierantozzi - Superintendent
181 Washington Street
Somerville, MA 02143
Tel - 617-625-6600
Fax - 617-591-7902

LIST OF DRAWINGS - DEMO

DEMO PACKAGE
AD000 COVERSHEET DEMO
AD001 SYMBOLS AND ABBREVIATIONS
AD101 CAFETERIA/ KITCHEN DEMO FLOOR PLAN
AD102 AUDITORIUM DEMO FLOOR PLAN
AD103 AUDITORIUM BALCONY DEMO FLOOR PLAN
AD104 CAFETERIA/ KITCHEN DEMO RCP
AD105 AUDITORIUM DEMO RCP
AD106 INTERIOR DEMO ELEVATIONS
AD107 PHOTO REFERENCES FOR DEMO
AD108 PHOTO REFERENCES FOR DEMO

MECHANICAL DEMOLITION
HD000 HVAC LEGEND, NOTES AND ABBREVIATIONS
HD201 HVAC CAFETERIA/ KITCHEN DEMO FLOOR PLAN
HD202 HVAC AUDITORIUM DEMO FLOOR PLAN
HD203 HVAC AUDITORIUM BALCONY DEMO FLOOR PLAN
HD204 HVAC ROOF DEMO PLAN

ELECTRICAL DEMOLITION
ED000 ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS
ED101 ELECTRICAL CAFETERIA/ KITCHEN DEMO FLOOR PLAN
ED102 ELECTRICAL AUDITORIUM DEMO PLAN
ED103 ELECTRICAL AUDITORIUM BALCONY DEMO FLOOR PLAN
ED104 ELECTRICAL KITCHEN DEMO PART PLAN
ED201 FIRE ALARM CAFETERIA/ KITCHEN FLOOR PLAN
ED202 FIRE ALARM AUDITORIUM FLOOR PLAN
ED203 FIRE ALARM AUDITORIUM BALCONY FLOOR PLAN

AUDIO VISUAL DEMOLITION
AVD201 AUDIO VISUAL CAFETERIA/ KITCHEN DEMO FLOOR PLAN
AVD202 AUDIO VISUAL AUDITORIUM DEMO FLOOR PLAN
AVD203 AUDIO VISUAL AUDITORIUM BALCONY DEMO FLOOR PLAN



Architects / Engineers / Planners
211 Congress Street, 11th Floor
Boston, Massachusetts 02110

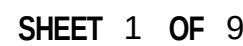
DEMO

PACKAGE

January 23, 2014



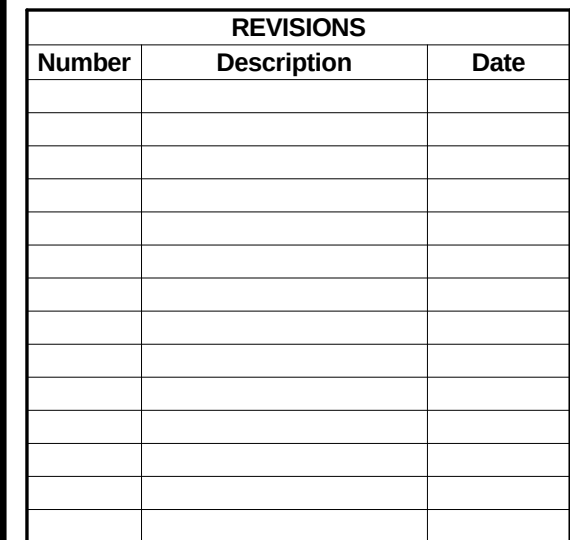
ARCHITECTURAL SYMBOLS LEGEND





GENERAL DEMO NOTES

-
- 9'-6"
- VIE
- 1/2" PLYWOOD
- METAL STUD @ 16" O.C.
- METAL RUNNER



ISSUED FOR BID

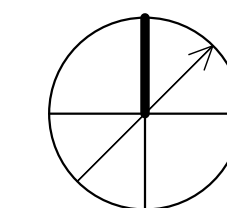


81 Highland Avenue,
Somerville, MA 02143

PROJECT NUMBER: 19431.01

SHEET NUMBER:

AD101



1. REMOVAL OF ANY WORK OR ITEM SHALL INCLUDE LEGAL DISPOSAL OF SAME UNLESS INDICATED TO BE SALVAGED. ALL REMOVAL AND DISPOSAL WORK SHALL BE PERFORMED IN A SAFE AND LEGAL MANNER. DOCUMENTATION OF RECYCLED WASTE IS REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF DEMOLITION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ATTENTION OF ARCHITECT IN WRITING IMMEDIATELY UPON DISCOVERY.
3. DRAWINGS MAY NOT FULLY SHOW EVERY DETAIL. PROVIDE UNIT PRICES FOR WORK AS REQUIRED.
4. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL STRUCTURAL MEMBERS PRIOR TO DEMOLITION AND SHALL PROVIDE ALL NECESSARY SHORING, BRACING AND TEMPORARY SUPPORTS REQUIRED TO ENSURE STRUCTURAL STABILITY AND PREVENT COLLAPSE OF EXISTING STRUCTURE AND CONSTRUCTION TO REMAIN.
5. CONTRACTOR SHALL PROTECT ALL ADJACENT CONSTRUCTION THAT IS TO REMAIN.
6. REFER TO THE MECHANICAL, PLUMBING, AND ELECTRICAL NOTES FOR REMOVAL AND DISPOSAL OF EQUIPMENT, PIPING, CONDUTITS, WIRING OR OTHER ITEMS THAT ARE INCLUDED AS PART OF THE SCOPE OF DEMOLITION WORK IN THIS CONTRACT.
7. ALL FINISHES ON WALLS AND THE UNDERSIDE STAIRS 7 & 8 ALONG WITH THE STAIR CEILINGS SHALL BE REMOVED ENTIRELY. EXISTING RUBBER FLOORING TO REMAIN. DISMISH ALL LIGHTING AND FIRE ALARM DEVICES ENTIRELY.
8. DOORS AND OPENINGS WILL BE SEALED WITH 8 MIL POLYETHYLENE SHEETING. BARRIERS TO BE INSTALLED TO AIRTIGHT ZONE BARRIER BETWEEN THE CONTROLLED AREA AND THE AREA ACCESSIBLE TO BUILDING OCCUPANTS. LARGER OPENINGS SUCH AS THE ENTRANCE TO THE AUDITORIUM WILL BE SEALED WITH A SOLID BARRIER PRIOR TO SEALING WITH 8 MIL POLYETHYLENE PLASTIC SHEETING. BARRIERS WILL BE SEALED FROM INSIDE THE CONTROLLED AREA. ADDITIONAL BARRIERS MAY BE SEALED ON THE OUTSIDE.

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ISSUED FOR BID

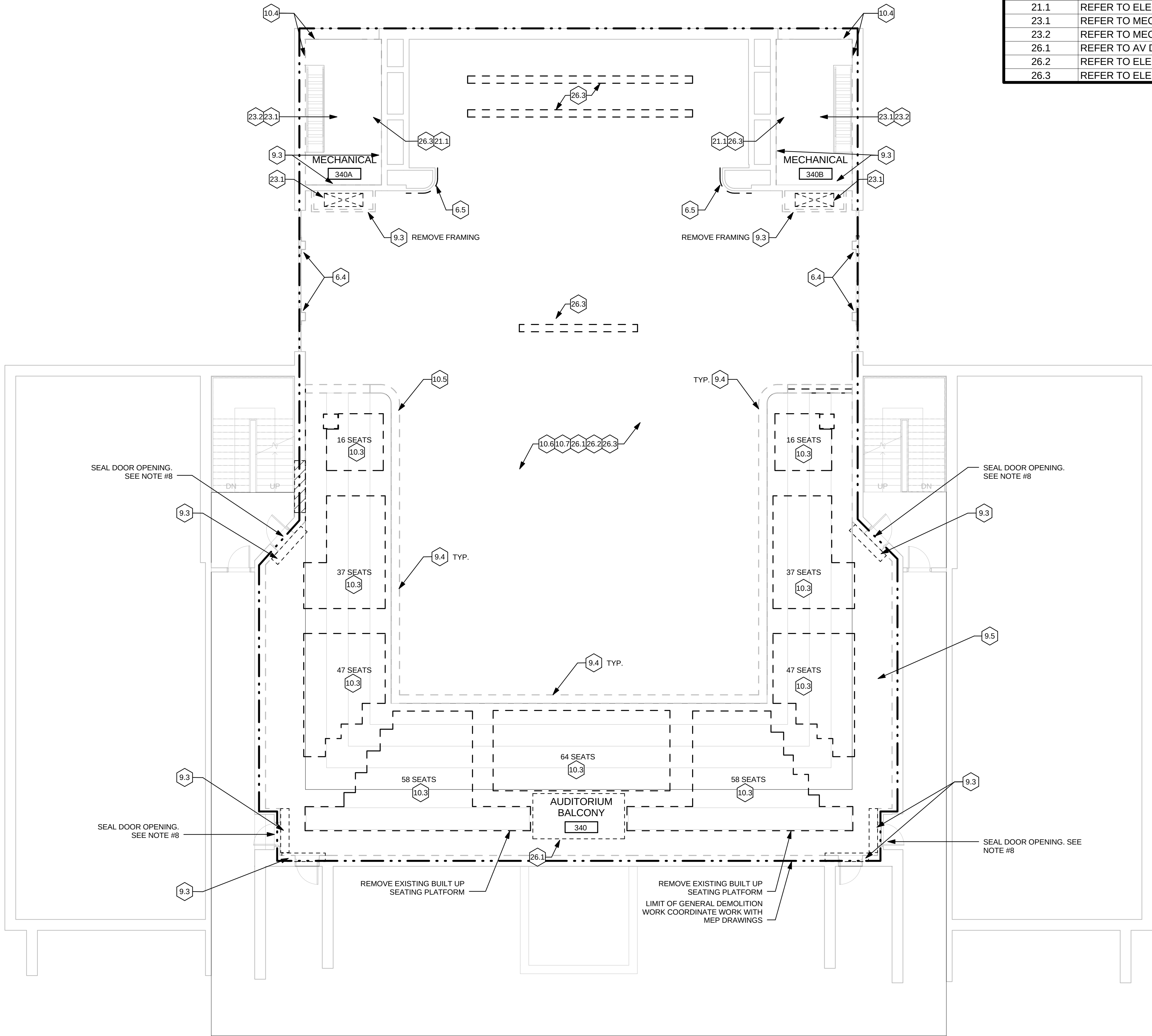


81 Highland Avenue,
Somerville, MA 02143

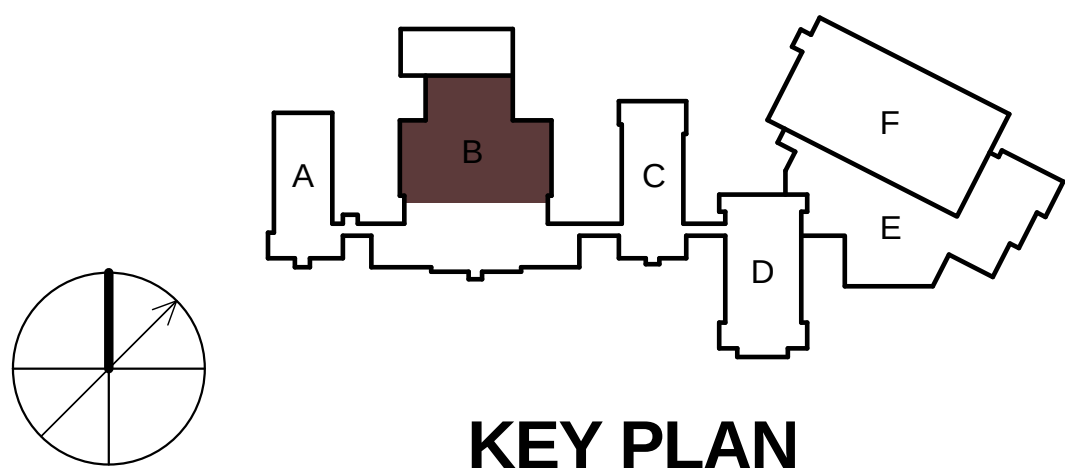
DESIGNED BY: FC
DRAWN BY: EKM
CHECKED BY: FC
DATE: January 23, 20
SCALE: As indicated

AD102

PROJECT FILE: C:\Users\ellb\OneDrive\Documents\19431-Somerville HS Seating Repairs - EME\1.rvt
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REVIEWED BY: CIVIL
ARCH:
STRUC:
PLUM:
FIRE:
MECH:
ELEC:



1 AUDITORIUM BALCONY DEMO FLOOR PLAN
SCALE: 1/8" = 1'-0"



AUDITORIUM BALCONY DEMO PLAN WORK NOTES	
DEMO NOTE #	DEMO NOTE
6.4	REMOVE WINDOW SILLS, JAMBS AND MULLIONS. COORDINATE WITH NEW WORK
6.5	REMOVE WOOD PLANKING PANELS ALONG WALLS INCLUDING FURRING STRIPS AND RELATED ATTACHMENTS
9.3	REMOVE GYPSUM WALL BOARD FINISH. SOFFIT/ WALL FRAMING TO REMAIN
9.4	REMOVE WOOD PANELS AND CAP
9.5	REMOVE ALL EXISTING WOOD FLOOR FINISH
10.3	REMOVE ALL SEATING
10.4	REMOVE WALL FINISHES BACK TO BRICK INCLUDING CEMENT PLASTER, METAL LATHE AND ALL RELATED ATTACHMENT THROUGHOUT STAIRS
10.5	REMOVE ALL DRYWALL AND PLASTER SOFFITS FINISH TO EXISTING FRAMING. FRAMING TO REMAIN UNDER BALCONY
10.6	REMOVE GYPSUM PLASTER CEILING, METAL LATHE, FURRING AND RELATED ATTACHMENTS
10.7	REMOVE ACT CEILING ENTIRELY
21.1	REFER TO ELECTRICAL DRAWINGS FOR DEMOLITION OF EXISTING FIRE ALARM SYSTEM
23.1	REFER TO MECHANICAL DRAWINGS FOR REMOVAL OF HVAC UNITS, DUCTS, WIRING AND CONTROLS
23.2	REFER TO MECHANICAL DRAWINGS FOR DEMOLITION OF EXISTING PIPING INSULATION
26.1	REFER TO AV DRAWINGS FOR REMOVAL OF SOUND SYSTEM, XLR AND SPEAKER WIRING IN ITS ENTIRETY
26.2	REFER TO ELECTRICAL DRAWINGS FOR REMOVAL OF LOW VOLTAGE CAMERA DEVICES, WIRING AND CONTROLS
26.3	REFER TO ELECTRICAL DRAWINGS FOR REMOVAL OF LIGHT FIXTURES, WIRING AND CONTROLS

GENERAL DEMO NOTES

- REMOVAL OF ANY WORK OR ITEM SHALL INCLUDE LEGAL DISPOSAL OF SAME UNLESS INDICATED TO BE SALVAGED. ALL REMOVAL AND DISPOSAL WORK SHALL BE PERFORMED IN A SAFE AND LEGAL MANNER. DOCUMENTATION OF RECYCLED WASTE IS REQUIRED.
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- ALL FINISHES ON WALLS AND THE UNDERSIDE STAIRS 7 & 8 ALONG WITH THE STAIR CEILINGS SHALL BE REMOVED ENTIRELY. EXISTING RUBBER FLOORING TO REMAIN. DEMOLISH ALL LIGHTING AND FIRE ALARM DEVICES ENTIRELY.
- DOORS AND OPENINGS WILL BE SEALED WITH 8 MIL POLYETHYLENE SHEETING TAPED TO CREATE AN AIRTIGHT DUST BARRIER BETWEEN THE CONTROLLED AREA AND THE AREA ACCESSIBLE TO BUILDING OCCUPANTS. LARGER OPENINGS SUCH AS THE SERVERY IN THE CAFETERIA AND THE MAIN ENTRANCE TO THE AUDITORIUM WILL BE SEALED WITH A SOLID BARRIER PRIOR TO SEALING WITH 8 MIL POLYETHYLENE PLASTIC SHEETING. BARRIERS WILL BE SEALED FROM INSIDE THE CONTROLLED AREA. ADDITIONAL BARRIERS MAY BE SEALED ON THE OUTSIDE.

REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

AUDITORIUM BALCONY DEMO FLOOR PLAN

PROJECT NUMBER: 19431.01

DESIGNED BY: FC

DRAWN BY: EKM

CHECKED BY: FC

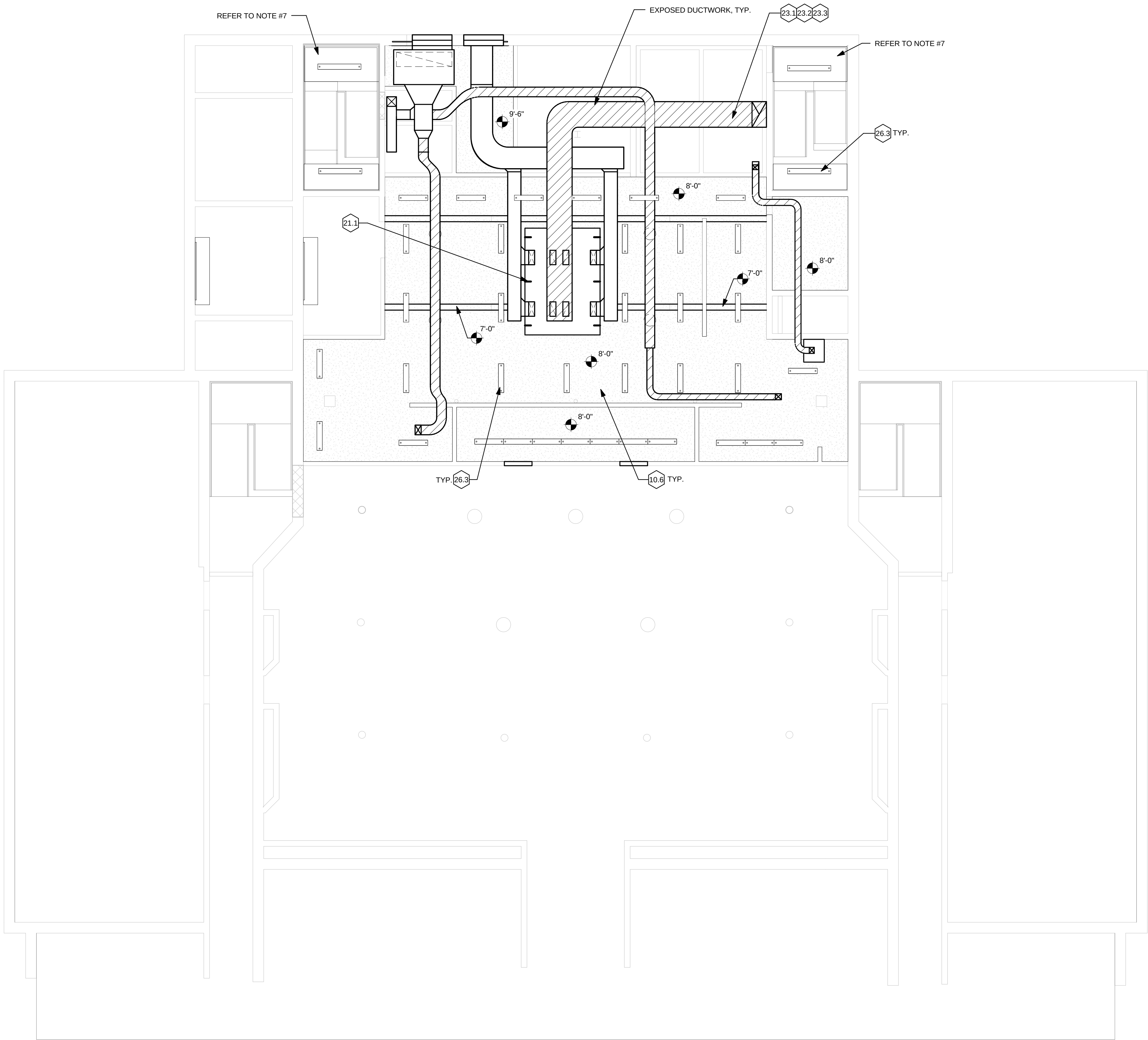
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SCALE: As indicated

SHEET NUMBER:

AD103

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REVIEWED BY: CIVIL ARCH: STRU: PLUM: FIRE: MECH: ELEC:



DEMO RCP WORK NOTES - CAFETERIA/KITCHEN	
DEMO NOTE #	DEMO NOTE
10.6	REMOVE GYPSUM PLASTER CEILING, METAL LATHE, FURRING AND RELATED ATTACHMENTS
21.1	REFER TO ELECTRICAL DRAWINGS FOR DEMOLITION OF EXISTING FIRE ALARM SYSTEM
23.1	REFER TO MECHANICAL DRAWINGS FOR REMOVAL OF HVAC UNITS, DUCTS, WIRING AND CONTROLS
23.2	REFER TO MECHANICAL DRAWINGS FOR DEMOLITION OF EXISTING PIPING INSULATION
23.3	REFER TO MECHANICAL DRAWINGS FOR REMOVAL OF HVAC CONTROLS AND WIRING
26.3	REFER TO ELECTRICAL DRAWINGS FOR REMOVAL OF LIGHT FIXTURES, WIRING AND CONTROLS

GENERAL DEMO NOTES

- REMOVAL OF ANY WORK OR ITEM SHALL INCLUDE LEGAL DISPOSAL OF SAME UNLESS INDICATED TO BE SALVAGED. ALL REMOVAL AND DISPOSAL WORK SHALL BE PERFORMED IN A SAFE AND LEGAL MANNER. DOCUMENTATION OF RECYCLED WASTE IS REQUIRED.
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CDR MAGUIRE
Architects / Engineers / Planners
211 Congress Street, 11th Floor
Boston, Massachusetts 02110
TEL: (617) 778-1440
www.cdrmaguire.com

REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville High School Auditorium, Kitchen and Cafeteria

81 Highland Avenue, Somerville, MA 02143

CAFETERIA/ KITCHEN DEMO RCP

PROJECT NUMBER: 19431.01

DESIGNED BY: FC

DRAWN BY: EKM

CHECKED BY: FC

DATE: January 23, 2014

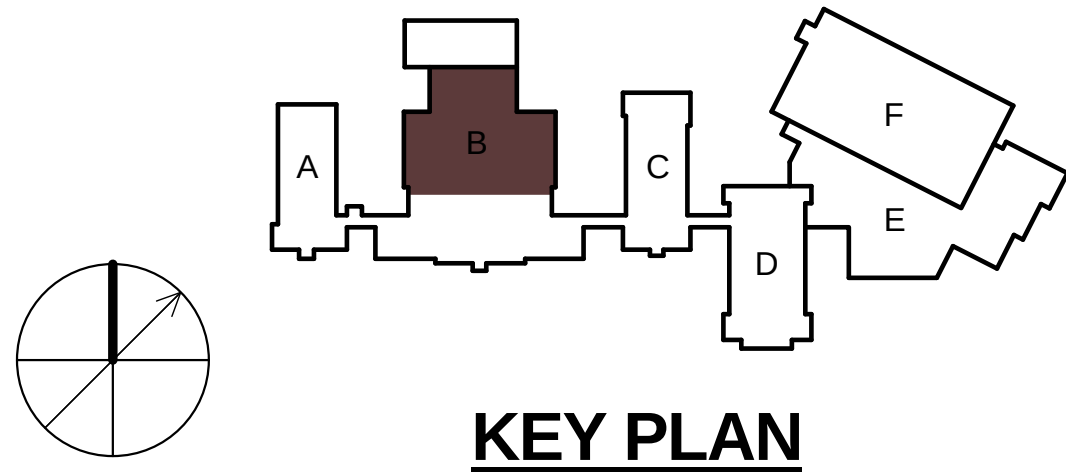
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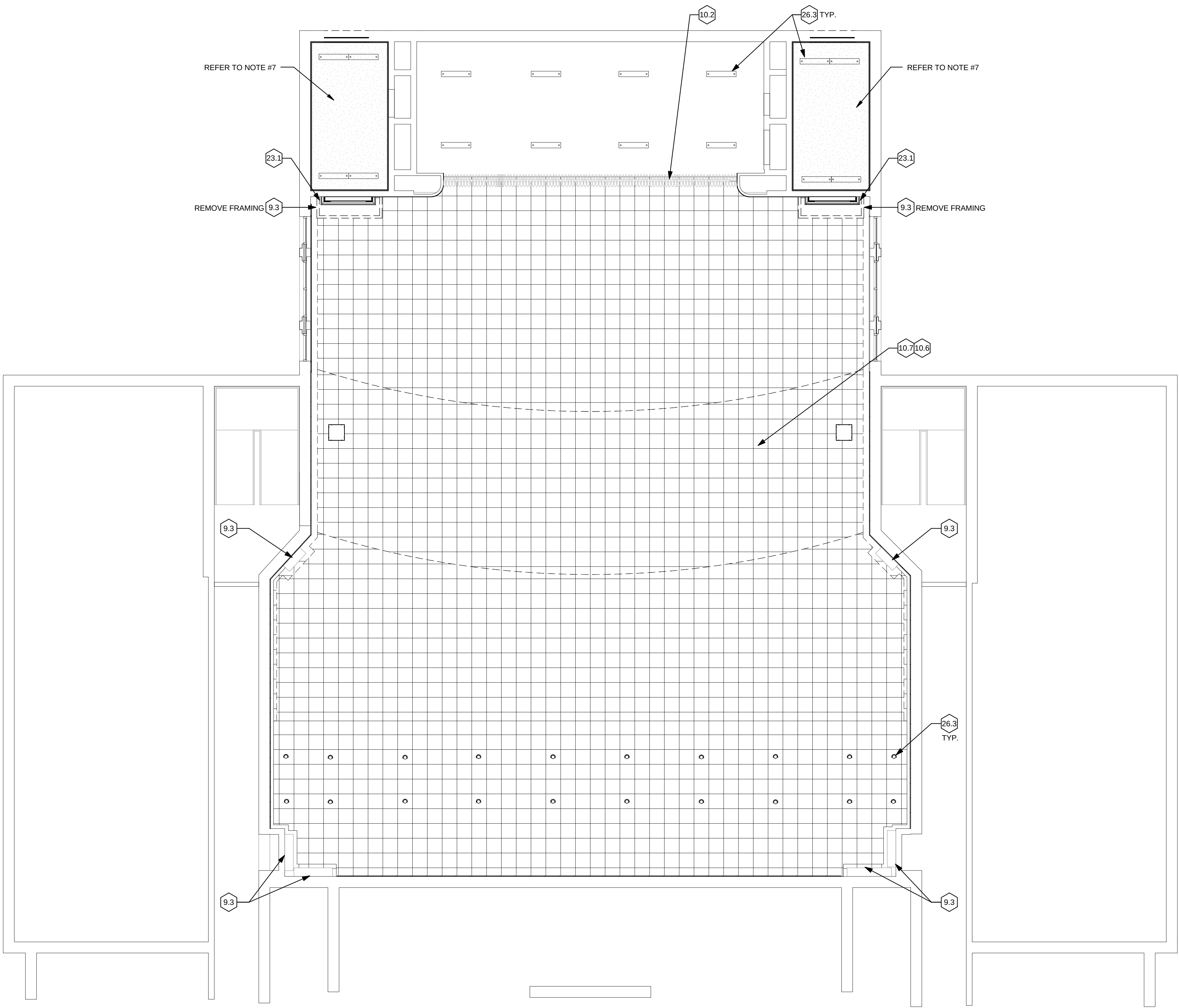
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SHEET 5 OF 9

1 CAFETERIA/KITCHEN DEMO RCP
SCALE: 1/8" = 1'-0"



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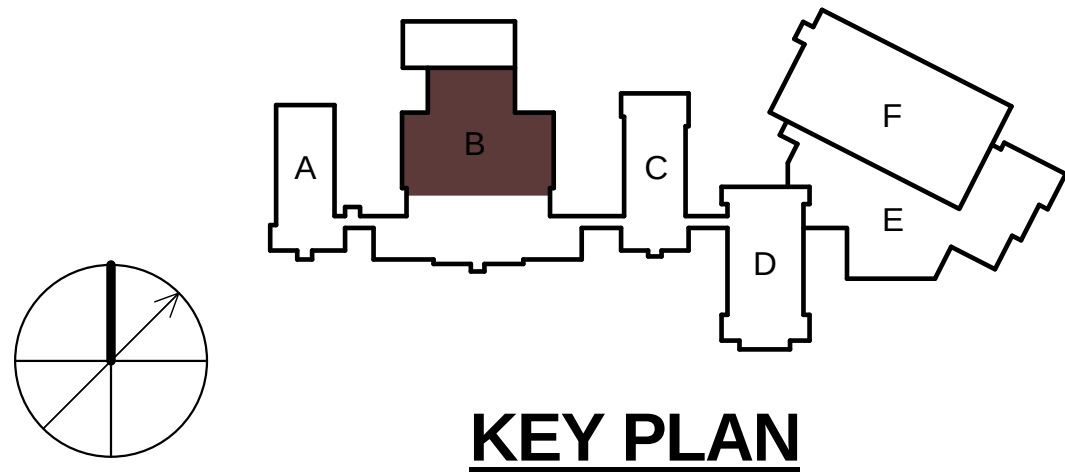


DEMO RCP WORK NOTES - AUDITORIUM	
DEMO NOTE #	DEMO NOTE
9.3	REMOVE GYPSUM WALL BOARD FINISH. SOFFIT/ WALL FRAMING TO REMAIN
10.2	REMOVE SMOKE AND FIRE CURTAINS, MOTORS, WIRING AND CONTROLS
10.6	REMOVE GYPSUM PLASTER CEILING, METAL LATHE, FURRING AND RELATED ATTACHMENTS
10.7	REMOVE ACT CEILING ENTIRELY
23.1	REFER TO MECHANICAL DRAWINGS FOR REMOVAL OF HVAC UNITS, DUCTS, WIRING AND CONTROLS
26.3	REFER TO ELECTRICAL DRAWINGS FOR REMOVAL OF LIGHT FIXTURES, WIRING AND CONTROLS

GENERAL DEMO NOTES

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1 AUDITORIUM DEMO RCP
SCALE: 1/8" = 1'-0"





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REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville High School Auditorium, Kitchen and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

AUDITORIUM DEMO RCP

PROJECT NUMBER: 19431.01
DESIGNED BY: FC
DRAWN BY: EKM
CHECKED BY: FC
DATE: January 23, 2014
SCALE: As indicated

SHEET NUMBER:

AD105

SHEET 6 OF 9

[illegible]

ISSUED FOR BID



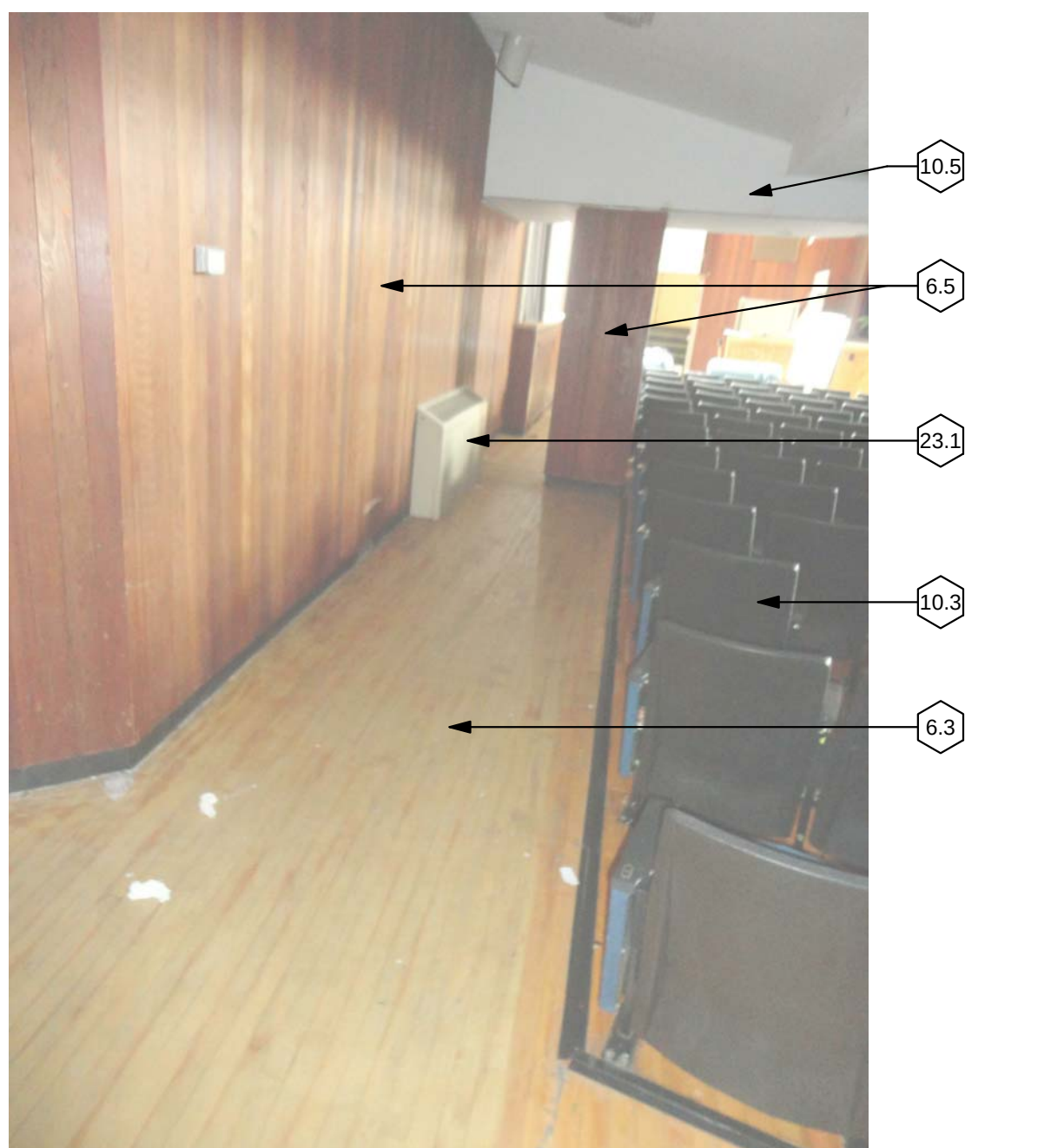
81 Highland Avenue,
Somerville, MA 02143

INTERIOR DEMO ELEVATIONS

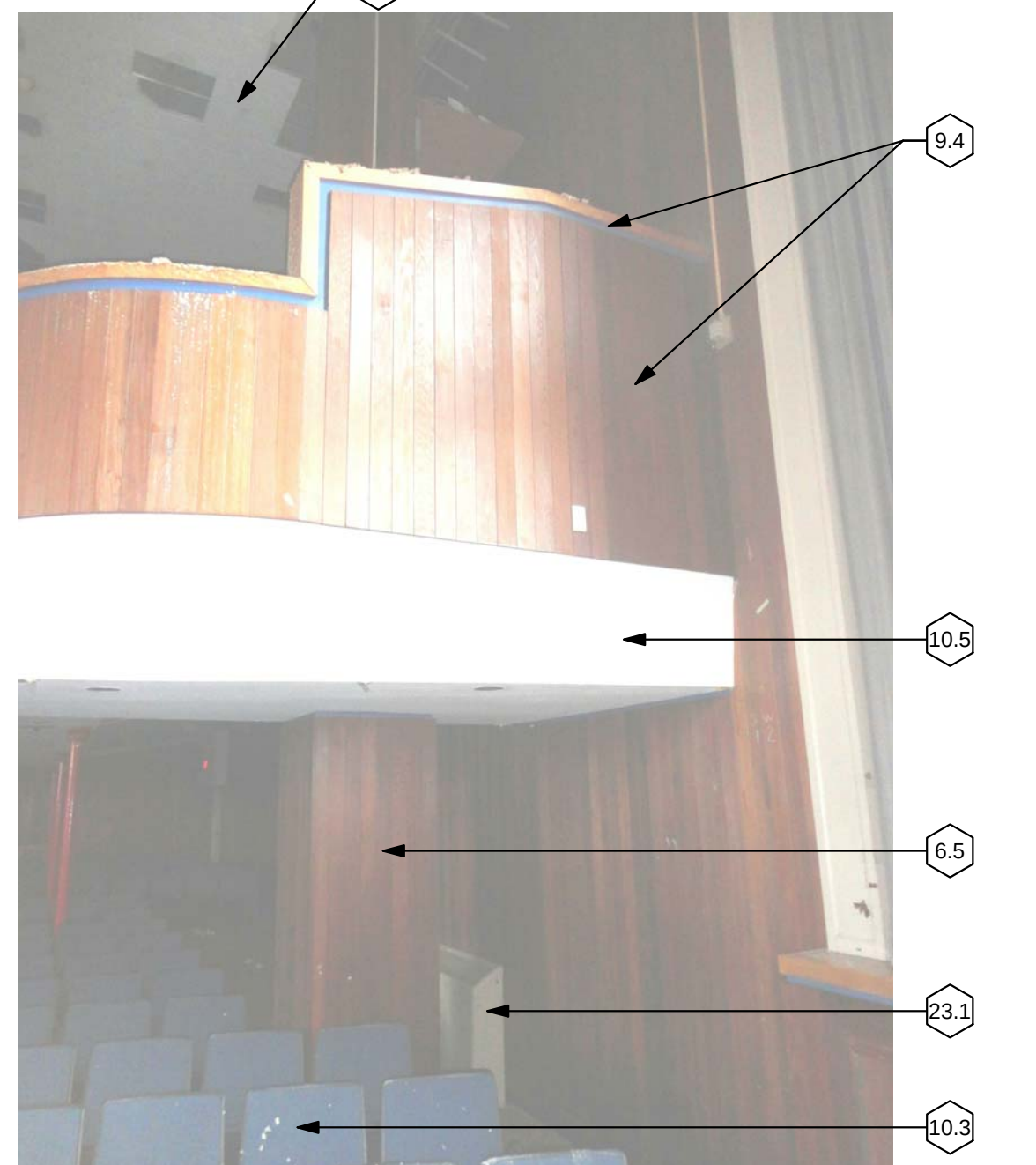
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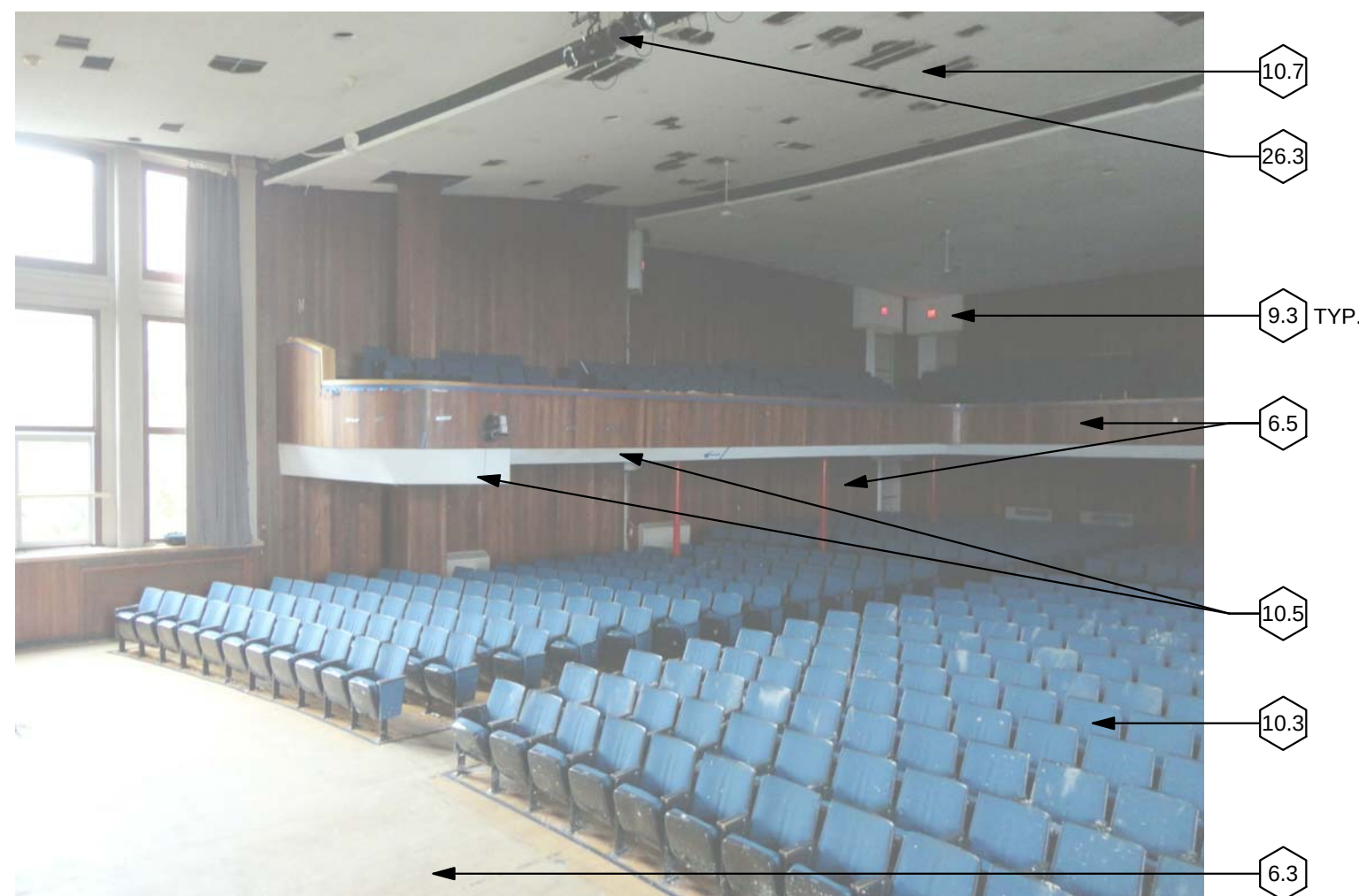




3 AUDITORIUM SIDE AISLE



6 BALCONY EDGE



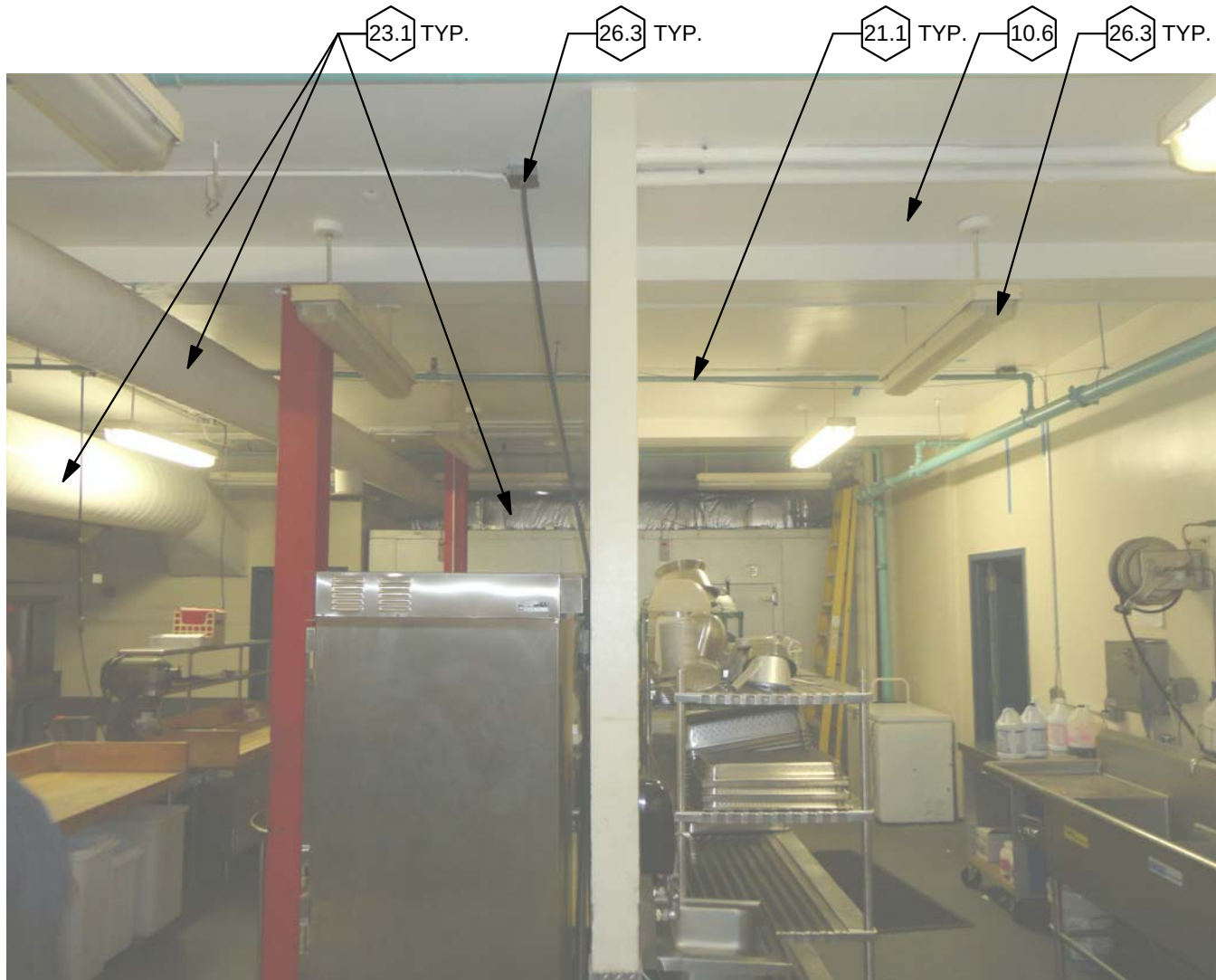
9 BALCONY END STAIR & EDGE

12 BALCONY END STAIR & EDGE

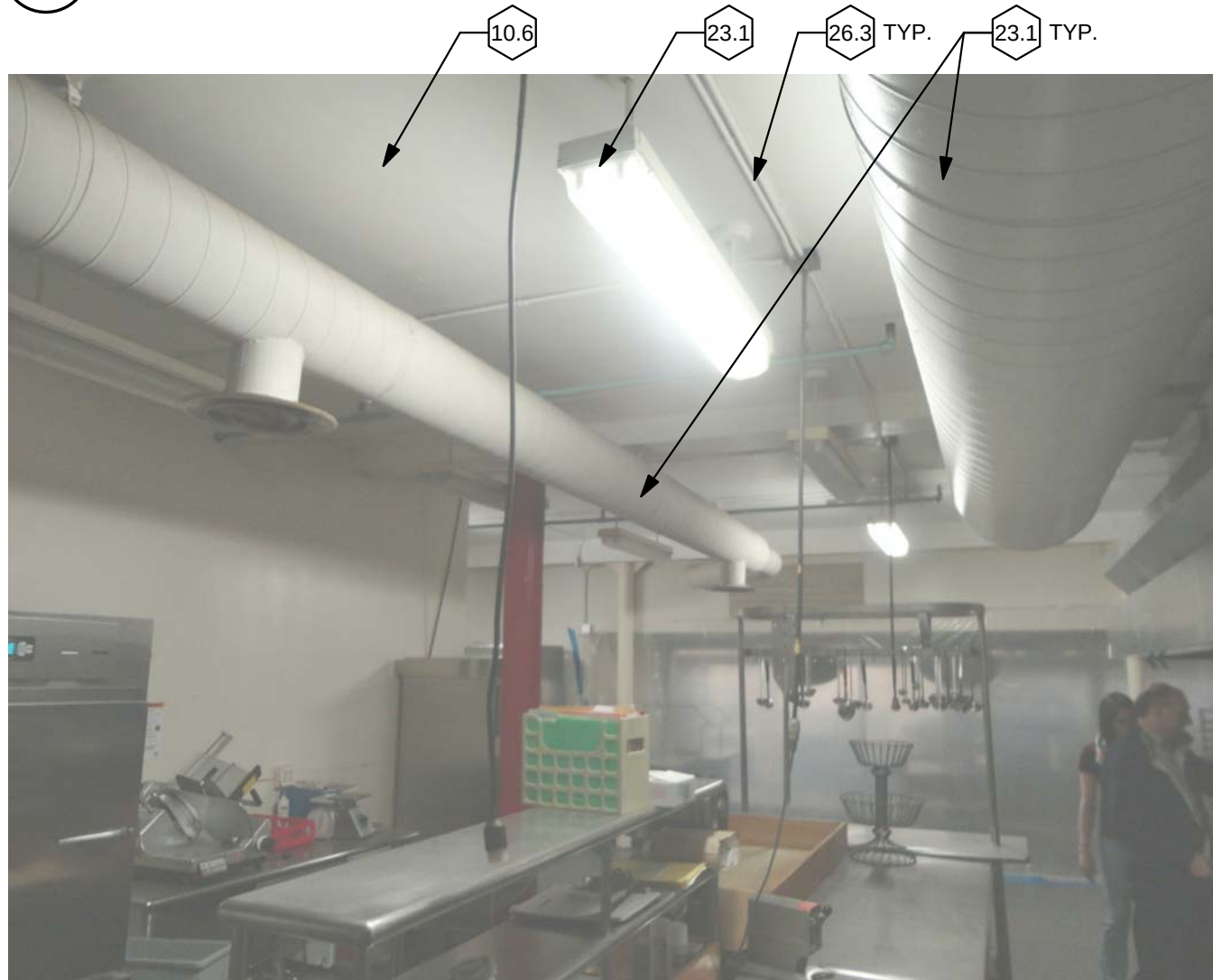


12 BALCONY END STAIR & EDGE

DEMO PHOTO WORK NOTES.	
DEMO NOTE #	DEMO NOTE
10.6	REMOVE GYPSUM PLASTER CEILING, METAL LATHE, FURRING AND RELATED ATTACHMENTS.
21.1	REFER TO ELECTRICAL DRAWINGS FOR DEMOLITION OF EXISTING FIRE ALARM SYSTEM
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26.3	REFER TO ELECTRICAL DRAWINGS FOR REMOVAL OF LIGHT FIXTURES, WIRING AND CONTROLS



1 KITCHEN



2 KITCHEN



3 KITCHEN



4 KITCHEN

REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

PHOTO
REFERENCES
FOR DEMO

PROJECT NUMBER: 19431.01
DESIGNED BY: FC
DRAWN BY: EKM
CHECKED BY: FC
DATE: January 23, 2014
SCALE: 1/2" = 1'-0"

SHEET NUMBER:

AD108

INVITATION FOR BIDS

(IFB # 14-54)

Somerville High School Renovations to the Auditorium Selective Demolition

Bid Opening: February 11, 2014 at 11:00 a.m.



**CITY OF SOMERVILLE, MASSACHUSETTS
Joseph A. Curtatone, Mayor**

**Purchasing Department
Angela M. Allen, Purchasing Director**

**Skip Bandini
Director, Capital Projects & Planning
City of Somerville
1 Franey Road
Somerville, MA 02145
P: 617-625-6600
F: 617-625-0999**

TABLE OF CONTENTS

Invitation for Bid Documents

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Section 1:

000200 Invitation to Bid

Section 2:

002000 Instructions to Bidders

Section 3: Bid Submission Documents:

003000 Form for General Bid
003200 Somerville Living Wage Form
003250 Responsible Employer Ordinance
003300 Acknowledgement of Notice to Bidders
003400 Certificate of Non-Collusion & Tax Compliance Statement
003500 Certificate of Signature Authority
003600 Signature Form
003700 Reference Form
003800 Bid Bond

Section 4: Other Bid Documents

004100 Division of Labor and Industries Prevailing Wage Rates
004300 Division of Labor and Industries Statement of Compliance
004300 General Term and Conditions

PART 2: SAMPLE CONSTRUCTION CONTRACT

- a. Sample Contract
 - Appendix A – Scope of Work (including Technical Specifications)*
 - Appendix B – Contractor's Bid Price; Form for General Bid ,
Bid Form for Alternates (From Bid Book)
 - Appendix C – General Terms and Conditions*
 - Appendix D – Insurance Requirements
 - Appendix E – Wage Rates and Living Wage (From Bid Book)
 - Appendix F – Certificate of Good Standing (for corporations)
 - Appendix G – Procurement documentation (Advertisements and Notice to Bidders)
 - Appendix H – Statement of Management
 - Appendix I – Performance Bond and Payment Bond, if contract over \$2000

*Appendix to be included in contract by reference

PART 3: TECHNICAL SPECIFICATIONS

DOCUMENT TITLE	SECTION - PAGES

000305	Unit Price Proposal Form

DIVISION 1 - General Requirements

011000	Summary
012000	Project Meetings
012200	Unit Prices
013100	Project Management & Coordination
013300	Submittals
014000	Quality Control Services
014200	References
015000	Temporary Facilities
015001	Air Quality Requirements
015002	Rodent Control
016000	Materials and Equipment
017000	Project Closeout
017329	Cutting and Patching

DIVISION 2

024119	Selective Demolition

DIVISION 23

230000	HVAC

DIVISION 26

260000	Electrical

DIVISION 27

274000	Audiovisual

PART 4: CONSTRUCTION DOCUMENT DRAWING LIST

<u>Drawing Number</u>	<u>Drawing Title</u>
-	Cover Sheet
<u>Architectural</u>	

AD000	Coversheet Demo
AD001	Symbols and Abbreviations
AD101	Cafeteria/Kitchen Demo Floor Plan
AD102	Auditorium Demo Floor Plan
AD103	Auditorium Balcony Demo Floor Plan
AD104	Cafeteria/Kitchen Demo RCP
AD105	Auditorium Demo RCP
AD106	Interior Demo Elevations
AD107	Photo References for Demo
AD108	Photo References for Demo

Heating, Venting and Air Conditioning

HD000	HVAC Legend, Notes and Abbreviations
HD201	HVAC Cafeteria/Kitchen Demo Floor Plan
HD202	HVAC Auditorium Demo Floor Plan
HD203	HVAC Auditorium Balcony Demo Floor Plan
HD204	HVAC Roof Demo Plan

Electrical

ED000	Electrical Legend, Notes, and Abbreviations
ED101	Electrical Cafeteria/Kitchen Demo Floor Plan
ED102	Electrical Auditorium Demo Floor Plan
ED103	Electrical Auditorium Balcony Demo Floor Plan
ED104	Electrical Kitchen Demo Part Plan
ED201	Electrical Fire Alarm Cafeteria/Kitchen Demo Floor Plan
ED202	Electrical Fire Alarm Auditorium Demo Floor Plan
ED203	Electrical Fire Alarm Auditorium Balcony Demo Floor Plan

Audiovisual

AVD201	Audio Visual Cafeteria/Kitchen Demo Floor Plan
AVD202	Audio Visual Auditorium Demo Floor Plan
AVD203	Audio Visual Auditorium Balcony Demo Floor Plan

NOTE: Bidders shall check the attached documents with the above list to verify all parts are included before submitting a bid.

PART 1 SECTION 00020:

**CITY OF SOMERVILLE MASSACHUSETTS
INVITATION TO BID
SOMERVILLE HIGH SCHOOL
RENOVATIONS TO THE AUDITORIUM
SELECTIVE DEMOLITION
Bid No. IFB #14-54**

Enclosed you will find an invitation to bid for: **Somerville High School Renovations to the Auditorium, Selective Demolition package, 81 Highland Avenue, Somerville, MA 02143.**

Plans and specifications will be available online from the City's Purchasing Department web page: <http://www.somervillema.gov/departments/finance/purchasing/bids> and via email by request to amallen@somervillema.gov. Bid documents may be printed upon request upon deposit of \$ 50.00 for each set in the form of a check made payable to the City of Somerville. **The deposit will be refundable, upon return of the plans and specifications in good condition.** Any person requesting additional sets will be required to pay an additional fee, for each additional set, in the amount of \$ 50.00 per set. Bidders must allow up to three business days from time of request before printed documents will be available.

A Pre-Bid Conference and site visit, will be held on Thursday, January 30, 2014 at 10:00 AM, Somerville High School, 81 Highland Avenue Somerville, MA 02143. Participants shall convene at the main entrance at this address, located on the concourse.

File Sub-bids, no file sub-bids are required on this project.

Sealed general bids will be received at the Purchasing Department, 1st Floor, City Hall, 93 Highland Avenue, Somerville, MA 02143 until **Thursday, February 11, 2014 at 11:00 a.m.** at which time all general bids will be publicly opened and read aloud.

Please mark the outside of all sealed bid envelopes (for filed sub-bids and general bids) with the following: **"IFB #14-54."** **Filed sub-bidders shall also indicate on the envelope which trade(s) are included in the enclosed bid(s).**

BIDS SUBMITTED MUST BE AN ORIGINAL.

The completion of the forms provided and listed in Part 1, Section 3 is necessary for consideration of a potential contract award. When submitting bid documents, please refer to Part I, Section 3 where the Bidder's Checklist appears and retain the order of documents as originally provided.

All general bids and filed sub-bids shall be accompanied by a bid deposit in the form of a certified, cashier's or treasurer's check issued by a responsible bank or trust company made payable to the City of Somerville, or a bid bond, in an amount not less than five percent (5%) of the value of the bid. The City of Somerville's Responsible Employer Ordinance, and the Massachusetts Prevailing Wage Rates apply to this procurement.

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

CITY HALL HOURS: WE ARE OPEN MONDAY THROUGH WEDNESDAY, 8:30AM THROUGH 4:30PM, UNTIL 7:30 P.M. ON THURSDAYS, AND CLOSE ON FRIDAYS AT 12:30 P.M.

PART 1, SECTION 2:

INSTRUCTIONS TO BIDDERS

(Chapter 149M – Construction- Competitive Sealed Bids)

1. NAME OF PROJECT

Somerville High School Renovations to the Auditorium Selective Demolition

2. AWARDING AUTHORITY

The City of Somerville (City), acting by and through the Purchasing Department, invites sealed bids for the selective demolition of the existing auditorium and parts of the kitchen at the Somerville High School in accordance with the Contract Documents.

Contact:

Angela M. Allen
Director of Purchasing

Skip Bandini,
Director, Capital Projects & Planning

City of Somerville
93 Highland Avenue
Somerville, MA 02143
Phone (617) 625-6600 x3400

City of Somerville
One Franey Road
Somerville, MA 02145
Phone (617) 625-6600 x5123

3. ARCHITECT:

**CDR Maguire, Inc.
211 Congress Street, 11th Floor
Boston, MA 02110**

Contact: Fabrizio Caruso, Project Manager
Phone: (617) 778 - 1464
Fax: (617) 348 - 2413

4. LOCATION OF PROJECT

The location of the Somerville High School is at 81 Highland Avenue, Somerville, MA.

5. BRIEF DESCRIPTION OF WORK MORE PARTICULARLY DESCRIBED IN THE PLANS AND SPECIFICATIONS INCLUDED AS PART OF THIS BID PACKAGE.

The City seeks selective demolition for the interior finishes, electrical and mechanical systems of the Somerville High School Auditorium and parts of the kitchen. The project is located at 81 Highland Street, Somerville, MA 02143.

ESTIMATED CONSTRUCTION COST OF THE PROJECT

The estimated cost for the project is \$150,000

6. PROJECT SCHEDULE:

Demolition: February 24, 2014

Demolition Completion: March 21, 2014

Bidders are instructed to note the firmness of the dates of Final Completion. For the purpose of meeting these deadlines, the City may be prepared to authorize extended work hours beyond those prescribed by City ordinance, to include work on Sundays with the prior permission of the City.

Contractor submission of all paperwork required for the Construction Contract, including but not limited to insurance certificates, performance and payment bonds, a certificate of good standing from the Secretary of State, and four complete originals of the contract with wet-signed signature pages shall be submitted to the Purchasing Director no later than 5 working days from award of the contract.

The successful bidder shall be required to submit a preliminary construction schedule within 10 days of the established date of award of the Contract and a more detailed Gantt-type construction schedule within 15 days of the established award of the contract, which shows the dates of substantial and final completion.

7. GOVERNING LAW

Massachusetts General Laws, c. 149M.

8. SALES TAX EXEMPTION

Materials, equipment, and supplies for this project are exempt from sales tax in accordance with M.G.L. Chapter 64H, Section 6 (d). The city will furnish the successful bidder with its sales tax exemption number.

9. PERMIT FEES

Contractor is responsible for all permits. Fees for City of Somerville permits are waived.

10. MINIMUM BID CRITERIA

- All bidders must have been conducting business, in this specified field, for a minimum of five (5) years.
- All bidders must have successfully constructed a minimum of three projects similar in magnitude within the last six (6) years.
- All bidders must be DCAMM certified for general construction.

11. PRE-BID CONFERENCE QUESTIONS AND INFORMATION

A Pre-Bid Conference and site visit, will be held on Thursday, January 30 at 10:00 a.m., Somerville High School, 81 Highland Avenue, Somerville MA 02143.

All questions regarding the project and this Invitation to Bid should be in writing, submitted to Angela M. Allen, Purchasing Director, Purchasing Department, Somerville City Hall, First Floor, 93 Highland Avenue, Somerville, Massachusetts, 02143. Questions may be submitted either by mail, or email to amallen@somervillema.gov.

Questions must be submitted in writing **by 10:00 a.m., Thursday, January 31**, and they will be answered in writing to all holders of the bid proposals. Bidders must submit e-mail address (preferred) or a fax number with their inquiries. If any bidders contact any other person or department outside of Purchasing with inquiries, they may be disqualified from the bidding process.

Key Dates

Pre-bid Conference	10:00 a.m.	January 30, 2014
Deadline for Questions	10:00 a.m.	January 31, 2014
General Bids Due and Opened	11:00 a.m.	February 11, 2014
Anticipated Contract Award		February 18, 2014
Anticipated Notice to Proceed		February 19, 2014
Commencement of Work		February 24, 2014
Project Completion		March 21, 2014

12. BID SUBMISSION TIME AND PLACE OF BID OPENING

Sealed bids (clearly identified as a bid and endorsed with the name and address of the bidder) must be received **no later than 11:00 a.m.** by the Purchasing Department, first floor, City Hall, 93 Highland Avenue, Somerville, MA, 02143 on or before **February 11, 2014**, at which time they will be publicly opened and read aloud. In the event City Hall is closed, the deadline shall be 11:00 a.m. on the next day City Hall is open for business.

ADDITIONAL REQUIREMENTS: PLEASE READ CAREFULLY, FAILURE TO MEET THESE REQUIREMENTS COULD RESULT IN REJECTION OF A BID.

13. BID SUBMISSION REQUIREMENTS

Bid Signature

A bid must be signed as follows: 1) if the bidder is an individual, by her/him personally; 2) if the bidder is a partnership, by the name of the partnership, followed by the signature of each general partner; and 3) if the bidder is a corporation or limited liability company (LLC), by the authorized officer, whose signature must be a person named on the Corporate Secretary's

Certificate of Authority or Certificate of Authority for an LLC (see required forms in this bid package).

Changes and Addenda

If any changes are made to this IFB, an addendum will be issued. Addenda will be posted on the city's purchasing web-page (<http://www.somervillema.gov/departments/finance/purchasing/bids>) e-mailed to all bidders on record as having picked up the IFB. No changes may be made to the bid documents, except as authorized in an addendum from the Purchasing Department.

Modification or Withdrawal of Bids, Mistakes, and Minor Informalities

A bidder may correct, modify, or withdraw a bid by written notice received by the City of Somerville prior to the time and date set for the bid opening. Bid modifications must be submitted in a sealed envelope clearly labeled "Modification No.____" to the address listed in part one of this section. Each modification must be numbered in sequence, and must reference the original IFB.

After the bid opening, a bidder may not change any provision of the bid in a manner prejudicial to the interests of the City or fair competition. Minor informalities will be waived or the bidder will be allowed to correct them. If a mistake and the intended correct bid are clearly evident on the face of the bid document, the mistake will be corrected to reflect the intended correct bid, and the bidder will be notified in writing; the bidder may not withdraw the bid. A bidder may withdraw a bid if a mistake is clearly evident on the face of the bid document, but the intended correct bid is not similarly evident.

Right to Cancel/Reject Bids

The City of Somerville may cancel this IFB, or reject in whole or in part any and all bids, if the City determines that cancellation or rejection serves the best interests of the City.

Bid Prices to Remain Firm

All bid prices submitted in response to this IFB must remain firm for 60 days following the bid opening.

Unbalanced Bids

The City reserves the right to reject unbalanced, front loaded, and conditional bids.

Documents to be Submitted as part of Bid:

The following documents must be submitted with the complete signed bid package:

Bid Submission Documents (Section 003000)

Form for General Bid (Section 003050)

Living Wage Form (Section 003200)

Responsible Employer Ordinance (Section 003250)

Acknowledgement of Notice to Bidders (Section 003300)

Quality Requirements Form (Section 003350)

Certificate of Non-Collusion and Tax Compliance (Section 003400)

Certificate of Signature Authority (Section 003500)

Signature Form (Section 003600)

Reference Form (Section 003700)

Schedule of Values. Bidders do not need to include a Schedule of Values with their bid package. The successful bidder will be required to submit a refined and detailed schedule of values for review and approval by the design professional prior to signing the construction contract.

5% Statutory Bid Guaranty. All bids shall be accompanied by a bid bond or bank certified check or bank treasurer's check in the amount of 5% of the bid price, which shall become the property of the City of Somerville if the bid is accepted and the bidder neglects or refuses to comply with the terms of the bid.

For successful bidder: Certificate of Good Standing: If the bidder is a corporation, a Certificate of Good Standing should accompany the signed contract. Certificate available online at: http://corp.sec.state.ma.us/corp/Certificates/Certificate_Request.asp or call Tel: (617) 727-9640 for more information.

QUALITY REQUIREMENTS

Please respond to the following questions. A negative response to any of the first four questions will automatically disqualify the Bidder. A negative response to the final question about SOMWBA will not disqualify the Bidder.

	Yes	No
Has the contractor been established in this specified field for at least 5 years?		
Has the contractor successfully completed a minimum of three (3) similar projects within the past six (6) years?		

Can the contractor certify that all employees to be provided have successfully completed at least 10 hours of OSHA approved training in Construction Safety and Health?		
Is the General Contractor DCAMM Certified?		
Optional: Vendor: Are you a State Office for Minority and Women Owned Business Assistance (SOMWBA) certified minority- or woman- owned business?		

14. APPLICABLE WAGE RATES:

The contractor shall pay State prevailing wage rates. The applicable wage rates are attached as part of this bid package and will be included as Appendix J in the contract. A signed Compliance Form must be included with the bid package, Form included.

15. SAMPLE CONSTRUCTION CONTRACT

The successful bidder shall execute with the City of Somerville a Contract ("Contract") in substantially the same form as the sample contract included in this bid package. In addition to the items submitted with the bid, the contract includes certain other documents which may be executed by the Bidder selected as contractor and which are included as Appendices to the Sample Construction Contract (see Part 2) include:

Certificate of Authority (for corporations and LLC's if the contract is signed by other than the President, there must be a current Certificate of Vote signed by the corporate clerk or secretary stating who is authorized to sign contracts on the Corporations or LLC's behalf)

Appendix D: Insurance Certificates– evidencing minimum coverage as follows:

General Liability - \$1,000,000 per occurrence, \$2,000,000 aggregate

Automobile Liability: \$500,000 per occurrence, \$1,000,000 aggregate

Workman's Compensation: statutory coverage

Appendix F: Certificate of Good Standing: Certificate available online at http://corp.sec.state.ma.us/corp/Certificates/Certificate_Request.asp or call Tel: (617) 727-9640 for more information.

Appendix H: Statement of Management (for contracts over \$100,000.00)

Appendix I: Performance and Payment Bonds for 100% of the contract sum

All paperwork required for the contract shall be completed and delivered to the Purchasing Department no later than five (5) working days after the Award of the Contract.

ITEMS OF SPECIAL CONSIDERATION

The Contractor's attention is specifically drawn to the following items of special consideration relative to this project, most of which are also addressed in the Technical Specifications.

- a. The Contractor must provide police details at the Contractor's expense.
- b. The Contractor must obtain all permits as necessary.

19. RESERVATION OF RIGHTS

The City reserves the right to extend the deadline for submission of bids, to request supplemental information, to waive minor informalities, and reserves the right to reject any and all bids, if in its sole judgment, the best interests of the City of Somerville would be served by doing so.

20. RULE FOR AWARD

A contract will be awarded to the lowest responsible and eligible bidder. All required bid documents must be provided to be deemed responsive and eligible.

PART 1 SECTION 3

Somerville High School Renovations to the Auditorium, Selective Demolition (IFB # 14-54)

BID SUBMISSION DOCUMENTS

BIDDERS NAME: _____

This Bid Submission includes the following:

- ____ Form for General Bid
- ____ Unit Price Proposal Form
- ____ Quality Requirements
- ____ Somerville Living Wage Form
- ____ Responsible Employer Ordinance Form
- ____ Acknowledgement of Notice to Bidders
- ____ Certificate of Non-Collusion and Tax Compliance
- ____ Certificate of Signature Authority
- ____ Signature Form
- ____ Reference Form
- ____ 5% Statutory Bid Bond or Guaranty
- ____ Prevailing Wage Compliance Form
- ____ DCAMM Certificate of Eligibility and Update Statement

**Part 1 Section 003050: FORM FOR GENERAL BID
FOR CONSTRUCTION CONTRACT**

To the Awarding Authority:

- A. The undersigned proposes to furnish all labor and materials required for:

Somerville High School Renovations to the Auditorium Selective Demolition

in accordance with the accompanying plans and specifications prepared by

**CDR Maguire, Inc.
211 Congress Street, 11th Floor
Boston, MA 02110**

Contact: Fabrizio Caruso, Project Manager
Phone: (617) 778 - 1440
Fax: (617) 348 - 2143

specified below, subject to additions and deductions according to the terms of the specifications.

- B. This bid includes addenda #1_____, #2 _____, #3 _____, #4 _____.

- C. The proposed contract price is:

\$_____.

(total bid in figures)

_____DOLLARS

(total bid in words)

- D. While the proposed contract price does not include the items listed on the attached "Bid Form for Alternates," the bidder understands that the project construction cost estimate provided by the city is inclusive of all the work described in this form.
- E. The Undersigned Bidder agrees that, if it is selected as general contractor, it will within five working days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid, including furnishing a 100% performance bond and a

100% labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price; and, in addition, furnishing a certificate of good standing and insurance certificates as required by the bid documents.

- F. The Undersigned Bidder hereby certifies that it is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Project and that it will comply fully with all laws and regulations applicable to this Award, including applicable provisions of MGL Chapter 30, ss. 39M et seq.
- G. The Undersigned Bidder further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.
- H. The Undersigned Bidder certifies under the penalties of perjury that:
- (1) Pursuant to M.G.L. c. 62C, §49A, to the best of the signatories knowledge and belief, that the Undersigned Bidder is in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support, as well as paid all contributions and payments in lieu of contributions pursuant to MGL 151A, §19A(b), and
- (2) the Federal Employer Identification Number (EIN) of the Bidder is # _____, and that it is in compliance with all federal, state, and local laws regarding taxation.
- I. The Undersigned Bidder certifies under penalties of perjury that the Bidder is not presently debarred from doing federal or state public construction work, that the Bidder has not had its low bid rejected by any municipality in the previous two years, except _____
in which case the reasons for rejection were as follows: _____
- J. The Undersigned Bidder has submitted the information on the Reference Form:
- o (00370-1), requesting three references for municipal park projects completed during the previous six (6) years. The Undersigned Bidder understands that the contractor and subcontractors will be required to pay prevailing wages to laborers and mechanics, and that if the Undersigned's bid is significantly below the

average bid, the Awarding Authority may require the Bidder to substantiate that the bid is based on payment of wages at prevailing rates.

M. The Undersigned Bidder certifies that it can achieve Final Completion by: March 14, 2014

N. Unit Price Form

1. Should certain additional work be required, or should the quantities of certain classes of work be increased or decreased from those required by the Contract Documents, by authorization of the City, unit prices listed on the attached "Unit Price Form" shall at the option of the City be the basis of payment to the Contractor or credit to the City, for such increase or decrease in the work. The unit prices shall represent the exact net amount per unit to be paid the Contractor (in the case of addition or increase) or to be refunded the City (in the case of decrease). Contractually noted adjustments will be allowed for overhead, profit, insurance or other direct or indirect expenses of the Contractor or Subcontractors.
2. The unit prices shall include cost of fuel, all labor, materials, equipment, overhead, profit, insurance, etc. to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the provisions of the General Conditions governing changes in the work.

Executed this _____ day of _____ 20_____ .

On behalf of :

(Undersigned Bidder Business Name)

(Business Address) and (Telephone)

By:

(Name and Address of Person Signing Bid)

(Title of Person Signing bid)



SOMERVILLE LIVING WAGE ORDINANCE CERTIFICATION FORM
CITY OF SOMERVILLE CODE OF ORDINANCES SECTION 2-397 et seq¹.

