



Town Belmont
Historic District Commission
Homer Municipal Building, 2nd Floor
19 Moore Street
Belmont, MA 02478

OFFICE USE

Case Number: HDC -

APPLICATION

In accordance with the Historic Districts Act, MGL Ch 40C, and the Town of Belmont General Bylaws, §40-315, the undersigned applies to the Belmont Historic District Commission for a Certificate of:

☒ Appropriateness ☐ Non-Applicability ☐ Hardship

1. PRELIMINARY INFORMATION:

Address of Property: TOWN HALL 455 CONCORD ROAD
Property Owner's Name: TOWN OF BELMONT
Address: TOWN HALL 455 CONCORD AVE
Email: Dblazon@Belmont-MA.GOV Phone: 617 993-2646

Agent Name: DAVID BLAZON - DIR. OF FACILITIES
Address: 19 MOORE STREET
Email: Dblazon@Belmont-MA.GOV Phone: 617 993-2646

I am the: ☐ Property Owner ☒ Agent
☐ Property is Owned by a Corporation, LLC, or Trust (Submit authorization to sign as owner)
☐ Property is a Condominium or Cooperative Association (submit authorization to sign as trustee)

If applicable: Architect: TED GALANTE Contractor: TED GALANTE ARCHITECTS

2. BRIEF DESCRIPTION OF PROPOSED WORK:

REPAIR SECTIONS OF SLATE ROOF AT TOWN HALL, AS
DESIGNATED BY TGLAS. THIS IS A PROTECT BID. SLATE
SAMPLE TO COME ONCE CONTRACT IS AWARDED.

3. SIGNATURES:

As Owner, I make the following representations:

- A. I hereby certify that I am the Owner of the Property at: _____
B. I hereby certify that if an Agent is listed on this Application, this Agent has been authorized to represent this Application before the Belmont Historic District Commission.

Owner: _____ Date: _____

As Applicant/Agent, I make the following representations:

1. The information supplied on and in this Application is accurate to the best of my knowledge;
2. I will make no changes to the approved plans without prior approval from the Belmont Historic District Commission.

Applicant/Agent: WJ/Bj - DIRECTOR OF FACILITIES Date: 3/28/2023

* Incomplete applications and Insufficient documentation will not be accepted. *

Approved March 23, 2017



Belmont Town Hall - Roof Repairs

455 Concord Avenue, Belmont, MA 02478

Construction Drawings

02.27.2023

DRAWING INDEX	
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ABBREVIATIONS							
ACCBL	Accessible	E.P.	Electric Panelboard	KO	Knockout	RHR	Right Hand Reverse
ACT	Acoustical Ceiling Tile	EPDM	Ethylene Propylene Diene M-Class	KPL	Kickplate	REINF	Reinforced/Reinforcing
AD	Area Drain	EQ	Equal	KWH	Kilowatt Hour	REQD	Required
ADJ	Adjustable	EQPT	Equipment			RESIL	Resilient
ADJCT	Adjacent	ETR	Existing To Remain	L	Length/long	RGTR	Register
AFF	Above Finish Floor	EWC	Electric Water Cooler	LAD	Ladder	RM	Room
AGGR	Aggregate	EXP	Expansion	LAM	Laminated	RO	Rough Opening
ALUM &	Aluminum And	EXTG	Existing	LAT	Lateral	RWL	Rainwater Leader
ANOD	Anodized	EXP JT	Expansion Joint	LAV	Lavatory		
APPRO X	Approximately	EXT	Exterior	LCC	Lead Coated Copper	S	Slope/South/Structural
ARCH	Architectural			LH	Left Hand	SAN	Sanitary
@	At	FA	Fire Alarm	LHR	Left Hand Reverse	SC	Solid Core
		FD	Floor Drain or Fire Department	LKR	Locker	SCHED	Schedule/Scheduled
		FDC	Fire Department Connection	LT	Light	SD	Smoke Detector
BD	Board	FDN	Foundation			SECT	Section
BITM	Bituminous	FE	Fire Extinguisher	M	Mechanical	SHR	Shower
BLK	Black/Block	FEC	Fire Extinguisher Cabinet	MAINT	Maintenance	SHT	Sheet
BLKG	Blocking	FF	Finish Floor	MATL	Material	SHTHG	Sheathing
BM	Beam	FGL	Fiberglass	MAX	Maximum	SIM	Similar
B.O.	Bottom Of	FIN	Finish	MECH	Mechanical	SPEC	Specification
BOT	Bottom	FIXT	Fixture	MED	Medium	SQ	Square
BSMT	Basement	FLR	Floor	MEMB	Membrane	STC	Sound Transmission Class
BYND	Beyond	FLUOR	Fluorescent	MET	Metal	STD	Standard
		F/O	Face Of	MFR	Manufacturer	STG	Storage
CAB	Cabinet	FP	Fire Protection	MH	Manhole	STL	Steel
CB	Catch Basin	FRT	Fire Retardant Treated	MIN	Minimum	STOR	Storage
CEM	Cement	FT	Foot or Feet	MISC	Miscellaneous	STRUC T	Structural
CER	Ceramic	FURR	Furring	MO	Masonry Opening	ST STL	Stainless Steel
CHNL	Channel	FUT	Future	MOD	Modified	SUSP	Suspended
C.I.	Cast Iron			MT	Men's Toilet		
CIP	Cast In Place			MTD	Mounted	T	Tread
C.J.	Control Joint	GA	Gauge	MTL	Metal	T&B	Top and Bottom
CKG	Caulking	GALV	Galvanized	MUL	Mullion	T&G	Tongue and Groove
CL	Closet	GC	General Contractor	MWK	Millwork	TC	Top of Curb
CLG	Ceiling	GEN	General/Generator			T/D	Tel/Data
CLR	Clear	GFCI	Ground Fault Circuit Interrupter (Outlet)	NATL	Natural	TEL	Telephone
CMU	Concrete Masonry Unit	GFI	Ground Fault Circuit Interrupter (Outlet)	NFA	Net Free Area	TERR	Terrazzo
CNTR	Counter	GKT	Gasket	NIC	Not In Contract	THK	Thick
C.O.	Concrete Opening	GL	Glass	NMT	Non-Metallic	THKNS	Thickness
C/O	Clean Out	GND	Ground	NO	Number	THR	Threshold
COL	Column	GR	Grade	NOM	Nominal	TO	Top Of
COMPR	Compressible	GRB	Gypsum Wallboard	NR	Noise Reduction	TOS	Top Of Steel
CONC	Concrete	GYP	Gypsum	NRC	Noise Reduction Coefficient	TP	Toilet Paper
CONSTR	Construction			NTS	Not To Scale	TRD	Tread
CONT	Continuous	H	High			TSTAT	Thermostat
CORR	Corridor	HB	Hose Bib	OC	On Center	TV	Television
CPT	Carpet	HC	Hollow Core	OD	Outside Diameter	TW	Top of Wall
C.T.	Ceramic Tile	HD	Heavy Duty	OFF	Office	TYP	Typical
CTR	Center	HDR	Header	OHD	Overhead Door		
¢	Centerline	HDWD	Hardwood	OPNG	Opening	UH	Unit Heater
CTSK	Countersunk	HDWR	Hardware	OPP	Opposite	UL	Underwriters' Laboratories
CTYD	Courtyard	HGR	Hanger	O/S	Occupancy Sensor	UNF	Unfinished
CUH	Cabinet Unit Heater	HM	Hollow Metal			UNO	Unless Noted Otherwise
CXN	Connection	HOR	Horizontal	P	Plumbing		
		HORIZ	Horizontal	PAF	Powder Actuated Fastener	V	Volt
DBL	Double	HR	Hour	P/C	Precast Concrete	VB	Vapor Barrier/Vapor Retarder
DEMO	Demolish or Demolition	HSS	Hollow Structural Steel	P CONC	Polished Concrete	VCT	Vinyl Composite Tile
DEPT	Department	HT	Height	PERF	Perforated	VERT	Vertical
DET	Detail	HT	Height	PFN	Prefinished	VEST	Vestibule
DF	Drinking Fountain	HVAC	Heating, Ventilating, and Air Conditioning	PKG	Parking	VIF	Verify In Field
DF HP	Handicapped Drinking Fountain	HVY	Heavy	PL	Plate	VIT	Vitreous
DIA	Diameter	HW	Hot Water	P LAM	Plastic Laminate	VNR	Veneer
Ø	Diameter			PLAS	Plastic	VOL	Volume
DIM	Dimension	i/C	Insulated Ceiling	PLBG	Plumbing	V PLAS	Veneer Plaster
DIR	Direction(s)	ICF	Insulated Concrete Form	PLYWD	Plywood	VTA	Valve Train Assembly
DISP	Dispenser	ID	Inside Diameter	PR	Pair	VTR	Vent Through Roof
DN	Down	iLO	In Lieu Of	PRCST	Precast Concrete		
DR	Door	IN	Inch	PSI	Pounds per Square Inch	W	West/Wide/Width/Watt
DS	Downspout	INCL	Incline/Include	PT	Paper Towel	W/	With
DWG	Drawing	INSUL	Insulation	PT	Pressure Treated	WC	Water Closet
DWR	Drawer	INT	Interior	PTD	Painted	WD	Wood
DWV	Drain-Waste-Vent Pipe	IP	Iron Pipe	PRTN	Partition	WH	Water Heater/White
		IRGWB	Impact Resistant Gypsum Wallboard	PVC	Polyvinyl Chloride	WM	Water Meter
E	Electrical					W/O	Without
EA	Each	JAN	Janitor	QT	Quarry Tile	WP	Waterproof
EBU	Emergency Backup	JBOX	Junction Box	QTR	Quarter	WSCT	Wainscot
EJ	Expansion Joint	JC	Janitor's Closet	QTY	Quantity	WT	Weight
EL	Elevation	JCT	Junction			WTR	Water
ELASTO	Elastomeric	JST	Joist	R	Rise	WWF	Welded Wire Fabric
ELEC	Electrical	JT	Joint	RD	Roof Drain		
ELEV	Elevator or Elevation			REF	Reference/Refer To	YD	Yard
EMER	Emergency	KIT	Kitchen	REFR	Refrigerator	YR	Year
ENCL	Enclosure			RH	Right Hand		

LOCATION MAP



455 Concord Avenue, Belmont, MA 02478

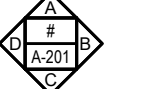
SYMBOLS



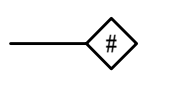
SECTION MARK



ELEVATION MARK



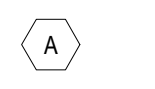
INTERIOR ELEVATION



WALL TYPE



DOOR TAG



WINDOW TAG

MATERIALS



INSULATION



DIMENSIONAL LUMBER



BLOCKING



CONCRETE



GYPSUM WALL BOARD



HARDWOOD



PLYWOOD

OTHER SYMBOLS



FLOOR/WALL DEMO

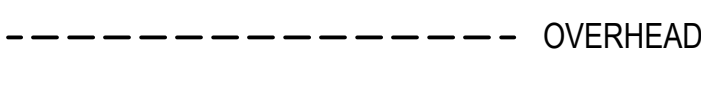


EXISTING CONSTRUCTION



NEW CONSTRUCTION

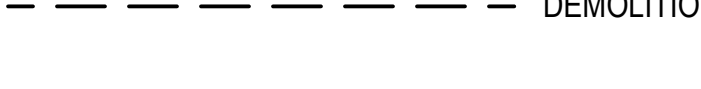
LINETYPES



OVERHEAD



BEYOND/HIDDEN



CENTERLINE



DEMOLITION

PROJECT DESCRIPTION:

The Belmont Town Hall is a historic building with a slate shingle roof dating back to 1881, currently in need of repair. Work of this project will include the selective removal, salvaging as possible, and reinstallation/installation of salvaged and new slate shingles and copper flashing and trim. All work will match the original, historical design and aesthetics.

TGAS

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146 MT AUBURN ST CAMBRIDGE, MA 02138

6 1 7 5 7 6 2 5 0 0

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Project Number
2105

Project Title
Belmont Town Hall
Roof Repairs

455 Concord Avenue
Belmont, MA 02478

Drawing Title

Abbreviations, Location Map, Symbols, Materials,

Date/Issued For
02.27.23

Construction Drawings

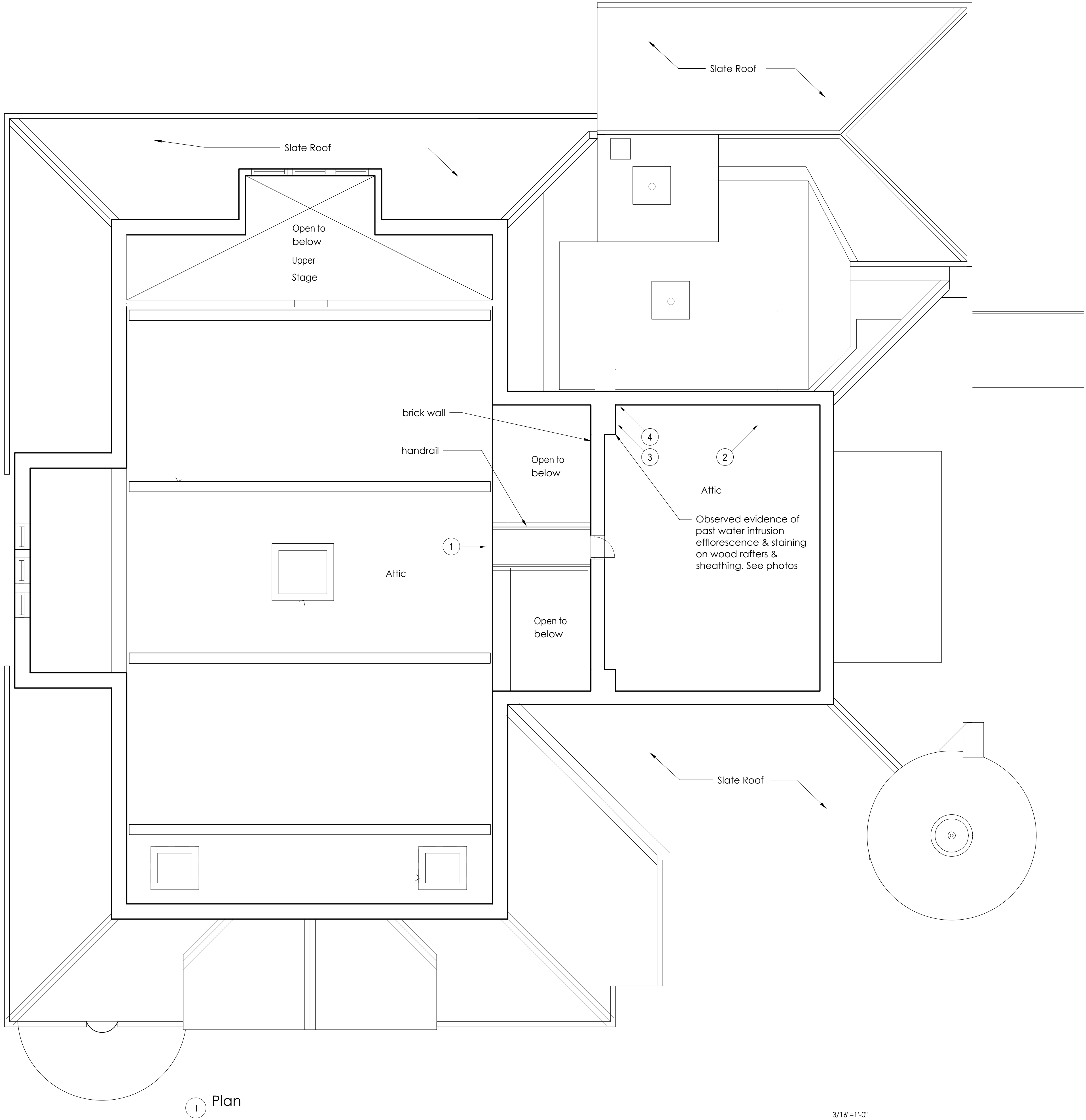
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Drawing Number

G-001

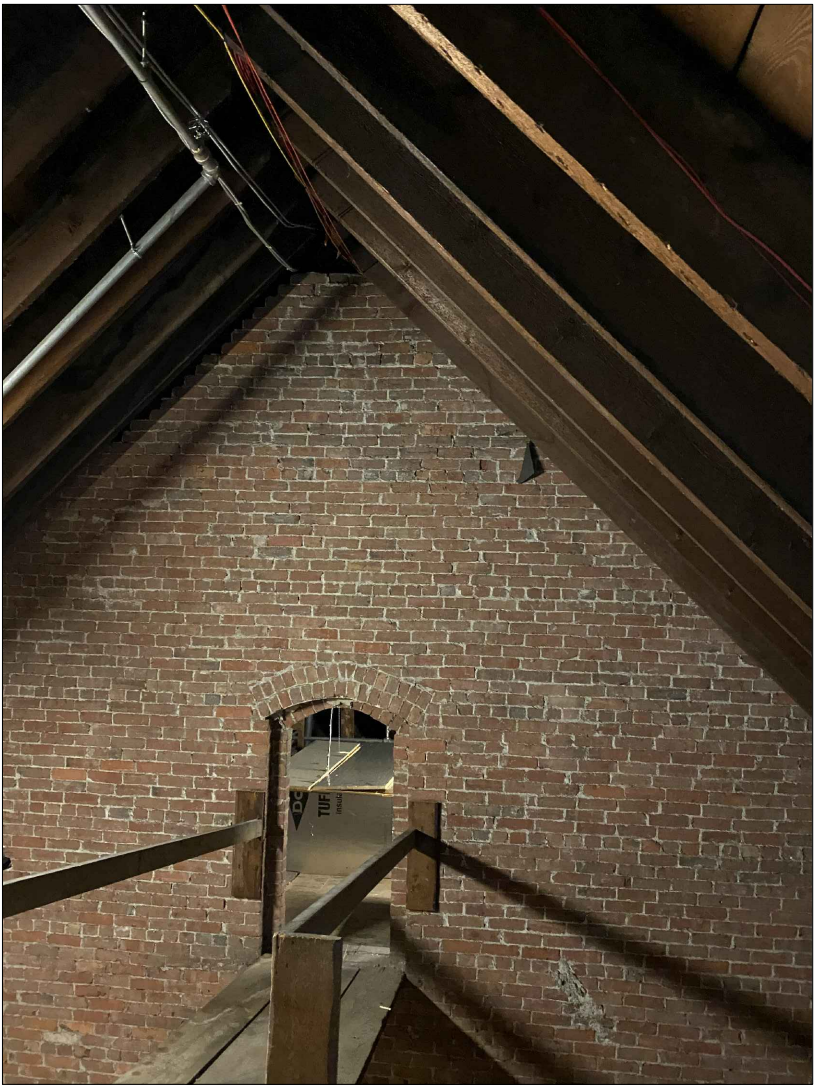
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1 Plan

3/16"=1'-0"

1



2



3



4



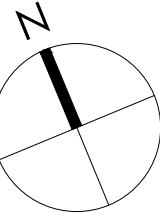
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Project Title
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Roof Repairs

455 Concord Avenue
Belmont, MA 02478

Drawing Title

Existing Conditions
Attic Plan

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Construction Drawings

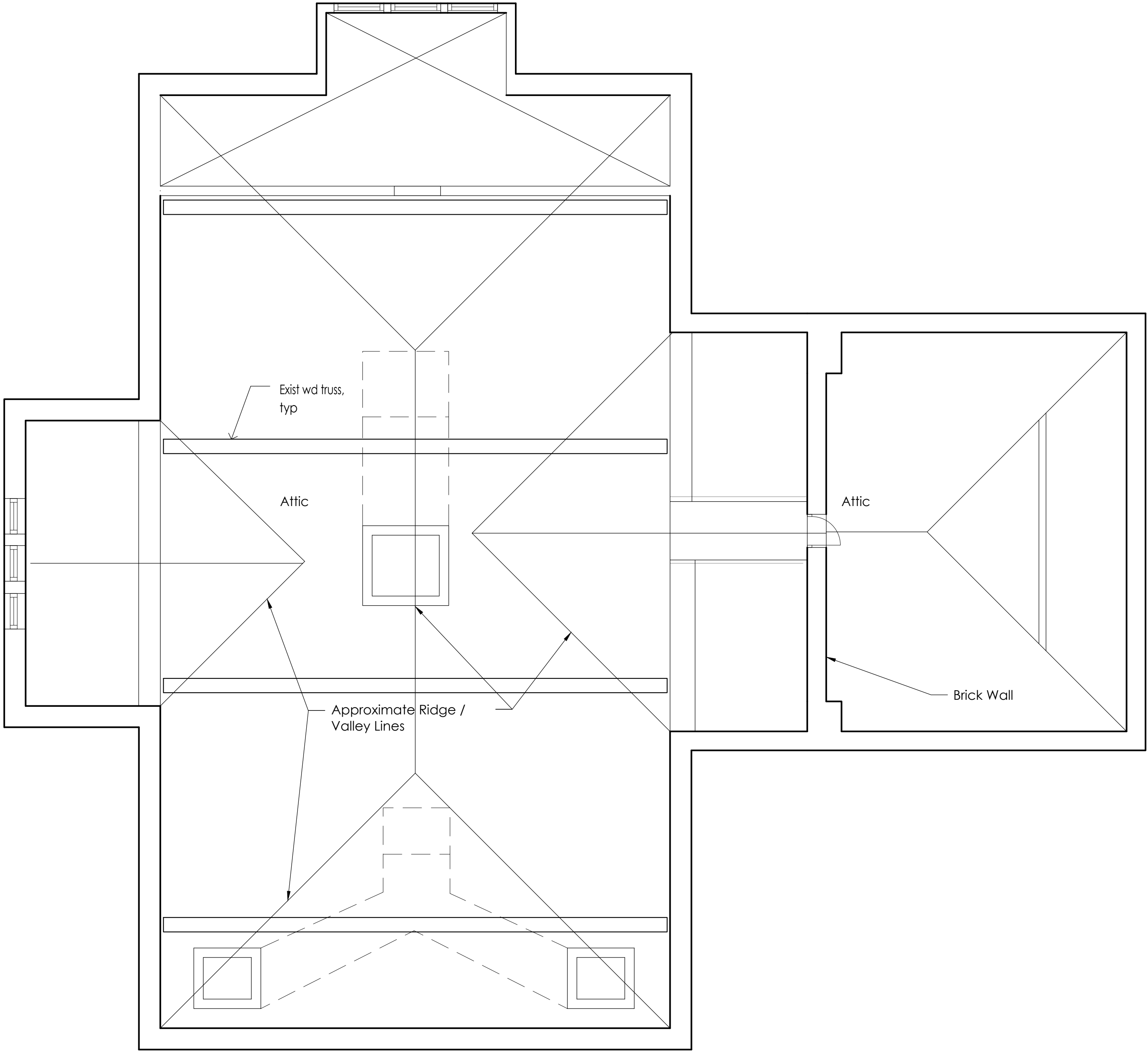
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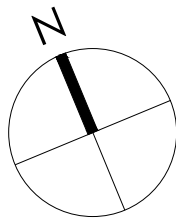
EC-101



1

Reflected Ceiling Plan

3/16"=1'-0"



Project Number
2105

Project Title
Belmont Town Hall
Roof Repairs

455 Concord Avenue
Belmont, MA 02478

Drawing Title

Existing Conditions
Attic Reflected
Ceiling Plan

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Construction Drawings

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EC-102

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1. Raised Slate. Sheathing Damaged



2. Damaged Hip on South Spire



3. Damaged & missing Slate



4. Deflection in Roof



5. Damaged, cracked and broken Slate



6. Typical Damaged Slate



7. Typical damaged and Missing Slate



8. Damaged Slate & Mismatched Color



9. Valley Flashing



10. Raised Slate. Sheathing Damaged

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Belmont Town Hall
Roof Repairs