Instructions: This form shall be included in all Invitations for Bids and Requests for Proposals which involve the furnishing of labor, time or effort (with no end product other than reports) by vendors contracting or subcontracting with the City of Somerville, where the contract price meets or exceeds the following dollar threshold: **\$10,000**. If the undersigned is selected, this form will be attached to the contract or subcontract and the certifications made herein shall be incorporated as part of such contract or subcontract. **Complete this form and sign and date where indicated below on page 2.**

Purpose: The purpose of this form is to ensure that such vendors pay a "Living Wage" (defined below) to all covered employees (i.e., all employees except individuals in a city, state or federally funded youth program). In the case of bids, the City will award the contract to the lowest responsive and responsible bidder paying a Living Wage. In the case of RFP's, the City will select the most advantageous proposal from a responsive and responsible offeror paying a Living Wage. In neither case, however, shall the City be under any obligation to select a bid or proposal that exceeds the funds available for the contract.

Definition of "Living Wage": For this contract or subcontract, as of 7/1/2013 "Living Wage" shall be deemed to be an hourly wage of no less than **\$11.89** per hour. From time to time, the Living Wage may be upwardly adjusted and amendments, if any, to the contract or subcontract may require the payment of a higher hourly rate if a higher rate is then in effect.

CERTIFICATIONS

1. The undersigned shall pay no less than the Living Wage to all covered employees who directly expend their time on the contract or subcontract with the City of Somerville.
2. The undersigned shall post a notice, (copy enclosed), to be furnished by the contracting City Department, informing covered employees of the protections and obligations provided for in the Somerville Living Wage Ordinance, and that for assistance and information, including copies of the Ordinance, employees should contact the contracting City Department. Such notice shall be posted in each location where services are performed by covered employees, in a conspicuous place where notices to employees are customarily posted.

¹Copies of the Ordinance are available upon request to the Purchasing Department.

3. The undersigned shall maintain payrolls for all covered employees and basic records relating hereto and shall preserve them for a period of three years. The records shall contain the name and address of each employee, the number of hours worked, the gross wages, a copy of the social security returns, and evidence of payment thereof and such other data as may be required by the contracting City Department from time to time.
4. The undersigned shall submit payroll records to the City upon request and, if the City receives information of possible noncompliance with the provisions the Somerville Living Wage Ordinance, the undersigned shall permit City representatives to observe work being performed at the work site, to interview employees, and to examine the books and records relating to the payrolls being investigated to determine payment of wages.
5. The undersigned shall not fund wage increases required by the Somerville Living Wage Ordinance by reducing the health insurance benefits of any of its employees.
6. The undersigned agrees that the penalties and relief set forth in the Somerville Living Wage Ordinance shall be in addition to the rights and remedies set forth in the contract and/or subcontract.

CERTIFIED BY:

Signature: _____
(Duly Authorized Representative of Vendor)

Title: _____

Name of Vendor: _____

Date: _____

INSTRUCTIONS: PLEASE POST

**NOTICE TO ALL EMPLOYEES
REGARDING PAYMENT OF LIVING WAGE**

Under the Somerville, Massachusetts' Living Wage Ordinance (Ordinance No. 1999-1), any person or entity who has entered into a contract with the City of Somerville is required to pay its employees who are involved in providing services to the City of Somerville no less than a "Living Wage".

The Living Wage as of 7/1/2013 is **\$11.89** per hour. The only employees who are not covered by the Living Wage Ordinance are individuals in a Youth Program. "Youth Program" as defined in the Ordinance, "means any city, state or federally funded program which employs youth, as defined by city, state or federal guidelines, during the summer, or as part of a school to work program, or in any other related seasonal or part-time program."

For assistance and information regarding the protections and obligations provided for in the Living Wage Ordinance and/or a copy of the Living Wage Ordinance, all employees should contact the City of Somerville's Purchasing Department directly

**CITY OF SOMERVILLE
ORDINANCE NO. 2008-08
IN THE BOARD OF ALDERMEN: June 12, 2008**

Be it ordained by the Board of Aldermen, in session assembled, that the Code of Ordinances of the City of Somerville, is hereby amended by adding a new Section 2-355 as follows:

Sec. 2-355. Responsible Employer Ordinance.

(a) The Board of Aldermen hereby finds and determines that the failure of certain construction firms awarded contracts funded by the City to include and enforce provisions requiring compliance with state laws governing the payment of prevailing wages, the provision of workers compensation coverage, and the proper classification of individuals as employees and not as independent contractors, as well as provisions concerning health insurance coverage and state-certified apprenticeship programs, is injurious to the life, health and happiness of individuals employed by such firms and is deleterious to the quality of life in the City where most of such individuals reside.

(b) Every contract awarded by the City under G. L. c. 149, § 44A (2) where the amount of the contract is more than one-hundred thousand dollars, and any subcontract awarded in connection with any such general contract where the amount of such subcontract is more than twenty-five thousand dollars, shall be deemed to incorporate by reference the provisions of sub-parts (1) through (5) of this subsection together with the provisions of subsections (c), (d) and (e) of this section.

1. The bidder and all subcontractors under the bidder shall comply with the requirements of G. L. c. 149 concerning the payment of prevailing wage rates to their employees;
2. The bidder and all subcontractors under the bidder must maintain and participate in a bona fide apprentice training program as defined by G. L. c. 23, §§ 11H & 11I for each apprenticeable trade or occupation represented in its workforce that is approved by the division of apprentice training of the department of labor and workforce development of the Commonwealth and must abide by the apprentice to journeymen ratio for each trade prescribed therein in the performance of the contract;
3. The bidder and all subcontractors under the bidder must offer, at its expense, hospitalization and medical benefits for all individuals employed on the project or coverage which is comparable to the hospitalization and medical benefits provided by the health and welfare plans in the applicable craft recognized by G. L. c. 149, § 26, in establishing minimum wage rates. All such plans shall meet or exceed state requirements for such plans.
4. The bidder and all subcontractors under the bidder must maintain appropriate industrial accident insurance coverage in accordance with G. L. c. 152 for all individuals employed on the project;
5. The bidder and all subcontractors under the bidder must properly classify individuals employed on the project as employees rather than independent contractors and comply with all laws concerning workers' compensation insurance coverage, unemployment taxes, social security taxes and income taxes as respects all such employees.

(c) All bidders and all subcontractors under such bidders who are awarded, or otherwise obtain, contracts from the city on projects governed by G. L. c. 149, § 44A (2), shall comply with the obligations described in sub-parts (1) through (5) of subsection (b) of this section for the entire duration of their work on the project, and an officer of each such bidder or subcontractor under the bidder shall certify under oath and in writing on a weekly basis that they are in compliance with these obligations.

(d) Any bidder or subcontractor under the bidder who fails to comply with any of the obligations described in sub-parts (1) through (5) of subsection (b) of this section for any period of time, or fails to comply with the weekly certification obligations described in subsection (c) of this subsection shall be subject to any or all of the following sanctions:

1. temporary suspension of work on the project until compliance is obtained; or,
2. withholding by the City of payment due under the contract until compliance is obtained; or,
3. permanent removal from any further work on the project; or,
4. recovery by the city from the general contractor of 1/10 of 1% of the general contract or \$ 1,000.00, whichever sum is greater, in the nature of liquidated damages assessed for each week that the general contractor is in non-compliance or, if a subcontractor is in non-compliance, the recovery by the city from the general contractor as a back charge against the subcontractor of 1/10 of 1% of the subcontract price, or \$ 400.00, whichever sum is greater, in the nature of liquidated damages assessed for each week that the subcontractor is in non-compliance.

(e) In addition to these sanctions a general bidder or contractor shall be equally liable for any violation of the obligations described in sub-parts (1) through (5) of subsection (b) of this section committed by any of its subcontractors or sub bidders, excepting only those violations which arise from work performed by subcontractors with subcontracts governed by G. L. c. 149, § 44F. Any contractor or subcontractor who has been determined to have violated any of the provisions of subsections (b) or (c) of this section shall be barred from performing any work on any future contracts awarded by the City for six months for the first violation, three years for the second violation, and permanently for a third violation.

(f) The provisions of this section shall not apply to construction projects for which the low general bid was less than one-hundred thousand dollars, or to work performed pursuant to subcontracts governed by G. L. 149, § 44F where the bid for such subcontract was less than twenty-five thousand dollars.

Receipt Acknowledged _____ day of _____, 20____.

Name of Vendor

By: _____
Name

Its: _____
Title

Signature

CITY OF SOMERVILLE Responsible Employer Ordinance

WEEKLY COMPLIANCE FORM

In accordance with the Code of Ordinances of the City of Somerville, Section 2-355, all general contractors and all subcontractors under such general contractors who are awarded, or otherwise obtain, contracts from the city on projects governed by G. L. c. 149, § 44A (2), shall comply with the obligations described in sub-parts (1) through (5) of subsection (b) of this section for the entire duration of their work on the project, and an officer of each such general contractor or subcontractor under the general contractor where the amount of such subcontract is more than \$25,000.00, shall certify under oath and in writing on a weekly basis that they are in compliance with these obligations.

NOTICE TO BIDDERS
IFB #14-54

All bids must be in accordance with terms and conditions set forth herein as stated.

- SECTION A. **Sealed general bids** will be received at the office of the Purchasing Director, Somerville High School, 81 Highland Avenue, Somerville, MA. 02143 no later than **February 11, 2014 at 11:00 a.m.** at which time and place they will be publicly opened and read.
- A Pre-Bid Conference and site visit, will be held on January 30, 2014 at 11:00 a.m., Somerville High School, 81 Highland Avenue, Somerville, MA 02143.**
- SECTION B. Forms of price bid, specifications and terms of contract can be obtained at the Purchasing Department office on or after **January 28, 2014.**
- SECTION C. Bid envelopes shall be clearly marked as follows: "**IFB #14-54, Bid for Somerville High School Renovations to the Auditorium Selective Demolition.**"
- SECTION D. If **awarded** vendor is a Corporation, vendor must comply with request for "Certificate of Good Standing". See attached instructions.
- SECTION E. **INSURANCE: Awarded Vendor** must comply with insurance requirements as stated in the bid package.
- SECTION F. Living Wage - see Somerville Living Wage Form (00320)
 Prevailing Wage Rates
 Responsible Employer Ordinance
- SECTION G. The requirements in Section **E or F** will be waived if the words "Non-Applicable" (**N/A**) are inserted in the space designated.
- SECTION H. The copy of the bid deposited with the City will be accompanied by a bid guarantee in the amount of 5% of the proposed bid amount. The estimated contract amount is \$150,000.00. A Bid bond, Certified Check, Treasurer's Check, or Cashier's Check made payable to the City must be submitted with each bid. Said bid guarantee will become the property of the City of Somerville if the proposal is accepted and the bidder either neglects or refuses to comply with the terms of the proposal. Bid guarantee will be returned within 30 days to all unsuccessful bidders.
- SECTION I. A Performance Bond and a Labor and Materials Bond in the amount of 100% of the total contract price will be required by the City.

- SECTION J. The Purchasing Director reserves the right to accept or reject any or all bids, to waive any minor informalities, if in her sole judgment, the best interest of the City of Somerville would be served by so doing.
- SECTION K. The City reserves the right to cancel a contract, if awarded bidder does not respond to all necessary documents and required signature forms within ten (10) working days of receipt of contract.
- SECTION L. The Vendor must certify that all employees to be provided have successfully completed at least ten (10) hours of OSHA approved training in Construction Safety and Health.

Signature: _____

Company: _____

By: _____ Title: _____

Date: _____ Tel. No: _____ Fax: _____

Applicable to Corporations:

I hereby attest that the signatory to this bid has the authority to sign and submit bids for the Corporation.

ATTEST: _____
Secretary



Non-Collusion Form and Tax Compliance Certification

Instructions: Complete each part of this two-part form and sign and date where indicated below.

A. NON-COLLUSION FORM

I, the undersigned, hereby certify under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person.

As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Signature: _____
(Individual Submitted Bid or Proposal)
Duly Authorized

Name of Business or Entity: _____

Date: _____

B. TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, §49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support, as well as paid all contributions and payments in lieu of contributions pursuant to MGL 151A, §19A(b).

Signature: _____
(Duly Authorized Representative of Vendor)

Name of Business or Entity: _____

Social Security Number or Federal Tax ID#: _____

Date: _____



Certificate of Authority (Corporations Only)

Instructions: Complete this form and sign and date where indicated below.

1. I hereby certify that I, the undersigned, am the duly elected Clerk/Secretary of

(Insert Full Name of Corporation)

2. I hereby certify that the following individual _____
(Insert the Name of Officer who Signed the Contract and Bonds)

is the duly elected _____ of said Corporation.
(Insert the Title of the Officer in Line 2)

3. I hereby certify that on _____
(Insert Date: Must be on or before Date Officer Signed Contract/Bonds)

at a duly authorized meeting of the Board of Directors of said corporation, at which a quorum was present, it was voted that

(Insert Name of Officer from Line 2) (Insert Title of Officer from Line 2)

of this corporation be and hereby is authorized to make, enter into, execute, and deliver contracts and bonds in the name and on behalf of said corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this corporation's name and on its behalf, with or without the Corporate Seal, shall be valid and binding upon this corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

4. **ATTEST:**

Signature: _____
(Clerk or Secretary)

AFFIX CORPORATE SEAL HERE

Printed Name: _____

Printed Title: _____

Date: _____

(Date Must Be on or after Date Officer Signed Contract/Bonds)



Certificate of Authority (Limited Liability Companies Only)

Instructions: Complete this form and sign and date where indicated below.

1. I, the undersigned, being a member or manager of

_____,
(Complete Name of Limited Liability Company)

a limited liability company (LLC) hereby certify as to the contents of this form for the purpose of contracting with the City of Somerville.

2. The LLC is organized under the laws of the state of: _____.

3. The LLC is managed by **(check one)** a Manager or by its Members.

4. I hereby certify that each of the following individual(s) is:

- a member/manager of the LLC;
- duly authorized to execute and deliver this contract, agreement, and/or other legally binding documents relating to any contract and/or agreement on behalf of the LLC;
- duly authorized to do and perform all acts and things necessary or appropriate to carry out the terms of this contract or agreement on behalf of the LLC; and
- that no resolution, vote, or other document or action is necessary to establish such authority.

<u>Name</u>	<u>Title</u>

5. **Signature:** _____

Printed Name: _____

Printed Title: _____

Date: _____

CITY OF SOMERVILLE
SIGNATURE FORM

NAME OF COMPANY: _____

ADDRESS: _____

TELEPHONE #: _____ FAX #: _____

DATE: _____ EMAIL: _____

SIGNATURE OF AUTHORIZED CONTRACTING OFFICIAL:

TITLE: _____

RESIDENCE: _____

IF COMPANY IS A PARTNERSHIP:

FULL NAME AND RESIDENCE OF EACH PARTNER:

IF COMPANY IS A CORPORATION:

THE CORPORATE NAME IS: _____

THE CORPORATION IS ORGANIZED UNDER THE LAWS OF: _____

THE PRESIDENT IS: _____

THE TREASURER IS: _____

THE CLERK/SECRETARY OR ASSISTANT CLERK/SECRETARY WHO WILL EXECUTE THE
CONTRACT AND SIGN THE CERTIFICATE OF AUTHORITY IS:

NAME OF CORPORATION THAT WILL APPEAR ON A POTENTIAL CONTRACTUAL
AGREEMENT IF DIFFERENT FROM ABOVE: _____.

NAME AND TITLE OF PERSON WHO WILL BE THE PRINCIPAL SIGNATORY ON THE
CONTRACT IF OTHER THAN THE PRESIDENT:

NAME: _____ TITLE: _____

REFERENCE FORM

Bidder:_____

IFB Title: **Somerville High School Renovations to the Auditorium Selective Demolition.**

Bidder must provide references from three municipalities for similar projects completed during the previous six (6) years.

Reference:_____ Contact:_____

Address:_____ Phone:_____

_____ Fax:_____

Description and date(s) of supplies or services provided:_____

Reference:_____ Contact:_____

Address:_____ Phone:_____

_____ Fax:_____

Description and date(s) of supplies or services provided:_____

Reference:_____ Contact:_____

Address:_____ Phone:_____

_____ Fax:_____

Description and date(s) of supplies or services provided:_____

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

BID BOND OR GUARANTY

BIDDER TO INSERT HERE

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

Division of Labor and Industries Wage Rates



DEVAL L. PATRICK
Governor

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

**As determined by the Director under the provisions of the
Massachusetts General Laws, Chapter 149, Sections 26 to 27H**

JOANNE F. GOLDSTEIN
Secretary
HEATHER E. ROWE
Director

Awarding Authority: City of Somerville
Contract Number: **City/Town:** SOMERVILLE
Description of Work: Somerville High School Auditorium & Kitchen Repair - Selective demolition of the auditorium and kitchen that were severely damaged in a storm.
Job Location: 81 Highland Avenue, Somerville, MA

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
- Awarding authorities must request an updated wage schedule from the Department of Labor Standards (“DLS”) if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. Once a contractor has been selected by the awarding authority, the wage schedule shall be made a part of the contract for that project. The wage schedule must be posted in a conspicuous place at the work site during the life of the project in accordance with M.G.L. c. 149, § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project regardless of whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Training (DAT). Apprentices must keep his/her apprentice identification [card](#) on his/her person during all work hours on the project. If an apprentice rate is listed on the prevailing wage schedule for the trade in which an apprentice is registered with the DAT, the apprentice may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **If an apprentice rate is not listed on the prevailing wage schedule for the trade in which an apprentice is registered with the DAT, the apprentice must be paid the journeyworker’s rate for the trade.**
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports directly to the awarding authority and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2013	\$32.05	\$9.41	\$8.80	\$0.00	\$50.26
	06/01/2014	\$32.40	\$9.41	\$8.80	\$0.00	\$50.61
	08/01/2014	\$32.40	\$9.91	\$8.80	\$0.00	\$51.11
	12/01/2014	\$32.40	\$9.91	\$9.33	\$0.00	\$51.64
	06/01/2015	\$32.75	\$9.91	\$9.33	\$0.00	\$51.99
	08/01/2015	\$32.75	\$10.41	\$9.33	\$0.00	\$52.49
	12/01/2015	\$32.75	\$10.41	\$10.08	\$0.00	\$53.24
	06/01/2016	\$33.25	\$10.41	\$10.08	\$0.00	\$53.74
	08/01/2016	\$33.25	\$10.91	\$10.08	\$0.00	\$54.24
	12/01/2016	\$33.25	\$10.91	\$10.89	\$0.00	\$55.05
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2013	\$32.12	\$9.41	\$8.80	\$0.00	\$50.33
	06/01/2014	\$32.47	\$9.41	\$8.80	\$0.00	\$50.68
	08/01/2014	\$32.47	\$9.91	\$8.80	\$0.00	\$51.18
	12/01/2014	\$32.47	\$9.91	\$9.33	\$0.00	\$51.71
	06/01/2015	\$32.82	\$9.91	\$9.33	\$0.00	\$52.06
	08/01/2015	\$32.82	\$10.41	\$9.33	\$0.00	\$52.56
	12/01/2015	\$32.82	\$10.41	\$10.08	\$0.00	\$53.31
	06/01/2016	\$33.32	\$10.41	\$10.08	\$0.00	\$53.81
	08/01/2016	\$33.32	\$10.91	\$10.08	\$0.00	\$54.31
	12/01/2016	\$33.32	\$10.91	\$10.89	\$0.00	\$55.12
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2013	\$32.24	\$9.41	\$8.80	\$0.00	\$50.45
	06/01/2014	\$32.59	\$9.41	\$8.80	\$0.00	\$50.80
	08/01/2014	\$32.59	\$9.91	\$8.80	\$0.00	\$51.30
	12/01/2014	\$32.59	\$9.91	\$9.33	\$0.00	\$51.83
	06/01/2015	\$32.94	\$9.91	\$9.33	\$0.00	\$52.18
	08/01/2015	\$32.94	\$10.41	\$9.33	\$0.00	\$52.68
	12/01/2015	\$32.94	\$10.41	\$10.08	\$0.00	\$53.43
	06/01/2016	\$33.44	\$10.41	\$10.08	\$0.00	\$53.93
	08/01/2016	\$33.44	\$10.91	\$10.08	\$0.00	\$54.43
	12/01/2016	\$33.44	\$10.91	\$10.89	\$0.00	\$55.24
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2013	\$84.21	\$9.80	\$18.17	\$0.00	\$112.18
	08/01/2014	\$87.36	\$9.80	\$18.17	\$0.00	\$115.33
	08/01/2015	\$90.51	\$9.80	\$18.17	\$0.00	\$118.48
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2013	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
	06/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
	12/01/2014	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
	06/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
	12/01/2015	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
	06/01/2016	\$37.85	\$7.30	\$12.70	\$0.00	\$57.85
	12/01/2016	\$38.85	\$7.30	\$12.70	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2013	\$30.68	\$10.40	\$5.95	\$0.00	\$47.03
	06/01/2014	\$31.58	\$10.40	\$5.95	\$0.00	\$47.93
	12/01/2014	\$32.48	\$10.40	\$5.95	\$0.00	\$48.83
	06/01/2015	\$33.43	\$10.40	\$5.95	\$0.00	\$49.78
	12/01/2015	\$34.38	\$10.40	\$5.95	\$0.00	\$50.73
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
	For apprentice rates see "Apprentice- OPERATING ENGINEERS"					
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
	For apprentice rates see "Apprentice- OPERATING ENGINEERS"					
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2013	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
	06/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
	12/01/2014	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
	06/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
	12/01/2015	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
	06/01/2016	\$37.85	\$7.30	\$12.70	\$0.00	\$57.85
	12/01/2016	\$38.85	\$7.30	\$12.70	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2010	\$37.70	\$6.97	\$11.18	\$0.00	\$55.85

Classification

**Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate**

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2010

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
2	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
3	70	\$26.39	\$6.97	\$11.18	\$0.00	\$44.54
4	75	\$28.28	\$6.97	\$11.18	\$0.00	\$46.43
5	80	\$30.16	\$6.97	\$11.18	\$0.00	\$48.31
6	85	\$32.05	\$6.97	\$11.18	\$0.00	\$50.20
7	90	\$33.93	\$6.97	\$11.18	\$0.00	\$52.08
8	95	\$35.82	\$6.97	\$11.18	\$0.00	\$53.97

Notes:

Apprentice to Journeyworker Ratio:1:5

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	08/01/2013	\$48.06	\$10.18	\$18.15	\$0.00	\$76.39
BRICKLAYERS LOCAL 3 (BOSTON)	02/01/2014	\$48.06	\$10.18	\$18.15	\$0.00	\$76.39
	08/01/2014	\$48.96	\$10.18	\$18.22	\$0.00	\$77.36
	02/01/2015	\$49.52	\$10.18	\$18.22	\$0.00	\$77.92
	08/01/2015	\$50.42	\$10.18	\$18.29	\$0.00	\$78.89
	02/01/2016	\$50.99	\$10.18	\$18.29	\$0.00	\$79.46
	08/01/2016	\$51.89	\$10.18	\$18.37	\$0.00	\$80.44
	02/01/2017	\$52.46	\$10.18	\$18.37	\$0.00	\$81.01

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Boston
Effective Date - 08/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.03	\$10.18	\$18.15	\$0.00	\$52.36
2	60	\$28.84	\$10.18	\$18.15	\$0.00	\$57.17
3	70	\$33.64	\$10.18	\$18.15	\$0.00	\$61.97
4	80	\$38.45	\$10.18	\$18.15	\$0.00	\$66.78
5	90	\$43.25	\$10.18	\$18.15	\$0.00	\$71.58

Effective Date - 02/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.03	\$10.18	\$18.15	\$0.00	\$52.36
2	60	\$28.84	\$10.18	\$18.15	\$0.00	\$57.17
3	70	\$33.64	\$10.18	\$18.15	\$0.00	\$61.97
4	80	\$38.45	\$10.18	\$18.15	\$0.00	\$66.78
5	90	\$43.25	\$10.18	\$18.15	\$0.00	\$71.58

Notes:
Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2013	\$34.45	\$7.30	\$12.90	\$0.00	\$54.65
	06/01/2014	\$35.20	\$7.30	\$12.90	\$0.00	\$55.40
	12/01/2014	\$35.95	\$7.30	\$12.90	\$0.00	\$56.15
	06/01/2015	\$36.70	\$7.30	\$12.90	\$0.00	\$56.90
	12/01/2015	\$37.45	\$7.30	\$12.90	\$0.00	\$57.65
	06/01/2016	\$38.20	\$7.30	\$12.90	\$0.00	\$58.40
	12/01/2016	\$39.20	\$7.30	\$12.90	\$0.00	\$59.40
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2013	\$33.30	\$7.30	\$12.90	\$0.00	\$53.50
	06/01/2014	\$34.05	\$7.30	\$12.90	\$0.00	\$54.25
	12/01/2014	\$34.80	\$7.30	\$12.90	\$0.00	\$55.00
	06/01/2015	\$35.55	\$7.30	\$12.90	\$0.00	\$55.75
	12/01/2015	\$36.30	\$7.30	\$12.90	\$0.00	\$56.50
	06/01/2016	\$37.05	\$7.30	\$12.90	\$0.00	\$57.25
	12/01/2016	\$38.05	\$7.30	\$12.90	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2013	\$33.30	\$7.30	\$12.90	\$0.00	\$53.50
	06/01/2014	\$34.05	\$7.30	\$12.90	\$0.00	\$54.25
	12/01/2014	\$34.80	\$7.30	\$12.90	\$0.00	\$55.00
	06/01/2015	\$35.55	\$7.30	\$12.90	\$0.00	\$55.75
	12/01/2015	\$36.30	\$7.30	\$12.90	\$0.00	\$56.50
	06/01/2016	\$37.05	\$7.30	\$12.90	\$0.00	\$57.25
	12/01/2016	\$38.05	\$7.30	\$12.90	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 1 (Metro Boston)</i>	09/01/2013	\$40.35	\$9.80	\$15.61	\$0.00	\$65.76
	03/01/2014	\$41.18	\$9.80	\$15.61	\$0.00	\$66.59
	09/01/2014	\$42.20	\$9.80	\$15.61	\$0.00	\$67.61
	03/01/2015	\$43.22	\$9.80	\$15.61	\$0.00	\$68.63

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CARPENTER - Zone 1 Metro Boston
Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.18	\$9.80	\$1.57	\$0.00	\$31.55
2	60	\$24.21	\$9.80	\$1.57	\$0.00	\$35.58
3	70	\$28.25	\$9.80	\$10.90	\$0.00	\$48.95
4	75	\$30.26	\$9.80	\$10.90	\$0.00	\$50.96
5	80	\$32.28	\$9.80	\$12.47	\$0.00	\$54.55
6	80	\$32.28	\$9.80	\$12.47	\$0.00	\$54.55
7	90	\$36.32	\$9.80	\$14.04	\$0.00	\$60.16
8	90	\$36.32	\$9.80	\$14.04	\$0.00	\$60.16

Effective Date - 03/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.59	\$9.80	\$1.57	\$0.00	\$31.96
2	60	\$24.71	\$9.80	\$1.57	\$0.00	\$36.08
3	70	\$28.83	\$9.80	\$10.90	\$0.00	\$49.53
4	75	\$30.89	\$9.80	\$10.90	\$0.00	\$51.59
5	80	\$32.94	\$9.80	\$12.47	\$0.00	\$55.21
6	80	\$32.94	\$9.80	\$12.47	\$0.00	\$55.21
7	90	\$37.06	\$9.80	\$14.04	\$0.00	\$60.90
8	90	\$37.06	\$9.80	\$14.04	\$0.00	\$60.90

Notes:
Apprentice to Journeyworker Ratio:1:5
CEMENT MASONRY/PLASTERING
BRICKLAYERS LOCAL 3 (BOSTON)

01/01/2014	\$43.60	\$10.90	\$18.71	\$1.30	\$74.51
07/01/2014	\$43.77	\$10.90	\$18.71	\$1.30	\$74.68
01/01/2015	\$44.69	\$10.90	\$18.71	\$1.30	\$75.60
07/01/2015	\$45.29	\$10.90	\$18.71	\$1.30	\$76.20
01/01/2016	\$46.21	\$10.90	\$18.71	\$1.30	\$77.12

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Boston)
Effective Date - 01/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.80	\$10.90	\$12.21	\$1.30	\$46.21
2	60	\$26.16	\$10.90	\$13.71	\$1.30	\$52.07
3	65	\$28.34	\$10.90	\$14.71	\$1.30	\$55.25
4	70	\$30.52	\$10.90	\$15.71	\$1.30	\$58.43
5	75	\$32.70	\$10.90	\$16.71	\$1.30	\$61.61
6	80	\$34.88	\$10.90	\$17.71	\$1.30	\$64.79
7	90	\$39.24	\$10.90	\$18.71	\$1.30	\$70.15

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.89	\$10.90	\$12.21	\$1.30	\$46.30
2	60	\$26.26	\$10.90	\$13.71	\$1.30	\$52.17
3	65	\$28.45	\$10.90	\$14.71	\$1.30	\$55.36
4	70	\$30.64	\$10.90	\$15.71	\$1.30	\$58.55
5	75	\$32.83	\$10.90	\$16.71	\$1.30	\$61.74
6	80	\$35.02	\$10.90	\$17.71	\$1.30	\$64.93
7	90	\$39.39	\$10.90	\$18.71	\$1.30	\$70.30

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
LABORERS - ZONE 1	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	12/01/2013	\$41.49	\$10.00	\$14.18	\$0.00	\$65.67
OPERATING ENGINEERS LOCAL 4						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR	12/01/2013	\$28.11	\$10.00	\$14.18	\$0.00	\$52.29
OPERATING ENGINEERS LOCAL 4						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE)	01/01/2014	\$45.91	\$7.85	\$16.10	\$0.00	\$69.86
PAINTERS LOCAL 35 - ZONE 1	07/01/2014	\$46.76	\$7.85	\$16.10	\$0.00	\$70.71
	01/01/2015	\$47.66	\$7.85	\$16.10	\$0.00	\$71.61
	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Classification

Effective Date

Base Wage

Health

Pension

Supplemental
Unemployment

Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS**Effective Date - 01/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.96	\$7.85	\$0.00	\$0.00	\$30.81
2	55	\$25.25	\$7.85	\$3.66	\$0.00	\$36.76
3	60	\$27.55	\$7.85	\$3.99	\$0.00	\$39.39
4	65	\$29.84	\$7.85	\$4.32	\$0.00	\$42.01
5	70	\$32.14	\$7.85	\$14.11	\$0.00	\$54.10
6	75	\$34.43	\$7.85	\$14.44	\$0.00	\$56.72
7	80	\$36.73	\$7.85	\$14.77	\$0.00	\$59.35
8	90	\$41.32	\$7.85	\$15.44	\$0.00	\$64.61

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$7.85	\$0.00	\$0.00	\$31.23
2	55	\$25.72	\$7.85	\$3.66	\$0.00	\$37.23
3	60	\$28.06	\$7.85	\$3.99	\$0.00	\$39.90
4	65	\$30.39	\$7.85	\$4.32	\$0.00	\$42.56
5	70	\$32.73	\$7.85	\$14.11	\$0.00	\$54.69
6	75	\$35.07	\$7.85	\$14.44	\$0.00	\$57.36
7	80	\$37.41	\$7.85	\$14.77	\$0.00	\$60.03
8	90	\$42.08	\$7.85	\$15.44	\$0.00	\$65.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1**DEMO: ADZEMAN***LABORERS - ZONE I*

12/01/2013	\$33.50	\$7.30	\$12.70	\$0.00	\$53.50
06/01/2014	\$34.25	\$7.30	\$12.70	\$0.00	\$54.25
12/01/2014	\$35.00	\$7.30	\$12.70	\$0.00	\$55.00
06/01/2015	\$35.75	\$7.30	\$12.70	\$0.00	\$55.75
12/01/2015	\$36.50	\$7.30	\$12.70	\$0.00	\$56.50

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR*LABORERS - ZONE I*

12/01/2013	\$34.50	\$7.30	\$12.70	\$0.00	\$54.50
06/01/2014	\$35.25	\$7.30	\$12.70	\$0.00	\$55.25
12/01/2014	\$36.00	\$7.30	\$12.70	\$0.00	\$56.00
06/01/2015	\$36.75	\$7.30	\$12.70	\$0.00	\$56.75
12/01/2015	\$37.50	\$7.30	\$12.70	\$0.00	\$57.50

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS*LABORERS - ZONE I*

12/01/2013	\$34.25	\$7.30	\$12.70	\$0.00	\$54.25
06/01/2014	\$35.00	\$7.30	\$12.70	\$0.00	\$55.00
12/01/2014	\$35.75	\$7.30	\$12.70	\$0.00	\$55.75
06/01/2015	\$36.50	\$7.30	\$12.70	\$0.00	\$56.50
12/01/2015	\$37.25	\$7.30	\$12.70	\$0.00	\$57.25

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 1</i>	12/01/2013	\$34.50	\$7.30	\$12.70	\$0.00	\$54.50
	06/01/2014	\$35.25	\$7.30	\$12.70	\$0.00	\$55.25
	12/01/2014	\$36.00	\$7.30	\$12.70	\$0.00	\$56.00
	06/01/2015	\$36.75	\$7.30	\$12.70	\$0.00	\$56.75
	12/01/2015	\$37.50	\$7.30	\$12.70	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2013	\$34.25	\$7.30	\$12.70	\$0.00	\$54.25
	06/01/2014	\$35.00	\$7.30	\$12.70	\$0.00	\$55.00
	12/01/2014	\$35.75	\$7.30	\$12.70	\$0.00	\$55.75
	06/01/2015	\$36.50	\$7.30	\$12.70	\$0.00	\$56.50
	12/01/2015	\$37.25	\$7.30	\$12.70	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.50	\$7.30	\$12.70	\$0.00	\$53.50
	06/01/2014	\$34.25	\$7.30	\$12.70	\$0.00	\$54.25
	12/01/2014	\$35.00	\$7.30	\$12.70	\$0.00	\$55.00
	06/01/2015	\$35.75	\$7.30	\$12.70	\$0.00	\$55.75
	12/01/2015	\$36.50	\$7.30	\$12.70	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2013	\$56.14	\$9.80	\$18.17	\$0.00	\$84.11
	08/01/2014	\$58.24	\$9.80	\$18.17	\$0.00	\$86.21
	08/01/2015	\$60.34	\$9.80	\$18.17	\$0.00	\$88.31
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2013	\$40.10	\$9.80	\$18.17	\$0.00	\$68.07
	08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
	08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2013	\$60.15	\$9.80	\$18.17	\$0.00	\$88.12
	08/01/2014	\$62.40	\$9.80	\$18.17	\$0.00	\$90.37
	08/01/2015	\$64.65	\$9.80	\$18.17	\$0.00	\$92.62
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2013	\$84.21	\$9.80	\$18.17	\$0.00	\$112.18
	08/01/2014	\$87.36	\$9.80	\$18.17	\$0.00	\$115.33
	08/01/2015	\$90.51	\$9.80	\$18.17	\$0.00	\$118.48
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	09/01/2013	\$43.96	\$13.00	\$14.42	\$0.00	\$71.38
	03/01/2014	\$44.45	\$13.00	\$14.68	\$0.00	\$72.13
	09/01/2014	\$45.12	\$13.00	\$14.70	\$0.00	\$72.82
	03/01/2015	\$45.84	\$13.00	\$14.72	\$0.00	\$73.56
	09/01/2015	\$46.80	\$13.00	\$14.75	\$0.00	\$74.55
	03/01/2016	\$47.75	\$13.00	\$14.78	\$0.00	\$75.53
For apprentice rates see "Apprentice- ELECTRICIAN"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2013	\$43.96	\$13.00	\$14.42	\$0.00	\$71.38
	03/01/2014	\$44.45	\$13.00	\$14.68	\$0.00	\$72.13
	09/01/2014	\$45.12	\$13.00	\$14.70	\$0.00	\$72.82
	03/01/2015	\$45.84	\$13.00	\$14.72	\$0.00	\$73.56
	09/01/2015	\$46.80	\$13.00	\$14.75	\$0.00	\$74.55
	03/01/2016	\$47.75	\$13.00	\$14.78	\$0.00	\$75.53

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - ELECTRICIAN - Local 103
Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.58	\$13.00	\$0.53	\$0.00	\$31.11
2	40	\$17.58	\$13.00	\$0.53	\$0.00	\$31.11
3	45	\$19.78	\$13.00	\$10.78	\$0.00	\$43.56
4	45	\$19.78	\$13.00	\$10.78	\$0.00	\$43.56
5	50	\$21.98	\$13.00	\$11.11	\$0.00	\$46.09
6	55	\$24.18	\$13.00	\$11.45	\$0.00	\$48.63
7	60	\$26.38	\$13.00	\$11.77	\$0.00	\$51.15
8	65	\$28.57	\$13.00	\$12.11	\$0.00	\$53.68
9	70	\$30.77	\$13.00	\$12.43	\$0.00	\$56.20
10	75	\$32.97	\$13.00	\$12.77	\$0.00	\$58.74

Effective Date - 03/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.78	\$13.00	\$0.53	\$0.00	\$31.31
2	40	\$17.78	\$13.00	\$0.53	\$0.00	\$31.31
3	45	\$20.00	\$13.00	\$11.04	\$0.00	\$44.04
4	45	\$20.00	\$13.00	\$11.04	\$0.00	\$44.04
5	50	\$22.23	\$13.00	\$11.37	\$0.00	\$46.60
6	55	\$24.45	\$13.00	\$11.70	\$0.00	\$49.15
7	60	\$26.67	\$13.00	\$12.03	\$0.00	\$51.70
8	65	\$28.89	\$13.00	\$12.37	\$0.00	\$54.26
9	70	\$31.12	\$13.00	\$12.69	\$0.00	\$56.81
10	75	\$33.34	\$13.00	\$13.03	\$0.00	\$59.37

Notes: :

App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

Apprentice to Journeyworker Ratio:2:3***

 ELEVATOR CONSTRUCTOR
 ELEVATOR CONSTRUCTORS LOCAL 4

01/01/2012

\$52.45

\$8.78

\$6.96

\$0.00

\$68.19

Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2012

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.23	\$8.78	\$0.00	\$0.00	\$35.01
2	55	\$28.85	\$8.78	\$6.96	\$0.00	\$44.59
3	65	\$34.09	\$8.78	\$6.96	\$0.00	\$49.83
4	70	\$36.72	\$8.78	\$6.96	\$0.00	\$52.46
5	80	\$41.96	\$8.78	\$6.96	\$0.00	\$57.70

Notes:

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER	01/01/2012	\$38.59	\$8.78	\$6.96	\$0.00	\$54.33
<i>ELEVATOR CONSTRUCTORS LOCAL 4</i>						

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
<i>LABORERS - ZONE 1</i>						
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	11/01/2013	\$38.73	\$10.00	\$13.55	\$0.00	\$62.28
<i>OPERATING ENGINEERS LOCAL 4</i>						
	05/01/2014	\$39.50	\$10.00	\$13.55	\$0.00	\$63.05

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY	11/01/2013	\$40.15	\$10.00	\$13.55	\$0.00	\$63.70
<i>OPERATING ENGINEERS LOCAL 4</i>						
	05/01/2014	\$40.92	\$10.00	\$13.55	\$0.00	\$64.47

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY	11/01/2013	\$21.10	\$10.00	\$13.55	\$0.00	\$44.65
<i>OPERATING ENGINEERS LOCAL 4</i>						
	05/01/2014	\$21.55	\$10.00	\$13.55	\$0.00	\$45.10

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIRE ALARM INSTALLER	09/01/2013	\$43.96	\$13.00	\$14.42	\$0.00	\$71.38
<i>ELECTRICIANS LOCAL 103</i>						
	03/01/2014	\$44.45	\$13.00	\$14.68	\$0.00	\$72.13
	09/01/2014	\$45.12	\$13.00	\$14.70	\$0.00	\$72.82
	03/01/2015	\$45.84	\$13.00	\$14.72	\$0.00	\$73.56
	09/01/2015	\$46.80	\$13.00	\$14.75	\$0.00	\$74.55
	03/01/2016	\$47.75	\$13.00	\$14.78	\$0.00	\$75.53

For apprentice rates see "Apprentice- ELECTRICIAN"

FIRE ALARM REPAIR / MAINTENANCE	09/01/2013	\$32.97	\$13.00	\$12.77	\$0.00	\$58.74
<i>LOCAL 103</i>						
/ COMMISSIONING	03/01/2014	\$33.44	\$13.00	\$13.03	\$0.00	\$59.47
	09/01/2014	\$33.84	\$13.00	\$13.05	\$0.00	\$59.89
	03/01/2015	\$34.38	\$13.00	\$13.06	\$0.00	\$60.44
	09/01/2015	\$35.10	\$13.00	\$13.08	\$0.00	\$61.18
	03/01/2016	\$35.81	\$13.00	\$13.10	\$0.00	\$61.91

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$33.76	\$10.00	\$14.18	\$0.00	\$57.94
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 1</i>	12/01/2013	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
	06/01/2014	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
	12/01/2014	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
	06/01/2015	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
	12/01/2015	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
	06/01/2016	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
	12/01/2016	\$20.50	\$7.30	\$12.70	\$0.00	\$40.50
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	09/01/2013	\$38.61	\$9.80	\$16.71	\$0.00	\$65.12
	03/01/2014	\$38.61	\$9.80	\$16.71	\$0.00	\$65.12

Apprentice - FLOORCOVERER - Local 2168 Zone 1

Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.31	\$9.80	\$1.79	\$0.00	\$30.90
2	55	\$21.24	\$9.80	\$1.79	\$0.00	\$32.83
3	60	\$23.17	\$9.80	\$11.34	\$0.00	\$44.31
4	65	\$25.10	\$9.80	\$11.34	\$0.00	\$46.24
5	70	\$27.03	\$9.80	\$13.13	\$0.00	\$49.96
6	75	\$28.96	\$9.80	\$13.13	\$0.00	\$51.89
7	80	\$30.89	\$9.80	\$14.92	\$0.00	\$55.61
8	85	\$32.82	\$9.80	\$14.92	\$0.00	\$57.54

Effective Date - 03/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.31	\$9.80	\$1.79	\$0.00	\$30.90
2	55	\$21.24	\$9.80	\$1.79	\$0.00	\$32.83
3	60	\$23.17	\$9.80	\$11.34	\$0.00	\$44.31
4	65	\$25.10	\$9.80	\$11.34	\$0.00	\$46.24
5	70	\$27.03	\$9.80	\$13.13	\$0.00	\$49.96
6	75	\$28.96	\$9.80	\$13.13	\$0.00	\$51.89
7	80	\$30.89	\$9.80	\$14.92	\$0.00	\$55.61
8	85	\$32.82	\$9.80	\$14.92	\$0.00	\$57.54

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$28.11	\$10.00	\$14.18	\$0.00	\$52.29

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)	01/01/2014	\$41.20	\$7.85	\$16.10	\$0.00	\$65.15
GLAZIERS LOCAL 35 (ZONE 1)	07/01/2014	\$42.05	\$7.85	\$16.10	\$0.00	\$66.00
	01/01/2015	\$42.95	\$7.85	\$16.10	\$0.00	\$66.90
	07/01/2015	\$43.85	\$7.85	\$16.10	\$0.00	\$67.80
	01/01/2016	\$44.80	\$7.85	\$16.10	\$0.00	\$68.75
	07/01/2016	\$45.75	\$7.85	\$16.10	\$0.00	\$69.70
	01/01/2017	\$46.70	\$7.85	\$16.10	\$0.00	\$70.65

Apprentice - GLAZIER - Local 35 Zone 1

Effective Date - 01/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.60	\$7.85	\$0.00	\$0.00	\$28.45
2	55	\$22.66	\$7.85	\$3.66	\$0.00	\$34.17
3	60	\$24.72	\$7.85	\$3.99	\$0.00	\$36.56
4	65	\$26.78	\$7.85	\$4.32	\$0.00	\$38.95
5	70	\$28.84	\$7.85	\$14.11	\$0.00	\$50.80
6	75	\$30.90	\$7.85	\$14.44	\$0.00	\$53.19
7	80	\$32.96	\$7.85	\$14.77	\$0.00	\$55.58
8	90	\$37.08	\$7.85	\$15.44	\$0.00	\$60.37

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.03	\$7.85	\$0.00	\$0.00	\$28.88
2	55	\$23.13	\$7.85	\$3.66	\$0.00	\$34.64
3	60	\$25.23	\$7.85	\$3.99	\$0.00	\$37.07
4	65	\$27.33	\$7.85	\$4.32	\$0.00	\$39.50
5	70	\$29.44	\$7.85	\$14.11	\$0.00	\$51.40
6	75	\$31.54	\$7.85	\$14.44	\$0.00	\$53.83
7	80	\$33.64	\$7.85	\$14.77	\$0.00	\$56.26
8	90	\$37.85	\$7.85	\$15.44	\$0.00	\$61.14

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
OPERATING ENGINEERS LOCAL 4						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.27	\$10.00	\$0.00	\$0.00	\$32.27
2	60	\$24.29	\$10.00	\$14.18	\$0.00	\$48.47
3	65	\$26.32	\$10.00	\$14.18	\$0.00	\$50.50
4	70	\$28.34	\$10.00	\$14.18	\$0.00	\$52.52
5	75	\$30.37	\$10.00	\$14.18	\$0.00	\$54.55
6	80	\$32.39	\$10.00	\$14.18	\$0.00	\$56.57
7	85	\$34.42	\$10.00	\$14.18	\$0.00	\$58.60
8	90	\$36.44	\$10.00	\$14.18	\$0.00	\$60.62

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK)	12/09/2013	\$42.35	\$9.82	\$19.33	\$2.14	\$73.64
<i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2014	\$42.76	\$9.82	\$19.74	\$2.17	\$74.49
	08/01/2014	\$43.61	\$9.82	\$19.74	\$2.17	\$75.34
	02/01/2015	\$44.51	\$9.82	\$19.74	\$2.17	\$76.24
	08/01/2015	\$45.51	\$9.82	\$19.74	\$2.17	\$77.24
	02/01/2016	\$46.51	\$9.82	\$19.74	\$2.17	\$78.24
	08/01/2016	\$47.66	\$9.82	\$19.74	\$2.17	\$79.39
	02/01/2017	\$48.76	\$9.82	\$19.74	\$2.17	\$80.49
	08/01/2017	\$49.86	\$9.82	\$19.74	\$2.17	\$81.59
	02/01/2018	\$51.01	\$9.82	\$19.74	\$2.17	\$82.74

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS)	09/01/2013	\$43.96	\$13.00	\$14.42	\$0.00	\$71.38
<i>ELECTRICIANS LOCAL 103</i>	03/01/2014	\$44.45	\$13.00	\$14.68	\$0.00	\$72.13
	09/01/2014	\$45.12	\$13.00	\$14.70	\$0.00	\$72.82
	03/01/2015	\$45.84	\$13.00	\$14.72	\$0.00	\$73.56
	09/01/2015	\$46.80	\$13.00	\$14.75	\$0.00	\$74.55
	03/01/2016	\$47.75	\$13.00	\$14.78	\$0.00	\$75.53

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR)	12/09/2013	\$42.35	\$9.82	\$19.33	\$2.14	\$73.64
<i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2014	\$42.76	\$9.82	\$19.74	\$2.17	\$74.49
	08/01/2014	\$43.61	\$9.82	\$19.74	\$2.17	\$75.34
	02/01/2015	\$44.51	\$9.82	\$19.74	\$2.17	\$76.24
	08/01/2015	\$45.51	\$9.82	\$19.74	\$2.17	\$77.24
	02/01/2016	\$46.51	\$9.82	\$19.74	\$2.17	\$78.24
	08/01/2016	\$47.66	\$9.82	\$19.74	\$2.17	\$79.39
	02/01/2017	\$48.76	\$9.82	\$19.74	\$2.17	\$80.49
	08/01/2017	\$49.86	\$9.82	\$19.74	\$2.17	\$81.59
	02/01/2018	\$51.01	\$9.82	\$19.74	\$2.17	\$82.74

For apprentice rates see "Apprentice- SHEET METAL WORKER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2013	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
	06/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
	12/01/2014	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
	06/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
	12/01/2015	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
	06/01/2016	\$37.85	\$7.30	\$12.70	\$0.00	\$57.85
	12/01/2016	\$38.85	\$7.30	\$12.70	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2013	\$42.11	\$10.95	\$12.10	\$0.00	\$65.16
	09/01/2014	\$44.11	\$10.95	\$12.10	\$0.00	\$67.16

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.06	\$10.95	\$9.00	\$0.00	\$41.01
2	60	\$25.27	\$10.95	\$9.62	\$0.00	\$45.84
3	70	\$29.48	\$10.95	\$10.24	\$0.00	\$50.67
4	80	\$33.69	\$10.95	\$10.86	\$0.00	\$55.50

Effective Date - 09/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.06	\$10.95	\$9.00	\$0.00	\$42.01
2	60	\$26.47	\$10.95	\$9.62	\$0.00	\$47.04
3	70	\$30.88	\$10.95	\$10.24	\$0.00	\$52.07
4	80	\$35.29	\$10.95	\$10.86	\$0.00	\$57.10

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	09/16/2013	\$40.85	\$7.70	\$18.60	\$0.00	\$67.15

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - IRONWORKER - Local 7 Boston
Effective Date - 09/16/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.51	\$7.70	\$18.60	\$0.00	\$50.81
2	70	\$28.60	\$7.70	\$18.60	\$0.00	\$54.90
3	75	\$30.64	\$7.70	\$18.60	\$0.00	\$56.94
4	80	\$32.68	\$7.70	\$18.60	\$0.00	\$58.98
5	85	\$34.72	\$7.70	\$18.60	\$0.00	\$61.02
6	90	\$36.77	\$7.70	\$18.60	\$0.00	\$63.07

Notes:

** Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:**
JACKHAMMER & PAVING BREAKER OPERATOR

LABORERS - ZONE 1

12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

LABORER

LABORERS - ZONE 1

12/01/2013	\$33.35	\$7.30	\$12.70	\$0.00	\$53.35
06/01/2014	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
12/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
06/01/2015	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
12/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
06/01/2016	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
12/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - LABORER - Zone 1
Effective Date - 12/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.01	\$7.30	\$12.70	\$0.00	\$40.01
2	70	\$23.35	\$7.30	\$12.70	\$0.00	\$43.35
3	80	\$26.68	\$7.30	\$12.70	\$0.00	\$46.68
4	90	\$30.02	\$7.30	\$12.70	\$0.00	\$50.02

Effective Date - 06/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.46	\$7.30	\$12.70	\$0.00	\$40.46
2	70	\$23.87	\$7.30	\$12.70	\$0.00	\$43.87
3	80	\$27.28	\$7.30	\$12.70	\$0.00	\$47.28
4	90	\$30.69	\$7.30	\$12.70	\$0.00	\$50.69

Notes:
Apprentice to Journeyworker Ratio:1:5
LABORER: CARPENTER TENDER
LABORERS - ZONE 1

12/01/2013	\$33.35	\$7.30	\$12.70	\$0.00	\$53.35
06/01/2014	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
12/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
06/01/2015	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
12/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
06/01/2016	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
12/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER
LABORERS - ZONE 1

12/01/2013	\$33.35	\$7.30	\$12.70	\$0.00	\$53.35
06/01/2014	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
12/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
06/01/2015	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
12/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
06/01/2016	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
12/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER
LABORERS - ZONE 1

12/01/2013	\$33.50	\$7.30	\$12.70	\$0.00	\$53.50
06/01/2014	\$34.25	\$7.30	\$12.70	\$0.00	\$54.25
12/01/2014	\$35.00	\$7.30	\$12.70	\$0.00	\$55.00
06/01/2015	\$35.75	\$7.30	\$12.70	\$0.00	\$55.75
12/01/2015	\$36.50	\$7.30	\$12.70	\$0.00	\$56.50

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MASON TENDER <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.35	\$7.30	\$12.70	\$0.00	\$53.35
	06/01/2014	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
	12/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
	06/01/2015	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
	12/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
	06/01/2016	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
	12/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.35	\$7.30	\$12.70	\$0.00	\$53.35
	06/01/2014	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
	12/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
	06/01/2015	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
	12/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
	06/01/2016	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
	12/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10
This classification applies to the wholesale removal of standing trees including all associated trimming of branches and limbs, and applies to the removal of branches at locations not on or around utility lines. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2013	\$36.66	\$10.18	\$16.83	\$0.00	\$63.67
	02/01/2014	\$36.66	\$10.18	\$16.83	\$0.00	\$63.67
	08/01/2014	\$37.37	\$10.18	\$16.90	\$0.00	\$64.45
	02/01/2015	\$37.82	\$10.18	\$16.90	\$0.00	\$64.90
	08/01/2015	\$38.53	\$10.18	\$16.97	\$0.00	\$65.68
	02/01/2016	\$38.98	\$10.18	\$16.97	\$0.00	\$66.13
	08/01/2016	\$39.68	\$10.18	\$17.05	\$0.00	\$66.91
	02/01/2017	\$40.14	\$10.18	\$17.05	\$0.00	\$67.37

Classification

**Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate**

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.33	\$10.18	\$16.83	\$0.00	\$45.34
2	60	\$22.00	\$10.18	\$16.83	\$0.00	\$49.01
3	70	\$25.66	\$10.18	\$16.83	\$0.00	\$52.67
4	80	\$29.33	\$10.18	\$16.83	\$0.00	\$56.34
5	90	\$32.99	\$10.18	\$16.83	\$0.00	\$60.00

Effective Date - 02/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.33	\$10.18	\$16.83	\$0.00	\$45.34
2	60	\$22.00	\$10.18	\$16.83	\$0.00	\$49.01
3	70	\$25.66	\$10.18	\$16.83	\$0.00	\$52.67
4	80	\$29.33	\$10.18	\$16.83	\$0.00	\$56.34
5	90	\$32.99	\$10.18	\$16.83	\$0.00	\$60.00

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH	08/01/2013	\$48.10	\$10.18	\$18.15	\$0.00	\$76.43
BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2014	\$48.10	\$10.18	\$18.15	\$0.00	\$76.43
	08/01/2014	\$49.00	\$10.18	\$18.22	\$0.00	\$77.40
	02/01/2015	\$49.56	\$10.18	\$18.22	\$0.00	\$77.96
	08/01/2015	\$50.46	\$10.18	\$18.29	\$0.00	\$78.93
	02/01/2016	\$51.03	\$10.18	\$18.29	\$0.00	\$79.50
	08/01/2016	\$51.93	\$10.18	\$18.37	\$0.00	\$80.48
	02/01/2017	\$52.50	\$10.18	\$18.37	\$0.00	\$81.05

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile
Effective Date - 08/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.05	\$10.18	\$18.15	\$0.00	\$52.38
2	60	\$28.86	\$10.18	\$18.15	\$0.00	\$57.19
3	70	\$33.67	\$10.18	\$18.15	\$0.00	\$62.00
4	80	\$38.48	\$10.18	\$18.15	\$0.00	\$66.81
5	90	\$43.29	\$10.18	\$18.15	\$0.00	\$71.62

Effective Date - 02/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.05	\$10.18	\$18.15	\$0.00	\$52.38
2	60	\$28.86	\$10.18	\$18.15	\$0.00	\$57.19
3	70	\$33.67	\$10.18	\$18.15	\$0.00	\$62.00
4	80	\$38.48	\$10.18	\$18.15	\$0.00	\$66.81
5	90	\$43.29	\$10.18	\$18.15	\$0.00	\$71.62

Notes:
Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) OPERATING ENGINEERS LOCAL 4	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE OPERATING ENGINEERS LOCAL 4	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 1) MILLWRIGHTS LOCAL 1121 - Zone 1	10/01/2013	\$35.20	\$9.80	\$16.01	\$0.00	\$61.01
	04/01/2014	\$35.98	\$9.80	\$16.01	\$0.00	\$61.79
	10/01/2014	\$36.93	\$9.80	\$16.01	\$0.00	\$62.74
	04/01/2015	\$37.89	\$9.80	\$16.01	\$0.00	\$63.70

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - MILLWRIGHT - Local 1121 Zone 1

Effective Date - 10/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$19.36	\$9.80	\$4.40	\$0.00	\$33.56
2	65	\$22.88	\$9.80	\$13.21	\$0.00	\$45.89
3	75	\$26.40	\$9.80	\$14.01	\$0.00	\$50.21
4	85	\$29.92	\$9.80	\$14.81	\$0.00	\$54.53

Effective Date - 04/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$19.79	\$9.80	\$4.40	\$0.00	\$33.99
2	65	\$23.39	\$9.80	\$13.21	\$0.00	\$46.40
3	75	\$26.99	\$9.80	\$14.01	\$0.00	\$50.80
4	85	\$30.58	\$9.80	\$14.81	\$0.00	\$55.19

Notes:

Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER LABORERS - ZONE 1	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2013	\$20.96	\$10.00	\$14.18	\$0.00	\$45.14
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2013	\$24.43	\$10.00	\$14.18	\$0.00	\$48.61
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 1	01/01/2014	\$45.91	\$7.85	\$16.10	\$0.00	\$69.86
	07/01/2014	\$46.76	\$7.85	\$16.10	\$0.00	\$70.71
	01/01/2015	\$47.66	\$7.85	\$16.10	\$0.00	\$71.61
	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS**Effective Date - 01/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.96	\$7.85	\$0.00	\$0.00	\$30.81
2	55	\$25.25	\$7.85	\$3.66	\$0.00	\$36.76
3	60	\$27.55	\$7.85	\$3.99	\$0.00	\$39.39
4	65	\$29.84	\$7.85	\$4.32	\$0.00	\$42.01
5	70	\$32.14	\$7.85	\$14.11	\$0.00	\$54.10
6	75	\$34.43	\$7.85	\$14.44	\$0.00	\$56.72
7	80	\$36.73	\$7.85	\$14.77	\$0.00	\$59.35
8	90	\$41.32	\$7.85	\$15.44	\$0.00	\$64.61

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$7.85	\$0.00	\$0.00	\$31.23
2	55	\$25.72	\$7.85	\$3.66	\$0.00	\$37.23
3	60	\$28.06	\$7.85	\$3.99	\$0.00	\$39.90
4	65	\$30.39	\$7.85	\$4.32	\$0.00	\$42.56
5	70	\$32.73	\$7.85	\$14.11	\$0.00	\$54.69
6	75	\$35.07	\$7.85	\$14.44	\$0.00	\$57.36
7	80	\$37.41	\$7.85	\$14.77	\$0.00	\$60.03
8	90	\$42.08	\$7.85	\$15.44	\$0.00	\$65.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *

* If 30% or more of surfaces to be painted are new construction,

NEW paint rate shall be used. *PAINTERS LOCAL 35 - ZONE 1*

01/01/2014	\$42.60	\$7.85	\$16.10	\$0.00	\$66.55
07/01/2014	\$43.45	\$7.85	\$16.10	\$0.00	\$67.40
01/01/2015	\$44.35	\$7.85	\$16.10	\$0.00	\$68.30
07/01/2015	\$45.25	\$7.85	\$16.10	\$0.00	\$69.20
01/01/2016	\$46.20	\$7.85	\$16.10	\$0.00	\$70.15
07/01/2016	\$47.15	\$7.85	\$16.10	\$0.00	\$71.10
01/01/2017	\$48.10	\$7.85	\$16.10	\$0.00	\$72.05

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - PAINTER Local 35 Zone 1 - Spray/Sandblast - New
Effective Date - 01/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.30	\$7.85	\$0.00	\$0.00	\$29.15
2	55	\$23.43	\$7.85	\$3.66	\$0.00	\$34.94
3	60	\$25.56	\$7.85	\$3.99	\$0.00	\$37.40
4	65	\$27.69	\$7.85	\$4.32	\$0.00	\$39.86
5	70	\$29.82	\$7.85	\$14.11	\$0.00	\$51.78
6	75	\$31.95	\$7.85	\$14.44	\$0.00	\$54.24
7	80	\$34.08	\$7.85	\$14.77	\$0.00	\$56.70
8	90	\$38.34	\$7.85	\$15.44	\$0.00	\$61.63

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.73	\$7.85	\$0.00	\$0.00	\$29.58
2	55	\$23.90	\$7.85	\$3.66	\$0.00	\$35.41
3	60	\$26.07	\$7.85	\$3.99	\$0.00	\$37.91
4	65	\$28.24	\$7.85	\$4.32	\$0.00	\$40.41
5	70	\$30.42	\$7.85	\$14.11	\$0.00	\$52.38
6	75	\$32.59	\$7.85	\$14.44	\$0.00	\$54.88
7	80	\$34.76	\$7.85	\$14.77	\$0.00	\$57.38
8	90	\$39.11	\$7.85	\$15.44	\$0.00	\$62.40

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)

PAINTERS LOCAL 35 - ZONE 1

01/01/2014	\$40.66	\$7.85	\$16.10	\$0.00	\$64.61
07/01/2014	\$41.51	\$7.85	\$16.10	\$0.00	\$65.46
01/01/2015	\$42.41	\$7.85	\$16.10	\$0.00	\$66.36
07/01/2015	\$43.31	\$7.85	\$16.10	\$0.00	\$67.26
01/01/2016	\$44.26	\$7.85	\$16.10	\$0.00	\$68.21
07/01/2016	\$45.21	\$7.85	\$16.10	\$0.00	\$69.16
01/01/2017	\$46.16	\$7.85	\$16.10	\$0.00	\$70.11

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 1 - Spray/Sandblast - Repaint
Effective Date - 01/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.33	\$7.85	\$0.00	\$0.00	\$28.18
2	55	\$22.36	\$7.85	\$3.66	\$0.00	\$33.87
3	60	\$24.40	\$7.85	\$3.99	\$0.00	\$36.24
4	65	\$26.43	\$7.85	\$4.32	\$0.00	\$38.60
5	70	\$28.46	\$7.85	\$14.11	\$0.00	\$50.42
6	75	\$30.50	\$7.85	\$14.44	\$0.00	\$52.79
7	80	\$32.53	\$7.85	\$14.77	\$0.00	\$55.15
8	90	\$36.59	\$7.85	\$15.44	\$0.00	\$59.88

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.76	\$7.85	\$0.00	\$0.00	\$28.61
2	55	\$22.83	\$7.85	\$3.66	\$0.00	\$34.34
3	60	\$24.91	\$7.85	\$3.99	\$0.00	\$36.75
4	65	\$26.98	\$7.85	\$4.32	\$0.00	\$39.15
5	70	\$29.06	\$7.85	\$14.11	\$0.00	\$51.02
6	75	\$31.13	\$7.85	\$14.44	\$0.00	\$53.42
7	80	\$33.21	\$7.85	\$14.77	\$0.00	\$55.83
8	90	\$37.36	\$7.85	\$15.44	\$0.00	\$60.65

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS)	12/01/2013	\$33.35	\$7.30	\$12.70	\$0.00	\$53.35
LABORERS - ZONE 1	06/01/2014	\$34.10	\$7.30	\$12.70	\$0.00	\$54.10
	12/01/2014	\$34.85	\$7.30	\$12.70	\$0.00	\$54.85
	06/01/2015	\$35.60	\$7.30	\$12.70	\$0.00	\$55.60
	12/01/2015	\$36.35	\$7.30	\$12.70	\$0.00	\$56.35
	06/01/2016	\$37.10	\$7.30	\$12.70	\$0.00	\$57.10
	12/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2014	\$41.20	\$7.85	\$16.10	\$0.00	\$65.15
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 1	07/01/2014	\$42.05	\$7.85	\$16.10	\$0.00	\$66.00
	01/01/2015	\$42.95	\$7.85	\$16.10	\$0.00	\$66.90
	07/01/2015	\$43.85	\$7.85	\$16.10	\$0.00	\$67.80
	01/01/2016	\$44.80	\$7.85	\$16.10	\$0.00	\$68.75
	07/01/2016	\$45.75	\$7.85	\$16.10	\$0.00	\$69.70
	01/01/2017	\$46.70	\$7.85	\$16.10	\$0.00	\$70.65

Apprentice - PAINTER - Local 35 Zone 1 - BRUSH NEW**Effective Date - 01/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.60	\$7.85	\$0.00	\$0.00	\$28.45
2	55	\$22.66	\$7.85	\$3.66	\$0.00	\$34.17
3	60	\$24.72	\$7.85	\$3.99	\$0.00	\$36.56
4	65	\$26.78	\$7.85	\$4.32	\$0.00	\$38.95
5	70	\$28.84	\$7.85	\$14.11	\$0.00	\$50.80
6	75	\$30.90	\$7.85	\$14.44	\$0.00	\$53.19
7	80	\$32.96	\$7.85	\$14.77	\$0.00	\$55.58
8	90	\$37.08	\$7.85	\$15.44	\$0.00	\$60.37

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.03	\$7.85	\$0.00	\$0.00	\$28.88
2	55	\$23.13	\$7.85	\$3.66	\$0.00	\$34.64
3	60	\$25.23	\$7.85	\$3.99	\$0.00	\$37.07
4	65	\$27.33	\$7.85	\$4.32	\$0.00	\$39.50
5	70	\$29.44	\$7.85	\$14.11	\$0.00	\$51.40
6	75	\$31.54	\$7.85	\$14.44	\$0.00	\$53.83
7	80	\$33.64	\$7.85	\$14.77	\$0.00	\$56.26
8	90	\$37.85	\$7.85	\$15.44	\$0.00	\$61.14

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)

PAINTERS LOCAL 35 - ZONE 1

01/01/2014	\$39.26	\$7.85	\$16.10	\$0.00	\$63.21
07/01/2014	\$40.11	\$7.85	\$16.10	\$0.00	\$64.06
01/01/2015	\$41.01	\$7.85	\$16.10	\$0.00	\$64.96
07/01/2015	\$41.91	\$7.85	\$16.10	\$0.00	\$65.86
01/01/2016	\$42.86	\$7.85	\$16.10	\$0.00	\$66.81
07/01/2016	\$43.81	\$7.85	\$16.10	\$0.00	\$67.76
01/01/2017	\$44.76	\$7.85	\$16.10	\$0.00	\$68.71

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - PAINTER Local 35 Zone 1 - BRUSH REPAINT
Effective Date - 01/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.63	\$7.85	\$0.00	\$0.00	\$27.48
2	55	\$21.59	\$7.85	\$3.66	\$0.00	\$33.10
3	60	\$23.56	\$7.85	\$3.99	\$0.00	\$35.40
4	65	\$25.52	\$7.85	\$4.32	\$0.00	\$37.69
5	70	\$27.48	\$7.85	\$14.11	\$0.00	\$49.44
6	75	\$29.45	\$7.85	\$14.44	\$0.00	\$51.74
7	80	\$31.41	\$7.85	\$14.77	\$0.00	\$54.03
8	90	\$35.33	\$7.85	\$15.44	\$0.00	\$58.62

Effective Date - 07/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.06	\$7.85	\$0.00	\$0.00	\$27.91
2	55	\$22.06	\$7.85	\$3.66	\$0.00	\$33.57
3	60	\$24.07	\$7.85	\$3.99	\$0.00	\$35.91
4	65	\$26.07	\$7.85	\$4.32	\$0.00	\$38.24
5	70	\$28.08	\$7.85	\$14.11	\$0.00	\$50.04
6	75	\$30.08	\$7.85	\$14.44	\$0.00	\$52.37
7	80	\$32.09	\$7.85	\$14.77	\$0.00	\$54.71
8	90	\$36.10	\$7.85	\$15.44	\$0.00	\$59.39

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1
PANEL & PICKUP TRUCKS DRIVER
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A

12/01/2013	\$31.88	\$9.41	\$8.80	\$0.00	\$50.09
06/01/2014	\$32.23	\$9.41	\$8.80	\$0.00	\$50.44
08/01/2014	\$32.23	\$9.91	\$8.80	\$0.00	\$50.94
12/01/2014	\$32.23	\$9.91	\$9.33	\$0.00	\$51.47
06/01/2015	\$32.58	\$9.91	\$9.33	\$0.00	\$51.82
08/01/2015	\$32.58	\$10.41	\$9.33	\$0.00	\$52.32
12/01/2015	\$32.58	\$10.41	\$10.08	\$0.00	\$53.07
06/01/2016	\$33.08	\$10.41	\$10.08	\$0.00	\$53.57
08/01/2016	\$33.08	\$10.91	\$10.08	\$0.00	\$54.07
12/01/2016	\$33.08	\$10.91	\$10.89	\$0.00	\$54.88

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)
PILE DRIVER LOCAL 56 (ZONE 1)

08/01/2013	\$40.10	\$9.80	\$18.17	\$0.00	\$68.07
08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07

PILE DRIVER
PILE DRIVER LOCAL 56 (ZONE 1)

08/01/2013	\$40.10	\$9.80	\$18.17	\$0.00	\$68.07
08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07

Apprentice - PILE DRIVER - Local 56 Zone 1**Effective Date - 08/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.05	\$9.80	\$18.17	\$0.00	\$48.02
2	60	\$24.06	\$9.80	\$18.17	\$0.00	\$52.03
3	70	\$28.07	\$9.80	\$18.17	\$0.00	\$56.04
4	75	\$30.08	\$9.80	\$18.17	\$0.00	\$58.05
5	80	\$32.08	\$9.80	\$18.17	\$0.00	\$60.05
6	80	\$32.08	\$9.80	\$18.17	\$0.00	\$60.05
7	90	\$36.09	\$9.80	\$18.17	\$0.00	\$64.06
8	90	\$36.09	\$9.80	\$18.17	\$0.00	\$64.06

Effective Date - 08/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.80	\$9.80	\$18.17	\$0.00	\$48.77
2	60	\$24.96	\$9.80	\$18.17	\$0.00	\$52.93
3	70	\$29.12	\$9.80	\$18.17	\$0.00	\$57.09
4	75	\$31.20	\$9.80	\$18.17	\$0.00	\$59.17
5	80	\$33.28	\$9.80	\$18.17	\$0.00	\$61.25
6	80	\$33.28	\$9.80	\$18.17	\$0.00	\$61.25
7	90	\$37.44	\$9.80	\$18.17	\$0.00	\$65.41
8	90	\$37.44	\$9.80	\$18.17	\$0.00	\$65.41

Notes:**Apprentice to Journeyworker Ratio:1:3**

PIPEFITTER & STEAMFITTER

03/01/2013

\$49.34

\$8.75

\$14.39

\$0.00

\$72.48

PIPEFITTERS LOCAL 537

Apprentice - PIPEFITTER - Local 537**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.74	\$8.75	\$6.50	\$0.00	\$34.99
2	45	\$22.20	\$8.75	\$14.39	\$0.00	\$45.34
3	60	\$29.60	\$8.75	\$14.39	\$0.00	\$52.74
4	70	\$34.54	\$8.75	\$14.39	\$0.00	\$57.68
5	80	\$39.47	\$8.75	\$14.39	\$0.00	\$62.61

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
LABORERS - ZONE 1	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

PLUMBERS & GASFITTERS	09/01/2013	\$49.06	\$9.82	\$14.04	\$0.00	\$72.92
PLUMBERS & GASFITTERS LOCAL 12	03/01/2014	\$50.06	\$9.82	\$14.04	\$0.00	\$73.92
	09/01/2014	\$51.06	\$9.82	\$14.04	\$0.00	\$74.92
	03/01/2015	\$52.06	\$9.82	\$14.04	\$0.00	\$75.92
	09/01/2015	\$53.06	\$9.82	\$14.04	\$0.00	\$76.92
	03/01/2016	\$54.21	\$9.82	\$14.04	\$0.00	\$78.07
	09/01/2016	\$55.26	\$9.82	\$14.04	\$0.00	\$79.12
	03/01/2017	\$56.26	\$9.82	\$14.04	\$0.00	\$80.12

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.17	\$9.82	\$5.26	\$0.00	\$32.25
2	40	\$19.62	\$9.82	\$5.92	\$0.00	\$35.36
3	55	\$26.98	\$9.82	\$7.95	\$0.00	\$44.75
4	65	\$31.89	\$9.82	\$9.30	\$0.00	\$51.01
5	75	\$36.80	\$9.82	\$10.65	\$0.00	\$57.27

Effective Date - 03/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.52	\$9.82	\$5.26	\$0.00	\$32.60
2	40	\$20.02	\$9.82	\$5.92	\$0.00	\$35.76
3	55	\$27.53	\$9.82	\$7.95	\$0.00	\$45.30
4	65	\$32.54	\$9.82	\$9.30	\$0.00	\$51.66
5	75	\$37.55	\$9.82	\$10.65	\$0.00	\$58.02

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr
Step4 with lic\$54.16 Step5 with lic\$60.40

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.)	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48
PIPEFITTERS LOCAL 537						

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER <i>LABORERS - ZONE 1</i>	12/01/2013	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	06/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	12/01/2014	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	06/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	12/01/2015	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	06/01/2016	\$38.10	\$7.30	\$12.70	\$0.00	\$58.10
	12/01/2016	\$39.10	\$7.30	\$12.70	\$0.00	\$59.10
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$28.11	\$10.00	\$14.18	\$0.00	\$52.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 25a</i>	05/01/2011	\$29.99	\$7.75	\$5.91	\$0.00	\$43.65
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 1 (Residential Wood)</i>	04/01/2011	\$37.25	\$8.67	\$15.51	\$0.00	\$61.43
RESIDENTIAL WOOD FRAME CARPENTER ** ** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. <i>CARPENTERS -ZONE 1 (Residential Wood)</i>	05/01/2011	\$27.49	\$6.34	\$6.23	\$0.00	\$40.06
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.						

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CARPENTER (Residential Wood Frame) - Zone 1
Effective Date - 05/01/2011

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.49	\$6.34	\$0.00	\$0.00	\$22.83
2	60	\$16.49	\$6.34	\$6.23	\$0.00	\$29.06
3	65	\$17.87	\$6.34	\$6.23	\$0.00	\$30.44
4	70	\$19.24	\$6.34	\$6.23	\$0.00	\$31.81
5	75	\$20.62	\$6.34	\$6.23	\$0.00	\$33.19
6	80	\$21.99	\$6.34	\$6.23	\$0.00	\$34.56
7	85	\$23.37	\$6.34	\$6.23	\$0.00	\$35.94
8	90	\$24.74	\$6.34	\$6.23	\$0.00	\$37.31

Notes:
Apprentice to Journeyworker Ratio:1:5

RIDE-ON MOTORIZED BUGGY OPERATOR	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
LABORERS - ZONE 1	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

ROLLER/SPREADER/MULCHING MACHINE	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
OPERATING ENGINEERS LOCAL 4						

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofer Waterproofng &Roofer Damproofg)	08/01/2013	\$38.31	\$10.50	\$10.70	\$0.00	\$59.51
ROOFERS LOCAL 33	02/01/2014	\$39.21	\$10.50	\$10.70	\$0.00	\$60.41
	08/01/2014	\$40.11	\$10.50	\$10.70	\$0.00	\$61.31
	02/01/2015	\$41.01	\$10.50	\$10.70	\$0.00	\$62.21
	08/01/2015	\$41.91	\$10.50	\$10.70	\$0.00	\$63.11
	02/01/2016	\$42.81	\$10.50	\$10.70	\$0.00	\$64.01

Classification

Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate

Apprentice - ROOFER - Local 33
Effective Date - 08/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.16	\$10.50	\$3.38	\$0.00	\$33.04
2	60	\$22.99	\$10.50	\$10.70	\$0.00	\$44.19
3	65	\$24.90	\$10.50	\$10.70	\$0.00	\$46.10
4	75	\$28.73	\$10.50	\$10.70	\$0.00	\$49.93
5	85	\$32.56	\$10.50	\$10.70	\$0.00	\$53.76

Effective Date - 02/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.61	\$10.50	\$3.38	\$0.00	\$33.49
2	60	\$23.53	\$10.50	\$10.70	\$0.00	\$44.73
3	65	\$25.49	\$10.50	\$10.70	\$0.00	\$46.69
4	75	\$29.41	\$10.50	\$10.70	\$0.00	\$50.61
5	85	\$33.33	\$10.50	\$10.70	\$0.00	\$54.53

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE	08/01/2013	\$38.56	\$10.50	\$10.70	\$0.00	\$59.76
ROOFERS LOCAL 33	02/01/2014	\$39.46	\$10.50	\$10.70	\$0.00	\$60.66
	08/01/2014	\$40.36	\$10.50	\$10.70	\$0.00	\$61.56
	02/01/2015	\$41.26	\$10.50	\$10.70	\$0.00	\$62.46
	08/01/2015	\$42.16	\$10.50	\$10.70	\$0.00	\$63.36
	02/01/2016	\$43.06	\$10.50	\$10.70	\$0.00	\$64.26

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER	12/09/2013	\$42.35	\$9.82	\$19.33	\$2.14	\$73.64
SHEETMETAL WORKERS LOCAL 17 - A	02/01/2014	\$42.76	\$9.82	\$19.74	\$2.17	\$74.49
	08/01/2014	\$43.61	\$9.82	\$19.74	\$2.17	\$75.34
	02/01/2015	\$44.51	\$9.82	\$19.74	\$2.17	\$76.24
	08/01/2015	\$45.51	\$9.82	\$19.74	\$2.17	\$77.24
	02/01/2016	\$46.51	\$9.82	\$19.74	\$2.17	\$78.24
	08/01/2016	\$47.66	\$9.82	\$19.74	\$2.17	\$79.39
	02/01/2017	\$48.76	\$9.82	\$19.74	\$2.17	\$80.49
	08/01/2017	\$49.86	\$9.82	\$19.74	\$2.17	\$81.59
	02/01/2018	\$51.01	\$9.82	\$19.74	\$2.17	\$82.74

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - SHEET METAL WORKER - Local 17-A
Effective Date - 12/09/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.94	\$9.82	\$4.28	\$0.00	\$31.04
2	40	\$16.94	\$9.82	\$4.28	\$0.00	\$31.04
3	45	\$19.06	\$9.82	\$8.70	\$1.13	\$38.71
4	45	\$19.06	\$9.82	\$8.70	\$1.13	\$38.71
5	50	\$21.18	\$9.82	\$9.49	\$1.21	\$41.70
6	50	\$21.18	\$9.82	\$9.74	\$1.22	\$41.96
7	60	\$25.41	\$9.82	\$11.05	\$1.39	\$47.67
8	65	\$27.53	\$9.82	\$11.84	\$1.48	\$50.67
9	75	\$31.76	\$9.82	\$13.41	\$1.65	\$56.64
10	85	\$36.00	\$9.82	\$14.48	\$1.81	\$62.11

Effective Date - 02/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.10	\$9.82	\$4.28	\$0.00	\$31.20
2	40	\$17.10	\$9.82	\$4.28	\$0.00	\$31.20
3	45	\$19.24	\$9.82	\$8.70	\$1.13	\$38.89
4	45	\$19.24	\$9.82	\$8.70	\$1.13	\$38.89
5	50	\$21.38	\$9.82	\$9.49	\$1.22	\$41.91
6	50	\$21.38	\$9.82	\$9.74	\$1.23	\$42.17
7	60	\$25.66	\$9.82	\$11.05	\$1.40	\$47.93
8	65	\$27.79	\$9.82	\$11.84	\$1.48	\$50.93
9	75	\$32.07	\$9.82	\$13.41	\$1.66	\$56.96
10	85	\$36.35	\$9.82	\$14.48	\$1.82	\$62.47

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SIGN ERECTOR

PAINTERS LOCAL 35 - ZONE 1

06/01/2013

\$25.81

\$7.07

\$7.05

\$0.00

\$39.93

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - SIGN ERECTOR - Local 35 Zone 1
Effective Date - 06/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

Notes:

Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1
SPECIALIZED EARTH MOVING EQUIP < 35 TONS
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A

12/01/2013	\$32.34	\$9.41	\$8.80	\$0.00	\$50.55
06/01/2014	\$32.69	\$9.41	\$8.80	\$0.00	\$50.90
08/01/2014	\$32.69	\$9.91	\$8.80	\$0.00	\$51.40
12/01/2014	\$32.69	\$9.91	\$9.33	\$0.00	\$51.93
06/01/2015	\$33.04	\$9.91	\$9.33	\$0.00	\$52.28
08/01/2015	\$33.04	\$10.41	\$9.33	\$0.00	\$52.78
12/01/2015	\$33.04	\$10.41	\$10.08	\$0.00	\$53.53
06/01/2016	\$33.54	\$10.41	\$10.08	\$0.00	\$54.03
08/01/2016	\$33.54	\$10.91	\$10.08	\$0.00	\$54.53
12/01/2016	\$33.54	\$10.91	\$10.89	\$0.00	\$55.34

SPECIALIZED EARTH MOVING EQUIP > 35 TONS
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A

12/01/2013	\$32.63	\$9.41	\$8.80	\$0.00	\$50.84
06/01/2014	\$32.98	\$9.41	\$8.80	\$0.00	\$51.19
08/01/2014	\$32.98	\$9.91	\$8.80	\$0.00	\$51.69
12/01/2014	\$32.98	\$9.91	\$9.33	\$0.00	\$52.22
06/01/2015	\$33.33	\$9.91	\$9.33	\$0.00	\$52.57
08/01/2015	\$33.33	\$10.41	\$9.33	\$0.00	\$53.07
12/01/2015	\$33.33	\$10.41	\$10.08	\$0.00	\$53.82
06/01/2016	\$33.83	\$10.41	\$10.08	\$0.00	\$54.32
08/01/2016	\$33.83	\$10.91	\$10.08	\$0.00	\$54.82
12/01/2016	\$33.83	\$10.91	\$10.89	\$0.00	\$55.63

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPRINKLER FITTER	01/01/2014	\$53.33	\$8.42	\$12.85	\$0.00	\$74.60
<i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	03/01/2014	\$54.58	\$8.42	\$12.85	\$0.00	\$75.85
	10/01/2014	\$55.73	\$8.42	\$12.85	\$0.00	\$77.00
	01/01/2015	\$55.73	\$8.42	\$13.00	\$0.00	\$77.15
	03/01/2015	\$56.73	\$8.42	\$13.00	\$0.00	\$78.15
	10/01/2015	\$57.88	\$8.42	\$13.00	\$0.00	\$79.30
	01/01/2016	\$57.88	\$8.67	\$13.15	\$0.00	\$79.70
	03/01/2016	\$58.88	\$8.67	\$13.15	\$0.00	\$80.70
	10/01/2016	\$60.03	\$8.67	\$13.15	\$0.00	\$81.85
	03/01/2017	\$61.03	\$8.67	\$13.15	\$0.00	\$82.85

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1

Effective Date - 01/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.67	\$8.42	\$8.25	\$0.00	\$35.34
2	40	\$21.33	\$8.42	\$8.25	\$0.00	\$38.00
3	45	\$24.00	\$8.42	\$8.25	\$0.00	\$40.67
4	50	\$26.67	\$8.42	\$8.25	\$0.00	\$43.34
5	55	\$29.33	\$8.42	\$8.25	\$0.00	\$46.00
6	60	\$32.00	\$8.42	\$8.25	\$0.00	\$48.67
7	65	\$34.66	\$8.42	\$8.25	\$0.00	\$51.33
8	70	\$37.33	\$8.42	\$8.25	\$0.00	\$54.00
9	75	\$40.00	\$8.42	\$8.25	\$0.00	\$56.67
10	80	\$42.66	\$8.42	\$8.25	\$0.00	\$59.33

Effective Date - 03/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.10	\$8.42	\$8.25	\$0.00	\$35.77
2	40	\$21.83	\$8.42	\$8.25	\$0.00	\$38.50
3	45	\$24.56	\$8.42	\$8.25	\$0.00	\$41.23
4	50	\$27.29	\$8.42	\$8.25	\$0.00	\$43.96
5	55	\$30.02	\$8.42	\$8.25	\$0.00	\$46.69
6	60	\$32.75	\$8.42	\$8.25	\$0.00	\$49.42
7	65	\$35.48	\$8.42	\$8.25	\$0.00	\$52.15
8	70	\$38.21	\$8.42	\$8.25	\$0.00	\$54.88
9	75	\$40.94	\$8.42	\$8.25	\$0.00	\$57.61
10	80	\$43.66	\$8.42	\$8.25	\$0.00	\$60.33

Notes: Apprentice entered prior 9/30/10:
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
<i>OPERATING ENGINEERS LOCAL 4</i>						

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN OPERATING ENGINEERS LOCAL 4	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TELECOMMUNICATION TECHNICIAN ELECTRICIANS LOCAL 103	09/01/2013	\$32.97	\$13.00	\$12.77	\$0.00	\$58.74
	03/01/2014	\$33.44	\$13.00	\$13.03	\$0.00	\$59.47
	09/01/2014	\$33.84	\$13.00	\$13.05	\$0.00	\$59.89
	03/01/2015	\$34.38	\$13.00	\$13.06	\$0.00	\$60.44
	09/01/2015	\$35.10	\$13.00	\$13.08	\$0.00	\$61.18
	03/01/2016	\$35.81	\$13.00	\$13.10	\$0.00	\$61.91

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.19	\$13.00	\$0.40	\$0.00	\$26.59
2	40	\$13.19	\$13.00	\$0.40	\$0.00	\$26.59
3	45	\$14.84	\$13.00	\$10.04	\$0.00	\$37.88
4	45	\$14.84	\$13.00	\$10.04	\$0.00	\$37.88
5	50	\$16.49	\$13.00	\$10.29	\$0.00	\$39.78
6	55	\$18.13	\$13.00	\$10.53	\$0.00	\$41.66
7	60	\$19.78	\$13.00	\$10.78	\$0.00	\$43.56
8	65	\$21.43	\$13.00	\$11.03	\$0.00	\$45.46
9	70	\$23.08	\$13.00	\$11.28	\$0.00	\$47.36
10	75	\$24.73	\$13.00	\$11.53	\$0.00	\$49.26

Effective Date - 03/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.38	\$13.00	\$0.40	\$0.00	\$26.78
2	40	\$13.38	\$13.00	\$0.40	\$0.00	\$26.78
3	45	\$15.05	\$13.00	\$10.29	\$0.00	\$38.34
4	45	\$15.05	\$13.00	\$10.29	\$0.00	\$38.34
5	50	\$16.72	\$13.00	\$10.54	\$0.00	\$40.26
6	55	\$18.39	\$13.00	\$10.79	\$0.00	\$42.18
7	60	\$20.06	\$13.00	\$11.04	\$0.00	\$44.10
8	65	\$21.74	\$13.00	\$11.29	\$0.00	\$46.03
9	70	\$23.41	\$13.00	\$11.54	\$0.00	\$47.95
10	75	\$25.08	\$13.00	\$11.79	\$0.00	\$49.87

Notes:

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2013	\$47.00	\$10.18	\$18.15	\$0.00	\$75.33
	02/01/2014	\$47.00	\$10.18	\$18.15	\$0.00	\$75.33
	08/01/2014	\$47.90	\$10.18	\$18.22	\$0.00	\$76.30
	02/01/2015	\$48.46	\$10.18	\$18.22	\$0.00	\$76.86
	08/01/2015	\$49.36	\$10.18	\$18.29	\$0.00	\$77.83
	02/01/2016	\$49.93	\$10.18	\$18.29	\$0.00	\$78.40
	08/01/2016	\$50.83	\$10.18	\$18.37	\$0.00	\$79.38
	02/01/2017	\$51.40	\$10.18	\$18.37	\$0.00	\$79.95

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.50	\$10.18	\$18.15	\$0.00	\$51.83
2	60	\$28.20	\$10.18	\$18.15	\$0.00	\$56.53
3	70	\$32.90	\$10.18	\$18.15	\$0.00	\$61.23
4	80	\$37.60	\$10.18	\$18.15	\$0.00	\$65.93
5	90	\$42.30	\$10.18	\$18.15	\$0.00	\$70.63

Effective Date - 02/01/2014

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.50	\$10.18	\$18.15	\$0.00	\$51.83
2	60	\$28.20	\$10.18	\$18.15	\$0.00	\$56.53
3	70	\$32.90	\$10.18	\$18.15	\$0.00	\$61.23
4	80	\$37.60	\$10.18	\$18.15	\$0.00	\$65.93
5	90	\$42.30	\$10.18	\$18.15	\$0.00	\$70.63

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2013	\$34.70	\$7.30	\$12.90	\$0.00	\$54.90
	06/01/2014	\$35.45	\$7.30	\$12.90	\$0.00	\$55.65
	12/01/2014	\$36.20	\$7.30	\$12.90	\$0.00	\$56.40
	06/01/2015	\$36.95	\$7.30	\$12.90	\$0.00	\$57.15
	12/01/2015	\$37.70	\$7.30	\$12.90	\$0.00	\$57.90
	06/01/2016	\$38.45	\$7.30	\$12.90	\$0.00	\$58.65
	12/01/2016	\$39.45	\$7.30	\$12.90	\$0.00	\$59.65

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2013	\$33.42	\$7.30	\$12.90	\$0.00	\$53.62
	06/01/2014	\$34.17	\$7.30	\$12.90	\$0.00	\$54.37
	12/01/2014	\$34.92	\$7.30	\$12.90	\$0.00	\$55.12
	06/01/2015	\$35.67	\$7.30	\$12.90	\$0.00	\$55.87
	12/01/2015	\$36.42	\$7.30	\$12.90	\$0.00	\$56.62
	06/01/2016	\$37.17	\$7.30	\$12.90	\$0.00	\$57.37
	12/01/2016	\$38.17	\$7.30	\$12.90	\$0.00	\$58.37

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2013	\$33.30	\$7.30	\$12.90	\$0.00	\$53.50
	06/01/2014	\$34.05	\$7.30	\$12.90	\$0.00	\$54.25
	12/01/2014	\$34.80	\$7.30	\$12.90	\$0.00	\$55.00
	06/01/2015	\$35.55	\$7.30	\$12.90	\$0.00	\$55.75
	12/01/2015	\$36.30	\$7.30	\$12.90	\$0.00	\$56.50
	06/01/2016	\$37.05	\$7.30	\$12.90	\$0.00	\$57.25
	12/01/2016	\$38.05	\$7.30	\$12.90	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.11	\$10.00	\$14.18	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2013	\$32.92	\$9.41	\$8.80	\$0.00	\$51.13
	06/01/2014	\$33.27	\$9.41	\$8.80	\$0.00	\$51.48
	08/01/2014	\$33.27	\$9.91	\$8.80	\$0.00	\$51.98
	12/01/2014	\$33.27	\$9.91	\$9.33	\$0.00	\$52.51
	06/01/2015	\$33.62	\$9.91	\$9.33	\$0.00	\$52.86
	08/01/2015	\$33.62	\$10.41	\$9.33	\$0.00	\$53.36
	12/01/2015	\$33.62	\$10.41	\$10.08	\$0.00	\$54.11
	06/01/2016	\$34.12	\$10.41	\$10.08	\$0.00	\$54.61
	08/01/2016	\$34.12	\$10.91	\$10.08	\$0.00	\$55.11
	12/01/2016	\$34.12	\$10.91	\$10.89	\$0.00	\$55.92
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2013	\$45.58	\$7.30	\$13.30	\$0.00	\$66.18
	06/01/2014	\$46.33	\$7.30	\$13.30	\$0.00	\$66.93
	12/01/2014	\$47.08	\$7.30	\$13.30	\$0.00	\$67.68
	06/01/2015	\$47.83	\$7.30	\$13.30	\$0.00	\$68.43
	12/01/2015	\$48.58	\$7.30	\$13.30	\$0.00	\$69.18
	06/01/2016	\$49.33	\$7.30	\$13.30	\$0.00	\$69.93
	12/01/2016	\$50.33	\$7.30	\$13.30	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2013	\$47.58	\$7.30	\$13.30	\$0.00	\$68.18
	06/01/2014	\$48.33	\$7.30	\$13.30	\$0.00	\$68.93
	12/01/2014	\$49.08	\$7.30	\$13.30	\$0.00	\$69.68
	06/01/2015	\$49.83	\$7.30	\$13.30	\$0.00	\$70.43
	12/01/2015	\$50.58	\$7.30	\$13.30	\$0.00	\$71.18
	06/01/2016	\$51.33	\$7.30	\$13.30	\$0.00	\$71.93
	12/01/2016	\$52.33	\$7.30	\$13.30	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2013	\$37.65	\$7.30	\$13.30	\$0.00	\$58.25
	06/01/2014	\$38.40	\$7.30	\$13.30	\$0.00	\$59.00
	12/01/2014	\$39.15	\$7.30	\$13.30	\$0.00	\$59.75
	06/01/2015	\$39.90	\$7.30	\$13.30	\$0.00	\$60.50
	12/01/2015	\$40.65	\$7.30	\$13.30	\$0.00	\$61.25
	06/01/2016	\$41.40	\$7.30	\$13.30	\$0.00	\$62.00
	12/01/2016	\$42.40	\$7.30	\$13.30	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2013	\$39.65	\$7.30	\$13.30	\$0.00	\$60.25
	06/01/2014	\$40.40	\$7.30	\$13.30	\$0.00	\$61.00
	12/01/2014	\$41.15	\$7.30	\$13.30	\$0.00	\$61.75
	06/01/2015	\$41.90	\$7.30	\$13.30	\$0.00	\$62.50
	12/01/2015	\$42.65	\$7.30	\$13.30	\$0.00	\$63.25
	06/01/2016	\$43.40	\$7.30	\$13.30	\$0.00	\$64.00
	12/01/2016	\$44.40	\$7.30	\$13.30	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2013	\$32.34	\$9.41	\$8.80	\$0.00	\$50.55
	06/01/2014	\$32.69	\$9.41	\$8.80	\$0.00	\$50.90
	08/01/2014	\$32.69	\$9.91	\$8.80	\$0.00	\$51.40
	12/01/2014	\$32.69	\$9.91	\$9.33	\$0.00	\$51.93
	06/01/2015	\$33.04	\$9.91	\$9.33	\$0.00	\$52.28
	08/01/2015	\$33.04	\$10.41	\$9.33	\$0.00	\$52.78
	12/01/2015	\$33.04	\$10.41	\$10.08	\$0.00	\$53.53
	06/01/2016	\$33.54	\$10.41	\$10.08	\$0.00	\$54.03
	08/01/2016	\$33.54	\$10.91	\$10.08	\$0.00	\$54.53
	12/01/2016	\$33.54	\$10.91	\$10.89	\$0.00	\$55.34
WAGON DRILL OPERATOR <i>LABORERS - ZONE I</i>	12/01/2013	\$33.60	\$7.30	\$12.70	\$0.00	\$53.60
	06/01/2014	\$34.35	\$7.30	\$12.70	\$0.00	\$54.35
	12/01/2014	\$35.10	\$7.30	\$12.70	\$0.00	\$55.10
	06/01/2015	\$35.85	\$7.30	\$12.70	\$0.00	\$55.85
	12/01/2015	\$36.60	\$7.30	\$12.70	\$0.00	\$56.60
	06/01/2016	\$37.35	\$7.30	\$12.70	\$0.00	\$57.35
	12/01/2016	\$38.35	\$7.30	\$12.70	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2013	\$40.49	\$10.00	\$14.18	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	09/01/2013	\$49.06	\$9.82	\$14.04	\$0.00	\$72.92
	03/01/2014	\$50.06	\$9.82	\$14.04	\$0.00	\$73.92
	09/01/2014	\$51.06	\$9.82	\$14.04	\$0.00	\$74.92
	03/01/2015	\$52.06	\$9.82	\$14.04	\$0.00	\$75.92
	09/01/2015	\$53.06	\$9.82	\$14.04	\$0.00	\$76.92
	03/01/2016	\$54.21	\$9.82	\$14.04	\$0.00	\$78.07
	09/01/2016	\$55.26	\$9.82	\$14.04	\$0.00	\$79.12
	03/01/2017	\$56.26	\$9.82	\$14.04	\$0.00	\$80.12
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$25.66	\$8.70	\$4.48	\$0.00	\$38.84
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$36.55	\$8.70	\$6.58	\$0.00	\$51.83
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$29.94	\$8.70	\$6.05	\$0.00	\$44.69
For apprentice rates see "Apprentice- LINEMAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$23.52	\$8.70	\$5.24	\$0.00	\$37.46
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$36.35	\$8.70	\$9.43	\$0.00	\$54.48
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$32.08	\$8.70	\$6.59	\$0.00	\$47.37
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$23.52	\$8.70	\$3.72	\$0.00	\$35.94
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$19.25	\$8.70	\$2.85	\$0.00	\$30.80
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$42.77	\$8.70	\$11.78	\$0.00	\$63.25

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 09/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.66	\$8.70	\$4.24	\$0.00	\$38.60
2	65	\$27.80	\$8.70	\$4.71	\$0.00	\$41.21
3	70	\$29.94	\$8.70	\$5.43	\$0.00	\$44.07
4	75	\$32.08	\$8.70	\$6.16	\$0.00	\$46.94
5	80	\$34.22	\$8.70	\$6.88	\$0.00	\$49.80
6	85	\$36.35	\$8.70	\$7.62	\$0.00	\$52.67
7	90	\$38.49	\$8.70	\$8.83	\$0.00	\$56.02

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$26.33	\$4.18	\$2.79	\$0.00	\$33.30
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/29/2012	\$17.18	\$3.37	\$0.00	\$0.00	\$20.55
This classification applies only to the trimming of branches on and around utility lines.						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/29/2012	\$15.15	\$3.37	\$0.00	\$0.00	\$18.52
This classification applies only to the trimming of branches on and around utility lines.						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours) unless otherwise specified.

- * Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof.
- ** Multiple ratios are listed in the comment field.
- *** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.
- **** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

Division of Labor and Industries Statement of Compliance

WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

In addition, every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority. For every week in which an apprentice is employed, a photocopy of the apprentice's identification card must be attached to the payroll report. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor, or public body shall furnish to the awarding authority directly, within fifteen days after completion of its portion of the work a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

_____, 20_____

I, _____,
(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by
_____ on the _____

(Contractor, subcontractor or public body)

(Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature _____

Title _____

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

GENERAL TERMS & CONDITIONS

APPENDIX C General Conditions

GENERAL TERMS AND CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, RECONSTRUCTION, ALTERATION, REMODELING, OR REPAIR OF ANY PUBLIC BUILDING OR PUBLIC WORK IN THE CITY OF SOMERVILLE

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**GENERAL TERMS AND CONDITIONS OF THE CONTRACT
FOR CONSTRUCTION, RECONSTRUCTION, INSTALLATION,
DEMOLITION, MAINTENANCE, OR REPAIR OF ANY
PUBLIC BUILDING OR PUBLIC WORK
IN THE CITY OF SOMERVILLE**

ARTICLE 1: DEFINITIONS

1.1. In General.

1.1.1. Well-known meanings. When words or phrases that have a well-known technical, or construction industry, or trade meaning are used in the Contract Documents, such words or phrases shall be interpreted in accordance with that meaning, unless otherwise stated.

1.1.2. Capitalization. The words and terms defined in this Article are capitalized in these General Terms and Conditions of the Contract. Other capitalized words may refer to a specific document found in the Contract Documents.

1.1.3. Persons. Whenever the word person or persons is used, it includes, unless otherwise stated, entity or entities, respectively, including, but not limited to, corporations, partnerships, and joint venturers.

1.1.4. Singular and Plural. The following terms have the meanings indicated which are applicable to both the singular and the plural thereof.

1.2. Definitions.

1.2.1. Agreement. The Agreement is the written document between the **City** and the **Contractor** which is titled: Agreement between the City of Somerville and the Contractor, which is the executed portion of the Contract, and which forms a part of the Contract. The Agreement also includes all documents required to be attached thereto, including, but not limited to, the performance bond, the labor and materials or payment bonds, certificates of insurance, and all Modifications of the Agreement.

1.2.2. Change Order. A Change Order is a document which is signed by the **Contractor**, the **Design Professional**, and the **City**; which is directed to the **Contractor**; which authorizes the **Contractor** to make an addition to, a deletion from or a revision in the Work, or an adjustment in the Contract Sum or in the Contract Time; and which is issued on or after the date of the Agreement between the **Contractor** and the **City**.

1.2.3. City. The **City** refers to the City of Somerville, which is the owner of the

Project and is the public awarding authority with whom the **Contractor** has entered into the Contract and for whom the Work is to be provided.

1.2.4. Claim. A Claim is a dispute, demand, or assertion by one of the parties arising out of or relating to the Contract for which such party is seeking relief.

1.2.5. Contract. The Contract consists of all the Contract Documents. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification to the Contract signed by both parties.

1.2.6. Contract Documents. The Contract Documents consist of the Agreement; the notice of award of the Contract; the Notice to Proceed; the entire Project Manual; Change Orders; Construction Change Directives; the **Contractor's** Bid and all accompanying documents; and the **Design Professional's** written interpretations and clarifications issued on or after the issuance of the Notice to Proceed. Shop Drawing submittals and reports or drawings utilized by the **Design Professional** in preparing the Contract Documents are not Contract Documents.

1.2.7. Contractor. The **Contractor** is the person who is awarded the Contract for the Project herein pursuant to M.G.L. c. 149, §44A or M.G.L. c. 39, §39M; and is identified in the Agreement as such. The term "**Contractor**" is intended to include the **Contractor** as well as its authorized representative(s).

1.2.8. Contract Sum. The Contract Sum is the total amount stated in the Agreement payable by the **City** to the **Contractor** for the completion of the Work in accordance with the Contract Documents.

1.2.9. Contract Time. Unless otherwise provided, the Contract Time is the number of days allotted in the Contract Documents or the dates stated in the Agreement, including authorized adjustments, for Substantial Completion. We usually put a contract end date that is beyond the date of substantial completion.

1.2.10. Coordination Drawings. Coordination Drawings are those drawings, which are prepared by the **Contractor** or a Subcontractor that show the exact alignment, physical locations, and configuration of the mechanical, electrical, and fire protection installations.

1.2.11. Day. The term "day" shall mean calendar day unless otherwise stated.

1.2.12. Design Professional. The **Design Professional** is the person lawfully licensed to practice architecture, engineering, or landscape architecture and has been selected by the **City** to administer the Contract. The term "**Design Professional**," while referred to in the singular, means the **Design Professional** and/or the **Design Professional's** representative. For the purposes of this project, **Design Professional** shall mean the firm of CDR Maguire

Inc. Engineers and appropriate consultants.

1.2.13. Field Order. A Field Order is a written order issued by the **Design Professional** which orders minor changes in the Work, but which does not involve a change in the Contract Sum or the Contract Time.

1.2.14. Final Completion. Final Completion is the point in time when the Design Professional finds that the Work has been fully completed in accordance with the Contract Documents. Final Completion shall be no later than thirty (30) days after Substantial Completion.

1.2.15. General Requirements. General Requirements refer to Sections of Division 1 of the Specifications.

1.2.16. Modification. A Modification is a written instrument that amends the Contract after execution of the Agreement.

1.2.17. Notice to Proceed. A Notice to Proceed is a written notice given by the **City**, or the **Design Professional**, to the **Contractor** fixing the date on which the Contract Time will begin to run and on which the **Contractor** shall start to perform its obligations under the Contract Documents.

1.2.18. Plans. The Plans are the drawings which are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location, dimensions, scope, extent, and character of the Work to be furnished and performed by the **Contractor** and which have been prepared or approved by the **Design Professional**.

1.2.19. Product Data. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the **Contractor** to illustrate materials or equipment for some portion of the Work. Product Data are not considered part of the Contract Documents.

1.2.20. Project. The Project is the total Work to be provided under the Contract Documents and may be the whole or a part as indicated elsewhere in the Contract Documents and may include construction by the **City** or by separate contractors. The Project is the Work described in the invitation to bid (advertisement) and Specifications and illustrated by the Plans, including any Modifications.

1.2.21. Project Manual. The Project Manual is the entire set of bidding documents which includes, but is not limited to, the invitation to bid (advertisement), the instructions to bidders, all of the forms, the wage rates, all City and state requirements, the General Terms and Conditions of the Contract, any supplementary conditions thereto, the Plans, the Specifications, and all addenda.

1.2.22. Proposed Change Order. A Proposed Change Order is a Change Order that has been submitted by the **Contractor** to the **Design Professional**, is under review, and has not been approved by the **City**.

1.2.23. Samples. Samples are physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged. Samples are not considered part of the Contract Documents.

1.2.24. Shop Drawings. Shop Drawings are all drawings, diagrams, illustrations, schedules, and other information that are specifically prepared or assembled by or for the **Contractor** and submitted by the **Contractor** to illustrate some portion of the Work. Shop Drawings are not considered part of the Contract Documents.

1.2.25. Site. The Site is the location of the Project and of the Work.

1.2.26. Specifications. Specifications are those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

1.2.27. Subcontractor. A Subcontractor is a person who contracts directly with the **Contractor**, unless otherwise stated.

1.2.28. Submittals. Submittals are those Shop Drawings, Product Data, Samples, or any other required document that are provided to the Design Professional for review and approval.

1.2.29. Substantial Completion. Substantial Completion means that the Work has been completed and the Site or the facility is opened for full and intended public use, except for minor incomplete or unsatisfactory items that do not materially impair the usefulness of the Work. The **Design Professional** shall decide what constitutes “minor,” “incomplete,” “unsatisfactory,” and “materially” and the **Design Professional's** decision shall be final.

1.2.30. Sub-subcontractor. A Sub-subcontractor is a person who has contracted directly with a Subcontractor.

1.2.31. Supplier. A Supplier is a manufacturer, fabricator, distributor, material person, or vendor having a direct contract with the Contractor or with any Subcontractor to furnish materials or equipment to be incorporated into the Work by the Contractor or any Subcontractor.

1.2.32. Work. Work refers to the services and the entire completed construction or the various separately identifiable parts thereof required by the Contract Documents,

including all labor, materials, and equipment furnished, furnished and incorporated into the Project, or to be provided by the **Contractor** to fulfill the **Contractor's** obligations. The Work may constitute the whole or a part of the Project.

1.2.33. Construction Change Directive. A **Construction Change** Directive is a written directive to the **Contractor** ordering an addition to, a deletion from, or a revision to the Work issued on or after the date of the Agreement, signed by the **City**, and recommended by the **Design Professional**.

ARTICLE 2: ABOUT THE CONTRACT DOCUMENTS

2.1. Priority/Conflict.

2.1.1. Priority Among Contract Documents. In the event of conflict among the Contract Documents, the Contract Documents shall be construed according to the following priorities:

Highest Priority:	Modifications
Second Priority:	Agreement
Third Priority:	Addenda-later date to take precedence
Fourth Priority:	Supplementary General Conditions
Fifth Priority:	General Conditions
Sixth Priority:	Plans and Specifications

2.1.1.1. If there is a conflict between the Plans and Specifications, the figured dimensions shall govern over the scaled dimensions. Detailed Plans shall govern over the general Plans. Larger scale Plans shall take precedence over smaller scale Plans. Plans shall govern over Shop Drawings. Whenever notes, specifications, dimensions, details, or schedules in the Specifications or in the Plans, or between the Specifications and the Plans, or in all other instances not specifically noted above, the **Contractor** shall provide, unless otherwise directed by a Modification of the Contract, the better quality or greater quantity of Work at no increase in the Contract Sum or in the Contract Time.

2.1.1.2. Compliance with these priority conditions shall not justify any changes in the Work or any increase in the Contract Sum or Contract Time, unless any such compliance results in Work that may not be reasonably inferred from the Contract Documents as being required to produce the intended result as determined by the **Design Professional**.

2.1.2. Review of the Contract Documents and Field Conditions and Discovery of Conflict, Error, Ambiguity, or Discrepancy. Before starting the Work, and during the

progress thereof, the **Contractor** shall carefully study and compare the Contract Documents with each other and with the information furnished by the **City** pursuant to Article 3 and shall at once report to the **Design Professional** any error, inconsistency, or omission the **Contractor** may discover. Any necessary change shall be ordered as provided in Article 11, subject to the requirements of any other provisions of the Contract Documents. The **Contractor** shall not proceed with the Work affected thereby (except in an emergency) until a Modification has been issued. If the **Contractor** proceeds with the Work having discovered such errors, inconsistencies, or omissions contrary to the provisions contained herein, or if by reasonable study of the Contract Documents the **Contractor** could have discovered such, the **Contractor** shall bear all costs arising therefrom. The **Contractor** shall be liable to the **City** for failure to report any conflict, error, ambiguity, or discrepancy of which it knew or should have known.

2.1.3. Field Measurements. The **Contractor** shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the **Contractor** with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the **Design Professional** at once.

2.1.4. Statutory Provisions. The **City** and the **Contractor** recognize that other rights duties and obligations with respect to public construction contracts are provided for by statute, notwithstanding the fact that they may not be provided for in the Contract Documents. In case of conflict between the statutory provisions and other provisions of the Contract Documents and the provisions of any applicable statute, the statutory provisions shall govern.

2.1.5. Voided or Unlawful Provisions. In the event any provision in the Contract is voided or deemed unlawful, such provision shall be deleted without affecting the remainder of the Contract.

2.2. Execution.

2.2.1. Execution of the Agreement by the **Contractor** is a representation that the **Contractor** has visited the Site, become familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

2.3. Intent.

2.3.1. Entire Agreement. The Contract Documents comprise the entire agreement between the **City** and the **Contractor** concerning the Work. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the **Contractor**. The Contract Documents are complementary; what is required by one shall be as binding as if required by all. Performance by the **Contractor** shall be

required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. All Work mentioned or indicated in the Contract Documents shall be performed by the **Contractor** as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others.

2.3.2. Statutory Provisions. Each and every provision of law, code, and regulation, required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion.

2.3.3. Functionally Complete Project. It is the intent of the Contract Documents to describe a functionally complete Project. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the **Contractor**. Any Work, materials, or equipment that may be reasonably inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed by the **Contractor** whether or not specifically called for in the Contract Documents.

2.3.4. Indications or Notations. All indications or notations which apply to one of a number of similar situations, materials, or processes shall be deemed to apply to all such situations, materials, or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

2.3.5. Standards or Quality of Materials or Workmanship. Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

2.3.6. Manufactured Products. All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

2.3.7. Mechanical, Electrical, and Fire Protection Plans. The mechanical, electrical, and fire protection Plans are diagrammatic only and are not intended to show the alignment, physical locations, or configurations of such Work. Such Work shall be installed without additional cost to the **City** to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the **Contractor** shall prepare Coordination Drawings and demonstrate to the **Design Professional's** satisfaction that the installations will comply with the preceding

sentence. The **Contractor** shall be solely liable and responsible for any costs and/or delays resulting from the **Contractor's** failure to prepare such Coordination Drawings.

2.3.8. Locations of Fixtures and Outlets. Exact locations of fixtures and outlets shall be obtained from the **Design Professional** as provided in Article 5 before the Work is roughed in. Work installed without such information from the **Design Professional** shall be relocated at the **Contractor's** expense.

2.3.9. Tests. When test boring or soil test information are included with the Contract Documents or otherwise made available to the **Contractor** and such test boring or soil test information was obtained by the **City** for use by the **Design Professional** in the design of the Project or Work, the **City** does not hold out such information to the **Contractor** as an accurate or approximate indication of subsurface conditions, and no claim for extra cost of extension of time resulting from a reliance by the **Contractor** on such information shall be allowed except as otherwise provided herein. Any such reports are not part of the Contract Documents.

2.3.10. Joining Work. Where the Work is to fit with existing conditions or work to be performed by others, the **Contractor** shall fully and completely join the Work with such conditions or work, unless otherwise specified.

2.4. Organization.

2.4.1. Except as provided in M.G.L. c. 149, §44F, the organization of the Specifications into divisions, sections, and articles, and the arrangement of Plans shall not control the **Contractor** in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

2.5. References.

2.5.1. Where codes, manuals, specifications, standards, requirements and publications of public and private bodies are referred to in the Contract Documents whether specifically or by implication, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated. Where statutes are referred to in the Contract Documents whether specifically or by implication, references shall be understood to be to the latest revision.

2.5.2. References herein to particular paragraphs or Articles are solely to facilitate finding additional information with regard to the specific matters and are not to be construed in any way as limiting the possible paragraphs and Articles in which such matters may be found elsewhere in this document.

2.6. Reuse of Design Professional's Written Instruments.

2.6.1. Neither the **Contractor** nor any Subcontractor or Supplier shall have or acquire any title to or ownership rights in any of the Plans, Specifications, or other documents prepared by the **Design Professional** and shall not reuse any of such Plans, Specifications, or other documents without prior written consent of the **City** and the **Design Professional**.

2.7. Written Material of the Contractor.

2.7.1. All written material prepared or collected by the **Contractor** in the course of completing the Work shall be the exclusive property of the **City** and shall not be used by the **Contractor** for any purpose other than the purpose of this Contract.

2.8. Modifying Words.

2.8.1. In the interest of simplicity, modifying words such as “all” and “any” may be omitted, but the fact that such words may be absent from one sentence and appear in another is not intended to affect the interpretation of either statement.

2.9. Use of Certain Words and Terms.

2.9.1. Whenever in the Contract Documents the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the **City** or of the **Design Professional** as to the Work, it is intended that such requirement, direction, review, or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise).

2.9.2. The use of any such term or adjective shall not be effective to change the duties and responsibilities of the **City** or the **Design Professional** from those assigned in the Contract Documents or to assign any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

2.9.3. When the words “Contractor,” “Subcontractor,” “Sub-subcontractor,” and “Supplier” are used, they are intended to include their employees and agents, unless otherwise specified.

2.10. Modification of the Contract Documents.

2.10.1. Major Modifications . Major Modifications may affect the Contract Sum or the Contract Time. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways, all of which must contain a written endorsement by the **City**:

- 2.10.1.1.** a formal written amendment;
- 2.10.1.2.** a Change Order;
- 2.10.1.3.** a **Construction Change** Directive; or
- 2.10.1.4.** the **Design Professional's** written interpretation, clarification, or decision.

2.10.2. Minor Modifications. Minor modifications do not affect the Contract Sum or the Contract Time. The requirements of the Contract Documents may be supplemented and minor variations and deviations of the Work may be authorized in one or more of the following ways:

- 2.10.2.1.** a Field Order; or
- 2.10.2.2.** the **Design Professional's** approval of a Shop Drawing or Sample.

ARTICLE 3: THE CITY

3.1. Signatory.

3.1.1. All documents which require a signature or an endorsement by the **City** must be signed by the Mayor in order to be deemed ratified by the **City**.

3.2. Requirements to Provide Documents.

3.2.1. To the extent they are available, the **City** shall furnish surveys describing physical characteristics, legal limitations, and utility locations for the site of the Project, and a legal description of the Site.

3.2.2. The **City** shall obtain and pay for necessary approvals, easements, assessments, and charges that are customarily secured prior to the execution of the Contract.

3.2.3. The **City** shall furnish information or services required of the **City** hereunder with reasonable promptness after receipt from the **Contractor** of a written request for such information or services.

3.2.4. The **City** shall provide the **Contractor**, at no charge, such copies of the Project Manual as are reasonably necessary for the execution of the Work.

3.3. Clerk of the Works.

3.3.1. The **City** may engage a Clerk of the Works for this Project, in which case the **City** shall, upon request of the **Contractor**, provide the **Contractor** with a written statement of the duties, responsibilities, and limitations of authority of such Clerk of the Works. Except as expressly set forth in such written statement, the Clerk of the Works shall have no authority to approve Work, to approve Change Orders, or to exercise any of the power and authority of the **City** or the **Design Professional**. The Clerk of the Works shall observe the **Contractor's** operations and construction activities for compliance with the Plans and Specifications. The Clerk of the Works shall have access to all areas of the Project at all times. The **Contractor** shall fully cooperate with the Clerk of the Works in the performance of the Clerk's duties.

3.4. City's Right to Perform Construction and to Award Separate Contracts.

3.4.1. The **City** reserves the right to perform construction or operations at the Site with its own forces or others. If the **Contractor** claims that a delay or additional cost is involved because of such action by the **City**, the **Contractor** shall make such Claim as provided elsewhere in the Contract Documents.

3.4.2. When the separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "**Contractor**" in the Contract Documents in each case shall mean the **Contractor** who executes each separate City-Contractor Agreement.

3.4.3. The **City** shall provide for coordination of the activities of the **City's** own forces and of each separate contractor with the Work of the **Contractor**, who shall cooperate with them. The **Contractor** shall afford each other person access to the Site and shall properly coordinate its Work with that of the persons performing other work. The **Contractor** shall participate with other separate contractors and the **City** in reviewing their construction schedules when directed to do so. The **Contractor** shall make any revisions to the construction schedules deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the **Contractor**, separate contractors, and the **City** until subsequently revised.

3.5. Limitations on the City's Responsibilities.

3.5.1. The **City** shall not supervise, direct, or have control or authority over, nor be responsible for the **Contractor's** means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the **Contractor** to comply with laws, codes and regulations applicable to the furnishing or performance of the Work. The **City** will not be responsible for the **Contractor's** failure to perform or furnish the Work in accordance with the Contract Documents. The **City** is not

responsible for the acts or omissions of the **Contractor**, any Subcontractor, Supplier, or anyone for whose acts the **Contractor**, any Subcontractor or Suppliers may be liable.

3.5.2. The **City's** authority to review any of the **Contractor's** progress schedules, or its decision to raise or not to raise any objections about such schedules shall not impose on the **City** any responsibility for the timing, planning, scheduling, or execution of the Work, nor in any way give rise to any duty or responsibility on the part of the **City** to exercise this authority for the benefit of the **Contractor**, any Subcontractor or Supplier or any other party.

3.5.3. The **City's** decision to raise or not to raise objections with regard to any aspects of the **Contractor's** insurance shall in no way give rise to any duty or responsibility on the part of the **City** to or for the benefit of the **Contractor**, any Subcontractor, any Supplier, or any other party.

3.6. Reservation of Rights .

3.6.1. The **City** reserves the right to correct at any time any error in any progress payment that may have been made.

3.6.2. Should defective Work be discovered subsequent to final payment, the **City** reserves the right to make a claim and recover all costs and professional fees associated therewith, including the cost of removing and/or replacing the defective Work.

3.7. Waivers .

3.7.1. All waivers by the **City** are valid only to the extent that they are signed by the **City**. Any such waivers pertain only to the specific matter contained in the waiver and not to any similar, subsequent matters.

ARTICLE 4: THE DESIGN PROFESSIONAL

4.1. City's Representative.

4.1.1. The **Design Professional** is the **City's** representative (1) during construction, (2) until final payment is due, and (3) with the **City's** concurrence, from time to time during the correction period described in Article 10. The **Design Professional** will advise and consult with the **City**. The **Design Professional** will have authority to act on behalf of the **City** only to the extent provided in the Contract Documents, unless otherwise modified by a written instrument in accordance with other provisions of the Contract.

4.1.2. The duties, responsibilities, and the limitations of authority of the **Design Professional** as the **City's** representative during construction are set forth in the Contract Documents and shall not be extended without the written consent of the **City** and the **Design Professional**.

4.2. Administration of the Contract .

4.2.1. The **Design Professional** will provide administration of the Contract as described in the Contract Documents, unless the **City** has engaged a construction manager.

4.3. Visits to the Site.

4.3.1. The **Design Professional** will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the **Design Professional** will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of on-site observations as an architect, engineer, or landscape architect, the **Design Professional** will keep the **City** informed of progress of the Work in writing and will endeavor to guard the **City** against defects and deficiencies in the Work.

4.4. Communications Facilitating Contract Administration.

4.4.1. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the **City** and the **Contractor** shall endeavor to communicate through the **Design Professional**. Communications by and with the **Design Professional's** consultants shall be through the **Design Professional**. Communications by and with Subcontractors and Suppliers shall be through the **Contractor**. Communications by and with **City** employees and separate contractors shall be through the **City**.

4.4.2. When it deems it necessary or expedient, the **City** may communicate directly with the **Contractor**, any Subcontractors, Suppliers, or consultants.

4.5. Certification of Applications for Payment.

4.5.1. Based on the **Design Professional's** observations and evaluations of the **Contractor's** applications for payment, the **Design Professional** will review and certify the amounts due the **Contractor** and will issue certificates for payment in such amounts.

4.6. Rejection of Work.

4.6.1. The **Design Professional** will have authority to reject or disapprove Work (1) that does not conform to the Contract Documents; (2) that the **Design Professional** believes to be defective; and (3) that the **Design Professional** believes will not produce a completed Project conforming to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

Whenever the **Design Professional** considers it necessary or advisable for implementation of the intent of the Contract Documents, the **Design Professional** will have authority to require additional inspection or testing of the Work in accordance with Article 9, whether or not such Work is fabricated, installed, or completed. However, neither this authority of the **Design Professional** nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the **Design Professional** to the **Contractor**, Subcontractors, Suppliers, or other persons performing portions of the Work.

4.7. Review of Submittals.

4.7.1. The **Design Professional** will review or take other appropriate action upon the **Contractor's** submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents and only to the extent that the **Design Professional** believes desirable to protect the **City's** interest. The **Design Professional's** action will be taken with reasonable promptness, while allowing sufficient time in the **Design Professional's** professional judgment to permit adequate review, taking into account the time periods set forth in the latest schedule prepared by the **Contractor** and approved by the **Design Professional**. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the **Contractor** as required by the Contract Documents. The **Design Professional's** review of the **Contractor's** submittals shall not relieve the **Contractor** of the obligations under Article 5. The **Design Professional's** review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The **Design Professional's** approval of a specific item shall not indicate approval of an assembly of which the item is a component. After the rejection of the second resubmittal of any one Submittal, the **Contractor** shall bear the cost of the review of each subsequent resubmittal.

4.8. Preparation of Change Orders and Construction Change Directives.

4.8.1. The **Design Professional** will prepare Change Orders and **Construction Change Directives** and may authorize minor Modifications in the Work as provided in Article 11.

4.9. Inspections.

4.9.1. The **Design Professional** will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; will receive and forward to the **City** for the **City's** review and records written warranties and related documents required by the Contract and assembled by the **Contractor**; and will issue a final certificate for payment upon the **Contractor's** compliance with all of the requirements of the Contract Documents.

4.10. Interpretations, Clarifications, and Decisions.

4.10.1. The **Design Professional** will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the **City** or the **Contractor**. The **Design Professional's** response to such requests will be made with reasonable promptness and within the time set forth in the Agreement between the **City** and the **Design Professional**. Any such written interpretations, clarifications, and decisions shall be binding on the **Contractor**.

4.10.2. Interpretations, clarifications, and decisions of the **Design Professional** will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. The **Design Professional** will not be liable to the **Contractor**, any Subcontractor, or Supplier for results of interpretations, clarifications, or decisions so rendered in good faith.

4.10.3. The **Design Professional** may, as the **Design Professional** judges desirable, issue additional drawings or instructions indicating in greater detail the construction or design of the various parts of the Work; such drawings or instructions may be effected by a Field Order or other notice to the **Contractor**, and provided such drawings or instructions are reasonably consistent with the previously existing Contract Documents, the Work shall be executed in accordance with such additional drawings or instructions without any additional cost or an extension of the Contract Time.

4.10.4. The **Design Professional's** decisions on matters relating to aesthetic effect must be consistent with the **City's** and will be final.

4.11. Limitation on the Design Professional's Responsibilities .

4.11.1. Neither the **Design Professional's** authority to act under the provisions of the Contract Documents nor any decision made by the **Design Professional** in good faith to exercise or not to exercise such authority shall give rise to any duty or responsibility of the **Design Professional** to the **Contractor**, any Subcontractor, any Supplier, any surety for any of them or any other person.

4.11.2. The **Design Professional** will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the **Contractor's** responsibility as provided in Article 5. The **Design Professional** will not be responsible for the **Contractor's** failure to carry out the Work in accordance with the Contract Documents. The **Design Professional** will not have control over or charge of and will not be responsible for acts or omissions of the **Contractor**, Subcontractors, Suppliers, or of any other persons performing portions of the Work.

ARTICLE 5: THE CONTRACTOR

5.1. Relationship with the City.

5.1.1. The **Contractor** is an independent contractor and not an employee of the **City**. The **Contractor** is engaged by virtue of the Contract to perform only those services contained therein. The **Contractor** is not authorized to contract on behalf of the **City** or to incur any liability on the part of the **City**.

5.2. Code of Conduct.

5.2.1. M.G.L. c. 268A establishes standards of conduct for officials and employees of the **City**. The **Contractor** shall familiarize itself with the statute and act accordingly.

5.3. Quality Assurance.

5.3.1. The **Contractor** shall be responsible for ensuring that it, all Subcontractors, Suppliers, and all persons employed to do the Work under the Contract Documents perform in a professional manner, provide a high quality of service and Work, and perform in accordance with the Contract Documents.

5.4. Supervision.

5.4.1. Competence and Efficiency. The **Contractor** shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills, attention and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

5.4.2. Construction Means, Methods, Techniques, Etc. The **Contractor** shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Contract. Where the Contract Documents refer to particular construction means, methods, techniques, sequences, or procedures or indicate or imply that such are to be used in the Work, such mention is intended only to indicate that the operations of the **Contractor** shall be such as to produce at least the quality of Work implied by the operations described. The actual determination of whether or not the described operations may be safely and suitably employed on the Work shall be the responsibility of the **Contractor**, who shall notify the **Design Professional** in writing, prior to implementation, of the actual means, methods, techniques, sequences, or procedures which will be employed on the Work, if these differ from those mentioned in the Contract Documents. All loss, damage, liability or cost of correcting defective work arising from the employment of any construction means, methods, techniques, sequences, or procedures shall be borne by the **Contractor**, notwithstanding that such construction means, methods, techniques, sequences, or procedures are referred to, indicated or implied by the Contract Documents, unless the **Contractor** has given timely notice to the **City** and the **Design Professional** in writing that

such means, methods, techniques, sequences, or procedures are not safe or suitable, and the **City** has then instructed the **Contractor** in writing to proceed at the **City's** risk.

5.4.3. Variance between the Contract Documents and Statutes, Ordinances, Codes, Rules, and Regulations. The **Contractor** shall promptly notify the **Design Professional** and the **City** in writing of any variances between the Contract Documents and statutes, ordinances, codes, rules, and regulations. If the **Contractor**, without written notice to the **Design Professional** and the **City**, performs Work knowing that it is contrary to statutes, ordinances, codes, rules, and regulations, the **Contractor** shall assume full responsibility for such Work and shall bear the costs associated therewith, i.e., replacement, repairs, removal, and fines.

5.4.4. Acts and Omissions. The **Contractor** shall be responsible to the **City** for the acts and omissions of all persons performing or supplying the Work.

5.4.5. Inspections. The **Contractor** shall be responsible for inspection of portions of Work already performed under this Contract to determine whether such portions are in proper condition to receive subsequent Work.

5.5. Personnel.

5.5.1. Suitability. The **Contractor** shall provide competent, properly licensed and/or certified, suitably qualified, and reliable personnel to perform the Work required by the Contract Documents. The **Contractor** shall enforce strict discipline and maintain good order at the site at all times. The **Contractor** shall not employ any Subcontractor, Supplier, or other person, whether initially or as a substitute, against whom the **City** may have reasonable objection. Acceptance of any Subcontractor or other person by the **City** shall not constitute a waiver of any right of the **City** to reject defective Work.

5.5.2. Sexual Harassment. Sexual harassment is an unlawful practice under M.G.L. c. 151B. The **Contractor**, Subcontractors, and all other persons responsible for any portion of the Work shall refrain from engaging in sexual harassment. The **Contractor** shall be responsible for any acts of sexual harassment committed by any persons responsible for any portion of the Work. The **Contractor** shall take appropriate action against any such individuals.

5.5.3. Weapons and Illegal Drugs. No weapons or illegal drugs are permitted on the Site. It is the responsibility of the **Contractor** to ensure that no weapons or illegal drugs are brought to the Site.

5.5.4. Maximum Work Day and Work Week. (*Reference: M.G.L. c. 149, §§30 and 34;*) No laborer, worker, mechanic, foreperson or inspector working within this Commonwealth in the employ of the **Contractor**, Subcontractor or other person doing or contracting to do the whole or part of the work contemplated by the Contract, shall be required or permitted to work more than eight (8) hours in any one day or more than forty-eight (48) hours in any one week, or more than six (6) days in any one week, except in cases of emergency.

5.5.5. Lodging. (*Reference:* M.G.L. c. 149, §25;). Every employee under this Contract shall lodge, board and trade where and with whom he or she elects, and neither the **Contractor** nor its agents or employees shall, either directly or indirectly, require as a condition of the employment of any person that the employee shall lodge, board or trade at a particular place or with a particular person.

5.5.6. Wage Rates. (*Reference:* M.G.L. c. 149, §27). Mechanics and apprentices, teamsters, chauffeurs and laborers performing Work shall be paid no less than the minimum rate of wages included in the bid documents and the Project Manual and which are made part of the Contract. They shall continue to be the minimum rate of wages for said employees during the life of the Contract. The **Contractor** shall keep a legible copy of the wage rates posted in a conspicuous place at the site during the life of the Contract. These rates of wages shall include payments by employers to health and welfare plans, pension plans and supplementary unemployment benefit plans as provided in M.G.L. c. 149, §26;, and such payments shall be considered as payments to persons under M.G.L. c. 149, §27 performing work as therein provided. If the **Contractor** does not make payments to a health and welfare plan, a pension plan and a supplementary unemployment benefit plan, where such payments are included in the rates of wages, the **Contractor** shall pay the amount of said payments directly to each employee engaged in the Work. If the **Contractor** pays less than the rate of wages, including payments to health and welfare funds and pension funds, or the equivalent payments in wages to any person performing Work within the classifications as determined by the Commissioner of Labor and Industries, and if the **Contractor** takes or receives for its own use or the use of any other person, as a rebate, refund or gratuity, or in any other guise, any part or portion of the wages, including payments to health and welfare funds and pension funds, or the equivalent payment in wages, paid to such person for Work done or service rendered on the Project, the **Contractor** will be subject to the penalties set forth in M.G.L. c. 149, §27. Notwithstanding the foregoing and the requirements of 5.5.7.1 and 5.5.7.2 below, if the Contract is federally funded, federal labor standards apply, including Davis Bacon minimum wage rates and payroll reporting requirements. See the "Federal Requirements" section at the end of these contract documents.

5.5.7. Payroll Records of Employees. (*Reference:* M.G.L. c. 149, §27B;). The **Contractor** and all Subcontractors who are subject to M.G.L. c. 149, §§27 and 27A shall keep a true and accurate record of all mechanics and apprentices, teamsters, chauffeurs, and laborers performing Work showing the name, address and occupational classification of each such employee, the hours worked by and the wages paid to all such employees. The **Contractor** and the Subcontractors shall submit a copy of said record to the **City** on a weekly basis.

5.5.7.1. (*Reference:* M.G.L. c. 149, §27B;). The **Contractor** and all Subcontractors who are subject to M.G.L. c. 149, §§27 and 27A shall preserve their payroll records for a period of three (3) years from the date of completion of the Contract.

5.5.7.2. (*Reference:* M.G.L. c. 149, §27B). The **Contractor** and all Subcontractors who are subject to M.G.L. c. 149, §§27 and 27A shall furnish to the

Commissioner of Labor and Industries and the **City** within fifteen (15) days after completion of their portion of the Work a statement executed by the **Contractor** or Subcontractor or by any authorized officer or employee of the **Contractor** or Subcontractor who supervises the payment of wages in the form found in M.G.L. c.149, §27B.

5.6. Superintendence.

5.6.1. Employment of a Superintendent . The **Contractor** shall employ a competent, properly licensed superintendent, reasonably acceptable to the **City**, and necessary assistants who shall be in attendance at the Site full time during the progress of the Work until the date of Substantial Completion and for such additional time thereafter as the **Design Professional** or the **City** may determine to be necessary for the expeditious completion of the Work, including final completion. If continually in the employ of the Contractor, the same Superintendent shall be assigned to this project.

5.6.2. Removal/Replacement of a Superintendent . The **Contractor** shall remove the superintendent if requested to do so in writing by the **City** and shall promptly replace such superintendent with a competent person reasonably acceptable to the **City**. The superintendent shall represent the **Contractor**, and communications given to the superintendent shall be as binding as if given to the **Contractor**. The **Contractor** shall not replace the superintendent without written notice to the **City** and the **Design Professional**.

5.6.3. Registered Professional Engineer or Registered Land Surveyor . The **Contractor** shall retain a competent Registered Professional Engineer or Registered Land Surveyor, acceptable to the **Engineer**, who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the site and shall establish sufficient lines and grades for the construction of associated Work such as, but not limited to, roads, utilities, and site grading. The Engineer or Land Surveyor shall certify as to the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries.

5.6.4. Building Grades, Lines, Etc.; The **Contractor** shall establish the building grades; lines; levels; and column, wall and partition lines required by the various Subcontractors in laying out their Work.

5.6.5. Coordination and Supervision . The **Contractor** shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The **Contractor** and all Subcontractors shall at all times afford each trade, any separate contractor, or the **City**, every reasonable opportunity for the installation of Work and the storage of materials.

5.6.6. Job Meetings . There shall be job meetings held on a weekly basis, or more

often if required by the **City**. The **Contractor** shall arrange for and attend weekly job meetings with the **Design Professional** and such other persons as the **Design Professional** may from time to time wish to have present. The **Contractor** shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the **Contractor's** own superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is requested by the **Design Professional**. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, Change Orders, time schedules and workforce power. Any notices required under the Contract may be served on such representatives.

5.7. Materials, Labor, Equipment, Etc.

5.7.1. Provision of. Unless otherwise provided in the Contract Documents, the **Contractor** shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the Work.

5.7.2. Quality and Use of. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by the **Design Professional**, the **Contractor** shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

5.7.3. Discrepancies or Defects. If the **Contractor** is unable to perform its Work because of discrepancies or defects in the work of the **City's** own forces or of a separate contractor, the **Contractor** shall immediately notify the **Design Professional** and the **City** in writing of the conditions that render unable to so perform. Failure to notify the **Design Professional** constitutes an acknowledgment and acceptance of the other work as being fit and proper for integration with the **Contractor's** Work except for latent or non-apparent defects and deficiencies in the other work.

5.8. Contractor's Management and Financial Statement Requirements. (Reference: M.G.L. c. 30, §39R)

5.8.1. The words defined herein shall have the meaning stated below whenever they appear in this Paragraph:

5.8.1.1. "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to M.G.L. c.149, §44A-H or M.G.L. c. 30, §39M, inclusive.

5.8.1.2. “Contract” means any contract awarded or executed pursuant to M.G.L. c. 149, §44A-H or M.G.L. c. 30, §39M, which is for an amount or estimate amount that exceed the dollar amount set forth in M.G.L. c. 30, §39R.

5.8.1.3. “Records” means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

5.8.1.4. “Independent Certified Public Accountant” means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his/her residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant’s independence shall not be confined to the relationships existing in connection with the filing of reports with the **City**.

5.8.1.5. “Audit,” when used in regard to financial statement, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

5.8.1.6. “Accountant’s Report,” when used in regard to financial statements, means a document in which an independent certified accountant indicates the scope of the audit which s/he has made and sets forth his/her opinion regarding the financial statements taken as a whole with listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefore shall be stated. An accountant’s report shall include as part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.

5.8.1.7. “Management,” when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the Contractor.

5.8.1.8. Accounting terms, unless otherwise defined herein shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

5.8.2. The Contractor shall make, and keep for at least six (6) years after final payment,

books, Records, and accounts that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.

5.8.3. Until the expiration of six (6) years after final payment, the Office of the Inspector General, and the Deputy Commissioner of the Division of Capital Asset Management shall have the right to examine any books, documents, papers or Records of the Contractor or of its Subcontractors that directly pertain to, and involve transactions relating to, the Contractor or its Subcontractors.

5.8.4. The Contractor shall describe any change in the method of maintaining Records or recording transactions which materially affect any statements filed with the **City**, including in its description the date of the change and reasons therefore, and shall accompany said description with a letter from the Contractor's Independent Certified Public Accountant approving or otherwise commenting on the changes.

5.8.5. The Contractor shall file a Statement of Management on internal accounting controls as set forth below prior to the execution of the Contract.

5.8.6. The Contractor shall file prior to the execution of the contract and shall continue to file annually, an Audited Financial Statement for the most recent completed fiscal year as set forth below.

5.8.7. The Contractor shall file with the **City** a Statement of Management as to whether the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:

5.8.7.1. transactions are executed in accordance with Management's general and specific authorization;

5.8.7.2. transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles, and to maintain accountability for assets;

5.8.7.3. access to assets is permitted only in accordance with Management's general or specific authorization; and

5.8.7.4. the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any difference.

5.8.7.5. The Contractor shall also file with the **City** a statement prepared and signed by an Independent Certified Public Accountant stating that s/he has examined the Statement of Management on internal accounting controls, and expressing an opinion

as to:

5.8.7.5.1. whether the representation of Management in response to this paragraph and paragraphs 5.8.2. through 5.8.6 above are consistent with the result of Management's evaluation of the system of internal accounting controls; and

5.8.7.5.2. whether such representations of Management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.

5.8.8. The Contractor shall annually file with the Commissioner of the Division of Capital Asset Management during the term of the contract a financial statement prepared by an Independent Certified Public Accountant on the basis of an Audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the **City** upon request.

5.9. Taxes.

5.9.1 The **Contractor** shall pay all sales, consumer, use, and other similar taxes for the Work or portions thereof which are provided by the **Contractor** which are legally enacted when bids are received, whether or not yet effective or merely scheduled to go into effect. However, the **Contractor** shall not pay, and the **City** shall not reimburse or pay the **Contractor** for, any sales taxes for building supplies or materials for which an exemption is provided in M.G.L. c. 64H, §6(f). The **City's** tax exemption number to be used by the **Contractor** in this regard is E04-600-1414.

5.10. Permits, Licenses, and Fees.

5.10.1 Unless otherwise provided, the **Contractor** shall obtain and pay the fees for all permits, licenses, and inspections that are necessary for the proper execution and completion of the Work and which are customarily secured after execution of the Contract and which are legally required. All fees for permits, licenses, and inspections required by any **City** department shall be waived.

5.11. Notices Required By Statutes, Ordinances, Codes, Rules, Regulations, and Orders of the City.

5.11.1 The **Contractor** shall give notices required by statutes, ordinances, codes, rules, regulations, and orders of the **City** bearing on performance of the Work.

5.12. Additional Information from Design Professional.

5.12.1. The **Contractor** shall perform the Work in accordance with the Contract

Documents and submittals approved pursuant to Article 4.

5.12.2. The **Contractor** shall give the **Design Professional** timely notice of any additional Plans, Specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.

5.12.3. The **Contractor** shall not proceed with any Work not clearly and consistently defined in detail in the Contract Documents, but shall request additional drawings or instructions from the **Design Professional** as provided in the previous Paragraph. If the **Contractor** proceeds with such Work without obtaining further drawings, Specifications, or instructions, the **Contractor** shall correct Work incorrectly done at the **Contractor's** own expense.

5.13. “Or equal.”

5.13.1. Requirements for Substitutions. (*Reference: M.G.L. c. 30, §39M(b).*) Where products or materials are prescribed by manufacturer name, trade name, or catalog reference, the words “or approved equal” shall be understood to follow. An item shall be considered equal to the item so named or described if, in the opinion of the **Design Professional**:

5.13.1.1. it is at least equal in quality, durability, appearance, strength, and design;

5.13.1.2. it performs at least equally the function imposed by the general design for the Work;

5.13.1.3. it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the Specifications.

5.13.2. Net Savings. No proposed substitution will be permitted unless the **Contractor** certifies that the proposed substitution will yield a net savings to the **City** and will not extend the Contract Time.

5.13.3. Contractor’s Expense. Any structural or mechanical changes made necessary to accommodate substituted equipment under this paragraph (including but not limited to engineering fees) shall be at the expense of the **Contractor** or **Subcontractor** responsible for the Work item.

5.13.3.1. Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the **Contractor**, notwithstanding approval or acceptance of such substitution by the **City** or the **Design Professional**, unless such substitution was made at the written request or direction of the **City** or the **Design Professional**.

5.13.3.2. All data to be provided by the **Contractor** in support of any proposed

“or equal” or substitute item will be at the **Contractor's** expense.

5.13.4. Meeting Requirements. The **Contractor** shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The **Design Professional** may require the **Contractor** to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the **Design Professional**, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the **Contractor's** expense. This provision shall not require the **Contractor** to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the **Contractor's** expense.

5.13.5. Named Manufacturer's Product. In all cases in which a manufacturer's name, trade name, or other proprietary designation is used in connection with materials or articles to be furnished under this Contract, whether or not the phrase “or equal” is used after such name, the **Contractor** shall furnish the product of the name manufacturer(s) without substitution, unless a written request for a substitute has been submitted by the **Contractor** and approved in writing by the **Design Professional** as provided in the following paragraph.

5.13.6. Deviations. If the **Contractor** proposes to use a material which while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the **Contractor** shall inform the **Design Professional** in writing of the nature of such deviations at the time the material is submitted for approval and shall request written approval of the deviation from the requirements of the Contract Documents.

5.13.7. Rejection of Deviations. In requesting approval of deviations or substitutions, the **Contractor** shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the **Design Professional**, the evidence presented by the **Contractor** does not provide a sufficient basis for such reasonable certainty, the **Design Professional** may reject such substitution or deviation without further investigation.

5.13.8. Consistent Character and Quality of Design. The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the Project. The **Design Professional** shall judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The **Design Professional** will not approve as equal to materials specified proposed substitutes that, in the **Design Professional's** opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the Project. In order to permit coordinated design of color and finishes the **Contractor** shall, if required by the **Design Professional**, furnish the substituted material in any color, finish, texture, or pattern which would have been

available from the manufacturer originally specified, at no additional cost to the **City**.

5.13.9. Warranty. The warranties provided herein shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

5.13.10. Design Professional's Approval. The **Design Professional** will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed, or utilized without the **Design Professional's** prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. The **City** may require the **Contractor** to furnish at the **Contractor's** expense a special performance guarantee or other surety with respect to any "or equal" or substitute. The **Design Professional** will record the time required by the **Design Professional** and its consultants in evaluating substitutes proposed or submitted by the **Contractor** and in making changes in the Contract Documents (or in the provisions of any other direct contract with the **City** for work on the Project) occasioned thereby. Whether or not the **Design Professional** accepts a substitute item so proposed or submitted by the **Contractor**, the **Contractor** shall reimburse the **City** for the charges of the **Design Professional** and its consultants for evaluating each such proposed substitute item.

5.14. Substitute Construction Methods or Procedures.

5.14.1 If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, the **Contractor** may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to the **Design Professional**. The **Contractor** shall submit sufficient information to allow the **Design Professional**, in the **Design Professional's** sole discretion, to determine whether the substitute proposed is equivalent to that expressly called for by the Contract Documents.

5.15. Contractor's Progress Schedule.

5.15.1. Before Starting Construction. Within ten (10) days after the date of the Notice to Proceed, the **Contractor** shall submit to the **Design Professional** for review:

5.15.1.1. a preliminary progress schedule indicating the times (number of days or dates) for starting and completing the various stages of the Work;

5.15.1.2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

5.15.1.3. a refined schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Sum and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and

profit applicable to each item of Work.

5.15.2. Review of Progress Schedule. At least ten (10) days prior to the commencement of construction, the **Design Professional**, the **Contractor**, and any other appropriate persons will meet to review and discuss the acceptability to the **Design Professional** of the progress schedule. The **Contractor** will have an additional ten (10) days to make corrections and adjustments and to complete and resubmit the schedule. No progress payment shall be made to the **Contractor** until the schedule is submitted to and found acceptable by the **Design Professional** as provided below.

5.15.3. Acceptability of Progress Schedule. The progress schedule will be acceptable to the **Design Professional** if, according to the **Design Professional**, it provides an orderly progression of the Work to completion within any specified time frame, but such acceptance will neither impose on the **Design Professional** responsibility for the sequencing, scheduling, or progress of the Work nor interfere with or relieve the **Contractor** from the **Contractor's** full responsibility therefore. The **Contractor's** schedule of Submittals must be acceptable to the **Design Professional** in providing a workable arrangement for reviewing and processing the required Submittals. The **Contractor's** schedule of values must be acceptable to the **Design Professional** as to form and substance.

5.15.4. Sepia and Copies. After the **Design Professional** has approved the schedule, the **Contractor** shall submit to the **Design Professional** one (1) sepia and four (4) copies bearing the **Contractor's** stamp of approval as a representation to the **City** that the **Contractor** has determined or verified all data on that progress schedule and that the **Contractor**, the Subcontractors and Suppliers have reviewed and coordinated the sequences in that progress schedule with the requirements of the Work.

5.15.5. Adjustment of Schedule. The **Contractor** shall adhere to the established progress schedule which may be adjusted from time to time as follows: the **Contractor** shall submit to the **Design Professional** for acceptance proposed adjustments in the progress schedule that will not change the Contract Time. Such adjustments will conform generally to the progress schedule then in effect and will comply with any provisions of the requirements applicable thereto.

5.15.6. During Construction. The **Contractor** shall submit monthly progress schedules to the **Design Professional**. The schedules shall stay current with the **Contractor's** approach to the Work remaining.

5.15.7. Schedule of Submittals. The **Contractor** shall prepare and keep current, for the **Design Professional's** approval, a schedule of Submittals that is coordinated with the **Contractor's** construction schedule and allows the **Design Professional** reasonable time to review Submittals.

5.16. Project Coordination.

5.16.1. In General. The **Contractor** shall be responsible for the proper coordination of the Work of all of the trades.

5.16.2. Coordination with Subcontractors. The **Contractor** shall coordinate the work of each Subcontractor with the Work of every other Subcontractor whose Work affects the other.

5.16.3. Coordination with the City's Own Forces or Separate Contractors. The **Contractor** shall coordinate its operations with those of the **City's** own forces or separate contractors. The **Contractor** shall provide the **City's** own forces and separate contractors a reasonable opportunity for the handling, unloading and storage of their materials and equipment and execution of their work. The **Contractor** shall connect and coordinate its Work with theirs.

5.16.4. Coordination with Utility Companies. The **Contractor** shall coordinate its operations with all the appropriate utility companies to assure that the utilities required on the Project are available and functioning properly pursuant to the requirements of the Contract Documents.

5.17. Project Photographs.

5.17.1. In General. The **Contractor** shall take, at its own expense, interior and exterior photographs at the site, from different vantages as directed by the **Design Professional** or the **City**, before beginning any Work and thereafter, at a minimum, on the first work day of each month until final completion of the Work, including final Site photos. Photos shall be taken of any Work that will be buried or concealed while the Work is still exposed. The photographs shall be taken by a skilled commercial photographer. The number of photographs required shall be at the discretion of the **City** or the **Design Professional**. One aerial photo shall be required a) prior to commencement of the work and b) at the completion of the work. See Section 01320 – Construction Progress Documentation.