455 Concord Avenue
Belmont, MA 02478

Drawing Title

Roof Photos

Date/Issued For
02.27.23

Construction Drawings

Print 24x36

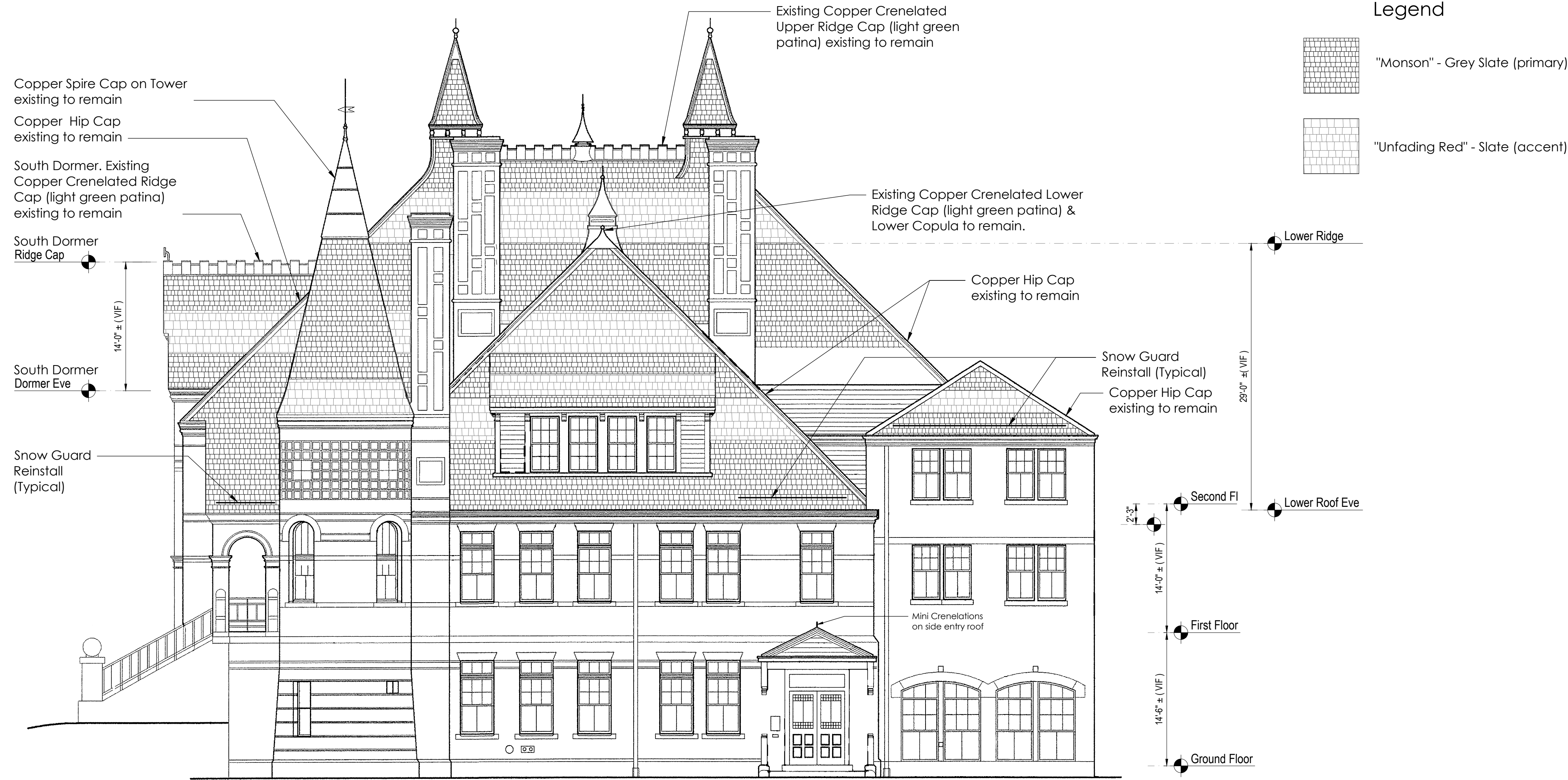
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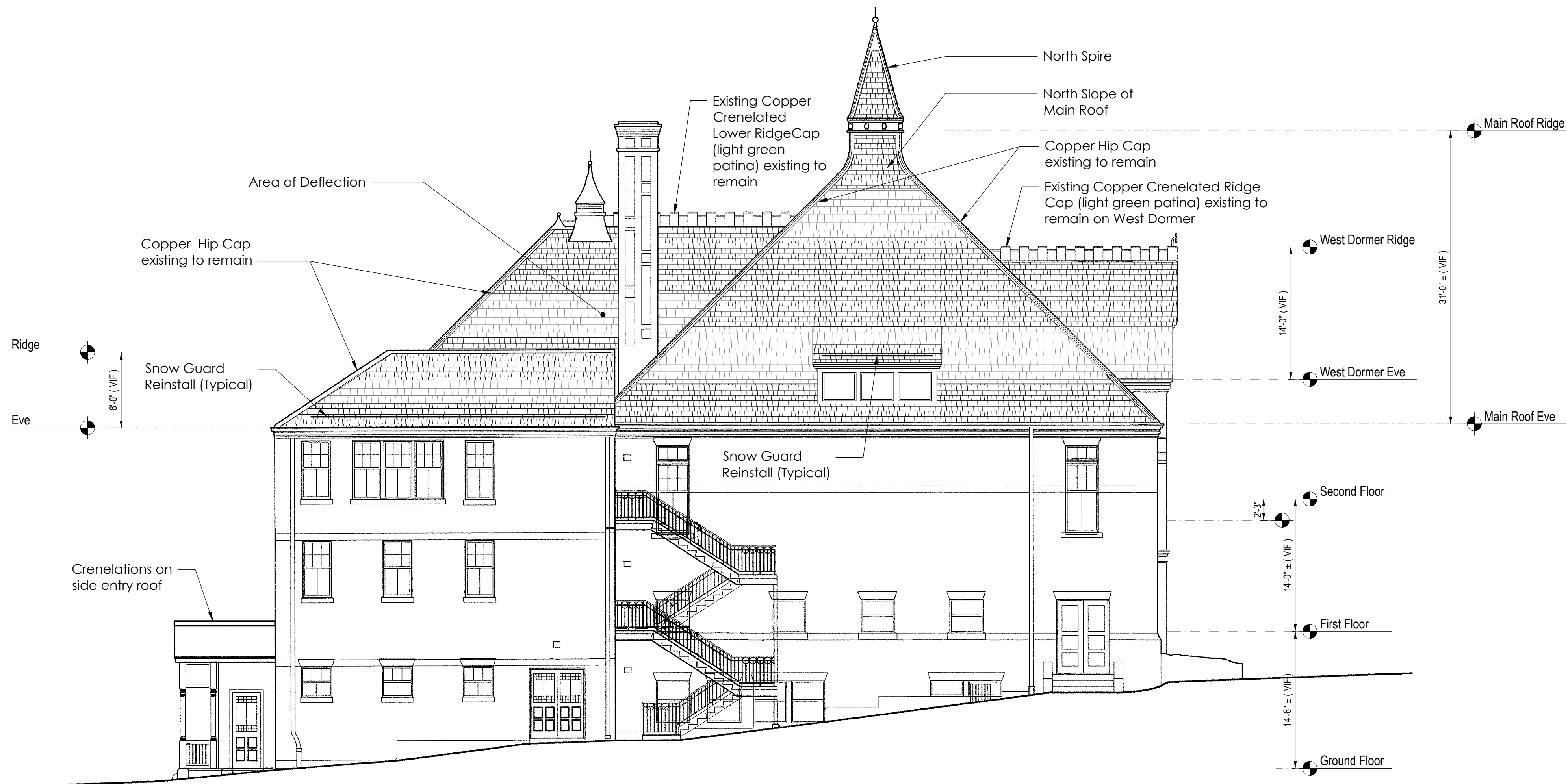
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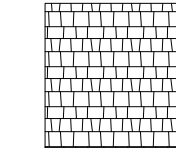


1 East Elevation

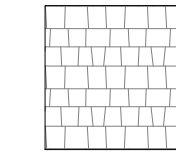


2 North Elevation

Legend



"Monson" - Grey Slate (primary)



"Unfading Red" - Slate (accent)

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Project Title

Belmont Town Hall
Roof Repairs

455 Concord Avenue
Belmont, MA 02478

Drawing Title

East & North
Elevations

Date/Issued For

02.27.23

Construction Drawings

Print 24x36

Scale

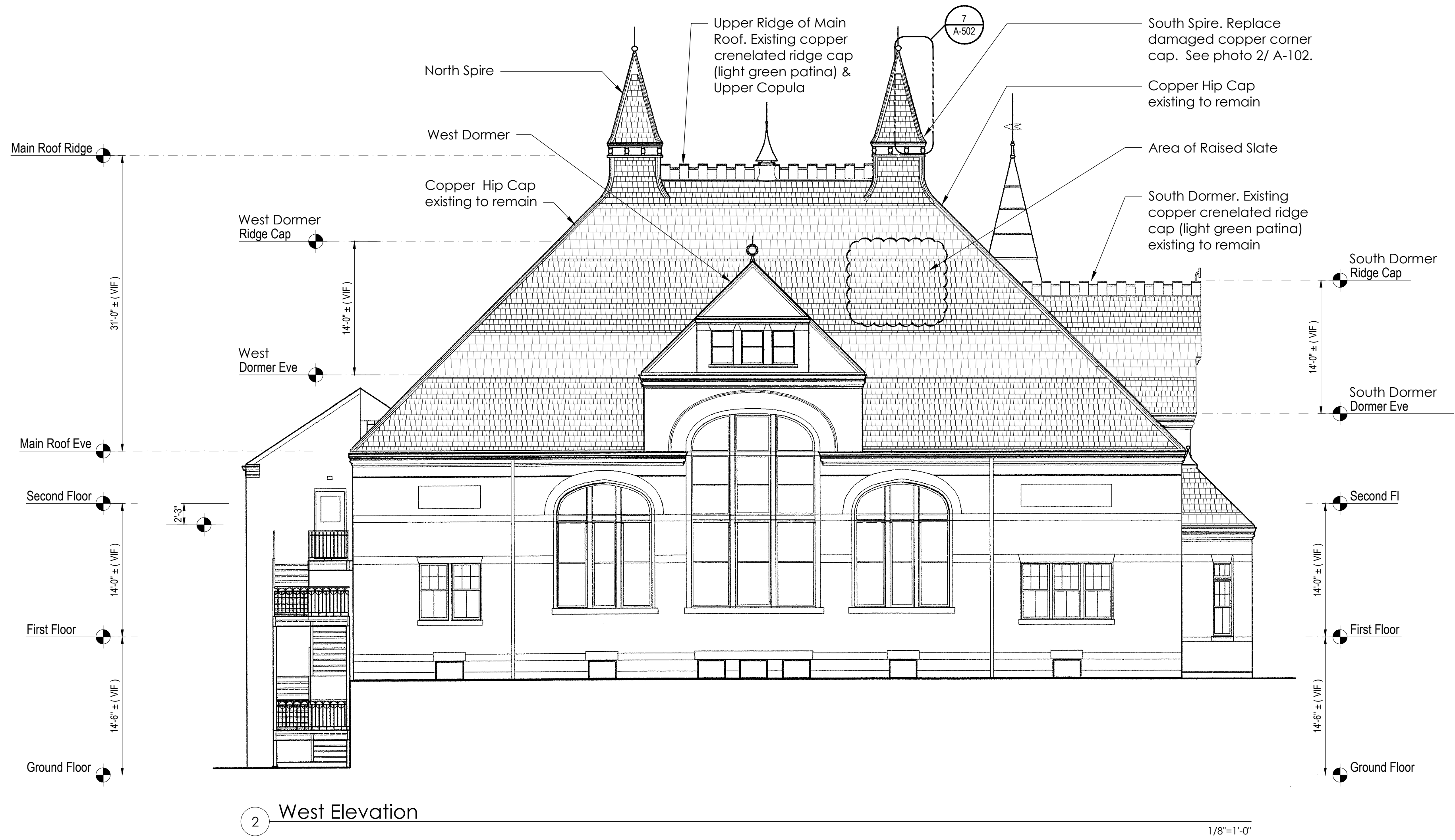
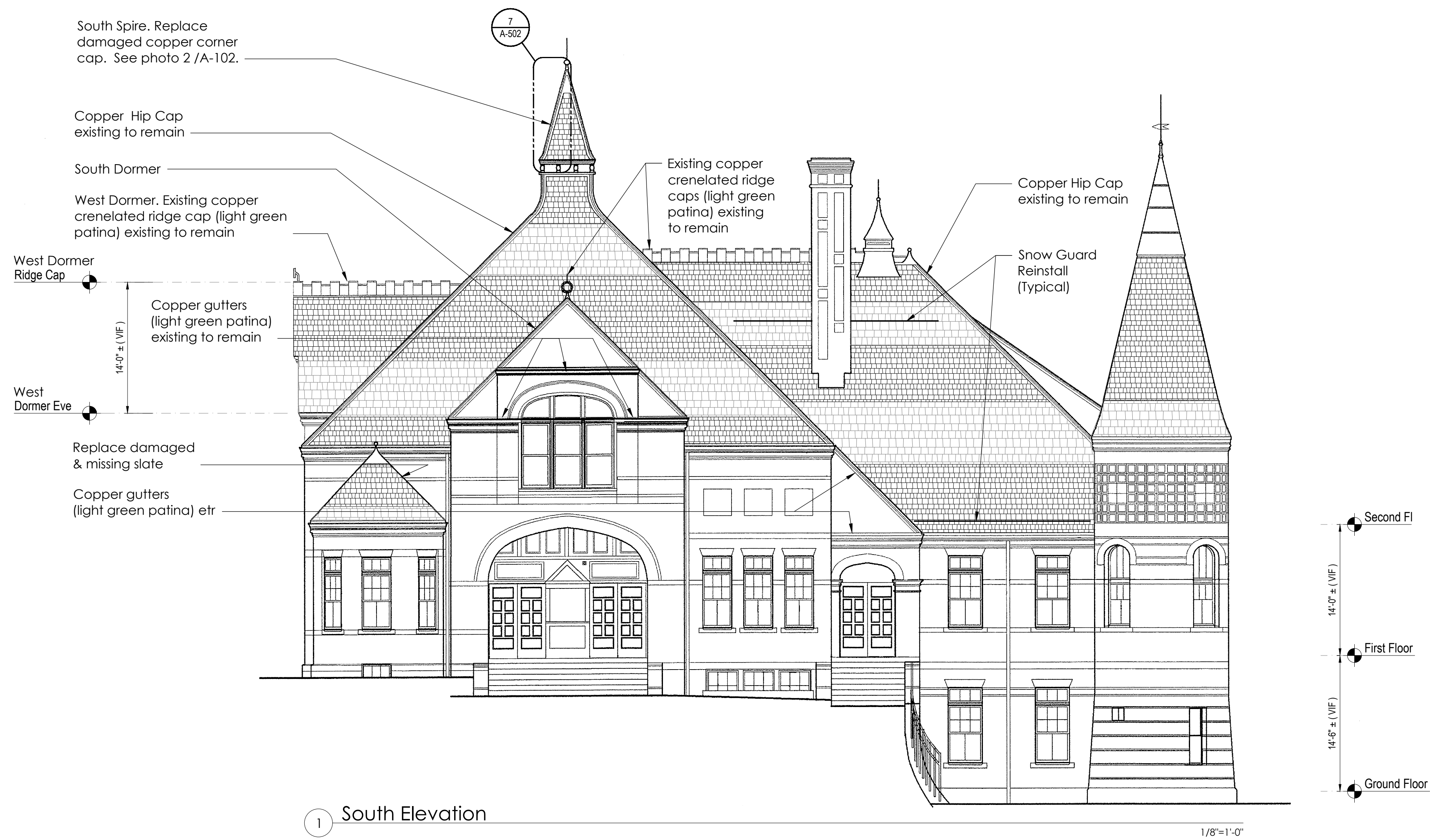
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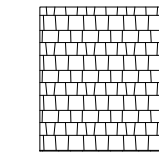
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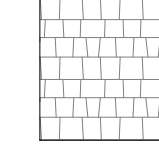
A-401



Legend



"Monson" - Grey Slate (primary)



"Unfading Red" - Slate (accent)

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Project Title

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Roof Repairs

455 Concord Avenue
Belmont, MA 02478

Drawing Title

South & West
Elevations

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Construction Drawings

Print 24x36

Scale

As Noted

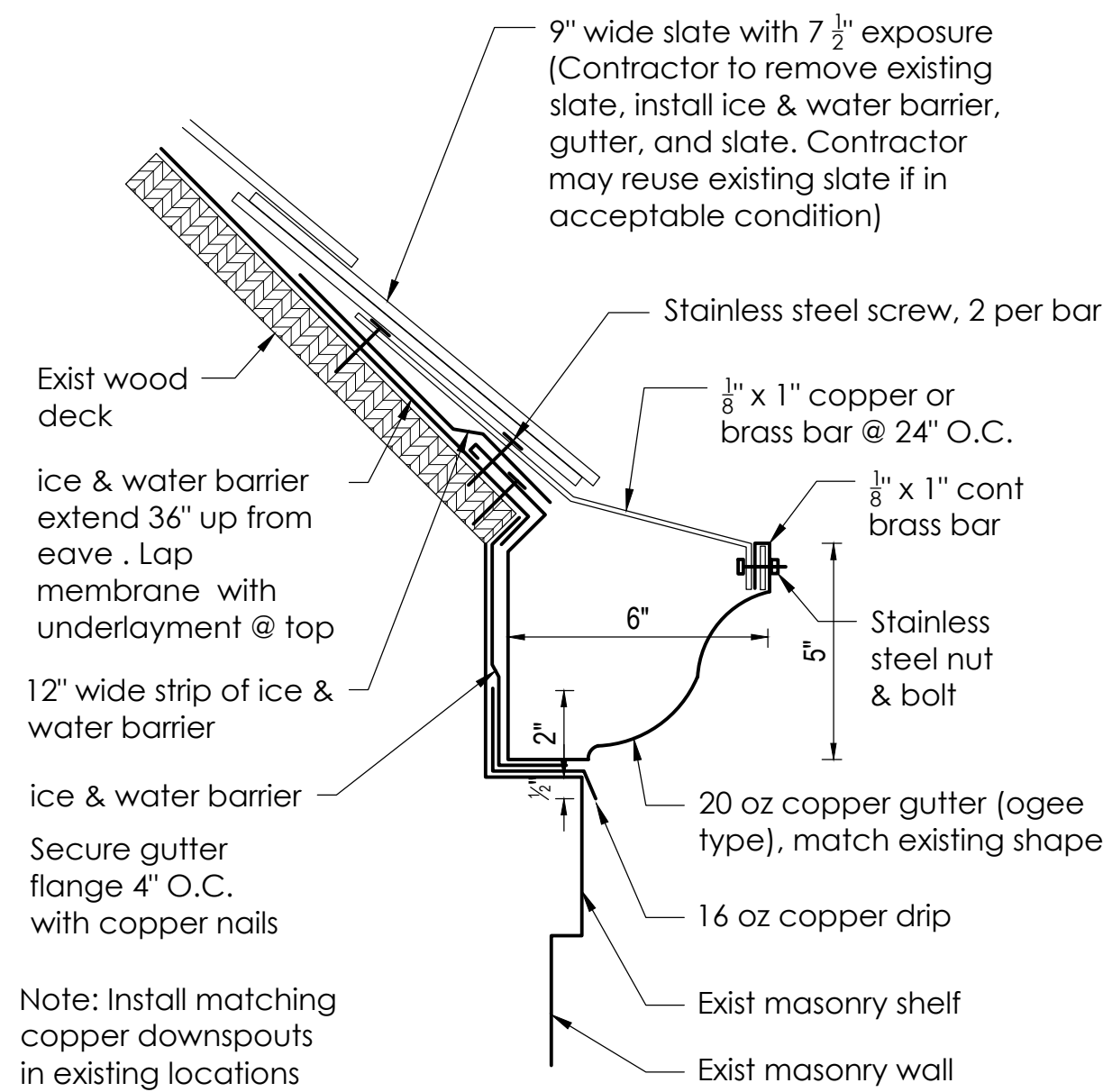
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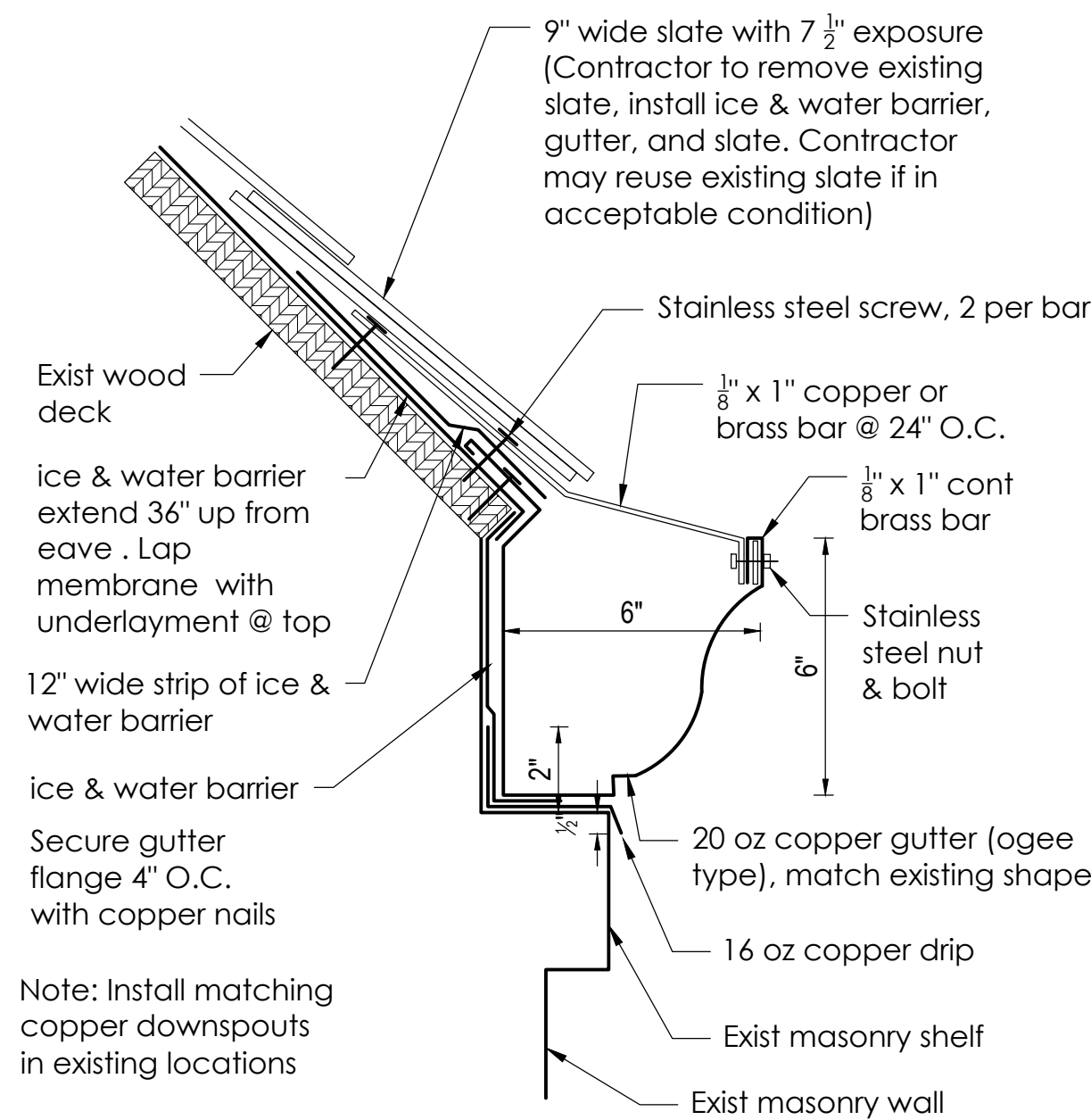
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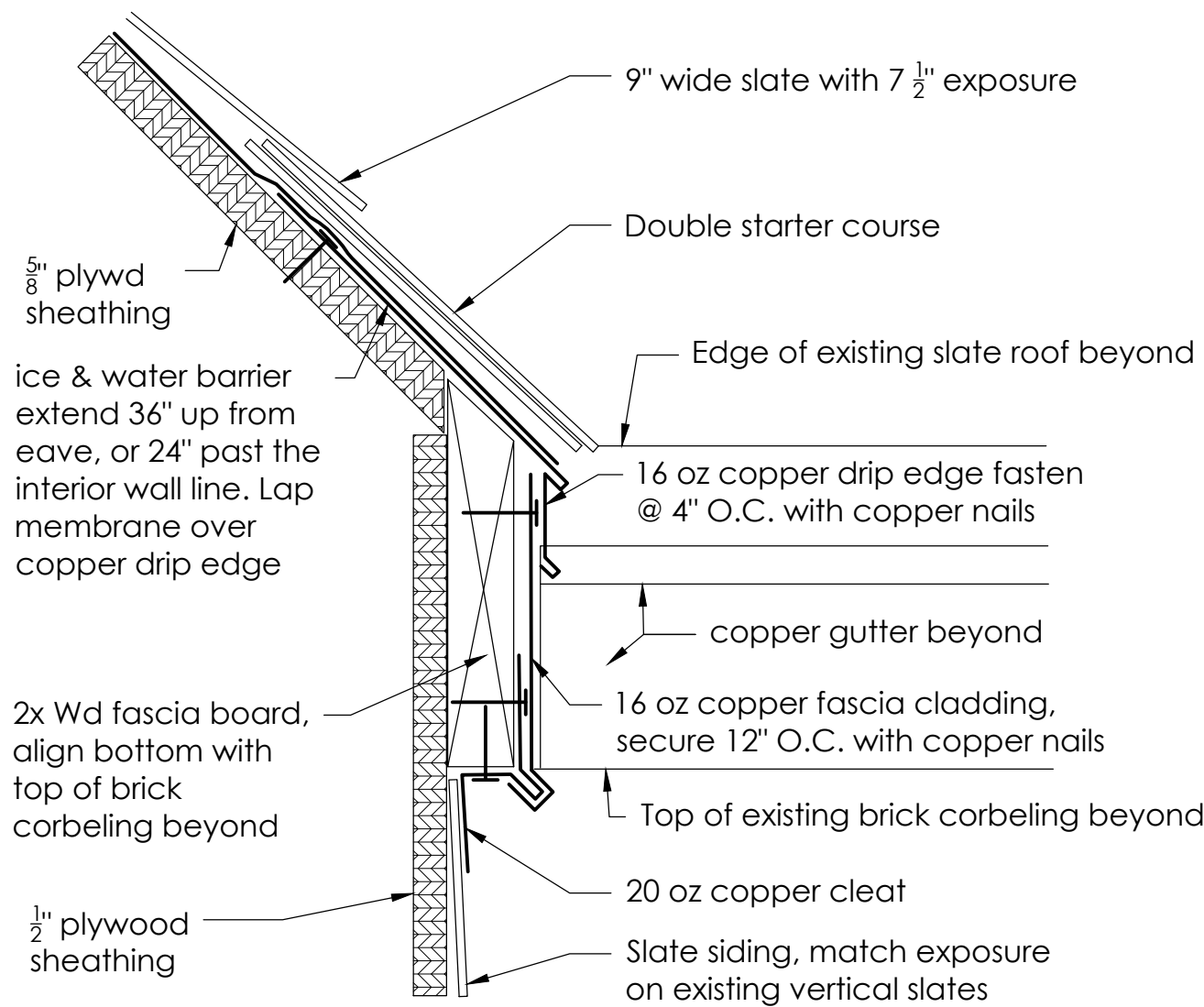
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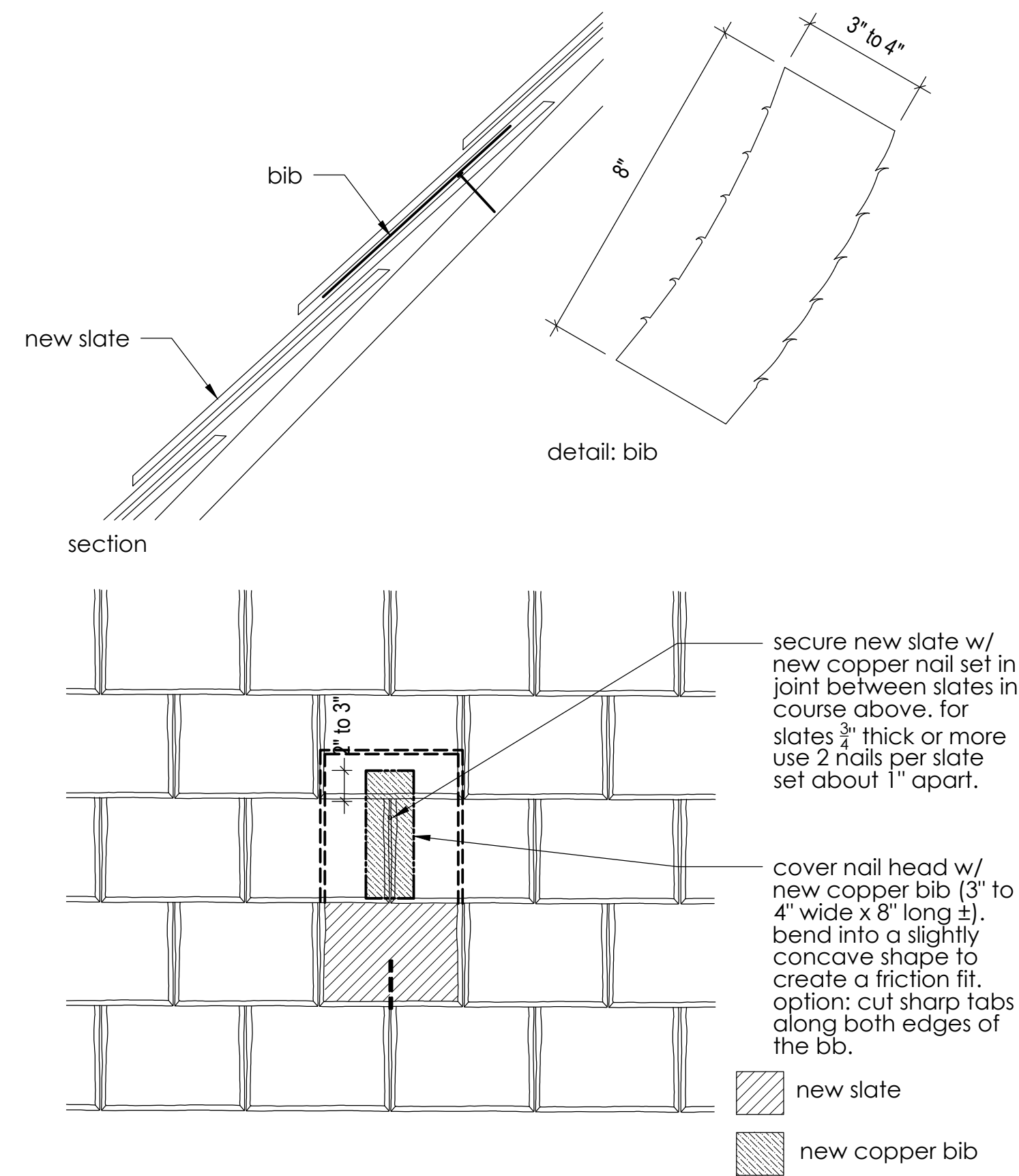
1 Gutter Detail at Old Addition
3" = 1'-0"