5.17.2. Prints and Digital Media. Within fourteen (14) days after the photographs have been taken, the **Contractor** shall cause prints to be made and delivered to the **City** and the **Design Professional**. All photographs shall be 8" x 10". Each print shall state the date of the photograph, the name of the Project, the description of the view and the name and address of the photographer. The **City** shall receive one glossy print of each photo as well as all prints in digital form on compact disc. The **Design Professional** shall receive one glossy print.

5.17.3. Failure to Comply. Should the **Contractor** fail to adhere to any requirement set forth in the previous two paragraphs, the **City** may have the photographs taken at the **Contractor's** expense or receive a set-off against the **Contractor's** next application for payment.

5.18. Record Documents and Samples at the Site.

5.18.1 The **Contractor** shall maintain in a safe place at the site one record copy of all

Plans, Specifications, Modifications, Change Orders, **Construction Change** Directives, Field Orders and written interpretations and clarifications in good order and annotated to show all changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to the **Design Professional** for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered by the **Contractor** to the **Design Professional** for the **City**.

5.19. Submittals.

5.19.1. Purpose. The purpose of Submittals is to demonstrate for those portions of the Work for which Submittals are required the way the **Contractor** proposes to conform to the information given and the design concept expressed in the Contract Documents.

5.19.2. Submittal Procedure. Within ten (10) days from the Notice to Proceed, the **Contractor** shall submit to the **Design Professional** a completed Submittals schedule. The **Contractor** shall review, approve, and submit to the **Design Professional** Submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the **City** or of separate contractors. Submittals made by the **Contractor** that are not required by the Contract Documents may be returned without action. The schedules shall be updated and resubmitted each month. All Submittals will be identified as the **Design Professional** may require and in the number specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show the **Design Professional** the materials and equipment that the **Contractor** proposes to provide and to enable the **Design Professional** to review the information for the limited purposes stated below.

5.19.3. Samples. The **Contractor** shall also submit Samples to the **Design Professional** for review and approval in accordance with said accepted schedule of Submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which it is intended and otherwise as the **Design Professional** may require to enable the **Design Professional** to review the Submittal for the limited purposed stated below. The numbers of each Sample to be submitted will be as specified in the Specifications. Unless otherwise specified in the Specifications, three (3) specimens of each Sample shall be submitted.

5.19.3.1. The Samples shall be of sufficient size to permit proper evaluation of material. Where variations in color or other characteristics are to be expected, samples showing the minimum range of variation shall be submitted. Materials exceeding the range of variation of the approved Samples will not be approved on the Work.

5.19.3.2. All costs associated with delivery of Samples will be paid by the **Contractor**.

5.19.4. Contractor's Verifications. Before submitting each Submittal, the **Contractor** shall have determined and verified:

5.19.4.1. all field measurements, quantities, dimensions specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

5.19.4.2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

5.19.4.3. all information relative to the **Contractor's** sole responsibilities in respect of means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto.

5.19.5. Contractor's Representations. By approving and providing Submittals, the **Contractor** thereby represents that the **Contractor** has determined and verified all dimensions, quantities, field dimensions, relations to existing Work, coordination with Work to be installed later, coordination with information on previously accepted Submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the **Contractor**. In reviewing Submittals, the **Design Professional** shall be entitled to rely upon the **Contractor's** representation that such information is correct and accurate.

5.19.6. Coordination. The **Contractor** shall also have reviewed and coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.

5.19.7. Stamp or Specific Written Indication. Each Submittal will bear a stamp or specific written indication that the **Contractor** has satisfied the **Contractor's** obligations under the Contract Documents with respect to the **Contractor's** review and approval of that Submittal.

5.19.8. Written Notice of Variations. At the time of each Submittal, the **Contractor** shall give the **Design Professional** specific written notice of such variations, if any, that the Submittal may have from the requirements of the Contract Documents. Such notice is to be in a written communication separate from the Submittal. Moreover, the **Contractor** shall make a specific notation on each Submittal to the **Design Professional** for review and approval of each such variation.

5.19.9. Review and Approval by the Design Professional. The **Contractor** shall perform no portion of the Work requiring a Submittal until the respective Submittal has been approved by the **Design Professional**. Such Work shall be in accordance with approved Submittals.

5.19.9.1. The **Design Professional** will review and approve Submittals in accordance with the schedule of Submittals accepted by the **Design Professional** as required above. The **Design Professional's** review and approval will be only to

determine if the items covered by the Submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. The **Design Professional's** review and approval will not extend to means, method, technique, sequences, or procedures of construction (except where a particular means, method, technique, sequences or procedures of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

5.19.10. Deviations. The **Contractor** shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the **Design Professional's** approval of Submittals unless the **Contractor** has specifically informed the **Design Professional** in writing of such deviation at the time of Submittal and the **Design Professional** has given written approval to the specific deviation. The **Contractor** shall not be relieved of responsibility for errors or omissions in Submittals by the **Design Professional's** approval thereof.

5.19.11. Revisions. The **Contractor** shall make corrections required by the **Design Professional** and shall return the required number of corrected copies of Submittals and submit as required new Submittals for review and approval. The **Contractor** shall direct specific attention, in writing or on resubmitted Submittals, to revisions other than those requested by the **Design Professional** on previous Submittals. Unless such written notice has been given, the **Design Professional's** approval of a resubmitted Submittal shall not constitute approval of any changes not requested on the prior Submittal.

5.19.12. Related Work. Where a Submittal is required by the Contract Documents or the schedule of Submittals accepted by the **Design Professional**, any related Work performed prior to the **Design Professional's** review and approval of the pertinent Submittal will be at the sole expense and responsibility of the **Contractor**.

5.19.13. Informational Submittals. Informational Submittals upon which the **Design Professional** is not expected to take responsive action may be so identified in the Contract Documents.

5.19.14. Certification. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the **City** shall be entitled to rely upon such certifications, and neither the **City** nor the **Design Professional** shall be expected to make any independent examination with respect thereto.

5.20. Continuing the Work.

5.20.1. The **Contractor** shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the **City**. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as otherwise provided herein or as

the **City** and the **Contractor** may agree in writing.

5.21. Use of Site; Access to Work.

5.21.1. The right of possession of the premises and the improvements made thereon by the **Contractor** shall remain at all times in the **City**. The **Contractor's** right to entry and use thereof arises solely from the permission granted by the **City** under the Contract Documents. The **Contractor** shall confine the **Contractor's** apparatus, the storage of materials, and the operations of the **Contractor's** workers to limits indicated by law, ordinance, the Contract Documents and permits and/or directions of the **Design Professional** and shall not unreasonably encumber the premises with the **Contractor's** materials. The **City** shall not be liable to the **Contractor**, the Subcontractors, Suppliers, or anyone else with respect to the conditions of the premises, except for a condition caused directly and solely by the negligence of the **City**.

5.21.2. At all times, the **City** and the **Design Professional** shall have access to the Work.

5.22. Protection of Persons and Property.

5.22.1. In General. The **Contractor** shall be responsible for initiating, maintaining, and supervising all health and safety precautions and programs in connection with the performance of the Contract. The **Contractor** is responsible for the implementation of all Federal, State, and local health and safety requirements.

5.22.2. The **Contractor** shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

5.22.2.1. employees on the site and other persons who may be affected thereby;

5.22.2.2. the Work, materials, and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the **Contractor**, Subcontractors, or Sub-subcontractors;

5.22.2.3. other property at the site or adjacent or in close proximity thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and

5.22.2.4. any other property of the **City**, whether or not forming part of the Work, located at the site or adjacent thereto in areas to which the **Contractor** has access.

5.22.3. Notices and Compliance. The **Contractor** shall give notices and comply in all other respects with applicable laws, ordinances, rules, regulations, codes, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury, or loss. The **Contractor** shall notify owners of adjacent and nearby properties of

underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

5.22.4. Erection and Maintenance of Safeguards. The **Contractor** shall erect and maintain, as required by existing conditions and the terms of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent and nearby sites and utilities.

5.22.5. Hazardous Materials and Equipment . When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the **Contractor** shall exercise utmost care and carry on such activities under the supervision of properly qualified personnel.

5.22.6. Damage to Property. The **Contractor** shall promptly remedy damage and loss to property referred to above. If the damage or loss is due in whole or in part to the **Contractor's** failure to take the precautions required herein, the **Contractor** shall bear the cost, subject to any reimbursement to which the **Contractor** is entitled under property insurance required by the Contract Documents. The **Contractor** shall be fully and solely responsible for all Work and other operations carried out on adjacent properties. The insurance required under Article 8 shall cover such Work or operations, and the **Contractor** shall indemnify and defend the **City**, the **Design Professional**, and the owners of such adjacent or nearby properties from and against all claims, suits, losses, or costs arising out of such Work or operations.

5.22.7. Fire Protection Equipment and Services. The **Contractor** shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean and all combustible rubbish shall be promptly removed from the site.

5.22.8. Protection of Excavations, Trenches, etc. The **Contractor** shall at all times protect excavations, trenches, buildings and materials from rain water, ground water, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The **Contractor** shall provide and operate all pumps, piping, and other equipment necessary to this end.

5.22.9. Snow and Ice Removal. The **Contractor** shall remove snow and ice that might result in damage or delay.

5.22.10. Safety Representative. The **Contractor** shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the

prevention of accidents and the maintaining and supervising of safety precautions and programs.

5.22.11. Weather Protection. (*Reference:* M.G.L. c. 149, §44F(1).) The **Contractor** shall install weather protection and furnish adequate heat in the protected area from November 1 through March 31.

5.22.12. Security. The **Contractor** shall provide, within the Contract Sum, a sufficient number of security personnel at the Site at all times when the **Contractor's** personnel are not present, from commencement of the Work until Substantial Completion to assure that the Site, the facility, and the Work, and all materials and equipment stored at the Site are fully and completely protected against loss or damage due to vandalism, theft, or malicious mischief. If the **Contractor** elects, in addition, to use guard dogs for this purpose, each dog shall at all times be accompanied by an adult handler. If the **Contractor** fails to comply with the requirements of this paragraph, then the **City** may provide appropriate security and charge the cost thereof to the **Contractor**. The **City's** provision of such security, or failure to do so, shall not relieve the **Contractor** of its responsibility to pay for loss or damage due to vandalism, theft, or malicious mischief at the Site.

5.22.13. Hazard Communication Programs. The **Contractor** shall be responsible for coordinating any exchange of material safety data sheets or other hazard communications information required to be made available to or exchanged between or among employers at the site in accordance with laws, codes and regulations.

5.22.14. Noise Pollution Control. The **Contractor** shall comply with all applicable provisions of Somerville Municipal Code §9-109.

5.23. Cutting and Patching.

5.23.1. In General. Unless otherwise provided in the Contract Documents, the **Contractor** shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly, including the work of the City or of separate contractors.

5.23.2. Damage to Work of City or of Separate Contractor. The **Contractor** shall not damage or endanger a portion of the Work or fully or partially completed construction of the **City** or separate contractors by cutting, patching, or otherwise altering such construction, or by excavation. The **Contractor** shall not cut or otherwise alter such construction by the **City** or a separate contractor except with prior written consent of the **City** and of such separate contractor; such consent shall not be unreasonably withheld. The **Contractor** shall not unreasonably withhold from the **City** or a separate contractor the **Contractor's** consent to cutting or otherwise altering the Work.

5.23.3. Damage Caused by Contractor. Should the **Contractor** cause damage to the work or property of any separate contractor at the Site, or should any claim arising out of the **Contractor's** performance of Work at the Site be made by any separate contractor against the

Contractor, the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, the **Contractor** shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. The **Contractor** shall, to the fullest extent permitted by laws and regulations, indemnify and hold harmless the **City**, the **Design Professional**, and the **Design Professional's** consultants from and against all claims, damages, losses and expenses (including, but not limited to, fees of the Design Professional, the Design Professional's consultants, attorneys, and other professionals, and court and arbitration or mediation costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, to the extent based on a claim arising out of the **Contractor's** performance of the Work. Should a separate contractor cause damage to the Work or property of the **Contractor** or should the performance of work by any separate contractor at the site give rise to any other claim, the **Contractor** shall not institute any action, legal or equitable, against the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, on account of any such damage or claim. If the **Contractor** delays at any time in performing or furnishing Work by any act or neglect of a separate contractor and the City and the Contractor are unable to agree as to the extent of any adjustment in the Contract Time attributable thereto, the **Contractor** may make a claim for an extension of time in accordance with Article 16. An extension of the Contract Time shall be the **Contractor's** exclusive remedy with respect to the **City**, the **Design Professional**, and the **Design Professional's** consultants, for any delay, disruption, interference, or hindrance caused by any separate contractor.

5.24. Cleaning Up.

5.24.1. During the progress of the Work, the **Contractor** shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract or other debris. At the completion of the Work, the **Contractor** shall remove from and about the Project all waste materials, rubbish, and debris, and the **Contractor's** tools, construction equipment, machinery, and surplus materials. Surplus materials to be provided to the **City** by specifications shall be stored in a clean, safe and secure area as directed by the **City**. The **Contractor** shall leave the site clean and ready for occupancy by the **City** at Substantial Completion of the Work. Immediately prior to the **Design Professional's** inspection for Substantial Completion, the **Contractor** shall completely clean the premises. Concrete and ceramic surfaces shall be cleaned and washed. Resilient coverings shall be cleaned, waxed and buffed. Woodwork shall be dusted and cleaned. Sash, fixtures and equipment shall be thoroughly cleaned. Stains, spots, dust, marks and smears shall be removed from all surfaces. Hardware and all metal surfaces shall be cleaned and polished. Glass and plastic surfaces shall be thoroughly cleaned by professional window cleaners. All damaged, broken or scratched glass or plastic shall be replaced by the **Contractor** at the **Contractor's** expense. The **Contractor** shall restore to original condition all property not designated for alteration by the Contract Documents.

5.24.2. If the **Contractor** fails to clean up as provided herein, the **City** may do so and charge the cost thereof to the **Contractor**.

5.25. Royalties and Patents.

5.25.1 The **Contractor** shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. To the fullest extent permitted by law, the **Contractor** shall indemnify and hold harmless the **City** and the **Design Professional** from and against all claims, costs, losses, and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the work or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Contract Documents.

5.26. Contractor's Obligation to Perform.

5.26.1. The **Contractor's** obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of the **Contractor's** obligation to perform the Work in accordance with the Contract Documents:

- 5.26.1.1.** observations by the **Design Professional**;
- 5.26.1.2.** recommendation of any progress or final payment by the **Design Professional**;
- 5.26.1.3.** the issuance of a certificate of Substantial Completion or any payment by the **City** to the **Contractor** under the Contract Documents;
- 5.26.1.4.** use or occupancy of the Work, Project, or Site, or any part thereof, by the **City**;
- 5.26.1.5.** any acceptance by the **City** or any failure to do so;
- 5.26.1.6.** any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptance by the **Design Professional**;
- 5.26.1.7.** any inspection, test, or approval by others; or
- 5.26.1.8.** any correction of defective Work by the **City**.

5.27. Indemnification; and Covenant Not To Sue.

5.27.1. To the fullest extent permitted by law, the **Contractor** shall assume the defense of, indemnify and hold harmless the **City**, the **Design Professional**, the **Design Professional's** consultants, and agents and employees of any of them, from and against claims, damages, losses, and expenses, including, but not limited, to attorneys' fee, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting there from, caused in whole or in part by alleged negligent acts or omissions of the **Contractor**, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this paragraph.

5.27.2. In claims against any person or entity indemnified under the foregoing paragraph by an employee of the **Contractor**, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under the foregoing paragraph shall not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for the **Contractor** or a Subcontractor under Workers' Compensation laws, disability benefit acts or other employee benefit acts.

5.27.3. The obligations of the **Contractor** in this Article shall not extend to the liability of the **Design Professional**, the **Design Professional's** consultants, and agents or employees of any of them arising out of (1) the preparation of maps, Plans, opinions, reports, surveys, Change Orders, designs, or Specifications, or (2) directions or instructions given by the **Design Professional**, the **Design Professional's** consultants and agents or employees of any of them, provided such instructions or directions are the primary cause of the injury or damage.

5.27.4. The **Contractor**, or any successor, assign, or subrogee of the **Contractor** agrees not to bring any civil suit, action, or other proceeding in law, equity or arbitration against the **Design Professional**, or the officers, employees, agents, or consultants of the **Design Professional**, for the enforcement of any action which the **Contractor** may have arising out of or in any manner connected with the Work. The **Contractor** shall assure that this covenant not to sue is contained in all subcontracts and sub-subcontracts of every tier and shall assure its enforcement. The **Design Professional**, its officers, employees, agents, and consultants are intended third-party beneficiaries of this covenant not to sue, and are entitled to enforce this covenant in law or equity.

5.28. Survival of Obligations.

5.28.1 All representations, indemnifications, warranties, and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Contract.

ARTICLE 6: SUBCONTRACTORS

6.1 Use of Subcontractors.

6.1.1 The **Contractor** shall use the Subcontractors named in the **Contractor's Bid**.

6.2 Substitution of Subcontractors.

6.2.1 The **Contractor** shall not substitute another Subcontractor therefore without notice to the **City** and the **City's** prior written consent of such substitution.

6.3 Names of Subcontractors.

6.3.1 Upon execution of the Contract with the **City**, the **Contractor** shall provide in writing to the **City**, through the **Design Professional**, the names, addresses, telephone numbers, and fax numbers of all persons proposed for each principal portion of the Work.

6.4 Objections to Subcontractors.

6.4.1 The **Contractor** shall not use any Subcontractor against whom the **City** has a reasonable objection. The **Contractor** shall not be required to contract with any person or entity against whom it has a reasonable objection.

6.5 Form of the Subcontract.

6.5.1 All Work performed by a Subcontractor shall be through an appropriate subcontract. The form of subcontract shall be submitted to the **City's Law Department for its** approval, which shall not be unreasonably withheld or delayed.

6.6 Content of the Subcontract.

6.6.1. In addition to all statutorily mandated provisions and provisions required elsewhere in the Contract Documents, each subcontract shall expressly provide that:

6.6.1.1. Each subcontract agreement for a portion of the Work is assigned by the **Contractor** to the **City** provided that:

6.6.1.1.1. the assignment is effective only after termination of the Contract by the **City** or the **Contractor** and only for those subcontract agreements which the **City** accepts by notifying the Subcontractor in writing; and

6.6.1.1.2. the assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

6.6.1.2. Each Subcontractor is bound by the requirements of the Contract Documents for the express benefit of the **City**.

6.6.1.3. Each Subcontractor shall assume toward the **Contractor** all the obligations that the **Contractor** assumes toward the **City** and the **Design Professional**, unless otherwise provided by law.

ARTICLE 7: PERFORMANCE AND PAYMENT BONDS

7.1. Form of Bonds.

7.1.1 The performance and labor and material or payment bonds shall be in the form required by the **City**, copies of which are included in the Project Manual. The **City** reserves the right to reject any bond that does not conform to the **City's** requirements.

7.2. Furnished by the Contractor. (Reference: M.G.L. c. 30, §39M(c);, M.G.L. c. 149, §29).

7.2.1 The **Contractor** shall furnish a performance bond and a labor and materials or payment bond, each with a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the **City** and each in the sum of the Contract Sum, the premiums for which are to be paid by the **Contractor** and are included in the Contract Sum. The bonds shall remain in effect until final payment is made. The sum of the performance bond shall increase each time the Contract Sum is increased as a result of a Change Order.

7.3. Submission to the City.

7.3.1 The **Contractor** must submit the performance and a labor and materials or payment bonds to the **City** upon the **Contractor's** execution of the Agreement.

ARTICLE 8: INSURANCE REQUIREMENTS

8.1 Insurance Certificates.

8.1.1 Prior to starting work on this project, the contractor shall deposit with the **City**, certificates from insurers clearly stating that the required insurance policies have been issued to the **Contractor** and will remain in effect during the time period required to complete this contract. ACCORD forms will not be accepted. The certificates must be in a form satisfactory to the **City**. The insurance shall include all major divisions of coverage, and shall be on a comprehensive general basis including: Premises and Operations (including X-C-U), Owners and Contractors Protective, Products and Completed Operations, Owned, Non-owned or Hired

and/or Leased Motor Vehicles. Such insurance shall be written for not less than any limits of liability, required by law or the following limits, whichever are greater.

8.2 Minimum Coverages. The **Contractor** shall possess and maintain throughout the contract period/project, insurance in the kinds and amounts as provided in Appendix D.

The **Contractor** may purchase and maintain excess liability insurance in the in the umbrella form in order to satisfy the limits of liability required for the insurance to be purchased and maintained in accordance with the required requirements set forth above (in addition to the umbrella limits required). Evidence of such excess liability shall be delivered to the **City** in the form of a certificate and the certificate indicating the policy numbers and limits of liability of all underlying insurance.

8.3 Additional Insured. The **City** shall be named as an additional insured on each certificate, and the certificate must have the endorsement of the insurance agency.

8.4 Notice. Each certificate shall contain a notation that the insurer will give 30 days notice to the **City** prior to cancellation, change or non-renewal of policy.

8.5 Carrier Rating. Insurance carriers MUST have an A.M. Best rating of "A" or better.

8.6 Material Breach. Failure of the contractor to provide and continue in force such insurance shall be deemed a material breach of contract and shall operate as immediate termination thereof.

ARTICLE 9: TESTS AND INSPECTIONS

9.1. Access.

9.1.1 The **City**, the **Design Professional**, and all other persons designated by the **City** shall have access to the Work at reasonable times for observing, inspecting, and testing. The **Contractor** shall provide them with proper and safe conditions for such access and advise them of the **Contractor's** site safety procedures and programs so that they may comply therewith as applicable.

9.2. Tests and Inspections.

9.2.1. The **Contractor** shall give the **Design Professional** timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

9.2.2. Unless otherwise provided, the **Contractor** shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the **City**, or with the appropriate public authority and shall bear all related costs of tests, inspections, and approvals. If the laws or regulations of any public body having jurisdiction

require any Work or part thereof specifically to be inspected, tested, or approved by an employee or other representative of such public body, the **Contractor** shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith and furnish the **Design Professional** with the required certificates of inspection, testing, or approval.

9.2.3. The **Contractor** shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for the **Design Professional's** acceptance of materials or equipment to be incorporated into the Work, or of materials, mix designs, or equipment submitted for approval prior to the **Contractor's** purchase thereof for incorporation into the Work.

9.2.4. If any Work that is to be inspected, tested, or approved is covered by the **Contractor**, Subcontractor, or Sub-subcontractor without the prior written consent of the **Design Professional**, it must be uncovered for observation, inspection, testing, or approval, if requested by the **Design Professional**. The **Contractor** must recover the Work at its own expense.

9.2.5. The **Contractor** shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the **Design Professional** in the **Design Professional's** administration of the Contract or by tests, inspections, or approvals required or performed by persons other than the **Contractor**.

ARTICLE 10

UNCOVERING AND CORRECTING WORK

10.1. Uncovering Work.

10.1.1. If a portion of the Work is covered contrary to the **Design Professional's** request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the **Design Professional**, be uncovered for the **Design Professional's** observation and be replaced, both at the **Contractor's** expense and without change in the Contract Time.

10.1.2. If a portion of the Work has been covered which the **Design Professional** has not specifically requested to observe prior to its being covered, the **Design Professional** may request to see such Work, and it shall be uncovered by the **Contractor**. If it is found that such Work is in accordance with the Contract Documents, costs of uncovering and replacing shall, by appropriate Change Order, be charged to the **City**. If it is found that such Work is defective or not in accordance with the Contract Documents, the **Contractor** shall pay all claims, costs, losses, and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection, and testing and of satisfactory replacement of reconstruction (including,

but not limited to, all costs of repair or replacement of work of others); and the **City** shall be entitled to an appropriate decrease in the Contract Sum. The **City** may take such decrease by reducing the then current application for payment accordingly or subsequent applications, if necessary, until the decrease is paid in full.

10.2. Correcting Work.

10.2.1. The **Contractor** shall promptly correct Work rejected by the **Design Professional** or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. The **Contractor** shall bear all costs of correcting such rejected Work including additional testing and inspections and compensation for the **Design Professional's** services and expenses made necessary thereby and any cost, loss, or damages to the **City** resulting from such failure or defect.

10.2.2. If, within one (1) year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established in Article 15, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the **City** to do so, unless the **City** has previously given the **Contractor** a written acceptance of such condition. This period of one (1) year shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. This obligation to correct under this paragraph shall survive acceptance of the Work under the Contract and termination of the Contract. The **City** shall give such notice promptly after discovery of the condition.

10.2.3. The **Contractor** shall correct, remove, or replace portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the **Contractor** nor accepted by the **City**.

10.2.4. If the **Contractor** fails within a reasonable time to correct nonconforming Work, or to remove and replace rejected Work, or fails to perform the Work in accordance with the Contract Documents, the **City** may correct it in accordance with the provisions herein. If the **Contractor** does not proceed with correction, removal, or replacement of such nonconforming Work within seven (7) days from the date of written notice from the **Design Professional**, the **City** may correct it and store any salvageable materials or equipment at the **Contractor's** expense. If the **Contractor** does not pay costs of any such removal and storage within ten (10) days after written notice, the **City** may upon ten (10) additional days' written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the **Contractor**, including compensation for the **Design Professional's** services and expenses made necessary thereby. If such proceeds of sale do not cover all the costs that the **Contractor** should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the

Contractor are not sufficient to cover such amount, the **Contractor** shall pay the difference to the **City**.

10.2.5. The **Contractor** shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the **City** or separate contractors caused by the **Contractor's** correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

10.2.6. Nothing contained in this paragraph shall be construed to establish a period of limitation with respect to other obligations that the **Contractor** might have under the Contract Documents. Establishment of the time period of one (1) year as described in the above paragraph related only to the specific obligation of the **Contractor** to correct the Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced nor to the time within which proceedings may be commenced to establish the **Contractor's** liability with respect to the **Contractor's** obligations other than specifically to correct the Work.

10.3. Acceptance of Nonconforming Work.

10.3.1 If, instead of requiring correction or removal and replacement of defective or nonconforming Work, the **City** prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the **City** may do so instead of requiring its removal and correction, in which case the **Contractor** shall pay all claims, costs, losses, and damages attributable to the **City's** evaluation of and determination to accept such defective or nonconforming Work. The Contract Sum will be reduced as appropriate. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 11: CHANGES IN THE WORK

11.1. In General.

11.1.1. The Contract Sum constitutes the total compensation (subject to authorized adjustments) payable to the **Contractor** for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the **Contractor** shall be at the **Contractor's** expense without any change in the Contract Sum.

11.1.2. Without invalidating the Contract and without notice to any surety, the **City** may, at any time or from time to time, order additions to, deletions from, or revisions in the Work. Such additions, deletions, or revisions will be authorized by a Change Order, a Modification or a **Construction Change** Directive. Upon receipt of any such document, the **Contractor** shall promptly proceed with the Work involved that will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

11.1.3. The **Contractor** shall not be entitled to an increase in the Contract Sum or an

extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified, or supplemented, except as otherwise provided herein.

11.2. Change Orders.

11.2.1. (*Reference:* M.G.L. c. 30, §39I;). The **Contractor** shall perform all the Work required by this Contract in conformity with the Plans and Specifications contained herein. No willful and substantial deviation from said Plans and Specifications shall be made unless authorized in writing by the **City** and the **Design Professional** in charge of the Work who is duly authorized by the **City** to approve such deviations. In order to avoid delays in the prosecution of the Work required by such Contract, such deviation from the Plans or Specifications may be authorized by a written order of the **City** or the **Design Professional** so authorized to approve such deviation. Within thirty (30) days thereafter, such written order shall be confirmed by a certificate of the **City** stating: (1) If such deviation involves any substitution or elimination of materials, fixtures or equipment, the reasons why such materials, fixtures, or equipment were included in the first instance and the reasons for substitution or elimination, and, if the deviation is of any other nature, the reasons for such deviation, giving justification therefore; (2) that the specified deviation does not materially injure the Project as a whole; (3) that either the work substituted for the Work specified is of the same cost and quality, or that an equitable adjustment has been agreed upon between the **City** and the **Contractor** and the amount in dollars of said adjustment; and (4) that the deviation is in the best interest of the **City**.

11.3. Construction Change Directive.

11.3.1. A **Construction Change Directive** shall be used in the absence of total agreement on the terms of a Change Order.

11.3.2. Upon request of the **City** or the **Design Professional**, the **Contractor** shall without cost to the **City** submit to the **Design Professional** in such form as the **Design Professional** may require, an accurate written estimate of the cost of any proposed extra work or change. The estimate shall indicate the quantity and unit cost of each item of materials, and the number of hours of work and hourly rate for each class of labor, as well as the description and amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of materials shall be shown if required by the **Design Professional**. If required by the **Design Professional**, in order to establish the exact cost of new Work added or of previously required Work omitted, the **Contractor** shall obtain and furnish to the **Design Professional** bona fide proposals from recognized Suppliers for furnishing any material included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work, and shall be furnished at the **Contractor's** expense.

11.3.3. The **Contractor** shall state in the estimate any extension of time required for the completion of the Work if the change or extra Work is ordered. The **Contractor** shall document, through a critical path analysis, or some other clearly delineated explanation, how the proposed

change affects other aspects of the Work, and why it would require an extension of time. The **Contractor** shall promptly revise and resubmit such estimate if the **Design Professional** determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors.

11.3.4. If the **Construction Change** Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods, as selected by the **City**, selection of which does not require the consent of the **Contractor**:

11.3.4.1. by unit prices stated in the Contract Documents or otherwise mutually agreed upon; or

11.3.4.2. by Cost and Percentages estimated by the **Contractor** as provided herein and accepted by the **City**, whereupon the **Contractor's** estimate shall become a fixed price which shall not be changed by any variation in the actual cost of executing the Work covered by the change; or

11.3.4.3. by actual Cost determined after the Work covered by the change is completed, plus Percentage; or

11.3.4.4. by submission to arbitration or a court, which shall determine the fair value of the Work covered by the change.

11.3.5. "Cost" shall mean the estimated or actual net increase or decrease in cost to the **Contractor**, Subcontractor, or Sub-subcontractor for performing the Work covered by the change, including actual payments for materials, equipment rentals, expendable items, wages, and associated benefits to the workers and to supervisors employed full time at the Site, insurance, bonds, and other provable direct costs, but not including any administrative, accounting or expediting costs, or other indirect or overhead costs, or any wages or benefits of supervisory personnel not assigned full time to the Site, or any amount for profit or fee to the **Contractor**, Subcontractor, or Sub-subcontractor.

11.3.6. "Percentage" shall mean an allowance to be added to or subtracted from the Cost in lieu of overhead and profit and of any other expense that is not included in the Cost of the Work covered by the change, as defined above. Percentage for a Sub-subcontractor shall be 8% of any net increase or decrease of Cost of any Work performed by the Sub-subcontractor's own forces plus 4% of any net increase or decrease in Cost of any Work performed for the Sub-subcontractor by lower tier Sub-subcontractors. Percentage for a Subcontractor shall be 12% of any net increase or decrease of Cost of any Work performed by the Subcontractor's own forces plus 4% of the Cost of Work performed by Sub-subcontractors. Percentage for the **Contractor** shall be 15% of any net increase or decrease of Cost of any Work performed by the **Contractor's** own forces plus 5% of any net increase or decrease in the Cost for all other Work covered by the change. When the **Contractor** is also performing Work as a Subcontractor or Sub-subcontractor, the **Contractor** shall only be entitled to a total of no more than 15% of any

net increase or decrease of Cost of any Work.

11.3.7. When in the reasonable judgment of the **Design Professional** a series of **Construction Change** Directives or Change Orders effect a single change, Percentage shall be calculated on the cumulative net increase or decrease in Cost, if any.

11.3.8. If unit prices are stated in the Contract Documents or are subsequently agreed upon, and if quantities originally contemplated are so changed in a Proposed Change Order or **Construction Change** Directive that the application of such unit prices to quantities of Work proposed will cause substantial inequity to the **City** or the **Contractor**, the applicable unit prices shall be equitably adjusted.

11.3.9. If the **City** elects to determine the Cost of the Work as provided in method (11.3.4.1) using unit prices stated in the Contract Documents or subsequently agreed upon, the unit prices shall be subject to the prior paragraph. Notwithstanding the inclusion of unit prices in the Contract Documents, it shall be the **City's** option to require the Cost of any given change to be determined by one of the other methods stated in 11.3.4. If the **City** elected to determine the Cost of the change by unit prices and the nature of the work is such that its extent cannot readily be measured after the completion of such work or any subsequent Work, the **Contractor** shall keep daily records, available at all times to the **Design Professional** for inspection, of the actual quantities of such Work put in place, and delivery receipts or other adequate evidence, acceptable to the **Design Professional**, indicating the quantities of materials delivered to the Site for use in such unit price Work, and distinguishing such from other similar material delivered for use in Work include in the base Contract Sum. If so required by the **Design Professional**, materials for use in unit price Work shall be stored apart from all other materials on the Project.

11.3.10. If the **City** elects to determine the Cost of the Work as provided in methods 11.3.4.3. or 11.3.4.4. or if the method of determining the Cost has not been established before the Work is begun, the **Contractor** shall keep detailed daily records of labor and material costs applicable to the Work.

11.3.11. Upon receipt of a **Construction Change** Directive, the **Contractor** shall promptly proceed with the change in the Work involved and advise the **Design Professional** in writing of the **Contractor's** agreement or disagreement with the method, if any, provided in the **Construction Change** Directive for determining the proposed adjustment in the Contract Time.

11.3.12. A **Construction Change** Directive signed by the **Contractor** indicates the agreement of the **Contractor** therewith, including adjustment in the Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

11.3.13. If the **Design Professional** and the **Contractor** do not agree with the adjustment in the Contract Time or the method for determining it, the adjustment or the method shall be referred to the **Design Professional** for determination.

11.4. Minor Changes in the Work.

11.4.1. The **Design Professional** has the authority to order minor changes in the Work. "Minor changes" as used in this paragraph mean changes which are so insignificant as to not affect the Contract Sum or the Contract Time and which are not inconsistent with the intent of the Contract Documents. Any minor change shall be committed to a written order which shall be binding on both the **City** and the **Contractor** and which shall be promptly carried out by the **Contractor**.

11.5. Certificate of Appropriations. (*Reference: M.G.L. c. 44, §31C;*). This Contract shall not be deemed to have been made until the **City's** auditor has certified thereon that an appropriation in the amount of this Contract is available therefor and that an officer or agent of the **City** has been authorized to execute said Contract and approve all requisitions and change orders. No order to the **Contractor** for a change in or addition to the Work, whether in the form of a drawing, plan, detail or any other written instruction, unless it is an order which the **Contractor** is willing to perform without any increase to the Contract price, shall be deemed to be given until the auditor has certified thereon that an appropriation in the amount of such order is available therefore; but such certificate shall not be construed as an admission by the **City** of its liability to pay for such work. The certificate of the auditor that an appropriation in the amount of this Contract or in the amount of such order is available shall bar any defense by the **City** on the grounds of insufficient appropriation.

ARTICLE 12: CHANGE IN THE CONTRACT TIME

12.1. Date of Commencement.

12.1.1 The date of commencement of the Work is the date established in the Notice to Proceed. The date shall not be postponed by the failure to act of the **Contractor** or persons or entities for whom the **Contractor** is responsible.

12.2. Progress and Completion.

12.2.1. Time is of the essence; all time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the **Contractor** confirms that the Contract Time is a reasonable period for performing the Work.

12.2.2. The **Contractor** shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

12.2.3. Within five (5) working days of award of contract, the **Contractor** shall submit to the **Design Professional** a progress schedule showing for each class of Work included in the

schedule of values, the percentage of completion to be obtained and the total dollar value of Work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of Work in place, but may include, at the **Design Professional's** discretion, the value of materials delivered but not in place.

12.2.4. The progress schedule shall be based on an orderly progression of the Work, allowing adequate time for each operation (including adequate time for submission and review of submittals), and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The progress schedule will be reviewed by the **Design Professional** for compliance with the requirements of this Article and will be accepted by the **Design Professional** or returned to the **Contractor** for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the progress schedule has been approved by the **Design Professional**. The **Design Professional's** review of the progress schedule shall not impose any duty on the **Design Professional** or the **City** with respect to the timing, planning, scheduling, or execution of the Work. In particular, if the **Contractor** proposes a progress schedule indicating a date of Substantial Completion which is earlier than the Contract Time, the **Contractor** shall not be entitled to additional payment or compensation of any kind if, for any reason, the full Contract Time is required to achieve Substantial Completion of the Work.

12.2.5. If in any Application for Payment, the total value of the completed Work in place, as certified by the **Design Professional**, is less than 90% of the total value of the Work in place estimated in the progress schedule, the **City** may, at the **City's** option, require the **Contractor** to accelerate the progress of the Work without cost to the **City** by increasing the workforce or hours of Work or by other reasonable means approved by the **Design Professional**.

12.2.6. If each of three successive applications, as certified by the **Design Professional**, indicate that the actual Work completed is less than 90% of the values estimated in the progress schedule to be completed by the respective dates, the **City** may at the **City's** option, treat the **Contractor's** delinquency as a default justifying the action permitted under Article 18.

12.2.7. If the **Design Professional** has determined that the **Contractor** should be permitted to extend the time for completion as provided below, the calendar dates in the progress schedule shall be adjusted accordingly to retain their same relationship to the adjusted date of Substantial Completion, and the dollar value of the Work to be completed as of the first of each month shall be adjusted pro rata.

12.2.8. If the **Contractor** fails to submit any application for payment in any month, the **Design Professional** shall, for the purpose of this evaluation of progress, certify separately to the actual value of the Work in place completed as of the first of the month to the best of the **Design Professional's** knowledge.

12.2.9. Nothing herein shall limit the **City's** right to liquidated or other damages for delays by the **Contractor** or to any other remedy which the **City** may be entitled or may possess

under other provisions of the Contract Documents or by law.

12.3. Delays and Extensions of Time.

12.3.1. If the **Contractor** is delayed at any time in the progress of the Work by an act or neglect of the **City** or the **Design Professional**, or of an employee of either, or of a separate contractor employed by the **City**, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes (except weather) beyond the **Contractor's** control, or by delay authorized by the **City**, or by other causes which the **Design Professional** determines may justify delay, then the Contract Time shall be extended by Change Order or **Construction Change** Directive for such reasonable time as the **Design Professional** may determine.

12.3.2. Claims relating to time shall be made in accordance with applicable provisions of Article 16.

12.3.3. No claim for extension of time shall be allowed on account of failure of the **Design Professional** to furnish Plans, Specifications or instructions or to return Shop Drawings or Samples until fifteen (15) days after receipt by the **Design Professional** by registered or certified mail of written demand for such instructions, Plans, Specifications, or Samples, and then not unless such claim is reasonable.

12.3.4. No extensions of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the **Contractor**, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

12.3.5. The **Contractor** hereby agrees that the **Contractor** shall have no claim for damages of any kind against the **City** or the **Design Professional** on account of any delay in the commencement of the Work and/or any hindrance, delay, or suspension of any portion of the Work, whether such delay is caused by the **City**, the **Design Professional**, or otherwise, except as and to the extent expressly provided under M.G.L. c. 30, §39O, in the case of written orders by the **City**. The **Contractor** acknowledges that the **Contractor's** sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

12.3.6. (Reference: M.G.L. c. 30, §39O;). (a) The **City** may order the **Contractor** in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine to be appropriate for the convenience of the **City**, provided however that if there is a suspension, delay, or interruption for fifteen (15) days or more due to a failure of the **City** to act within the time specified in this Contract, the **City** shall make an adjustment in the Contract prices for any increase in the cost of performance of this Contract under this provision for any suspension, delay, interruption, or failure to act to the extent that such is due to any cause for which this Contract provides for an equitable adjustment of the Contract price under any other

Contract provisions.

(b) The **Contractor** must submit the amount of a claim under provision (a) to the **City** in writing as soon as practicable after the end of the suspension, delay, interruption, or failure to act and, in any event, not later than the date of final payment under this Contract and, except for costs due to a suspension order, the **City** shall not approve any costs in the claim incurred more than twenty (20) days before the **Contractor** notified the **City** in writing of the act or a failure to act involved in the Claim.

In the event a suspension, delay, interruption, or failure to act of the **City** increases the cost of performance to any Subcontractor, that Subcontractor shall have the same rights against the **Contractor** for payment for an increase in the cost of its performance as provisions (a) and (b) give the **Contractor** against the **City**, but nothing in provisions (a) and (b) shall in any way change, modify, or alter any other rights which the **Contractor** or the Subcontractor may have against each other.

12.4. Liquidated Damages.

12.4.1. If the **Contractor** shall fail to achieve Substantial Completion within the Contract Time, it shall be liable to pay the **City** the daily amount specified in the Agreement, not as a penalty, but as a fixed and agreed upon damages for breach of contract. The said amount is fixed and agreed upon because of the difficulty of ascertaining the **City's** actual damages. It is mutually understood that the said amount is a reasonable approximation or estimate thereof as of the date of the Agreement. The **City** may elect to withhold said amount from periodic or final payments due to the **Contractor**, in addition to retainage and other back charges.

12.5. Changes in the Contract Time.

12.5.1. In Writing. The Contract Time may only be changed by a Change Order or a Modification. Any claim for an adjustment of the Contract Time shall be based on a written notice delivered to the party making the claim to the other party and to the **Design Professional** promptly (but in no event later than seven (7) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within thirty (30) days after such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the **Design Professional** in accordance with Article 16. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph.

12.5.2. Early Completion. The Contract Time shall not be changed due to a delay in the **Contractor's** early completion date.

ARTICLE 13: PAYMENTS

13.1. Schedule of Values.

13.1.1. The **Contractor** shall submit to the **Design Professional** a schedule of values which shall subdivide the Work into its component parts and shall include quantities, direct craft labor worker hours, labor cost and material/equipment cost. Labor cost shall include an appropriate amount of construction equipment costs, supplemental costs, administrative expenses, contingencies, and profit. The **Contractor** shall prepare the schedule of values in such form and supported by such data to substantiate its accuracy as the **Design Professional** may require and shall be revised if later found by the **Design Professional** to be inaccurate. This schedule, unless objected to by the **Design Professional**, shall be used as a basis for reviewing the **Contractor's** applications for payment.

13.2. Content and Submission of Applications for Payment.

13.2.1. At least ten (10) days before the date established for each progress payment, the **Contractor** shall submit to the **Design Professional** six (6) copies of an itemized application for payment for Work completed in accordance with the schedule of values. Such application shall be in a form or format established or approved by the **Design Professional** and shall be supported by documentation substantiating the **Contractor's** right to payment.

13.2.2. When **Construction Change** Directives have set forth an adjustment to the Contract Sum but have not yet been included in Change Orders, the value established by the **City** may be included in the application.

13.2.3. Applications covering Work of Subcontractors or Suppliers shall not include requests for payments of amounts the **Contractor** does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason. The **Contractor** shall not be paid for any Work performed by a Subcontractor unless and until the **City** receives for that Subcontractor a certificate of insurance that conforms to the requirements of the Contract Documents .

13.2.4. Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the Site for subsequent incorporation in the Work. If approved in advance by the **City**, payment may similarly be made for materials and equipment suitably stored off the Site at a location agreed upon in writing. Payment for materials and equipment stored on or off the Site shall be conditioned upon the application for payment being accompanied by a bill of sale, an invoice, or other documentation warranting that the **City** has received the materials and equipment free and clear of all liens, claims, security interests, or encumbrances, hereinafter collectively referred to as "liens," and evidence that the materials and equipment are covered by appropriate insurance and other arrangements to protect the **City's** interest therein.

13.2.5. Each application for payment or periodic estimate requesting payment shall be

accompanied by, at the **City's** option, a certificate from each Subcontractor stating that the Subcontractor has been paid all amounts due the Subcontractor on the basis of the previous periodic payment to the **Contractor**, or else stating the amount not so paid and the reason for the discrepancy. In the event of any such discrepancy, the **Contractor** shall furnish the **Contractor's** own written explanation to the **City** through the **Design Professional**. Such waiver or certificate shall be in a form acceptable to the **City**.

13.3. False Applications for Payment .

13.3.1. (*Reference: M.G.L. c. 266, §§67B*). Any person who makes or presents to any claim upon or against any employee or department of the **City**, knowing such claim to be false, fictitious, or fraudulent shall be punished by a fine or not ore than ten thousand dollars (\$10,000) or by imprisonment in the state prison for not more than five (5) years, or in the house of correction for not more than two and one-half years, or both.

13.4. Review of Applications for Payment.

13.4.1. The **Design Professional** shall review each application for payment and will reject any application that (1) is not accompanied by the required documentation or (2) contains errors, mathematical or otherwise.

13.4.2. Within five (5) business days after receipt of an application for payment, the **Design Professional** will either (1) return the application to the **Contractor** with a written explanation as to why it was rejected or (2) issue to the **City** a certificate for payment, with a copy to the **Contractor**, for such amount as the **Design Professional** determines is properly due. In the event an application is returned to the **Contractor**, the date of receipt of the application shall be the date of receipt of the corrected application.

13.4.3. The **Design Professional** or the **City** may make changes to any application submitted by the **Contractor**.

13.4.4. By recommending any payment, the **Design Professional** will not thereby be deemed to have represented that: (1) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to the **Design Professional** in the Contract Documents or (2) that there may not be other matters or issues between the parties that might entitle the **Contractor** to be paid additionally by the **City** or entitle the **City** to withhold payment to the **Contractor**. The **Design Professional's** approval of the application for payment and the accompanying documentation shall indicate that to the best of the **Design Professional's** knowledge, information, and belief, the Work has progressed to the point indicated by the **Contractor**, and that the quality of the Work is in accordance with the Contract Documents, subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests specified in the Contract Documents, final determination of quantities and classifications for unit price work and any other qualifications so stated.

13.4.5. The **Design Professional's** recommendation of any payment shall not mean that the **Design Professional** is responsible for the **Contractor's** means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the **Contractor** to comply with laws and regulations applicable to the furnishing or performance of Work, or for any failure of the **Contractor** to perform or furnish Work in accordance with the Contract Documents.

13.4.6. No certificate given or payment made shall be evidence of the performance of this Contract, either wholly or in part and no payment, whether made upon the final certificate or otherwise, shall be construed as an acceptance of defective work or materials.

13.5. Decisions to Withhold Certification.

13.5.1. The **Design Professional** may refuse to recommend the whole or any part of any payment if, in the **Design Professional's** opinion, it would be incorrect to make the representations to the **City** referred to above.

13.5.2. If the **Contractor** and the **Design Professional** cannot agree on a revised amount, the **Design Professional** will promptly approve a certificate for payment for the amount for which the **Design Professional** is able to make such representations to the **City**. The **Design Professional** may also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a certificate for payment previously issued, to such extent as may be necessary in the **Design Professional's** opinion to protect the **City** from loss because of:

13.5.2.1. defective Work not remedied;

13.5.2.2. third party claims filed or reasonable evidence indicating probable filing of such claims;

13.5.2.3. failure of the **Contractor** to make payments properly to Subcontractors or for labor, materials or equipment;

13.5.2.4. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

13.5.2.5. damage to the **City** or another contractor;

13.5.2.6. reasonable evidence that the Work will not be completed within the Contract Time, and that retainage currently held by the **City** would not be adequate to cover actual or liquidated damage for the anticipated delay;

13.5.2.7. persistent failure to carry out the Work in accordance with the Contract Documents; or

13.5.2.8. failure of mechanical trade or electrical trade subcontractors to comply with mandatory requirements for maintaining record drawings. The **Contractor** shall check record drawings each month. Written confirmation that the record drawings are current will be required by the **Design Professional** before approval of the **Contractor's** monthly payment requisition.

13.5.3. When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

13.6. Progress Payments.

13.6.1. After the **Design Professional** has issued a certificate for payment, the **City** shall make payment in the manner and within the time provided in the Contract Documents.

13.6.2. (*Reference:* M.G.L. c. 30, §39G;). The **City** shall pay the amount due pursuant to any periodic, Substantial Completion or final estimate within thirty-five (35) days after receipt of written acceptance for such estimate from the **Contractor**. In the case of periodic payments, the **City** may deduct from its payment a retention based on its estimate of the fair value of its claims against the **Contractor**, a retention for direct payments to Subcontractors based on demands for same in accordance with M.G.L. c. 30, §39F; and a retention to secure satisfactory performance of the contractual work, not exceeding five percent (5%) of the approved amount of any periodic payment, and the same right to retention shall apply to bonded Subcontractors entitled to direct payment under M.G.L. c. 30, §39F; provided, that a five percent (5%) value of all items that are planted in the ground shall be deducted from the periodic payments until final acceptance.

13.6.3. No periodic, Substantial Completion or final estimate or acceptance or payment thereof shall bar the **Contractor** from reserving all rights to dispute the quantity and amount of, or the failure of the **City** to approve a quantity and amount of, all or part of any Work item or extra Work item.

13.7. Final Payment.

13.7.1. After final inspection and after the **Contractor** has completed all the required corrections to the satisfaction of the **Design Professional** and the **City** and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, bonds, certificates, or other evidence of insurance, certificates of inspection, marked-up record documents, and all other documents called for in the Contract Documents, as well as any surplus materials requested by the **City**, the **Contractor** may make an application for final payment as provided below.

13.7.2. (*Reference:* M.G.L. c. 30, §39G;). Within thirty (30) days after receipt by the **City** of a notice from the **Contractor** stating that all of the Work required by the Contract has been completed, the **City** shall prepare and forthwith send to the **Contractor** for acceptance a final estimate for the quantity and price of the Work done and all retainage on the Work less all payments made to date, unless the **City's** inspection shows that Work required by the Contract remains incomplete or unsatisfactory, or that documentation required by the Contract has not been completed.

13.7.3. The making and acceptance of final payment will constitute a waiver of all claims by the **Contractor** against the **City** other than those previously made in writing and still unsettled.

13.8. Payments to Subcontractors.

13.8.1. Neither the **City** nor the **Design Professional** shall have an obligation to pay or see to the payment of money to a Subcontractor, Sub-subcontractor, or Supplier except as may otherwise be required by law.

13.8.2. (*Reference:* M.G.L. c. 30, §39F;) (1)(a) Forthwith after the **Contractor** receives payment on account of a periodic estimate, the **Contractor** shall pay to each Subcontractor the amount paid for the labor performed and the materials furnished by that Subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the **Contractor**.

(b) Not later than the sixty-fifth day after each Subcontractor substantially completes its Work in accordance with the Plans and Specifications, the entire balance due under the subcontract, less amounts retained by the **City** as the estimated cost of completing the incomplete and unsatisfactory items of Work, shall be due the Subcontractor; and the **City** shall pay that amount to the **Contractor**. The **Contractor** shall forthwith pay to the Subcontractor the full amount received from the **City** less any amount specified in any court proceeding barring such payment and also less any amount claimed due from the Subcontractor by the **Contractor**.

(c) Each payment made by the **City** to the **Contractor** pursuant to paragraphs (a) and (b) of M.G.L. c. 30, §39F(1);, for the labor performed and the materials furnished by a Subcontractor shall be made to the **Contractor** for the account of that Subcontractor; and the **City** shall take reasonable steps to compel the **Contractor** to make each such payment to each such Subcontractor. If the **City** has received a demand for direct payment from a Subcontractor for any amount which has already been included in a payment to the **Contractor** or which is to be include in a payment to the **Contractor** for payment to the Subcontractor as provided in paragraphs (a) and (b) of M.G.L. c. 30, §39F(1), the **City** shall act upon the demand as provided in M.G.L. c. 30, §39F.

(d) If, within seventy (70) days after the Subcontractor has substantially

completed the subcontract Work, the Subcontractor has not received from the **Contractor** the balance due under the subcontract including any amount due for extra labor and materials furnished to the **Contractor**, less any amount retained by the **City** as the estimated cost of completing the incomplete and unsatisfactory items of Work, the Subcontractor may demand direct payment of that balance from the **City**. The demand shall be by a sworn statement delivered to or sent by certified mail to the **City**, and a copy shall be delivered to or sent by certified mail to the **Contractor** at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of completion of the subcontract Work. [The demand letter shall indicate the certified mail number assigned by the postal service or the date of delivery to the **Contractor**.] Any demand made after substantial completion of the subcontract Work shall be valid even if delivered or mailed prior to the seventieth day after the Subcontractor has substantially completed the subcontract Work. Within ten (10) days after the Subcontractor has delivered or so mailed the demand to the **City** and delivered or so mailed a copy to the **Contractor**, the **Contractor** may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the **City**, and a copy shall be delivered to or sent by certified mail to the Subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract, including any amount due for extra labor and materials furnished to the **Contractor** and of the amount due for each claim made by the **Contractor** against the Subcontractor.

(e) Within fifteen (15) days after receipt of the demand by the **City**, but in no event prior to the seventieth day after substantial completion of the subcontract Work, the **City** shall make direct payment to the Subcontractor of the balance due under the subcontract, including any amount due for extra labor and materials furnished to the **Contractor**, less any amount (i) retained by the **City** as the estimated cost of completing the incomplete or unsatisfactory items of Work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the **Contractor** in the sworn reply; provided that the **City** shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to or for which the sworn reply does not contain the detailed breakdown required by the previous paragraph. The **City** shall make further direct payments to the Subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this paragraph.

(f) The **City** shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of the previous paragraph in an interest-bearing joint account in the names of the **Contractor** and the Subcontractor in a bank in Massachusetts selected by the **City** or agreed upon by the **Contractor** and the Subcontractor and shall notify the **Contractor** and the Subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the **Contractor** and the Subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to the previous paragraph shall be made out of amounts payable to the **Contractor** at the time of receipt of a demand for direct payment from a Subcontractor and out of amounts which later become payable to the **Contractor** and in the order of receipt of such demands from Subcontractors. All direct payments shall discharge the obligation of the **City** to the **Contractor** to the extent of such payment.

(h) The **City** shall deduct from payments to a **Contractor** amounts that, together with the deposits in interest-bearing accounts pursuant to paragraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from Subcontractors. All such amounts shall be earmarked for such direct payments, and the Subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the **Contractor**.

(i) If the Subcontractor does not receive payment as provided in paragraph (a) or if the **Contractor** does not submit a periodic estimate for the value of the labor or materials performed or furnished by the Subcontractor and the Subcontractor does not receive payment for same when due less the deductions provided for in paragraph (a), the Subcontractor may demand direct payment by following the procedure in paragraph (d) and the **Contractor** may file a sworn reply as provided in that same paragraph. A demand made after the first day of the month following that for which the Subcontractor performed or furnished the labor and materials for which the Subcontractor seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the **Contractor**. Thereafter the **City** shall proceed as provided in paragraphs (e), (f), (g), and (h). "Subcontractor" as used in this paragraph (1)(i) shall mean a person approved by the **City** in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the **Contractor**.

(2) Any assignment by a Subcontractor of the rights under this section to a surety company furnishing a bond under the provisions of M.G.L. c. 149, §29; shall be invalid. The assignment and subrogation rights of the surety to amounts included in a demand for direct payment which are in the possession of the **City** or which are on deposit pursuant to paragraph (g) shall be subordinate to the rights of all Subcontractors who are entitled to be paid under this section and who have not been paid in full.

(3) A **Contractor** or a Subcontractor shall enforce a claim to any portion of the amount of a demand for direct payment deposited as provided in herein by a petition in equity in the superior court against the other and the bank shall not be a necessary party. A Subcontractor shall enforce a claim for direct payment or a right to require a deposit as provided in paragraph (f) by a petition in equity in the superior court against the **City** and the **Contractor** shall not be a necessary party. Upon motion of any party the court shall advance for speedy trial any petition filed as provided in this paragraph. M.G.L. c. 231, §§59 and 59B shall apply to such petitions. The court shall enter an

interlocutory decree upon which execution shall issue for any part of a claim found due pursuant to §§59 and 59B and, upon motion of any party, shall advance for speedy trial the petition to collect the remainder of the claim. Any party aggrieved by such interlocutory decree shall have the right to appeal therefrom as from a final decree. The court shall not consolidate for trial the petition of any Subcontractor with the petition of one or more Subcontractors or the same general contract unless the court finds that a substantial portion of the evidence of the same events during the course of construction (other than the fact that the claims sought to be consolidated arise under the same general contract) is applicable to the petitions sought to be consolidated and that such consolidation will present unnecessary duplication of evidence. A decree in any such proceeding shall not include interest on the disputed amount deposited in excess of the interest earned for the period of any such deposit. No person except a Subcontractor filing a demand for direct payment for which no funds due the **Contractor** are available for direct payment shall have a right to file a petition in court of equity against the **City** claiming a demand for direct payment is premature, and such Subcontractor must file the petition before the **City** has made a direct payment to the Subcontractor and has made a deposit of the disputed portion as provided in part (iii) of paragraph (e) and in paragraph (f).

(4) In any petition to collect any claim for which a Subcontractor has filed a demand for direct payment the court shall, upon motion of the **Contractor**, reduce by the amount of any deposit of a disputed amount by the **City** as provided in part (iii) of paragraph (e) and in paragraph (f) any amount held under a trustee writ or pursuant to a restraining order or injunction.

ARTICLE 14: SUBSTANTIAL COMPLETION

14.1. Substantial Completion.

14.1.1. Upon Substantial Completion of the Work, the **Contractor** shall present in writing to the **City** its certification that the Work has been substantially completed and include in its certification (1) a list of items to be completed or corrected, (2) all special warranties required by the Contract Documents, endorsed by the **Contractor** and in a form reasonably acceptable to the **Design Professional** and (3) the permits and certificates referred to in 13.7.1., or elsewhere. The failure to include any item on the list mentioned in the preceding sentence does not alter the responsibility of the **Contractor** to complete all Work in accordance with the Contract Documents. When the **Design Professional** on the basis of an inspection determines that the Work or designed portion thereof is substantially complete and the other conditions have been met, the **Design Professional** will then prepare a certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the **City** and the **Contractor** for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the **Contractor** shall complete the items listed therein. The certificate of Substantial Completion shall be submitted to the **City** and the **Contractor** for their written acceptance of the responsibilities assigned to them in such certificate.

14.1.2. Within twenty-one (21) days after receipt of the certification from the **Contractor**, the **City** shall present to the **Contractor** either a written declaration that the Work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the Contract sufficient to demonstrate that the Work has not been substantially completed. The **City** may include with such list a notice setting forth a reasonable time within which the **Contractor** must achieve Substantial Completion of the Work. If the **City** fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the **Contractor's** certification within the twenty-one (21) day period, the **Contractor's** certification shall take effect as the **City's** declaration that the Work has been substantially completed.

14.2. Partial Use or Occupancy of the Premises.

14.2.1. The **City** may occupy or use any completed or partially completed portion of the Work at any stage. Such partial occupancy or use may begin whether or not the portion is substantially complete, provided that the respective responsibilities of the **City** and the **Contractor** with respect to payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work, insurance, correction of the Work, and warranties shall be established by agreement of the **City** and the **Contractor** or, absent such agreement, shall be determined by the **Design Professional** subject to the right of either party to contest such determination as provided in Article 16.

14.2.2. Immediately prior to such partial occupancy or use, the **City**, the **Contractor** and the **Design Professional** shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

14.2.3. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

14.2.4. (*Reference: M.G.L. c. 30, §39G;*). Within sixty-five (65) days after the effective date of a declaration of Substantial Completion, the **City** shall prepare and send to the **Contractor** for acceptance a Substantial Completion estimate for the quantity and price of the Work done and all but one percent (1%) retainage on that Work, including the quantity, price and all but one percent (1%) retainage for the undisputed part of each item and extra work item in dispute, but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory items and less the total periodic payments made to date for the Work. The **City** shall also deduct from the Substantial Completion estimate an amount equal to the sum of all demands for direct payment filed by Subcontractors and not yet paid to Subcontractors or deposited in joint accounts pursuant to M.G.L. c. 30, §39F.

14.2.5. (*Reference: M.G.L. c. 30, §39G.*) If the **City** fails to prepare and send to the **Contractor** any Substantial Completion estimate required by the provisions herein on or before the date specified, the **City** shall pay to the **Contractor** interest on the amount which would have

been due to the **Contractor** pursuant to such Substantial Completion estimate at the rate of three (3) percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston from such date to the date on which the **City** sends that Substantial Completion estimate to the **Contractor** for acceptance or to the date of payment therefor, whichever occurs first. The **City** shall include the amount of such interest in the Substantial Completion estimate.

14.2.6. (Reference: M.G.L. c. 30, §39G). Within fifteen (15) days after the effective date of the declaration of Substantial Completion, the **City** shall send to the **Contractor** by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory items, and unless delayed by causes beyond its control, the **Contractor** shall complete all such items within forty-five (45) days after the receipt of such list or before the date for final payment and acceptance, whichever is later. If the **Contractor** fails to complete such Work within such time, the **City** may, subsequent to seven (7) days' written notice to the **Contractor** by certified mail, return receipt requested, terminate the Contract and complete the incomplete or unsatisfactory items and charge the cost of same to the **Contractor**.

14.3. Final Inspection.

14.3.1. Upon written notice from the **Contractor** that the entire Work or an agreed portion thereof is complete, the **Design Professional** will make a final inspection with the **City** and the **Contractor** and will notify the **Contractor** in writing of all particulars which this inspection reveals that the Work is incomplete or defective. The **Contractor** shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

ARTICLE 15: GUARANTEES AND WARRANTIES

15.1. In General.

15.1.1. All guarantees and warranties specifically called for by the Specifications shall expressly run to the benefit of the **City**.

15.2. Warranties.

15.2.1. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof, unless otherwise provided in the certificate of Substantial Completion.

15.2.2. The **Contractor** warrants that the materials and equipment furnished under the Contract will be new and of recent manufacture unless otherwise specified, and that all Work will be of good quality, free from faults and defects, and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The **Contractor's** warranty excludes remedy for damage or defect caused by abuse, Modifications not executed by the **Contractor**, improper or insufficient maintenance, improper operation, or normal wear and tear under normal

usage. If required by the **Design Professional**, the **Contractor** shall furnish satisfactory evidence as to the kind and quality of material and equipment.

15.2.3. The **Contractor** warrants that title to all Work covered by an application for payment will pass to the **City** either by incorporation in the construction or upon the receipt of payment by the **Contractor**, whichever occurs first, free and clear of all liens. The **Contractor** further agrees that the submission of any application for payment shall conclusively be deemed to waive all liens with respect to said Work to which the **Contractor** may then be entitled, provided that such waiver of the lien rights shall not waive the **Contractor's** right to payment for such Work.

15.2.4. The **Contractor** warrants and guarantees that title to all Work, materials, and equipment covered by any application for payment, whether incorporated in the Project or not, will pass to the **City** no later than the time of payment free and clear of all liens.

15.2.5. No materials or supplies for the Work shall be purchased by the **Contractor** or Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The **Contractor** warrants that it has good title to all materials and supplies used by it in the Work, free from all liens.

15.2.6. The **Contractor** shall indemnify and hold the **City** harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workers, mechanics, material persons, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. The **Contractor** shall at the **City's** request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the **Contractor** fails to do so, then the **City** may, after having served written notice on the **Contractor** either pay unpaid bills, of which the **City** has written notice, direct, or withhold from the **Contractor's** unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the **Contractor** shall be resumed, in accordance with the terms of this

Contract, but in no event shall the provisions of this sentence be construed to impose any obligations on the **City** to either the **Contractor** or its surety. In paying any unpaid bills of the **Contractor**, the **City** shall be deemed the agent of the **Contractor** and any payment so made by the **City** shall be considered as payment made under the Contract by the **City** to the **Contractor** and the **City** shall not be liable to the **Contractor** for any such payment made in good faith.

15.3. Extended Warranties and Guarantees.

15.3.1. Any defective Work that is either corrected or replaced will be warranted and guaranteed for a period of three (3) years from the date of such correction or replacement.

ARTICLE 16: CLAIMS

16.1. In General.

16.1.1. Written Notice. A Claim must be made by written notice to the other party.

16.1.2. Content of Notice. The notice must include all written supporting data.

16.1.3. Burden of Proof. The party making the Claim must substantiate the Claim.

16.2. Time Limits on Claims.

16.2.1. Unless otherwise provided, all Claims must be made within twenty-one (21) days after the occurrence of the event giving rise to such Claim or within twenty-one (21) days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Any change or addition to a previously made Claim shall be made by a written notice within the twenty-one-day period in order to be valid.

16.3. Continuing Contract Performance.

16.3.1. Pending final resolution of a Claim including arbitration, unless otherwise agreed in writing, the **Contractor** shall proceed diligently with performance of the Contract and the **City** shall continue to make payments in accordance with the Contract Documents.

16.4. Types of Claims.

16.4.1. Claims for Differing Subsurface or Latent Physical Conditions. (*Reference: M.G.L. c. 30, §39N*);). If, during the progress of the Work, the **Contractor** or the **City** discovers that the actual subsurface or latent physical conditions encountered at the Site differ substantially or materially from those shown on the Plans or indicated in the Contract Documents, either the **Contractor** or the **City** may request an equitable adjustment in the Contract Sum of the Contract applying to Work affected by the differing Site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a **Contractor**, or upon its own initiative, the **City** shall make an investigation of such physical conditions, and if they differ substantially or materially from those shown on the Plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Plans and Contract Documents and are of such a nature as to cause an increase or decrease in the cost of performance of the Work or a change in the construction methods required for the performance of the Work which results in an increase or decrease in the cost of the Work, the **City** shall make an equitable adjustment in the Contract Sum and the Contract shall be modified in writing accordingly.

16.4.2. Claims for Additional Cost. If the **Contractor** claims that any acts or omissions

of the **City** or the **Design Professional**, including any instructions or orders, whether oral, written, by drawings, or otherwise, involve extra cost or time, and the **Contractor** has not received a written acknowledgment by the **City** or the **Design Professional** that extra payment will be made or time extended on account thereof, the **Contractor** shall promptly so notify the **Design Professional** in writing of such Claim and shall proceed with the Work relating to such Claim and all rights of both parties with respect to such Claim shall be deemed to have been reserved. No Claim by the **Contractor** on account of such acts, omissions, instructions, or orders shall be valid unless the **Contractor** has so notified the **Design Professional** before proceeding.

16.4.2.1. Under no circumstances shall a Claim be made for additional cost where adverse weather conditions are the basis for the Claim.

16.4.3. Claims for Additional Time. If the **Contractor** wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The **Contractor** shall have the burden of demonstrating the effect of the claimed delay on the Contract Time and shall furnish the **Design Professional** with such documentation relating thereto as the **Design Professional** may reasonably require. Under no circumstances shall the **Contractor** make a Claim for an increase in the Contract Time due to a change in the **Contractor's** early completion date. If the increase in the Contract Time extends beyond the Contract Time established by the **City**, only the time that so extends beyond the Contract Time shall be reviewed and considered. In the case of a continuing delay, only one Claim is necessary.

16.4.3.1. Under no circumstances shall a Claim be made for additional time where adverse weather conditions are the basis for the Claim.

16.4.4. Claims for Injury to Person or Damage to Property. Should either party to the Contract suffer injury to person or damage to property because of any error, omission, or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, a Claim will be made in writing to the other party within twenty-one (21) days of the occurrence of the act giving rise to the injury or damage.

16.5. Review of Claims.

16.5.1. Initial Referral. All Claims, the bases of which arise prior to final payment or the earlier termination of the Contract, shall be referred initially to the **Design Professional** for action as provided herein.

16.5.2. Time Period and Action. The **Design Professional** shall review Claims and shall do one of the following within fourteen (14) days of receipt of the Claim:

16.5.2.1. defer any action with respect to all or any part of a Claim for the purpose of requesting and receiving additional information from either party;

16.5.2.2. decline in writing to render a decision for any reason which it deems appropriate (including, but not limited to, the fact that the Claim involves allegations of fault on the part of the **Design Professional**); or

16.5.2.3. render a decision on all or a part of the Claim.

16.5.3. If the **Design Professional** requests additional information, the **Design Professional** shall take action with respect to the Claim no later than fourteen (14) days after receipt of the additional information. The **Design Professional** shall notify the parties in writing of its disposition of such Claim. If the **Design Professional** renders a decision or declines to render a decision, either party may proceed in accordance with paragraph 16.7.

16.6. Decisions.

16.6.1. Decisions by the City or the Design Professional. (*Reference: M.G.L. c. 30, §39P*);). In every case in which this Contract requires the **City**, any official, or its **Design Professional** to make a decision on interpretation of the Specifications, approval of equipment, material or any other approval, or progress of the Work, the decision shall be made promptly and, in any event, no later than fourteen (14) days after the written submission for decision; but if such decision requires extended investigation and study, the **City**, the official, or the **Design Professional** shall, within fourteen (14) days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty-day period and the date by which the decision will be made.

16.6.2. When Decision of the Design Professional is Final and Binding. The decision of the **Design Professional** shall be final and binding on the parties, unless a party files suit or a demand for arbitration within thirty (30) days after the date of the decision.

16.6.3. When Decision of the Design Professional is Not Final and Binding. (*Reference: M.G.L. c. 30, §39J*). Notwithstanding any contrary provision of this Contract, no decision by the **City** or by the **Design Professional** on a dispute, whether of fact or of law, arising under said Contract shall be final or conclusive if such decision is made in bad faith, fraudulently, capriciously, arbitrarily, is unsupported by substantial evidence, or is based upon error of law.

16.6.4. Resolved Claims. If a Claim is resolved, the **Design Professional** shall obtain or prepare the appropriate documentation and provide the **City** and the **Contractor** with a copy of same.

16.7. Arbitration.

16.7.1. Controversies and Claims Subject to Arbitration. Any controversy or Claim arising out of or related to the Contract, or the breach thereof, shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration

Association, and judgment upon the award rendered by the arbitrator or arbitrators may be entered in any court having jurisdiction thereof, except controversies or Claims relating to aesthetic effect, subject to the provisions of paragraph 16.7.7. In any such arbitration in which the amount stated in the demand is \$100,000 or less, the American Arbitration Association shall appoint a single arbitrator in accordance with such Rules, who shall be a lawyer. In any such arbitration in which the amount stated in the demand is in excess of \$100,000, the demand shall include the name of an arbitrator appointed by the claimant. The respondent shall appoint a second arbitrator and shall notify the claimant in writing of such appointment within thirty (30) days of receipt of the demand, failing which the matter shall be decided by the arbitrator named in the claimant's demand. Within thirty (30) days after the claimant's receipt of notice of the appointment of the second arbitrator, the two arbitrators shall appoint a neutral arbitrator and shall notify the parties in writing of such appointment, failing which either party may apply to the American Arbitration Association to appoint such neutral arbitrator. If such neutral arbitrator is appointed by the American Arbitration Association, he or she shall be a lawyer.

16.7.2. Rules for Arbitration. If the neutral arbitrator is appointed by the American Arbitration Association, the said Association shall administer the arbitration and its Construction Industry Arbitration Rules shall govern all aspects of the proceeding including the enforcement of any award. If the neutral arbitrator is not appointed by the American Arbitration Association, then the panel of arbitrators shall act as the administrator of the arbitration but the Construction Industry Arbitration Rules of the Association shall nonetheless govern all aspects of the proceeding, including the enforcement of any award, provided however that the arbitration panel shall have all of the powers and duties conferred on the Association pursuant to said rules. In addition, the following rules shall govern the selection of arbitrators and the proceedings:

16.7.2.1. Neither party may appoint as arbitrator an employee or an owner of that party, nor the parent, spouse, or child of an employee or owner of that party.

16.7.2.2. After the neutral arbitrator has been appointed, neither party may engage in *ex parte* communication with any arbitrator.

16.7.3. When Arbitration May Be Demanded. Demand for arbitration of any Claim, the basis of which arises prior to final payment or the earlier termination of the Contract may not be made before the earlier of (1) the date on which the **Design Professional** has rendered a written decision on the Claim or has notified the parties in writing that such decision will not be rendered or (2) forty-five (45) days following receipt by the **Design Professional** of a written request for a decision sent by registered or certified mail to both the **Design Professional** and the other party to this Contract.

16.7.3.1. In no event shall a demand for arbitration be made after the date when the institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations.

16.7.4. Limitation on Consolidation or Joinder. No arbitration arising out of or

relating to the Contract Documents shall include, by consolidation or joinder or in any other manner, the **Design Professional**, the **Design Professional's** employees or consultants, except by written consent containing specific reference to the Contract and signed by the **Design Professional**, the **City**, the **Contractor**, and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the **City**, the **Contractor**, a separate contractor, and other persons substantially involved in a common question of fact or law whose presence is required if complete relief is to be accorded in arbitration. No person or entity other than the **City**, the **Contractor**, or a separate contractor shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a dispute not described therein or with a person or entity so named or described herein. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Contract shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

16.7.5. Claims and Timely Assertion of Claims. A party who files a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded. When a party fails to include a Claim through oversight, inadvertence, or excusable neglect, or when a Claim has matured or been acquired subsequently, the arbitrator or arbitrators may permit amendment.

16.7.6. Award Final. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

16.7.7. The City's Reservation of Rights. Notwithstanding any provision contained in this Article 16 or elsewhere in the Contract Documents, the **City** reserves the following rights in connection with Claims between the **City** and the **Contractor**, which rights may be exercised by the **City** unilaterally, in the **City's** sole discretion, and without the consent of the **Contractor**:

16.7.7.1. the right to institute legal action against the **Contractor** in any court of competent jurisdiction in lieu of demanding arbitration, in which case the dispute or disputes which are the subject of such action shall be decided by such court, and not by arbitration;

16.7.7.2. the right to obtain from any court of competent jurisdiction a stay of any arbitration instituted by the **Contractor**, provided that the application for such stay is made before the appointment of the neutral arbitrator in such arbitration, in which case the dispute or disputes which are the subject of such arbitration shall be decided by such court and not by arbitration;

16.7.7.3. the right to require the **Contractor** to join as a party in any arbitration between the **City** and the **Design Professional** relating to the Project, in which

case the **Contractor** agrees to be bound by the decision of the arbitrator or arbitrators in such arbitration.

16.7.8. In case the **City** elects to proceed in accordance with 16.7.7.1. or 16.7.7.2. above, the word "litigation" shall be deemed to replace the word "arbitration" wherever the latter word appears in the Contract Documents.

ARTICLE 17: EMERGENCIES

17.1. In an emergency affecting the health and safety of persons or property, the **Contractor** shall act to prevent threatened damage, injury, or loss.

17.2. In emergencies affecting the health, safety, or protection of persons, the Work or property at the Site or adjacent thereto, the **Contractor**, without special instruction or authorization from the **City** or the **Design Professional**, is obligated to act to prevent threatened damage, injury, or loss. The **Contractor** shall give the **Design Professional** prompt written notice if the **Contractor** believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If the **Design Professional** determines that a change in the Contract Documents is required because of the action taken by the **Contractor** in response to such an emergency, a **Construction Change** Directive or Change Order will be issued to document the consequences of such action.

ARTICLE 18: TERMINATION OR SUSPENSION OF THE CONTRACT

18.1. Suspension by the City.

18.1.1. At any time and without cause, the **City** may suspend the Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the **Contractor** and the **Design Professional** that will fix the date on which Work will be resumed. The **Contractor** shall resume Work on the date so fixed. The **Contractor** shall be allowed an adjustment in the Contract Sum or an extension of the Contract Time, or both, directly attributable to any such suspension if the **Contractor** makes an approved Claim therefor.

18.1.2. If the Work is defective, if the **Contractor** fails to provide a sufficient number of skilled workers or suitable materials or equipment, or if the **Contractor** defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the **City** to begin and prosecute correction of such default or neglect with diligence and promptness, the **City** may correct such deficiencies, without prejudice to other remedies the **City** may have. In such case, an appropriate **Construction Change** Directive shall be issued deducting from payments then or thereafter due to the **Contractor** the cost of correcting such deficiencies including compensation for the **Design Professional's** additional services and expenses made necessary by such default, neglect, or failure and any and all direct, indirect, or consequential costs associated with the order to stop the Work. If such payments then or thereafter due the **Contractor** are not sufficient to cover such

amounts, the **Contractor** shall immediately pay the difference to the **City**. The **Contractor** shall remain responsible for maintaining progress and shall not be entitled to any increase in the Contract Time or the Contract Sum.

18.2. Termination by the Contractor.

18.2.1. If, through no act or fault of the **Contractor**, a Subcontractor, or a Sub-subcontractor, the Work is suspended for a period of more than ninety (90) days by the **City**, or under an order of court or other public authority, or the **Design Professional** fails to act on any application for payment within thirty (30) days after it is submitted in proper form and content or the **City** fails for thirty (30) days to pay the **Contractor** any sum finally determined to be due, then the **Contractor** may terminate the Contract upon seven (7) days' written notice to the **City**, provided that the **City** does not remedy such suspension or failure within that time.

18.3. Termination by the City.

18.3.1. If the **Contractor** is adjudged a bankrupt, or if the **Contractor** makes a general assignment for the benefit of the **Contractor's** creditors, or if a receiver is appointed on account of the **Contractor's** insolvency, or if the **Contractor** persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if the **Contractor** fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction or disregards an instruction, order, or decision of the **Design Professional**, or otherwise is guilty of substantial violation of any provision of the Contract, then the **Contractor** shall be in default, and the **City** may, without prejudice to any other right or remedy and upon written notice to the **Contractor**, take possession of all materials, tools, appliances, equipment, construction equipment and machinery and vehicles, offices and other facilities on the Project Site, and all materials intended for the Work, wherever stored, and, seven (7) days after such notice, may terminate the employment of the **Contractor**, accept assignment of any or all subcontracts pursuant to Paragraph __, and finish the Work by whatever method the **City** may deem expedient. The **City** shall be entitled to collect from the **Contractor** all direct, indirect, and consequential damages suffered by the **City** on account of the **Contractor's** default, including without limitation additional services and expenses of the **Design Professional** made necessary thereby. The **City** shall be entitled to hold all amounts due to the **Contractor** at the date of termination until all of the **City's** damages have been established, and to apply such amounts to such damages.

18.3.2. (*Reference: Somerville Municipal Code Chapter 2.117, Section 2.117.110C*). In the event the **Contractor** or any of its agents or employees violates any provision of Somerville Municipal Code Chapter 2.117 that is applicable to **City** contractors in connection with the awarding, administration, or performance of the Contract, the **City** may terminate the Contract.

ARTICLE 19: AMERICANS WITH DISABILITIES ACT; (42 U.S. 12131)

19.1. On July 26, 1994, the Americans with Disabilities Act (“the Act”) became effective for employers of fifteen or more employees.

19.2. The Act protects against discrimination on the basis of “disability,” which is defined as a physical or mental impairment that substantially limits at least one “major life activity;” or discrimination against an individual who has a record of such impairment; or discrimination against an individual being regarded - even if inaccurately - as having such impairment. The Act also expressly prohibits job discrimination that is based on any individual’s relationship or association with a disabled person.

19.3. If the **Contractor** is subject to the Act, it must comply with its provisions.

ARTICLE 20: WRITTEN NOTICE TO THE PARTIES

20.1. In General.

20.1.1. All written communications from the **Design Professional** to the **Contractor** shall be copied to the **City**. All written communications from the **Contractor** to the **Design Professional** shall be copied to the **City**. All written communications from the **Contractor** to the **City** shall be copied to the **Design Professional**.

20.2. Addresses.

20.2.1. To the City. Written notice to the **City** shall be sent or hand-delivered to:

Purchasing Director
City of Somerville
93 Highland Avenue
Somerville, MA 02143

City Solicitor
Law Department
93 Highland Avenue
Somerville, MA 02143

20.2.2. To the Contractor. Both the address given on the bid form upon which the Agreement is founded and the **Contractor's** office at or near the Site of the Work are hereby designated as places to either of which notices, letters, and other communications to the **Contractor** shall be certified, mailed, or delivered. Delivery of any notice, letter, or other communication to the **Contractor** at or depositing same in a postpaid wrapper directed to either

place shall be deemed sufficient service thereof upon the **Contractor**. Written notice shall be deemed to have been duly served on the **Contractor** if it is sent or hand-delivered to any member or officer of the **Contractor**. The date of said service shall be the date of such delivery or mailing. The address may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor** and delivered to the **City** and to the **Design Professional**. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon the **Contractor** personally. Moreover, any notice, letter, or other communication required under the Contract may be served on the **Contractor's** representative at job meetings. The **Contractor** shall provide the **City** with its change of address seven (7) days prior to its effective date.

20.2.3. To the Design Professional. Written notice to the **Design Professional** shall be sent or hand-delivered to the address appearing on the Project Manual. Written notice shall be deemed to have been duly served on the **Design Professional** if it is sent or hand-delivered to any member or officer of the **Design Professional**.

ARTICLE 21: MISCELLANEOUS PROVISIONS

21.1. Governing Law.

21.1.1. This Contract shall be governed by the laws of the Commonwealth of Massachusetts.

21.2. Venue.

21.2.1. Venue for any court action or proceeding shall be Middlesex County in the Commonwealth of Massachusetts only. The **Contractor**, all Subcontractors, and Suppliers waive any and all jurisdictional and venue defenses.

21.3. Successors and Assigns.

21.3.1. The **Contractor** shall not assign, in whole or in part, its rights and obligations under the Contract Documents without prior written consent of the **City**. An assignment without the prior written consent of the **City** shall not relieve the **Contractor** of its obligations thereunder.

21.3.2. The **City** and the **Contractor** respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents.

21.4. Statutory Limitation Period.

21.4.1. It is expressly agreed that the obligations of the **Contractor** hereunder arise out of contractual duties, and that the failure of the **Contractor** to comply with the requirements of the

Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitations and repose. Any cause of action which the **City** may have on account of such failure shall be deemed to accrue only when the **City** has obtained actual knowledge of such failure, not before.

21.5. Rights and Remedies.

21.5.1. Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

21.5.2. No action or failure to act by the **City**, the **Design Professional**, or the **Contractor** shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

PART 2 - SAMPLE CONSTRUCTION **CONTRACT**

- Sample Contract
- Certificate of Authority
- Appendix A – Scope of Work (including Technical Specifications)
- Appendix B – Contractor's Bid Price; Form for General Bid (From Bid Book)
- Appendix C – General Terms and Conditions
- Appendix D – Insurance Requirements
- Appendix E – Wage Rates and Living Wage (From Bid Book)
- Appendix F – Certificate of Good Standing (for corporations; from Bid Book)
- Appendix G – Procurement documentation (Advertisements and Notice to Bidders)
- Appendix H – Statement of Management
- Appendix I – Performance Bond and Payment Bond, if contract over \$2000
- Appendix J – Prevailing Wage Rates and Compliance Form

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

S A M P L E C O N T R A C T

CONTRACT NUMBER

A-

PURCHASE ORDER # AND AMOUNT

BID NUMBER

Department of Capital Projects and
Planning

ISSUING DEPARTMENT

XXXXX xx , 20XX – YYYYYY yy, 20XX
CONTRACT PERIOD

CITY OF SOMERVILLE

PUBLIC CONSTRUCTION CONTRACT

CONTRACTOR: Vendor
 Address
 Townname, MA, Zip Code

FOR: **SOMERVILLE HIGH SCHOOL**
 RENOVATIONS TO THE AUDITORIUM
 SELECTIVE DEMOLITION

ACCORDING TO SPECIFICATIONS CONTAINED HEREIN

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

**CITY OF SOMERVILLE
OWNER-CONTRACTOR PUBLIC CONSTRUCTION AGREEMENT**

AGREEMENT made this _____ day of _____, 2014, by and between the City of Somerville, a Massachusetts municipal corporation, acting by and through its Purchasing Department, with a usual address of 93 Highland Ave., Somerville, MA 02143 ("City", "Owner" or "Awarding Authority") and the following General Contractor ("Contractor" or "General Contractor"):

GENERAL CONTRACTOR:

Name:

Address:

Telephone:

Fax:

E-Mail:

PROJECT: Somerville High School
Renovations to the Auditorium
Selective Demolition

PROJECT MANAGER:

Name: Skip Bandini, Director, Capital Projects & Planning

Address: One Franey Road, Somerville, MA 02145

Telephone: (617) 625 - 6660

E-Mail: sbandini@somervillema.gov

DESIGN PROFESSIONAL:

Contact: Fabrizio Caruso, Project Manager
CDR Maguire, Inc.
211 Congress Street, 11th Floor
Boston, MA 02110
Phone: (617) 778 - 1440
Fax; (617) 348 - 2143

Profession: Architect [☒] Landscape Architect [☐] Engineer [☐]

THIS CONTRACT IS A:

- ☐ Public Works Contract estimated to cost more than \$10,000 subject to the bidding requirements of G.L. c. 30, § 39M
- ☐ Public Building Contract estimated to cost under \$10,000, subject to the price quote requirements of G.L. c. 149 §44A (2)(A)
- ☐ Public Building Contract estimated to cost more than \$10,000 but less than \$25,000, subject to the written response requirements of G.L. c. 149, §44A(2)(B) of the General Laws
- ☐ Public Building Contract estimated to cost more than \$25,000 but less than \$100,000, subject to the bidding requirements of G.L. c. 149, §44A(2)(C) and G.L. c. 30, § 39M
- ☒ Public Building Contract estimated to cost more than \$100,000, subject to the bidding requirements of G.L. c. 149, §44A(D).

Section 1: CONTRACT DOCUMENTS/APPENDICES

The Contract Documents consist of this Agreement; the notice of award of the Contract; the Notice to Proceed; the entire Project Manual; Change Orders; Construction Change Directives; the Contractor's Bid and all accompanying documents; and the Design Professional's written interpretations and clarifications issued on or after the issuance of the Notice to Proceed. Shop Drawing submittals and reports or drawings utilized by the Design Professional in preparing the Contract Documents are not Contract Documents.

The following Appendices are hereby attached or incorporated by reference as part of this Agreement.

- ☒ Certificate of Authority
- ☐ * Appendix A - Scope of Services - Misc. Bid Documents: includes a brief description of the Project, the Plans and Technical Specifications (Plans on File) and Addenda issued during the bid process
- ☒ Appendix B - Contractor's Bid Price; Form for General Bid
- ☒ ** Appendix C - General Conditions

X** Appendix D - Insurance Requirements with Contractor's Insurance Certificate(s)

X Appendix E - Wage Rates; Living Wage

X Appendix F - Certificate of Good Standing (for corporations)

X Appendix G - Procurement Documentation (includes Advertisement; Notice to Bidders)

X Appendix H - Statement of Management (over \$100,000)

X Appendix I - Performance Bond and Payment Bond, if contract is over \$2,000

X = Attached

* = Included in the Project Manual and incorporated herein by reference

** = Attached and also duplicated in the Project Manual

Section 2: THE CONTRACTOR'S WORK.

The Contractor's "Work" refers to the services and the entire completed construction or the various separately identifiable parts thereof required by the Contract Documents, including all labor, materials, and equipment furnished, furnished and incorporated into the Project, or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

Section 3: PROJECT DATES.

(a) Contract Period: The Contract shall begin on:

(b) Date of Commencement of Work: The Date of Commencement of the Work shall be stipulated by a written Notice to Proceed given by the City to the Contractor on or before

(c) Date of Substantial Completion: The Contractor shall achieve Substantial Completion of the Work on or before _____, time being of the essence. Substantial Completion means that the Work has been completed and the Site or the facility is opened for full and intended public use, except for minor incomplete or unsatisfactory items that do not materially impair the usefulness of the Work. The Design Professional shall decide what constitutes "minor," "incomplete," "unsatisfactory," and "materially" and the Design Professional's decision shall be final.

(d) Dates of Final Completion:

The Date of Final Completion shall be;

Section 4. CONTRACT SUM/LIQUIDATED DAMAGES

- (a) Contract Sum: The Contract Sum shall be \$_____ .
- (b) Liquidated Damages: The Contractor and the City agree to a Liquidated Damages sum of \$500.00 per calendar day for failure to meet the deadlines set forth in Sections 3(c), or (d).

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the City and the Contractor have executed this Contract as a sealed instrument as of the date first written above.

CITY OF SOMERVILLE

I hereby certify that the total contract amount is \$_____, and that an unencumbered balance of \$_____ is available for the first fiscal year of this contract. I further certify that a sum of \$_____ is hereby encumbered against the appropriate account for the purposes of this contract. Further, I certify that as funds become available, I will encumber additional sums as are required under this contract.

Edward Bean, City Auditor

Joseph A. Curtatone
Mayor

Skip Bandini
Director, Capital Projects & Planning

.

Angela M. Allen, Purchasing Director

Approved as to form:

Francis X. Wright, Jr., City Solicitor

VENDOR:

Signature of Authorized Agent of Vendor

Printed Name:
Title:

Vendor Address:

Federal Tax ID: #_____

FOR CORPORATIONS ONLY:

Clerk's Signature

Clerk's Name

APPENDIX A

Scope of Services – Miscellaneous Bid Documents

Includes a brief description of the project
The Plans and Technical Specifications (Plans on File)
And addenda issued during the bid process.

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

APPENDIX B
Contractor's Bid Price - Form for General Bid
(From Bid Book)

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

APPENDIX C
General Terms and Conditions
(From Bid Manual)

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

APPENDIX D

INSURANCE REQUIREMENTS

**APPENDIX D - INSURANCE REQUIREMENTS
INSURANCE SPECIFICATIONS**

INSURANCE REQUIREMENTS FOR AWARDED VENDOR ONLY:

Prior to commencing performance of any work or supplying materials or equipment covered by these specifications, the contractor shall furnish to the Office of the Purchasing Director a Certificate of Insurance evidencing the following:

A. GENERAL LIABILITY - Comprehensive Form

Bodily Injury Liability.....\$ One Million
Property Damage Liability.....\$ Two Million

**B. COVERAGE FOR PAYMENT OF WORKER'S COMPENSATION BENEFIT
PURSUANT TO CHAPTER 152 OF THE MASSACHUSETTS GENERAL LAWS IN
THE AMOUNT AS LISTED BELOW:**

Workers Compensation.....\$ Statutory
Employer's Liability.....\$ Statutory

C. AUTOMOBILE LIABILITY INSURANCE AS LISTED BELOW:

Bodily Injury Liability.....\$ Statutory

1. A contract will not be executed unless a certificate (s) of insurance evidencing above-described coverage is attached.
2. Failure to have the above-described coverage in effect during the entire period of the contract shall be deemed to be a breach of the contract.
3. All applicable insurance policies shall read:
"CITY OF SOMERVILLE" as a certificate holder and as an additional insured for general liability only along with a description of operation in the space provided on the certificate.
4. Please comply with our requirement of a **thirty (30) day** notice of cancellation and note on certificate.

Certificate Should Be Made Out To:
City Of Somerville
Purchasing Department
93 Highland Avenue
Somerville, MA 02143

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

Note: If your insurance expires during the life of this contract, you shall be responsible to submit a new certificate(s) covering the period of the contract. No payment will be made on a contract with an expired insurance certificate.

**APPENDIX E
WAGE RATES AND LIVING WAGE FORM**

**STATE PREVAILING WAGE RATES
SOMERVILLE LIVING WAGE RATES FORM
RESPONSIBLE EMPLOYER ORDINANCE**

INSERT MANUALLY

APPENDIX F

CERTIFICATE OF GOOD STANDING (FOR CORPORATIONS)

INSERT DOCUMENT FROM BID MANUAL HERE

Certificate of Good Standing: If the bidder is a corporation, a Certificate of Good Standing shall be provided with executed contracts. Certificate of Good Standing available online at: http://corp.sec.state.ma.us/corp/Certificates/Certificate_Request.asp or call Tel: (617) 727-9640 for more information.

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

APPENDIX G

PROCUREMENT DOCUMENTATION

ADVERTISEMENTS, NOTICE TO BIDDERS, ETC.

APPENDIX H

STATEMENT OF MANAGEMENT FOR CONTRACTS OVER \$100,000

STATEMENT OF MANAGEMENT

In accordance with M.G.L. Chapter 30, Section 39R, the undersigned successful bidder states that its system of internal accounting controls and that of its subsidiaries reasonably assure (1) that transactions are executed in accordance with management's general and specific authorization; (2) that transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles, and to maintain accountability for assets; (3) that access to assets is permitted only in accordance with management's general or specific authorization, and (4) that the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

Executed this _____ day of _____

On behalf of _____

(Successful bidder name)

(Address and telephone of successful bidder)

(Name and title of person signing statement)

By: _____
(Signature)

CERTIFIED PUBLIC ACCOUNTANT STATEMENT

In accordance with M.G.L. 30, Section 39R I, _____ a certified public accountant, state that I have examined the above Statement of Management on internal accounting controls, and that in my opinion (1) the representations of management are consistent with the result of management's evaluation of the system of internal accounting controls; and (2) that such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the above referenced successful bidder's financial statements.

(Signature)

(Business name, address and telephone number)

Somerville High School
Renovations to the Auditorium
Selective Demolition

Somerville, Massachusetts
January 23, 2014

APPENDIX I

PERFORMANCE BOND AND PAYMENT BOND

FOR CONTRACTS OVER \$2000

PERFORMANCE BOND

We, the undersigned,

_____,
(Name of Contractor)

_____,
(Address of Contractor)

_____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____,
(Name of Surety)

_____, (Address of Surety)

hereinafter called Surety, are held and firmly bound unto CITY OF SOMERVILLE, 93
Highland Avenue, Somerville, MA 02143, hereinafter called Owner, in the penal sum of
Dollars

(\$_____) in lawful money of the United States, for the payment of which sum well and
truly to be made. We hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors, and assigns.

The condition of this obligation is such that the Principal entered into a certain
contract with the Owner, dated the _____ day of _____, 20____, a copy of
which is attached hereto and made a part hereof, for the project known as Somerville High
School Renovations to the Auditorium Selective Demolition and the Principal and Surety
bind themselves to the Owner for the performance of the contract.

Now, therefore, if the Principal shall well, truly and faithfully perform its duties, all

the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety and during the guaranty period set forth in the contract, and if it shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by a reason of failure to do so, and shall reimburse and repay the Owner all outlay and expenses which the Owner may incur in making good any default, then this obligation shall be void; otherwise, this bond shall remain in full force and effect; provided, further, that the said Surety for value received hereby agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder of the specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications. Provided, further, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed on this _____ day of _____, 20____.

CONTRACTOR AS PRINCIPAL

SURETY

(Signature)
Name and Title:

(Signature)
Name and Title:

SEAL

SEAL

Payment Bond

We, the undersigned,

_____,
(Name of Contractor)

_____,
(Address of Contractor)

_____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____,
(Name of Surety)

_____, (Address of Surety)

hereinafter called Surety, are held and firmly bound unto CITY OF SOMERVILLE, 93
Highland Avenue, Somerville, MA 02143, hereinafter called Owner, in the penal sum of
Dollars

(\$ _____) in lawful money of the United States, for the payment of which sum well and
truly to be made. We hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors, and assigns.

The condition of this obligation is such that the Principal entered into a certain
contract with the Owner, dated the _____ day of _____, 20____, a copy of
which is attached hereto and made a part hereof, for the project known as Somerville High
School Renovations to the Auditorium Selective Demolition.

Now, therefore, if the Principal shall promptly make payment to all persons, firms,
subcontractors, and corporations furnishing materials for or performing labor in the

prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials used in connection with the work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise this bond is remain in full force and effect. Provided, further, that the said Surety for value received hereby agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder of the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

Provided, further, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed on this _____ day of
, 20____.

CONTRACTOR AS PRINCIPAL

SURETY

(Signature)

(Signature)

Name and Title:

Name and Title:

SEAL

SEAL

PART III **TECHNICAL SPECIFICATIONS –**
DIVISIONS 1 AND 2

Unit Price Proposal Form

Attach the completed list of proposed Unit Prices to the Bid Form

Item No.	Spec. Section	Item	Unit	Add and Deduct Amount
1.	024119	Demolition and Disposal of Hard Wood Flooring	Square Feet	\$_____
2.	024119	Demolition and Disposal of Wood Wall Paneling	Square Feet	\$_____
3.	024119	Demolition and Disposal of Plaster Ceiling	Square Feet	\$_____
4.	024119	Demolition and Disposal of Doors & Frames	Square Feet	\$_____
5.	024119	Demolition and Disposal of Plaster Walls	Square Feet	\$_____
6.				\$_____
7.				\$_____
8.				\$_____
9.				\$_____
10.				\$_____

END OF SECTION

SECTION 011000 - SUMMARY

PART 1 - GENERAL

- 1.01 Project Description: The project consists of Selective Demolition of the interior finishes, electrical and mechanical systems within the existing auditorium and kitchen area at the Somerville High School, 81 Highland Street, Somerville, MA 02145 as shown on the Contract Documents prepared by CDR Maguire Inc., drawings and Project Manual dated January 23, 2013.
- 1.02 The Work consists predominantly of demolishing and removing the water-damaged portions of the auditorium and kitchen of the Somerville High School. Prior to demolition, all hazardous materials are to be removed and disposed of appropriately and in accordance with all applicable state and federal laws and regulations. Contact DIGSAFE prior to starting demolition for location of underground utility.
- 1.03 Pre-Condition Surveys – The Contractor is responsible for performing a pre-conditions survey of all immediately adjacent properties to confirm existing conditions prior to commencement of demolition activities.
- 1.04 Contractor Use of Premises: Limit use of the premises to construction activities in areas indicated for work.
 - A. Confine operations to areas within Contract Work Limits. Portions of the building beyond the Contract Work Limits, or other areas in which construction operations are specifically allowed to take place, are not to be disturbed. All areas in which construction activities take place are to be repaired and/or restored to pre-construction condition after construction activities are completed.
 - B. Keep driveways and building entrances clear at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize requirements for storage of materials. Maintain egress from all building entrances to safe areas away from the building. Coordinate construction schedule and sequencing with the Owner prior to the commencement of work to assure safe public use of all building entrances and exits at all times for daytime and evening activities as needed by the School Department.
- 1.05 Maintenance of the Existing Building: Maintain the existing building in a weathertight condition throughout construction. Repair damage caused by construction operations. Schedule and perform operations so as to protect the building, its occupants and visitors during the construction period.
- 1.06 Owner Occupancy: The Owner will not occupy the site or existing building during construction.

END OF SECTION

SECTION 012000 - PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies requirements for Project meetings including:
- B. Pre-Construction Conference
- C. Progress Meetings

1.02 PRE-CONSTRUCTION CONFERENCE

- A. The Architect will conduct a pre-construction conference after execution of the Agreement and prior to commencement of construction activities. Review responsibilities and personnel assignments.
- B. Agenda: Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing payment applications, Change Orders and equipment deliveries. The contractor shall submit the following at this meeting:
 - 1. Proposed construction schedule
 - 2. Projected directory (list of major subcontractors, suppliers, and all project participants, include phone and fax numbers)
 - 3. Proposed Schedule of Values (Application for payment continuation form)

1.03 PROGRESS MEETINGS

- A. The Architect will conduct progress meetings at regular intervals and will notify the Owner and Contractor of scheduled dates.
- B. Agenda: Review minutes of the previous progress meeting. Review significant items that could affect progress. Include topics appropriate to the current status of the Project.

END OF SECTION

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

- A. See Unit Price Proposal Form in Specification Section 000305. This Proposal Form must be completed and attached to the Bid Form.

END OF SECTION

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 This Section specifies requirements for project coordination including:

- A. Coordination.
- B. Administrative and supervisory personnel.
- C. General installation provisions.
- D. Cleaning and protection.

1.2 COORDINATION

- A. Coordinate activities to assure efficient and orderly installation of each and every component. Coordinate operations that are dependent on each other for proper installation and operation.
- B. Where installation of one component depends on installation of other components before or after its own installation, schedule activities in the sequence required to obtain the best results.
- C. Where space is limited, coordinate installation of different components to assure maximum accessibility for maintenance, service and repair.
- D. Make provisions to accommodate items scheduled for later installation.

1.3 ADMINISTRATIVE PROCEDURES

- A. Coordinate scheduling and timing of administrative procedures with other activities to avoid conflicts and ensure orderly progress. Such activities include:
 - 1. Preparation of schedules.
 - 2. Installation and removal of temporary facilities.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Project closeout activities.

1.4 INSPECTION OF CONDITIONS

- A. The Installer of each component shall inspect the substrate and conditions under which Work is performed. Do not proceed until unsatisfactory conditions have been corrected. The Contractor shall verify all measurements and existing conditions at the site, shall be responsible for their correctness and shall perform the Work in conformity with same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings.

1.5 MANUFACTURER'S INSTRUCTIONS

- A. Comply with manufacturer's installation instructions and recommendations to the extent that they are more stringent than requirements in Contract Documents.

1.6 Inspect material immediately upon delivery and again prior to installation. Reject damaged and defective items.

1.7 Provide attachment and connection devices and methods necessary for securing each construction element. Secure each construction element true to line and level. Allow for expansion and building movement.

1.8 VISUAL EFFECTS

- A. Provide uniform appearance of all exposed Work. Refer questionable choices to the Architect for decision.

1.9 SUPERINTENDENT

- A. The General Contractor shall provide and employ a full time licensed (with no restrictions) Mass. Dept. of Public Safety project superintendent who will be present on site when work is in progress.

1.10 PROJECT REPRESENTATIVE

- A. The Owner may employ, at their sole discretion, a Project Representative. The General Contractor and subcontractors will fully cooperate with this entity.

1.11 TRAFFIC MANAGEMENT PLAN

- A. A pedestrian Traffic Management Plan (TMP) in accordance to the Manual of Uniform Traffic Control Devices (MUTCD) is required if access to any sidewalk or walkway is prohibited.
- B. A TMP must be submitted (in addition to the above) if traffic flow is adversely affected by either the delivery of materials to the job site or by the "staging" of contractor's equipment and/or materials at the job site.
- C. A police detail is required if contractor's/construction vehicles adversely affect the movement of traffic on City streets.
- D. A truck route to/from the job site (for delivery vehicles) should be prepared and submitted for review and approval by Traffic and Parking.
- E. Where possible the delivery of construction materials should be scheduled between the hours of 9:00AM and 2:30PM.
- F. In the event that construction requires any on-street workspace, the contractor must secure the necessary permits and permission from Traffic and Parking Department and the Public Works Department.

- G. The City's permit parking provisions will be in effect for all contractor's vehicles associated with this project. Any questions concerning these policies should be directed to the City's Parking Clerk.
- H. Local residents should be notified where, when and the duration of use of any parking spaces that the contractor might require to expedite work on this project. Traffic and Parking must approve any temporary occupancy of parking space by the contractor.
- I. It is recommended that a sweeper be utilized by the contractor to keep both the sidewalks and streets clean of debris associated with the project.

END OF SECTION

SECTION 013300 – SUBMITTALS

PART 1 - GENERAL

- 1.01 Summary: This Section specifies requirements for handling submittals.
- 1.02 General Procedures: Coordinate submittal preparation with performance of construction activities and with purchasing or fabrication, delivery, other submittals and related activities. Transmit in advance of performance of related activities to avoid delay.
- A. Coordinate transmittal of different submittals for related elements so processing will not be delayed by the need to review concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received.
 - B. Processing: Allow two weeks if only the Architect is included in the review. Allow three weeks for review if a subconsultant is included in the process. Allow more time if processing must be delayed for coordination with other submittals. The Architect will advise the Contractor when a submittal must be delayed for coordination. Allow two weeks for reprocessing each submittal.
 - 1. No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.
- 1.03 Contractor's Construction Schedule: Submit a fully developed construction schedule prior to the commencement of the Work and preferably at the preconstruction conference. Provide a separate designation for each construction activity and a vertical line to identify the first working day of each week. Use the breakdown of units of Work as indicated in the "Schedule of Values".
- Coordinate the Construction Schedule; the Schedule of Values, List of Subcontracts, Submittal Schedule, Progress Reports, Payment Requests and other schedules.
- 1.04 Schedule of Values: The Contractor shall submit, within thirty (30) calendar days of award and no less than fifteen (15) working days prior to the first payment application, and preferably at the preconstruction conference, a detailed Schedule of Values in CSI format.
- 1.05 Shop Drawings: Submit new information, drawn to accurate scale. Indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Include the following information:
- A. Dimensions
 - B. Identification of products and materials included
 - C. Notification of coordination requirements
 - D. Notation of dimensions established by field measurement
 - E. 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".

- F. Final Submittal: Submit 5 prints; 2 prints will be retained and the remainder will be returned. If no sub-consultant is involved in the review process, 4 copies may be submitted, and 2 will be retained.
 - G. Do not use Shop Drawings without a final stamp indicating action taken by the Architect in connection with construction.
- 1.06 Product Data: Collect Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options. Where products data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
- A. Manufacturer's printed recommendations
 - B. Compliance with recognized trade association standards
 - C. Compliance with recognized testing agency standards
 - D. Application of testing agency labels and seals
 - E. Notation of dimensions verified by field measurement
 - F. Notation of coordination requirements
 - G. Submittals: Submit six (5) copies of each required submittal. The Architect will retain two (2) and will return the others marked with action taken and corrections or modifications required.
 - 1. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - H. Distribution: Furnish copies of final submittal to installers and other required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of product data is in the installer's possession.
 - 1. Do not permit use of unmarked copies of product data in connection with construction.
- 1.07 Samples: Submit one (1) full-size sample, cured and finished as specified and identical to the product proposed. Mount, display or package samples to facilitate review. Prepare samples to match the Architect's request. Include the following:
- A. Generic description
 - B. Source
 - C. Product name or name of manufacturer
 - D. Compliance with recognized standards
 - E. Availability and delivery time
 - F. Submit Samples for review of kind, color, pattern and texture for a final check of these characteristics, and a comparison of these characteristics between the final submittal and the

component as delivered and installed. Where variations are inherent in the product, submit multiple units that show limits of the variations.

1. Refer to other Sections for samples that illustrate details of assembly, fabrication techniques, workmanship, connections, operation and similar characteristics.
 2. Refer to other Sections for samples to be returned for incorporation in the Work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of sample submittals.
- G. Preliminary Submittals: Where samples are for selection of characteristics from a range of choices, submit a full set of choices for the product. Preliminary submittals will be reviewed and returned indicating selection and other action.
- H. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit two sets.
- 1.08 Distribution: Prepare additional sets for subcontractors, manufacturers, fabricators, installers and others as required for performance. Show distribution on transmittal forms.
- 1.09 Architect's Action: Except for submittals for record, information or similar purposes, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.
- A. Action Stamp: The Architect will stamp each submittal with a self-explanatory action stamp. The stamp will be appropriately marked to indicate action taken.

END OF SECTION

SECTION 014000 - QUALITY CONTROL SERVICES

PART 1 - GENERAL

- 1.1 This Section specifies requirements for quality control services. Quality control services include inspections and tests performed by independent agencies, governing authorities, as well as the Contractor.
- 1.2 Contractor Responsibilities: Provide inspections and tests specified or required by governing authorities. Costs are included in the Contract.
- 1.3 Retesting: The Contractor is responsible for retesting where results prove unsatisfactory and do not indicate compliance with Contract Documents.
 - A. Cost of re-testing construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
- 1.4 Associated Services: The Contractor shall cooperate with agencies performing inspections or tests and provide auxiliary services as requested. Notify the agency in advance of operations to permit assignment of personnel. Auxiliary services include but are not limited to:
- 1.5 Coordination: The Contractor is responsible for scheduling inspections, tests, taking samples and similar activities.
- 1.6 Submittals: A certified written report of each inspection and test shall be submitted to the Architect, in duplicate, unless the Contractor is not responsible for the service.
 - A. Submit additional copies of each report to the governing authority, when the authority so directs.
 - B. Report Data: Written reports of each inspection or test shall include, but not be limited to:
 1. Date of issue
 2. Project title and number
 3. Name, address and telephone number of testing agency
 4. Names and locations of samples and tests or inspections
 5. Names of individuals making the inspection or test
 6. Designation of the Work and test method
 7. Complete inspection or test data
 8. Test results and an interpretation of test results
 9. Ambient conditions at the time of sample-taking and testing
 10. Name and signature of laboratory inspector
 11. Recommendations on retesting
- 1.7 Qualification for Service Agencies: If required, engage inspection and testing agencies which are pre-qualified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and specialize in the types of inspections and tests to be performed.
 - A. Each inspection and testing agency engaged shall be authorized to operate in the State in which the Project is located.

- 1.8 Repair and Protection: Upon completion of inspection and testing, repair damaged construction and restore substrates and finishes to eliminate deficiencies. Comply with requirements for "Cutting and Patching".
- A. Protect construction exposed by or for quality control service activities and protect repaired construction.
 - B. The Contractor is responsible for repair and protection regardless of the assignment of responsibility for inspection and testing.

END OF SECTION

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.01 DEFINITIONS

Basic Contract definitions are included in the General Conditions.

- A. Indicated refers to graphic representations, notes or schedules on Drawings, or paragraphs or schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled" and "specified" are used, it is to help locate the reference.
- B. Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required" and "permitted" mean "directed by the Architect", "requested by the Architect", and similar phrases. No implied meaning shall be interpreted to extend the Architect's responsibility into the Contractor's supervision of construction.
- C. Approved, used in conjunction with action on submittals, applications and requests, is limited to the Architect's duties and responsibilities stated in General and Supplementary Conditions. Approval shall not release the Contractor from responsibility to fulfill Contract requirements.
- D. Regulation includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, and rules, conventions and agreements within the construction industry that control performance of the Work, whether lawfully imposed by authorities having jurisdiction or not.
- E. Furnish means "supply and deliver, ready for unloading, unpacking, assembly, installation, and similar operations."
- F. Install describes operations at the site including "unloading, unpacking, assembly, erection, anchoring, applying, working to dimension, protecting, cleaning and similar operations."
- G. Provide means "furnish and install, complete and ready for use."
- H. Installer: "Installer" is the Contractor or an entity engaged by the Contractor, as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including Installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - 1. The term "experienced", when used with "Installer", means having a minimum of five (5) previous projects similar in size to this Project and familiar with the precautions required, and with requirements of the authority having jurisdiction.

1.02 Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, at the Project site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.

1.03 Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16-Division format and MASTERFORMAT numbering system. Language used in the Specifications is the abbreviated type. Implied words and meaning will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the context so indicates.

- A. Imperative language is used generally. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor or by others when so noted.

The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.

- 1.04 Drawing Symbols: Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., eighth edition.
- 1.05 Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable industry standards have the same force and effect as if bound or copied into Contract Documents. Such standards are part of the Contract Documents by reference.
- 1.06 Publication Dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.
- 1.07 Copies of Standards: Each entity engaged on the Project shall be familiar with standards applicable to the activity. Copies of applicable standards are not bound with the Contract Documents.
- A. Where copies of standards are needed for performance of required construction activity, the Contractor shall obtain copies directly from the publication source.
- 1.08 Abbreviations and Names: Where acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable. Refer to the "Encyclopedia of Associations" published by Gale Research Co., available in most libraries.
- 1.09 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.

END OF SECTION

SECTION 015000 - TEMPORARY FACILITIES

PART 1 - GENERAL

- 1.01 Summary: This Section specifies temporary services. Remove when no longer needed or replaced by permanent facilities.
- 1.02 Regulations: Comply with applicable laws and regulations including standards set forth by the Massachusetts Department of Public Safety and the Occupational and Safety Health Act of 1970, latest revision.
- 1.03 Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition". Comply with Occupational and Safety Health Act of 1970, latest revision. Comply with all other applicable safety standards and regulations.
- 1.04 Conditions of Use: Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload or permit facilities to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.
- 1.05 Materials and Equipment: Provide new materials and equipment or, if acceptable to the Architect, undamaged previously used materials and equipment in serviceable condition may be used. Provide materials and equipment suitable for the use intended.
 - A. Lumber and Plywood: Provide fire treated lumber and plywood for sheds and offices. Provide minimum 5/8 inch thick exterior plywood for other uses.
 - B. Tarpaulins: Waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- 1.06 WEATHER PROTECTION
 - A. The Contractor shall provide a minimum temperature of 55 degrees Fahrenheit to all occupied areas of the project if the existing permanent heating system cannot be utilized or if the work requires a shutdown of the existing system.
 - B. "Weather Protection" shall mean the temporary protection of that Work adversely affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate work areas during the months of November through March as determined by the Authority and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees Fahrenheit at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Articles with added regard to performance obligations of the Contractor.

- C. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices.
 - D. The Contractor shall provide thermometers at places designated by the Architect in order to determine if specified temperatures are being maintained.
 - E. Unit heaters, if used, shall be of the smokeless type and be installed and operated in such a way that they will not damage finished work or endanger the health and welfare of the occupants. Salamanders shall not be used.
 - F. The entire responsibility for weather protection during construction, until Substantial Completion, shall be assumed by the Contractor, who shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.
 - G. Work damaged by frost shall be removed and replaced at the expense of the Contractor and as directed by the Architect.
 - H. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the perfect execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to bringing the Work to Substantial Completion within the period of time set forth in the Contract Documents.
- 1.07 Temporary Construction and Support Facilities Installation: Locate for each access. Maintain facilities until Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- A. A temporary office will not be required for this project. The Contractor shall keep documents pertaining to the construction in a safe place at the construction site.
 - B. Telephone Service: Telephone service will not be required for this project. The Project Superintendent shall always be available however, by cell phone or pager.
 - C. Temporary Utilities:
 - 1. The Contractor will be allowed to use existing electric power and city water through connection to a hydrant with a meter at the site. Existing power in the building is limited and the Contractor may need to provide his own power or make arrangements with the power company. The Contractor shall be responsible for providing supplementary fuses, breakers and any other control devices required to assure that the basic needs for the operations of the ongoing functions at the site are not interfered with. Comply with all applicable safety regulations. Secure municipal permits and perform work with licensed personnel when required by codes. At the close of each day's work, temporary wiring of any type which may present a hazard shall be removed.
 - D. Toilets: Install self-contained single-occupant toilet units of the chemical aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Use of pit-type privies will not be permitted.

- E. Wash Facilities: Arrange with owner to use existing wash facilities or install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up. Dispose of drainage properly. Supply cleaning compounds.
- F. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units.
- G. Temporary Shoring: Provide temporary shoring of existing construction. Engineer shoring to adequately support the existing loads.
- H. Temporary Enclosures: Provide temporary enclosure for protection of construction from exposure, foul weather, other construction operations and similar activities. Where heat is needed, provide enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions.
 - 1. Install tarpaulins securely, with incombustible framing. Close openings through floor or roof decks and horizontal surface with load-bearing construction.
- I. Project Identification and Temporary Signs: A sign is not required for this project.
- J. Collection and Disposal of Waste: Collect waste daily. Comply with NFPA 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner.
- K. Staging and Hoisting: Provide temporary construction staging, planking and hoisting for all trades unless specifically noted otherwise under particular sections. All temporary staging shall conform to OSHA and all other applicable regulatory requirements.

1.08 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Fire Extinguishers: Provide hand-carried, portable UL rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand carried, portable, UL rated, class "ABC" dry chemical extinguishers. Locate fire extinguishers where effective for the intended purpose, but not less than one on each floor near each usable stairwell.
 - 1. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Provide supervision of welding operations, combustion type temporary heating units, and sources of fire ignition.
- B. Barricades, Warning Signs and Lights: Comply with standard and code requirements for erection of barricades. Paint appropriate warning signs to inform personnel and the public of the hazard being protected against. Where needed provide lighting, including flashing lights.

- C. Security Enclosure and Lockup: Install temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism and theft. Where materials and equipment must be stored, provide a secure lockup.
 - D. Environmental Protection: Operate temporary facilities and conduct construction by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints.
- 1.09 Operation: Enforce strict discipline in use of temporary facilities. Limit availability to intended use to minimize abuse. Maintain facilities in good operating condition until removal.
 - 1.10 Termination and Removal: Remove each facility when the need has ended, or replaced by a permanent facility, or no later than Substantial Completion. Complete or restore construction delayed because of interference with the facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

END OF SECTION

SECTION 015001 – AIR QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General and Supplementary Conditions and Division I General Requirements, apply to the work of this section.
- B. This section applies to all work performed under the Contract.
- C. The strictest interpretation of these specifications shall apply, particularly where there may be a conflict between sections.

1.02 Summary: This Section specifies requirements prior to, during and after each construction period.

1.03 Owner Requirements

- A. Intent: Execute the work with the least possible disturbance to the Owner's and building occupants' operations and without damage to or loss of the Owner's and building occupants' property.
- B. Avoiding Nuisance: Take special care and make special efforts to avoid creating any nuisance, which could interfere with the Owner's ability to conduct business, and to avoid disturbing occupants who remain in the building during the work of this project.
- C. Health and Comfort of Building Occupants: Throughout the work, use only materials, products and procedures which do not create or contribute to objectionable dust, odors, or other conditions, and which are specifically chosen to avoid adversely affecting the health and comfort of building occupants.
- D. Vehicles and Engines, Noise and Exhaust Fumes: Do not operate any vehicle, machinery, or Engines Noise and Exhaust Fumes engine less than 50 feet from the nearest Owner occupied area, except where specific prior written permission has been obtained from the Owner or Architect. Ensure exhaust fumes do not migrate to Owner occupied areas.
- E. When directed by the Owner or Architect, immediately cease offending operations and relocate Contractor's operations to another work area to maintain job progress.

1.04 Use Charges: Cost or use charges for these services are not chargeable to the Owner or Architect and will not be accepted as a basis of claims for a Change Order. Applicable costs shall be paid by the General Contractor ("Contractor").

1.05 Regulations: Comply with applicable laws and regulations including standards set forth by the Massachusetts Department of Public Safety and the Occupational and Safety Health Act of 1970, latest revision.

1.06 Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition". Comply with Occupational and Safety Health Act of 1970, latest revision. Comply with EPA

IAQ Tools for Schools program [<http://www.epa.gov/iedweb00/schools/tools4s2.html>]. Comply with ASHRAE 62 Indoor Air Quality Standards. Comply with all other applicable safety standards and regulations.

- A. The following additional references shall be also be used in defining potential pollutant or irritant test levels to be achieved.
1. "Indoor Air Quality: Position Paper, (Approved by ASHRAE Board of Directors August 11, 1987; Reaffirmed by ASHRAE Board of Directors February 10, 2000)." [http://www.ashrae.org/ABOUT/iaq_papr.htm].
 2. ACGIH (American Conference of Governmental Industrial Hygienists) TLV (Threshold Limit Values), TWA (Time Weighted Average) and STEL (Short Term Exposure Limits) and CEIL (Ceiling Limits), most current published limits.
 3. NIOSH (National Institute for Occupational Safety and Health) REL (Recommended Exposure Limits), TWA and STEL/CEIL, most current published limits.
- 1.07 Conditions of Use: Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary preventative measures. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.
- 1.08 Contamination of Existing HVAC Systems: Protect all components and surfaces of HVAC systems serving occupied areas, and all components and surfaces of HVAC systems indicated to remain. Effectively seal and protect HVAC elements from dust, dirt, debris, mold, mildew, water penetration, and other harmful or objectionable conditions.
- 1.09 Indemnification: The Contractor shall be solely responsible for air quality problems and issues related to the Contractor's operations. To the fullest extent permitted by law, the Contractor and its subcontractors shall indemnify and hold harmless the Owner, the Architect, and their agents and employees from and against all claims, damages, losses and expenses including, but not limited to, attorneys' fees arising out of or relating to the performance of the Work, including air quality, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

END OF SECTION

SECTION 015002 - RODENT CONTROL

PART 1 – GENERAL

1.01 SUMMARY

- A. General Requirements: Before beginning demolition, retain a local exterminator or pest control company acceptable to the City to develop a plan and procedures for exterminating rats and other pests inhabiting the project site and preventing them from migrating from the project site to adjacent properties. Employ this company to implement extermination and control procedures before the start of the Work at the site and at regular intervals throughout the duration of the project until Substantial Completion, so that abutting properties are kept free of rodents and their residue.
- B. Perform control operations in a lawful manner using environmentally safe products.
- C. Extermination Program: As a minimum, require the pest control company to perform the following services:
 - 1. At least 10 days prior to demolition bait the building for rodents.
 - 2. Install a series of exterior rodent stations around the perimeter of the site.
 - 3. Maintain these stations and service them weekly until the project is completed and all debris is removed.
 - 4. Provide a monthly report indicating rodent activity and bait station status.
- D. Final Inspection and Report: Prior to requesting inspection to certify substantial completion, require the licensed exterminator or pest control company which has been responsible for rodent control on the site to make a final inspection and prepare a report recording rodent-related activity (or absence thereof) at the site at the time of Substantial Completion, and recommending follow-up activities, if appropriate.

END OF SECTION 015002

SECTION 016000 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

- 1.01 "Products" are items purchased for incorporation in the Work, whether purchased for the Project taken from previously purchased stock.
- A. "Named Products" are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.
- 1.02 "Materials" are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed or installed to form a part of the Work.
- 1.03 "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
- 1.04 Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
- A. When the Contractor has the option of selection between two or more products, the product selected shall be compatible with products previously selected.
- 1.05 Manufacturer Preference
- A. Attention is directed to the provisions of General Laws of Massachusetts (Ter. Ed.) chapter 7, Section 23A, including provisions of Chapter 7, Section 22 Clause (17) which states as follows:
- B. "A preference in the purchase of supplies and materials, other consideration being equal, in favor, first, of supplies and materials manufactured and sold within the Commonwealth; second, to supplies and materials manufactured and sold elsewhere within the United States."
- 1.06 Nameplates: Except for required labels and operating data, do not attach manufacturer's nameplates or trademarks on surfaces exposed to view in occupied spaces or on the exterior.
- A. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an inconspicuous accessible surface. The nameplate shall contain the following information and essential operating data.
- 1.07 Product Delivery, Storage and Handling: Deliver, store and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.
- A. Schedule delivery to minimize long-term storage and prevent overcrowding construction spaces. Coordinate with installation to ensure minimum holding time for items that are flammable, hazardous, easily damaged or sensitive to deterioration, theft and other losses.
- B. Deliver products in manufacturer's original sealed container or packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
- C. Inspect products on delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and properly protected.

- D. Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger supporting construction.
 - E. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
- 1.08 Product Selection: Provide products that comply with the Contract Documents, are undamaged and unused at installation. 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.
- 1.09 Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- 1.10 Non-Proprietary Specifications: When Specifications list products or manufacturers that are available and may be used but do not restrict the Contractor to use of these products only, the Contractor may propose any product that complies with Contract requirements unless specifically stated otherwise.
- 1.11 Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.
- A. Visual Matching: Where Specifications require matching a sample, the Architect's decision on whether a proposed product matches in final. Where no product matches and complies with other requirements, comply with provisions for "substitutions" for selection of a matching product in another category.
 - B. Visual Selection: Where requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product that complies with other requirements. The Architect will select color, pattern and texture from the product line selected.
- 1.12 Installation of Products: Comply with manufacturer's instructions and recommendations for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 017000 - PROJECT CLOSEOUT

PART 1 - GENERAL

- 1.01 Substantial Completion: Before requesting inspection for certification of Substantial Completion, complete the following:
- A. In the Application for Payment that coincides with the date Substantial Completion is claimed, show one hundred percent (100%) completion for the portion of the Work claimed substantially complete.
 - B. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - C. Submit record drawings, maintenance manuals and similar record information. Refer to all Specification Sections for record document maintenance and submittals. Comply with the most stringent requirements.
 - D. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
 - E. Complete final clean up. Touch-up and repair and restore marred exposed finished.
 - F. Perform a final inspection. Develop a "punch list" and deliver it to the Architect. The Architect will then perform the Architect's "punch list" inspection.
- 1.02 Inspection Procedures: On receipt of a request for inspection, the Architect will proceed or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the contractor of construction that must be completed or corrected before the certificate will be issued.
- A. The Architect will repeat inspection when requested and assured that Work has been completed. If subsequent inspections are required, the Contractor may be held responsible for additional costs.
 - B. Results of the completed inspection will form the basis of requirements for final acceptance.
- 1.03 Final Acceptance: Before requesting inspection for certification of final acceptance and final payment, complete the following:
- A. Submit final payment request with releases.
 - B. Submit a final statement accounting for changes to the Contract sum.
 - C. Submit evidence of continuing insurance coverage complying with insurance requirements.
 - D. Submit consent of surety to final payment.
 - E. Submit at least one copy of record drawings and operation and maintenance manuals.

- 1.04 Record Drawings: Maintain a clean, undamaged set of black line white prints of Contract Drawings. Mark-up these drawings to show the actual installation. Mark whichever drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
- A. Organize record drawing sheets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover.
- 1.05 Maintenance Manuals: Organize maintenance data. Bind in individual heavy-duty 2-inch, 3-ring vinyl covered binders with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:
- A. Emergency instructions
- B. Spare parts list
- C. Copies of warranties
- D. Inspection procedures
- E. Shop Drawings and Product Data
- 1.06 Final Cleaning: Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following before requesting inspection for certification of Substantial Completion:
- A. Remove labels that are not permanent labels.
- B. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances.
- C. Clean the site of rubbish, litter, and other foreign substances. Sweep paved areas; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth even-textured surface.
- 1.08 Removal of Protection: Remove temporary protection and facilities.
- 1.09 Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

- 1.01 General Contractor should include cutting, coring, drilling, and patching of holes and openings for the work of all subtrades unless specifically noted otherwise.
- 1.02 Replacement Procedures: The contract documents include replacement work and construction. Not all the existing conditions are shown nor the complete extent of patching nor interfacing of new to old. The Contractor and subcontractors shall examine and study the existing construction and conditions to fully understand the extent of the replacement work required. The work includes, but is not limited to, selective demolition, replacing rough opening construction and re-finishing surfaces as required by the work of this contract.
- 1.03 Structural Work: Do not cut and patch structural elements in a manner that would reduce the load-carrying capacity or load deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching structural elements.
- 1.04 Operational and Safety Limitations: Do not cut and patch operating elements or safety components in a manner that would reduce their capacity to perform as intended, or would increase maintenance, or decrease operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems.
- 1.05 Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would reduce the building's aesthetic qualities or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.
- 1.06 Materials: Use materials identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible. Use materials whose performance will equal or surpass existing materials.
- 1.07 Inspection: Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- 1.08 Temporary Support: Provide temporary support of Work to be cut.
- 1.09 Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.
 - A. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- 1.10 Performance: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

- A. Cut existing construction to provide for the installation of other components or the performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- 1.11 Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible, review procedures with the original installer; comply with the original installer's recommendations.
- A. Where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - B. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
 - C. By-pass utility services such as pipe or conduit before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- 1.12 Patching: Patch with durable seams that which are as invisible as possible. Comply with specified tolerances.
- A. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 - B. 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.
- 1.13 Cleaning: Thoroughly clean areas and spaces where cutting and patching is performed. Remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before painting or finishing is applied.

END OF SECTION

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of selected portions of the interior of the auditorium and kitchen areas.
 - 2. Salvage of existing items to be reused or recycled.
- B. Related Sections include the following:
 - 1. Division 01 Section "Summary" for use of premises, and phasing requirements.
 - 2. Division 01 Section "Photographic Documentation" for preconstruction photographs taken before selective demolition operations.
 - 3. Division 01 Section "Temporary Facilities" for temporary construction and environmental-protection measures for selective demolition operations.
 - 4. Division 01 Section "Cutting and Patching" for cutting and patching procedures.
 - 5. Division 23 Section "Mechanical Demolition" for demolition of selective areas.
 - 6. Division 26 Section "Electrical Demolition" for demolition of selective areas.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
- B. Unless otherwise indicated, demolition waste becomes property of the Contractor.

1.5 SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Locations of proposed dust- and noise-control temporary partitions and means of egress.
 - 5. Means of protection for items to remain and items in path of waste removal from building.
- C. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- D. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Division 01 Section "Photographic Documentation." Submit before Work begins.
- E. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
 - 1. Comply with submittal requirements in Division 01 Section "Construction Waste Management and Disposal."
- F. Statement of Refrigerant Recover: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.,

1.6 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.

- E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss condition of construction to be selectively demolished.
 2. Review structural load limitations of existing structure.
 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 5. Review areas where existing construction is to remain and requires protection.

1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
1. Comply with requirements specified in Division 01 Section "Summary."
 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Storage or sale of removed items or materials on-site is not permitted.

1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.

- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
 - 1. Comply with requirements for existing services/systems interruptions specified in Division 01 Section "Summary."
 - 2. Refer to Divisions 23 and 26 Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner Building manager will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
 - a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.
- C. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.
- D. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.

1. Electrical power panels dedicated to the area to be demolished are located in the janitor/electric room on first floor shown on Drawing A101. They are designated B(A), BB(B), HB(C), and HBB(D). Panels B, HB and HBB are fed underground from the main electric switchboard approximately 350 LF away as shown on Drawing A101.
2. To make safe the power within the area to be demolished, turn off the circuit breakers in the main switchboard labeled B, HB and HBB. Disconnect the feeder cables to each of these circuit breakers. Insulate the cable conductors with tape and fittings, then label each conductor.
3. Cut off pipe or conduit a minimum of 24 inches below grade. Cap or plug and seal remaining portion of pipe or conduit.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Facilities."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during and for at least four hours after flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Division 01 Section "Construction Waste Management and Disposal."

B. Dust Control:

1. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding and pollution.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- B. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.
 - 1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
- C. Existing Wood Flooring and Wood Wall Paneling: Remove existing wood flooring, wood wall paneling and associated substrate.
- D. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

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SECTION 230000

HEATING, VENTILATING AND AIR CONDITIONING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. The GENERAL REQUIREMENTS, DIVISION 1, and BIDDING AND CONTRACT REQUIREMENTS, and DIVISION 0 are hereby made a part of this Specification Section.
- B. Examine all Drawings and all Sections of the Specifications and requirements and provisions affecting the work of this Section.

1.2 SCOPE OF WORK

- A. This project includes the renovation of the Auditorium and kitchen. Selective demolition of existing systems shall be required. This work includes replacement of the kitchen hood supply and exhaust fans, unit ventilator, H&V air handling units, misc. convectors, insulated and lined ductwork, diffusers, and controls.
- B. The work under this Section shall include the furnishing of all materials, labor, equipment and supplies and the performance of all operations to provide complete working systems, in general, to include the following items:
 - 1. Piping and Fittings (all systems and types) including submitting sizing where called for on the drawings or in these specifications
 - 2. Pipe Hangers and Supports
 - 3. Identification
 - 4. Sleeves, Firestopping
 - 5. Valves and Accessories (all types)
 - 6. Steam Traps
 - 7. Electric Motors and Starters
 - 8. Equipment Nameplates
 - 9. Factory Tests
 - 10. Vibration Isolation
 - 11. Ductwork
 - 12. Diffusers, Registers and Grilles
 - 13. Fans

14. Air Filters
 15. Air Handling Units (H&V)
 16. Unit Ventilator
 17. Insulation
 18. Relocation of existing HVAC components that interfere with new construction and removal and disposal of obsolete components.
 19. Operating and maintenance instructions and manuals
 20. Shop drawings
 21. HVAC Control Systems
 22. Training of Owners Personnel on Equipment, Systems, and Controls
- C. The work to be done under this section is generally shown on the Mechanical HVAC Drawings.

1.3 RELATED WORK

- A. Principal classes of Work related to the Work of this Section are listed below, and are specified to be performed under the indicated Sections of these Specifications. Refer to the indicated Sections for description of the extent and nature of the indicated Work, and for coordination with related trades. This listing may not include all related Work items. It is the responsibility of the Contractor to coordinate the Work of this Section with that of all other trades.
- B. The following work is not included in this section and will be provided under other sections, except as specified herein:
1. Electrical power wiring for all HVAC equipment and to junction box(es) in mechanical areas. Power wiring from these box(es) to all control equipment (control panels, etc.) and all controls/interlock wiring shall be provided by the controls Contractor. Control wiring shall be from standby power source (if available).
 2. Starters and variable speed drives that are not integral to equipment, unless specified otherwise.
 3. Structural supports necessary to distribute loading from equipment to roof or floor.
 4. Temporary light, power, water, heat, gas and sanitary facilities for use during construction and testing. Refer to Division 1, General Conditions.
 5. Gypsum drywall enclosures of supply, return and exhaust ductwork on all rooftop/penthouse air handlers, supply and return air shafts, as shown on drawings.

6. Outdoor air intake and exhaust louvers.
7. Flashing of roof and wall penetrations.
8. Painting.

1.4 DEFINITIONS

- A. As used in this Section, the following terms shall be understood to have the following meaning:
1. **“Contractor,”** or **“Subcontractor,”** unless otherwise qualified, shall mean the installer of the work specified under this Section, and shall be responsible for coordination of this work with the work of the ATC Contractor.
 2. **“Furnish”** shall mean purchase and deliver to the project site, complete with every necessary appurtenance and product support.
 3. **“Install”** shall mean unload at the delivery point at the site and perform all work necessary to establish secure mounting and proper operation at the proper location in the project.
 4. **“Provide”** shall mean furnish and install.
 5. **“Work”** shall mean all labor, materials, equipment, apparatus, controls, accessories and all other items required for a proper and complete installation.
 6. **“Concealed”** shall mean hidden from sight in chases, furred in spaces, shafts, embedded in construction, in a crawl space, and above hung ceilings.
 7. **“Exposed”** shall mean not installed underground or concealed as defined above.
 8. **“Furnished by others”** shall mean materials or equipment purchased under other sections of the general contract and installed by this section of the specifications by this trade Contractor.
 9. **“Owner’s Representative”** shall be the party responsible to make decisions regarding all contractual obligations in reference to the Scope of Work for the Owner.
 10. **“Date of Substantial Completion”** shall indicate the date where the work has been formally accepted as evidenced by completed final punch list or where the work has reached the stage that the Owner obtains beneficial use and commences utilization of the installed systems for business or occupancy purposes. The GENERAL REQUIREMENTS, DIVISION 1, shall supercede this definition where specifically defined.
 11. **“Piping”** shall mean, in addition to pipe or tubing, all fittings, flanges, unions, valves, strainers, drains, hangers and other accessories relative to such piping.
 12. **“ATC”** shall mean Automatic Temperature Controls, and shall be interchangeable with **“BAS”** (Building Automation System).

1.5 CODES, REFERENCES AND PERMITS

- A. Materials, installation of systems and equipment provided under this section shall be done in strict accordance with the latest governing edition of the following standards, codes, specifications, requirements, and regulations, and any other Codes and Regulations having jurisdiction including but not limited to:
 - 1. All Applicable NFPA Standards
 - 2. State and Local Building Mechanical, Electrical, and Energy Codes
 - 3. American Society of Mechanical Engineers (ASME)
 - 4. American Society of Testing and Materials (ASTM)
 - 5. American National Standards Institute (ANSI)
 - 6. Underwriters' Laboratories, Inc. (UL)
 - 7. Occupational Safety and Health Administration (OSHA)
 - 8. Any other local codes or authorities having jurisdiction.
- B. Heating and steam piping and kitchen hood systems shall be installed by Contractors and personnel appropriately licensed in the State (Installing Contractor).
- C. All pressure vessels shall conform to ASME and State codes and regulations.
- D. All equipment shall meet the more efficient requirement:
 - 1. As shown on bid documents,
 - 2. Minimum efficiencies state in ASHRAE 90.1-2007, or
 - 3. Minimum efficiencies stated in the governing Energy Code.
- E. Unless otherwise specified or indicated, materials, workmanship and equipment performance shall conform with the latest governing edition of the following standards, codes, specifications, requirements, and regulations, except when more rigid requirements are specified or are required by applicable codes but not limited to:
 - 1. Air Conditioning and Refrigeration Institute (ARI)
 - 2. Air Diffusion Council (ADC)
 - 3. Air Movement and Control Association AMCA
 - 4. American National Standards Institute (ANSI)
 - 5. American Society of Heating, Refrigeration and Air Conditioning (ASHRAE)
 - 6. American Society of Mechanical Engineers (ASME).
 - 7. American Society of Testing and Materials (ASTM)

8. American Welding Society, Inc. (AWS)
 9. Associated Air Balance Council (AABC)
 10. Copper Development Association (CDA)
 11. Factory Mutual System (FM)
 12. Illuminating Engineering Society (IES)
 13. Institute of Electrical and Electronics Engineers (IEEE)
 14. Insulated Cable Engineers Association (ICEA)
 15. Manufacturer's Standardization Society of the Valve & Fitting Industry (MSS)
 16. National Electrical Contractors Association (NECA)
 17. National Electric Manufacturers Association (NEMA)
 18. National Environmental Balancing Bureau (NEBB)
 19. North American Insulation Manufacturer's Association (NAIMA)
 20. Sheet Metal and Air Conditioning Contractor's National Association, Inc. (SMACNA)
 21. The Hydronics Institute (HI)
 22. Thermal Insulation Manufacturer's Association (TIMA)
- F. Codes, laws and standards provide a basis for the minimum installation criteria acceptable. The drawings and specifications illustrate the scope required for this project, which may exceed minimum codes, laws and standards.
- G. The date of the code or standard is that in effect at the Bid date.
- H. Give all notices, file all plans, obtain all permits and licenses, and obtain all necessary approvals from authorities having jurisdiction. Deliver all certificates of inspection to the authorities having jurisdiction. No work shall be covered before examination and approval by the Owner's Representative, inspectors, and authorities having jurisdiction. Replace imperfect or condemned work to conform to requirements, satisfactory to Owner's Representative, and without extra cost to the Owner. If work is covered before inspection and approval, this Contractor shall pay costs of uncovering and reinstalling the covering, whether it meets contract requirements or not.

1.6 GENERAL REQUIREMENTS

- A. Nameplates
1. Each item of equipment shall have a nameplate bearing the manufacturer's name, address, type or style, model number, catalog number, and serial number securely

affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

B. Maintenance Information

1. Systems and equipment which require periodic maintenance to maintain efficient operation shall be furnished with complete necessary maintenance information. Required routine maintenance actions, as specified by the manufacturer, shall be stated clearly and incorporated on a readily accessible label on the equipment. Such label may be limited to identifying, by title or publication number, the operation and maintenance manual for that particular model and type of product.

C. Equipment Guards

1. Belts, pulleys, chains, gears, couplings, projecting setscrews, keys, and other rotating parts so located that any person may come in close proximity thereto shall be completely enclosed or guarded. High-temperature equipment and piping so located as to endanger personnel or create a fire hazard shall be guarded or covered with insulation of type specified for service.

1.7 MATERIAL AND EQUIPMENT STANDARDS

- A. Where equipment or materials are specified with the name of a manufacturer, such specification shall be deemed to be used for the purpose of establishing a standard for that particular item. No equipment or material shall be used unless previously approved by the Owner's Representative.
- B. Substitutions (approved equals) may be offered for review provided the material, equipment or process offered for consideration is equal in every respect to that indicated or specified. In order for Requests for substitution to be considered, all must be submitted for pre-approval of manufacturer within 30 days of award of contract. All requests must be accompanied by a list of minimum 5-year-old successful installations of similar scope (with Owner contact and phone number), complete specifications together with drawings or samples to properly appraise the materials, equipment or process. Allow 30 days for Owner's Representative's review.
- C. If a substitution of materials or equipment in whole or in part is made, this Contractor shall bear the cost of any changes necessitated by any other trade as a result of said substitution.
- D. All materials, equipment and accessories provided under this section shall be new and unused products of recognized manufacturers as approved.

1.8 SUBMITTALS

- A. Conform to the requirements of Division 1, General Conditions, for schedule and form of all submittals unless specifically noted otherwise in this section. Coordinate this submittal with submittals for all other finishes. Shop drawings and design layouts shall be prepared by licensed installing Contractors and shall note the name(s), license number(s) and license expiration date(s) of the Contractor(s) installing the heating, steam piping and kitchen hood systems.

B. Definitions:

1. Shop Drawings are information prepared by the Contractor to illustrate portions of the work in more detail than indicated in the Contract Documents.
2. Acceptable Manufacturers: The mechanical design for each product is based on the single manufacturer listed in the schedule or shown on the drawings. In Part 2 of the specifications certain Alternate Manufacturers are listed as being acceptable. In addition, the MATERIAL AND EQUIPMENT STANDARDS paragraph potentially allows for substitutions as being acceptable. These are acceptable only if, as a minimum, they:
 - a. Meet all performance criteria listed in the schedules and outlined in the specifications. For example, to be acceptable, an air handling unit must deliver equal CFM against equal external static pressure (with the allowed pressure drop of dirty filters) using equal or less horsepower as the air handler listed in the schedules.
 - b. Fit within the available space it was designed for, including space for maintenance and component removal, with no modification to either the space or the product. Clearances to walls, ceilings, and other equipment will be at least equal to those shown on the design drawings. The fact that a manufacturer's name appears as acceptable shall not be taken to mean the Engineer has determined that the manufacturer's products will fit within the available space – this determination is solely the responsibility of the Contractor.
 - c. For rooftop mounted equipment and equipment mounted in areas where structural matters are a concern, the products must have a weight no greater than the product listed in the schedules or specifications.
 - d. Products must adhere to all architectural considerations including, but not limited to: being of the same color as the product scheduled or specified, fitting within the architectural enclosures and details.

C. Submittal Procedures, Format and Requirements

1. Review submittal packages for compliance with Contract Documents and then submit to Owner's Representative for review. Submit enough sets of shop drawings such that, after review, two sets will be kept by the reviewer, with only the remaining sets returned with reviewer's marks and comments.
2. Each Shop Drawing shall indicate in title block, and each Product Data package shall indicate on cover sheet, the following information:
 - a. Title.
 - b. Equipment number.
 - c. Name and location of project.

- d. Names of Owner, Engineer and Seller.
 - e. Names of manufacturers, suppliers, vendors, etc.
 - f. Date of submittal.
 - g. Whether original submittal or resubmitted.
3. Shop drawings showing manufacturer's product data shall contain detailed dimensional drawings (minimum $\frac{1}{4}" = 1'$ scale) including plans and sections (where physical clearance could be an issue). Provide larger scale details as necessary. Sheet metal drawings shall show elements of Architect's reflected ceiling plan, exposed ductwork, walls and partitions (highlighting fire walls and smoke partitions), diffusers, registers, grilles, all dampers (fire, smoke, balancing, backdraft, and control dampers), sleeves and other aspects of construction as necessary for coordination.
4. Submit accurate and complete description of materials of construction, manufacturer's published performance characteristics, sizes, weights, capacity ratings (performance data, alone, is not acceptable), electrical requirements, starting characteristics, wiring diagrams, and acoustical performance for complete assemblies. Drawings shall clearly indicate location (terminal block or wire number), voltage and function for all field terminations, and other information necessary to demonstrate compliance with all requirements of Contract Documents.
5. Provide shop drawings showing details of piping connections to all equipment. If connection details are not submitted and connections are found to be installed incorrectly, this Contractor shall reinstall them within the original contract price.
- a. Alternate pipe joining methods such as grooved and permanent push-to-connect systems shall be shown on drawings and product submittals, and be specifically identified with the applicable manufacturer's style or series number. Installation shall include any additional hangers required for the alternate system.
6. Provide complete data for all auxiliary services and utilities required by submitted equipment. This shall include power, cooling water and compressed air requirements and points of connection.
7. Provide a complete description of all controls and instrumentation required including electrical power connection drawing for all components and interconnection wiring to starters, detailed information on starters, control diagrams, termination diagrams, and all control interfaces with a central control system.
8. Provide installation and erection information including; lifting requirements, and any special rigging or installation requirements for all equipment.
9. The Owner's Representative shall approve all materials before commitment for materials is made.

- D. Product Data: Submit complete manufacturer's product description and technical information including:
1. Piping and Fittings (all services, types, and joining methods)
 2. Pipe Hangers and Supports
 3. Identification
 4. Sleeves, Firestopping
 5. Valves and Accessories (all types)
 6. Electrical Unit Heaters
 7. Electric Motors and Starters
 8. Factory Tests
 9. Vibration Isolation
 10. Insulation
 11. Coordination Drawing
 12. Operating and maintenance instructions and manuals
 13. HVAC Control Systems
 14. Seismic Restraints
 15. Color selection charts and samples for equipment and systems in finished areas
 16. Testing, Adjusting, & Balancing Qualifications, Plan, and Reports
 17. Identification, labels and tags, including database for all equipment and devices
 18. O&M manual table of contents
 19. O&M manual including completed Facility Support Services data sheets (from Part 4)
- E. Submit shop drawings and product data grouped to include complete submittals of related systems, products and accessories in an individual (combined) submittal.
1. Access panel shop drawings shall be submitted to the Construction Supervisor for approval.
 2. Do not submit multiple product information in a single bound manual.
 3. Three-ring binders shall not be accepted.
- F. Deviations

1. Concerning deviations other than substitutions, proposed deviations from Contract Documents shall be requested individually in writing whether deviations result from field conditions, standard shop practice, or other cause. Submit letter with transmittal of Shop Drawings which flags the deviation to the attention of the Owner's Representative.
 2. Without letters flagging the deviation to the Owner's Representative, it is possible that the Engineer may not notice such deviation or may not realize its ramifications. Therefore, if such letters are not submitted to the Owner's Representative, the Seller shall hold the Engineers, his consultants and the Owner harmless for any and all adverse consequences resulting from the deviations being implemented. This shall apply regardless of whether the Engineer has reviewed or approved shop drawings containing the deviation, and will be strictly enforced.
 3. Approval of proposed deviations, if any, will be made at discretion of Engineer.
- G. Schedule: Incorporate shop drawing review period into construction schedule so that Work is not delayed. This Contractor shall assume full responsibility for delays caused by not incorporating the following shop drawing review time requirements into his project schedule: Allow at least 10 working days, exclusive of transmittal time, for review each time shop drawing is submitted or resubmitted with the exception that 20 working days, exclusive of transmittal time are required for the following:
1. HVAC temperature control submittals
 2. Coordination Drawings
 3. TAB Plan
 4. TAB draft and final balancing reports.
 5. O&M manuals including completed Facility Support Services data sheets (from Part 4)
 6. As built drawings
 7. If more than five shop drawings of a single trade are received in one calendar week.
- H. Responsibility
1. Intent of Submittal review is to check for capacity, rating, and certain construction features. HVAC Contractor shall ensure that work meets requirements of Contract Documents regarding information that pertains to fabrication processes or means, methods, techniques, sequences and procedures of construction; and for coordination of work of this and other Sections. Work shall comply with approved submittals to extent that they agree with Contract Documents. Submittal review shall not diminish responsibility under this Contract for dimensional coordination, quantities, installation, wiring, supports and access for service, nor the shop drawing errors or deviations from requirements of Contract Documents. The Engineer's noting of some errors while overlooking others will

not excuse the HVAC Contractor from proceeding in error and will not absolve the Contractor from meeting the full design intent of the associated system(s). Contract Documents requirements are not limited, waived nor superseded in any way by review.