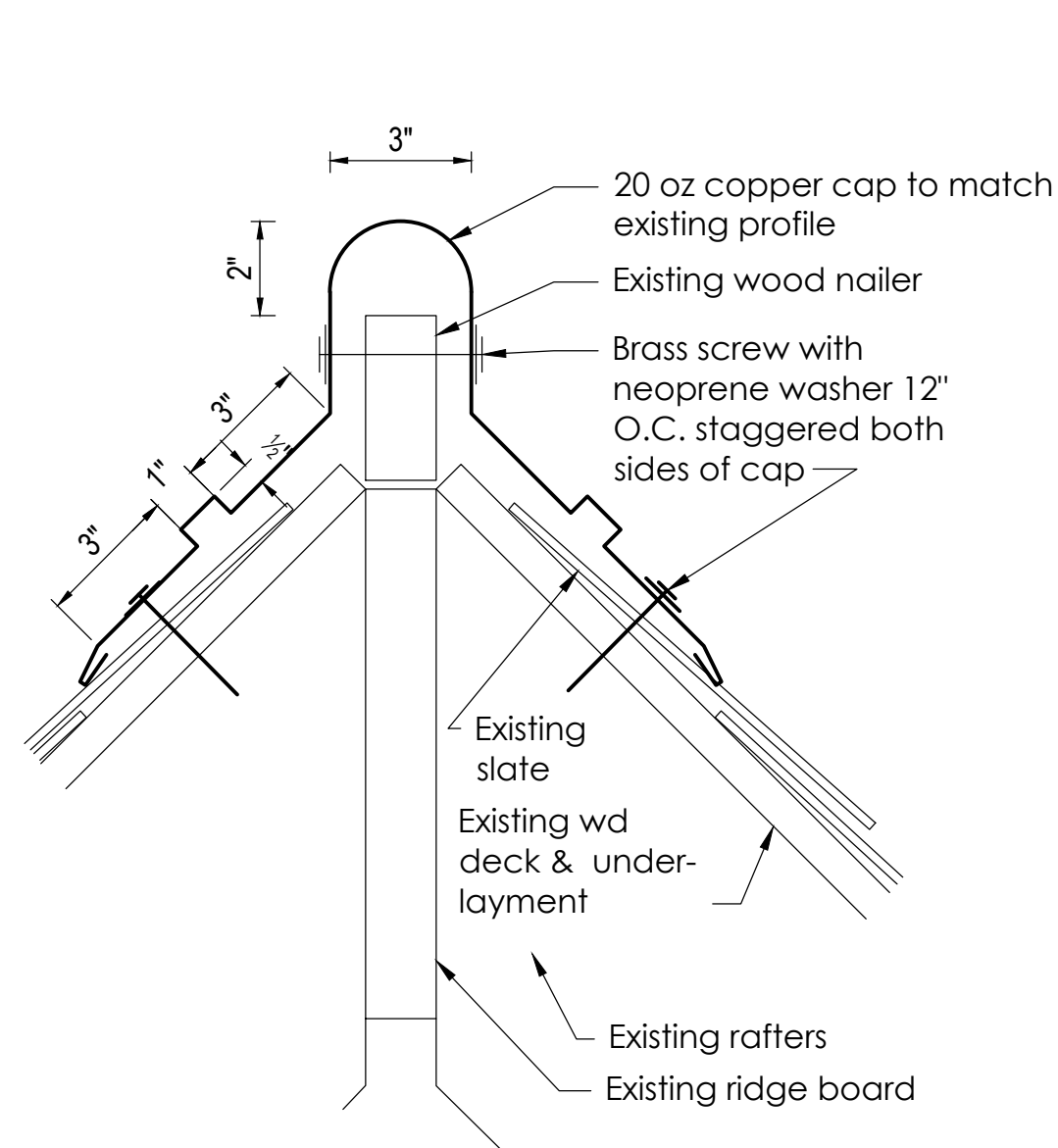
2 Gutter Detail at Main Roof
3" = 1'-0"



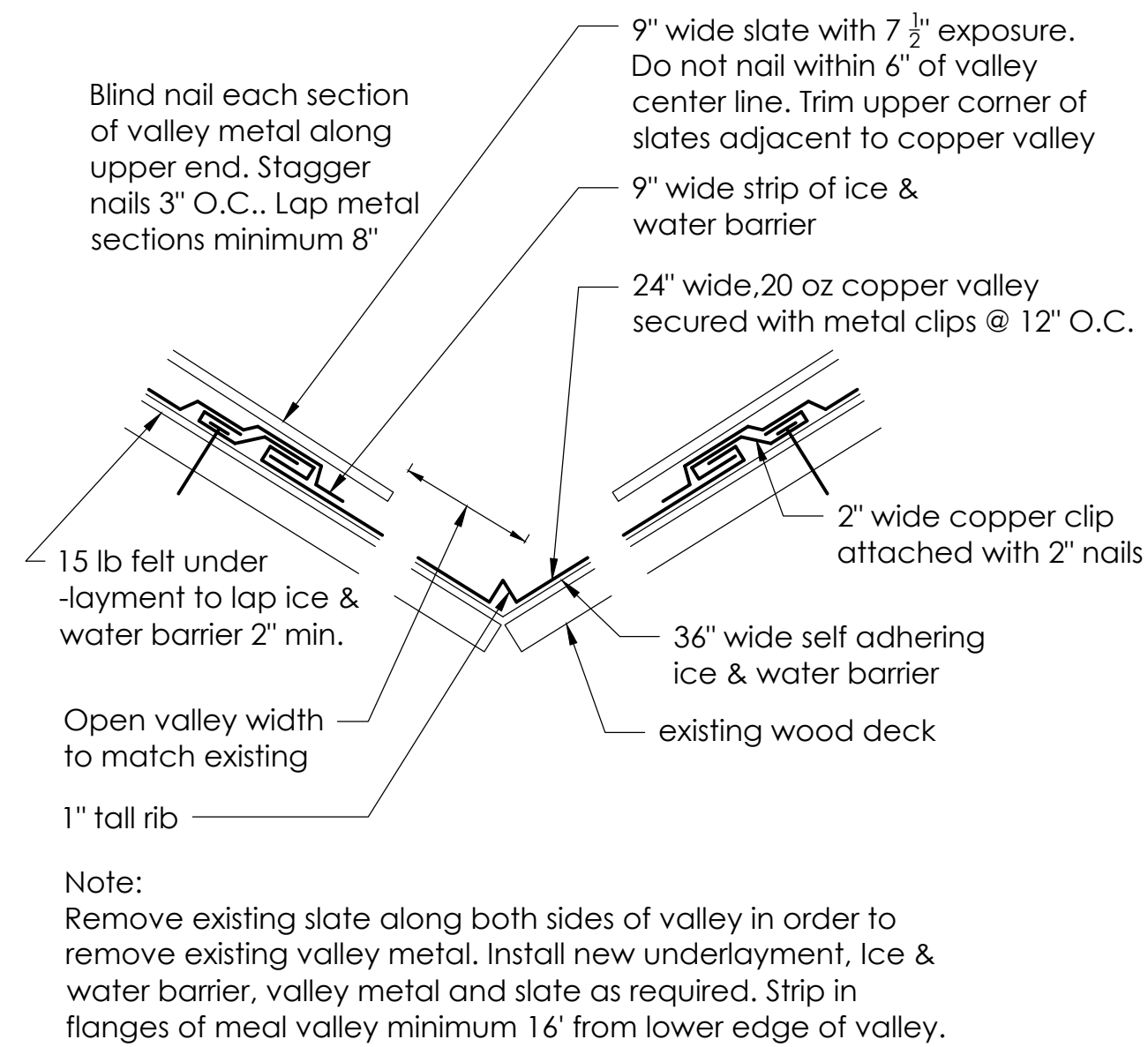
5 Typical Detail at Slate Roof Edge
3" = 1'-0"



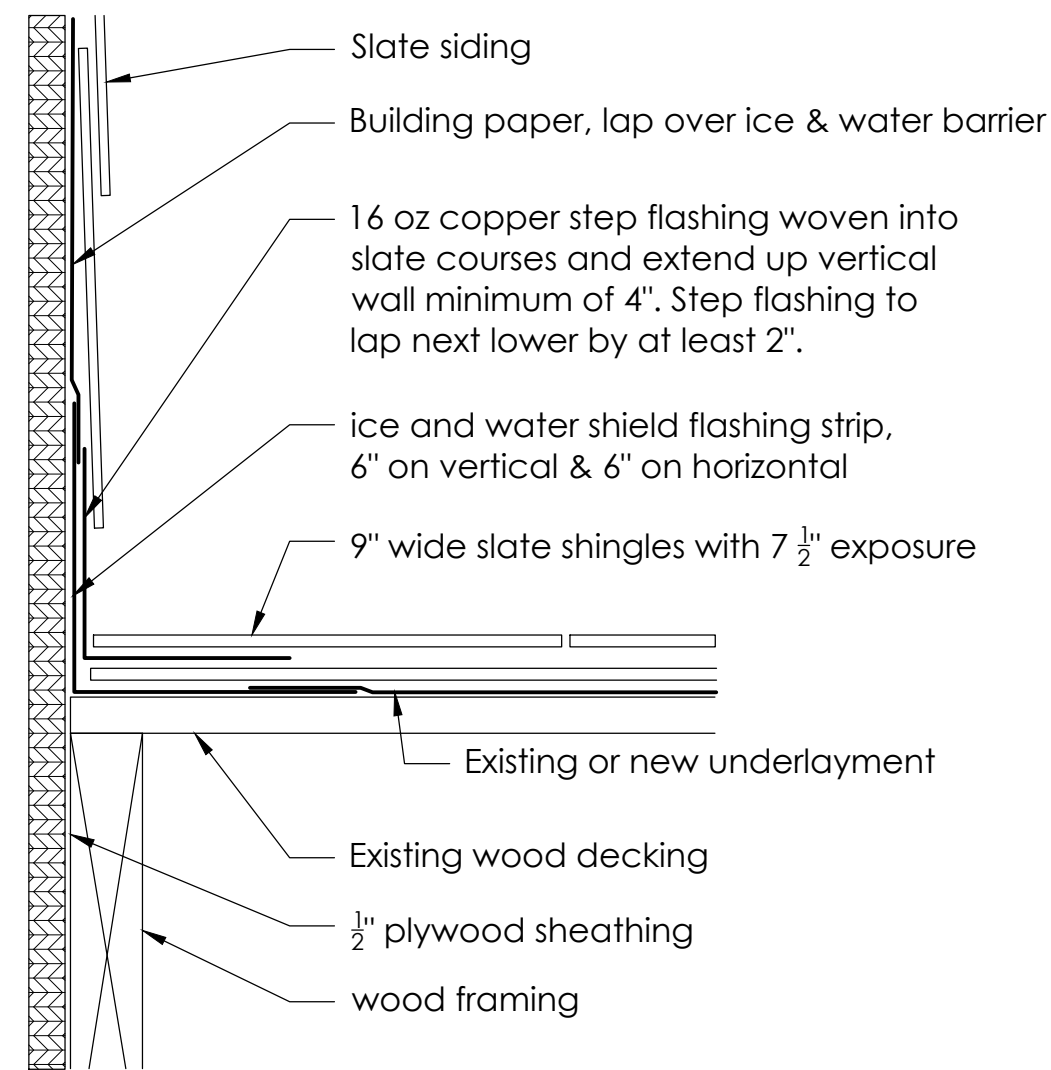
2 Slate Repair - Nail and Bib Method
NTS



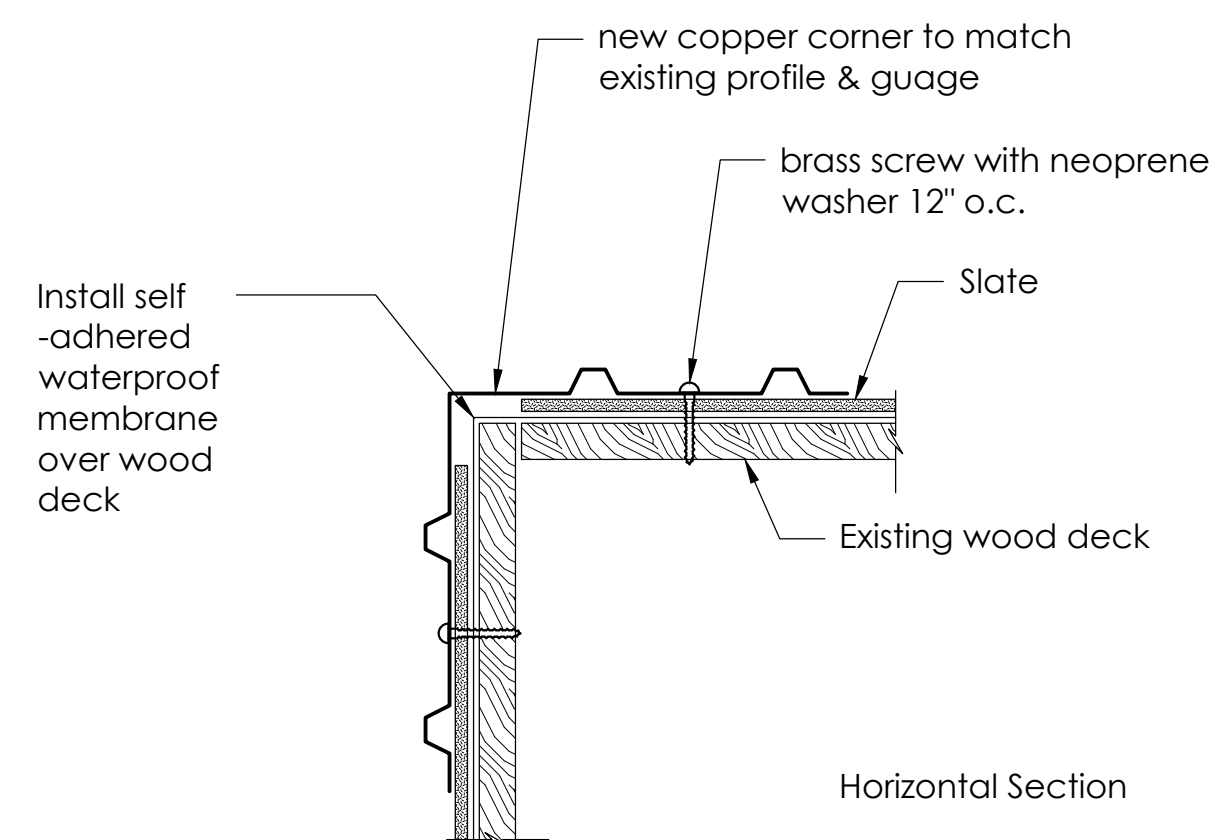
3 Metal Hip Replacement Detail
3" = 1'-0"



4 Metal Valley Replacement Detail
3" = 1'-0"



6 Step Flashing Detail
3" = 1'-0"



7 Corner Hip Detail on Spire
3" = 1'-0"

General Note:

Details on A-501 & A-502 are provided as typical conditions for reference if replacement is determined necessary as observed & verified in the field. Reference Specifications for additional information

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Project Title

Belmont Town Hall
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Drawing Title

Typical Roof Details

Date/Issued For

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Construction Drawings

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Scale

As Noted

Drawn By

TGAS

Drawing Number

A-501

Project Number
2105
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Drawing Title

Typical Roof
Details

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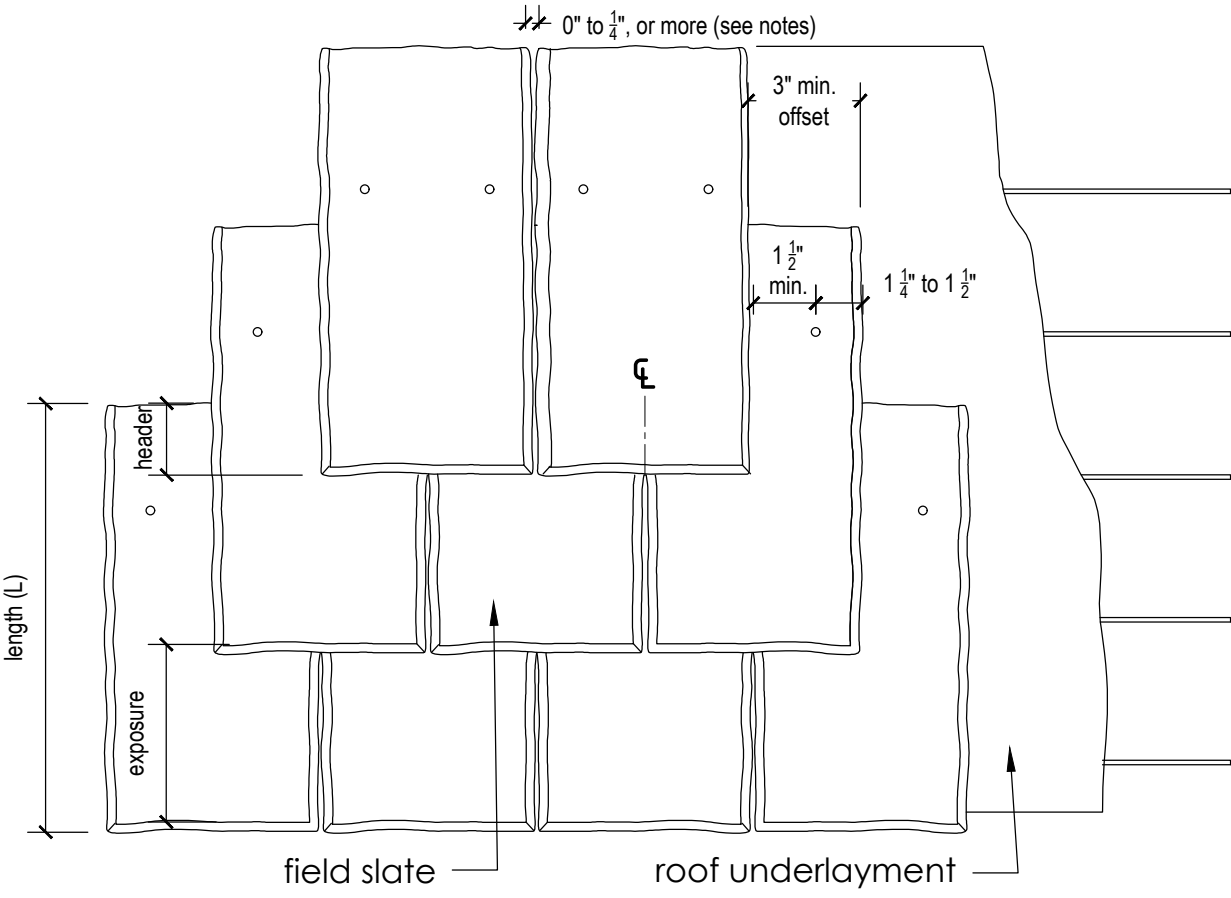
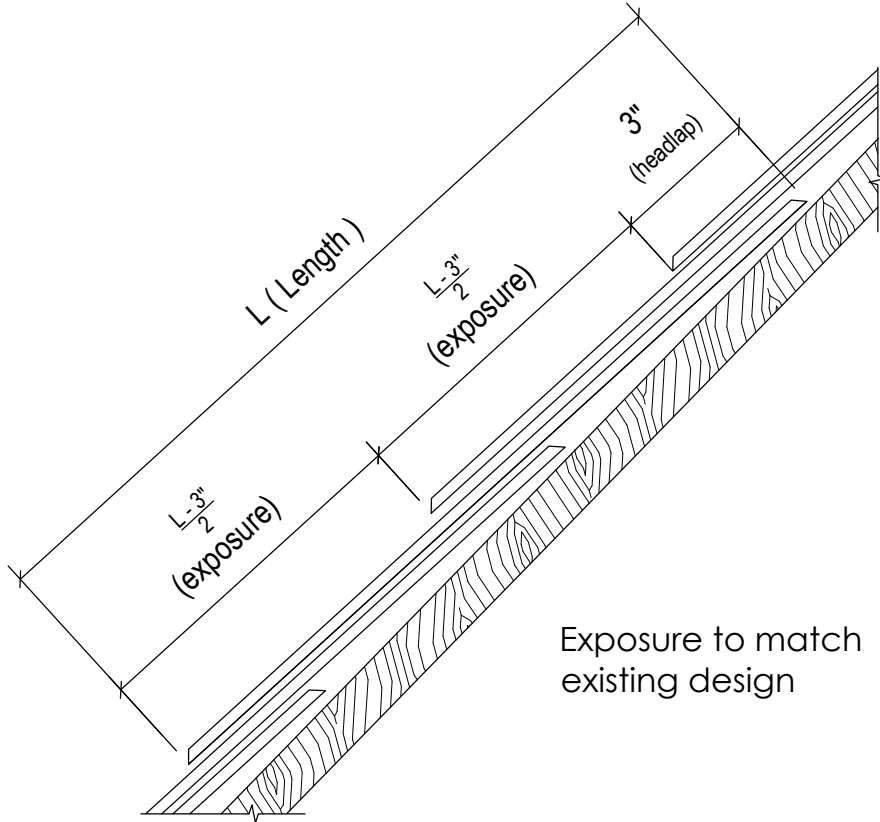
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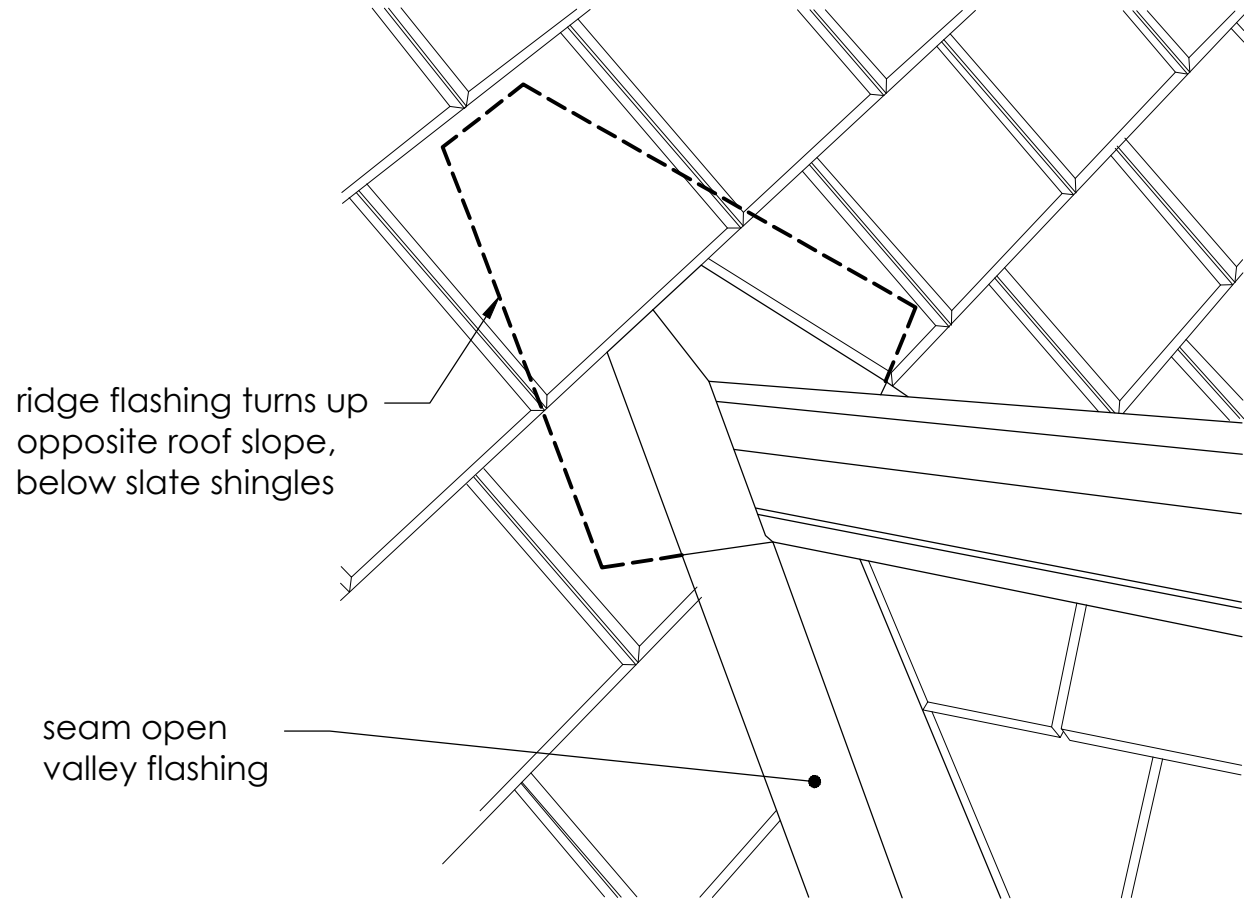
General Note:

Details on A-501 & A-502 are provided as typical conditions for reference if replacement is determined necessary as observed & verified in the field. Reference Specifications for additional information



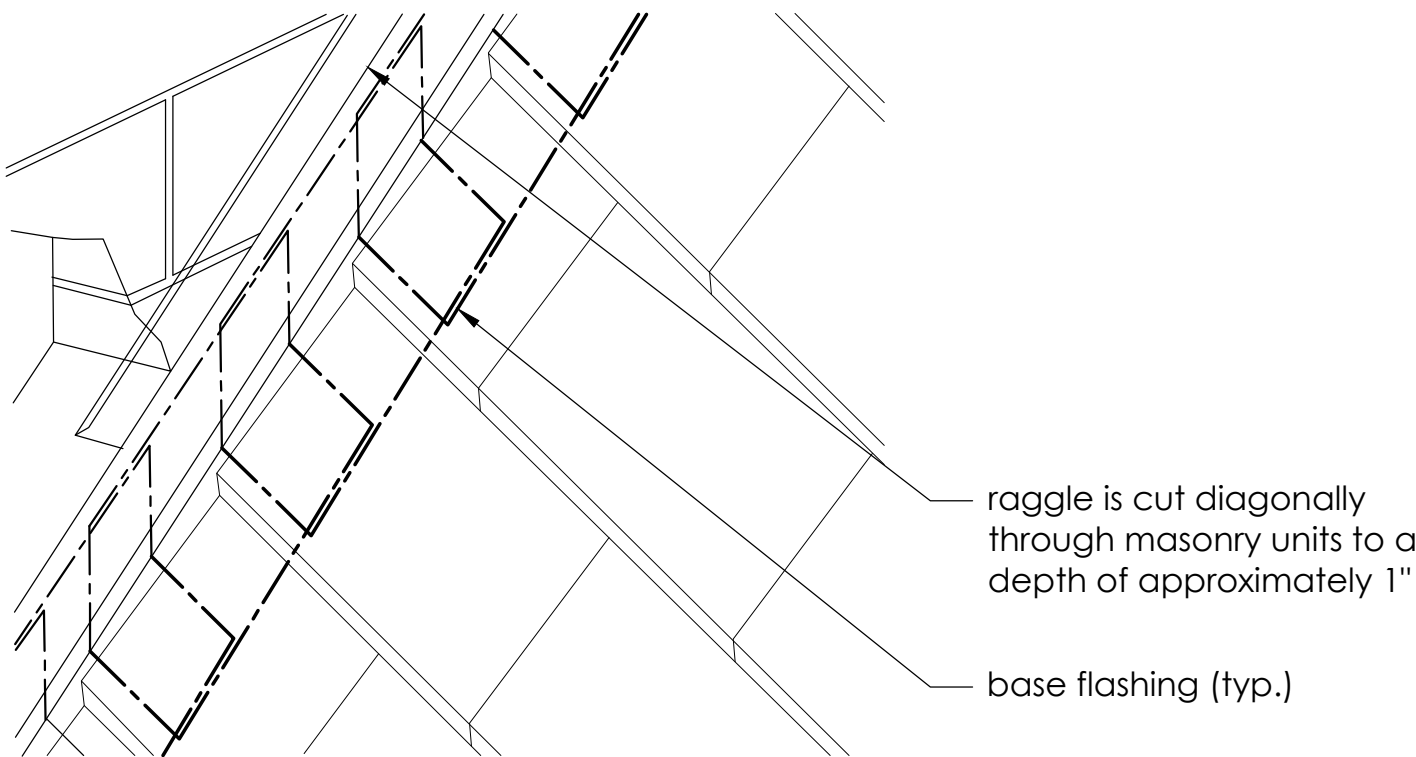
4 Field slates of uniform width

NTS



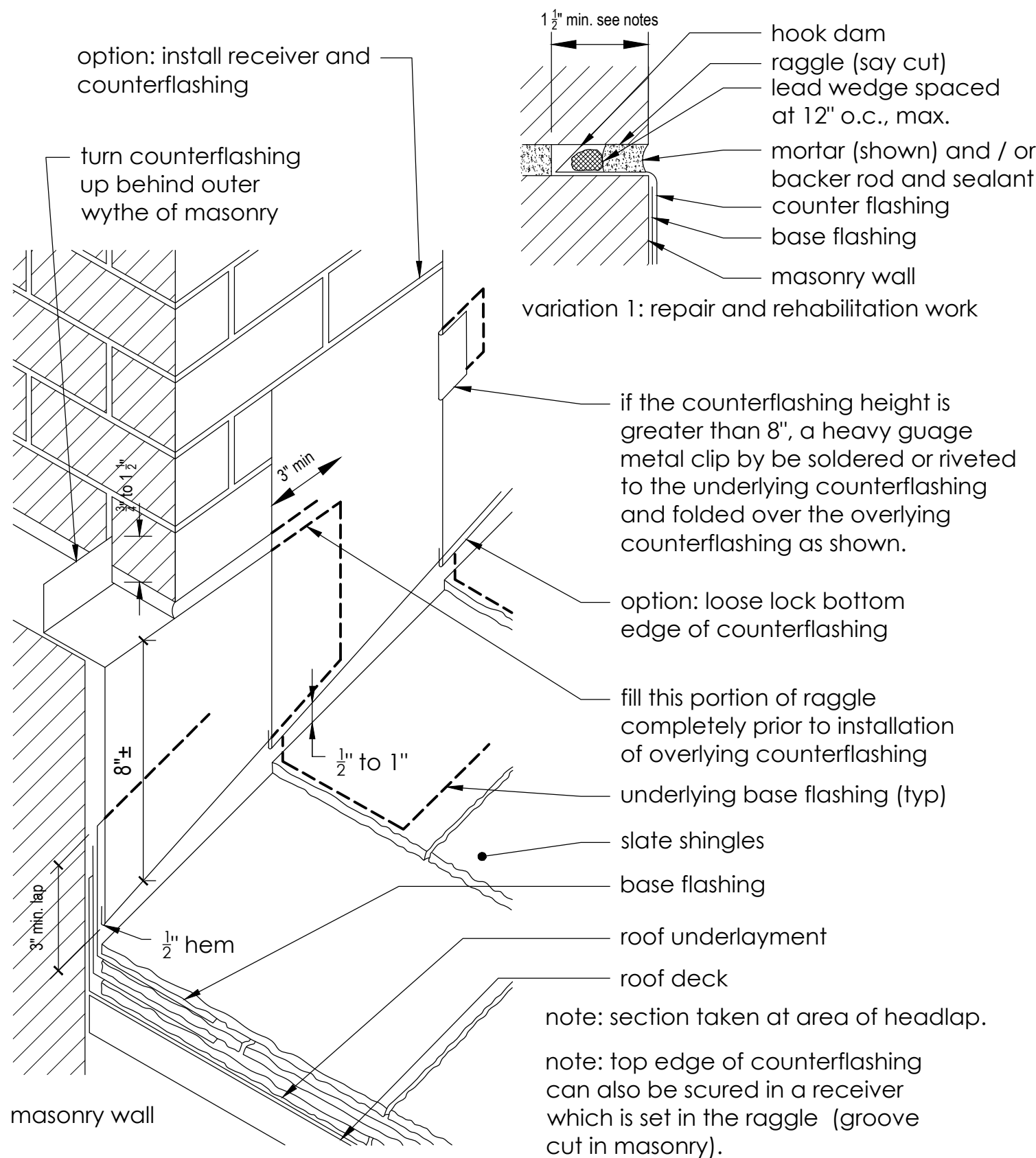
7 ridge - valley interface

NTS



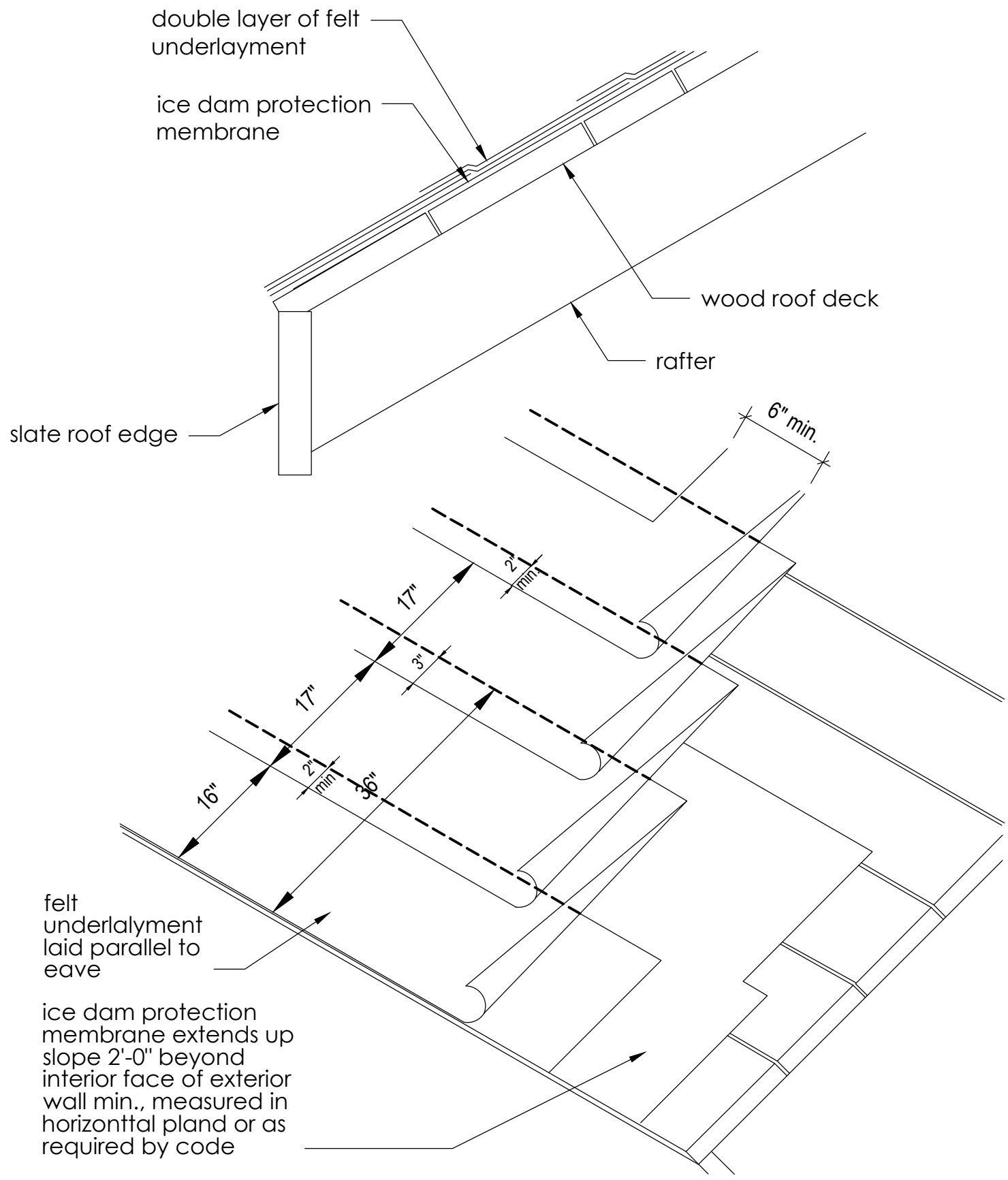
5 variation: straight counterflashings

NTS



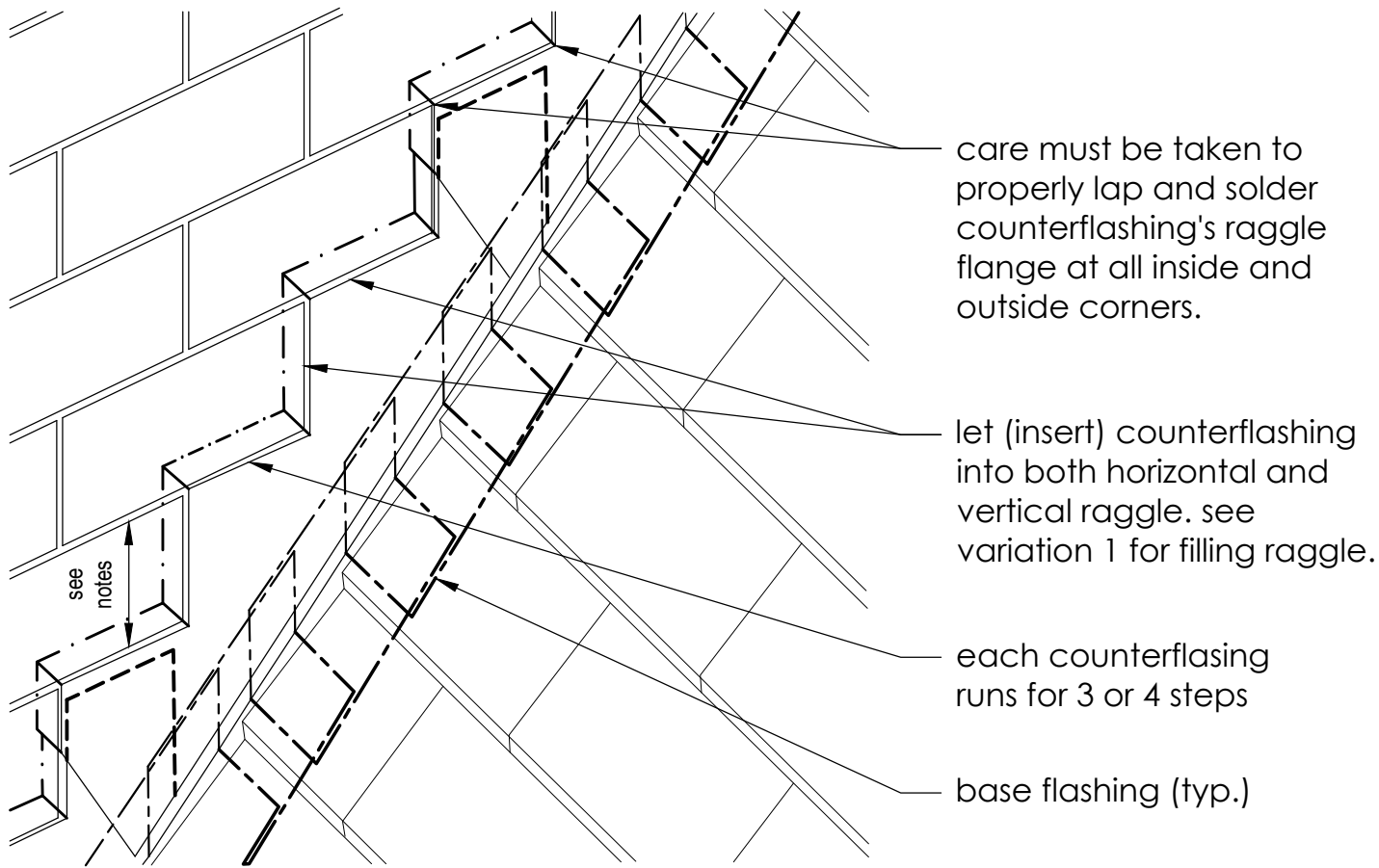
2 counterflashing (cap flashing) at vertical side wall

NTS



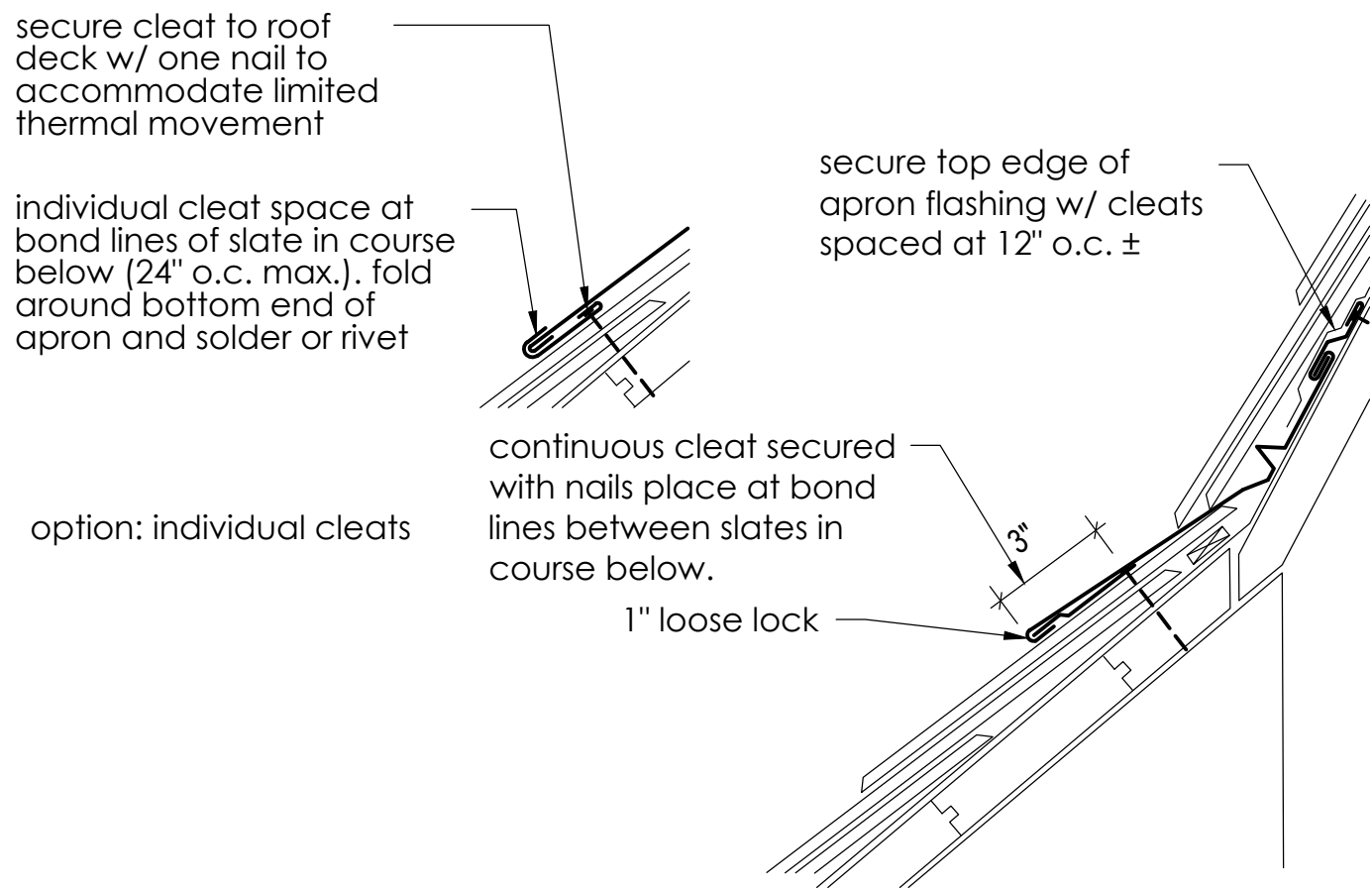
1 Eave underlayment with ice dam protection membrane

NTS



6 variation: 1-piece counterflashings

NTS



3 Variation 1: exposed apron with continous cleat

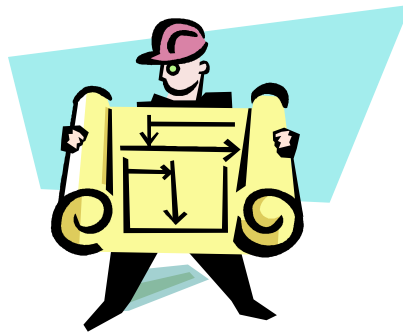
NTS

Bid Set No. _____

February 27, 2023

PROJECT MANUAL

Belmont Town Hall Roof Repairs



Patrice Garvin, Town Administrator
455 Concord Avenue
Belmont, MA 02478

OWNER

Town of Belmont
David Blazon, Director of Facilities
Belmont Facilities Department
19 Moore Street
Belmont, MA 02478
Tel – 617-993-2640
Fax – 617-993-2641

CONSULTANT

ARCHITECT
The Galante Architecture Studio, Inc.
146 Mount Auburn Street
Cambridge, MA 02138
Tel – 617-576-2500

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SECTION TITLE

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END OF SECTION – 00 01 10

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END OF SECTION – 00 01 15

00 11 16 INVITATION TO BID

The Town of Belmont, acting through the Belmont Facilities Department, the Awarding Authority, invites sealed bids for **Belmont Town Hall – Roof Repairs**, Belmont, MA in accordance with Contract Documents prepared by The Galante Architecture Studio, Inc., 146 Mount Auburn Street, Cambridge, Massachusetts, 02138. The work of this Contract includes selective repairs to the slate shingle roof, and associated construction.

All bids for this Project are subject to the provisions of Massachusetts General Laws (Ter. Ed), including without limitation Chapter 30, Section 39M as amended; Mass. G.L. Chapter 149, Sections 44A through 44L inclusive; and Chapter 149, Section 26 through 27D inclusive.

Filed Sub-Bids are required for the following trades:

Not Applicable

Sealed bids for the General Contract on forms furnished by the Awarding Authority will be received by the Awarding Authority at the offices of the Belmont Facilities Department, 1st Floor, Homer Administration Building, 19 Moore Street, Belmont, MA 02478, until 2:00 p.m. local time on Tuesday, March 21, 2023. All General Bids will be publicly opened and read aloud immediately thereafter.

Each General Bidder must be certified by the Department of Capital Asset Management (DCAM) for the category of **Historical Roofing** and dollar amount of this project and to be considered must submit with his or her Bid, a DCAM Certification and Update Statement indicating additional work or contracts performed or executed after the certification date. The category of work for this Project is General Contracting. The estimated construction cost of this Project is \$ 360,000.

A mandatory pre-bid site inspection and meeting will be held on Wednesday, March 8, 2023 at 10:00 AM. All Bidders are requested to meet at the Belmont Town Hall, 455 Concord Avenue, Belmont, MA.

Bid Forms and Contract Documents are available online at www.Projectdog.com. Enter Project Code **854026** in the project locator box and select "Acquire Documents" to download documents. Alternatively, a free CD-ROM may be requested by contacting Projectdog – shipping & handling charges apply. All plan holders must have an active online account on www.Projectdog.com to download documents, receive e-mail notifications, and to submit bids electronically. Documents may also be viewed, but not removed, from the offices of Projectdog Inc., 18 Graf Road - Unit 8, Newburyport, MA 01950, Monday – Friday, 8:30 a.m. to 5:00 p.m.

Addenda

Addenda, if issued, will be posted to the Projectdog website and shall be accompanied by e-mail notification to every individual or firm on record as having received the Contract Documents. Hard copies of addenda will not be mailed or faxed. It shall be the sole responsibility of the Contractor to ascertain the existence of any and all addenda.

If a bid is submitted prior to an Addendum being issued, the Bidder will receive an e-mail notification for informational purposes only. The Bidder must review the addendum, retract the bid, acknowledge all addenda, and re-submit the bid. If a Bidder fails to acknowledge all addenda their bid may be rejected by the Awarding Authority.

The Bidding Documents may be examined at the following places during normal business hours after issuance:

Belmont Town Hall – Roof Repairs
Belmont, MA

Belmont Facilities Department
Homer Administration Building – 1st Floor
19 Moore Street
Belmont, MA 02478

Each General Bid shall be accompanied by Bid Security equal to five (5) percent of the Bid amount in the form of a Bid Bond, Certified Treasurer's or Cashier's Check issued by a responsible U.S. bank or Trust Company, payable to the Town of Belmont. Each Bidder shall attach the required Bid Bond or Check to the Bid Form.

The Bid Securities of all General Bidders, except those of the three lowest responsible and eligible General Bidders, will be returned within five (5) days, Saturdays, Sundays, and legal holidays excluded, after the opening of General Bids.

The Awarding Authority reserves the right to waive any informalities and to reject any or all General Bids not deemed to be in the best interest of the Town. (C.149, Sec.44E)

The successful General Bidder will be required to furnish a Performance Bond and a Labor and Materials Payment Bond as required by the Contract Documents.

Attention is directed to the fact that no less than the minimum wages as set forth in Document 00 73 43 WAGE RATES SCHEDULES AND FEDERAL REGULATIONS of the Contract Documents must be paid on this Project and that no sales tax shall be included in their bids.

All bids shall remain in effect for sixty (60) days, Saturdays, Sundays and legal holidays excluded, after the opening of General Bids.

The right is reserved by the Town of Belmont, Massachusetts through the Building Committee to reject any or all bids, if it be in the public interest to do so.

END OF SECTION – 00 11 16

00 21 13 INSTRUCTIONS TO BIDDERS

1.00 COMPLEMENTARY DOCUMENT

- A. Document 00 11 16, INVITATION TO BID, included herewith, is complementary to this document and shall be carefully reviewed by bidders for specific instructions which are not repeated herein.

2.00 STATUTES REGULATING COMPETITIVE BIDDING

- A. Bidding procedures and award of general contract and subcontracts shall be in accordance with the provisions of Chapter 30, Section 39M and Chapter 149, Sections 44A through 44L inclusive, of the General Laws of the Commonwealth of Massachusetts, including all current amendments.
- B. In the event of any discrepancy or inconsistency between the provisions of these Bid and Contract Documents and the above-mentioned statutes, the provisions of the above-mentioned statutes shall govern. In such event, the application of all remaining provisions not in conflict to any circumstance other than that in which the conflict occurs shall not be affected thereby.

3.00 GENERAL BIDDER'S QUALIFICATIONS

- A. No individual or firm may submit a General Bid unless it is accompanied by a Certificate of Eligibility (DCAM Form CQ7) issued by the Massachusetts DCAM including a current DCAM Update Statement (DCAM Form CQ3) on or before the time and date stipulated in the Invitation to Bid in accordance with the above-referenced General Laws.
- B. The Contractors' Update Statements are not public records and will not be open to public inspection.
- C. Current Massachusetts law requires all employees who work on public construction sites must have no less than 10 hours of OSHA approved safety and health training.
 - 1. The contractor and all subcontractors on this project will be required to provide certification of their compliance with this requirement with the first certified payroll report for each employee in accordance with the provisions of section 00 73 43 of these Specifications

4.00 INTERPRETATION OF DOCUMENTS: NOTIFICATION OF ERRORS

- A. Interpretation of the provisions of the Bid and Contract Documents will be made by the Architect upon written request of any general bidder, provided that such request is received by the Architect via email at least seven (7) business days prior to date of applicable bid opening, and that the Architect considers such interpretation to be of sufficient importance. Oral or telephone interpretations will not generally be made, and if made, shall be strictly informal and not legally valid or binding.
- B. Such written interpretations shall be in the form of Addenda to the Bid and Contract Documents, issued electronically via email not less than four (4) business days prior to date of applicable bid opening.
- C. Bidders are urged to communicate all errors and discrepancies found in the Bid and Contract Documents to the Architect in writing. Telephone calls pointing out any such errors or discrepancies will be taken by the Architect, but only for the purpose of receiving the information in order that it may be properly processed, and not for interpretation or clarification.

5.00 EXAMINATION OF BIDDING AND CONTRACT DOCUMENTS

- A. Each General Bidder shall carefully examine the Bid and Contract Documents to obtain a thorough understanding of the work of his bid in addition to work of related trades. In addition, each General Bidder shall personally visit the site to thoroughly acquaint himself with the conditions as they exist thereon.
- B. Failure of any General Bidder to thoroughly examine the Bid and Contract Documents or to visit and examine the site shall in no way relieve him of any obligation with respect to his bid or of any responsibility assigned him under the Contract.

6.00 PRE-BID CONFERENCE

- A. Pre-bid conference will be held at location and time stipulated in the Invitation to Bid.

7.00 MODIFICATION AND WITHDRAWAL OF BIDS

- A. Modifications or withdrawals of General Bids will be permitted after submission of such bids provided clearly written, readily understandable instructions for same are received by the Awarding Authority in writing prior to time established for opening of such bids. No General Bid may be withdrawn after that time, except as otherwise provided herein or by law.

8.00 ADDENDA

- A. Addenda may be required during the bidding period to modify, clarify, or interpret the Bid and Contract Documents. It is intended, but not guaranteed, that such Addenda shall be emailed by ProjectDog to all persons or parties to whom Bid and Contract Documents have been issued (Bidders of Record). Failure to receive such Addenda shall in no way relieve any bidder from the execution of its provisions. All bidders are cautioned to verify the number of Addenda which have been issued and to secure any needed copies from the Architect before submitting a bid.

9.00 FORM FOR BIDS

- A. The Awarding Authority will make available to every person applying therefore, a Form for General Bid. Each bona fide General Bidder will be furnished forms for his proposal upon request. Such forms will be made available by ProjectDog throughout the bidding period. Bids must be submitted on forms included in the bid documents of the Project Manual.
- B. All blank spaces provided on the bid forms shall be filled in with ink or typewriter. Where space is provided, sums shall be expressed in both words and figures. In case of discrepancy between the two, the written words shall govern.
- C. No interlineations, additions, alterations, or erasures shall be made on the forms.

10.00 ALTERNATES

- A. Not Applicable.

11.00 SUBMISSION OF FILED SUBBIDS

- A. Not Applicable.

12.00 SUBMISSION OF GENERAL BIDS

- A. The General Bid Form shall be properly executed and enclosed with the required bid deposit in a sealed envelope plainly marked on the outside with the following information, and must include Document 00 45 48 CERTIFICATION OF PAYMENT OF STATE TAXES and Document 00 45 19 NON-COLLUSION AFFIDAVIT:

GENERAL BID for:

BELMONT TOWN HALL – ROOF REPAIRS
BELMONT, MA

SUBMITTED BY:

(Name of General Bidder)

(Address of General Bidder)

- B. If General Bids are mailed, the above required envelope shall be enclosed in a second envelope identified with the above markings and mailed to the place of general bid opening, as described in the Invitation to Bid. Mailed General Bids must be received before time scheduled for opening of General Bids.

13.00 PERFORMANCE AND PAYMENT BONDS

- A. The Performance and Payment Bonds required of the General Contractor shall each be in the amount of 100% of the Contract Sum from a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and approved by the Awarding Authority.