2. Inform Contractors, manufacturers, suppliers, etc. of scope and limited nature of review process and enforce compliance with contract documents.
- I. In the event that the HVAC Subcontractor fails to provide Shop Drawings for any of the products specified herein:
 1. The HVAC Subcontractor shall furnish and install all materials and equipment herein specified in complete accordance with these Specifications.
 2. If the HVAC Subcontractor furnishes and installs material and/or equipment that is not in complete accordance with these Specifications, he shall be responsible for the removal of this material and/or equipment. He shall also be responsible for the replacement of this material and/or equipment with material and/or equipment that is in complete accordance with these Specifications, at the direction of the Owner's Representative.
 3. Removal and replacement of materials and/or equipment that is not in complete compliance with these Specifications shall be done at no extra cost to the Owner.
 4. Removal and replacement of materials and/or equipment that is not in complete compliance with these Specifications shall not be allowed as a basis for a claim of delay of completion of the Work.
- J. Mark dimensions and values in units to match those specified.
- K. Submit Material Safety Data Sheets (MSD) on each applicable product with submittal.

1.9 OPERATION AND MAINTENANCE DATA

- A. Commence preparation of the Operating and Maintenance (O&M) Manuals immediately upon receipt of "Approved" or "Approved as Noted" shop drawings and submit each section within one month. The final submission shall be no later than two months prior to the projected date of Substantial Completion of the Project.
- B. Submit O&M table of contents in the submittal phase. O&M manuals shall be built as submittals are accepted and shall include the individual equipment manufacturer's data retrieval sheet, as per Attachment A in Part IV for input into the Owner's Maintenance Management System. Form shall be provided and completed electronically.
- C. Each O&M document shall include the manufacturer's web address for equipment - specific O&M information for Internet access by the Owner.
- D. The manual shall consist of (3) sets of manuals and include (3) sets of CDs, which shall contain the scanned content of the entire manual. The manual shall highlight the actual equipment used and not be a master catalog of all similar products of the manufacturer. The manual shall be submitted for review prior to creation of the CDs.

E. The Manual shall contain the following:

1. Operations Manual

- a. Systems description including all relevant information needed for day-to-day operations and management including:
 - 1) Start-up procedures
 - 2) Shut-down procedures.
 - 3) Trouble-shooting checklist (i.e., common alarms with possible cause & effect, etc.)
- b. Wiring diagrams, schematics, logic diagrams and sequence of operations that accurately depict the controls system.
- c. Depiction of each interface screen where programmable logic and visual displays are provided. Descriptors shall be provided to define displayed data, alarms, etc.
- d. A single sheet (for ease of removal) of all access codes and passwords necessary to access all levels of control and programming.

2. Maintenance Manual

- a. Define all maintenance activities required to ensure system operation within manufacturers specified parameters. Maintenance documentation shall include:
 - 1) Data retrieval sheet
 - 2) Special instructions (i.e., lockout/tag-out, etc.)
 - 3) Special tools (i.e., key, allen wrench, etc.)
 - 4) Tasks
 - 5) Frequency
 - 6) Required materials, lubricants, etc.
- b. Provide table of all required activities plotted vs. interval with adequate fill-in-space for “activity completion date” and “comments”. Where multiple instrument readings are required, provide data sheet formatted to accommodate activity.
- c. Provide as part of each package, lubricating charts indicating equipment tag number, location, equipment service, greasing and lubricating requirements, lubricants, and intervals.

- d. Provide as part of each package, a valve and system chart that corresponds to the valve tags. Provide directions for normal positions and positions for equipment failure modes.
 - e. Provide all information as listed on the Facility Support Services data sheet as per Attachment A in Part IV for input into the Owner's Maintenance Management System. Form shall be provided and completed electronically.
 - f. The HVAC Subcontractor shall furnish spare-parts data for each different item of equipment furnished. The data shall include a complete list of: parts and supplies, with current unit prices, lead time, and source of supply; a list of parts and supplies that are either normally furnished at no extra cost with the purchase of the equipment, or specified hereinafter to be furnished as part of the contract; and a list of additional items recommended by the manufacturer to assure efficient operation for a period of 360 days at the particular installation. The foregoing shall not relieve the HVAC Subcontractor of any responsibilities under the guarantees specified herein.
 - g. Provide copy of all warranty information with associated date of substantial completion (commencement of warranty) and end date of coverage. Define all components/subsystems specifically included and excluded.
- F. Provide O&M manuals for each of the following as a minimum:
- 1. Valves and Accessories (all types, including charts for all balancing valves)
 - 2. Steam Traps
 - 3. Electric Motors and Starters
 - 4. Vibration Isolation
 - 5. Fans
 - 6. Convectors
 - 7. Air Filters
 - 8. Air Handling Units (H&V)
 - 9. Unit Ventilator
 - 10. Gravity Relief Ventilators
 - 11. HVAC Control Systems

1.10 WARRANTIES

- A. Submit manufacturer's standard replacement warranties for material and equipment furnished under this Section. Such warranties shall be in addition to and not in lieu of all liabilities which the manufacturer and the HVAC Subcontractor may have by law or by provisions of the Contract Documents.
- B. All materials, equipment and work furnished under this Section shall be guaranteed against all defects in materials and workmanship for a minimum period of one year commencing with the Date of Substantial Completion. Where individual equipment sections specify longer warranties, provide the longer warranty. Any failure due to defective material, equipment or workmanship which may develop, shall be corrected at no expense to the Owner including all damage to areas, materials and other systems resulting from such failures.
- C. Guarantee that all elements of each system meet the specified performance requirements as set forth herein or as indicated on the Drawings.
- D. Upon receipt of notice from the Owner of the failure of any part of the systems during the guarantee period, the affected parts shall be replaced. Any equipment requiring excessive service shall be considered defective and shall be replaced.

1.11 COORDINATION

- A. Refer to DIVISION 1, General Conditions, for record drawings and procedures to be provided under this section, unless specifically noted otherwise in this section.
- B. Materials and apparatus shall be installed as fast as conditions of the building will permit and must be installed promptly when and as required.
- C. Confer with all other trades relative to location of all apparatus and equipment to be installed and select locations so as not to conflict with work of other Sections. Any conflicts shall be referred immediately to the Owner's Representative for decision to prevent delay in installation of work. All work and materials placed in violation of this clause shall be readjusted to the Owner's Representative's satisfaction at no expense to the Owner.
- D. Where work of this section will be installed in close proximity to work of other sections or where there is evidence that the work of this section may interfere with work of other sections, assist in working out space conditions to make satisfactory adjustment. Prepare and submit for approval 3/8" scale or larger working drawings and sections, clearly showing how the work is to be installed in relation to the work of other sections. If the work of this section is installed before coordinating with other trades or so as to cause interference with work of other trades, make changes necessary to protect conditions without extra charge.
- E. Keep fully informed as to the shape, size and position of all openings required for all apparatus, piping, ductwork, etc., and give information in advance to build openings into the work. Furnish all sleeves, pockets, supports and incidentals, and coordinate with the Owner's Representative for the proper setting of same.
- F. All distribution systems which require pitch or slope such as condensate drains and water piping shall have the right of way over those which do not.

- G. Make reasonable modifications in the work as required by structural interferences, interference with work of other trades, or for proper execution of the work without extra charge.
- H. Keep fully informed as to the size, shape and location of all openings required for the work of this Section and give full information to all Subcontractors and the Owner's Representative.

1.12 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

- A. It is the intention of the Specifications and Drawings to call for complete, finished work, tested and ready for continuous operation. Any apparatus, appliance, material or work not shown on the Drawings, but mentioned in the Specifications or vice versa, or any incidental accessories necessary to make the work complete in all respects and ready for operation, even if not particularly specified, shall be provided by the HVAC Subcontractor or his/her Sub Subcontractors, without additional expense to the Owner.
- B. The Drawings are generally diagrammatic. The locations of all items that are not definitely fixed by dimensions are approximate only. The exact locations must be determined at the site and shall have the approval of the Architect before being installed. The HVAC Subcontractor shall follow Drawings, including shop drawings, in laying out work and shall check the Drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions. Where space conditions appear inadequate, notify the Architect before proceeding with the installation. The HVAC Subcontractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.
- C. Any requests for information (RFI) for resolving an apparent conflict or unclarity, or a request for additional detail, shall include a sketch or equivalent description of Contractors proposed solution.
- D. Sizes of ducts and pipes and routing are shown, but it is not intended to show every offset and fitting, nor every structural difficulty that may be encountered. To carry out the intent and purpose of the Drawings, all necessary parts to make complete approved working systems ready for use, shall be furnished without extra charge.

1.13 INSPECTION OF SITE CONDITIONS

- A. Prior to submission of bid, visit the site and review the related construction documents to determine the conditions under which the Work has to be performed. Send a report, in writing, to the Owner's Representative, noting any conditions which might adversely affect the Work of this Section of the Specifications.

1.14 SURVEY AND MEASUREMENTS

- A. Base all required measurements, horizontal and vertical, from referenced points established with the Owner's Representative and be responsible for correctly laying out the Work required under this Section of the Specification.

- B. In the event of discrepancy between actual measurements and those indicated, notify the Owner's Representative in writing and do not proceed with the related work until instructions have been issued.

1.15 DELIVERY, STORAGE AND HANDLING

- A. No materials shall be delivered or stored on site until Shop Drawings have been approved.
- B. All manufactured materials shall delivered to the site in original packages or containers bearing the manufacturer's labels and product identification.
- C. Protect materials against dampness. Store off floors, under cover, and adequately protected from damage.
- D. Inspect all equipment and materials, upon receipt at the job site, for damage and conformance to approved shop drawings.

1.16 PROTECTION OF WORK AND PROPERTY

- A. This Contractor shall be responsible for the care and protection of all work included under this Section until the completion and final acceptance of this Contract.
- B. Protect all equipment and materials from damage from all causes including, but not limited to, fire, vandalism and theft. All materials and equipment damaged or stolen shall be repaired or replaced with equal material or equipment at no additional cost to the Owner.
- C. Protect all equipment, outlets and openings with temporary plugs, caps and covers. Protect work and materials of other trades from damage that might be caused by work or workmen under this Section and make good damage thus caused.
- D. Damaged materials are to be removed from the site; no site storage of damaged materials will be allowed.

1.17 SUPERVISION

- A. Provide a competent Supervisor with a minimum of 5 years of experience in HVAC Construction Supervision who shall be in charge of the HVAC work at the site.

1.18 SAFETY PRECAUTIONS

- A. Life safety and accident prevention shall be a primary consideration. Comply with all of the safety requirements of the Owner and OSHA throughout the entire construction period of the project.
- B. Furnish, place and maintain proper guards and any other necessary construction required to secure safety of life and property.

1.19 SCHEDULE

- A. Construct work in sequence under provisions of Division 1 and as coordinated with the Owner's Representative.

1.20 HOISTING, SCAFFOLDING AND PLANKING

- A. The work to be done under this Section of the Specifications shall include the furnishing, set-up and maintenance of all derricks, hoisting machinery, cranes, helicopters, scaffolds, staging and planking as required for the work.

1.21 CUTTING AND PATCHING

- A. Provide all cutting and patching necessary for the proper installation of work to be performed under this Section.
- B. All work shall be fully coordinated with all phases of construction, in order to minimize the requirements for cutting and patching.
- C. Form all chases or openings for the installation of the work of this Section of the specifications, or cut the same in existing work and see that all sleeves or forms are in the work and properly set in ample time to prevent delays. Be responsible that all such chases, openings, and sleeves are located accurately and are of the proper size and shape and consult with the Owner's Representative and all trades concerned in reference to this work. Confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the approval of the Owner's Representative.
- D. Fit around, close up, repair, patch, and point around the work specified herein to match the existing adjacent surfaces and to the satisfaction of the Owner's Representative.
- E. Fill and patch all openings or holes left in the existing structures by the removal of existing equipment that is part of this Section of the Specifications.
- F. All of this work shall be carefully done by workmen qualified to do such work and with the proper and smallest tools applicable.
- G. Any cost caused by defective or ill-timed work required by this Section of the specifications shall be borne by the Subcontractor.
- H. When, in order to accommodate the work required under this Section of the specifications, finished materials of other trades must be cut or fitted, furnish the necessary drawings and information to the trades whose materials must be cut or fitted.

1.22 SLEEVES, INSERTS AND ANCHOR BOLTS

- A. Coordinate with other trades the location of and maintaining in proper positions, sleeves, inserts and anchor bolts to be supplied and/or set in place under this section of the specifications. In the event of incorrectly located preset sleeves, inserts and anchor bolts, etc., all required cutting and patching of finished work shall be done under this section of the specifications.
- B. All pipes passing through floors, walls, ceilings or partitions shall be provided with fire stopping to maintain the fire rating of the structure. All penetrations and associated fire stopping shall be installed in accordance with the fire stopping manufacturer's listed installation details. Provide sleeves for all penetrations where required by the listed detail,

for the penetration of all mechanical room floors and where specifically required on the drawings.

- C. Field drilling (core drilling), when required, shall be performed under this section of the specifications, after receipt of approval by the Owner's Representative.
 - 1. When coring cannot be avoided, provide ¼ inch pilot hole prior to coring. When coring through floor or slab, verify location of core on floor below and protect and piping, ductwork, wiring, furniture, personnel, etc., below the location of the core.

1.23 HAZARDOUS MATERIALS

- A. Dispose of all hazardous materials in accordance with Federal and State laws. All handling shall conform to EPA requirements. A uniform hazardous waste manifest shall be prepared for all disposals and returned with all applicable signoffs prior to application for final payment. Provide breakout cost for this scope.
- B. Recovered refrigerant shall be recycled by a licensed facility approved by the Owner's Representative.
- C. Removed equipment or fluids containing any hazardous materials such as ethylene glycol, oil, mercury or chromate shall be recycled by a licensed facility approved by the Owner's Representative.
- D. Where it has been identified that asbestos-containing material exists within the scope limits, refer to the Asbestos Abatement specification section for requirements. Where insulation is removed, provide new insulation (types and thicknesses as specified in this section). Where scope is not defined, provide unit prices with bid for all pipe and duct sizes involved.

1.24 ACCESSIBILITY

- A. All work provided under this Section of the Specification shall be installed so that parts requiring periodic inspection, maintenance and repair are readily accessible. Work of this trade shall not infringe upon clearances required by equipment of other trades, especially code required clearances to electrical gear. Minor deviations from the drawings may be made to accomplish this, but changes of substantial magnitude shall not be made prior to written approval from the Owner's Representative.

1.25 SEISMIC RESTRAINT REQUIREMENTS

- A. Submit working plans and calculations reviewed, signed and stamped by a professional engineer who is registered in the State where the project is located and has specific experience in seismic calculations, certifying that the plans meet all seismic requirements established by authorities having jurisdiction over the project, including bracing for any hazardous exhaust systems.

1.26 WELDING QUALIFICATIONS

- A. Piping shall be welded in accordance with qualified procedures using performance qualified welders and welding operators. Procedures and welders shall be qualified in

accordance with ASME BPV IX. Welding procedures qualified by others, and welders and welding operators qualified by another employer may be accepted as permitted by ASME B31.9 (or B31.1 for steam boiler piping over 15 psig and all steam and condensate piping over 150 psig). The Owner's Representative shall be notified 24 hours in advance of tests and the tests shall be performed at the work site if practicable. The welder or welding operator shall apply his assigned symbol near each weld he makes as a permanent record. Structural members shall be welded in accordance with Division 1.

- B. A fire watchman with an approved fire extinguisher shall be posted at the site of the welding work, during that work, and for a minimum of 30 minutes after the work is completed, to see that sparks or drops of hot metal do not start fires.

1.27 ELECTRICAL WORK

- A. All electrical apparatus and controls furnished, and the installation thereof, as a part of the HVAC work, equipment, and controls shall conform to applicable requirements under DIVISION 26 - ELECTRICAL.

PART 2 - PRODUCTS

2.1 PIPING AND FITTINGS

- A. General Requirements for Pipe

- 1. Pipe material shall be indicated in the Schedule of Pipe and Fittings for each type of service.
- 2. Steel pipe shall conform to ASTM A53 Grade B or ASTM A106 Grade B (for systems with temperatures that could go over 750 degrees F) black steel. Pipe thickness (schedule) shall be as specified for the service.

- B. General Requirements for Fittings

- 1. Pipe fittings shall be indicated in the Schedule of Pipe and Fittings for each type of service. Fittings shall be rated to match the larger of the pipe pressure rating in the Schedule or the valve rating listed in the valve tables in the Part 2 Valve and Strainer section of this specification.
- 2. All fittings shall be installed per code requirements and the manufacturer's best recommendations.
- 3. Malleable iron pipe fittings shall conform to ASME B16.3, type required to match adjacent piping.
- 4. Cast iron (CI) pipe fittings shall conform to ASME B16.1 or ASME B16.4 type required to match adjacent piping.
- 5. Steel pipe fittings shall have the manufacturer's trademark affixed in accordance with MSS SP-25 so as to permanently identify the manufacturer. For 90° elbows, provide long radius fitting unless they will not physically fit, in which case short

radius may be used. Flanges shall be flat faced weld neck up to Class 125 and raised face weld neck type for Class 150 and above.

6. The steel pipe joining methods below are only allowed when they are specifically listed in the Schedule of Pipe and Fittings:
 - a. Type S1: Welded fittings shall conform to ASTM A234 with WPA marking. Butt-welded fittings shall conform to ASME B16.9, and socket welded fittings shall conform to ASME B16.11. Make fusion welded joints as required by ANSI/ASME B31.1.
 - b. Type S2: Steel flanged fittings including flanges, bolts, nuts, bolt patterns, etc. shall be in accordance with ASME B16.5 for the class required (Class 150 minimum). Flange material shall conform to ASTM A53 Grade B. Blind flange material shall conform to ASTM A516 for cold service and ASTM A515 for hot service. Bolts shall be high strength or intermediate (Class 150 only) strength with material conforming to ASTM A193.
 - c. Type S3: Cast Iron (CI) flanged fittings shall be of malleable cast iron conforming to ASTM A47, Grade 32510. Bolts shall be high strength or intermediate (Class 125 only) strength with material conforming to ASTM A193. Class 125 iron flanges shall be limited to 175 psig / 230°F (up to 12") and 125 psig / 230°F (14" – 24"). Class 250 iron flanges shall be limited to 400 psig / 250°F (up to 12") and 250 psig / 250°F (14" – 24").
 - d. Type S4: Ductile iron (DI) flanged fittings shall conform to ASTM A536, Grade 65-45-12. Bolts shall be high strength or intermediate (Class 150 only) strength with material conforming to ASTM A193. Class 150 ductile iron flanges shall be limited to 225 psig / 230°F. Class 300 ductile iron flanges shall be limited to 425 psig / 450°F.
 - e. Type S5: Threaded joints: For use up to 2" pipe size. Pipe threads shall conform to ASME B1.20.1. Nipples shall conform to ASTM A733 or ASTM B687. Class 125 iron threaded fittings shall be limited to 150 psig / 250°F or 125 psi at 350°F. Class 250 iron threaded fittings shall be limited to 340 psig / 250°F. Class 150 ductile iron threaded fittings shall be limited to 185 psig / 250°F or 150 psig / 300°F (maximum temperature). Class 300 ductile iron threaded fittings shall be limited to 1200 psig / 250°F or 600 psig / 450°F (maximum temperature).
7. Composition gaskets for flanges shall conform to ASME B16.21. Gaskets shall be non-asbestos compressed material in accordance with ASME B16.21, 1/16 inch thickness, full face or self-centering flat ring type. Gaskets shall contain aramid fibers bonded with styrene butadiene rubber (SBR) or nitrile butadiene rubber (NBR). NBR binder shall be used for hydrocarbon service. Gaskets shall be suitable for pressure and temperatures of piping system.
8. Unions shall conform to FS WW-U-531 or FS WW-U-516, type to match adjacent piping.

9. Flexible pipe connectors shall be as specified in Vibration Isolation paragraph.

C. Schedules of Pipe and Fittings

1. As used in the pipe and fitting schedule tables, closed loop systems have expansion tanks and are not open to the atmosphere, examples are chilled, hot, dual temperature and closed heat pump condenser water systems. Open loop systems are open to the atmosphere with open condenser water system being the most common.
2. Relief valve piping shall have the same pressure/temperature ratings as the fluid being relieved. Exposed outdoor piping shall be stainless steel.

STEAM AND CONDENSATE SERVICES: UP TO 125 PSIG (353°F SATURATED), OR ANY PUMPED CONDENSATE TO 175 PSIG: (Some joint types or materials may have lower pressure and/or temperature limits and Contractor shall ensure they are only used where those limits will NOT be exceeded.)				
Service	Pipe Material & Schedule or Type	Joint Types Allowed	Fitting Material	Min. Pressure Class (psig) & / or Schedule
Steam up to 2"	Steel / Schedule 40 (80 if threaded)	S1 or S5	Steel, CI, DI	125 / Sched. 40 (80 if threaded)
Condensate up to 2"	Steel / Schedule 80 Seamless	S1 or S5	Steel, CI, DI	125 / Schedule 80
Steam 2.5"-12"	Steel / Standard Weight	S1, S2, S3, or S4	Steel, CI, DI	125 / Standard Weight

2.2 FIRESTOPPING

- A. Provide asbestos-free firestopping material capable of maintaining an effective barrier against flame, gases, and temperature. Provide noncombustible firestopping that is nontoxic to human beings during installation or during fire conditions. Devices and equipment for firestopping service shall be UL FRD listed or FM P7825 approved for use with applicable construction, and penetrating items.
 1. Fire Hazard Classification: Material shall have a flame spread of 25 or less, a smoke developed rating of 50 or less when tested in accordance with UL 723 or UL listed and accepted.
 2. Firestopping Rating: Firestopping materials shall be UL FRD listed or FM P7825 approved for "F" and "T" ratings at least equal to fire-rating of fire wall or floor in which penetrated openings are to be protected, except that "F" and "T" ratings may be 3 hours for firestopping in through-penetrations of 4-hour fire rated wall or floor.

2.3 VALVES AND STRAINERS

A. General:

1. Valves and strainers shall be constructed of the materials shown in the tables for each system and be rated by the manufacturer for the appropriate pressure class required for the listed pressure and temperature limits and for the fluid used and per the valve tables.
2. The manufacturers and model numbers indicated below are to be used as a means of identifying the type, quality, materials and workmanship required. Note that some of the manufacturers listed for a type of valve do not make valves for all pressure/temperature limits and/or all sizes. All valves of each type (400 psig ball, 150 psig globe, etc.) for the project shall be by the same manufacturer.
3. All valves shall be located and oriented as to valve stem direction to permit proper and easy operation, and access to valve for maintenance of packing, seat and disc. Valve stems shall not be tilted down unless approved by the manufacturer. Where valves are more than seven feet above the floor, stems shall be horizontal and all valves 2-1/2" and above shall have chain wheel and "endless link" style chain for operation from floor; where impact wheel is required, it shall be provided. Packing and gaskets shall not contain asbestos. Provide unions adjacent to equipment end of all threaded and soldered or permanent push-to- connect end valves. Provide grooved joint couplings adjacent to equipment end of all grooved end valves.

B. Service:

1. Shutoff or Isolation Valves shall be provided in all branch connections to mains and where shown on piping diagrams.
 - a. In general, for 2½" and larger piping use flanged gate valves for steam and condensate systems.
 - b. In general, for piping smaller than 2½" use threaded, sweat, connections; gate valves for steam and condensate systems.
2. Drain Valves and Manual Vent Valves
 - a. Globe with plug-type disc or ball valves (as shown on drawings).
3. Vacuum Breakers
 - a. Vacuum breakers shall be swing-check valves with 15-degree seat angle Provide at least one vacuum breaker for each steam coil and heat exchanger.

C. Swing Check Valves: Bronze valves shall conform to MSS SP-80, of the type required for the pressure class and body connection type listed in the tables. Iron valves shall conform to MSS SP-71, of the type required for the pressure class and body connection type listed in the tables. Steel valves shall conform to ASME B16.34, of the type required for the pressure class and body connection type listed in the tables. Valves shall be as manufactured by Stockham, Milwaukee, Crane, Nibco, Victaulic (grooved), Grinnell (grooved), or Hammond.

D. Globe Valves (including angle valves): Bronze valves shall conform to MSS SP-80, of the type

required for the pressure class and body connection type listed in the tables. Iron valves shall conform to MSS SP-85, of the type required for the pressure class and body connection type listed in the tables. Steel valves shall conform to ASME B16.34, of the type required for the pressure class and body connection type listed in the tables. Maximum seat leakage for manual valves shall be no more than 10 cc/hr per inch of diameter. Control valves leakage shall be no more than that allowed by ANSI seat leakage Class IV (0.01% of full open valve capacity). Valves shall be as manufactured by Stockham, Milwaukee, Crane, Nibco, or Hammond. For areas where clearances are restricted, non-rising stems may be used – Contractor shall indicate locations on submittal.

- E. Gate Valves: Bronze valves shall conform to MSS SP-80, of the type required for the pressure class and body connection type listed in the tables. Iron valves shall conform to MSS SP-70, of the type required for the pressure class and body connection type listed in the tables. Steel valves shall conform to ASME B16.34, of the type required for the pressure class and body connection type listed in the tables. Maximum seat leakage shall be no more than 10 cc/hr per inch of diameter. Valves shall be as manufactured by Stockham, Milwaukee, Crane, Nibco, or Hammond. For areas where clearances are restricted, non-rising stems may be used – Contractor shall indicate locations on submittal.
- F. Ball Valves: Valves shall meet FS WW-V-35C, Type II, and have the appropriate trim to meet the required pressure/temperature ratings listed in the tables. Valves shall have locking handles to allow servicing and removal of piping or equipment. Valves on insulated piping shall have stem extension assemblies equal to the insulation thickness. Valves shall have 100% tight shut-off (no seat leakage). Valves shall be as manufactured by Conbraco Industries (Apollo), Watts, Stockham, Nibco, Hammond, or Milwaukee. Ball valves for modulating control service shall have characterized disc to provide equal percentage flow characteristics and extended rangeability. Modulating ball valves shall be Bray VCB series or Belimo B series.
- G. Butterfly Valves: Provide butterfly valves of the type and materials listed in the tables. Valve necks shall allow a minimum of 2" insulation. Valves shall have the trim required to meet the listed pressures and temperatures listed in the tables. Valves shall have visual position indication. Valve seats shall have zero or near zero (bubble-tight) bi-directional seat leakage. Valves 6" and larger and all steam valves shall be gear operated. Non-steam valves under 6" shall be lever operated with balance stops.
 - 1. General Service: Standard lug or grooved (in grooved systems) type with ductile or cast iron body, resilient EPDM seats, bronze, nickel, PPS (Polyphenylene Sulfide), Nylon 11 or EPDM coated ductile iron disc and 416 stainless steel stem. Valves shall comply with MSS SP-25, MSS SP-67, and API-609. Valves shall be as manufactured by Mueller, Centerline, DeZurik, Milwaukee, Nibco, Hammond, Keystone, Bray Model 31H, Victaulic Masterseal (grooved), Grinnell Model B302 (grooved), or SF Equipment.
 - 2. High Performance: Valves shall have lug-style carbon steel body, 316 stainless steel eccentric disc, offset 17-4 PH stainless steel shaft, and filled PTFE soft seat. Valves shall comply with ANSI B16.5, ANSI B16.34, MSS SP-25, MSS SP-61 (zero leakage), MSS SP-58, and API-609. Valves shall be as manufactured by

Flowseal (Crane), Neles-Jamesbury, DeZurik, Posi-Seal, Milwaukee, Hammond or Bray/McCannalok.

- H. Drain Valves: Drain valves shall be one of the type listed for isolation in the table for each piping system. Provide drain connections at all equipment and all low points in the piping systems to allow for complete drainage. Drain connections shall have full size threaded hose end connections with cap/plug. For piping up to 4", provide minimum ¾" valves. For piping between 4" and 10", provide minimum 1½" valves. For piping larger than 10", provide minimum 2" valves. Provide 50' of premium grade hose for each size drain.
- I. Valve Lubrication: Furnish a lubrication gun in the mechanical equipment room with extra lubricant sticks sufficient to repack each valve. Guns shall be extra heavy, lever type hydraulic hand type with automatic shutoff, 1500 psi gauge and 12" long connecting hose. Lubricant shall be as required by valve manufacturer for the service intended.

STEAM AND STEAM CONDENSATE SERVICES:						
Maximum 125 psig Saturated Steam (353°F), or Any Pumped Condensate to 175 psig						
Valve Type	Size	Type	Application	Body/Trim Body/Seat	Type of Connection	Minimum Pressure Rating/Class
Ball	To 2"	2 piece	Isolation or ATC open-close (non-modulated)	Steel/Stainless Steel/Reinforced PTFE	Threaded	125 psig steam
Butterfly	2½" - 24"	High Performance (Double offset)	Isolation or ATC, open-close or Modulation (with C _v selected at 2/3 open)	Steel/Stainless Steel/Reinforced PTFE	Flanged	ANSI Class 150 with zero leakage bi-directional Note: Mmodulation is limited to 50 psig steam systems.
Butterfly	2½" - 24"	High Performance (Triple offset)	Isolation or ATC Modulation (with C _v at 2/3 open)	Steel/Stainless Steel or laminated	Flanged	ANSI Class 150 with zero leakage bi-directional.
Gate	To 2"	Screwed Bonnet	Isolation	Bronze/Bronze	Threaded	ANSI Class 125
Gate	2½" - 12"	OS&Y, Rising stem	Isolation	Iron/Bronze	Flanged	ANSI Class 125
Globe	To 2"	Union or Screwed Bonnet	Balancing or ATC Modulation	Bronze/Stainless Steel	Threaded	ANSI Class 125
Globe	2½" - 12"	Bolted Bonnet	Balancing or ATC Modulation	Iron/Stainless Steel	Flanged	ANSI Class 125
Check	To 2"	Swing	Piping	Bronze/Bronze	Threaded	ANSI Class 125
Check	2½" - 12"	Swing	Piping	Iron/Bronze	Flanged	ANSI Class 125

2.4 PIPING, EQUIPMENT, PANEL AND VALVE IDENTIFICATION

- A. All piping, equipment, panels and valves furnished and/or installed under this Section of the Specifications including automatic temperature controls shall be identified with pipe markers, valve tags, equipment plates and/or bar codes. Refer to Part 3 – IDENTIFICATION for materials and methods of installation.

2.5 MOTORS, DRIVES AND STARTERS

- A. All equipment shall be provided complete with motors and drives, unless otherwise indicated.
- B. Motors shall be Premium Efficiency (as available by size/speed/horsepower) and shall conform to NEMA Standards and shall be suitable for load, duty service and location. Motors shall have nameplates giving manufacturer's name, serial number, horsepower, efficiency, speed and current characteristics. Motors shall be Century "E+3", General Electric "Energy Saver Premium", Reliance "Premium Energy Efficient" Series, Baldor "Super Premium Efficiency", or approved equal.
- C. Motors shall be tested in accordance with the standards of ANSI C50 and conform therewith for insulation resistance and electric strength. Minimum efficiency levels shall be as listed in latest edition of ANSI/ASHRAE Standard 90.1 or the state's energy code, whichever is higher. All motors shall be tested in accordance with IEEE Standard 112, Test Method B. Provide on nameplate the type of bearing grease to use.
- D. Motors for use with variable frequency drives (VFD) shall be inverter duty rated and labeled, meet NEMA MG-1 Part 31, and have a minimum Class F or H insulation. All VFD motors shall have AEGIS™ or approved equal Shaft Ground Rings to prevent electrical bearing damage from capacitively coupled shaft voltages. For motors up to 100 HP, ring shall be installed on either the drive end or non-drive end. Motors over 100 HP shall have ring installed on the drive end of the motor with an insulated bearing on the non-drive end to prevent circulating currents. If rings are not factory installed, Contractor shall install them in the field following manufacturer's requirements and, to start factory warranty, shall register them with AEGIS™ in the Owner's name. Failure to install or register the rings will require Contractor to take on the responsibility of providing a 15 year warranty and to replace any failed motor bearings during the 15 year period.
- E. Motors ½ HP and larger shall be squirrel cage induction, ball or roller bearings with pressure grease lubrication, specifically wound for the scheduled voltages.
- F. Motors less than ½ HP shall be capacitor start of split phase type, specifically wound for 120V/1PH/60HZ alternating current, unless otherwise noted. Fractional horsepower motors, integral to equipment intended for installation in finished public spaces, shall be provided with an overload device responsive to motor current. The device shall be integral to the motor or separate as part of the controls.
- G. Motors shall be furnished complete with conduit terminal box of size adequate to accommodate conduits and wires as sized on the Electrical Drawings or specified under this Section.

- H. Motor capacity shall be sufficient to operate associated driven devices under conditions of operation and load and with overload and at least the horsepower indicated or specified. All motors shall be of the premium efficiency, high power factor, low energy consuming type most suitable for the application and installed environment. Any motor replacement necessary for compliance to the application shall be at no additional cost to the Owner.
- I. Motors shall be suitable for continuous duty at rated horsepower with temperature rise not to exceed 40°C for drip proof motors, 50°C for splash proof motors, 55°C for totally enclosed or explosion proof motors. All non-VFD motors shall be capable of 15% overload without overheating and suitable for operation for the ambient conditions of its specific location.
- J. Direct connected motors shall be furnished with adjustable base. Motors connected to driven equipment by belt or shaft shall be furnished with adjustable sliding bases, except fractional HP motors, which shall have slotted mounting holes.
- K. Drives for belted motors shall be as manufactured by Dodge Manufacturing Company, Browning Manufacturing Company, T.B. Woods Company or equal with adjustable motor sheaves and adjustable slide bases. The drive belts shall be as short as practicable. All fans and fan units shall be furnished with cogged-type triple V-belt drives, each sized for 150% of the design drive capacity. All multiple belt drives shall have matched sets of belts.
- L. Where starters or variable speed drives are not integral with packaged equipment specified in this section, the Electrical Subcontractor shall furnish all starters and drives in accordance with Division 16 drawings and specifications.
- M. For packaged equipment, motor controllers shall be equipped with all poles, auxiliary contacts and other devices necessary to permit the interlocking and control sequences required. Controller operating coils shall be generally designed for 120 volt operation, and 3 phase motors shall be provided with thermal overload protection in all phases.
- N. All electrical apparatus furnished under this Section shall be approved by UL (or other agencies approved by the authority having jurisdiction) and shall be labeled or listed where such is applicable. Where custom-built equipment is specified and the UL label or listing is not applicable to the completed product, all components used in the construction of such equipment shall be labeled or listed by UL where such is applicable to the component.

2.6 FACTORY PAINTING

- A. Units which are not of aluminum, stainless steel, or galvanized construction (according to ASTM A 123 or ASTM A 525) shall be factory painted with a corrosion resisting paint finish. Internal and external ferrous metal surfaces shall be cleaned, phosphatised and coated with a paint finish which has been tested according to ASTM B 117, ASTM D 1654, and ASTM D 3359. Evidence of satisfactory paint performance for a minimum of 125 hours for units to be installed indoors and 500 hours for units to be installed outdoors shall be submitted. Rating of failure at the scribe mark shall be not less than 6, average creepage not greater than 1/8 inch. Rating of the inscribed area shall not be less than 10, no failure. On units constructed of galvanized steel which have been welded, exterior

surfaces of welds or welds that have burned through from the interior shall receive a final shop docket of zinc-rich protective paint according to ASTM D 520 Type I.

2.7 INSULATION

- A. Scope: Provide all labor, equipment, materials and accessories, and perform all operations required, for the correct installation of insulation on the following systems and all other necessary items connected into the systems subject to condensation, loss of heat, or personnel protection (above 120 degrees F):
 - 1. Piping insulation (other than pre-insulated underground piping), jackets and accessories (including all valves and fittings with easily removable sections for maintenance of strainers, balance valves, and unions).
 - 2. Ductwork insulation, jackets, and lining (including all fittings).
 - 3. Fire wrap insulation where indicated or required to maintain fire separation.
- B. Environmental Requirements: Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- C. Quality Assurance: Insulation materials must be asbestos free, UL listed, and manufactured at facilities certified and registered to conform to ISO 9000 Quality Standard. All insulating products and jackets shall carry a 25/50-flame spread/smoke developed rating as tested in accordance with ASTM E 84.
- D. Workmanship: All insulation shall be installed by a licensed applicator and applied in accordance with the manufacturer's recommendations. All work shall comply with all applicable federal, state, and local codes including, but not limited to, OSHA. All work shall conform to industry and trade accepted standards for commercial and industrial insulations. Verify that piping, heat trace, and ductwork has been tested (including applicable pressure/leakage tests) before applying insulation materials. Surfaces to be insulated shall be cleaned free of dirt, scale, moisture, oil and grease. No vapor barrier leaks or insulation voids will be accepted. Continue insulation vapor barrier through penetrations except where prohibited by code. All fire rated walls and penetrations shall be sealed with fire stopping. Locate insulation and cover seams in least visible locations. Neatly finish insulation at supports, protrusions, and interruptions. For all systems requiring a vapor barrier seal all terminations including fittings, wall penetrations, and supports with vapor barrier mastic such as Foster 30-35 or equal. In addition, in brine or chilled water pipe systems vapor seal pipe terminations every four pipe sections, using Foster 30-35 or equal. Bevel and seal ends of insulation at equipment, flanges, and unions. Where insulation is used over stainless surfaces, the material shall be chlorine free.
- E. Delivery and Storage of Materials
 - 1. Deliver all materials to the job site and protect the insulation against dirt, water, chemical and mechanical damage before, during and after installation. Do not install damaged insulation and remove it from the job site.

2. Deliver insulation, coverings, cements, adhesives coatings etc. to the site in factory-fabricated containers with the manufacturer's stamp or label affixed showing fire hazard ratings of the products, name of manufacturer and brand.
 3. Installed insulation that has not been weatherproofed shall be protected from inclement weather by an approved waterproof sheeting installed by the Contractor. Any water-damaged insulation shall be removed and replaced by the Contractor at no additional cost.
- F. Manufacturers: Johns Manville (JM), CertainTeed, Owens-Corning, 3M, Armstrong, Knauf, or approved equal. Note that the listed manufacturers may not be able to supply all the insulation products required for the project. Unless otherwise noted, JM insulation products are listed to provide the minimum standards required for each type of insulation.
- G. Pipe Insulation: Provide the following products depending on temperature of each system. Insulation shall be marked to show the locations of all unions, break flanges, strainers, check and balancing valves.
1. For piping with a service temperature between 40°F and 600°F such as steam, and steam condensate, provide glass fiber insulation equal to JM Micro-Lok. Insulation shall be rigid molded and noncombustible, meeting ASTM C 547, Type I. K-factor shall be 0.23 at 75°F mean temperature. All purpose vapor retardant jacket shall be JM AP-T PLUS. Jacket shall be white kraft paper reinforced with glass fiber yarn and bonded to aluminum foil, secure with self sealing longitudinal laps and butt strips or AP Jacket with outward clinch expanding staples.
- H. Minimum pipe insulation thicknesses shall be as shown on the drawings.
- I. Field Applied Piping and Fitting Jackets
1. Provide covers for insulation of all pipe fittings (i.e. elbows, tees, end caps, reducers, unions, flanges, mechanical joints), strainers and valves with surface temperatures between -20°F and 150°F (all low pressure steam and condensate systems with glass fiber insulation). Provide easily removable sections for cleaning and maintenance of unions, balancing valves, and strainers. Fitting covers shall be 30-mil thick white PVC equal to JM Zeston 2000 molded high impact, UV resistant covers. Attach with water-resistant pressure sensitive color matching vinyl tape to maintain vapor barrier. Insulate all fittings per manufacturer's recommendations to prevent surface temperature from exceeding the 150°F limit.
- J. Ductwork Insulation – General
1. Provide duct and plenum insulation of type(s) indicated in these specifications. Minimum total R-value for each location and duct system shall be as shown on the drawings.
 2. R-values shown on drawings may be obtained by adding the individual R-values of both the lining (where shown or used) and external duct insulation.
- K. Ductwork Insulation (External Wrap) - General

1. Where duct is internally lined (coordinate locations with ductwork sub-Contractor), exterior insulation is not required unless called for in the specifications, shown on the plans, or where required to provide the minimum R-value shown on the drawings.
 2. Where ducts are insulated or lined, flexible connectors to equipment shall be insulated. Duct flanges and standing seams shall be insulated the same as the duct.
 3. Where service access is required, bevel and seal ends of easily removable insulation. Removable sections shall also be provided (and labeled) at all duct test holes.
 4. The underside of duct work 24" or greater shall be secured with mechanical fasteners and speed clips spaced approximately 18" on center. The protruding ends of the fasteners should be cut off flush after the speed clips are installed, and then, when required, sealed with UL listed tapes or vapor-retardant adhesive.
- L. Ductwork Insulation (External Wrap): Provide the following insulation types for the listed ductwork.
1. Insulate concealed ducts and plenums, depending upon the required R-value (see drawings) for the duct and its location, with 0.75 lb/cu ft dense fiber glass insulation equal to JM Microlite or Owens Corning SOFTR Type 75. Insulation shall meet ASTM C 1290 Type III, flexible blanket with a maximum K-factor of 0.30 at 75°F mean temperature. Operating service temperature range shall be 40°F to 250°F. Vapor barrier jacket shall be FSK aluminum foil reinforced with fiberglass scrim laminated to UL rated kraft paper with maximum permeance of 0.02 perms. Jacket shall be secured with UL listed pressure sensitive tape and/or outward clinched expanded staples (with minimum 2 inch lapped vapor barrier) and vapor barrier mastic as needed. K-factors and R-values listed assume 25% compression during installation. The minimum R-value based on thickness, shall be:

<u>Thickness</u>	<u>R-value</u>
1 ½"	4.2
2"	5.6
3"	8.3
 2. Insulate exposed ducts and plenums, depending upon the required R-value (see drawings) for the duct and its location, with 3.0 lb/cu ft dense fiber glass insulation. Insulation shall be equal to JM Type 814 Spin-Glas or Owens Corning Type 703 meeting ASTM C 612, Type 1A & IB; rigid board with a maximum K-factor of 0.23 at 75°F mean temperature. Operating service temperature range shall be 0°F to 450°F. Vapor barrier jacket shall be AP type (kraft paper bonded to aluminum foil, reinforced with fiber glass yarn) with maximum permeance of 0.02 perms. Jacket shall be secured with UL listed pressure sensitive tape and/or outward clinched expanded staples (with minimum 2 inch lapped vapor barrier) and vapor barrier mastic as needed. The minimum R-value, based on thickness, shall be:

<u>Thickness</u>	<u>R-value</u>
1 ½"	6.5
2"	8.6

M. Acoustic Duct Liner – General:

1. Liner minimum thickness shall be minimum 1" (unless otherwise noted on drawings) or as required to provide the minimum R-values shown on the drawings. Ductwork dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness. Do not use liner on kitchen, pool, shower, fume exhaust, hospital operating rooms (and similar areas) or other wet, grease laden, or potentially hazardous exhaust systems.
2. Liner shall have rugged coating system installed on the air side of liner and all edges. Coating shall be cleanable by dry cleaning methods without damage. Maximum pressure drop of lined ductwork shall not exceed 5% more than unlined ductwork of the same inside dimensions. Liner shall be roll type or board type as required for duct size and to meet specified requirements.
3. Liner shall be rated up to 5,000 ft/min.
4. Repair liner surface penetrations with manufacturer's approved adhesive meeting ASTM C 919.

N. Duct Liner: Provide flexible duct liner equal to JM Permacote Linacoustic (rectangular duct) or Spiracoustic (round duct) meeting ASTM C 1071 with K-factor shall be 0.25 (1" thick) at 75°F mean temperature when tested per ASTM C 518. Liner shall have an air surface coated with acrylic coating treated with EPA register anti-microbial agent proven to resist microbial growth as determine by ASTM G 21 and G 22. Noise reduction coefficient shall be minimum 0.65 for 1" thick liner or higher for thicker liner based on type "A" mounting and tested in accordance to ASTM C 423. Install liner with full coverage adhesive meeting ASTM C 919 or JM SuperSeal. Secure liner with galvanized steel pins, welded or mechanically fastened. Weld pins shall not mar the exterior finish or surface of the duct. Liner shall be attached to pin with pressed on washer. Mechanical liner fasteners shall be spaced as indicated by SMACNA, NAIMA, or manufacturer. Pin length should be such as to limit compression of liner. All exposed edges of the liner must be factory or field coated. The minimum R-value, based on thickness, shall be:

<u>Thickness</u>	<u>R-value</u>
1"	4.0
1 ½"	6.0
2	8.0

O. Fire Wrap Insulation (for systems that are not protected by fire dampers): For all kitchen grease hood exhaust ducts and for any other systems which are shown on the drawings that penetrate fire rated walls, floors, ceilings or shafts, provide fully encapsulated fire rated insulation equal to Unifrax FryeWrap Elite 1.5, Fire Master Fast XL, or 3M Fire Barrier System 615+. Fire Wrap insulation shall be non-asbestos and rated to maintain 2-hour (both T and F - ratings) fire separation with zero clearance to combustibles at all points for the entire duct run after it leaves the fire zone (fire penetrates fire rated construction).

1. For grease ducts, fire wrap insulation shall pass all requirements of ASTM E2336 and be a minimum of two 1.5-inch thick overlapping layers with minimum 3" perimeter and longitudinal overlaps.
2. Installation shall be in accordance with manufacturer's instructions to maintain rating with all cut edges sealed with aluminum tape. Insulation shall be held in place with minimum ½ inch wide and 0.015-inch thick stainless steel bands and clips. Provide insulation pins and clips (per manufacturer's recommendations) on the bottom of horizontal ducts to prevent sagging.
3. Seal all fire rated penetrations per manufacturer's details to maintain full 2-hour rating.
4. Provide removable insulation sections for all access and clean-out doors per manufacturer's details to maintain full 2-hour rating. Install easy to read warning labels on insulation every 20 feet and at each clean-out door. Labels shall say "Fire Resistive Enclosure – Do Not Remove".
5. Exposed duct wrap systems shall be protected where subject to physical damage.

2.8 ELECTRIC UNIT HEATERS

- A. Provide commercial quality electric resistance unit heaters as scheduled and where indicated on the Drawings.
- B. Heater enclosure shall be constructed of minimum 18 gauge steel, furniture grade. All metal surfaces of the casing shall be phosphate coated.
 1. Enclosure finish shall be baked on enamel.
- C. Heating element shall be aluminum fins, pressure bonded to copper clad steel sheathing element.
- D. Heater shall be provided with:
 1. Built in bi-metal thermostat, 40 degrees F to 90 degrees F.
 2. Fan motor shall be completely enclosed, continuous heavy duty, all angle operation.
 3. Unit heater shall be equipped with an automatic reset thermal overload protection device, linear capillary type wired for de-energizing at thermal overload.
 4. Heater to be draw through air flow design.
 5. Heater shall be equipped with factory installed power disconnect switch.
 6. Heater shall have control connections; pigtails and spade terminals.
- E. Electrical Wiring: Wiring connections for heater shall be provided in Division 16 of these Specifications.

PART 3 - EXECUTION

3.1 DEMOLITION

- A. The existing facility will continue to operate during all phases of the demolition work and subsequent construction. No interruption of the systems will be permitted without prior approval of the Owner's Representative.
- B. Submit proposed methods and sequence of operations for the selective demolition work to the Owner's Representative for review prior to the start of the work.
- C. Perform all demolition while ensuring minimum interference with adjacent occupied areas.
- D. Where sections of a system are to be removed and the system serves other areas of the building that are outside the scope of the work, perform the following:
 - 1. Coordinate the temporary shutdown of the system with the Owner's representative.
 - 2. Install supports in the remaining active sections of the system as required by the removal of nearby supports associated with the demolition.
 - 3. Isolate the system.
 - 4. Cap the remaining system section, leaving the remainder of the system active.
- E. Provide temporary shoring or bracing during the demolition work to prevent movement, settlement, or collapse of the system or adjacent systems due to the work.
- F. Promptly repair any damage caused to adjacent facilities or areas that are designated to remain at no additional cost to the Owner.
- G. Equipment:
 - 1. Coordinate with the Contractor and Subcontractors to provide disconnection prior to equipment removal.
 - 2. Remove equipment by unfastening at the supports or attachments. Then remove the attachments from the building, leaving no component of the original installation.
 - 3. The Owner shall choose to take possession of the equipment or not. If the Owner chooses not to take possession of the equipment, the Subcontractor shall remove the equipment and dispose of the equipment in accordance with Paragraph H specified below.
 - 4. Exercise care with equipment that is to be relocated or turned over to the Owner, examine the equipment before removal in the presence of the Owner's representative to determine its condition. Make a record of any marks, etc. by a photograph or videotape acknowledged by the Owner's representative.
 - 5. Install relocated equipment to ensure no damage.

6. Equipment to be turned over to the Owner: Deliver to an on-site location designated by the Owner, and obtain acknowledgment of receipt in good condition.
- H. All equipment, etc., not turned over to the Owner shall be put into the General Contractor's dumpsters; become the property of the General Contractor, and shall be removed from the site by the General Contractor. For equipment containing any refrigerant, it shall be reclaimed for recycling. Any hazardous materials such as mercury from thermometers or thermostats; or lead shall be properly disposed of, following EPA guidelines.

3.2 GENERAL

- A. Install all items specified under PART 2 - PRODUCTS, according to the manufacturer's requirements and best quality recommendations, shop drawings, the details as shown on the Drawings and as specified in this specification section.
- B. Install all work so that parts requiring inspection, replacements, maintenance and repair shall be readily accessible. Minor deviations from the Drawings may be made to accomplish this, but any substantial change shall not be made without prior written approval from the Owner.
- C. Support of equipment on studs or other means, and the placing or building of the supporting slab, pad, pier, stand, grating, or other "to the equipment", is prohibited.
- D. All welding done under this section shall be performed by experienced welders in a neat and workmanlike manner. All welding done on piping, pressure vessels and structural steel under this Section shall be performed only by persons who are currently qualified in accordance with ANSI Code B31.9 and B31.1 for Pressure Piping and certified by the AWS, ASME or an approved independent testing laboratory, and each such welder shall present certificate attesting his/her qualifications to the Architect's representative whenever requested to do so on the job.
- E. All pipe welding shall be oxyacetylene or electric arc. High test welding rods suitable for the material to be welded shall be used throughout. All special fittings shall be carefully laid out and joints shall accurately match intersections. Care shall be exercised to prevent the occurrence of protruded weld metal into the pipe. All welds shall be of sound metal free from laps, cold shots, gas pockets, oxide inclusions and similar defects.
- F. All necessary precautions shall be taken to prevent fire or damage occurring as the result of welding operations.
- G. Care shall be taken when working on the roof. Protect the roof from damage.

3.3 IDENTIFICATION

- A. General
 1. All piping, equipment, and valves furnished and/or installed under this Section of the Specifications shall be marked for ease of identification.
 2. Marking shall be done using self-adhering (screw or rivets for equipment) labels applied to clean, smooth surfaces. All lettering shall have sharply contrasting

background for ease of identification. Colors shall be in accordance with ANSI A13.1 Standards. Samples of stickers together with color schedules shall be submitted for approval.

B. Pipe Identification

1. Provide color-coded pipe identification markers on all piping in the building installed under this Section. Pipe markers shall be heavy plastic faced cloth labels with heat resistant backing, "Set Mark" by Seton Nameplate Corporation, Zipper Tubing Co., or equal by the W. H. Brady Company or approved equal.
2. Provide each pipe with markers indicating the service, size (in inches), and arrow markers to indicate the direction(s) of flow.
3. Piping mains shall be labeled at 20 foot intervals and on entrance and exit from the Mechanical Room, adjacent to each valve and at both sides of wall penetrations. This work shall be done after finish painting has been completed.
4. The following color coding shall be used with names in black letters on backgrounds indicated:

SCHEDULE OF PIPING IDENTIFICATION		
Service	Legend	Background Color
Steam	S (xx)	Yellow (note: xx=psig of steam system)
Steam condensate	C (xx)	Yellow (note: xx= psig of steam system)

5. In general, a 2" high legend shall be used for pipe lines 4" diameter and larger, and a 3/4" high legend shall be used for pipe lines 3" diameter and smaller.
6. All markers shall be OSHA approved.

C. Equipment Identification (by Unit Manufacturer)

1. Equipment marking shall be prominently located and securely attached with screws or rivets (no adhesives or cements are permitted) on the normally visible side of the equipment.
2. Equipment identification designations shall be taken from equipment callouts as shown on drawings and coordinated with the Owner's facility group to assure designations match up with Owner's maintenance management system identification database.
3. Provide on the label (or on a prominently located second label) all required routine maintenance action (per manufacturer). Label may be limited to identifying, by title or publication number, the operation and maintenance manual for that particular model and type of product.

D. Valve Tags

1. All valves on pipes of every description shall have numbering tags. The valve numbers shall correspond with numbers indicated for valves and controls on two-printed Valve Lists prepared using electronic database by the HVAC Subcontractor. These printed lists shall state the numbers and locations of each valve and control and the section, fixture or equipment which it controls, and other necessary information, such as requiring the opening or closing of another valve when one valve is to be opened or closed.
2. Provide flow diagrams showing all valves. Use the Valve List for callouts of all valves on the flow diagrams, prepared in a form to meet the approval of the Architect. Include this info in the operating and maintenance (O&M) manuals, and, for all mechanical rooms, provide the information laminated, mounted and framed under glass at the direction of the Owner. All valve interior diameters shall be shown in the O&M manuals and on the final Record Drawings.
3. Valve tags shall have neat circular black and white laminated fibre-engraved white showing through tags of at least 1 ½" in diameter, attached with a brass hook to each valve stem. Stamp on these valves tags in letters, as large as practical, the number of the valve and the service such as indicated on the "Valve List". The numbers on each service shall be consecutive. All valves on tanks and pumps shall be numbered by 3" black and white laminated fibre-engraved white showing through discs with white numbers 2" secured to stem of valves by means of brass hooks or small solid link brass chain.

3.4 FIRESTOPPING INSTALLATION

- A. Install firestopping assembly at locations shown and as specified in accordance with UL FRD systems or FM P7825 designs, and as recommended by manufacturer. Do not cover or enclose firestopped areas until approved by the Owner's Representative.
- B. Completely fill openings around penetrating items with firestopping material to prevent spread of fire in the following locations:
 1. Around duct, cable, conduit, piping, and their supports that penetrate fire-rated above grade floor slabs, interior partitions, and exterior walls.
 2. Around openings and penetrations through fire-rated ceiling assemblies.
 3. Around penetration of vertical fire-rated service shafts.
 4. Around openings and penetrations through fire-rated enclosures.
 5. Other locations indicated.
 6. At all air barrier penetrations as defined in the State's Energy Code.
- C. Completely fill voids flush with the surface; the depth of material shall be in accordance with UL FRD or FM P7825. Firestopping for filling voids in floors in which smallest dimension of a void is 4 inches or more shall support the floor design load or be protected by a permanent barrier. Damaged, disrupted, or removed firestopplings shall be replaced with new firestopplings as specified in this section.

- D. Insulated Pipes and Ducts: Cut and remove thermal insulation where pipes or ducts pass through firestoppings. Replace thermal insulation with a material having equal thermal insulating characteristics and equal firestopping characteristics.

3.5 PLACING IN SERVICE

- A. At the completion of performance tests and following approval of test result, recheck all equipment to see that each item is adequately lubricated and functioning correctly.
- B. Furnish upon completion of all work, certificates of inspections from the manufacturers stating that authorized factory engineers have inspected and tested the operation of their respective equipment and found same to be in satisfactory operating conditions.

END OF SECTION

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SECTION 260000

ELECTRICAL

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. The GENERAL REQUIREMENTS, DIVISION 1, and BIDDING AND CONTRACT REQUIREMENTS, DIVISION 0, are hereby made a part of this Specification Section.
- B. Examine all Drawings and all Sections of the Specifications and requirements and provisions affecting the work of this Section.

1.2 SCOPE OF WORK

- A. This project includes the demolition of electrical and mechanical systems in the Auditorium and kitchen area.
- B. The work under this Section shall include the furnishing of all materials, labor, equipment and supplies and the performance of all operations to provide complete working systems, in general, to include the following items:
 - 1. Fire Alarm System Modifications / Additions
 - 2. Relocation of existing electrical components that interfere with new construction and removal and disposal of obsolete components.
- C. Work of this Section is generally shown on the Electrical Drawings.

1.3 RELATED WORK

- A. Principal classes of Work related to the Work of this Section are listed in the Specification Table of Contents, and are specified to be performed under the indicated Sections of the Specifications. Refer to the indicated Sections for description of the extent and nature of the indicated Work, and for coordination with related trades. This listing may not include all related Work items. It is the responsibility of the Contractor to coordinate and schedule the Work of this Section with that of all other trades.
- B. The following work is not included in this section and will be provided under other sections:
 - 1. Temporary light, power, water, heat, gas and sanitary facilities for use during construction and testing. Refer to Division 1, General Conditions.

1.4 DEFINITIONS

- A. As used in this Section, the following items are understood to have the following meaning:
 - 1. **“Contractor or Subcontractor”**, unless otherwise qualified, shall mean the installer of the work specified under this Section.
 - 2. **“Furnish”** shall mean purchase and deliver to the project site, complete with every necessary appurtenance.

3. **“Install”** shall mean unload at the delivery point at the site and perform all work necessary to establish secure mounting and proper operation at the proper location in the project.
4. **“Provide”** shall mean "Furnish" and "Install".
5. **“Work”** shall mean all labor, materials, equipment, apparatus, controls, accessories and all other items required for a proper and complete installation.
6. **“Concealed”** shall mean hidden from sight in chases, furred-in spaces, shafts, hung ceilings, embedded in construction or in a crawl space. Areas to be concealed as part of tenant alterations to the building shall also be considered in this definition.
7. **“Exposed”** shall mean not installed underground or concealed as defined above.
8. **“Furnished by Others”** shall mean materials or equipment purchased under other sections of the general contract and installed by this section of the specifications by this trade Contractor .
9. **“Owners Representative”** shall be the party responsible to make decisions regarding all contractual obligations in reference to the Scope of Work for the Owner.
10. **“Date of Substantial Completion”** shall indicate the date where the work has been formally accepted as evidenced by completed final punch list or where the work has reached the stage that the Owner obtains beneficial use and commences utilization of the installed systems for business or occupancy purposes. The GENERAL REQUIREMENTS, DIVISION 1, shall supersede this definition where specifically defined.

1.5 CODES, REFERENCES AND PERMITS

- A. Materials, installation of systems and equipment provided under this section shall be done in strict accordance with the Department of Public Safety, Department of Environmental Protection, State Building Code and any other Codes and Regulations having jurisdiction including but not limited to:
 1. All Applicable NFPA Standards
 2. National Electrical Code (NEC).
 3. Occupational Safety and Health Administration (OSHA)
 4. State and Local Building Codes
 5. Underwriters' Laboratories, Inc (UL)
- B. Unless otherwise specified or indicated, materials, workmanship and equipment performance shall conform with the latest governing edition of the following standards, codes, specifications, requirements, and regulations, except when more rigid requirements are specified or are required by applicable codes but not limited to:
 1. American National Standards Institute (ANSI)
 2. American Society of Mechanical Engineers (ASME).
 3. American Society of Testing and Materials (ASTM)

4. Certified Ballast Manufacturers (CME)
 5. Illuminating Engineering Society (IES)
 6. Institute of Electrical and Electronics Engineers (IEEE)
 7. Insulated Cable Engineers Association (ICEA)
 8. National Electrical Contractors Association (NECA)
 9. National Electric Manufacturers Association (NEMA)
 10. Thermal Insulation Manufacturers Association (TIMA)
- C. Codes, laws and standards provide a basis for the minimum installation criteria acceptable. The drawings and specifications illustrate the scope required for this project, which may exceed minimum codes, laws and standards.
- D. Give all notices, file all plans, obtain all permits and licenses, and obtain all necessary approvals from authorities having jurisdiction. Deliver all certificates of inspection to the authorities having jurisdiction. No work shall be covered before examination and approval by the Owner's Representative, inspectors, and authorities having jurisdiction. Replace imperfect or condemned work to conform to requirements, satisfactory to Owner's Representative, and without extra cost to the Owner. If work is covered before inspection and approval, this Contractor shall pay costs of uncovering and reinstalling the covering, whether it meets contract requirements or not.

1.6 GENERAL REQUIREMENTS

- A. Nameplates
1. Each major component of equipment shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the equipment.
- B. Equipment Guards
1. Belts, pulleys, chains, gears, couplings, projecting setscrews, keys, and other rotating parts so located that any person may come in close proximity thereto shall be completely enclosed or guarded. High-temperature equipment and piping so located as to endanger personnel or create a fire hazard shall be guarded or covered with insulation of type specified for service.

1.7 MATERIAL AND EQUIPMENT STANDARDS

- A. Where equipment or materials are specified with the name of a manufacturer, such specification shall be deemed to be used for the purpose of establishing a standard for that particular item. No equipment or material shall be used unless previously approved by the Owner's Representative.
- B. Substitutions may be offered for review provided the material, equipment or process offered for consideration is equal in every respect to that indicated or specified. The request for each substitution must be accompanied by complete specifications together with drawings or samples to properly appraise the materials, equipment or process. The Contractor shall highlight and list all applicable specification requirements which the substituted material deviates from.

- C. If a substitution of materials or equipment in whole or in part is made, this Contractor shall bear the cost of any changes necessitated by any other trade as a result of said substitution.
- D. All materials, equipment and accessories provided under this section shall be new and unused products of recognized manufacturers as approved.

1.8 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

- A. It is the intention of the Specifications and Drawings to call for complete, finished work, tested and ready for continuous operation. Any apparatus, appliance, material or work not shown on the Drawings, but mentioned in the Specifications or vice-versa, or any incidental accessories necessary to make the work complete in all respects and ready for operation, even if not particularly specified, shall be provided by this Contractor without additional expense to the Owner.
- B. The Drawings are generally diagrammatic. The locations of all items that are not definitely fixed by dimensions are approximate only. The exact locations must be determined at the project and shall have the approval of the Owner's Representative before being installed. This Contractor shall follow Drawings, including his shop drawings, in laying out work and shall check the Drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions. Where space conditions appear inadequate, notify the Owner's Representative before proceeding with the installation. This Contractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.
- C. Any requests for information (RFI) for resolving an apparent conflict or unclarity, or a request for additional detail, shall include a sketch or equivalent description of Contractor's proposed solution.
- D. Size of conduits, cable trays, raceways and methods of running them are shown, but it is not intended to show every offset and fitting, nor every structural difficulty that may be encountered. To carry out the true intent and purpose of the Drawings, all necessary parts to make complete approved working systems ready for use, shall be furnished without extra charge. All work shall be installed in an approved workmanlike manner.

1.9 INSPECTION OF SITE CONDITIONS

- A. Prior to submission of bid, visit the site and review the related construction documents to determine the conditions under which the Work has to be performed and send a report, in writing, to the Owner's Representative, noting any conditions which might adversely affect the Work of this Section of the Specifications.

1.10 SURVEY AND MEASUREMENTS

- A. Base all required measurements, horizontal and vertical, from referenced points established WITH the Owner's Representative. The Electrical Contractor shall be responsible for correctly laying out the Work required under this Section of the Specifications.
- B. In the event of discrepancy between actual measurements and those indicated, notify the Owner's Representative in writing and do not proceed with the related work until instructions have been issued.

1.11 PROTECTION OF WORK AND PROPERTY

- A. This Contractor shall be responsible for the care and protection of all work included under this Section until the completion and final acceptance of this Contract.
- B. Protect all equipment and materials from damage from all causes including, but not limited to, fire, vandalism and theft. All materials and equipment damaged or stolen shall be repaired or replaced with equal material or equipment at no additional cost to the Owner.
- C. Protect all equipment, outlets and openings with temporary plugs, caps and covers. Protect work and materials of other trades from damage that might be caused by work or workmen under this Section and make good damage thus caused.
- D. Damaged materials are to be removed from the site; no site storage of damaged materials will be allowed.

1.12 SUPERVISION

- A. Supply the service of a competent Supervisor with a minimum of 5 years experience in Electrical construction supervision who shall be in charge of the Electrical work at the site.

1.13 SAFETY PRECAUTIONS

- A. Life safety and accident prevention shall be a primary consideration. Comply with all of the safety requirements of the Owner and OSHA throughout the entire construction period of the project.
- B. Furnish, place and maintain proper guards and any other necessary construction required to secure safety of life and/or property.

1.14 SCHEDULE

- A. Construct work in sequence under provisions of Division 1 and as coordinated with the Owner's Representative.

1.15 HOISTING, SCAFFOLDING AND PLANKING

- A. The work to be done under this Section of the Specifications shall include the furnishing, set-up and maintenance of all derricks, hoisting machinery, cranes, helicopters, scaffolds, staging and planking as required for the work.

1.16 CUTTING AND PATCHING

- A. Provide all cutting and patching necessary for the proper installation of work to be performed under this Section.
- B. All work shall be fully coordinated with all phases of construction, in order to minimize the requirements for cutting and patching.
- C. Form all chases or openings for the installation of the work of this Section of the specifications, or cut the same in existing work and see that all sleeves or forms are in the work and properly set in ample time to prevent delays. Be responsible that all such chases, openings, and sleeves are located accurately and are of the proper size and shape and consult with the Owner's Representative and all other trades concerned in reference to this work. Confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the approval of the Owner's Representative.

- D. Fit around, close up, repair, patch, and point around the work specified herein to match the existing adjacent surfaces and to the satisfaction of the Owner's Representative.
- E. Fill and patch all openings or holes left in the existing structures by the removal of existing equipment which is part of this Section of the Specifications.
- F. All of this work shall be carefully done by workmen qualified to do such work and with the proper and smallest tools applicable.
- G. Any cost caused by defective or ill-timed work required by this Section of the specifications shall be borne by this Contractor.
- H. When, in order to accommodate the work required under this Section of the specifications, finished materials of other trades must be cut or fitted, furnish the necessary drawings and information to the trades whose materials must be cut or fitted.

1.17 HAZARDOUS MATERIALS

- A. Removed batteries shall be recycled by a facility approved by the Owner's Representative. A uniform hazardous waste manifest shall be prepared for all disposals and returned with all applicable signoffs prior to application for final payment.
- B. Removed fluorescent and HID lamps shall be recycled by a facility approved by the Owner's Representative. A uniform hazardous waste manifest shall be prepared for all disposals and returned with all applicable signoffs prior to application for final payment.
- C. All ballasts in lighting fixtures to be disposed shall be verified to be PCB free. All ballasts manufactured prior to 1979 and not labeled as PCB free shall be considered to contain PCB's. Provide written verification to the Owner's Representative that confirms PCB free waste. Where PCB free waste cannot be verified, ballasts shall be recycled by a facility approved by the Owner's Representative, with PCB components eliminated by a high temperature incineration. A uniform hazardous waste manifest shall be prepared for all disposals and returned with all applicable signoffs prior to application for final payment. All handling shall conform to EPA requirements. Provide breakout cost for this scope.
- D. Where it has been identified that asbestos-containing material exists within the scope limits, refer to the Asbestos Abatement specification section for requirements.

1.18 ACCESSIBILITY

- A. All work provided under this Section of the Specification shall be installed so that parts requiring periodic inspection, maintenance and repair are accessible. Work of this trade shall not infringe upon clearances required by equipment of other trades, especially code required clearances to electrical gear. Minor deviations from the drawings may be made to accomplish this, but changes of substantial magnitude shall not be made prior to written approval from the Owner's Representative.

PART 2 - PRODUCTS

2.1 NOT USED

2.2 RACEWAYS AND CONDUIT

- A. Electrical Metallic Tubing (EMT)

1. EMT shall be zinc-coated steel that conforms to ANSI C80.3, UL Standard No. 797 and Federal Specification WW-C-563 as by Republic Steel, Allied Tube and Conduit or approved equal.
 2. EMT fittings shall be
 - a. zinc plated pressed steel gland and ring compression up to 2" and zinc plated pressed steel double set screw from 2" and up.
- 2.3 WIRE AND CABLE (600V)
- A. Cable
1. Flexible Metal Clad (MC) cable utilized for Fire Alarm service shall be identified with a factory applied tracer along the entire length.
- 2.4 FIRE ALARM – MODIFICATION TO EXISTING SYSTEM
- A. General
1. Provide the illustrated changes to the existing addressable fire detection, alarm and control system with horn/strobe and speaker/strobe signaling devices in compliance with all applicable codes and authorities having jurisdiction.
 2. The system design and installation shall conform to the following standards:
 - a. All new equipment shall be UL listed for its intended purpose and cross listed for addition to the existing system.
 - b. All applicable NFPA standards, including but not limited to: 70, 72, 90A, 92A, and 101.
 - c. State Building Code.
 - d. The Americans with Disabilities Act (ADA)
 - e. All requirements of the Authority Having Jurisdiction (AHJ)
 3. The installer and manufacturers warrantee shall be for a minimum period of one (1) year from the date of the final acceptance test approval.
 4. Equipment shall be by **Simplex 4100**.
- B. Sequence of Operation
1. Refer to the Sequence of Operations Matrix on the plans and the Fire Protection Narrative for the intended system operation.
- C. Control
1. General Requirements
 - a. New addressable loop wiring (Signaling Line Circuits - SLC) shall be wired in a Class B method. Each circuit shall allow for a minimum of 25% additional devices. Where connecting into an existing loop, match existing. No tee tapping allowed.
 - b. New non-addressable loop wiring (Initiating Device Circuits - IDC) shall be wired in a Class A method. Where connecting into an existing loop, match existing. No tee tapping allowed.

- c. New audible and visual circuits (Notification Appliance Circuits - NAC) shall be wired in a Class A method. Where connecting into an existing loop, match existing. No tee tapping allowed. Each circuit shall allow for a minimum of 25% additional devices. Provide a minimum of two (2) circuits per floor or area, alternately wiring adjacent notification appliances between circuits.

D. Initiating Devices and Accessories

1. Provide addressable detectors as shown on the drawings. Detectors shall be connected to the addressable loop with two wires. All detectors shall incorporate built-in identification for the system to automatically identify various types of sensors. Detectors shall utilize a flashing LED which denotes normal operation, and latched LED which indicates an alarm condition. All common types of analog detectors shall be interchangeable with common twist-lock bases. The standard base shall have a supervised LED output, and optional relay and isolator bases shall be available.
2. Analog sensors shall provide indication to the control panel that a detector requires maintenance, and shall operate in stand-alone mode in the event of an addressable loop communications failure.
3. Analog Thermal detectors shall monitor the ambient temperature from 32 to 158° F, and provide fast response to rapid increases in temperature. Rate of rise detection rate and fixed setpoint shall be panel selectable.
4. Manual Pull Stations shall be double action type with screw terminals and an integral toggle switch. The station shall be constructed of red Lexan with white raised letters, and a key reset switch. The station shall have integral addressable electronics and mount to a standard single gang switch box or to a red surface mount box when required.
5. Provide clear Lexan covers over specified pull stations. Cover shall be provided with integral battery operated alarm module, which will emit a loud audible alert when the cover is opened. Covers shall be equal to Stopper or Sentry.

E. Notification Devices and Accessories

1. Primary Notification Appliances shall be flush mounted combination horn/strobe units. Assembly shall be mounted on red lexan frame, on surface or flush wall box. Where box is surface mounted, it shall be red cast aluminum.
2. Visual notification appliances shall be self-synchronizing xenon strobes rated by UL 1971 test criteria and in accordance with the Americans with Disabilities Act and NFPA 72. Appliances shall have a field adjustable intensity listing ranging from 15 candela(cd) to 110 candela(cd) or as otherwise specified on the drawings.
3. Audible notification appliances shall have a field adjustable UL 464 sound pressure level listing ranging from 80dBA to 90dBA at 10 ft.
4. Speaker Audible Signals shall be UL 1480 multi-tapped Cone or Re-Entrant Speakers. Speaker shall have ¼, ½, 1 or 2 watt settings. The minimum reverberant sound output shall be 87dBA at 10' at a 1-watt setting. Provide re-

entrant units with 2, 4, 8 and 15 watt tap settings in all outdoor, shop or other designated high ambient noise areas.

PART 3 - EXECUTION

3.1 DEMOLITION

A. General

1. The Electrical Contractor shall visit the site before submitting his bid to familiarize himself with the existing conditions and the extent of the work. No extra compensation will be allowed for work required to be performed or to overcome existing conditions, by failure to visit the site.
2. The Electrical demolition work shall be performed by the Electrical Contractor in cooperation with the other trades and as scheduled and approved by the Owner's Representative.
3. The locations of existing equipment to remain including piping, ductwork, conduits, etc., are shown in an approximate way only. The Contractor shall determine the exact location of all existing equipment before commencing work.
4. Power outages caused by demolition that affect other areas shall be held to a minimum. Shutdowns shall be coordinated with the users and the Owner. Night, weekend and/or Holiday time required to perform electrical demolition work or new electrical work shall be carried as part of the Contract Cost.