14.00 FOREIGN CORPORATIONS

- A. The attention of bidders is called to the General Laws, Chapter 30, Section 39L, as amended by Acts of 1967, Chapter 3, under which the Awarding Authority may not enter into a contract with a foreign corporation (a corporation not organized under the Laws of Massachusetts), nor approve a foreign corporation as a subcontractor, unless the foreign corporation has filed with the Awarding Authority a certificate by the State Secretary stating that the foreign corporation has complied with General Laws, Chapter 181, Sections 3 and 5, and stating the date of such compliance.

15.00 AWARD OF CONTRACT

- A. The General Contract will be awarded to the lowest responsible and eligible bidder on the basis of the proposed Contract Price. The award of the Contract will be made within thirty (30) days, Saturdays, Sundays and legal holidays excluded, after opening of general bids.
- B. Special attention is directed to the provisions of Sections 44A to 44L of Chapter 149 defining the term "lowest responsible eligible bidder" and giving the Awarding Authority the right to require essential information regarding qualifications.
- C. If the General Bidder selected as the General Contractor fails to perform his agreement to execute a Contract in accordance with the terms of his general bid and furnish a Performance Bond and also a Payment Bond as stated in the forms provided herein, as award will be made to the next lowest responsible and eligible General Bidder.

- D. The thirty (30) day time limit will not apply to a second or subsequent award made after the expiration of the time limit because the General Bidder failed to execute the Contract or to provide a Performance Bond and a Payment Bond.

16.00 COMMENCEMENT AND COMPLETION OF WORK

- A. The successful bidder, upon execution of the Contract Agreement, shall commence the work of the Contract within seven (7) calendar days from receipt of written Notice to Proceed issued by the Awarding Authority within fourteen (14) calendar days after said execution of the Contract Agreement, and shall thereafter diligently and continuously carry on the work in such manner as to substantially complete the work on or before dates as specified in Section 01 11 00 – SUMMARY OF WORK.

17.00 LIQUIDATED DAMAGES

- A. The work shall commence at the time stated in the notice to the Contractor to proceed and shall be substantially completed in accordance with the schedule provided in the specifications. Notice to proceed may be given to the Contractor on any date after the Contractor has executed the Contract and furnished the performance and payment bonds with all insurance therein requested. Owner and Contractor recognize that time is of the essence to this agreement and that Owner will suffer financial loss if the work is not substantially complete within the time specified above, plus any extensions thereof allowed via change orders as a result of changes in the work. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the work is not substantially complete on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay, but not as a penalty, Contractor shall pay Owner as provided below for each day that expires after the time specified for substantial completion until the work is substantially complete.
- B. Liquidated damages for not completing the work within the time limit specified above will be assessed to the Contractor. Liquidated damages will be in the amount stipulated in Document 00 52 16, SUPPLEMENT TO THE STANDARD AGREEMENT. The liquidated damages amount per calendar day is a minimum damage figure to compensate the Town of Belmont for administrative costs and loss of income in the event of delay of its use of the Town Hall roof, and for added Architect and consultant fees, and does not limit in any way the liability of the Contractor for damages in excess of the specified liquidated damages amount per day for other damages, in particular, damages for breach of Contract. It is expressly understood that such liquidated damages do not constitute a penalty.
1. Substantial Completion: Date for Substantial Completion is specified in Section 01 11 00, SUMMARY OF WORK.

18.00 DELAY REMEDY

- A. In the event that the Project is delayed for any reason, the sole remedy for the Contractor, and any subcontractor, for such delay shall be an extension of the Contract Time. No party shall have any other rights or remedies against the Owner, and shall make no claim therefore.

19.00 MBE/WBE REQUIREMENTS

- A. Not Applicable.

END OF SECTION – 00 21 13

00 41 13 FORM FOR GENERAL BID

To the Awarding Authority:

A. Pursuant to and in compliance with your Invitation to Bid relating thereto, the

undersigned, _____ having visited the site, familiarized himself with the conditions present, and carefully examined the Contract Documents dated February 27, 2023, together with all Addenda issued and received prior to closing time for receipt of Bids as prepared by the Architect,

The Galante Architecture Studio, Inc.
146 Mount Auburn Street
Cambridge, MA 02138

hereby offers and agrees to provide all labor and materials required for construction of:

BELMONT TOWN HALL – ROOF REPAIRS
Belmont, MA

to the satisfaction of the Owner and the Architect and in accordance with the accompanying Contract Documents with all addenda, for the Contract Price specified below, subject to additions and deductions according to the terms of the Contract Documents.

B. This Bid includes Addenda numbered _____.

C. The proposed Contract Price is : _____ Dollars
(\$ _____).

D. Alternates:

Not Applicable

E. The subdivision of the proposed Contract Price is as follows:

Item 1. Work of General Contractor, being all work other than that covered by Item 2:

_____ Dollars (\$ _____).

Belmont Town Hall – Roof Repairs
Belmont, MA

Item 2. Subbids as follows:

<u>Class of Work</u>	<u>Name of Subbidder</u>	<u>Amount</u>	Bonds required, indicated by <u>"Yes" or "No"</u>
----------------------	--------------------------	---------------	---

Not Applicable

- G. Unit Prices: 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 Owner, the Undersigned agrees that the following unit prices shall be the basis of payment to the Contractor or credit to the Owner, 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 additions or increases) or to be refunded the Owner (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, or other direct or indirect expenses of the Contractor or Subcontractors.

The specified unit prices shall include all labor, materials, dewatering, removal, 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 Contract Documents governing Changes in the Work.

Item	Quantity to include in Base Bid	Unit	Addition	Deduction
1. Slate Shingles: Replacement of slate shingles in addition to those shown on drawings, including the removal of existing shingles and installation of new underlayment and shingles.				
a. Monson slate: for the replacement of all broken or missing slate and any other areas designated by the Architect.	500 SF (5 squares) + 100 SF (1 square) of attic stock	SF	_____	_____
b. Unfading Red slate: for the replacement of all broken or missing slate and any other areas designated by the Architect.	300 SF (3 squares) + 100 SF (1 square) of attic stock	SF	_____	_____
2. Sheathing: Replace wood board roof sheathing, including removal of existing.	350 SF	SF	_____	_____
3. Gutters: Replacement of copper gutters.	50 LF	LF	_____	_____

Belmont Town Hall – Roof Repairs
Belmont, MA

4. Valleys: Replacement of copper valleys, including removal and reinstallation of adjacent slates.	20 LF	LF	_____	_____
5. Hips: Replacement of copper hips	20 LF	LF	_____	_____

- H. The undersigned agrees that, if he/she is selected as General Contractor, he/she will within five days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the Awarding Authority, execute the Contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority, and each in the sum of one hundred percent of the contract price, or more if so specified elsewhere in the Contract Documents, the premiums for which are to be paid by the General Contractor and are included in the Contract Price.
- I. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he/she will comply fully with all laws and regulations applicable to awards made subject to Section 44A.
- J. The Awarding Authority is exempt from sales and federal excise tax to the extent permitted under law; bidders should not include such taxes in figuring or in references to any bid.
- K. The undersigned 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 subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.
- L. The undersigned further certifies that evidence of certification required by DCAM including required Update Statement **are attached to and made a part of this Bid.**
- M. Commencement and Completion of Work: The undersigned agrees to commence work on the Contract within seven (7) calendar days from receipt of written notice to proceed issued by the Owner within fourteen (14) calendar days after execution of the Contract Agreement and to thereafter diligently and continuously carry on the work.
1. The undersigned agrees to substantially complete the work on or before the time as specified under Section 01 1100, SUMMARY OF WORK, and/or as indicated on Drawings.
 2. If work is not Substantially Complete within this time, undersigned agrees to pay Owner the amount in liquidated damages as stated in Document 00 7300, MODIFICATIONS TO GENERAL CONDITIONS.
- N. Bidder understands that Owner reserves the right to reject any and all bids.
- O. The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of Section 29F of Chapter 29, or any other applicable debarment provisions of any chapter of the General Laws or any rule or regulation promulgated thereunder.
- P. Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 30 business days after the scheduled closing for receiving bids.

Date:_____

(Name of General Bidder)

Signed:_____

Belmont Town Hall – Roof Repairs
Belmont, MA

(Seal)

By: _____
(Name and Title of Person Signing Bid)

(Business Address)

(City and State)

END OF SECTION – 00 41 13

00 43 13 BID SECURITY FORM

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, _____

_____, as Principal, and _____
(insert name of bidder)

_____, as Surety, are hereby
(insert name of surety)

held and firmly bound unto the _____, acting through Belmont Facilities Department,
Belmont, MA, as Owner, in the sum of _____ Dollars (\$_____) for the payment of which, 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 whereas the Principal has submitted to the Owner a certain Bid, attached hereto and hereby made a part hereof, to enter into a contract in writing, hereinafter referred to as the "AGREEMENT" for BELMONT TOWN HALL – ROOF REPAIRS:

NOW THEREFORE,

- (a) If said BID shall be rejected, or in the alternative,
- (b) If said BID shall be accepted and the Principal shall duly execute and deliver the form of AGREEMENT attached hereto and shall furnish the specified bonds for the faithful performance of the Contract and for the payment for labor and materials furnished for the performance of the AGREEMENT,

then this obligation shall be void, otherwise it shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder in no event shall exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extensions of the time within which the Owner may accept such BID; and said Surety does hereby waive notice of any such extensions.

Belmont Town Hall – Roof Repairs
Belmont, MA

IN WITNESS WHEREOF, the parties to these presents have duly executed this bond on this

_____ day of _____, 20_____.

(SEAL)

(Name of Principal)

By: _____

(SEAL)

(Name of Surety)

By: _____

Sealed and delivered
in the presence of

END OF SECTION – 00 43 13

**00 45 19 NONCOLLUSION AFFIDAVIT
(GENERAL BID ONLY)**

The undersigned, being first duly sworn, deposes and says that:

- (1) He is _____ of _____, the Bidder that has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner, or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.
- (6) The undersigned certifies under 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 herein, the word person shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

Signature: _____

Name of Person signing bid: _____

Name of Business: _____

Subscribed and sworn to before me

this _____ day of _____, 20_____

(Title)

My commission expires _____

END OF SECTION – 00 45 19

00 45 44 VOTE OF CORPORATION AUTHORIZING EXECUTION OF CONTRACT

At a meeting of the Board of Directors of _____

duly called and held on _____

and acting throughout, the following vote was duly adopted:

VOTED: That _____

of the corporation, be and hereby is authorized to affix the corporate seal, sign and deliver in the name

and behalf of the corporation a contract with _____

for the construction of _____

at _____

(\$ _____)

to secure the performance of said contract and payment for labor and materials for each year of the term of the Contract, all in such form and on such terms and conditions as he, by the execution thereof, shall deem proper.

A true copy.

ATTEST:

Clerk of the Corporation

Countersignature: _____

In the event that the Clerk or Secretary is the same person as the Officer authorized to sign contract or instrument for the Corporation, this certificate must be countersigned by another officer of the Corporation.

END OF SECTION – 00 45 44

**00 45 48 CERTIFICATION OF PAYMENT OF STATE TAXES
(GENERAL BID ONLY)**

Legislation enacted by the Commonwealth of Massachusetts, effective July 1, 1983, requires that the attestation below be signed:

Pursuant to M.G.L. Ch 62C, Sec. 49A, I certify under penalties of perjury that I, to the best knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

If an Individual:

Social Security Number _____

If a Corporation:

Federal ID Number _____

Signed _____

Subscribed and sworn to before me

this _____ day of _____, 20_____

(Title)

My commission expires _____

END OF SECTION – 00 45 48

Belmont Town Hall – Roof Repairs
Belmont, MA

00 52 15 AGREEMENT FORM

DRAFT AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Town of Belmont
c/o Facilities Department
1st Floor, Homer Administration Building
19 Moore Street
Belmont, MA 02478

and the Contractor:
(Name, legal status, address and other information)

« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

Belmont Town Hall – Roof Repairs
Belmont, Massachusetts

The Architect:
(Name, legal status, address and other information)

The Galante Architecture Studio, Inc.
146 Mount Auburn Street
Cambridge, MA 02138

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

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- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
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EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

☐ [« »] The date of this Agreement.

☒ [« X »] A date set forth in a notice to proceed issued by the Owner, anticipated to be issued on or about June 6, 2023. If the Notice to Proceed is a Partial Notice to Proceed, it shall define the particular work to be commenced, the limitations upon the work to be done, and shall state the maximum amount (including allocable portion of the Contractor's Fee) which the Contractor shall be entitled to be paid for such work. The Owner shall not be obligated to pay for any work done or to pay any amount in excess of the limitation stated in a partial Notice to Proceed.

☐ [« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

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User Notes:

(1496339303)

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[☐] Not later than () calendar days from the date of commencement of the Work.

[☒] By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
<input type="text"/>	<input type="text"/>

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
<input type="text"/>	<input type="text"/>

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
<input type="text"/>	<input type="text"/>	<input type="text"/>

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
<input type="text"/>	<input type="text"/>

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
<input type="text"/>	<input type="text"/>	<input type="text"/>

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

Time is of the essence of this Agreement, and Contractor and Owner agree that delay in Substantial Completion of the Project will cause disruption to the Owner's operations and cause the Owner to incur significant damages and costs in the event of such delay, the exact amount of which is uncertain and difficult to determine. The Parties accordingly agree that if the Contractor fails to achieve Substantial Completion of the work on or before the date set forth in Section 3.3 of this Agreement, then the Owner shall be entitled to recover from Contractor or offset against amounts due the Contractor the sum of Seven Hundred Fifty Dollars (\$750.00) for each calendar day after the Substantial

Completion date until Substantial Completion is achieved. The parties agree that these liquidated damages are a reasonable estimation of Owner's anticipated damages as of the date of this Agreement. The Owner's right to recover liquidated damages shall not preclude or prevent the Owner from recovering compensatory damages for non-delay related events.

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Five percent (5%)

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

In accordance with applicable Massachusetts law, G.L. c. 30, §§ 39G and 39K.

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. Billing and payment of final retainage shall be in accordance with G.L. c. 30, §§ 39G and 39K and the relevant provisions of the General Conditions.

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest in accordance with Massachusetts law, G.L. c. 30, §§ 39G and 39K.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other (*Specify*)

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(*Name, address, email address, and other information*)

« »
« »
« »
« »
« »
« »

§ 8.3 The Contractor’s representative:

(*Name, address, email address, and other information*)

« »
« »
« »
« »
« »
« »

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203-2013 incorporated into this Agreement.)

« »

- .5 Drawings

Number	Title	Date

- .6 Specifications

Section	Title	Date	Pages

- .7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

- .8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

Town of Belmont
c/o Facilities Department
1st Floor, Homer Administration Building
19 Moore Street
Belmont, MA 02478

(Printed name and title)

CONTRACTOR (Signature)

« »« »

(Printed name and title)

00 52 16 SUPPLEMENT TO STANDARD AGREEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 – GENERAL REQUIREMENTS, as listed in the Table of Contents shall be included in and made part of this Section.

1.02 AGREEMENT

- A. American Institute of Architects (AIA) Document A101, "Standard Form of Agreement between Owner and Contractor where the Basis of Payment is an Stipulated Sum", 1987 edition, bound herein as Document 00 5215 – AGREEMENT BETWEEN CONTRACTOR AND OWNER shall be the Form of Agreement for this Project, and, when completed, will include the Information and modifications contained in this document.

1.03 INFORMATION AND MODIFICATIONS

- A. Page 1:
 - 1. The Agreement basis of payment will be a Stipulated Sum as required in Document 00 41 13 – FORM OF GENERAL BID.
 - 2. The Owner is the Town of Belmont, Massachusetts represented by the Belmont Facilities Department, 1st Floor, Homer Administration Building, 19 Moore Street, Belmont, MA 02478.
 - 3. The Contractor will be the person, firm or corporation contracting to perform the complete Work covered or the legal representative of said party.
 - 4. The Project is Belmont Town Hall – Roof Repairs, Belmont, MA.
 - 5. The Architect for this Project is The Galante Architecture Studio, Inc.; telephone 617-576-2500.

1.04 ARTICLE 2 – THE WORK OF THIS CONTRACT

- A. The Contractor shall perform the Work required by the Contract Documents for the complete construction of the Belmont - Department of Public Works Upgrades. The Contractor shall provide all materials, labor, equipment, tools, machinery, transportation, and services necessary for, and reasonably incidental to, the performance of Work.

1.05 ARTICLE 3 – DATES OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

- A. The Work to be performed under the Contract shall commence upon issuance of a "Notice to Proceed", anticipated to be issued on or about June 6, 2023.
- B. The Work of the Contract shall be performed according to the Contract Documents including restrictions specified under Section 01 11 00 – SUMMARY OF WORK. The Work to be performed under this Contract shall be substantially completed August 15, 2023.
- C. Liquidated Damages: The General Contractor agrees to pay the Owner for any delay in Work; the sum of seven hundred fifty dollars (\$750.00) per day for every calendar day beyond the above-established date; said amounts to be deemed payment for liquidated and ascertained for such delay.

1.06 ARTICLE 4 – CONTRACT PRICE

- A. The Unit Prices are as described in Section 01 2200 – UNIT PRICES, of these Specifications.

1.07 ARTICLE 5 – PROGRESS PAYMENTS

Delete Paragraphs 5.2 through 5.8 in their entirety, and insert the following:

- A. The provisions of this Article are subject to the provisions of the General Laws of the Commonwealth of Massachusetts, Chapter 30, as amended.

1.08 ARTICLE 6 – FINAL PAYMENTS

- A. The provisions will be made in accordance with Chapter 30 of the General Laws of the Commonwealth of Massachusetts

1.09 ARTICLE 7 – MISCELLANEOUS PROVISIONS

- A. Other Provisions:
 - 1. Contractor's Representations
 - a. The Contractor has familiarized himself with the nature and extent of the Contract Documents, work, locality, and all location conditions and federal, state, and local laws, rules, ordinances, and regulations that in any manner may affect costs, progress, or performance of the Work.
 - b. The Contractor has made, or has caused to be made, examinations, investigations, and test and studies of such reports, and related data in addition to those referred to in the paragraph above as the Contractor deems necessary for the performance of the Work at the Contract Price, within the Contract Time, and in accordance with other Terms and Conditions of the Contract Documents; and no additional examinations, tests, investigations, reports, and similar data are or will be required by the Contractor for such purposes.
 - c. The Contractor has correlated the results of such observations, examinations, investigations, tests, reports, and data with the Terms and Conditions of the Contract Documents.
 - d. The Contractor has given the Architect written notice of all conflicts, errors, or discrepancies that he has discovered in the Contract Documents, and the Written Resolution thereof by the Architect is acceptable to the Contractor.
 - 2. Miscellaneous
 - a. Terms used in this Contract where are defined in Article 1 of Document 00 72 00-GENERAL CONDITIONS (AIA Document A201) and Section 01 42 00, REFERENCES shall have the meaning indicated in the General Conditions; other terms shall have the meanings given them in applicable publications and regulations.
 - b. No assignment by a party hereto or any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, monies that may become due and monies that are the effect of this restriction may be limited (by law),and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

1.10 ARTICLE 9 – ENUMERATION OF THE CONTRACT DOCUMENTS

Delete Paragraphs 9.1.1 through 9.1.7 and insert the following:

- A. The Contract Documents, which comprise the entire contract between the Owner and the Contract, are attached to this Contract, made a part hereof, and consist of the following:

Belmont Town Hall – Roof Repairs
Belmont, MA

1. The Contract.
 2. Contractor's Bid, including required submittals.
 3. Bid, Performance, and Payment Bond.
 4. General Conditions (herein stated and in AIA Document A201).
 5. Modifications to General Conditions.
 6. Supplementary Conditions.
 7. Specifications bearing the title: " Belmont - Department of Public Works Upgrades ".
 8. AIA Construction Documents, including but not limited to AIA Document A201, A310, A311, selected for use by the Town of Belmont, Massachusetts.
 9. All Addenda issued prior to Bid Preparation.
 10. Documentation submitted by Contractor during the Performance of the Contract.
 11. Contract Drawings.
 12. Town of Belmont Standard Signature Sheet, which will be provided separately as Page 9 of this Contract,
- B. There are no Contract Documents other than those listed in this Article. The Contract Documents may only be altered, amended, or repealed by a Modification as defined in Section 1 of the General Conditions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 00 52 16

00 61 13 LABOR AND MATERIALS PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we _____

_____, as Principal
(Name of Contractor)

a _____
(Corporation, Partnership, or Individual)

hereinafter called "Principal" and _____
(Surety)

_____ of _____, State of _____
,

hereinafter called the "Surety", are held and firmly bound into Belmont - Department of Public Works Upgrades, Belmont, MA acting through the Belmont Facilities Department, 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 bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain

contract with the Owner, dated the _____ day of _____, 2023,
a copy of which is hereto attached and made a part hereof for the construction of:

BELMONT TOWN HALL – ROOF REPAIRS
BELMONT, MA

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, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such 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 to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed hereunder or 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.

Belmont Town Hall – Roof Repairs
Belmont, MA

IN WITNESS WHEREOF, the parties to these present have duly executed in this bond on this

_____ day of _____, 2023.

ATTEST:

(SEAL)

(Principal)

By _____
(Secretary)

(Address - Zip Code)

(SEAL)

(Witness as to Principal)

(Address - Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

END OF SECTION – 00 61 13

00 61 13.13 PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we _____

_____, as Principal
(Name of Contractor)

a _____
(Corporation, Partnership, or Individual)

hereinafter called "Principal" and _____
(Surety)

_____ of _____, State of _____,

hereinafter called the "Surety", are held and firmly bound into the Belmont Facilities Department, Belmont, Massachusetts, 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 bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain

contract with the Owner, dated the _____ day of _____, 2023, a copy of which is hereto attached and made a part hereof for the construction of

**BELMONT TOWN HALL – ROOF REPAIRS
BELMONT, MA**

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 if he 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 reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed hereunder or the specifications accompanying the same shall in any way affect its obligation of 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, the parties to these present have duly executed in this bond on the

_____ day of _____, 2023.

ATTEST:

(SEAL)

Belmont Town Hall – Roof Repairs
Belmont, MA

(Principal)

By _____
(Secretary)

(Address - Zip Code)

(SEAL)

(Witness as to Principal)

(Address - Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

END OF SECTION – 00 61 13.13

00 63 25 SUBSTITUTION REQUEST FORM

Contractor requests for substitutions will be considered upon receipt of this completed Substitution Request Form and supporting documentation. Substitutions made without completion of this form and Architect's approval will be considered defective work.

Project: Belmont Town Hall – Roof Repairs
Belmont, MA

To: The Galante Architecture Studio, Inc.

The Contractor proposes the following substitution in accordance with the requirements of the Contract Documents:

Scope of Substitution: _____

Specification References: _____

Drawing References: _____

Reasons for Proposed Substitution: _____

Impact on Project Schedule: _____

Impact on Guarantees and Warranties: _____

Coordination Required with Adjacent Materials and Related Systems: _____

List all Deviations from Specified Requirements: _____

Attachments: ☐ Yes, ☐ No. Attach supporting documentation sufficient for Architect to evaluate substitution. Substitution Request Forms submitted without adequate documentation will be returned without review.

Response Date: _____ (Date by which response by Architect is requested to maintain project schedule and allow sufficient time for inclusion of proposed substitution.)

Signature below signifies acceptance of responsibility for accuracy and completeness of information included in this Substitution Request Form.

Authorized Signature: _____ Date: _____

ARCHITECT'S RESPONSE

Notations listed below still have same meaning as on Architect's approval stamp. Clarifications to or changes of project schedule or time shall be processed using Change Order forms.

Signed: _____ Date: _____

Approved: _____ Revise and Resubmit: _____ Not Approved: _____

Approved as Noted, Resubmission not Required: _____

Contractor Signature: _____ Copy to: _____

END OF SECTION – 00 63 25

Belmont Town Hall – Roof Repairs
Belmont, MA

00 72 00 GENERAL CONDITIONS

DRAFT AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Belmont Town Hall - Roof Repairs
Belmont Town Hall, 455 Concord Avenue, Belmont, MA 02478

THE OWNER:

(Name, legal status and address)

Town of Belmont
c/o Facilities Department
1st Floor, Homer Administration Building
19 Moore Street
Belmont, MA 02478

THE ARCHITECT:

(Name, legal status and address)

The Galante Architecture Studio, Inc.
146 Mount Auburn Street
Cambridge, MA 02138

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, *Guide for Supplementary Conditions*.

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14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES



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(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. 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. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided 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.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 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, and 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 indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or

relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as

the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. 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. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and

similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 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.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, 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), but only to the extent caused by the 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 that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 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 Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect 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 Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, 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. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. 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 Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect 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. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in

number and means a Subcontractor or an authorized representative of the Subcontractor. The term “Subcontractor” does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term “Sub-subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor’s Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor’s Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When 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 Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule 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 Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

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

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect 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 Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in 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.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 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.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 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 Owner, 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 compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
 - .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
 - .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
 - .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
 - .5 damage to the Owner or a Separate Contractor;
 - .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. 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.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect 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.

§ 9.9.3 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.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;

- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 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 supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed

by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, 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), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the

procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any 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 notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work 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 completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site 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 Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates 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.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 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.

§ 13.3.2 No action or failure to act by the Owner, Architect, or 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 upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect

timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract

Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work

properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing 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.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 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.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party

provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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00 73 00 MODIFICATIONS TO THE GENERAL CONDITIONS

I. THE GENERAL CONDITIONS

The "General Conditions of the Contract for Construction", AIA Document A201, Fourteenth Edition (1987), Articles 1 through 14 inclusive, is a part of this contract.

II. THE SUPPLEMENTARY GENERAL CONDITIONS

The following supplements modify, delete and/or add to the General Conditions. Where any Article, Paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph, or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

Paragraphs or subparagraphs marked with an asterisk (*) are required by or are intended to be consistent with the requirements of Massachusetts statutes governing public construction contracts in the Commonwealth of Massachusetts (referred to in such paragraphs or subparagraphs as the "Commonwealth"). Any other provisions required by statute to be included herein shall be deemed to be so included. In addition, the Owner and Contractor recognize that other rights, duties and obligations with respect to public construction contracts are provided for by statute, notwithstanding the fact that they are not provided for in the Contract Documents. In case of conflict between the asterisked provisions and other provisions of the Contract Documents, the asterisked provisions shall govern. In case of conflict between the provisions of the Contract Documents and the provisions of any applicable statute, the statutory provisions shall govern. Where the term "awarding authority" appears in any asterisked provision, it shall mean the Owner.

III. MODIFICATIONS TO VARIOUS ARTICLES OF THE AIA GENERAL CONDITIONS

ARTICLE 1: GENERAL PROVISIONS

1.1.1 Add the following at the end of subparagraph 1.1.1:

In the event of any conflict among the Contract Documents, the Documents shall be construed according to the following priorities:

Highest Priority:	Massachusetts General Laws
Second Priority:	Change Orders
Third Priority:	Owner-Contractor Agreement
Fourth Priority:	Addenda, with later date having greater priority
Fifth Priority:	Division 0 Requirements, with Supplementary General Conditions having priority over General Conditions
Sixth Priority:	Division 1 General Requirements
Seventh Priority:	Technical Specifications
Eighth Priority:	Drawings, with larger scale drawings taking precedence over smaller scale drawings

1.1.2 Add the following at the beginning of the fourth sentence of subparagraph 1.1.2:

"Except as provided in Paragraph 3.18,"

Delete the fifth sentence of subparagraph 1.1.2.

1.1.3 Change the first sentence of subparagraph 1.1.3 to read as follows:

The term "Work" means the construction required by the Contract Documents, including all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated therein.