B. Scope

1. The architectural drawings illustrate the full extent of the scope of demolition. Disconnect and make safe all electrical equipment identified for removal on the Electrical, HVAC, Plumbing and Fire Protection plans. The electrical scope may extend beyond the area defined by the architectural demolition limits to fully comply with various requirements of these specifications.
2. The electrical demolition plans and details indicate the general scope and are not intended to show all items to be removed or retained. Devices and equipment located on walls and/or ceilings to be removed shall be disconnected and made safe. The Electrical Contractor shall notify the Owner's Representative of any unanticipated hidden conditions encountered during demolition.
3. The Electrical Contractor shall circuit trace and label all existing branch circuits and feeders within the area of demolition scope prior to de-energizing and disconnection. All circuits within panelboards identified for removal shall be traced and labeled to ensure that no area outside the demolition scope limit is affected.
4. The Electrical Contractor shall identify all branch circuits, feeders and system components, which are to remain within the area of demolition scope. There shall be no interruption of service to any area outside the scope limits without approval from the Owner's Representative. Existing equipment to remain shall be left in a code compliant manner.
5. The Electrical Contractor shall de-energize and remove all conductors and raceways to their points of origin within the area of demolition scope. Items identified for demolition shall not be abandoned in place. Raceways that enter

masonry walls and floors shall be cut flush at the surface for patching by others. All circuit breakers associated with the demolition scope shall be de-energized and labeled spare.

6. The Electrical Contractor shall be responsible for the repair of all systems or building components damaged during the execution of the work. Damage shall include but not be limited to destruction or disposal of items intended to remain or to be salvaged.
7. The Electrical Contractor shall temporarily support all items to remain that are affected by the demolition of building structural components (walls, ceilings, etc.). Temporarily supported items shall be permanently supported and installed when finalized structures are in place.
8. The existing fire alarm system shall remain fully functional during the entire demolition and construction period. Reuse of existing fire alarm system raceways shall not be allowed. All required system shutdowns shall be coordinated with and approved by the Owner's Representative and the Authority Having Jurisdiction. Demolition of the existing system shall not commence until the new system has been completely installed, tested and approved by the Authority Having Jurisdiction.
9. All demolition scope associated with low voltage systems including but not limited to telephone, data, security, paging, CCTV, etc. shall be included.

C. Disposal

1. All removed items shall be legally disposed of unless identified for reuse. Refer to Part 1 of this specification for requirements for Hazardous Material disposal.
2. The Owner's Representative shall inspect all retained items prior to placement in the identified storage location by the Electrical Contractor . Selected items will be disposed at no additional cost to the project.

3.2 IDENTIFICATION

A. Nameplates

1. Provide nameplates on all equipment listed in other sections of this specification including but not limited to switchboards, substations, panelboards, transformers, junction and pull boxes, disconnect switches, motor starters and motor control centers, contactors, time clocks, remote control stations, fire alarm panels, smoke detector remote test/alarm stations and fire alarm annunciators.
2. Nameplates shall designate equipment tag number as defined on the drawings, system voltage where applicable, circuit number, device controlled and system function. Refer to typical nameplate detail on the drawings for additional requirements.
3. Submit a complete list of proposed nameplates prior to order to ensure conformance to design criteria. Submittal shall include nomenclature, size and layout of each tag.
4. Code 39 shall be the bar code format unless designated differently by the Owner's facility group. The Contractor shall create the required bar codes and assign numbers based upon input from the Owner's facility group. The

Contractors shall create a database of all equipment, panels and valves for Owner's review and approval.

5. Samples of stickers together with color schedules shall be submitted during the submittal phase of this project.

B. Equipment Identification

1. Equipment identification designations shall be taken from equipment schedules and coordinated with the Owner's facility group to assure designations match up with Owner's maintenance management system identification database.

3.3 RACEWAYS AND CONDUIT

A. General

1. Unless specified or shown on Drawings otherwise, install raceways and conduits concealed. Raceways and conduits may be run exposed on unfinished walls and basement ceilings with exposed structure, in mechanical rooms, electric rooms, attics and roof spaces.
2. Run concealed raceways and conduits in as direct lines as possible with minimum number of bends of longest possible radius. Install exposed raceways and conduits parallel to or at right angles to building lines.
3. Raceway and conduit runs shall be mechanically and electrically continuous from supply to outlet. Conduit shall enter and be secured to metallic enclosures with lock nut and bushing inside. Provide additional exterior lock nut for RGS connections. Bushings shall be the bonding type for conduit connections to metallic enclosures with concentric or eccentric knockouts. Lock nuts and bushings will not be required where conduits are screwed into threaded hubs.
4. Size raceways and conduits as required by NEC unless oversized raceways and conduits are shown on the Drawings. Raceways and conduits shall be ¾" minimum.
5. Install conduit systems complete before installation of conductors. Blow through and swab after plaster is finished and dry, and before conductors are installed.
6. Raceways and conduits supports shall be rigidly attached to the building structure utilizing corrosion resistant components suitable for use with the selected raceway or conduit. Refer to the seismic restraint sections of this specification for any additional requirements.
7. Field bending, cutting and threading shall be executed with the proper tools, resulting in bends and shortened conduits and raceways that are equivalent to factory fabricated and purchased components.
8. Provide standoff clips for conduits on exterior and wet location walls.
9. Protect all vertical conduit runs from the entrance of foreign material before installation of conductors and the final closure of the raceway system. All spare conduits (vertical and horizontal runs) shall be sealed with a bushing and appropriate insert to prohibit entrance of debris or vermin. Affix a label that indicates "Spare Conduit to _____" at each seal. Label shall be in accordance with the labeling section of this specification.

B. Electrical Metallic Tubing (EMT)

1. EMT may be used for lighting and receptacle branch circuits, telephone, fire alarm, communications, signal and instrumentation circuits and for control circuits. EMT may be used in masonry walls, above hung ceilings, in equipment rooms, in mechanical and electrical chases and closets, in exposed locations along ceilings or walls above normal traffic level and where not subject to accidental damage or abuse.
2. EMT shall not be used in exposed applications below 8 feet above finished floor or in exterior or damp/wet/corrosive locations. Electrical, telephone and communications closets are considered exempt from this restriction and EMT may be installed below 8' AFF in this application only. EMT shall not be installed underground, in slabs on grade, in exterior locations, in hazardous areas, or for circuits operating at more than 600 V.

C. Miscellaneous Conduit Fittings

1. Expansion/Deflection Fittings: Raceways and conduit buried or secured rigidly on opposite sides of building expansion joints and long runs of exposed conduit subject to expansion and contraction due to variations in temperature shall have expansion fittings. Raceways and conduit shall cross building expansion joints at right angles. Provide separate external copper bonding jumper secured with grounding straps on each end of fitting. Fittings shall safely deflect and/or expand/contract to twice the distance of potential movement.
2. Penetrations of all below grade exterior walls and flooring shall require approval by the Engineer and Architect. Submit proposed penetration points, size openings and penetration methods to Engineer and Architect. Penetrations shall utilize sealing fittings appropriately sized for the application. Duct bank penetrations are excluded from this requirement.
3. Sealing Fittings shall be installed wherever conduits pass from warm to cold locations to minimize condensation within the conduit. Sealing fittings shall be installed with RGS penetration of the wall and terminate in a suitably sized junction box.
4. Refer to other specification sections for requirements pertaining to sealing for hazardous atmospheres.

3.4 WIRE AND CABLE (600V)

- A. Homerun designations on the drawings are diagrammatic only. Install branch circuits and feeders from the power source to the attachment point as required for a complete system. Provide slack wire for connections to equipment installed by others. Refer to schedules and risers where specific conductor and associated raceway sizes are not indicated on the floor plans.
- B. Connect branch circuit homerun with two or three circuits and common neutral only where specifically shown on the drawings. Circuits with common neutrals shall not be connected to the same phase to ensure cancellation of the return current in the neutral conductor.
- C. Cable
 1. Flexible Metal Clad (MC) cable may be used in concealed locations for fire alarm wiring.

2. Flexible Armored (AC) cable shall not be used.
3. Flexible Hospital Grade Armored Cable (AC) cable shall not be used.
4. Conductor color code shall comply with identification requirements as indicated in this Section.

D. Splices and Terminations

1. No more than twelve splices of current carrying conductors or six circuits, whichever is greater, shall be allowed in a single enclosure or junction box.
2. Splices and terminations shall be sized to the specified conductor. The insulation shall be cut back with the appropriate tools such that the conductors are not nicked or damaged.
3. The compression tool shall be appropriate for the installation of the provided lug or butt splice to ensure pressure necessary for a proper connection is applied.
4. Terminations shall not be stacked or bent unless specifically listed for the application.

E. Cable Pulling

1. Pull cables that share conduit at same time into completely installed raceway. Conductors shall not be pulled in raceways with existing wiring.
2. Submit cable pulling calculations for engineers approval prior to all mechanically assisted pulls. Attach pull ropes to conductors with basket-weave grips on pulling eyes. Provide means to measure tension during entire pull. Utilize pulling compounds to lessen friction in accordance with the manufacturer's recommendations.
3. mechanically assisted pulls shall utilize equipment specifically designed for the purpose such as ropes, electric wench, pulleys, etc. The use of a motorized vehicle to assist in a cable pull is prohibited.

3.5 FIRE ALARM

A. Installation

1. All interconnections shall be installed in accordance with the manufacturer's system wiring diagrams.
2. The firm who holds the existing system maintenance contract shall perform final connections, programming, and testing. The Contractor shall carry all costs associated with final connections, programming and testing.
3. The Contractor shall carry all costs associated with disabling connections to the municipal loop during final connections and testing.
4. Provide UL certification of the installation by a UL certified testing company.
5. Labels
 - a. All new detectors shall be labeled with assigned address on both the detector housing and the base with a black on clear typed label equal to Kroy 0.375 Industrial UV. The base address shall be legible without removal of the detector. The detector address shall be concealed when placed into the base.

6. Wiring

- a. Wiring for the fire alarm system shall not be installed in conduits, junction boxes, or outlet boxes with conductors of lighting and power systems.
- b. Wiring for the fire alarm system shall be installed in conduit with limitations as outlined in Section 3.3 of this specification. The use of MC cable shall follow the guidelines provided in Section 3.4 of this specification. Exposed plenum rated wire/cable and/or fire alarm low energy cable will not be accepted.
- c. Minimum wire sizes shall be as follows:
 - 1) Addressable loop wiring shall utilize minimum #16 AWG.
 - 2) Notification appliance circuits shall utilize minimum #14 AWG.
 - 3) Network communications wiring shall be a solid conductor non-shielded #16 twisted pair minimum.
- d. All junction boxes shall be sprayed red and labeled "Fire Alarm". Conduit couplings shall be spray painted red prior to installation.
- e. Connections and splices shall be made using screw terminal blocks. No more than one conductor shall be installed under any screw terminal. The uses of wire nut type connectors are prohibited in the system.
- f. All circuit conductors entering or leaving any mounting box, outlet box enclosure or cabinet shall be labeled in accordance with the wiring diagram. Labeling and color-coding shall be consistent throughout the conductor run.
- g. Wiring within any enclosure shall be readily accessible without removing any component parts.
- h. No more than half loudspeaker/strobes or horn/strobes serving any floor or zone shall be connected to same circuit. Adjacent devices shall be alternately wired between circuits.

7. Detectors

- a. Detectors placement shall be in accordance with NFPA 72 requirements and recommendations.
- b. Detectors shall be at least 12 inches from any part of any lighting fixture and at least 3 feet from diffusers of air handling systems.
- c. Each detector shall be provided with appropriate mounting hardware as required by its mounting location.
- d. Detectors, which mount in free space, shall be mounted directly to the end of the stubbed down rigid conduit drop. Conduit drops shall be firmly secured to minimize detector sway. Where length of conduit drop from ceiling or wall surface exceeds 3 feet, sway bracing shall be provided.

- e. Smoke detectors shall not be installed until the building has been thoroughly cleaned. Dust covers shall be installed over all smoke detectors until final testing commences. All detectors, which indicate reduced sensitivity due to dirty condition, shall be cleaned prior to commencement of final cleaning.
 - f. Detectors shall be provided with wire guard cages where subjected to physical abuse, such as in gymnasiums.
 - 8. Notification Appliances
 - a. Notification appliances shall be mounted in accordance with NFPA 72.
 - b. Coordinate final quantity, location and power settings of audible notification appliances with ambient sound levels and interior finishes to comply with minimum & maximum sound pressure level requirements as follows:
 - 1) Total sound pressure level produced by combining ambient with all audible notification appliances operating shall not exceed 110dBA at the minimum hearing distance.
 - 2) An average ambient sound pressure level of 105dBA shall require the use of visible notification appliances.
 - 3) Unless otherwise permitted by NFPA 72, minimum sound pressure level produced by audible notification appliances shall be 15 dBA above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds., whichever is greater, measured 5-ft above the floor.
 - 9. Modify the system annunciator to indicate the added devices in accordance with the drawings.
- B. Testing
 - 1. The Contractor shall notify the Owner's Representative 10 business days before the tests are to be conducted. The tests shall be performed in accordance with the approved test procedures in the presence of the Owner's Representative. The Contractor shall furnish all instruments and personnel required for the tests, including the Contractor who holds the existing system maintenance contract.
 - 2. Preliminary Tests
 - a. The Contractor shall perform insulation testing (megger), continuity and loop resistance checks on all system conductors to determine that the system is free from grounded, shorted, or open circuits. These tests shall be conducted prior to the installation of fire alarm equipment. Loop resistance measurement shall verify that the loop resistance does not exceed the manufacturers specified limits. Corrections shall be made and the system shall be retested to assure if deficiencies are found.
 - b. The Contractor shall perform complete functional and operational performance tests. Testing shall include verification that the circuits and components are electrically supervised and operate as intended. Coordinate final testing with the Elevator and HVAC Contractors where

applicable to verify function of all control interfaces such as elevator recall and air handler shutdowns.

- c. A written report shall be submitted detailing the results of the preliminary tests shall accompany the request for Final Acceptance Test. The written Preliminary Test Report shall be submitted with:
 - 1) Copy of FACP printer output verifying proper operation of each device in alarm or trouble, time stamped throughout the testing process.
 - 2) The Operations and Maintenance Manual for the system.
 - 3) The revised record (as-built) drawings.
- d. Reacceptance testing shall be performed in accordance with NFPA 72 14.4.1.2 where applicable (testing of 10% of existing devices not affected by scope of work, etc.).

3. Final Acceptance Test

- a. The Fire Alarm System modifications, other systems and equipment associated with the fire alarm system modifications and new accessory equipment shall be tested in accordance with NFPA 72. Verification of system completion shall be documented with a fully executed copy of the Record of Completion per NFPA 72 Figure 10.18.2.1.1. The listed tests in NFPA 72 Table 14.4.2.2 shall be conducted and documented with an executed copy of Figure 14.6.2.4 as well as manufacturer and job specific procedures to verify that the circuits and components are electrically supervised and operate as intended. The test shall include but shall not be limited to the following:
 - 1) Visual inspection of all new wiring connections.
 - 2) Test of each function of new panels.
 - 3) Test of each circuit into which new devices have been added in both trouble and normal modes.
 - 4) Tests of each circuit associated with new alarm initiating device in both normal and trouble conditions. Open the circuits at each alarm-initiating device to test the wiring supervisory feature.
 - 5) Tests of each new control circuit and device.
 - 6) Tests of each circuit associated with new alarm notification appliance. Open the circuit at each notification appliance to test the wiring supervisory feature. Provide copy of FACP printer output verifying proper operation (alarm, trouble, etc.) for each device with time stamp enabled throughout the testing process.
 - 7) Tests of the primary and secondary power supplies of new panels and associated loss of each.
 - 8) Complete operational tests under emergency power supply.
 - 9) Ground fault monitoring circuit function.

- 10) Measurement of sound pressure levels in all areas within the scope of this project. Provide background and evacuation signal sound levels on the floor plans submitted with device address and tap settings.

END OF SECTION

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SECTION 274000

AUDIO VISUAL

(PART OF WORK SECTION 270000 – ELECTRICAL WORK, TRADE BID REQUIRED)

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. The GENERAL REQUIREMENTS, DIVISION 1, and BIDDING AND CONTRACT REQUIREMENTS, DIVISION 0, are hereby made a part of this Specification Section.
- B. Examine all Drawings and all Sections of the Specifications and requirements and provisions affecting the work of this Section.

1.2 SCOPE OF WORK

- A. This project includes the demolition of existing audio visual components damaged by water. Selective demolition of existing systems shall be required.
- B. The work under this Section includes providing of all material, labor, equipment and supplies and the performance of all operations to provide a complete working Integrated Audio Visual System as required by the Drawings and details and as specified herein. Where the Drawings, Specifications, Codes, Regulations, Laws, or the requirements of the local Authority conflict, provide the higher quality and higher quantity indicated or required and follow the most strict requirement. In general, the work includes, but is not limited to, the following:
 - a. Audio Control and Video system components
 - b. Cabling Removal.
 - c. Protection of new and existing work.
 - d. Record Drawings and Documentation.
 - e. Staging.
 - f. Operation and Maintenance Instructions and Manuals for the Section's work.
 - g. Fireproofing of Penetrations and Openings used by the Audio Visual Sub Contractor.
 - h. Access panels and doors.
 - i. Phasing of work and maintenance of service to existing and temporarily relocated items, Owner equipment or workstations, etc. as required to

meet the project schedule.

- j. Coordination with manufacturers, other trades and Owner.
- k. Audio Visual Equipment Removal.
- l. Ceiling/Wall Mounted Speaker Assemblies Removal.
- m. Cable and Plate Removal.
- n. Supervision and Approval.
- o. Operating and maintenance instructions and manuals.
- p. Coordination and delivery of Audio Visual systems to the project site.
- q. Shop drawings.
- r. Record (as-built) drawings.

1.3 RELATED WORK

- A. Principal classes of Work related to the Work of this Section are listed in the Specification Table of Contents, and are specified to be performed under the indicated Sections of the Specifications. Refer to the indicated Sections for description of the extent and nature of the indicated Work, and for coordination with related trades. This listing may not include all related Work items. It is the responsibility of the Contractor to coordinate and schedule the Work of this Section with that of all other trades.
- B. The following work is not included in this section and will be provided under other sections:

1.4 QUALIFICATIONS

- A. The installer (Firm and Employees) shall be experienced in the operations they are engaged to perform. Demonstrate at least five years of continuous recent experience on similar projects. The installer shall hold and provide recent, up-to-date licenses, certifications and training certificates in the area the project is located and for the equipment to be installed.
- B. The successful bidder shall be thoroughly familiar with the cabinet methods set forth in the latest release of the BICSI TDMM's (Building Industry Consulting Services International Telecommunications Distribution Methods Manuals) and unless otherwise specified, shall supervise the installation in accordance with the recommendations and practices outlined in the latest release of the BICSI Telecommunications Cabling Installation Manual.
- C. Provide names of contacts from the last five similar projects including the General Contractor, Owner's representative, Architect and Engineer. Indicate project locations, scope and current phone numbers that the contacts can be reached at.
- D. Qualified Audio Visual installation firms shall have demonstrable design and installation training with certifications of competence. Certified training shall be industry recognized and at least equal to:

1. Building Industry Consulting Service International, Inc. (BICSI), Registered Communications Distribution Designer (RCDD).
2. Approved Manufacturer's Certified Installer Program (i.e. Bose)
 - a. Each foreman and installer working on this project shall be trained and certified to the qualified level as specified by the manufacturer(s) for installation and maintenance of equipment being provided on this project. The training shall consist of at least a minimum of proper installation techniques of their specific equipment in order to have a complete operating system meeting or exceeding the requirements as specified herein. Each foreman and installer working on this project shall provide documentation from the manufacturer indicating that they have been adequately trained prior to the start of the project. Only foreman and installers who have been properly trained and documented by the manufacturer whose equipment is being provided on this project shall be allowed to install.
 - b. Maintain at the site, an updated copy of the Manufacturer Trained Installers list including a copy of their training documentation from the manufacturer. This documentation shall be made available to the Owner's representative upon request.
3. infoComm International Communications Industries Association, INC. (ICIA) Certified Technology Specialist (CTS)
4. infoComm International Communications Industries Association, INC. (ICIA) Certified Technology Specialist - Installation (CTS-I)
5. infoComm International Communications Industries Association, INC. (ICIA) Registered Installer

1.5 DEFINITIONS

- A. As used in this Section, the following items are understood to have the following meaning:
1. **C S C S S C**, unless otherwise qualified, shall mean the installer of the work specified under this Section.
 2. **F** shall mean purchase and deliver to the project site, complete with every necessary appurtenance.
 3. **I** shall mean unload at the delivery point at the site and perform all work necessary to establish secure mounting and proper operation at the proper location in the project.
 4. **P** shall mean "Furnish" and "Install".
 5. shall mean all labor, materials, equipment, apparatus, controls, accessories and all other items required for a proper and complete installation.

6. **C** shall mean hidden from sight in chases, furred-in spaces, shafts, hung ceilings, embedded in construction or in a crawl space. Areas to be concealed as part of tenant alterations to the building shall also be considered in this definition.
7. **E** shall mean not installed underground or concealed as defined above.
8. **F** **O** shall mean materials or equipment purchased under other sections of the general contract and installed by this section of the specifications by this Trade Contractor.
9. **O** **R** shall be the party responsible to make decisions regarding all contractual obligations in reference to the Scope of Work for the Owner.
10. **S** **C** shall indicate the date where the work has been formally accepted as evidenced by completed final punch list or where the work has reached the stage that the Owner obtains beneficial use and commences utilization of the installed systems for business or occupancy purposes. The GENERAL REQUIREMENTS, DIVISION 1, shall supercede this definition where specifically defined.

1.6 CODES, REFERENCES AND PERMITS

- A. Materials, installation of systems and equipment provided under this section shall be done in strict accordance with Massachusetts Department of Public Safety Codes, Massachusetts Department of Environmental Protection, Massachusetts State Building Code 780 CMR and any other Codes and Regulations having jurisdiction including but not limited to:
 1. All Applicable NFPA Standards
 2. Massachusetts Electrical Code (MEC)
 3. Occupational Safety and Health Administration (OSHA)
 4. State and Local Building Codes
 5. Underwriters' Laboratories, Inc (UL)
- B. Unless otherwise specified or indicated, materials, workmanship and equipment performance shall conform with the latest governing edition of the following standards, codes, specifications, requirements, and regulations, except when more rigid requirements are specified or are required by applicable codes but not limited to:
 1. American National Standards Institute (ANSI)
 2. American Society of Testing and Materials (ASTM)
 3. Institute of Electrical and Electronics Engineers (IEEE)

4. Insulated Cable Engineers Association (ICEA)
 5. National Electric Manufacturers Association (NEMA)
 6. TIA/EIA – Telecommunications Industry Alliance/Electronics Industry Alliance
 7. FCC – Federal Communications Commission
 8. NEC – National Electric Code
 9. NFPA 70 – National Fire Protection Association
 10. ANSI/TIA/EIA-568-B.1– Commercial Building Telecommunications Cabling
Part 1 – General Requirements
 11. ANSI/TIA/EIA – 568-B.2- Commercial Building Telecommunications Cabling
Part 2: Balanced Twisted Pair Cabling
 12. ANSI/TIA/EIA-568-B.3 – Commercial Building Telecommunications Cabling
 13. ANSI/TIA/EIA-569-A – Commercial Building Standard for Telecommunications
Pathways and Spaces
 14. ANSI/TIA/EIA-606 – The Administration Standards for the Telecommunications
Infrastructure of Commercial Building
 15. ANSI/TIA/EIA-607 – Commercial Building Grounding and Bonding
Requirements for Telecommunications
 16. FCC Part 15 (addresses electromagnetic radiation)
 17. FCC Part 68 (connection of premise equipment and wiring to the network)
 18. ANSI/ICEA – Insulated Cable Engineers Association
 19. SP – Standards Proposal (EIA/TIA)
 20. UL Compliance: The communication system supplied shall be listed by
Underwriter’s Laboratories under UL Standard 1459 (designation WYQQ on UL
Listing Card) for Telephone Appliance and Equipment. A copy of the UL listing
card for the proposed system shall be included with the Contractor's submittal.
- C. Give all notices, file all plans, obtain all permits and licenses, and obtain all necessary approvals from authorities having jurisdiction. Deliver all certificates of inspection to the authorities having jurisdiction. No work shall be covered before examination and approval by the Owner’s Representative, inspectors, and authorities having jurisdiction. Replace imperfect or condemned work to conform to requirements, satisfactory to Owner’s Representative, and without extra cost to the Owner. If work is covered before inspection and approval, this Contractor shall pay costs of uncovering and reinstalling the

covering, whether it meets contract requirements or not.

1.7 GENERAL REQUIREMENTS

A. Nameplates

Each major component of equipment shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the equipment.

1.8 COORDINATION

- A. Refer to Division 1, General Conditions, for coordination requirements applicable to this section, unless specifically noted otherwise in this section.
- B. Materials and apparatus shall be installed as fast as conditions of the building will permit and must be installed promptly when and as required.
- C. Confer with all other trades relative to location of all apparatus and equipment to be installed and select locations so as not to conflict with work of other Sections. Any conflicts shall be referred immediately to the Owner's Representative for decision to prevent delay in installation of work. All work and materials placed in violation of this clause shall be readjusted to the Owner's Representative's satisfaction at no expense to the Owner.
- D. Where work of this section will be installed in close proximity to work of other sections or where there is evidence that the work of this section may interfere with work of other sections, assist in working out space conditions to make satisfactory adjustment. Prepare and submit for approval 3/8" scale or larger working drawings and sections, clearly showing how the work is to be installed in relation to the work of other sections.
- E. Keep fully informed as to the shape, size and position of all openings required for all apparatus, conduit, cable, sleeves, etc., and give information in advance to allow construction of required openings. Furnish all sleeves, pockets, supports and incidentals, and coordinate with the General Contractor for the proper setting of same.
- F. All distribution systems which require pitch or slope such as condensate drains and water piping shall have the right of way over those which do not. Confer with other trades as to the location of pipes, ducts, lights and apparatus and install work to avoid interferences.
- G. Fire Protection, Plumbing, HVAC, Electrical and any other systems shall be shown and coordinated on these transparencies in the order listed by the respective Contractors.
- H. This Contractor shall, with the approval of the Owner's Representative and without extra charge, make reasonable modifications in his work as required by normal structural interferences, or by interference with work of other trades, or for proper execution of the work.

1.9 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

- A. It is the intention of the Specifications and Drawings to call for complete, finished work, tested and ready for continuous operation. Any apparatus, appliance, material or work

not shown on the Drawings, but mentioned in the Specifications or vice-versa, or any incidental accessories necessary to make the work complete in all respects and ready for operation, even if not particularly specified, shall be provided by this Contractor without additional expense to the Owner.

- B. The Drawings are generally diagrammatic. The locations of all items that are not definitely fixed by dimensions are approximate only. The exact locations must be determined at the project and shall have the approval of the Owner's Representative before being installed. This Contractor shall follow Drawings, including his shop drawings, in laying out work and shall check the Drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions. Where space conditions appear inadequate, notify the Owner's Representative before proceeding with the installation. This Contractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.
- C. Any requests for information (RFI) for resolving an apparent conflict or unclarity, or a request for additional detail, shall include a sketch or equivalent description of Contractor's proposed solution.
- D. Size of conduits, cable trays, raceways and methods of running them are shown, but it is not intended to show every offset and fitting, nor every structural difficulty that may be encountered. To carry out the true intent and purpose of the Drawings, all necessary parts to make complete approved working systems ready for use, shall be furnished without extra charge. All work shall be installed in an approved workmanlike manner.

1.10 INSPECTION OF SITE CONDITIONS

- A. Prior to submission of bid, visit the site and review the related construction documents to determine the conditions under which the Work has to be performed and send a report, in writing, to the Owner's Representative, noting any conditions which might adversely affect the Work of this Section of the Specifications.

1.11 SURVEY AND MEASUREMENTS

- A. Base all required measurements, horizontal and vertical, from referenced points established with the Owner's Representative. The Audio Visual Contractor shall be responsible for correctly laying out the Work required under this Section of the Specifications.
- B. In the event of discrepancy between actual measurements and those indicated, notify the Owner's Representative in writing and do not proceed with the related work until instructions have been issued.

1.12 PROTECTION OF WORK AND PROPERTY

- A. This Contractor shall be responsible for the care and protection of all work included under this Section until the completion and final acceptance of this Contract.
- B. Protect all equipment and materials from damage from all causes including, but not limited to, fire, vandalism and theft. All materials and equipment damaged or stolen shall

be repaired or replaced with equal material or equipment at no additional cost to the Owner.

- C. Protect all equipment, outlets and openings with temporary plugs, caps and covers. Protect work and materials of other trades from damage that might be caused by work or workmen under this Section and make good damage thus caused.
- D. Damaged materials are to be removed from the site; no site storage of damaged materials will be allowed.

1.13 SUPERVISION

- A. Supply the service of a competent Supervisor with a minimum of 5 years experience in Audio Visual construction supervision who shall be in charge of the Audio Visual work at the site.

1.14 SAFETY PRECAUTIONS

- A. Life safety and accident prevention shall be a primary consideration. Comply with all of the safety requirements of the Owner and OSHA throughout the entire construction period of the project.
- B. Furnish, place and maintain proper guards and any other necessary construction required to secure safety of life and/or property.

1.15 SCHEDULE

- A. Construct work in sequence under provisions of Division 1 and as coordinated with the Owner's Representative.

1.16 HOISTING, SCAFFOLDING AND PLANKING

- A. The work to be done under this Section of the Specifications shall include the furnishing, set-up and maintenance of all derricks, hoisting machinery, cranes, helicopters, scaffolds, staging and planking as required for the work.

1.17 HAZARDOUS MATERIALS

- A. Removed batteries shall be recycled by a facility approved by the Owner's representative. A uniform hazardous waste manifest shall be prepared for all disposals and returned with all applicable signoffs prior to application for final payment.
- B. Fiberoptic cable shall be separated from general waste.
- C. A uniform hazardous waste manifest shall be prepared for all disposals and returned with all applicable signoffs prior to application for final payment. All handling shall conform to EPA requirements. Provide breakout cost for this scope.
- D. Where it has been identified that asbestos-containing material exists within the scope limits, refer to the Asbestos Abatement specification section for requirements.

1.18 ACCESSIBILITY

- A. All work provided under this Section of the Specification shall be installed so that parts requiring periodic inspection, maintenance and repair are accessible. Work of this trade shall not infringe upon clearances required by equipment of other trades, especially code required clearances to electrical gear. Minor deviations from the drawings may be made to accomplish this, but changes of substantial magnitude shall not be made prior to written approval from the Owner's Representative.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 GENERAL

- A. Coordinate all work with all contract documents including but not limited to:
1. Architectural Floor Plans and Equipment Layouts.
 2. Electrical Contract Drawings.
 3. Telecommunication Drawings
 4. Mechanical Equipment.
 5. Somerville Audio Visual Project Manager
- B. Coordinate all work with all on-site Contractors including but not limited to:
1. Electrical Contractor
 2. General Contractor
 3. Equipment Installer.
 4. Somerville Audio Visual Project Manager
- C. Refer to electrical drawings for pathways including sleeves, conduits, cable tray, and poke-through's, to be utilized by this Contractor.
- D. Refer to telecommunications contract documents (drawings and specifications) fit-up, riser, ladder rack, elevations, and additional information.
- E. Cooperate and coordinate with work of other sections in executing work of this section.
- F. Perform work so that progress of entire project including work of other sections is not interfered with or delayed. Obtain detailed installation information from all manufacturers of equipment provided under other sections.
- G. Provide information as requested on items furnished under this section which shall be

installed under other sections.

H. Materials and Workmanship

1. Work shall be executed in workmanlike manner and shall be neat, plum, parallel to the building structure perpendicular to all electronics and associated cabling and neat in appearance when completed. All work shall adhere to the standards as set forth in this specification (See Section 1). Maintain maximum headroom at all times. Do not run work exposed unless shown exposed on drawings.
2. Material and equipment shall be new and installed according to manufacturer's recommended best practices so that completed installation shall operate safely and efficiently, and be neatly installed.

I. This Contractor owns the greater quantity and better quality where conflicts exist.

J. Continuity of Services: Do not interrupt existing services. Existing services shall remain operational at all times. If the existing services need to be disrupted for any reason the Contractor shall contact the Owner (representative to be announced at a later date) and schedule the aforementioned shutdown. The Contractor shall schedule the shutdown with the Owner 48 hours in advance.

K. The requirements of Part One and Part Two of the Specifications also apply to the execution of the work.

L. Verify the exact location prior to bid of all items that may be indicated and determine exact location of all electrical items that are not indicated on the Drawings.

M. Include the cost of all work including sub-letting of any work that may be required to complete the work indicated in order to avoid work stoppages and jurisdictional disputes. The work to be sublet shall conform with precedent agreements and decisions of record. Jurisdictional assignment shall be a responsibility under this Section's contractual obligation.

N. Do not install equipment and materials which have not been reviewed by the Architect. Equipment and materials which are installed without the Architect's review or without complying to comments issued with the review shall be removed from the project when so instructed by the Architect. No payment will be made for unapproved or removal if it is ordered removed. The Installer shall be responsible for any ancillary costs incurred because of its removal and the installation of the correct equipment and materials.

O. Obtain detailed information on installation requirements from the manufacturers of all equipment to be furnished, installed or provided. At the start of construction, check all Contract Documents including all Drawings and all Sections of the specifications for equipment requiring electrical connections and service and verify electrical characteristics of equipment prior to roughing.

P. Any and all material installed or work performed in violation of above requirements shall be re-adjusted and corrected by the Installer without charge.

Q. Refer to all Drawings associated with the project, prior to the installation or roughing-in

of the electrical outlets, conduit and equipment, to determine the exact location of all outlets.

- R. After installation, equipment shall be protected to prevent damage during the construction period. Openings in conduits and boxes shall be closed to prevent the entrance of foreign materials.
- S. Home runs indicated are not to be combined or reduced without written consent from the Architect.
- T. All connections to equipment shall be made as required, and in accordance with the approved submittal and setting drawings.
- U. Delivery, Storage and Handling:
 - 1. Deliver, store, protect and handle products in accordance with recommended practices listed in Manufacturer's Installation and Maintenance Manuals.
 - 2. Deliver equipment in individual shipping splits for ease of handling, mount on shipping skids and wrap for protection.
 - 3. Inspect and report concealed damage to carrier within specified time.
 - 4. Store in a clean, dry space. Maintain factory protection or cover with heavy canvas or plastic to keep out dirt, water, construction debris, and traffic. Heat enclosures to prevent condensation. Meet the requirements and recommendations of NFPA 70B and the Manufacturer. Location shall be protected to prevent moisture from entering enclosures and material.
 - 5. Handle in accordance with NEMA and the Manufacturer's recommendations and instructions to avoid damaging equipment, installed devices and finish.
 - 6. The equipment shall be kept upright at all times. When equipment has to be tilted for ease of passage through restricted areas during transportation, the Contractor shall be required to brace the equipment suitably to insure that the tilting does not impair the functional integrity of the equipment.
- V. Site Observation:
 - 1. Site observation visits will be performed randomly during the project by the Architect. Reports will be generated noting observations. Deficiencies noted on the site visit reports shall be corrected. All work shall comply with the Contract Documents, applicable Codes, regulations and local Authorities whether or not a particular deficiency has been noted in a site visit report.
 - 2. Be responsible to notify the Architect ten working days prior to closing in work behind walls, raised access floors, ceilings, etc., so that installed work can be observed prior to being concealed.
 - 3. Work concealed prior to observation and correction of deficiencies shall be made accessible for review at the discretion of the Architect. Bear all costs for

allowing worked to be reviewed.

4. Areas shall stay accessible until deficiencies are corrected and accepted. Notify the Architect when all deficiencies are corrected. Return reports with items indicated as corrected prior to re-observation by the Architect.

W. Project Open House:

1. If the Owner elects to have an open house at the end of the project, provide assistance to the Owner. Cooperate and provide manpower to operate and demonstrate systems during the open house as requested by the Owner.

X. Change Orders, Modifications, Revisions and Directives:

1. When change orders, modifications, revisions or Architect's Directives are issued or authorized, provide the required additional material, equipment, personnel and workers to prevent delays in the work, and to complete the work within the time limit of the Contract unless a specific time extension is requested with the change and accepted. Include costs for expediting deliveries where required.
2. Requests for additional compensation shall be submitted broken down and associated by item, tasks and Drawing or sketch number with material and labor costs, so quantities can be easily verified.
3. Requests shall be properly and adequately identified so the scope of work can be clearly determined. Indicate who originated change in work.
4. Submit on all credits broken down as requested for adds. Credits shall be separately identified and accounted for. Do not indicate as net changes with adds.
5. Unit costs for labor and material shall be equal for adds, deletes and credits.

Y. Loose materials shall not be stored on-site. A "gang box" is acceptable to be placed in a location agreeable to the Owner and the General Contractor. The Installer is responsible for all equipment and materials and for their delivery until the system is deemed complete and accepted by the Owner.

Z. Under no circumstances shall the Owner's or General Contractor's waste containers, compactor or dumpster be used for any kind of waste material.

AA. A trailer may be used for the storage of materials to be located on the Owner's property at a location designated by the Owner and the General Contractor. Such on-site storage shall be kept locked by the Installer. Security for the trailer and its contents shall be strictly the responsibility of the Installer.

BB. Protect existing in spaces where work is being performed to protect it from damage and from the accumulation of dirt.

CC. Any ceilings, walls, floors, furniture, equipment, furnishings, etc., damaged by the work

of this Section shall be replaced, or at the Owner's option, repaired with similar materials, workmanship and quality.

- DD. Work includes field survey of existing conditions, systems, equipment and tracing of existing circuits in order to determine scope of work.
- EE. Maintain the existing building in operation at all times during the entire construction period. If it is necessary to have a system shutdown, a written request for approval shall be submitted in advance stating the estimated shutdown time. Work shall be planned to minimize shutdown. Shutdowns shall be at the convenience of the Owner and, if necessary, on premium time.
- FF. Clean and touch up all equipment, materials and work sites at the completion of work in each area.
- GG. Certain portions of the work area may be occupied during construction. Determine which areas and schedule work accordingly and include necessary premium time.

3.2 GROUNDING

- A. Insulate all conductors in conduit from the conduit, back boxes, and from each other.
- B. Insulate all conduits and electrical boxes from equipment racks, sound system, and audio system ground. Ground all conduits ONLY to power system ground.
- C. Ground power strips in equipment racks shall be insulated from power system ground.
- D. The resistance of the ground system from the common ground point at the rack to the building ground point shall not exceed 0.1 ohm.
- E. Equipment racks and/or cabinets contained within the AV Room shall be bonded with #6 AWG.
- F. The Contractor shall ensure that ONLY the audio visual equipment shall be connected to the audio visual dedicated ground system.
- G. The Contractor shall ensure the Electrical Contractor has provided adequate power circuits for ALL Audio Visual equipment.

3.3 FIRESTOPPING

- A. All conduits, sleeves, and cable tray point of entry shall be properly firestopped, per local, state, and federal codes with reusable firestopping materials.

3.4 DOCUMENTATION

- A. Provide the Owner with:
 - 1. Hard copy documentation of "As-Built" Audio Visual Cabling Systems Administration Reports.

2. Hard copy documentation of test results for every cable segment and link in 3-ring binder. Documents shall include measured values as well as whether or not the test passed.
3. "As-Built" drawings indicating location of all equipment including but not limited to projectors, screens, wall plates, interfaces, racks and cable routing. Indicate labeling for each piece of equipment.
4. Refer to Part One for additional documentation.

3.5 SLEEVING AND PENETRATIONS

- A. Raceways and openings shall be laid out in advance to permit their provision in the work. Sleeves and raceway shall be set before masonry is constructed. Any extra work required where sleeves or raceways have been omitted or improperly placed shall be performed at the expense of the Installer which made the error or omission, including coring.
- B. Provide sleeves for raceways and cable trays penetrating all types of floors, fire walls, or smoke partitions. Install approved material to provide for fire stop.
- C. Provide waterproof seals inside and outside raceway when penetrating from the exterior or underground.
- D. Provide acoustic sealer in sleeves between occupied spaces.
- E. Sleeves installed in floors shall extend two inches (50mm) above the finished floor unless specifically indicated otherwise.
- F. Provide sleeves in masonry construction and in full height (slab to slab) walls.
- G. Provide sleeves for all openings.
- H. Penetrations through fire rated construction shall comply with a listed fire rated assembly as detailed in the UL Fire Resistance. Pipe sleeves through floors, exterior walls and fire-rated construction shall be galvanized Schedule 40 steel pipe. Pipe sleeves through non-fire-rated partitions shall be 26-gauge galvanized steel.
- I. Through Penetration Assemblies: The combination of materials shall have the same fire rating, in hours, as the wall or floor, as tested in accordance with the code referenced editions of ANSI/UL 1479 (ASTM E-814). The combination of materials shall be classified by UL for the fire rating required and shall be listed as a numbered system in the UL Fire Resistance Directory.
 1. Caulking of conduit and cable tray penetrations through floor slabs, smoke barriers and fire rated partitions shall be performed under the Division 7 Section for Firestops and Smoke seals.
- J. Provide adjustable escutcheons on exposed conduit that passes through finished floors, walls, and ceilings. Escutcheons shall be chromium-plated cast brass, sized to cover sleeve opening and to accommodate pipe and insulation.

3.6 SEISMIC SUPPORTS, SUPPLEMENTARY STEEL AND CHANNELS

- A. Provide all supports, supplementary steel and channels required for the proper Seismic installation, mounting and support of all work installed under this Section.
- B. All supports, supplementary steel and channels shall be furnished, installed and secured with all fittings, support rods and appurtenances required for a complete support or mounting system.
- C. Supplementary steel and channels shall be firmly connected to the building construction in a manner approved by the Architect prior to the installation of same. Submit to the Architect, via the General Contractor, the locations proposed for using supplementary steel and channels for the support of equipment, fixtures and raceways. The submittal shall indicate the mounting methods, size and details of the supports, channels and steel; it shall indicate also that weight which the supports, channels and supplementary steel is to carry.
- D. The type and size of the supporting channels and supplementary steel shall be of sufficient strength and size for seismic restraint and to allow only a minimum deflection in conformance with the channel and supplementary steel manufacturer's requirements for loading.
- E. All supplementary steel and channels shall be installed in a neat and workmanlike manner parallel to the walls, floor and ceiling construction. All turns shall be made with 90 degrees and 45 degrees fittings, as required to suit the construction and installation conditions.
- F. All supplementary steel, channels, supports, and fittings, shall be Underwriters' Laboratories, Incorporated, approved, be galvanized steel and be manufactured by Steel City, Unistrut, Power-Strut, T. J. Cope or approved equal.
- G. Provide supports to meet the required Seismic rating as indicated under "Part One" of this Specification.
- H. Provide beam clamps with set screws (C-clamp type).
- I. Work under this Section shall be held in place by Seismic rated methods.
- J. Supporting from the roof decking will not be acceptable.
- K. Provide expansion anchors on masonry units or brick work. Power actuated supports will not be accepted.
- L. Provide stainless steel or corrosion resistant supports in corrosive areas on wet or damp areas.
- M. Support work from the building structure, independent of suspended ceilings, roof deck or other trades work. Where ductwork, pipes, pipe racks, type of building construction materials or structural framing members provide obstruction or difficult support means,

hanger rods shall be used in association with horizontal sections of steel support channels, in an approved manner.

- N. All work shall be installed in a rigid and satisfactory manner and shall be supported by bar hangers in frame construction or shall be fastened directly with wood screws on wood, bolts with expansion shields on concrete or brick toggle bolts on hollow masonry units, and machine screws or welded threaded studs on metal. Threaded studs of the proper type and holding capacity driven in by a power charge and provided with lock washers and nuts are acceptable for mounting of equipment on solid concrete walls or slabs.
- O. Obtain written permission from the General Contractor allowing use of power activated charges. Use only properly trained and licensed operators.
- P. Do not use power charge driven supports for any work that is to be hung from a horizontal surface without written permission from the Architect.
- Q. Preset inserts of the proper type and holding capacity shall be used in overhead slab construction wherever possible.
- R. Provide lateral supports for work to prevent excessive movement during a seismic event using rods, braces or galvanized or stainless steel cables.
- S. Pendants, supports or hanging rods longer than 12 inches (300mm) shall be laterally braced.
- T. Where installed in damp, wet and areas requiring wash down, all surface mounted panels, boxes, junction boxes, conduit, etc., shall be supported by spacers to provide a clearance between wall and equipment.

3.7 SYSTEM ACCEPTANCE

- A. Obtain written acceptance from the Owner or their authorized representative for each audio-visual system installed on this project. Failure to obtain written acceptance shall result in delay of start of warranty period. No claim for additional costs will be allowed due to not receiving written acceptance. Warranty period will start upon receipt of written acceptance.

3.8 ACCEPTANCE DEMONSTRATIONS

- A. Systems installed under this section shall be demonstrated to the Owner and Architect. Demonstrations are in addition to necessary testing and training sessions. Notify all parties at least 7 days prior to the scheduled demonstration. Schedule demonstrations in cooperation with and at times convenient to all parties and so as to not disturb ongoing activities.
- B. Systems shall be tested prior to the demonstrations and each system shall be fully operational and tested prior to arranging the Acceptance Demonstration. Final payments will be withheld until a satisfactory demonstration is provided for all systems indicated or requested.

- C. If the demonstration is not totally complete, performing all functions, features and connections or interfaces with other systems, or if there is a failure during the demonstration, additional demonstrations shall be arranged. Provide and pay for all costs, labor and expenses incurred for all attendees for each additional demonstration required for acceptance and demonstration of complete system operation.
- D. Demonstrations shall be scheduled in ample time to complete all activities prior to final acceptance and Owner occupancy. Demonstrations shall take place at least 30 days prior to the scheduled project completion date and 30 days prior to Owner's use and occupancy.
- E. As a minimum, provide demonstrations for systems indicated under "Work Included" under Part One of the Specifications. Provide demonstrations of additional systems as requested by the Owner or Architect.

3.9 PROJECT OWNER COORDINATION

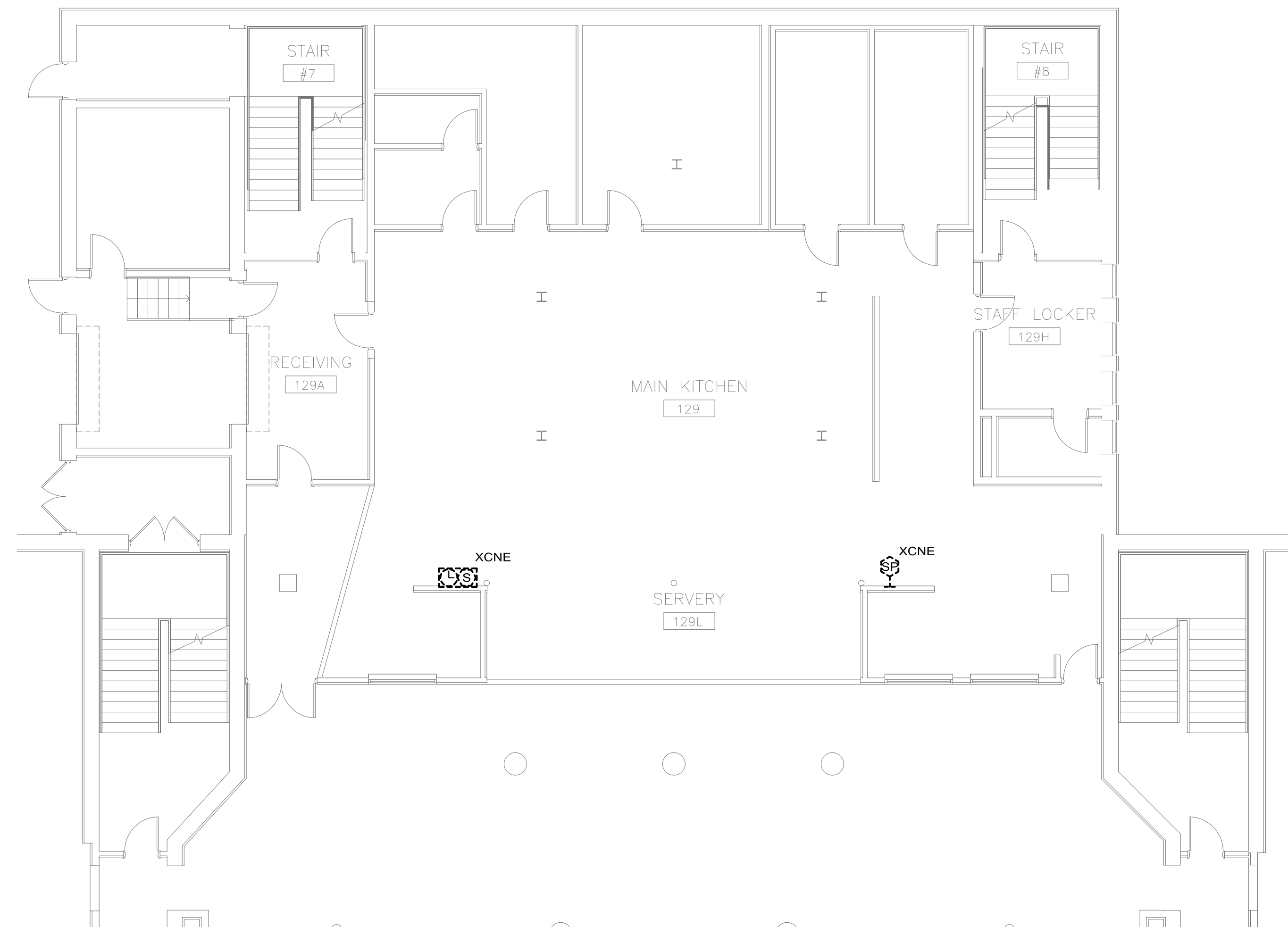
- A. Prior to Substantial Completion of the project and in ample time to address and resolve any coordination issues, request and arrange meetings between the Owner, Owner's Vendors and Consultants, Architect, and General Contractor to discuss the Scope of Work for each system being provided and the interface required for a fully functional and operational system upon project completion. Initial meetings shall be scheduled three months prior to the scheduled Substantial Completion date or as soon as Submittals are submitted and reviewed for projects with shorter schedules.
- B. At these meetings the required interface with the Owner shall be reviewed, requests for information required to complete programming or for coordination shall be presented and system operation and philosophy shall be discussed.
- C. Additional meetings shall be held as requested by any party so that all issues are resolved and with the goal and intent being that all systems are fully operational and functional upon project Substantial Completion and that the responsibility for all components required is clearly established.

3.10 CLEANING UP

- A. Upon completion of all work and testing, thoroughly inspect all exposed portions of installation and completely remove all exposed labels, markings, and foreign material.
- B. The interior of all equipment and cabinets shall be left clean; exposed surfaces shall be cleaned and plated surfaces polished.
- C. Repair damage to finish surfaces resulting from work under this section.
- D. Remove material and equipment from areas of work and storage areas.
- E. All equipment shall be clean from dirt, dust, and fingerprints prior to final acceptance.

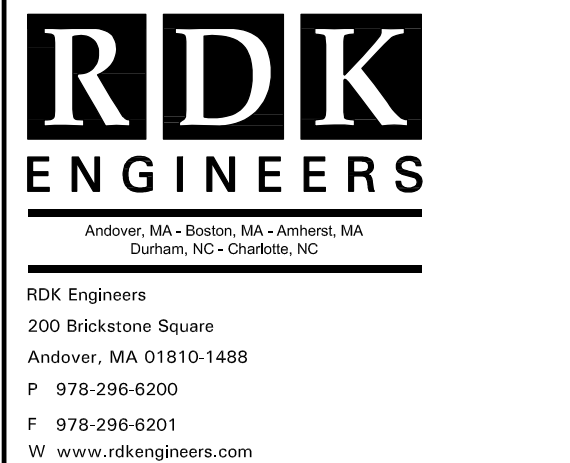
- F. Touch up all damaged pre-finished equipment using materials and methods recommended by the Manufacturer.

END OF SECTION



1 AUDIO VISUAL CAFETERIA/KITCHEN DEMOLITION FLOOR PLAN
AVD201 1/8" = 1'-0"

1. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE FULL EXTENT OF THE SCOPE OF DEMOLITION. DISCONNECT AND MAKE SAFE ALL AUDIO VISUAL CABLING IDENTIFIED FOR REMOVAL FROM OUTLET COMPLETELY BACK TO SOURCE. THE AUDIO VISUAL SCOPE MAY EXTEND BEYOND THE AREA DEFINED BY THE ARCHITECTURAL DEMOLITION LIMITS TO FULLY COMPLY WITH VARIOUS REQUIREMENTS DEFINED BY THESE NOTES.
2. THE AUDIO VISUAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE AUDIO VISUAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE. THE AUDIO VISUAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
3. THE AUDIO VISUAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF THE WORK. DAMAGE SHALL INCLUDE BUT NOT BE LIMITED TO DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR TO BE SALVAGED.
4. THE AUDIO VISUAL CONTRACTOR SHALL COORDINATE ALL DEMO WITH TELLUM DEPT PRIOR TO DEMO. COORDINATE BEFORE ELECTRICAL DEMO. THE SCOPE, THE AUDIO VISUAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING HORIZONTAL CABLING WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DISCONNECTION.
5. THE AUDIO VISUAL CONTRACTOR SHALL IDENTIFY ALL HORIZONTAL CABLING SYSTEM COMPONENTS WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
6. THE AUDIO VISUAL CONTRACTOR SHALL REMOVE ALL CABLING TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. EXISTING CABLING SHALL BE REMOVED BACK TO EACH RESPECTIVE DATA CLOSET.
7. ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF.

[illegible]

ISSUED FOR BID



81 Highland Avenue,
Somerville, MA 02143

PROJECT NUMBER 19431.01

DESIGNED BY: JD

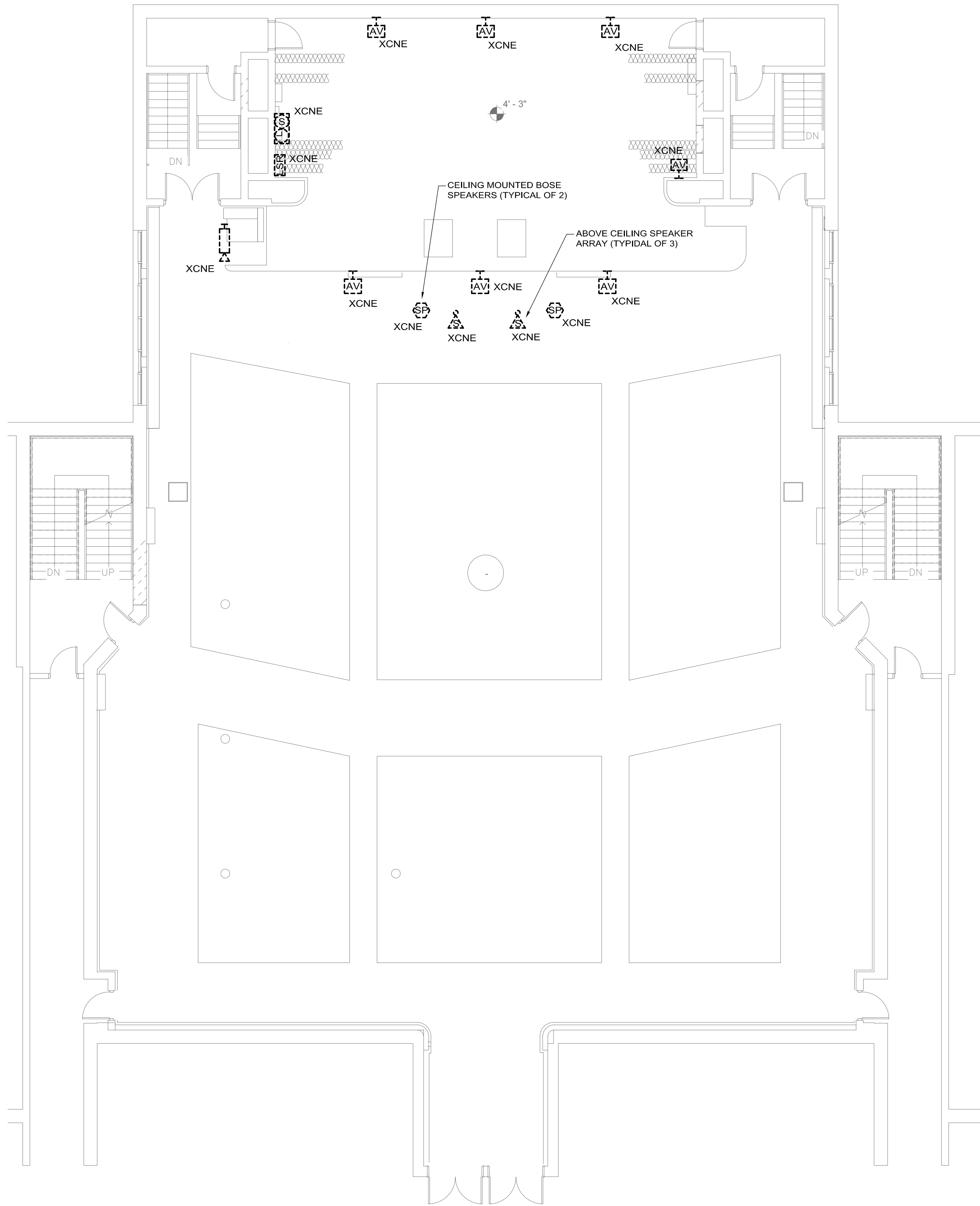
DRAWN BY: JD

CHECKED BY: BP

DATE: January 23, 2014

SCALE: 1/8" = 1' - 0"

SHEET NUMBER:
AVD201



1 AUDIO VISUAL AUDITORIUM DEMOLITION FLOOR PLAN
AVD202 1/8" = 1'-0"

DEMOLITION NOTES

1. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE FULL EXTENT OF THE SCOPE OF DEMOLITION. DISCONNECT AND MAKE SAFE ALL AUDIO VISUAL CABLING IDENTIFIED FOR REMOVAL FROM OUTLET COMPLETELY BACK TO SOURCE. THE AUDIO VISUAL SCOPE MAY EXTEND BEYOND THE AREA DEFINED BY THE ARCHITECTURAL DEMOLITION LIMITS TO FULLY COMPLY WITH VARIOUS REQUIREMENTS DEFINED BY THESE NOTES.
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3. THE AUDIO VISUAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF THE WORK. DAMAGE SHALL INCLUDE BUT NOT BE LIMITED TO DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR TO BE SALVAGED.
4. THE AUDIO VISUAL CONTRACTOR SHALL COORDINATE ALL DEMO WITH TELECOM DEPT PRIOR TO DEMO. COORDINATE BETWEEN ELECTRICAL DEMO AND THIS SCOPE. THE AUDIO VISUAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING HORIZONTAL CABLING WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DISCONNECTION.
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7. ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF.

REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

AUDIO VISUAL
AUDITORIUM
DEMO
FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: JD

DRAWN BY: JD

CHECKED BY: BP

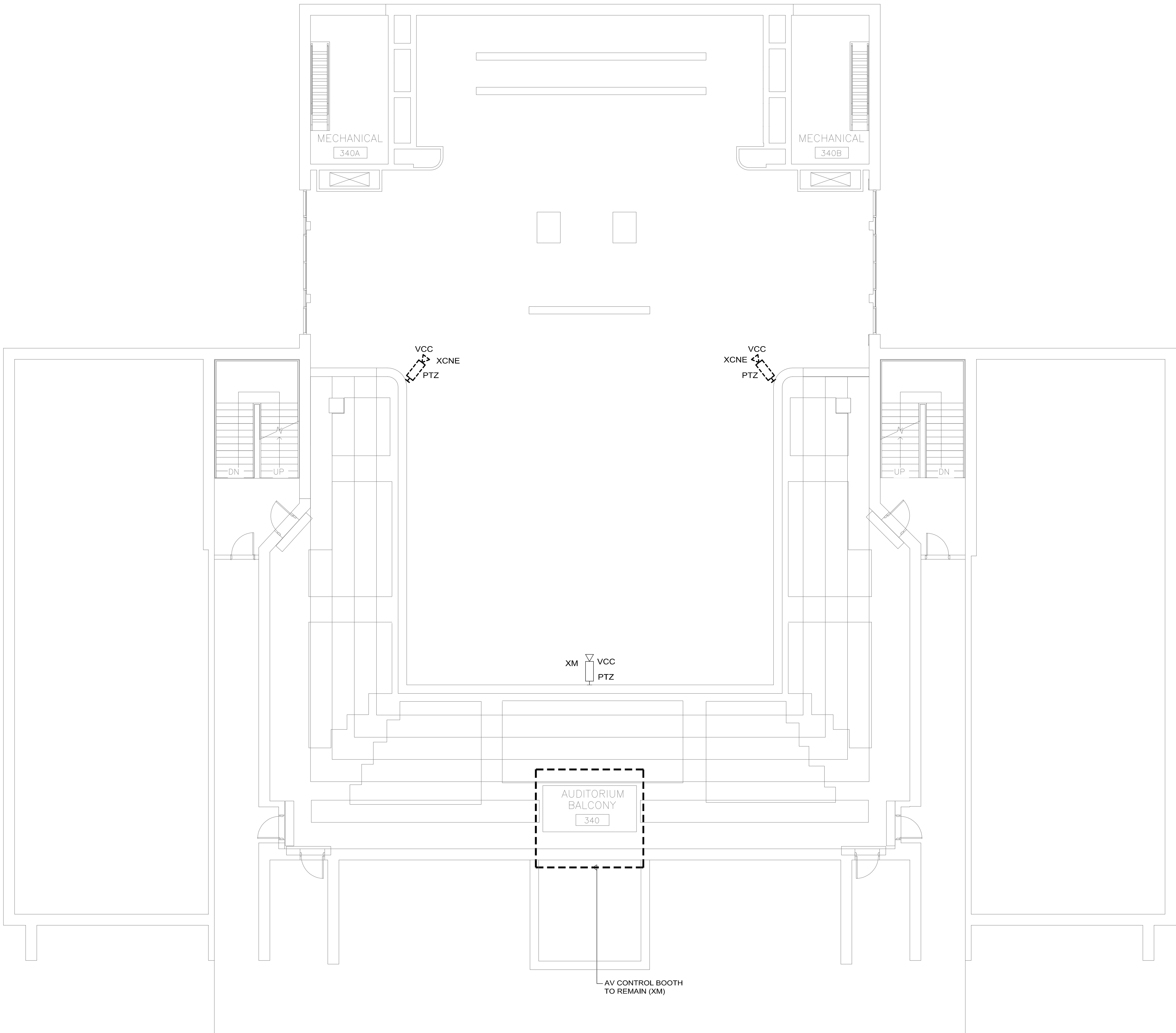
DATE: January 23, 2014

SCALE: 1/8" = 1'-0"

SHEET NUMBER:

AVD202

SHEET OF



1 AUDIO VISUAL AUDITORIUM BALCONY DEMOLITION FLOOR PLAN
AVD203 1/8" = 1'-0"

DEMOLITION NOTES

1. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE FULL EXTENT OF THE SCOPE OF DEMOLITION. DISCONNECT AND MAKE SAFE ALL AUDIO VISUAL CABLING IDENTIFIED FOR REMOVAL FROM OUTLET COMPLETELY BACK TO SOURCE. THE AUDIO VISUAL SCOPE MAY EXTEND BEYOND THE AREA DEFINED BY THE ARCHITECTURAL DEMOLITION LIMITS TO FULLY COMPLY WITH VARIOUS REQUIREMENTS DEFINED BY THESE NOTES.
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7. ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF.



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F 978-298-6201
W www.rdkengineers.com

REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville High School Auditorium, Kitchen and Cafeteria

81 Highland Avenue, Somerville, MA 02143

AUDIO VISUAL AUDITORIUM BALCONY DEMO FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: JD

DRAWN BY: JD

CHECKED BY: BP

DATE: January 23, 2014

SCALE: 1/8" = 1'-0"

SHEET NUMBER:

AVD203

SHEET OF



1. REFER TO DRAWING ED000 FOR LEGEND, SYMBOLS AND GENERAL NOTES.

3. THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.

5. THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED. BRANCH CIRCUITS SERVING EQUIPMENT IN AREAS OUTSIDE OF DEMOLITION SCOPE SHALL BE TEMPORARILY REFEED FROM EXISTING PANELBOARD INDICATED TO REMAIN WITHIN DEMOLITION SCOPE OF WORK OR FROM CLOSEST PANEL LOCATED OUTSIDE OF AREA. FIELD VERIFICATION BY CONTRACTOR IS REQUIRED.

7. THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE RETAINED FOR REUSE.

9. ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.

11. ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE SYSTEMS INCLUDING BUT NOT LIMITED TO TELEPHONE, DATA, SECURITY, PAGING, CCTV, ETC. SHALL BE INCLUDED IN THIS CONTRACT.

13. ALL BALLAST IN LIGHTING FIXTURES TO BE DISPOSED SHALL BE VERIFIED TO BE PCB FREE. ALL BALLAST MANUFACTURED PRIOR TO 1979 AND NOT LABELED AS PCB FREE SHALL BE CONSIDERED TO CONTAIN PCBs. PROVIDE WRITTEN VERIFICATION TO THE OWNER'S REPRESENTATIVE THAT CONFIRMS PCB FREE WASTE. WHERE PCB FREE WASTE CANNOT BE VERIFIED, BALLAST SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE. WITH PCB COMPONENTS ELIMINATED BY A HIGH TEMPERATURE INCINERATOR. A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PREPARED FOR ALL DISPOSALS AND RETURNED WITH ALL APPLICABLE SIGN OFFS PRIOR TO APPLICATION FOR FINAL PAYMENT. ALL HANDLING SHALL CONFORM TO EPA REQUIREMENTS. PROVIDE BREAKOUT COST FOR THIS SCOPE.

14. ALL BRANCH CIRCUIT WIRING/DEVICES FEEDING KITCHEN EQUIPMENT SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE. ALL CONDUIT RUN IN FLOOR SLAB SHALL BE CUT BACK FLUSH WITH THE FINISHED FLOOR, FILLED WITH CONCRETE AND ABANDONED IN PLACE. SEE KITCHEN EQUIPMENT SCHEDULE ON DRAWING ED104 FOR ADDITIONAL INFORMATION.