- 1.2.1 Add at the end of the first sentence of subparagraph 1.2.1:

A copy of the signed set shall be deposited with the Architect.

- 1.2.3 Add the following at the end of subparagraph 1.2.3:

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. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

- 1.2.6-
1.2.13

Add new subparagraphs 1.2.6 through 1.2.13 as follows:

1.2.6 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.

1.2.7 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated.

1.2.8 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.

1.2.9 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.

1.2.10 The Mechanical, Electrical and Fire Protection Drawings 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 Owner 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 showing the exact alignment, physical location and configuration of the Mechanical, Electrical and Fire Protection installations and demonstrating to the Contractor'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.

1.2.11 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.5 before the Work is roughed in; Work installed without such information from the Architect shall be relocated at the Contractor's expense.

1.2.12 Test boring or soil test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architect in the design of the Project or Work. The Owner does not hold out such information to the Contractor as an accurate or approximate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall

be allowed except as provided in subparagraph 4.3.6.

1.2.13 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.

ARTICLE 2: OWNER

2.1.1 Delete the second sentence of subparagraph 2.1.1.

2.1.2 Delete subparagraph 2.1.2.

2.2.1 Delete subparagraph 2.2.1.

2.2.4 Change subparagraph 2.2.4 to read as follows:

2.2.4 Information or services required of the Owner hereunder shall be furnished by the Owner with reasonable promptness after receipt from the Contractor of a written request for such information or services.

2.2.5 Change subparagraph 2.2.5 to read as follows:

2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, up to fifteen copies of Drawings and Project manuals for execution of the Work.

2.3.1 After the last sentence, add:

The Contractor shall remain responsible for maintaining progress and shall not be entitled to any increase in Contract Time or Contract Sum, and the Contractor shall reimburse the Owner all costs incurred by the Owner and attributable to such an order to stop the Work.

2.4.1 Delete the first and second sentences of subparagraph 2.4.1 and substitute the following:

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 Owner to begin and prosecute correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies.

In the third sentence of subparagraph 2.4.1, replace the words "Change Order" with the words "Construction Change Directive," and delete the fourth sentence.

ARTICLE 3: CONTRACTOR

3.2.1 Change subparagraph 3.2.1 to read as follows:

3.2.1 Before starting the Work, and at frequent intervals during the progress thereof, the Contractor shall carefully study and compare the Contract Documents with each other and with the information furnished by the Owner pursuant to subparagraph 2.2.2 and shall at once report to the Architect any error, inconsistency or omission the Contractor may discover. Any necessary change shall be ordered as provided in Article 7, subject to the requirements of Paragraph 1.2 and other provisions of the Contract Documents. If the Contractor proceeds with the Work without such notice to the Architect, having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Contract Documents the Contractor could have discovered such, the Contractor shall bear all costs arising therefrom.

~~3.2.4-~~
3.2.5 Add new subparagraph 3.2.4 and 3.2.5 as follows:

3.2.4 The Contractor shall give the Architect timely notice of any additional Drawings, Specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.

3.2.5 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 Architect as provided in subparagraph 3.2.4. 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.

3.3.1 Delete the last ten words of subparagraph 3.3.1, and add the following:

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

3.3.2 Change subparagraph 3.3.2 to read as follows:

3.3.2 The Contractor shall be responsible to the Owner for the acts and omissions of all entities or persons performing or supplying the Work.

3.4.1 Add the following sentence to the end of subparagraph 3.4.1:

The word "provide" shall mean furnish and install complete, including connections, unless otherwise specified.

3.4.2-
3.4.3

Add new Subparagraphs 3.4.2, 3.4.3 and 3.4.4 as follows:

3.4.2* (Statutory reference: M.G.L. c.149, §§30 and 34)

No laborer, worker, mechanic, foreman 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 hours in any one day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of emergency.

3.4.3* (Statutory reference: M.G.L. c.149 §25)

Every employee under this contract shall lodge, board and trade where and with whom he elects, and neither the Contractor nor his 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.

3.4.4* (Statutory Reference: M.G.L. c.149 §34B)

The Contractor shall pay to any reserve police officer employed by him in any city or town the prevailing rate of wage paid to regular police officers in such city or town.

3.5.1 Change the first sentence of subparagraph 3.5.1 to read as follows:

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.

Delete the last two sentences.

3.5.2-
3.5.10 Add new subparagraphs 3.5.2 through 3.5.10 as follows:

3.5.2* (Statutory reference: M.G.L. c.30 §39M(b))

Where products or materials are prescribed by manufacturer name, trade name, or catalog reference, the word "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 Architect:

- a. it is at least equal in quality, durability, appearance, strength and design;
- b. it performs at least equally the function imposed by the general design for the work;
- c. it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the specifications.

Any structural or mechanical changes made necessary to accommodate substituted equipment under this paragraph shall be at the expense of the Contractor or Subcontractor responsible for the work item.

3.5.3 The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect 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 Architect, 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.

3.5.4 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 named manufacturer(s) without substitution, unless a written request for a substitute has been submitted by the Contractor and approved in writing by the Architect as provided in subparagraph 3.5.5.

3.5.5 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 Architect 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.

3.5.6 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 Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

3.5.7 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 building. The Architect 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 Architect will not approve as equal to materials specified proposed substitutes which, in the Architect'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 Architect, 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 Owner.

3.5.8 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 Owner or the Architect, unless such substitution was made at the written request or direction of the Owner or the Architect.

3.5.9 The warranty provided in this paragraph 3.5 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

3.5.10 The Contractor shall procure and deliver to the Architect, no later than the date claimed by the Contractor as the date of Substantial Completion, all special warranties required by the Contract Documents. Delivery by the Contractor shall constitute the Contractor's guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions.

3.6.1 Add the following at the end of Subparagraph 3.6.1:

"However, the Contractor shall not pay, and the Owner 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)."

3.8 Delete Paragraph 3.8.

3.9 Change the title of paragraph 3.9 to read "Superintendence".

3.9.1 Change subparagraph 3.9.1 to read as follows:

The Contractor shall designate in writing to the Owner the names of the superintendent and necessary assistants at the commencement of work. These persons shall be assigned to this project only for the duration of this project, unless agreement otherwise is provided in writing by the Owner. The superintendent and necessary assistants shall not be assigned or replaced without written notice to the Owner. If the Owner objects to the Contractor's superintendent or any assistant, whether initially or otherwise, the Contractor shall submit a replacement superintendent or assistant at no increase in the Contract Sum or Contract Time.

.1 The Contractor's project superintendent and similar authorized representatives of any Subcontractor, Supplier, or other person or organization shall attend all meetings, as requested by the Owner or Architect at no increase in the Contract Sum or Contract Time.

.2 The Contractor shall, upon written request of the Owner, remove from the premises and replace workers whom the Owner deems to be disorderly, careless or incompetent or to be employed in violation of the terms of the Contract Documents, at no increase in the Contract Sum or Contract Time.

3.9.2-

3.9.5 Add new subparagraphs 3.9.2 through 3.9.5 as follows:

3.9.2 The Contractor shall retain a competent Registered Professional Engineer or Registered Land Surveyor, registered in the Commonwealth of Massachusetts, acceptable to the Architect, 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.

3.9.3 The Contractor shall establish the building grades, lines, levels, column, wall and partition lines required by the various Subcontractors in laying out their Work.

3.9.4 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 Owner, every reasonable opportunity for the installation of Work and the storage of materials.

3.9.5 The Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect 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 Architect. 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 manpower. Any notices required under the Contract may be served on such representatives.

3.10.1 Change subparagraph 3.10.1 to read as follows:

3.10.1 The Contractor shall prepare and submit to the Architect a progress schedule, and shall comply with such schedule, as described in subparagraphs 8.2.4 through 8.2.10.

3.10.3 Delete subparagraph 3.10.3.

3.12.7 Change subparagraph 3.12.7 to read as follows:

3.12.7 By approving and submitting Shop Drawings, Product Data, Samples, and similar 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 Shop Drawings, Product Data, Samples, or similar 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 Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

3.12.9 Add the following at the end of subparagraph 3.12.9:

Unless such written notice has been given, the Architect's approval of a resubmitted Shop Drawing, Product Data, Sample, or similar submittal shall not constitute approval of any changes not requested on the prior submittal.

3.12.11 Change subparagraph 3.12.11 to read as follows:

When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Owner shall be entitled to rely upon such

certifications, and neither the Owner nor the Architect shall be expected to make any independent examination with respect thereto.

3.13.1 Change subparagraph 3.13.1 to read as follows:

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

3.15.1 Add the following at the end of subparagraph 3.15.1:

Immediately prior to the Architect'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.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1.2 Delete subparagraph 4.1.2.

4.1.4 Delete subparagraph 4.1.4.

4.2.7 In subparagraph 4.2.7, add to the end of the first sentence, "and only to the extent which the Architect believes desirable to protect the Owner's interest." Change the second sentence to read:

"The Architect's action will be taken with reasonable promptness, while allowing sufficient time in the Architect'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 Architect pursuant to subparagraphs 8.2.4 through 8.2.10." In the fifth sentence, delete the words "unless otherwise specifically stated by the Architect."

4.2.10 At the end of subparagraph 4.2.10, add the following:

If no such exhibit has been so incorporated, the duties, responsibilities, and limitations of authority of such Project Representative shall be as set forth in the edition of AIA Document B352 current as of the date of the Agreement. Alternatively, the Owner may employ a Clerk of the Works for the Project, in which case the Owner 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 Changes, or to exercise any of the power and authority of the Owner or the Architect.

4.2.11 Delete the last sentence of subparagraph 4.2.11 and substitute the following:

The Architect may, as the Architect 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 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 additional cost or extension of the Contract Time. If the Contractor claims additional cost or time on account of such additional drawings or instructions, the Contractor shall give the notice provided in subparagraph 4.3.7.

4.3.2 Revise subparagraph 4.3.2 to read as follows:

4.3.2 Claims arising prior to final payment or the earlier termination of the Contract shall be referred initially to the Architect for action as provided in Paragraph 4.4.

4.3.3 Revise the last sentence of subparagraph 4.3.3 to read as follows:

Any change or addition to a previously made Claim shall be made by timely written notice in accordance with this subparagraph 4.3.3.

4.3.5 Add the following to the end of subparagraph 4.3.5:

Any Claim which has not been waived in accordance with this subparagraph shall be deemed to have accrued upon discovery by the Owner of the condition or breach upon which such Claim is based, for the purpose of any applicable statute of limitation.

4.3.6 Change subparagraph 4.3.6 to read as follows:

4.3.6 *(Statutory reference: M.G.L. C.30 §39N)

If, during the progress of the work, the Contractor or the awarding authority 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 awarding authority may request an equitable adjustment in the contract price 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 awarding authority 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 awarding authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly.

4.3.7 Change subparagraph 4.3.7 to read as follows:

4.3.7 If the Contractor claims that any acts or omissions of the Owner or the Architect, 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 Owner or Architect that extra payment will be made or time extended on account thereof, the Contractor shall promptly so notify the Architect in writing of such Claim and shall not proceed with the Work relating to such Claim until the Contractor has received a further written order to proceed in accordance with Paragraph 4.4 except, as provided in Paragraph 10.3, in the case of an emergency affecting life or property. No Claim by the Contractor on account of such acts, omissions, instructions or orders shall be valid unless the Contractor has so notified the Architect, before proceeding, and has received the further written order to proceed.

4.3.8.1 Delete the second sentence of subparagraph 4.3.8.1 and substitute the following:

The Contractor shall have the burden of demonstrating the effect of the claimed delay on the Contract Time, and shall furnish the Architect with such documentation relating thereto as the Architect may reasonably require.

4.3.8.2 Delete subparagraph 4.3.8.2.

4.4 Replace Paragraph 4.4 with the following:

4.4 REVIEW OF CLAIMS BY ARCHITECT

4.4.1 The Architect shall review Claims and may (1) defer any action with respect to all or any part of a Claim and request additional information from either party; (2) decline to render a decision for any reason which he deems appropriate (including but not limited to the fact that the Claim involves allegations of fault on the part of the Architect); or (3) render a decision on all or a part of the Claim. The Architect shall notify the parties in writing of his disposition of such Claim.

If the Architect decides that the Work relating to such Claim should proceed regardless of his disposition of such Claim, the Architect shall issue to the Contractor a written order to proceed. The Contractor shall proceed as instructed, and all rights of both parties with respect to such Claim shall be deemed to have been reserved.

4.4.5-
4.4.6 Insert new subparagraphs 4.4.5 and 4.4.6, as follows:

4.4.5 The Contractor, and any Subcontractor, Supplier and any other person or organization performing any part of Work, agree that each of them will waive jurisdiction and venue and shall submit to the jurisdiction of the courts of the Commonwealth of Massachusetts regardless of residence or domicile, with respect to any actions or suits at law or in equity arising under or related to the bidding, award or performance of the Work.

4.4.6 The Contractor, Subcontractors, Suppliers or any other person or organization shall not commence any action, other than those in the Commonwealth of Massachusetts in the county where the Owner's headquarters are located, against the Owner and the Architect, or any of their consultants, and/or any of their respective directors, officers, employees, representatives or agents, with regard to any matter whatsoever arising out of or relating to the validity, construction, interpretation or reinforcement of the Contract.

4.5 Delete paragraph 4.5 in its entirety.

4.6 Add new Paragraph 4.6 as follows:

4.6* DECISIONS BY AWARDING AUTHORITY OR ARCHITECT

4.6.1* (Statutory Reference: M.G.L. c.30 §36P)

In every case in which this contract requires the awarding authority, any official, its Architect or Engineer 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 thirty days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, Architect or Engineer shall, within thirty 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.

4.6.2* (Statutory reference: M.G.L. c.30 §39J)

Notwithstanding any contrary provision of this contract, no decision by the awarding authority or by the Architect 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, or arbitrarily, is unsupported by substantial evidence, or is based upon error of law.

ARTICLE 5: SUBCONTRACTORS

5.2.5 Add new subparagraph 5.2.5 as follows:

The Contractor when sub-contracting with sub-bidders filed pursuant to M.G.L. c.149 §44F(4)(c) shall use the form of subcontract set forth in M.G.L. c.149, §44F. The form of subcontract for non-filed subbidders shall be submitted to the Owner for its approval, which shall not be unreasonably withheld or delayed. Each subcontract shall expressly provide for the contingent assignment referred to in subparagraph 5.4.1.

5.3.1 Add at the end of the first sentence of subparagraph 5.3.1:

"including without limitation the obligations set forth in subparagraph 3.18.4."

5.4.2 Delete subparagraph 5.4.2.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1.4 Delete subparagraph 6.1.4.

6.2.4 Add the following at the end of subparagraph 6.2.4:

"If such separate contractor sues the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at the Owner's expense, and if any judgment or award against the Owner arises therefrom the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court or arbitration costs which the Owner has incurred."

6.2.5 Delete subparagraph 6.2.5.

ARTICLE 7: CHANGES IN THE WORK

7.2.2-

7.2.5 Delete subparagraph 7.2.2, and insert the following new subparagraphs 7.2.2 through 7.2.4:

7.2.2 A Change Order executed by the Owner and also by the Contractor without a Contractor's notice reserving right to claim additional adjustments constitutes an all inclusive settlement for all changes and for all direct, supplemental, indirect, consequential, and cumulative costs and delays, and the Contractor's signature represents a waiver of any and all rights to file a claim on account of that Change Order, the work or the work involved in that Change Order. A Change Order executed by the Owner and also by the Contractor with a notice reserving right to claim additional adjustments, shall become final and binding on the Contractor, without consideration of his reservation of rights, unless the Contractor delivers to the Owner written notice of a claim within thirty days after the date when notice of a claim on account of the Change Order executed by the Owner comes due. The Owner and the Contractor shall sign Change Orders with reasonable promptness. Amounts for work involved in a Change Order signed by the Owner may be included in Applications for Payment. Retainage is applicable to all Change Orders.

7.2.3 The Owner may direct such changes and unilaterally make or provide the basis for making an adjustment to Contract Sum or Contract Time. Upon receipt of such a unilateral order, the Contractor shall promptly proceed or continue with the work involved as directed. Any such unilateral adjustment in Contract Sum or Contract Time made by Change Order shall be final and binding on the Contractor unless the Contractor delivers to the Owner written notice of a claim within thirty days after receipt of the unilateral order.

7.2.4* (Statutory 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 awarding authority or by the Engineer or Architect in charge of the work who is duly authorized by the awarding authority 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 awarding authority or such Engineer or Architect so authorized to approve such deviation. Within thirty days thereafter, such written order shall be confirmed by a certificate of the awarding authority stating: (1) If such deviation involves any substitution or elimination of materials, fixtures or equipment, the reasons why such 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 therefor; (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 awarding authority and the Contractor and the amount in dollars of said adjustment; and (4) that the deviation is in the best interest of the awarding authority.

Such certificates shall be signed under the penalties of perjury and shall be a permanent part of the file record of the work contracted for.

7.3.3 Add the following as new subparagraph 7.3.3:

7.3.3 Upon request of the Owner or the Architect, the Contractor shall without cost to the Owner submit to the Architect, in such form as the Architect 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 Architect. The Contractor shall promptly revise and resubmit such estimate if the Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors. If required by the Architect, 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 Architect 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. 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.

Renumber former subparagraph 7.3.3 as 7.3.4 revise to read as follows:

7.3.4.1 The Contractor shall perform any Extra Work when and as ordered in writing by the Architect, and shall be compensated therefor at the Cost of the Extra Work plus a Contractor's Fee as set forth in this Article.

No Extra Work shall be paid for unless specifically ordered as such in writing by the Architect.

At the request of the Architect, the Contractor shall furnish itemized statements of the Cost of the Extra Work ordered as above and give the Architect access to all records, accounts, bills and vouchers and correspondence relating thereto. The itemized statements shall be provided by the Contractor within seven days from the date the request is sent by the Architect.

The methods to be used to determine an adjustment in Contract Price necessitated by changes ordered or negotiated pursuant to this Agreement, or Extra Work covered by a submittal or a claim are limited to the following:

- a. Where the Extra Work is covered or is of the same character as work covered by lump sum prices in the Contract Documents: the basis of those lump sum prices.
- b. Where the Extra Work is covered or is of the same character as Unit Price Work: by application of those unit prices to the quantities of the items involved.
- c. Where the Extra Work is not covered by either of the methods specified in subparagraph a or b above: by mutual acceptance a lump sum price negotiated on the basis of the contractor's itemized estimate of the anticipated cost of the Extra Work, determined as specified in this Article, and a Contractor's Fee determined as one hundred (100%) of the fee allowed under this Article.
- d. Where the Extra Work is not covered by either of the methods specified in subparagraph a or b above, and the Architect directs the Contractor to proceed with the Extra Work with payments to be made on the basis of actual cost: Cost of the Extra Work, determined as specified in this Article, and a Contractor's Fee determined as seventy five percent (75%) of the fee allowed under this Article.
- e. Where the Extra Work is not covered by any of the preceding methods, and when payment is to be determined by a court of competent jurisdiction, the actual cost method shall be the method for determining the cost of the Extra Work.

In computing either anticipated, or actual cost, the term "Cost of the Extra Work" means the sum of all reasonable incremental costs which would be, or actually were, necessarily incurred by the Contractor in the proper performance of the Extra Work. Those costs shall be in amounts no higher than those prevailing in the locality of the Project, and shall include only the appropriate items for labor, material/equipment, subagreement, equipment, and supplemental costs specified below.

Payroll costs shall be included for craft labor and first line supervision in the direct employ of the Contractor assigned to the site and engaged in furnishing and incorporating materials or equipment in the Extra Work. Payroll costs shall include wage plus the necessary labor burdens, which may include social security, unemployment, workers' compensation, health and retirement benefits, vacation and holiday pay, and other payments pursuant to union agreements. When determining payroll costs under subparagraphs d and e above, daily time sheets, certified at the end of each day by the Contractor, and filed with the Architect, shall be the record upon which actual payroll costs shall be based. When determining payroll cost under subparagraphs d and e above, daily time sheets shall be valid only if they expressly correlate to the Extra Work and if made when the Extra Work was performed.

Payments by the Contractor to Suppliers for all material and equipment in the Extra Work, including transportation and storage costs, and necessary Suppliers' field services shall be included. All trade discounts, rebates and refunds and all returns from sale of surplus items shall accrue to the Owner, and the Contractor shall make provisions so that they may be obtained. When required by the Architect, the Contractor shall obtain competitive bids from Suppliers and shall deliver such bids to the Architect. When determining actual material and equipment cost, actual invoices segregating items associated with the Extra Work shall be the record upon which actual costs shall be based.

Payments by the Contractor to Subcontractors for Extra Work performed by Subcontractors shall be included. If required by the Architect, the Contractor shall obtain competitive detailed bids from three (3) Subcontractors and shall deliver them to the Architect who will then determine which bid will be selected. When determining Subcontractor costs at any tier, the Subcontractor's Cost shall be determined in the same manner as the Contractor's Cost of the Extra Work. All subagreements shall be subject to the provisions of this Article insofar as applicable.

Equipment costs required solely in connection with the Extra Work reflecting rented or leased or owned equipment costs for individual construction equipment or machinery whose replacement value is in excess of \$1,000.00 shall be included. Transportation, loading and unloading, installation, dismantling and removal cost shall be included only if such equipment is or was transported to the site solely to perform the Extra Work. Payroll costs for craft labor operating the equipment shall be as described above. Equipment costs shall be computed using the same accounting and estimating rules regardless of whether related to added or deleted items of work.

When determining equipment costs, daily records listing the equipment units, operators, and actual usage, and certified at the end of each day by Contractor, and filed with the Architect, shall be the record upon which actual equipment use shall be based. When determining equipment costs under subparagraphs d and e above, such daily records shall be valid only if they list the equipment units, their operators, and actual usage, and were developed when the Extra Work was performed.

Rented or owned equipment at the site and not in actual use as a direct result of the change, shall be paid at the rates for rented equipment as specified below. In no event shall the idle time claimed in a day exceed the established working schedule. Payments for idle equipment shall come due only as long as the equipment was idled solely by the actions of the Owner or Architect, and that the idle period exceeds that normally experienced for such equipment.

The fair rental for all machinery and equipment shall be based upon the most recent edition of "Rental Rate Bluebook for Construction Equipment" (the Bluebook), published by Nielson/Dataquest, or a similar publication approved by the Architect. Rental for machinery and equipment shall be based upon an appropriate fraction of the approved monthly rate schedule. If the Extra Work requires the use of machinery or equipment not already on the site of the Work, the cost of transportation, not exceeding a distance of 100 miles, of such machinery or equipment to and from the Work shall be added to the "fair monthly rental" provided, however, that this shall not apply to machinery or equipment already required to be furnished under the terms of the Contract Documents. In addition to rental or lease rate, operating costs shall not exceed the estimated hourly rate for the aforementioned guide. There shall be no operation costs allocated for idle time.

Hourly rates shall be developed by dividing the monthly Blue Book rates by 176 hours a month (the "weekly", hourly", and "daily" rate listed in the Blue Book shall not be used). Rates in all cases shall be adjusted by application of the Rate Adjustment Tables (machine and adjustment) plus adjustments to eliminate Equipment Overhead plus Regional Adjustments.

Standby rates shall be computed by using the full cost-of-facilities capital (CFC) hourly cost plus one half the hourly depreciation rate as used in the initial hourly calculation above.

The equipment rate for usage in excess of eight hours a day shall be fifty percent (50%) of the base hourly rate as established in the initial hourly calculation above.

The rates used for billing purposes will be those most economical to the Owner based on the circumstances of actual usage and all applicable credits and discounts.

For equipment rented or leased from lessor firms associated with or owned by the Contractor, the Contractor shall be entitled to reimbursement as though the equipment was owned equipment, as specified below.

For equipment owned by the Contractor, the Contractor shall be entitled to costs based on his normal accounting practices, but in no event shall those costs exceed the hourly rates as established above.

Supplemental costs may include the proportion of necessary transportation, travel and subsistence expenses of Contractor's employees incurred in discharge of duties concerned

with the Extra Work, and the cost of materials, supplies and equipment installed in the Extra Work.

The Cost of the Extra Work shall not include any of the following costs, all of which are considered supplemental cost not allowed, administrative costs, or contingencies and covered by the Contractor's Fee:

- a. Cost already included in the Contract Price for the Work (including all previously authorized adjustments).
- b. Payroll costs and other compensation of personnel employed by the Contractor whether at the site or in the contractor's principal or a branch office for management, administration or in support of the performance, management or administration of the Work, including, but not limited to, the Contractor's officers, executives, principals, general managers, project managers, construction managers, superintendents, estimators and schedulers, detailer, claims consultants, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, Architects, architects, timekeepers, and clerks.
- c. Expenses of the Contractor's principal and branch offices including, but not limited to, Contractor's office and temporary facilities at the site.
- d. Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Extra Work and charges for delinquent payments.
- e. Costs of premiums for all Bonds and for all insurance whether or not Contractor is required to purchase and monitor the same.
- f. Costs due to the fault or negligence of the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, deposits to be lost, costs to correct defective work, disposal of materials or equipment wrongly supplied and making good any damage to property.
- g. Costs of a rental of small tools; costs of a rental of building.
- h. Cost associated with the preparation of Change Orders (whether or not ultimately authorized), cost estimates, or the preparation of filing of claims.
- i. Expenses of the contractor associated with anticipated lost profits or lost revenues, lost income or earnings, lost interest on earnings or unpaid retainage.
- j. Costs derived from the computation of a "home office overhead" rate by application of the Eichleay, Allegheny, Burden Fluctuation, or other similar methods.
- k. Cost of special consultants or attorneys, whether or not in the direct employ of the Contractor, employed for services specifically related to the resolution of a claim, dispute, or other matter relating to the acceptability of the Work.
- l. Acceleration costs incurred as an alternative to an extension of Contract Time on account of delays not meeting the requirements for extensions in Contract Time.
- m. Escalation cost for any part of the Work which is not delayed beyond the applicable Late Dates in the Construction Schedule required by Section 01 3216.19 CPM Schedule of the Specifications.
- n. Delay cost.

- o. Other administrative expense or contingent costs of any kind, and the cost of any item not specifically and expressly included in this Article.

The Contractor's Fee, (profit), in connection with the Extra Work shall not exceed the following percentages of the various portions in the Cost of the Extra Work:

- a. For the Contractor's labor cost, the Contractor's Fee shall not exceed fifteen percent (15%).
- b. For the Contractor's material/equipment or construction equipment costs, the Contractor's Fee shall not exceed ten percent (10%).
- c. For subcontractor costs, and for Extra Work performed by (a) a subcontractor having a direct subagreement with the Contractor, the Contractor's Fee shall not exceed five percent (5%) of the cost of the Extra Work excluding lower tier fees, and the subcontractor's Fee shall not exceed ten percent (10%); b) a lower tier Subcontractor, the Contractor's Fee and the corresponding first tier Subcontractor's Fee shall not exceed five percent (5%) each, and the lower tier subcontractor's Fee shall not exceed ten percent (10%).

No Contractor's fee shall be payable on the basis of Subcontractor's Fees.

The credit to be allowed by the Contractor to the Owner for any individual change in the work (combining additions and deletions) which results in a net decrease in cost (Cost of the Extra Work in negative), shall be the amount of the actual net decrease together with a deduction for the Contractor's Fee equal to one hundred percent (100%) of the maximum Fee which would be allowed under the preceding paragraphs.

When more than one individual change, each resulting in a net increase or decrease in the cost of the Extra Work, is covered in one specific Change Order or submittal or claim, the adjustment in the Contractor's Fee shall be the sum of the individual Fees.