2 ELECTRICAL POWER AND FIRE ALARM CAFETERIA/KITCHEN DEMOLITION FLOOR PLAN

[illegible]

ISSUED FOR BID



81 Highland Avenue,
Somerville, MA 02143

PROJECT NUMBER 19431.01

DESIGNED BY: MVM

DESIGNED BY: MVM

DRAWN BY: MVM

DRAWN BY: MVM

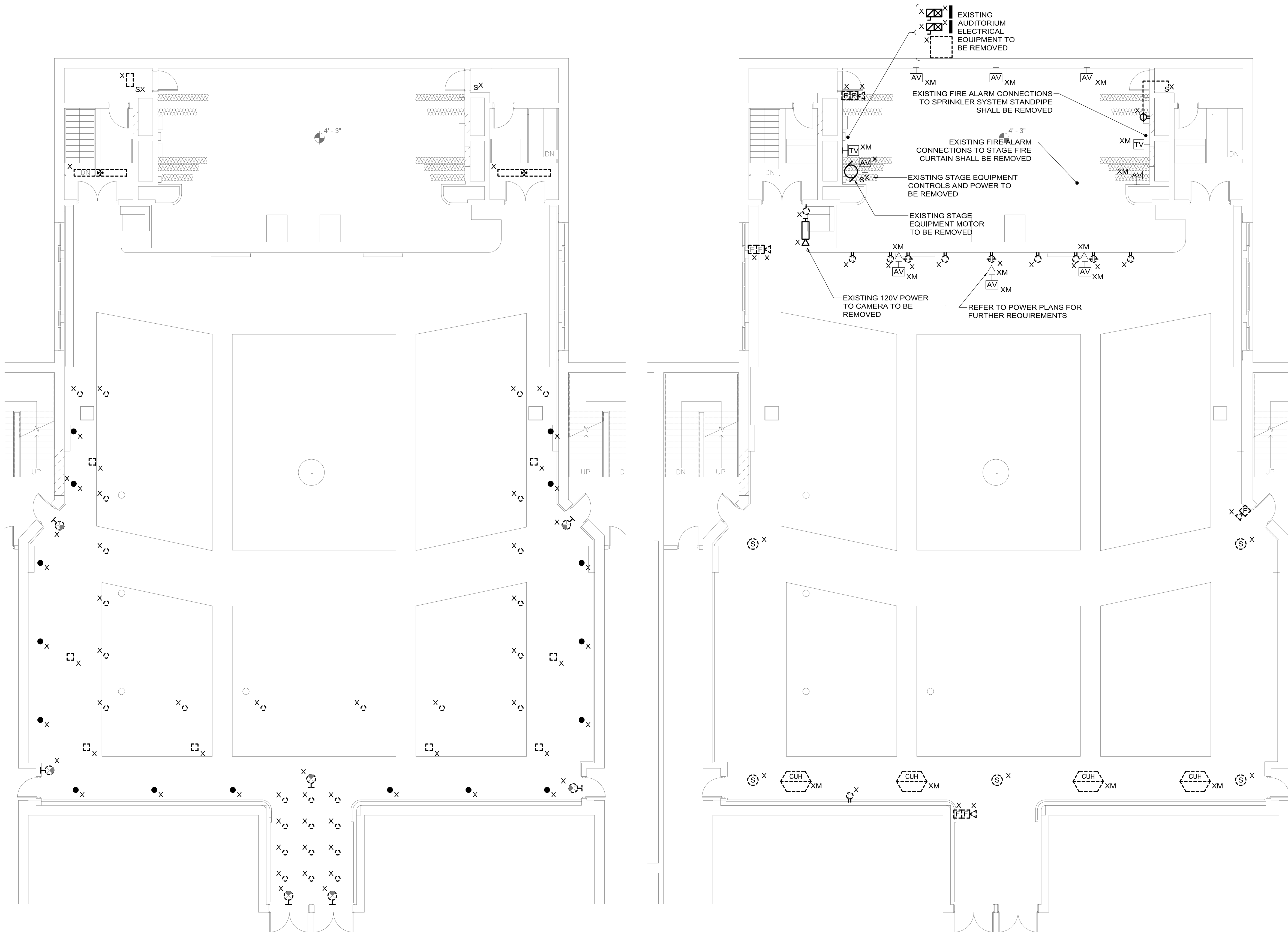
CHECKED BY: GM

DATE: January 23, 2014

SCALE: 1/8" = 1' - 0"

SHEET NUMBER:

ED101



1 ELECTRICAL LIGHTING AUDITORIUM DEMOLITION FLOOR PLAN
ED102 1/8" = 1'-0"

2 ELECTRICAL POWER AND FIRE ALARM AUDITORIUM DEMOLITION FLOOR PLAN
ED102 1/8" = 1'-0"

DEMOLITION NOTES:

1. REFER TO DRAWING ED000 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE FULL EXTENT OF THE SCOPE OF DEMOLITION. DISCONNECT AND MAKE SAFE ALL ELECTRICAL EQUIPMENT IDENTIFIED FOR REMOVAL ON THE HVAC, PLUMBING AND FIRE PROTECTION PLANS. THE ELECTRICAL SCOPE MAY EXTEND BEYOND THE AREA DEFINED BY THE ARCHITECTURAL DEMOLITION LIMITS TO FULLY COMPLY WITH VARIOUS REQUIREMENTS DEFINED BY THESE NOTES.
3. THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
4. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF THE WORK. DAMAGE SHALL INCLUDE BUT NOT BE LIMITED TO DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR TO BE SALVAGED.
5. THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
6. THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
7. THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE RETAINED FOR REUSE.
8. THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.
9. ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
10. THE EXISTING FIRE ALARM SYSTEM SHALL REMAIN FULLY FUNCTIONAL DURING THE ENTIRE DEMOLITION AND CONSTRUCTION PERIOD. REUSE OF EXISTING FIRE ALARM SYSTEM RACEWAYS SHALL NOT BE ALLOWED. ALL REQUIRED SYSTEM SHUTDOWNS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE AND THE AUTHORITY HAVING JURISDICTION. DEMOLITION OF THE EXISTING SYSTEM SHALL NOT COMMENCE UNTIL THE NEW SYSTEM HAS BEEN COMPLETELY INSTALLED, TESTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
11. ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE SYSTEMS INCLUDING BUT NOT LIMITED TO TELEPHONE, DATA, SECURITY, PAGING, CCTV, ETC. SHALL BE INCLUDED IN THIS CONTRACT.
12. REMOVED FLUORESCENT AND HID LAMPS AND BATTERIES SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE. A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PREPARED FOR ALL DISPOSALS AND RETURNED WITH ALL APPLICABLE SIGN OFF'S PRIOR TO APPLICATION FOR FINAL PAYMENT.
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REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

ELECTRICAL
AUDITORIUM
DEMO
FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: MVM

DRAWN BY: MVM

CHECKED BY: GM

DATE: January 23, 2014

SCALE: 1/8" = 1'-0"

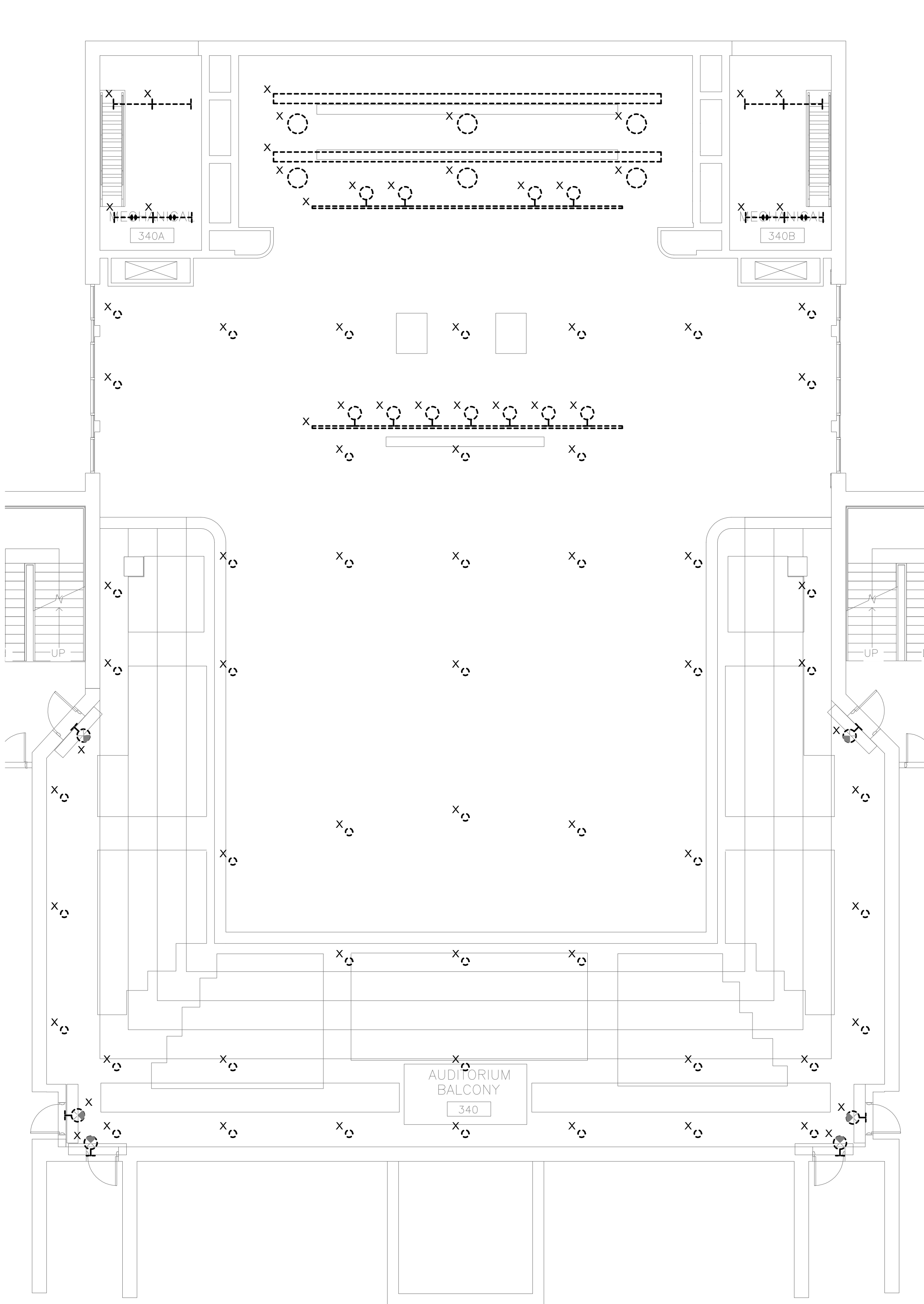
SHEET NUMBER:

ED102

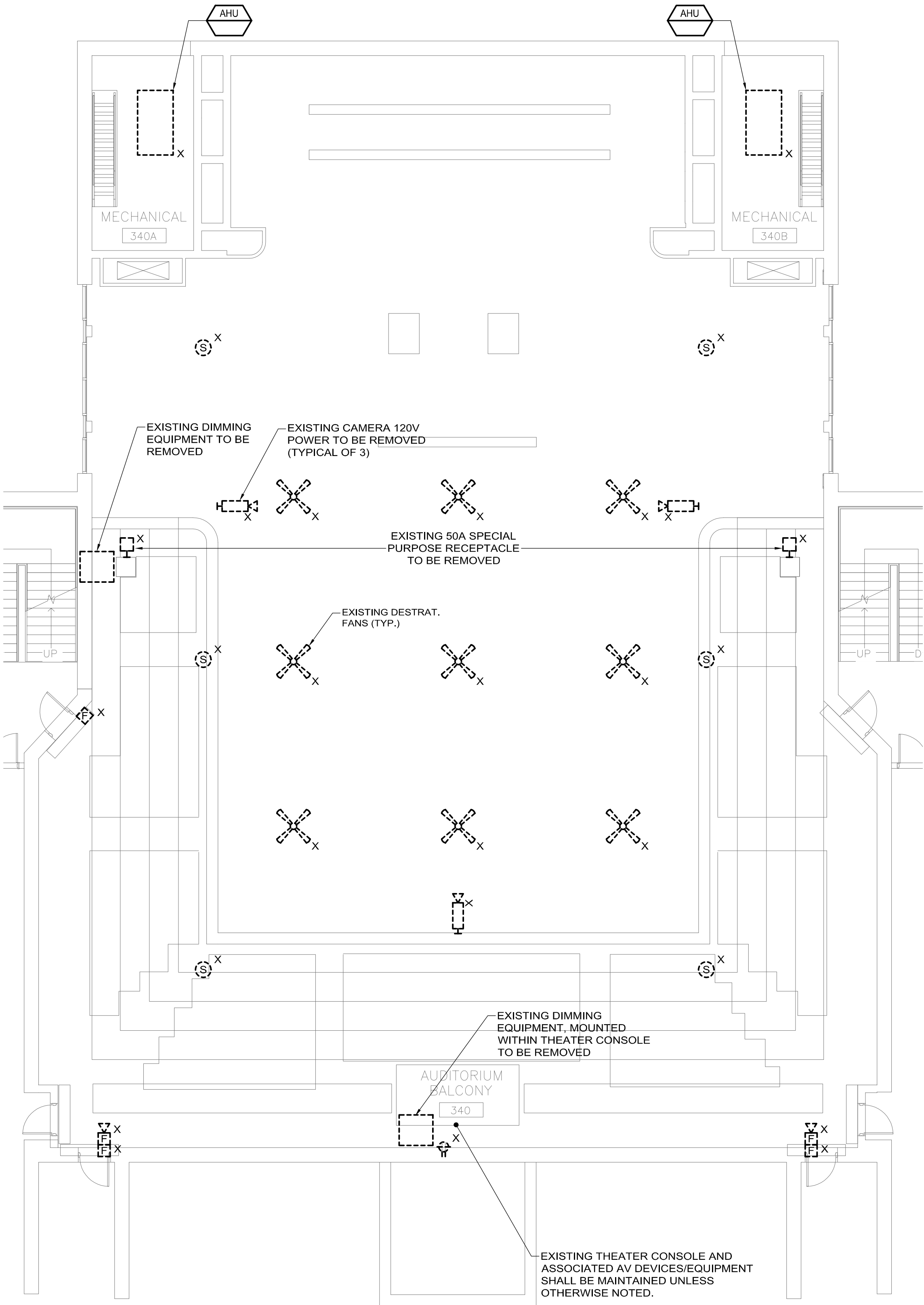
SHEET OF

C:\2010\2020\20201 - Somerville High School Auditorium\2020 Drawing\Consulting Packages\1504 Electrical\ED103 ELECTRICAL AUDITORIUM BALCONY DEMO FLOOR PLAN.dwg [Work] January 23, 2014 - 2:47pm dfrank

REVIEW BY: CIVIL ARCH: STU: PLUM: FIRE: MECH: ELEC:



1 ELECTRICAL LIGHTING AUDITORIUM BALCONY DEMOLITION FLOOR PLAN
ED103 1/8" = 1'-0"

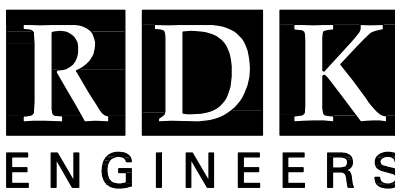


2 ELECTRICAL POWER AND FIRE ALARM AUDITORIUM BALCONY DEMOLITION FLOOR PLAN
ED103 1/8" = 1'-0"

DEMOLITION NOTES:

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REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

ELECTRICAL AUDITORIUM BALCONY DEMO FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: MVM

DRAWN BY: MVM

CHECKED BY: GM

DATE: January 23, 2014

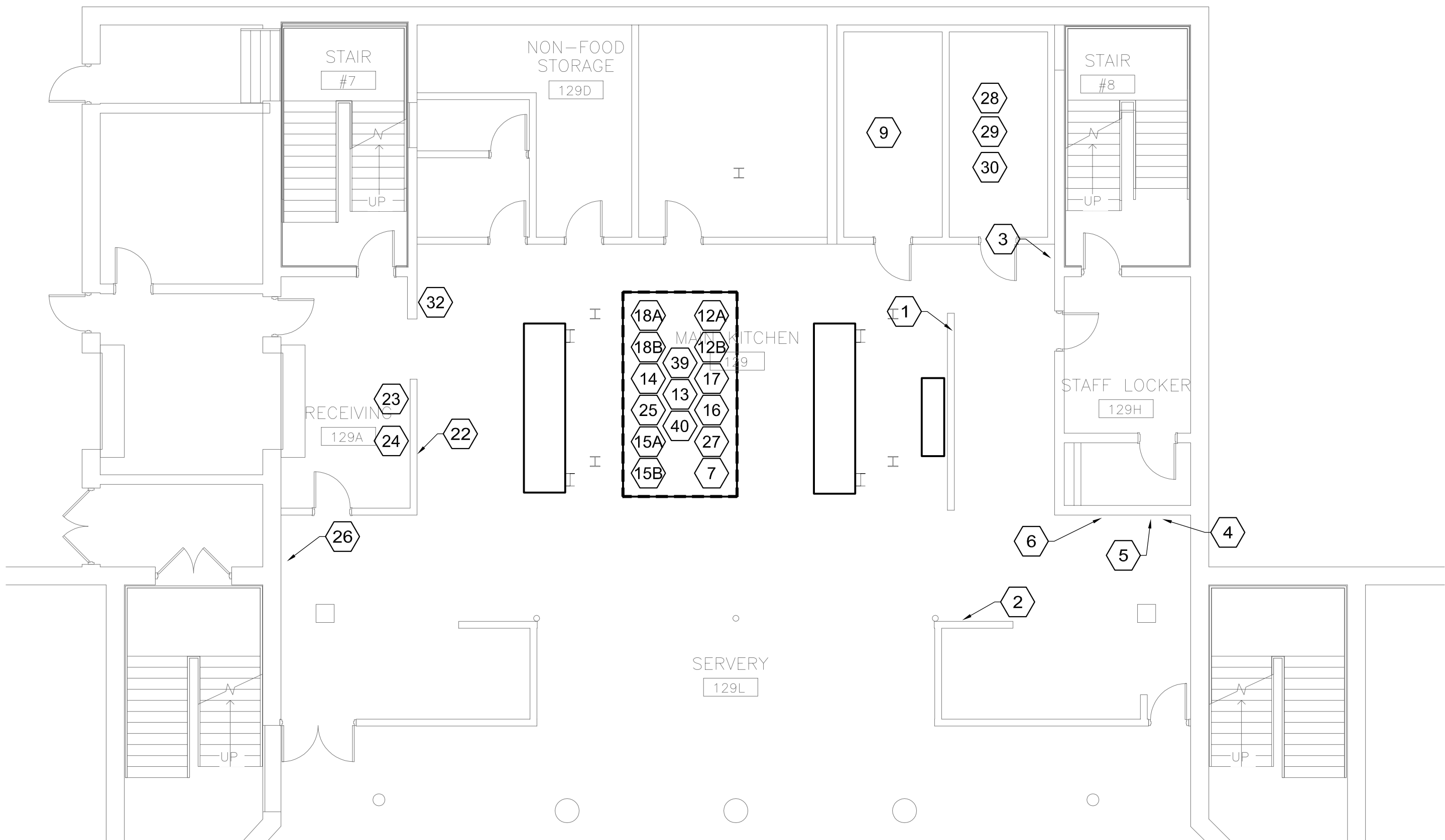
SCALE: 1/8" = 1'-0"

SHEET NUMBER:

ED103

SHEET OF

EXISTING KITCHEN EQUIPMENT SCHEDULE													
EQUIP TAG	DESCRIPTION	MANUFACTURER	LOAD			POWER SOURCE		BRANCH CIRCUIT	CONNECTION			REMARKS	
			HP	AMP	KVA	VOLT	PH		WIRE	FLEX	JB		REC
1	REFRIGERATOR	TRAULSEN		11.27		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
2	REFRIGERATOR	VMCO				120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
3	FREEZER	CROSLEY				120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
4	DISPOSER	SALVAJOR		6.6		208	3	4	(3)#12 & (1)#12G IN 3/4"C	X			X
5	TRAY WASHER	HOBART		24.9		208	3	3	(3)#10 & (1)#10G IN 3/4"C	X			X
6	HOT WATER BOOSTER	HATCO		33.3	12.0	208	3	3	(3)#8 & (1)#10G IN 3/4"C	X			X
7	OVEN (RECEPT)	CARTER HOFFMAN		26.6	6.0	208	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
8	MEAT SLICER	BIZERBA		2.9		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
9	REFRIGERATOR	TRAULSEN			7.8	208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
10	MIXER	HOBART	1/3	8.2		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
11	CAN OPENER	EDLUND		1.2		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
12A	CONVECTION OVEN	BLOGETT		10	1.2	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
12B	CONVECTION OVEN	BLOGETT		10	1.2	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
13	COOKER	MARKET FORGE		6		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
14	TILTING SKILLET	MARKET FORGE		0.4		120		3	(2)#12 & (1)#12G IN 3/4"C			X	
15A	CONVECTION OVEN	BLOGETT		10	1.2	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
15B	CONVECTION OVEN	BLOGETT		10	1.2	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
16	COOKER	MARKET FORGE		2		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
17	STEAM COOKER	MARKET FORGE		6		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
18A	CONVECTION OVEN	BLOGETT		10	1.2	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
18B	CONVECTION OVEN	BLOGETT		10	1.2	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
19	CAN OPENER	EDLUND		1.2		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
20	JUICER	DEAN			5.9	120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
21	WRAPPER	BESELER				120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
22	DISPOSER	HOBART		16.6		208	3	3	(2)#12 & (1)#12G IN 3/4"C	X			X
23	REFRIGERATOR	TRAULSEN		11.4		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
24	REFRIGERATOR	TRAULSEN		11.4		120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
25	GAS STOVE CONTROL					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
26	TOASTER	MERCO SAVORY		15.4		208	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
27	COOKER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
28	COOLER DOOR HEATER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
29	LIGHT/FREEZER DOOR HTR					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
30	COOLER FANS					208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
31	COOLER EVAP					208	3	4	(3)#10 & (1)#10G IN 3/4"C	X			X
32	ANSUL SYSTEM					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
33	CUTTER/MIXER					208	3	4	(3)#12 & (1)#12G IN 3/4"C	X			X
34	CUTTER/MIXER					208	3	4	(3)#8 & (1)#10G IN 3/4"C	X			X
35	VENDING MACHINE					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
36	FREEZER CONDENSER					208	3	4	(3)#8 & (1)#8G IN 3/4"C	X			X
37	HOOD LIGHTS					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
38	CHILLER					208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
39	STEAM KETTLE					208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
40	STEAM KETTLE					208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
41	COOL TABLE CORNER UNIT					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
42	OASIS DISPLAY CASE					208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
43	COOL WELL MAIN SERV. LINE					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
44	TEACHER'S SERVING TABLE					208	1	3	(2)#10 & (1)#10G IN 3/4"C	X			X
45	SANDWICH WARMER					208	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
46	WARMING CABINET					208	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
47	HOT FOOD COUNTER					208	3	4	(3)#12 & (1)#12G IN 3/4"C	X			X
48	JUICE DISPENSER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
49	HOT FOOD COUNTER					208	1	3	(2)#12 & (1)#12G IN 3/4"C	X			X
50	HOT FOOD COUNTER					208	1	3	(2)#10 & (1)#10G IN 3/4"C	X			X
51	WARMING CABINET					208	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
52	JUICE DISPENSER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
53	COLD FOOD COUNTER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
54	HOT FOOD COUNTER					208	1	3	(2)#10 & (1)#10G IN 3/4"C			X	
55	SHRINK WRAP DROP					120	1	3	(2)#10 & (1)#10G IN 3/4"C	X			X
56	3 TIER WARMER					208	3	4	(3)#12 & (1)#12G IN 3/4"C	X			X
57	FOOD WARMER					120	1	3	(2)#10 & (1)#10G IN 3/4"C	X			X
58	SANDWICH REFRIG					120	1	3	(2)#10 & (1)#10G IN 3/4"C			X	
59	FOOD WARMER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
60	BUNOMATIC COFFEE MAKER					208	1	3	(2)#10 & (1)#10G IN 3/4"C			X	
61	TRUE MILK/DAIRY DISPENSER					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	
62	HOT CHOCOLATE MACHINE					120	1	3	(2)#12 & (1)#12G IN 3/4"C			X	



DEMOLITION NOTES:

1. REFER TO DRAWING ED000 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
2. EXISTING DEVICES AND RELATED BRANCH CIRCUIT WIRING CURRENTLY FEEDING KITCHEN EQUIPMENT SHALL BE DISCONNECTED/REMOVED BACK TO SOURCE. ALL CONDUIT RUN IN FLOOR SLAB SHALL BE CUT BACK FLUSH WITH FINISHED FLOOR, FILLED WITH CONCRETE AND ABANDONED IN PLACE. REFER TO KITCHEN EQUIPMENT SCHEDULE FOR EXISTING EQUIPMENT INCLUDED IN DEMOLITION SCOPE NOT ALL EQUIPMENT HAS BEEN IDENTIFIED ON KITCHEN PART PLAN.



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Repairs to Somerville High School Auditorium, Kitchen and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

ELECTRICAL KITCHEN DEMO PART PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: MVM

DRAWN BY: MVM

CHECKED BY: GM

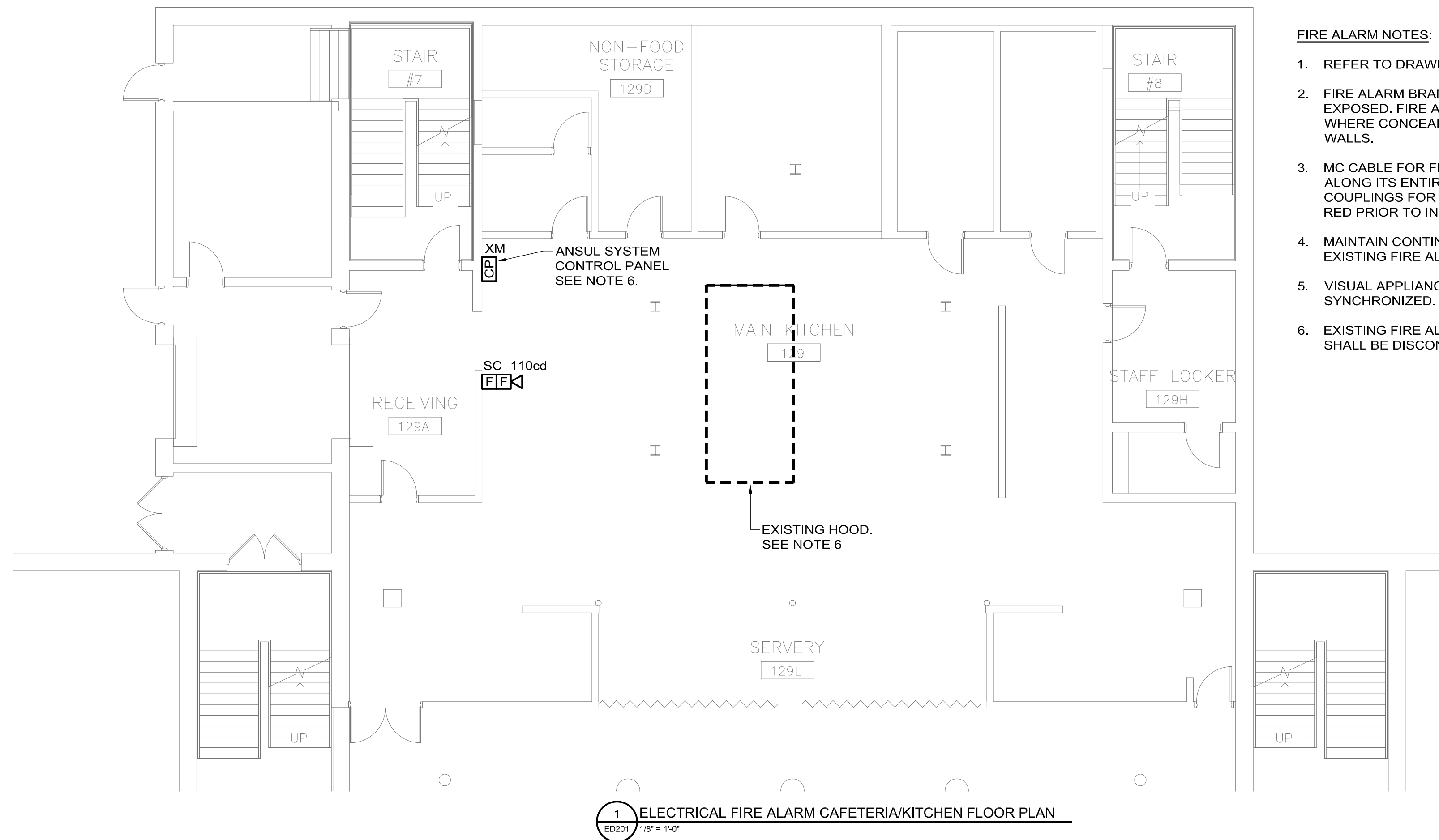
DATE: January 23, 2014

SCALE: 1/4" = 1' - 0"

SHEET NUMBER:

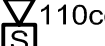
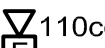
ED104

SHEET OF

FIRE ALARM NOTES

1. REFER TO DRAWING ED000 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
2. FIRE ALARM BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT WHERE EXPOSED. FIRE ALARM BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
3. MC CABLE FOR FIRE ALARM SERVICE SHALL HAVE A RED IDENTIFIER ALONG ITS ENTIRE LENGTH. JUNCTION BOX COVERS AND CONDUIT COUPLINGS FOR ALL FIRE ALARM WIRING RACEWAYS SHALL BE PAINTED RED PRIOR TO INSTALLATION.
4. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING FIRE ALARM DEVICES TO REMAIN.
5. VISUAL APPLIANCES WITHIN SAME ROOM OF FIELD OF VIEW SHALL BE SYNCHRONIZED.
6. EXISTING FIRE ALARM CONNECTION (ACM/ZMM) AND RELATED WIRING SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE.

FIRE ALARM LEGEND

	FIRE ALARM CONTROL PANEL
	FIRE ALARM AUDIBLE (SPEAKER) AND VISUAL DEVICE. NUMERAL INDICATES CANDELA VALUE
	FIRE ALARM AUDIBLE (HORN) AND VISUAL DEVICE. NUMERAL INDICATES CANDELA VALUE
	DUCT MOUNTED SMOKE DETECTOR
	FIRE ALARM MANUAL PULL STATION "SC" INDICATES STOPPER COVER
	SPRINKLER TAMPER FLOW SWITCH
	SPRINKLER WATER FLOW SWITCH
	SPRINKLER LOW PRESSURE SWITCH
	REMOTE ALARM INDICATOR
	REMOTE TEST STATION
	INDIVIDUAL ADDRESSABLE CONTROL MODULE
	ZONE MONITORING MODULE
	FIRE ALARM SMOKE DETECTOR, PHOTO ELECTRIC UNLESS NOTED OTHERWISE
	FIRE ALARM HEAT DETECTOR, 135° FIXED TEMPERATURE UNLESS NOTED OTHERWISE. DETECTOR SHALL BE RATED FOR INSTALLATION AT UP TO 70 FOOT SPACING.



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Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

FIRE ALARM CAFETERIA/ KITCHEN FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: SH

DRAWN BY: SH

CHECKED BY: GM

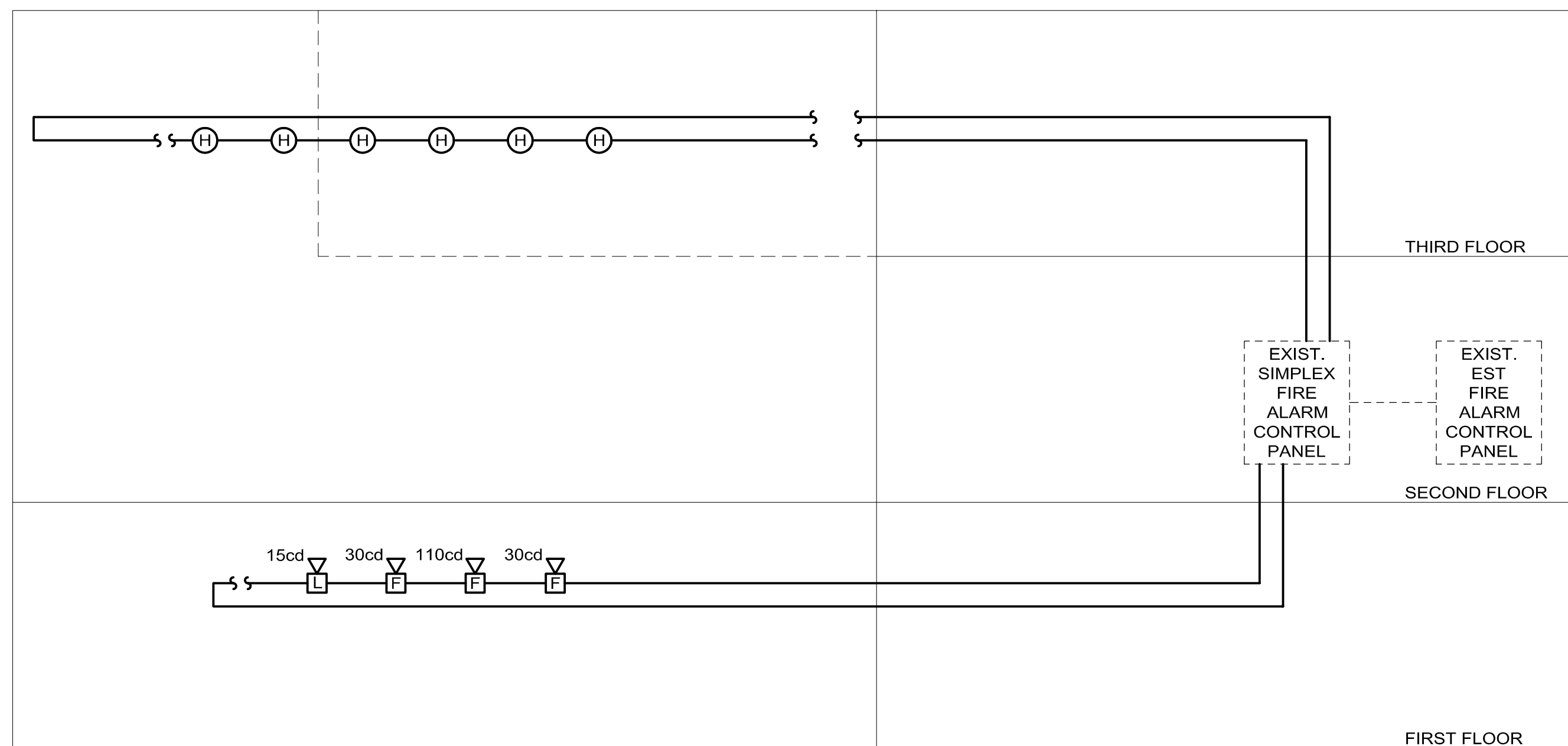
DATE: January 23, 2014

SCALE: 1/8" = 1' - 0"

SHEET NUMBER:

ED201

SHEET OF



NOTES:

1. THIS DRAWING IS INTENDED TO ILLUSTRATE MAJOR EQUIPMENT AND THE INTENDED INTERCONNECTIONS. REFER TO THE FLOOR PLANS FOR EXACT LOCATIONS AND QUANTITIES OF DEVICES. REFER TO THE MANUFACTURER'S WIRING DIAGRAMS FOR INTERCONNECTION REQUIREMENTS. INTERCONNECTION DETAILS SHALL BE INCLUDED IN THE SHOP DRAWINGS WITH COMPONENT CUT SHEETS FOR REVIEW AND APPROVAL.
2. ALL FINAL CONNECTIONS INTO THE EXISTING FIRE ALARM SYSTEM SHALL BE PERFORMED BY THE OWNER'S FIRE ALARM MAINTENANCE CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL CARRY ALL ASSOCIATED COSTS FOR FINAL CONNECTION AND ASSOCIATED TESTING.
3. ALL NEW FIRE ALARM DEVICES SHALL MATCH EXISTING MANUFACTURER AND BE CROSSED LISTED FOR CONNECTION TO THE EXISTING SYSTEM.
4. EXISTING SMOKE DETECTORS, PULL STATIONS, AUDIO/VISUAL DEVICES, HEAT DETECTORS, ETC. WITHIN THE BUILDING SHALL BE MAINTAINED, UNLESS OTHERWISE NOTED. PROVIDE PROGRAMMING OF SYSTEM AS REQUIRED TO MAINTAIN SYSTEM OPERATION OF EXISTING DEVICES. REPROGRAM SYSTEM AND MODIFY EXISTING ANNUNCIATOR(S) TO ACCOMMODATE THE NEW DEVICES AND FUNCTIONS.
5. FIRE ALARM SYSTEM MODIFICATION SHALL BE IN CONFORMANCE WITH THE LATEST FIRE DEPARTMENT RULES AND REGULATIONS.
6. VISUAL APPLIANCES WITHIN SAME ROOM OR FIELD OF VIEW SHALL BE SYNCHRONIZED.

FIRE ALARM RISER

E801

SYSTEM OUTPUTS

SYSTEM INPUTS		ACTUATE COMMON ALARM SIGNAL INDICATOR ACTUATE AUDIBLE ALARM SIGNAL ACTUATE COMMON SUPERVISORY SIGNAL ACTUATE AUDIBLE SUPERVISORY SIGNAL ACTUATE COMMON TROUBLE SIGNAL VISUALLY INDICATE COMMON TROUBLE SIGNAL ACTUATE AUDIBLE COMMON TROUBLE SIGNAL DISPLAY/PRINT DEVICE ADDRESS TRANSMIT BUILDING EVACUATION SIGNALS TRANSMIT FIRE ALARM SIGNAL TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION EXISTING TROUBLE SIGNAL TO SUPERVISING STATION SHUT DOWN ALL ASSOCIATED AIR HANDLING EQUIPMENT															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	MANUAL FIRE ALARM PULL STATION	●	●					●	●	●	●			●		1	
2	HEAT DETECTOR	●	●					●	●	●	●			●		4	
3	FIRE ALARM AC POWER FAILURE					●	●						●			8	
4	FIRE ALARM SYSTEM LOW BATTERY					●	●						●			9	
5	OPEN CIRCUIT					●	●						●			10	
6	GROUND FAULT					●	●						●			11	
7	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●					●	●			12	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
		FIRE ALARM CONTROL PANEL ANNUNCIATION						NOTIFICATION						REQUIRED FIRE SAFETY CONTROL			

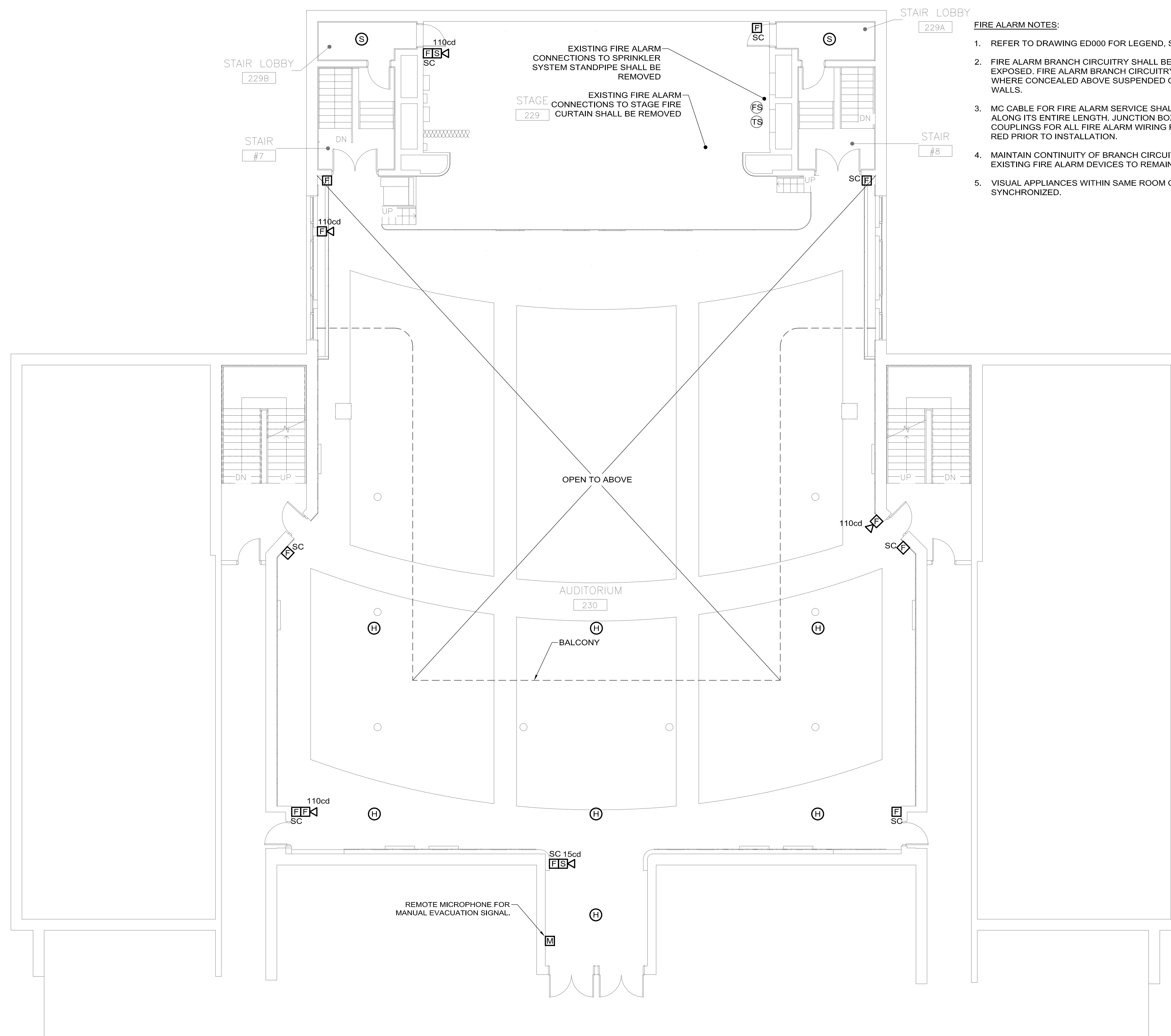
SYSTEM OUTPUTS

FIRE ALARM SEQUENCE OF OPERATION MATRIX

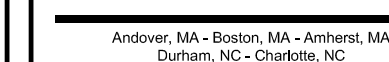
N.T.S

FA MATRIX NOTES:

1. DEVELOP SPECIFIC MATRIX FOR EACH DEVICE AND CROSS REFERENCE TO DEVICE ADDRESS NUMBER FOR ENGINEER'S APPROVAL.
2. SHOP DRAWINGS SHALL INCLUDE FLOOR PLANS WITH DEVICE LAYOUT. EACH DEVICE SHALL HAVE ITS ASSOCIATED ADDRESS ILLUSTRATED AND CROSS REFERENCED TO THE SEQUENCE OF OPERATIONS MATRIX. SHOP DRAWING SHALL ILLUSTRATE ALL REQUIRED



1 ELECTRICAL FIRE ALARM AUDITORIUM FLOOR PLAN
ED203 1/8" = 1'-0"



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Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

FIRE ALARM AUDITORIUM FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: MVM

DRAWN BY: MVM

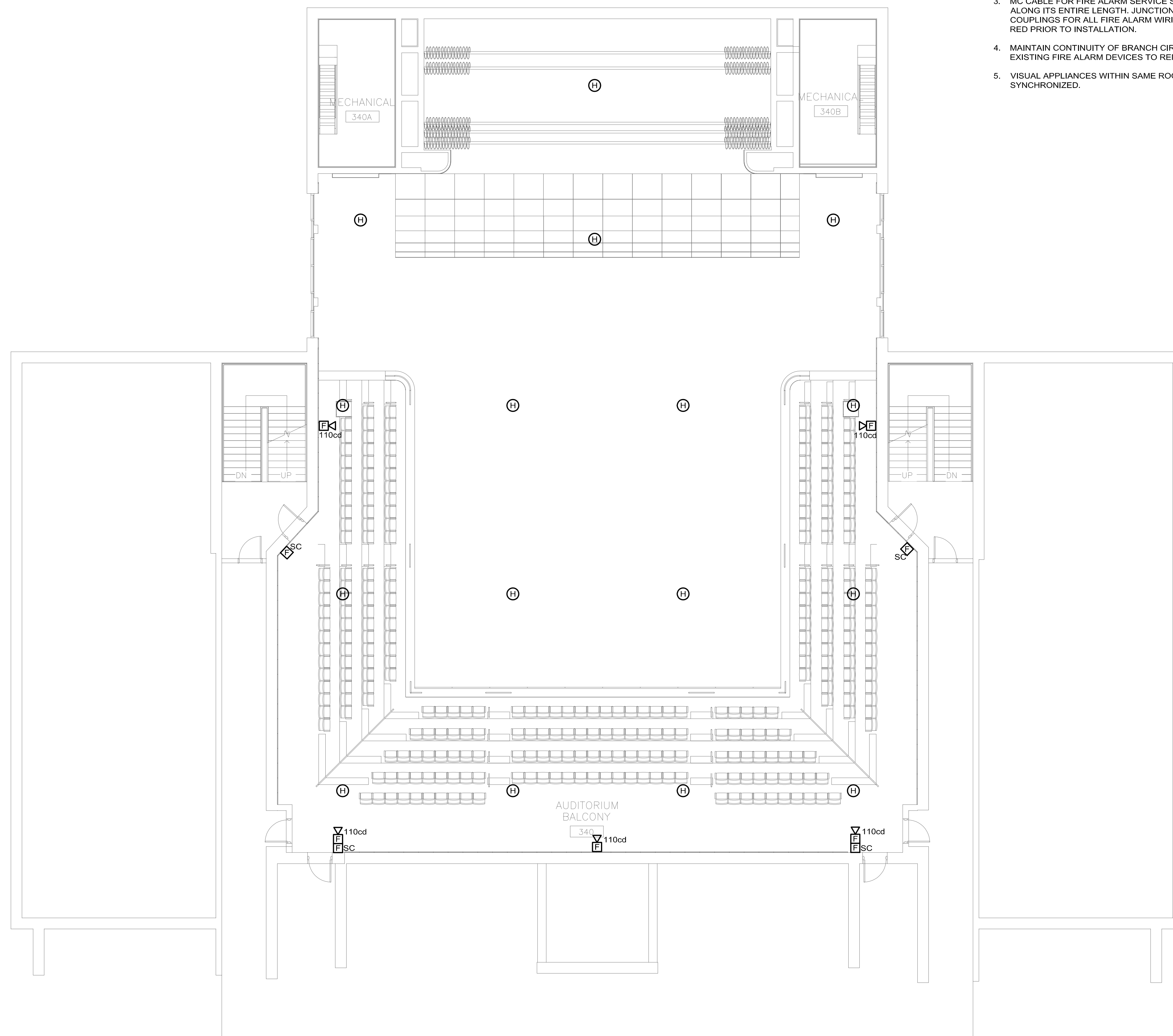
CHECKED BY: GM

DATE: January 23, 2014

SCALE: 1/8" = 1' - 0"

SHEET NUMBER:

ED202



1 ELECTRICAL FIRE ALARM AUDITORIUM BALCONY FLOOR PLAN
ED203 1/8" = 1'-0"

1. REFER TO DRAWING ED000 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
2. FIRE ALARM BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT WHERE EXPOSED. FIRE ALARM BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
3. MC CABLE FOR FIRE ALARM SERVICE SHALL HAVE A RED IDENTIFIER ALONG ITS ENTIRE LENGTH. JUNCTION BOX COVERS AND CONDUIT COUPLINGS FOR ALL FIRE ALARM WIRING RACEWAYS SHALL BE PAINTED RED PRIOR TO INSTALLATION.
4. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING FIRE ALARM DEVICES TO REMAIN.
5. VISUAL APPLIANCES WITHIN SAME ROOM OF FIELD OF VIEW SHALL BE SYNCHRONIZED.

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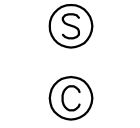
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81 Highland Avenue,
Somerville, MA 02143

ED203

PIPING ABBREVIATIONS	
--- C(X) ---	STEAM CONDENSATE (X=PSIG)
--- S(X) ---	STEAM (X=PSIG)
/// (NAME) ///	REMOVE EXISTING PIPING
NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT	

	CONNECT NEW TO EXISTING
	LIMIT OF DEMOLITION
	SECTION DESIGNATION
	SHEET NUMBER
	REVISION NUMBER
	THERMOSTAT, WALL MOUNTED
	TEMPERATURE SENSOR, WALL MOUNTED
	CARBON DIOXIDE SENSOR
	REMOVE EXISTING ITEM

SA(100)	S = SUPPLY A = SCHEDULED DIFFUSER (100) = CFM TO BALANCE TO
RA(100)	R = RETURN A = SCHEDULED DIFFUSER (100) = CFM TO BALANCE TO
EA(100)	E = EXHAUST A = SCHEDULED DIFFUSER (100) = CFM TO BALANCE TO
TA(100)	T = TRANSFER A = SCHEDULED DIFFUSER (100) = CFM TO BALANCE TO

**EQUIPMENT REQUIRING ELECTRICAL SERVICE,
SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS:**



SCHEDULED EQUIPMENT UNIT NUMBER

FIRST DIGIT(S) = LEVEL WHERE UNIT IS LOCATED:

SB = SUB-BASEMENT
B = BASEMENT
LL = LOWER LEVEL
G = GROUND FLOOR
1 = FIRST FLOOR
2 = SECOND FLOOR
3 = THIRD FLOOR, ETC
M = MEZZANINE
A = ATTIC
PH = PENTHOUSE
R = ROOF

SECOND DIGIT(S):

1 = FIRST UNIT OF THIS EQUIPMENT TYPE ON THIS LEVEL.
2 = SECOND UNIT OF THIS EQUIPMENT TYPE ON THIS LEVEL.
3 = THIRD UNIT OF THIS EQUIPMENT TYPE ON THIS LEVEL, ETC.
(DUE TO EDITING NOT ALL NUMBERS MAY BE USED)



UNIT CAPACITY INFORMATION (IF APPLICABLE-DATA VARIES
DEPENDING ON TYPE OF EQUIPMENT)

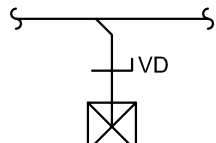
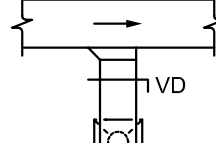
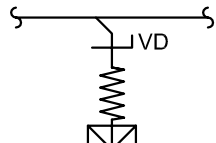
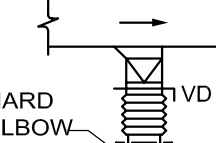
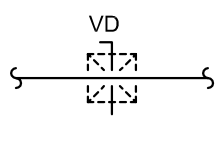
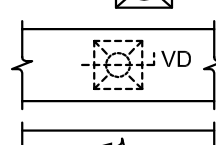
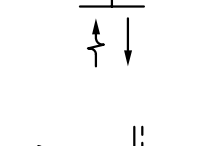
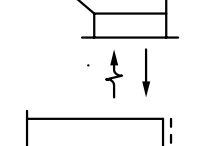
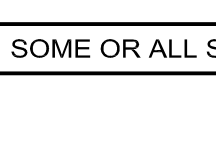
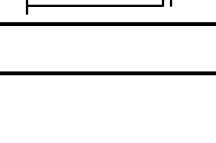
i.e. FOR FAN POWERED VAV BOXES:

FIRST NUMBER = MAX. CFM
SECOND NUMBER = MIN. CFM OR PERCENT OF MAX. CFM
THIRD NUMBER = COIL GPM OR KW

**EQUIPMENT NOT REQUIRING ELECTRICAL SERVICE,
SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS:**



REFER TO EQUIPMENT REQUIRING ELECTRICAL SERVICE
SYMBOL ABOVE FOR TAG AND DATA INFORMATION.

DIFFUSERS	
SINGLE LINE	DOUBLE LINE
	
	
	
	
	

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

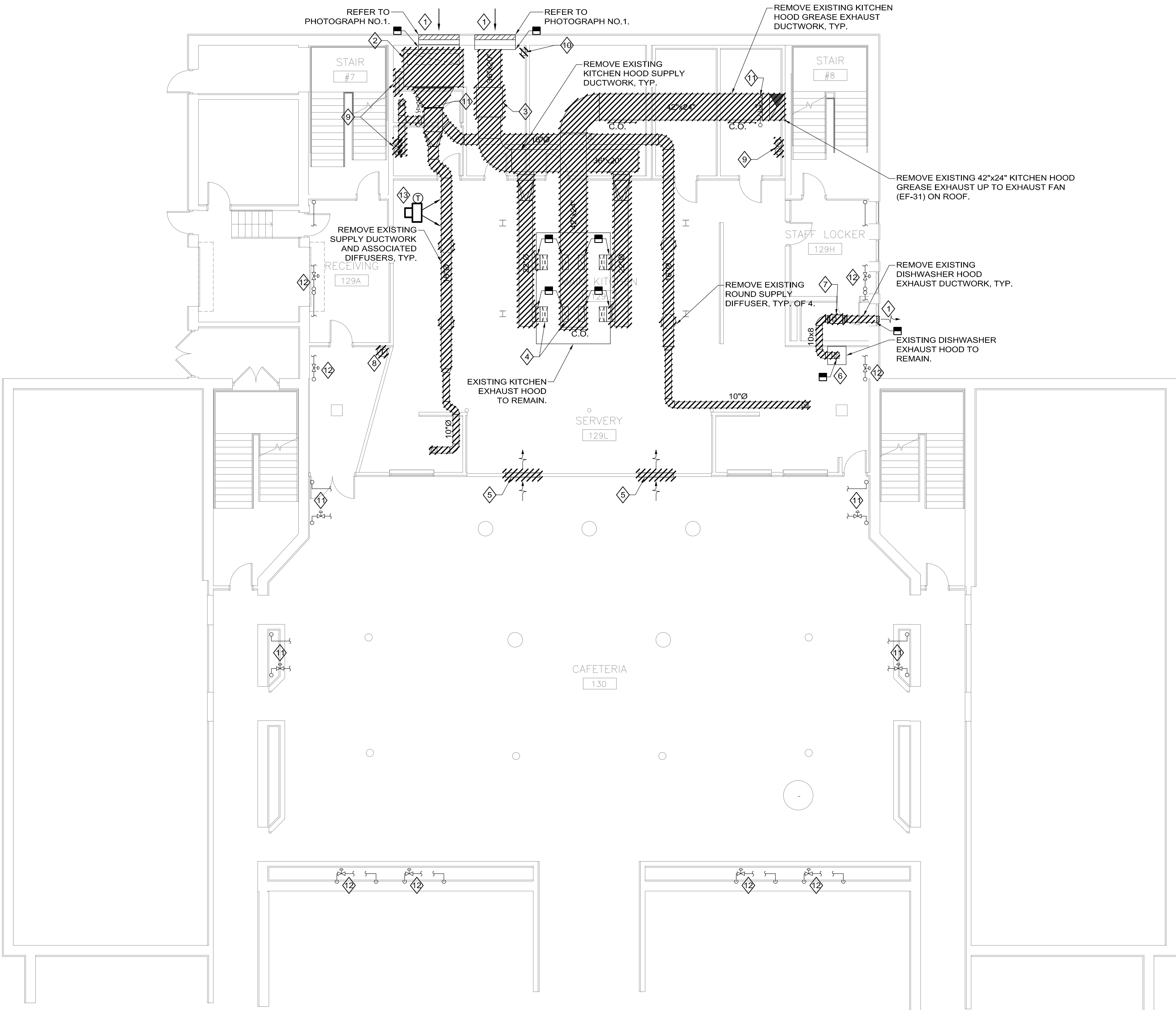
DUCTWORK/RGD SYMBOLS	
	AFMS AIR FLOW MONITORING STATION
	ACD AUTOMATIC CONTROL DAMPER W/ ACCESS DOOR
	VD MANUAL VOLUME DAMPER
	FD SELF-CLOSING FIRE DAMPER W/ ACCESS DOOR
	SDET DUCT MOUNTED SMOKE DETECTOR
	BDD BACKDRAFT DAMPER
	STANDARD 4-WAY BLOW SUPPLY DIFFUSER
	3-WAY BLOW SUPPLY DIFFUSER
	OR 2-WAY BLOW SUPPLY DIFFUSER
	ONE-WAY BLOW SUPPLY DIFFUSER
	RETURN/EXHAUST GRILLE OR REGISTER
	RETURN OR EXHAUST AIR FLOW
	SUPPLY AIR FLOW

NOTE: SOME OR ALL SYMBOLS MAY BE USED ON THIS PROJECT

H000

DEMOLITION WORK NOTES	
1.	DEMOLITION NOTES SHALL APPLY TO ALL DEMOLITION DRAWINGS.
2.	ALL PIPE, DUCTWORK, AND LOUVER SIZES INDICATED ARE APPROXIMATE. THE MECHANICAL CONTRACTOR SHALL FIELD VERIFY EXACT SIZES IN THE FIELD.
3.	THE MECHANICAL CONTRACTOR SHALL PROVIDE DEMOLITION OF EXISTING UNIT VENTILATOR AND ASSOCIATED THERMOSTATS, CONTROLS, CONTROL WIRING AND HARDWARE, DUCTWORK, PIPING (STEAM AND CONDENSATE), ETC. AS INDICATED.
4.	THE MECHANICAL CONTRACTOR SHALL PROVIDE DEMOLITION OF EXISTING INLINE FANS, ASSOCIATED CONTROLS, CONTROL WIRING AND HARDWARE, DUCTWORK, ETC. AS INDICATED.
5.	THE MECHANICAL CONTRACTOR SHALL PROVIDE DEMOLITION OF THERMOSTATS AND ASSOCIATED CONTROL WIRING TO CABINET UNIT HEATERS, UNIT HEATERS, CONVECTORS, ETC. AS INDICATED.
6.	ALL EXISTING HVAC EQUIPMENT, DUCTWORK, PIPING, ETC. TO REMAIN UNLESS OTHERWISE NOTED.
7.	THE MECHANICAL CONTRACTOR SHALL PROVIDE DEMOLITION OF STEAM AND CONDENSATE PIPING INDICATED. PROVIDE ALL NECESSARY TEMPORARY OR PERMANENT CAPS OR PLUGS FOR PIPING. DO NOT LEAVE PIPING OPEN ENDED.

KEYNOTES	
1	REMOVE EXISTING DUCTWORK UP TO LOUVER. THE MECHANICAL CONTRACTOR SHALL COVER AND TAPE SEAL OPENING WITH 2" POLYSTYRENE INSULATION. LOUVER SHALL BE MADE AIR TIGHT.
2	REMOVE EXISTING UNIT VENTILATOR (UV-H-S), ASSOCIATED DUCTWORK, DAMPERS, CONTROL WIRING AND HARDWARE, PIPING (STEAM SUPPLY AND CONDENSATE), ETC. IN ITS ENTIRETY BACK TO NEAREST MAIN. PROVIDE NEW ISOLATION VALVES AND CAPS ON EXISTING BRANCH PIPING AT POINT WHERE DEMOLITION STOPS.
3	REMOVE EXISTING KITCHEN HOOD SUPPLY FAN (SF-2), ASSOCIATED DUCTWORK, DAMPERS, CONTROL WIRING AND HARDWARE, ETC. IN ITS ENTIRETY.
4	EXISTING 24"x10" EXHAUST CONNECTION (2700 CFM EA) AND EXISTING 24"x8" MAKE-UP AIR CONNECTION (1620 CFM EA) TO REMAIN, TYP OF 4. REMOVE EXISTING EXHAUST AND SUPPLY DUCTWORK FROM HOOD CONNECTIONS, TYP OF 4.
5	REMOVE EXISTING 46"x22" TRANSFER GRILLE, DUCTWORK, AND FIRE DAMPER. THE MECHANICAL CONTRACTOR SHALL COVER AND TAPE SEAL OPENING WITH 2" POLYSTYRENE INSULATION. LOUVER SHALL BE MADE AIR TIGHT.
6	EXISTING 10"x8" EXHAUST CONNECTION (600 CFM EA) TO REMAIN. REMOVE EXISTING EXHAUST DUCTWORK FROM HOOD CONNECTION.
7	REMOVE EXISTING DISHWASHER EXHAUST FAN (EF-32), ASSOCIATED DUCTWORK, DAMPERS, CONTROL WIRING AND HARDWARE, ETC. IN ITS ENTIRETY. REMOVE EXISTING DUCTWORK UP TO LOUVER. THE MECHANICAL CONTRACTOR SHALL COVER AND TAPE SEAL OPENING WITH 2" POLYSTYRENE INSULATION. LOUVER SHALL BE MADE AIR TIGHT.
8	REMOVE THE EXISTING THERMOSTAT AND THE ASSOCIATED CONTROL WIRING FOR UV-H
9	REMOVE THE EXISTING STEAM SUPPLY AND CONDENSATE PIPING RISERS BACK TO NEAREST MAIN. CONTRACTOR SHALL CAP AND SEAL PIPES. PROVIDE NEW ISOLATION VALVES AND CAPS ON EXISTING BRANCH PIPING AT POINT WHERE DEMOLITION STOPS.
10	REMOVE EXISTING CONTROL PANEL ENCLOSURE, CONTROLLER, AND ASSOCIATED WIRING IN ITS ENTIRETY. CONTRACTOR TO FIELD VERIFY LOCATION OF PANEL.
11	EXISTING STEAM SUPPLY, CONDENSATE PIPING RISERS, VALVES AND ASSOCIATED CONTROLS TO REMAIN IN ITS ENTIRETY.
12	EXISTING STEAM CONTROL VALVE TO REMAIN IN ITS ENTIRETY.
13	PROVIDE NEW ELECTRIC UNIT HEATER EQUAL TO BERKO MODEL HUH-520SA, MARLEY, QMARK OR APPROVED EQUAL. ELECTRIC UNIT HEATER SHALL BE 5KW, 208V/1PH. PROVIDE WITH UNIT MOUNTED THERMOSTAT AND STEEL HANGERS.



1 HVAC CAFETERIA/KITCHEN DEMOLITION FLOOR PLAN
HD201 1/8" = 1'-0"

REVISIONS		
Number	Description	Date

DEMO PACKAGE

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Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

HVAC
CAFETERIA/
KITCHEN DEMO
FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: BEO

DRAWN BY: TC

CHECKED BY: TC

DATE: January 23, 2014

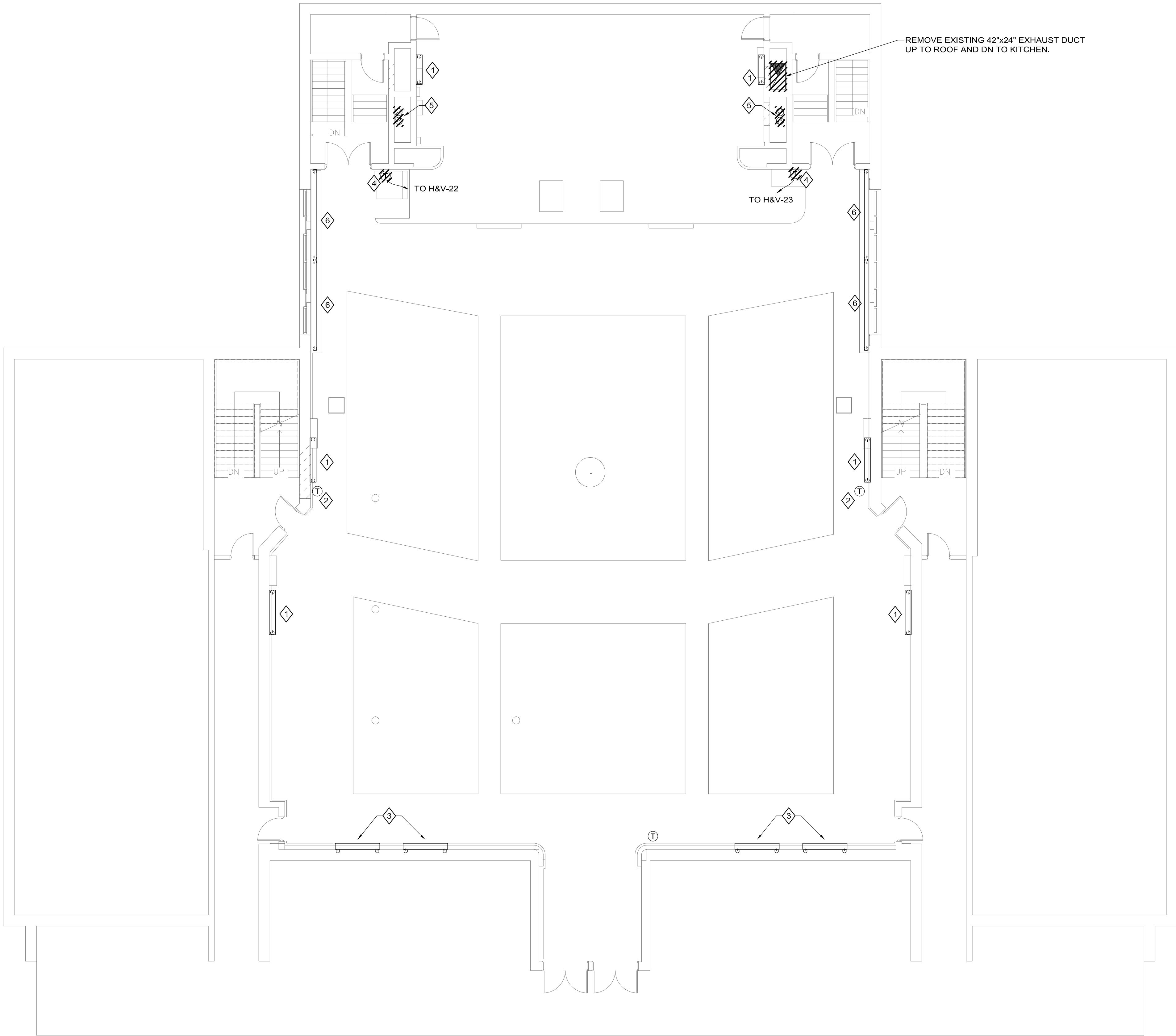
SCALE: 1/8" = 1' - 0"

SHEET NUMBER:

HD201

SHEET OF

KEYNOTES	
1	EXISTING CONVECTOR AND ASSOCIATED CONTROLS, STEAM SUPPLY PIPING, AND STEAM CONDENSATE PIPING TO REMAIN IN ITS ENTIRETY.
2	EXISTING THERMOSTAT AND ASSOCIATED CONTROL WIRING FOR THE EXISTING SURFACE CONVECTORS TO REMAIN IN ITS ENTIRETY.
3	EXISTING CABINET UNIT HEATER AND ASSOCIATED CONTROLS, STEAM PIPING, AND CONDENSATE PIPING TO REMAIN.
4	REMOVE THE EXISTING THERMOSTAT AND THE ASSOCIATED CONTROL WIRING FOR EACH AIR HANDLING UNIT SERVING THE AUDITORIUM (HV-22 & HV-23).
5	REMOVE EXISTING STEAM PIPING AND STEAM CONDENSATE PIPING RISERS IN ITS ENTIRETY BACK TO THE NEAREST MAIN. COORDINATE ACCESS OPENINGS TO THE PIPING WITH THE GC. CONTRACTOR SHALL CAP AND SEAL PIPES, PROVIDE NEW ISOLATION VALVES ON EXISTING BRANCH PIPING AT POINT WHERE DEMOLITION STOPS.
6	CAST IRON RADIATORS AND ASSOCIATED CONTROLS, STEAM PIPING, AND CONDENSATE PIPING TO REMAIN.



1 HVAC AUDITORIUM DEMOLITION FLOOR PLAN
HD202 1/8" = 1'-0"

REVISIONS		
Number	Description	Date

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Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

HVAC
AUDITORIUM
DEMO
FLOOR PLAN

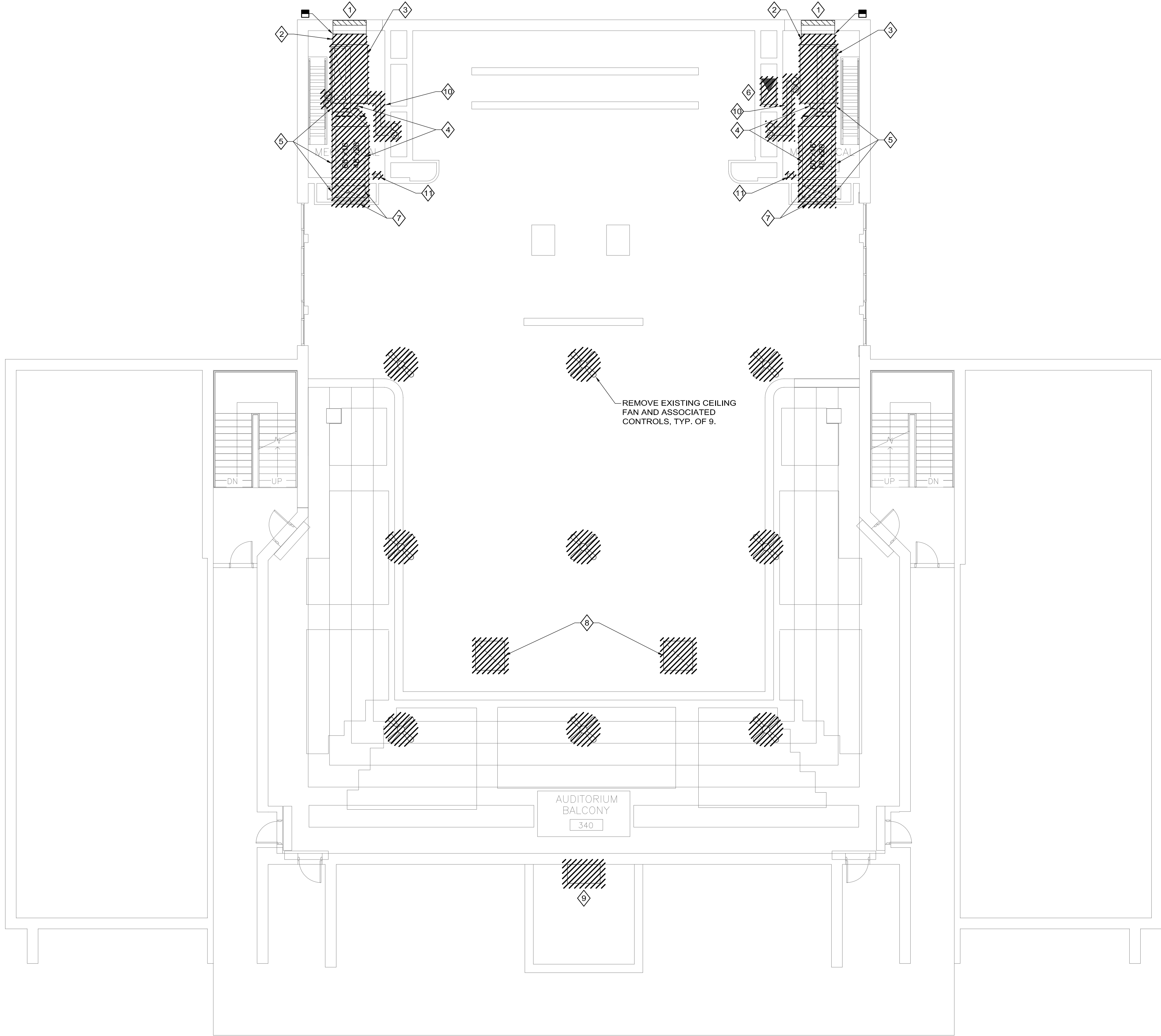
PROJECT NUMBER 19431.01
DESIGNED BY: BEO
DRAWN BY: TC
CHECKED BY: TC
DATE: January 23, 2014
SCALE: 1/8" = 1'-0"

SHEET NUMBER:

HD202

SHEET OF

KEYNOTES	
1	REMOVE DUCTWORK UP TO LOUVER. THE MECHANICAL CONTRACTOR SHALL COVER AND TAPE SEAL OPENING WITH 2" POLYSTYRENE INSULATION. LOUVER SHALL BE MADE AIR TIGHT.
2	REMOVE EXISTING OA PLENUM, ANY DAMPERS, AND 57"x24" OA DUCT ASSOCIATED WITH THE AIR HANDLING UNIT.
3	REMOVE EXISTING AIR HANDLING UNIT (H&V-22 & H&V-23), ASSOCIATED DUCTWORK, DAMPERS, CONTROL WIRING AND HARDWARE, PIPING (STEAM AND CONDENSATE), ETC. IN ITS ENTIRETY. THE EXISTING AIR HANDLING UNIT SHALL BE DISMANTLED IN PLACE AND REMOVED IN PIECES.
4	REMOVE EXISTING 22"x22" DUCT CONNECTION AND EXISTING 48"x20" SUPPLY DUCT IN THEIR ENTIRETY.
5	REMOVE EXISTING 30"x26" RETURN DUCT AND EXISTING 60"x16" RETURN DUCT IN THEIR ENTIRETY, INCLUDING THE DUCT ABOVE THE AUDITORIUM ACT CEILING.
6	REMOVE EXISTING 42"x24" EXHAUST DUCT UP TO ROOF AND DN TO KITCHEN IN ITS ENTIRETY. COORDINATE ACCESS TO GREASE DUCT IN THE SHAFT WITH GC.
7	REMOVE EXISTING 56"x20" SUPPLY DUCT DN (EXPOSED IN AUDITORIUM) AND ASSOCIATED 46"x28" SUPPLY GRILLES (TYP OF 2).
8	REMOVE EXISTING 48"x48" RELIEF DUCT UP TO EXISTING GRAVITY RELIEF VENT MOUNTED ON THE ROOF. EXISTING GRAVITY RELIEF VENT (LOCATED ON ROOF) TO REMAIN. THE MECHANICAL CONTRACTOR SHALL COVER AND TAPE SEAL OPENING WITH 2" POLYSTYRENE INSULATION. BOTTOM OF GRAVITY RELIEF VENT SHALL BE MADE AIR TIGHT. COORDINATE ACT REMOVAL WITH THE GC.
9	REMOVE EXISTING CEILING FAN CONTROLS AND ASSOCIATED CONTROL WIRING. COORDINATE WITH DIV 26 AND GC AS REQUIRED.
10	REMOVE EXISTING STEAM SUPPLY AND CONDENSATE PIPING RISERS AND HORIZONTAL PIPING TO THE EXISTING AIR HANDLING UNITS BACK TO NEAREST MAIN. THE MECHANICAL CONTRACTOR SHALL CAP AND SEAL PIPES. PROVIDE NEW ISOLATION VALVES AND CAPS ON BRANCH PIPING AT POINT WHERE DEMOLITION STOPS. COORDINATE ANY ACCESS REQUIRED WITH THE GC.
11	REMOVE EXISTING CONTROL PANEL ENCLOSURE, CONTROLLER, AND ASSOCIATED WIRING IN ITS ENTIRETY. CONTRACTOR TO FIELD VERIFY LOCATION OF PANEL.



1 HVAC AUDITORIUM BALCONY DEMOLITION FLOOR PLAN
HD203 1/8" = 1'-0"

REVISIONS		
Number	Description	Date

DEMO PACKAGE

ISSUED FOR BID



Repairs to Somerville
High School
Auditorium, Kitchen
and Cafeteria

81 Highland Avenue,
Somerville, MA 02143

HVAC
AUDITORIUM
BALCONY DEMO
FLOOR PLAN

PROJECT NUMBER 19431.01

DESIGNED BY: BEO

DRAWN BY: TC

CHECKED BY: TC

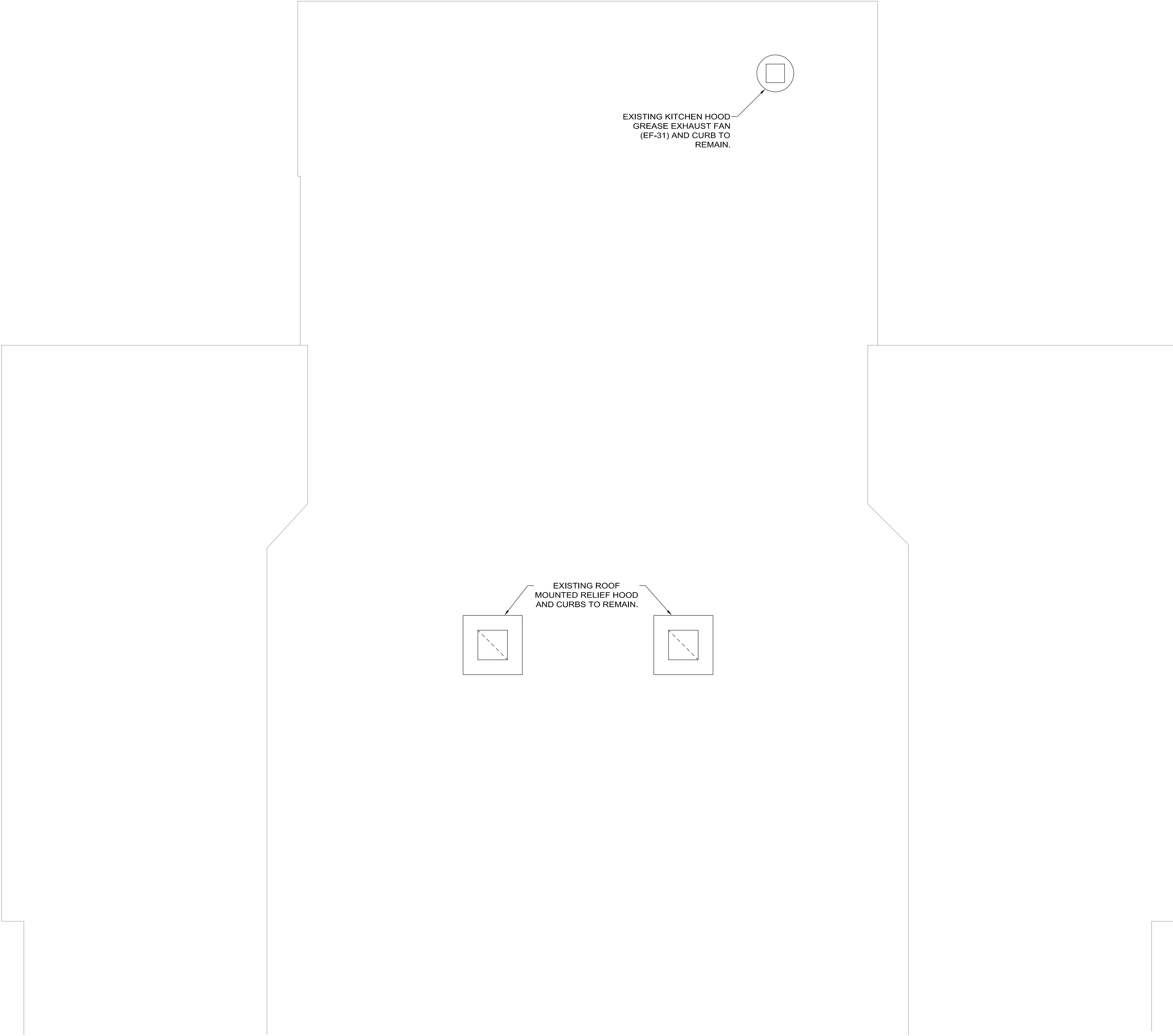
DATE: January 23, 2014

SCALE: 1/8" = 1'-0"

SHEET NUMBER:

HD203

SHEET OF



1 HVAC ROOF DEMOLITION PLAN
HD204 1/8" = 1'-0"



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REVISIONS		
Number	Description	Date



DEMO PACKAGE

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HVAC
ROOF
DEMO PLAN

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HD204

SHEET OF