7.3.4.2 If the Owner elects to determine the cost of the Work as provided in method (b) above using unit prices stated in the Contract Documents or subsequently agreed upon, the unit prices shall be subject to subparagraph 7.1.4. Notwithstanding the inclusion of unit prices in the Contract Documents, it shall be the Owner's option to require the Cost of any given change to be determined by one of the other methods stated in 7.3.4.1. If the Owner elects to determine the Cost of the change work 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 Architect for inspection, of the actual quantities of such work put in place, and delivery receipts or other adequate evidence, acceptable to the Architect, 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 included in the base Contract Sum. If so required by the Architect, materials for use in unit price work shall be stored apart from all other materials on the Project.

7.3.4.3 If the Owner elects to determine the cost of the Work as provided in methods (d) or (e) of subparagraph 7.3.4.1 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 materials costs applicable to the work.

7.3.4 Renumber former subparagraph 7.3.4 as 7.3.5. In the last line, delete the words "Contract Sum or".

7.3.5 Renumber former subparagraph 7.3.5 as 7.3.6.

7.3.6-

7.3.9 Delete former subparagraph 7.3.6 and subparagraphs 7.3.7 and 7.3.9.

7.3.7 Insert new subparagraph 7.3.7

7.3.7 Extension Of Time: When Extra Work is ordered near the completion of the work or at any time during the progress of the Work which unavoidably increases the time for the completion of the Work, an extension of time shall be granted as hereinbefore provided. Extra Work which is not on the critical path of the Construction Schedule required by Section 01 3216.19 CPM Schedule of the Specifications will not be considered.

The criteria to be used to determine and adjustment in contract Time necessitated by changes ordered or negotiated pursuant to this Agreement, or work covered by a submittal or a claim, are limited to the following:

An adjustment in Contract Time will be based solely upon net increases in the time required for the performance or completion of parts of the Work that negatively impact the Critical Path of the Construction Schedule. However, even if time required for the performance or completion of controlling parts of the Work is extended, an extension in Contract Time will not be granted until all of the available Total Float in the Construction Schedule is consumed and performance or completion of the controlling Work necessarily extends beyond the Contract Time.

The Owner may elect, at its sole discretion, to grant an extension in Contract Time, without the Contractor's request, because of delays meeting the requirements set forth below.

An extension in Contract Time will not be granted unless the Contractor can demonstrate through an analysis of the Construction Schedule that the increases in the time to perform or complete the Work, or specified part of the Work, beyond the corresponding Contract Time(s) arise from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and his subcontractors, suppliers or other persons or organizations, and that such causes in fact lead to performance or completion of the Work, or specified part in question, beyond the corresponding Contract Time, despite the Contractor's reasonable and diligent actions to guard against those effects. Examples of such causes include acts of God, acts of government, unavoidable strikes, certain extra work, or other causes or contingencies clearly beyond the control or responsibility of the Contractor.

It is the intent of the Contract Documents that an extension in Contract Time, if any granted, shall be the Contractor's sole and exclusive remedy for any delay, disruption, interference, or hindrance and associated costs, however caused, resulting from causes contemplated in the paragraphs above.

7.5 Add new Paragraph 7.5 as follows:

7.5* CERTIFICATE OF APPROPRIATIONS

7.5.1* Statutory reference: M.G.L. c.44 §31C)

This contract shall not be deemed to have been made until the auditor or accountant or other officer of the city or town having similar duties has certified thereon that an appropriation in the amount of this contract is available therefor and that an officer or agent of the city, town, or awarding authority 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 in the contract price, shall be deemed to be given until the auditor or accountant, or other officer of the awarding authority having similar duties, 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 awarding authority of its liability to pay for such work. The certificate of the auditor or accountant or other officer of the awarding authority having similar duties, that an appropriation in the amount of this contract or in the amount of such order is available shall

bar any defense by the awarding authority on the grounds of insufficient appropriation.

ARTICLE 8: TIME

8.2.2 Delete subparagraph 8.2.2.

8.2.4-
8.2.10 Add new subparagraphs 8.2.4 through 8.2.10 as follows:

8.2.4 At least 10 working days before the first Application for Payment, the Contractor shall submit to the Architect a Progress Schedule showing for each class of work included in the Schedule of Values, the percentage 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 not including the value of materials delivered but not in place.

8.2.5 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 Architect for compliance with the requirements of this Article and will be accepted by the Architect 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 Architect. The Architect's review of the Progress Schedule shall not impose any duty on the Architect or the Owner 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.

8.2.6 If in any Application for Payment the total value of the completed Work in place, as certified by the Architect, is less than 90% of the total value of the Work in place estimated in the Progress Schedule, the Owner may, at the Owner's option, require the Contractor to accelerate the progress of the Work without cost to the Owner by increasing the work force or hours of work, or by other reasonable means approved by the Architect.

8.2.7 If each of three successive applications, as certified by the Architect, 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 Owner may at the Owner's option, treat the Contractor's delinquency as a default justifying the action permitted under Paragraph 14.2.

8.2.8 If the Architect has determined that the Contractor should be permitted to extend the time for completion as provided in Paragraph 8.3, 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 Work to be completed as of the first of each month shall be adjusted pro rata.

8.2.9 If the Contractor fails to submit any Application for Payment in any month, the Architect 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 Architect's knowledge.

8.2.10 Nothing herein shall limit the Owner's right to liquidated or other damages for delays by the Contractor or to any other remedy which the Owner may possess under other provisions of the Contract Documents or by law.

8.3.1 In subparagraph 8.3.1, change "other causes beyond the Contractor's control" to read "other causes (except weather) beyond the Contractor's control". Delete the words "pending arbitration" in line seven. Delete the words "Change Order" in line 9 and substitute

"Construction Change Directive."

8.3.3- Change subparagraph 8.3.3 and add new subparagraphs 8.3.4
8.3.7 through 8.3.7, as follows:

8.3.3 No claim for extension of time shall be allowed on account of failure of the Architect to furnish Drawings, Specifications or instructions or to return Shop Drawings or Samples until 15 days after receipt by the Architect by registered or certified mail of written demand for such instructions, Drawings, or Samples, and not then unless such claim be reasonable.

8.3.4 No extension 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.

8.3.5 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect 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 Owner, the Architect, 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 Owner. 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.

8.3.6* (Statutory reference: M.G.L. c.30 §39O)

(a) The awarding authority 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 awarding authority; provided, however, that if there is a suspension, delay or interruption for fifteen days or more or due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract prices for any increase in the cost of performance of this contract but shall not include any profit to the Contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price under this provisions 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 awarding authority 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 awarding authority shall not approve any costs in the claim incurred more than twenty days before the Contractor notified the awarding authority in writing of the act or failure to act involved in the claim.

In the event a suspension, delay, interruption or failure to act of the awarding authority 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 his performance as provisions (a) and (b) give the Contractor against the awarding authority, 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.

8.3.7 The rate of progress shall be such that the Work shall be performed and completed in accordance with the Contract before the expiration of the time limit stipulated in the Agreement, except as otherwise expressly provided herein.

The time of commencement, any interim milestones and final completion of the Work in accordance with the Contract Documents are essential conditions of this Agreement.

It is agreed that the rate of progress herein required has been purposely set low enough to allow for the ordinary and foreseeable delays incident to construction work of this character. No extension of time will be given for ordinary or foreseeable delays, inclement weather, or accidents, and the occurrence of such will not relieve the Contractor from the necessity of maintaining this rate of progress and completing the Work within the stipulated time limit.

If delays are caused by acts of God, acts of government, unavoidable strikes, extra work, or other causes or contingencies clearly beyond the control or responsibility of the Contractor, the Contractor may be entitled to additional time to perform and complete the Work, provided that the Contractor shall, within ten (10) days from the beginning of such delay notify the Owner in writing, with a copy to the Architect, of the cause and particulars of the delay. Upon receipt of such notification, the Owner shall review and evaluate the cause and extent of the delay. If, under the terms of the Agreement, the delay is properly excusable, the Owner will, in writing, appropriately extend the time for completion of the Work. (This paragraph shall be interpreted to include delays in receipt of equipment provided that the Contractor placed his order and submitted shop drawings for such equipment promptly after execution of the Contract, that he has shown due diligence in following the progress of the order, and that the time required for delivery is in accordance with conditions generally prevailing in the industry.) The Contractor agrees that he shall not have or assert any claim for nor shall he be entitled to any additional compensation or damages on account of such delays. The time in which the Work is to be performed and completed is of the essence of this Agreement. Where, in accordance with the Contract Documents additional time is allowed for completion of any work, the new time fixed by such extension shall be of the essence of this Agreement.

8.4 Add new Paragraph 8.4 as follows:

8.4 LIQUIDATED DAMAGES

If the Contractor shall fail to achieve Substantial Completion within the Contract Time, it shall be liable to pay the Owner the daily amount specified in the Agreement (or Contract), not as a penalty, but as fixed and agreed upon damages for breach of contract. The said amount is fixed and agreed upon because of the difficulty of ascertaining the Owner'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 (or Contract). The said amount may be withheld from periodic or final payments due to the Contractor, in addition to retainage and other backcharges.

ARTICLE 9: PAYMENTS AND COMPLETION

9.2.1 Add at the end of the first sentence of subparagraph 9.2.1:

"and shall be revised if later found by the Architect to be inaccurate."

9.3.1.1 Add to the end of subparagraph 9.3.1.1:

"when such Construction Change Directives have set forth an adjustment to the Contract Sum."

9.3.2 At the end of this subparagraph, add the following:

In no case shall stored materials or equipment, whether stored at the site or at some other location, be considered for payment of stored material unless, in the judgment of the Owner, the materials or equipment are ready for and actually scheduled for prompt use. Written request for payment of stored material must be made thirty days in advance of the due date for the Application for Payment. Payment for materials or equipment stored onsite shall require submission and approval of a valid invoice indicating the unit quantity, description of the material or equipment and cost. Payment for materials stored offsite shall require submission and approval of (1) a valid invoice indicating the unit quantity, description of the material or

equipment and cost, (2) bill of sale naming the Owner as purchaser, (3) certified statement stating the exact location of the materials or equipment, that the material or equipment is properly stored and protected, and that it will be diverted for use and installation at a different project, (4) an All Risk insurance certificate for the full invoiced value of the items, with Owner as certificate holder, insured party, and payee in case of loss, with no deductible attached, and a minimum thirty day notice of cancellation to the certificate holder, (5) a fully executed Bailment Agreement. Further, the Contractor shall pay all costs associated for the Architect or Owner to make a verification visit to the storage location.

9.3.4 Add the following new subparagraph 9.3.4:

9.3.4 Each Application for Payment shall be accompanied by a certificate from each Subcontractor and supplier stating that he has been paid all amounts due him 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 be required to furnish his own written explanation.

9.3.3 Change subparagraph 9.3.3 to read as follows:

9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article 9 as "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.

9.3.4 Add new subparagraph 9.3.4 as follows:

9.3.4 Each Application for Payment or periodic estimate requesting payment shall be accompanied by 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 Owner through the Architect. Such waiver or certificate shall be in a form acceptable to the Owner.

9.5.1 In subparagraph 9.5.1, change item .6 and add a new item .8 as follows:

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

.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 Architect before approval of the Contractor's monthly payment requisition.

9.6.1 Add new Sub-subparagraphs 9.6.1.1 through 9.6.1.4, as follows: (Statutory reference: M.G.L. c.30 §39K)

9.6.1.1* Within fifteen days (twenty-four days in the case of the Commonwealth) after receipt from the Contractor, at the place designated by the awarding authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the awarding authority will make a periodic payment to the Contractor for the work performed during the preceding month and for the materials not incorporated in the work but delivered and suitably stored at the site (or some location agreed upon in writing) to which the Contractor has title or to which a Subcontractor has title and has authorized the Contractor to

transfer title to the awarding authority, less (1) a retention based on its estimate of the fair value of its claims against the Contractor and less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Subparagraph 9.2, and less (3) a retention not exceeding five percent of the approved amount of the periodic payment. After the receipt of a periodic estimate requesting final payment and within sixty-five days after (a) the Contractor fully completes the work or substantially completes the work so that the value of the work remaining to be done is, in the estimate of the awarding authority, less than one percent of the original contract price, or (b) the Contractor substantially completes the work and the awarding authority takes possession for occupancy, whichever occurs first, the awarding authority shall pay the contractor the entire balance due on the contract less (1) a retention based on its estimate of the fair value of its claims against the Contractor and of the cost of completing the incomplete and unsatisfactory items of work and less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Paragraph 1.9 of these Supplementary General Conditions, or based on the record of payments by the Contractor to the Subcontractors under this contract if such record of payment indicates that the Contractor has not paid Subcontractors as provided in Paragraph 1.9. If the awarding authority fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until fifteen days (twenty-four days in the case of the Commonwealth) after receipt of such periodic estimate from the Contractor, at the place designated by the awarding authority if such a place is so designated. The Contractor agrees to pay to each Subcontractor a portion of any such interest paid in accordance with the amount due each Subcontractor.

9.6.1.2* The awarding authority may make changes in any periodic estimate submitted by the Contractor, and the payment due on said periodic estimate shall be computed in accordance with the changes so made, but such changes or any requirement for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided, that the awarding authority may, within seven days after receipt, return to the Contractor for correction, any periodic estimate which is not in the required form or which contains computations not arithmetically correct and, in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form and with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter.

9.6.1.3* All periodic estimates shall be submitted to the awarding authority, or to its designee as set forth in writing to the Contractor, and the date of receipt by the awarding authority or its designee shall be marked on the estimate. All periodic estimates shall contain a separate item for each filed subtrade and each sub-subtrade listed in sub-bid form as required by specifications and a column listing the amount paid to each subcontractor and sub-subcontractor as of the date the periodic estimate is filed. The person making payment for the awarding authority shall add the daily interest provided for herein to each payment for each day beyond the due date based on the date of receipt marked on the estimate.

9.6.1.4* A certificate of the Architect to the effect that the Contractor has fully or substantially completed the work shall, subject to the provisions of Subparagraph 4.6.2 be conclusive for the purposes of this Subparagraph 9.6.1.

9.6.2 Add new Sub-subparagraphs 9.6.2.1 through 9.6.2.13, as follows: (Statutory reference: M.G.L. c.30 §39F)

9.6.2.1* 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.

9.6.2.2* Not later than the sixty-fifth day after each Subcontractor substantially completes his work in accordance with the plans and specifications, the entire balance due under the subcontract, less amounts retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the Subcontractor; and the awarding authority shall pay that amount to the Contractor. The Contractor shall forthwith pay to the Subcontractor the full amount received from the awarding authority less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.

9.6.2.3* Each payment made by the awarding authority to the Contractor pursuant to Sub-subparagraphs 9.6.2.1 and 9.6.2.2 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 awarding authority shall take reasonable steps to compel the Contractor to make each such payment to each such Subcontractor. If the awarding authority 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 included in a payment to the Contractor for payment to the Subcontractor as provided in Sub-subparagraphs 9.6.2.1 and 9.6.2.2, the awarding authority shall act upon the demand as provided in this Subparagraph 9.6.2.

9.6.2.4* If, within seventy 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 awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, the Subcontractor may demand direct payment of that balance from the awarding authority. The demand shall be by a sworn statement delivered to or sent by certified mail to the awarding authority, 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. 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 days after the Subcontractor has delivered or so mailed the demand to the awarding authority 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 awarding authority, 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.

9.6.2.5* Within fifteen days after receipt of the demand by the awarding authority, but in no event prior to the seventieth day after substantial completion of the subcontract work, the awarding authority 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 awarding authority 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 awarding authority 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 Sub-subparagraph 9.6.2.4. The awarding authority 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 Sub-subparagraph.

9.6.2.6* The awarding authority shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of Sub-subparagraph 9.6.2.5 in an interest-bearing joint account in the names of the Contractor and the Subcontractor in a bank in Massachusetts selected by the awarding authority 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.

9.6.2.7* All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to Sub-subparagraph 9.6.2.6 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 awarding authority to the Contractor to the extent of such payment.

9.6.2.8* The awarding authority shall deduct from payments to a Contractor amounts which, together with the deposits in interest-bearing accounts pursuant to Sub-subparagraph 9.6.2.6, 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.

9.6.2.9* If the Subcontractor does not receive payment as provided in Sub-subparagraph 9.6.2.1 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 Sub-subparagraph 9.6.2.1, the Subcontractor may demand direct payment by following the procedure in Sub-subparagraph 9.6.2.4 and the Contractor may file a sworn reply as provided in that same Sub-subparagraph. 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 awarding authority shall proceed as provided in Sub-subparagraphs 9.6.2.5 through 9.6.2.8.

9.6.2.10* 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 awarding authority or which are on deposit pursuant to Sub-subparagraph 9.6.2.6 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.

9.6.2.11* "Subcontractor" as used in Sub-subparagraphs 9.6.2.1 through 9.6.2.13 shall mean a person who files a sub-bid and receives a subcontract as a result of that filed sub-bid or who is approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the Contractor.

9.6.2.12* 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 Sub-subparagraph 9.6.2.6 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 Sub-subparagraph 9.6.2.6 by a petition in equity in the superior court against the awarding authority 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 prevent 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 a court of equity against the awarding authority claiming a demand for direct payment is premature, and such Subcontractor must file the petition before the awarding authority has made a direct payment to the Subcontractor and has made a deposit of the disputed portion as provided in part (iii) of Sub-subparagraph 9.6.2.5 and in Sub-subparagraph 9.6.2.6.

9.6.2.13* 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 awarding authority as provided in part (iii) of Sub-subparagraph 9.6.2.5 and in Sub-subparagraph 9.6.2.6 any amount held under a trustee writ or pursuant to a restraining order or injunction.

9.6.3 Delete subparagraph 9.6.3.

9.6.4 Change subparagraph 9.6.4 to read as follows:

9.6.4 Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, Sub-subcontractor or material supplier.

9.6.5 Delete subparagraph 9.6.5.

9.7.1 Delete the words "or awarded by arbitration" from line 6 of subparagraph 9.7.1.

9.8.1 Add at the end of subparagraph 9.8.1:

"and only minor items which can be corrected or completed without any material interference with the Owner's use of the Work remain to be corrected or completed".

9.8.2 Replace subparagraph 9.8.2 with the following:

When the Contractor considers that the Work, or a portion thereof designated in the Contract Documents for separate completion, is substantially complete and the premises comply with subparagraph 3.15.1, the Contractor shall submit to the Architect (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 Architect and (3) the permits and certificates referred to in subparagraph 13.5.4. The failure to include any items 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 Architect on the basis of an inspection determines that the Work or designated portion thereof is substantially complete and the other conditions have been met, the Architect will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner 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. 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. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of the responsibilities assigned to them in such

Certificate.

9.9.1 Change subparagraph 9.9.1 to read as follows:

9.9.1 The Owner 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, and occupancy shall not imply substantial completion, provided that the respective responsibilities of the Owner and 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 Owner and Contractor or, absent such agreement, shall be determined by the Architect subject to the right of either party to contest such determination in Court.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1.2-
10.1.4 Delete subparagraphs 10.1.2, 10.1.3, and 10.1.4.

10.2.1.2 In subparagraph 10.2.1.2, delete the word "and" at the end of the subparagraph.

10.2.1.3 In subparagraph 10.2.1.3, add the word "and" to the end of the subparagraph.

10.2.1.4 Add new subparagraph 10.2.1.4 as follows:

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

10.2.5 Replace subparagraph 10.2.5 with the following:

The Contractor shall promptly remedy damage and loss to property referred to in clauses 10.2.1.2, 10.2.1.3 and 10.2.1.4. If the damage or loss is due in whole or in part to the Contractor's failure to take the precautions required by this Paragraph 10.2, the Contractor shall, subject to any reimbursement to which the Contractor is entitled under property insurance required by the Contract Documents, bear the cost. The Contractor shall be fully and solely responsible for all Work and other operations carried out on adjacent properties. The insurance required under Article 11 shall cover such Work or operations, and the Contractor shall indemnify and defend the Owner, the Architect, and the owners of such adjacent properties from and against all claims, suits, losses or costs arising out of such Work or operations.

10.2.8-
10.2.12 Add new subparagraphs 10.2.8 through 10.2.12 as follows:

10.2.8 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.

10.2.9 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.

10.2.10 The Contractor shall remove snow and ice which might result in damage or delay.

10.2.11* (Statutory reference: M.G.L. c.149 §44F)

The Contractor shall install weather protection and furnish adequate heat in the protected area from November 1 to March 31, as required by M.G.L. c.149 §44F(1).

10.2.12 The Contractor shall provide, within the Contract Sum, sufficient security 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 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 fails to comply with the requirements of this Subparagraph 10.2.12, then the Owner may provide appropriate security, and change the cost thereof to the Contractor. The Owner's provision of such security, or failure to do so, shall not relieve the Contractor of its sole responsibility to pay for loss or damage due to vandalism, theft, or malicious mischief at the Site.

ARTICLE 11: INSURANCE AND BONDS

11.1.1 In the first sentence of subparagraph 11.1.1 following the word "located" insert the words "and to which the Owner has no reasonable objection".

11.1.1.1 Add new Sub-subparagraph 11.1.1.1 to read as follows:

11.1.1.1* (Statutory reference: M.G.L. c.149, §34A)

The Contractor shall, before commencing performance of the contract, provide by insurance for the payment of compensation and the furnishing of other benefits under M.G.L. c.152 to all persons to be employed under the contract, and the Contractor shall continue such insurance in full force and effect during the term of the contract. Sufficient proof of compliance with this Sub-subparagraph 11.1.1.1 must be furnished at the time of execution of this contract. Failure to provide and continue in force such insurance as aforesaid shall be deemed a material breach of the contract and shall operate as an immediate termination thereof. No cancellation of such insurance, whether by the insurer or by the insured, shall be valid unless written notice thereof is given by the party proposing cancellation to the other party and to the awarding authority at least fifteen days prior to the intended effective date thereof, which date shall be expressed in said notice.

11.1.2 Change subparagraph 11.1.2 to read as follows:

11.1.2 The insurance required by subparagraph 11.1.1 shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Nonowned, and Hired Motor Vehicles (Save Harmless Agreement for Owner and Architect set forth in 3.18 of General Conditions). Such insurance shall be written for not less than any limits of liability required by law or the following limits, whichever are greater:

Employer's Liability:

Combined Single Limit: \$1,000,000

Workers Compensation: As required by the General Laws of the Commonwealth of Massachusetts, M.G.L. c. 149, §34A.

Comprehensive General Liability Insurance:

Owner's and Contractor's Protective Insurance:

Each Occurrence: \$2,000,000

Aggregate: \$2,000,000

Belmont Town Hall – Roof Repairs
Belmont, MA

Commercial General Liability Insurance:

General Aggregate:	\$2,000,000
Products/Completed	
Operations Aggregate:	\$2,000,000
Personal Injury and	
Advertising Limit:	\$2,000,000
Each Occurrence:	\$2,000,000

* Aggregates shall apply to this project only (aggregates not to include other projects and shall be identified as such on the certificate of insurance). "Claims made" form is not acceptable. General Contractor Completed Operations coverage must not exclude hazardous materials.

Motor Vehicle Insurance, including all owned, non-owned, hired and leased vehicles:

Combined Single Limit:	\$1,000,000
Bodily Injury:	\$1,000,000 per person \$1,000,000 per occurrence
Property Damage:	\$500,000 per occurrence

Excess Liability (Umbrella) Insurance (to provide in excess for Employers Liability, Commercial Liability and Automobile Liability policies required herein:

\$10,000,000 per occurrence
\$10,000,000 general policy aggregate

Copies of the foregoing insurance policies and certificates shall be provided to the Owner within thirty (30) days of the execution of the Agreement. Renewed certificates must be forwarded by the Contractor prior to the expiration date of any of the initial insurance.

All insurance shall be written on an occurrence basis. Coverages shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. The Town of Brookline shall be added as an Additional Insured on all policies.

All certificates of insurance shall contain substantially the following statement: "The insurance covered by this certificate shall not be canceled, nor materially altered, except after thirty days prior written notice to the Town of Brookline."

The Contractor shall be responsible for and maintain property insurance coverage at his option and expense to cover tools, equipment, etc., owned or rented, the capital value of which is not included in the cost of the Work.

All policies are to be written by insurance companies licensed to do business in the Commonwealth of Massachusetts and acceptable to the Town of Brookline.

The Town of Belmont and The Galante Architecture Studio, Inc. are each to be named as an "Additional Insured" on all policies:

11. 1.3 At the end of this subparagraph, insert the following: "Neither the Owner's authority to review certificates and policies of insurance, nor their decision to raise or not raise any objections about those certificates and policies, shall in any way give rise to any duty or responsibility on the part of the Owner to exercise this authority for the benefit of the Contractor, any Subcontractor or Supplier, or any other party."

- 11.1 Add the following:
- 11.1.4 The Contractor's liability insurance shall remain in effect until the end of the Correction period as defined in Article 12 and in Division 1, General Requirements, and at all times after that when the Contractor may be correcting, removing, or replacing defective work. The Completed Operations insurance shall be maintained for two years after the final payment.
- 11.3.1.1 In the second sentence, after the words "loss or damage" insert a period and delete the words "including, without duplication of coverage, theft, vandalism and malicious mischief." Insert the following: "This coverage carries a deductible per occurrence which will be paid by the Contractor. This insurance coverage does not cover the Contractor's tools and equipment."
- 11.3.9 In the third sentence, after the words "in accordance with" delete the words "an arbitration award by ... Paragraph 4.5" and insert the words "the direction of a court of competent jurisdiction."
- 11.3.10 Delete this subparagraph in its entirety and insert the following:
- "The Owner, as trustee, shall have power to adjust and settle any loss with the insurers."

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

- 12.2.1 Add at the end of subparagraph 12.2.1:
- "and any cost, loss, or damages to the Owner resulting from such failure or defect."

ARTICLE 13: MISCELLANEOUS PROVISIONS

- 13.5.4 Change subparagraph 13.5.4 to read as follows:
- 13.5.4 The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Architect shall be a condition precedent to Substantial Completion of the Work.
- 13.5.5 Delete subparagraph 13.5.5.
- 13.7 Change Paragraph 13.7 to read as follows:
- 13.7 STATUTORY LIMITATION PERIOD
- 13.7.1 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 limitation and repose. Any cause of action which the Owner may have on account of such failure shall be deemed to accrue only when the Owner has obtained actual knowledge of such failure, not before.

ARTICLE 14: TERMINATION OF THE CONTRACT

- 14.1.1.4-
14.1.1.5 Delete subparagraphs 14.1.1.4 and 14.1.1.5.
- 14.2 Change Paragraph 14.2 to read as follows:
- 14.2 TERMINATION BY THE OWNER

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 workmen 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 Architect, or otherwise is guilty of a substantial violation of any provision of the Contract, then the Contractor shall be in default, and the Owner 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 5.4, and finish the Work by whatever method the Owner may deem expedient. The Owner shall be entitled to collect from the Contractor all direct, indirect, and consequential damages suffered by the Owner on account of the Contractor's default, including without limitation additional services and expenses of the Architect made necessary thereby. The Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner's damages have been established, and to apply such amounts to such damages.

14.3 Delete Paragraph 14.3.

ARTICLE 15* - CONTRACTOR'S ACCOUNTING METHOD REQUIREMENTS
(Statutory reference: M.G.L. c.30, §39R)

15.1*-

15.5* Add new paragraphs 15.1 through 15.5, as follows:

15.1* The words defined herein shall have the meaning stated below whenever they appear in this Article 15:

15.1.1* "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to §39M of c.30, §§44A-44H inclusive, of c.149, and §§30B-30P, inclusive, of c.7.

15.1.2* "Contract" means any contract awarded or executed pursuant to §§30B-30P, inclusive of c.7, and any contract awarded or executed pursuant to §39M of c.30, or §§44A-44H, inclusive, of c.149, which is for an amount or estimated amount that exceeds the dollar amount set forth in M.G.L. c.30, §39R.

15.1.3* "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.

15.1.4* "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public account 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 awarding authority.

15.1.5* "Audit," when used in regard to financial statements, 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.

15.1.6* "Accountant's Report," when used in regard to financial statements, means a document in which an independent certified public 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 a 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 therefor shall be stated. An accountant's report shall include as a 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.

15.1.7* "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.

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

15.2* Subparagraph 15.1.2 hereof notwithstanding, every agreement or contract awarded or executed pursuant to §§30B-30P, inclusive of c.7, and pursuant to §39M of c.30 or to §§44A-44H, inclusive, of c.149, shall provide that:

15.2.1* The Contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.

15.2.2* Until the expiration of six years after final payment, the awarding authority, office of inspector general, and the deputy commissioner of capital planning and operations shall have the right to examine any books, documents, papers or records of the Contractor or of his/her Subcontractors that directly pertain to, and involve transactions relating to, the Contractor or his/her Subcontractors.

15.2.3* If the agreement is a contract as defined herein, the Contractor shall describe any change in the method of maintaining records or recording transactions which materially affect any statements filed with the awarding authority, including in his/her description the date of the change and reasons therefor, and shall accompany said description with a letter from the Contractor's independent certified public accountant approving or otherwise commenting on the changes.

15.2.4* If the agreement is a contract as defined herein, the Contractor has filed a statement of management on internal accounting controls as set forth in Paragraph 15.3 below prior to the execution of the contract.

15.2.5* If the agreement is a contract as defined herein, the Contractor has filed prior to the execution of the contracts and will continue to file annually, an audited financial statement for the most recent completed fiscal year as set forth in Paragraph 15.5 below.

15.3* Every Contractor awarded a contract shall file with the awarding authority a statement of management as to whether the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:

15.3.1* transactions are executed in accordance with management's general and specific authorization;

15.3.2* transactions are recorded as necessary;

(i) to permit preparation of financial statements in conformity with generally accepted accounting principles, and

(ii) to maintain accountability for assets;

15.3.3* access to assets is permitted only in accordance with management's general or specific authorization; and

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

15.4* Every Contractor awarded a contract shall also file with the awarding authority 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

15.4.1* whether the representations of management in response to this paragraph and Paragraph 15.2 above are consistent with the result of management's evaluation of the system of internal accounting controls; and

15.4.2* 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.

15.5* Every Contractor awarded a contract by the Commonwealth or by any political subdivision thereof shall annually file with the Deputy Commissioner of Planning and Operations 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.

ARTICLE 16:* - EQUAL EMPLOYMENT OPPORTUNITY AND AFFIRMATIVE ACTION
(Statutory reference: M.G.L. c.151B; Executive Orders No. 74, No. 116, and No. 246)

The provisions of this Article 16 are intended to comply with the Commonwealth's Supplemental Equal Employment Opportunity Anti-Discrimination and Affirmative Action Program, referred to in Executive Order No. 116 and administered by the Massachusetts Commission Against Discrimination. If no specific percentage has been inserted in Subparagraph 16.2.3 below, the applicable minimum percentage provided for in such Supplemental Program shall be deemed to have been so inserted.

16.1* Definitions. For purposes of this contract, "minority" refers to Asian-Americans, Blacks, Spanish Surnamed Americans, North American Indians, and Cape Verdeans. "Commission" refers to the Massachusetts Commission Against Discrimination.

16.2* Non-Discrimination and Affirmative Action Requirements. During the performance of his contract, the Contractor and all of (his) Subcontractors (hereinafter collectively referred to as the Contractor), for himself, his assignees, and successors in interest, agree as follows:

16.2.1* In connection with the performance of work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age or sex. The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion, or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship. The Contractor shall post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Commission setting forth the provisions of the Fair

Employment Practices Law of the Commonwealth.

16.2.2* In connection with the performance of work under this contract, the Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age or sex, and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age, or sex. A purpose of this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for this and future Commonwealth public construction projects.

16.2.3* As part of his obligation of remedial action under the foregoing Subparagraph 16.2.2, the Contractor shall maintain on this project a not less than 5 percent ratio of minority employee man hours to total man hours in each job category including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in M.G.L. c.149, §44F.

16.2.4* In the hiring of minority journeymen, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the Commission, traditional referral methods utilized by the construction industry, and referrals from agencies, not more than three in number at any one time, designated by the Liaison Committee (described in Subparagraph 16.2.5 below) or the Commission.

16.2.5* At the discretion of the Commission there may be established for the life of this contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one representative each from the agency or agencies administering this project, hereinafter called the administering agency, the Commission and such other representatives as may be designated by the Commission in conjunction with the administering agency.

16.2.6* The Contractor (or his agent, if any, designated by him as the on-site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

16.2.7* The Contractor shall prepare projected manning tables on a quarterly basis. These shall be broken down into projections, by week, of workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and also when updated, to the Commission and Liaison Committee.

16.2.8* Records of employment referral orders, prepared by the Contractor, shall be made available to the Commission and to the Liaison Committee on request.

16.2.9* The Contractor shall prepare weekly reports in a form approved by the Commission of hours worked in each trade by each employee, identified as minority or non-minority. Copies of these shall be provided at the end of each such week to the Commission and to the Liaison Committee.

If the Contractor shall use any subcontractor on any work performed under this contract, he shall take affirmative action to negotiate with qualified minority subcontractors. This affirmative action shall cover both pre-bid and post-bid periods. It shall include notification to the Office of Minority Business Assistance (within the Executive Office of Communities and Development) or its designee, while bids are in preparation, of all products, work or services for which the Contractor intends to negotiate bids.

In the employment of journeymen, apprentices, trainees and advanced trainees, the Contractor shall give preference, first, to citizens of the Commonwealth who have served in the armed forces of the United States in time of war and have been honorably discharged therefrom or released from active duty therein, and who are qualified to perform the work to which the employment relates, and, secondly, to citizens of the Commonwealth generally, and, if such cannot be obtained in sufficient numbers, then to citizens of the United States.

A designee of the Commission and a designee of the Liaison Committee shall each have right of access to the construction site.

16.3* Compliance with Requirements. The Contractor shall comply with the provisions of Executive Order No. 74, as amended by Executive Order No. 166, dated May 1, 1975, and of M.G.L. c.151B, both of which are herein incorporated by reference and made a part of this contract.

16.4* Non-Discrimination. The Contractor, in the performance of all work after award, and prior to completion of the contract work, will not discriminate on grounds of race, color, religious creed, national origin, age or sex in employment practices, in the selection or retention of Subcontractors, or in the procurement of materials and rentals of equipment.

16.5* Solicitations for Sub-Contracts, and for the Procurement of Materials and Equipment. In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential Subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this contract relative to non-discrimination and affirmative action.

16.6* Bidders' Certification Requirement. The Contractor hereby certifies he shall comply with the minority manpower ratio and specific action steps contained herein. The Contractor shall be required to obtain from each of its subcontractors and submit to the contracting or administering agency prior to the performance of any work under the contract a certification by said Subcontractor, regardless of tier, that it will comply with the minority manpower ratio and specific affirmative action steps contained herein. Such certification shall be provided on forms furnished by the awarding authority or, in the absence thereof, on forms prescribed by the Commission.

16.7* Contractor's Certification. The Contractor's certification form must be signed by all successful low bidder(s) prior to award by the contracting agency.

16.8* Compliance-Information, Reports and Sanctions.

16.8.1* The Contractor will provide all information and reports required by the administering agency or the Commission on instructions issued by either of them and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the Commission to affect the employment of personnel. This provision shall apply only to information pertinent to the Commonwealth's supplementary affirmative action contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the administering agency or the Commission as appropriate and shall set forth what efforts he has made to obtain the information.

16.8.2* Whenever the administering agency, the Commission, or the Liaison Committee believes the Contractor or any Subcontractor may not be operating in compliance with the terms of this Paragraph 16.8, the commission directly, or through its designated agent, shall conduct an appropriate investigation, and may confer with the parties, to determine if such Contractor is operating in compliance with the terms of this Paragraph 16.8. If the Commission or its agent finds the Contractor or any Subcontractor not in compliance, it shall make a

preliminary report on noncompliance, and notify such Contractor in writing of such steps as will in the judgment of the Commission or its agent bring such Contractor into compliance. In the event that such Contractor fails or refuses to fully perform such steps, the Commission shall make a final report of non-compliance, and recommend to the administering agency the imposition of one or more of the sanctions listed below. If, however, the Commission believes the Contractor or any Subcontractor has taken or is taking every possible measure to achieve compliance, it shall not make a final report of non-compliance. Within fourteen days of the receipt of the recommendations of the Commission, the administering agency shall move to impose one or more of the following sanctions, as it may deem appropriate to attain full and effective enforcement:

(i) The recovery by the administering agency from the Contractor of 1/100 of 1% of the contract award price or \$1,000, whichever sum is greater, in the nature of liquidated damages or, if a Subcontractor is in non-compliance, the recovery by the administering agency from the Contractor, to be assessed by the Contractor as a back charge against the Subcontractor, of 1/10 of 1% of the subcontract price, or \$400, whichever sum is greater, in the nature of liquidated damages, for each week that such party fails or refuses to comply;

(ii) The suspension of any payment or part thereof due under the contract until such time as the Contractor or any Subcontractor is able to demonstrate his compliance with the terms of the contract;

(iii) The termination, or cancellation, of the contract, in whole or in part, unless the Contractor or any Subcontractor is able to demonstrate within a specified time his compliance with the terms of the contract;

(iv) The denial to the Contractor or any Subcontractor of the right to participate in any future contracts awarded by the administering agency for a period of up to three years.

If at any time after the imposition of one or more of the above sanctions a Contractor is able to demonstrate that he is in compliance with this Paragraph 16.8, he may request that administering agency, in consultation with the Commission, to suspend the sanctions conditionally, pending a final determination by the Commission as to whether the Contractor is in compliance. Upon final determination of the Commission, the administering agency, based on the recommendation of the Commission, shall either lift the sanctions or reimpose them.

Sanctions enumerated under Subparagraph 16.8.2 of this Paragraph 16.8 shall not be imposed by the administering agency except after an adjudicatory proceeding, as that term is used in M.G.L. c.30A, has been conducted. No investigation by the Commission or its agent shall be initiated without prior notice to the Contractor.

16.9* Severability. The provisions of this Article 16 are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions.

16.10* Equal Employment Opportunity for the Handicapped. The Contractor shall comply with the provisions of Executive Order No. 246, relating to discrimination against and equal employment opportunity for the handicapped, which is herein incorporated by reference and made a part of this contract. In connection with the performance of work under this contract, the Contractor, Subcontractors and suppliers of goods and services shall not discriminate against the handicapped. Furthermore, Contractors, Subcontractors and suppliers of good and services must give written notice of their commitments under this Paragraph 16.10 to any labor union, association or brotherhood with which they have a collective bargaining contract or other agreement, and must give such notice to handicap contractors and to handicapped contractor associations. A copy of such notice must be furnished to the awarding authority at the time of the signing of the contract.

16.11* Suspension of Payments.

16.11.1* If the awarding authority determines after investigation that the Contractor or any Subcontractor is not in compliance with the terms of Article 16, it may suspend any payment or portion thereof due under the contract until Contractor demonstrates compliance with the terms of Article 16.

16.11.2* Payment shall not be suspended if the awarding authority finds that the Contractor made his best efforts to comply with Article 16, or that some other justifiable reason exists for waiving the provisions of Article 16 in whole or in part.

16.11.3* Payment may be suspended only after the Contractor and any other interested party shall have been given the opportunity to present evidence in support of its position at an informal hearing held by the awarding authority and the awarding authority has concluded upon review of all the evidence that such penalty is justified.

16.11.4* This temporary suspension of payments by the awarding authority is separate from the sanctions set forth in Paragraph 16.8 above, which are determined by the Commission and recommended to the awarding authority.

END OF DOCUMENT

END OF SECTION – 00 73 00

00 73 10 SPECIAL CONDITIONS

1.01 MASSACHUSETTS GENERAL LAWS

- A. The following lists certain sections of the Massachusetts General Laws applicable to this Project, which shall be included in this Contract as if written out in full.

<u>Subject</u>	<u>Statute or Executive Order</u>
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PAYMENT, CONTRACT ADMINISTRATION, ETC.

"or Equal" Clause	M.G.L. Chapter 30 Section 39 M(b)
Delays	M.G.L. Chapter 30 Section 39 O
Deviations	M.G.L. Chapter 30 Section 39 I
Finality of Decisions	M.G.L. Chapter 30 Section 39 J
Differing Site Conditions	M.G.L. Chapter 30 Section 39 N
Timely Decisions	M.G.L. Chapter 30 Section 39 P
Certificate of Appropriation	M.G.L. Chapter 30 Section 39 C
Method of Payment (Public Building Projects)	M.G. L. Chapter 30 Section 39 K
Method of Payment (Public Works Projects)	M.G.L. Chapter 30 Section 39 G
Direct Payment	M.G.L. Chapter 30 Section 39 F
Discharge of Release of Bonds	M.G.L. Chapter 30 Section 40

WAGES AND EMPLOYMENT PRACTICES

Preference to Veterans and Citizens	M.G.L. Chapter 149 Section 26
Determination of Wage Rates	M.G.L. Chapter 149 Section 27
Employment Records	M.G.L. Chapter 149 Section 27B
Wages Paid to Operators of Trucks and Other Equipment	M.G.L. Chapter 149 Section 37 F

Belmont Town Hall – Roof Repairs
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Reserve Police Officers	M.G.L. Chapter 149 Section 34 B
Eight-Hour Day, etc.	M.G.L. Chapter 149 Sections 30, 34 and 34 A
Lodging, etc.	M.G.L. Chapter 149 Section 25
Access to Contractor's Records	Executive Order No. 195
Worker's Compensation Insurance	M.G.L. Chapter 149, Section 34
CONTRACTOR'S ACCOUNTING METHODS	
Contractor's Accounting Method Requirements	M.G.L. Chapter 149 Section 39 R
MISCELLANEOUS	
Weather Protection	M.G.L. Chapter 149, Section 44 F (I)
Form for Sub-Contract	M.G.L. Chapter 149, Section 44 (F) (4) (C)
Foreign Corporations	M.G.L. Chapter 181, Section 3.5; Chapter 30, Section 39.L
Shoring	M.G.L. Chapter 149 Section 129 A
Compliance with Tax Laws	M.G.L. Chapter 62 C Section 49 A

1.02 EQUAL OPPORTUNITY, AFFIRMATIVE ACTION POLICY

- A. The following Special Conditions are requirements of the Town of Belmont, Massachusetts, and apply to performance and procedures of Contractor and all subcontractors, suppliers, and others providing labor, material, equipment and services to the Project, regardless of tier. Copies of all referenced policies are available from the Town of Belmont.
1. The Town of Belmont is an Equal Opportunity, Affirmative Action Employer and encourages participation from minority and women-owned contractors and businesses. A copy of the Town of Belmont Affirmative Action Program is included as if bound herein.
- a. The Contractor shall maintain on this Project a not less than 5% ratio of minority employee worker hours to total worker hours in each job category including but not limited to brick-layers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in Section 44C of Chapter 149 of the Massachusetts General Laws.

1.03 DEFINITIONS – OWNER AND ARCHITECT

- A. Wherever the term "Owner" is used in this specification, it refers to

Belmont Town Hall – Roof Repairs
Belmont, MA

Town of Belmont
Belmont Town Offices
455 Concord Avenue
Belmont, MA 02478

1. The terms "Owner" and "Awarding Authority" as used in the Project Manual have the same meaning and are interchangeable in the Contract Documents. Both terms refer to the same entity.
 2. Important Tax Note: OWNER is exempt from **certain taxes**. It is therefore required that the Contractor and Subcontractors purchasing taxable goods or services make known to suppliers that tax-exempt status of the Owner, in order that such taxes will not be applied to goods under Contract. In the event that such taxes are paid on any items, the Contractor shall obtain rebates for the taxes and reimburse the Owner in the full amount by change order. The Owner will provide the necessary evidence and certificates of its tax-exempt status upon request of those concerned. The most prevalent taxes concerned are:
 - a. Federal Excise Taxes as applied to articles which are taxable under Chapter 32 of the Internal Revenue Code of 1954, as amended. The Owner's Excise Tax Exemption Certificate Number is applicable.
 - b. Sales and Use Tax imposed by the Commonwealth of Massachusetts: The Owner has been assigned Exemption Certificate Number with respect to leases, rental or purchase of "tangible personal property", including building materials and supplies, subject to Massachusetts Sales and Use Tax. This exemption does not apply to any equipment leased or rented by the Contractor for their own use on the construction of the Project.
 - c. Sales and Use Tax imposed by the states where the Owner does not have exemption status: The Owner may choose to apply for tax exemption status in other states where major building materials and supplies are being purchased. In the event that the Owner obtains exemption status after bids are received, the Contractor shall adjust the Stipulated Sum by change order, for the amount equal to the scheduled taxes that were included in the Contractor's Bid.
 3. All papers required to be delivered to the Owner shall, unless otherwise specified in writing to the contrary, be delivered to the office of the Architect.
- B. Wherever the term "Architect" or "Engineer" is used in the Contract Documents, it refers to:

The Galante Architecture Studio, Inc.
146 Mount Auburn Street
Cambridge, MA 02138

END OF DOCUMENT

END OF SECTION – 00 73 10

00 73 43 WAGE RATE SCHEDULES AND FEDERAL REGULATIONS

1.01 STATE WAGE RATES

- A. The classifications and wage rates as established by the Commonwealth of Massachusetts Department of Labor and Industries are hereby made a part of this Contract.
- B. Wage rates included in the Contract Documents are minimum wage rates.

1.04 OASHA APPROVED SAFETY AND HEALTH TRAINING

- A. Current Massachusetts law requires all employees who work on public construction sites must have no less than 10 hours of OSHA approved safety and health training.

The contractor and all subcontractors on this project will be required to provide certification of their compliance with this requirement with the first certified payroll report for each employee.

01 11 00 SUMMARY OF WORK

PART 1 - GENERAL

1.01 PROJECT IDENTIFICATION AND DESCRIPTION OF WORK

- A. Project Identification: The name of the Project on Contract Documents is: Belmont – Town Hall – Roof Repairs, Belmont, MA.
- B. Description of Work: The work of this Contract includes, but is not limited to:
 - 1. The Belmont Town Hall is a historic building with a slate shingle roof dating back to 1881, currently in need of repair. Work of this project will include the selective removal, salvaging as possible, and reinstallation/installation of salvaged and new slate shingles and copper flashing and trim. All work will match the original, historical design and aesthetics.
 - 2. Refer to drawings and Technical Specifications for full scope of work.
- C. Filed Sub-Bids:
 - 1. Not applicable

1.02 PHASING/SCHEDULE

- A. Schedule: Construction shall be executed in a single 10-week period, commencing on June 6, 2023, and substantially complete on or before August 15, 2023.

Schedule:
 - 1. Award of Contract April 11, 2023
 - 2. Contractor Mobilization commence June 6, 2023
 - 3. Substantial Completion August 15, 2023
 - 4. Punch List Completion and Final Cleaning September 15, 2023

1.03 WORK UNDER SEPARATE AND ASSIGNED CONTRACTS

- A. Utility companies serving the Project will perform work providing services to the Project as described in the appropriate Sections of the Specifications and indicated on the Drawings.

1.04 CODES, STANDARDS AND PERMITS

- A. All work under this Contract shall conform to all codes and standards in effect as of the date of receipt of Bids which are applicable to this Project. All work shall further conform to specific requirements and interpretations of local authorities having jurisdiction over the Project. These codes, standards and authorities are referred to collectively as "the governing codes and authorities", and similar terms, throughout the Specifications. Determination of applicable codes and standards, and authorities having jurisdiction, shall be the responsibility of the Contractor, as shall be the analysis of all such codes and standards in regard to their applicability to the Project for the purposes of determining necessary construction to conform to such code requirements, securing all approvals and permits necessary to proceed with construction, and to obtain all permits necessary for the Owner to occupy the facilities for their intended use. In the case of conflicts between the requirements of different codes and standards, the most restrictive or stringent requirements shall be met.
 - 1. The Contractor shall maintain at the site, for the duration of the construction operations at the site, two (2) copies of all relevant codes and standards listed herein or determined to be applicable to the work. One copy of such codes shall be for the exclusive use of the Owner and Architect and its consultants, and shall be kept in the Owner's site office.

- B. The codes that most significantly impact the Project are the following:
1. Massachusetts State Building Code, current edition, as amended, including all referenced standards.
 2. Massachusetts Architectural Access Board Rules and Regulations.
 3. ADAAG - Americans with Disabilities Act, Accessibility Guidelines.
 4. ANSI A117.1 - Providing Accessibility and Usability for Physically Handicapped People.
 5. National Fire Protection Association (NFPA) codes and standards.
- C. Code Enforcement and Approvals: The Contractor and Filed Subcontractors shall secure the general building permit, and the plumbing and electrical permits for the work for which all permit related fees will be waived. The General Contractor and Filed Subcontractor shall conform to all conditions and requirements of the permit and code enforcement authority. Contractor shall provide names and license numbers of its responsible representatives to complete application for permit, and shall receive permit and promptly distribute copies thereof to Owner and Architect.
- D. Contractor shall identify all permits (other than general building permit) required from authorities having jurisdiction over the Project for the construction and occupancy of the work, shall prepare the necessary applications and submit required plans and documents to obtain such permits in a timely manner, and shall pay all fees and charges (e.g. police/ fire detail costs are not waived) in connection therewith.
1. Contractor shall display all permit cards as required by the authorities, and shall deliver photocopies of all permits to the Owner and Architect promptly upon receipt.
 2. Contractor shall arrange for all inspections, testing and approvals required for all permits, and shall notify the Architect and Owner of such inspections at least three business days in advance, so they may arrange to observe.
 3. Contractor shall comply with all conditions and provide all notices required by all permits.
 4. Contractor shall perform and/or arrange for and pay for all testing and inspections required by governing codes and authorities, other than those provided by the Owner, and shall notify Architect and Owner of such inspections at least three business days in advance of all such testing or inspection, so they may arrange to observe.
 5. Where inspecting authorities require corrective work in conjunction with applicable codes and authorities, Contractor shall promptly comply with such requirements, except in cases in which requirements clearly exceed the requirements of the Contract Documents in which case the Contractor shall proceed in accordance with the procedures for modifications or changes in the work established in the Contract Documents, as amended.

1.05 CONTRACTOR'S CONSTRUCTION/ MITIGATION PLAN

- A. Prior to beginning work of the Contract, the General Contractor shall meet with the Owner and the Architect to determine procedures regarding access to and use of site, exterior staging, parking, and storage areas, tree protection, special site conditions, and any other restrictions regarding the use of the site areas surrounding the construction. The General Contractor shall prepare a Construction/ Mitigation Plan. At a minimum, scope to include:
1. Project Sign.
 2. Parking and deliveries
 3. Storage/ laydown Areas
 4. Construction Trailers
 5. Phasing Schedule
 6. Tree Protection
 7. Rodent Control
 8. Hours of Operation
 9. Quality Control Plan

10. Site Security Plan
11. Weather Protection
12. Video/ Photographs
13. Site Safety
14. Dumpster management
15. Dust and Noise Control
16. Temporary Lighting

1.06 CONTRACTOR'S USE OF PREMISES

- A. The existing buildings and site will be fully occupied for the entire construction period. At all times during the demolition, construction, and alterations, the Contractor shall provide adequate and safe means of egress for all Owner's personnel and the general public in the building and at the same time provide security of the building. "Means of Egress" also includes safe and adequate paths on the site. Maintenance of the building and site within the areas designated under the phasing shall be the Contractor's responsibility for the entire construction period, inclusive of snow removal, heat, and electricity.
- B. Where work on public roads or walks, or other work on municipal property or easements is done, all such work shall conform to applicable portions of this Specification and the rules, regulations, and specifications of the public agencies having jurisdiction. Wherever work on a public street is done, a Town special duty police officer must be present. All permits and fees (police detail) in relation to such off-site work shall be obtained and paid for by the General Contractor.
- C. The General Contractor shall keep all public and private access roads and walks clear of debris caused by this work during the entire term of the Contract. He shall repair all public and private streets, drives, curbs, walks, and other improvements where disturbed by work of, or related to, building operations, leaving them in as good condition after completion of the work as before operations started, in accordance with rules, regulations, and specifications of the public agencies having jurisdiction.
- D. Street parking will not be permitted. The contractor shall submit a Site Logistics Plan indicating contractor parking entirely within the limits of the site.
- E. Access roads and fire-lanes on and about the site shall be kept open and free at all times, except moving traffic, for passage of emergency vehicles.
- F. A reasonable sum (cost of equivalent replacement) will be deducted from the Contract Sum for any permanent damage to existing trees or plantings which are outside the construction site area but on the Owner's property or are within the construction site area and are designated to be protected. Damage to trees and plants off the Owner's property shall be fully the responsibility of the General Contractor.
- G. The General Contractor shall endeavor at all times to maintain as low a level of construction noise as practicable in order not to create a disturbance in the neighborhood.
 1. Refer to the Town of Belmont By-Laws.
 2. All workers on the project are required to conduct themselves in a professional manner. Abusive or obscene language will not be tolerated. No obscene gestures, whistles, or cat-calls will be allowed. No soliciting or harassing of neighborhood residents for any reason will be permitted. The Owner reserves the right to have any worker barred from the construction site.
 3. Use of alcohol or drugs on the property is prohibited.
 4. Workers shall wear shirts at all times.
 5. Smoking is prohibited on the property.
 6. Use of radios on project site is prohibited.

- H. The intent of the specifications is that required work shall be performed with a minimum of interference with the public and the Owner's operations. To achieve this end, the Contractor shall prosecute the work to its completion as soon as possible with full crews of workers during regular working hours.
 - 1. Regular working hours for work are defined by Town By-laws.
 - 2. All work at other than regular hours shall be subject to prior approval by Owner.
- I. The Contractor shall confine his apparatus, storage of materials, and operations of his workers to areas agreeable to the owner, and shall not unreasonably encumber the premises with his materials. Contractor shall keep corridors and exits clear of debris, stored materials, etc. at all times, to provide for normal and fire egress from the building. The premises shall be maintained in a safe, orderly condition at all times.
- J. Site Cleaning and Maintenance:
 - 1. Before the start of any work it is required that an inspection be made to determine the existing conditions of the site around the work areas, including areas outside of the Site boundaries in which operations of the Contractor may occur. This should be performed jointly by representatives of the Contractor and Architect. A video tape record will be made of this inspection, as described in Section 01 31 00 of these specifications.
 - 2. Unless otherwise specified in the various technical specification Sections, the Contractor shall take all necessary precautions to prevent the spreading of dirt and dust throughout the area of the work. During demolition and other work, Contractor shall take all measures necessary to contain dust and other debris from the work within the limits of the site under the Contractor's control. Contractor shall be responsible for promptly cleaning up all dirt, dust and debris escaping from the work areas or dropped from vehicles traveling to and from the work. All vehicles used for removal of material from the site shall be equipped with covers, in good condition, adequate to contain dust and debris within lawful and acceptable limits. Contractor shall provide all facilities for preventing spread of objectionable matter outside of the site areas through washing of vehicles and vehicle wheels, decontamination of vehicles transporting hazardous waste containing materials including asbestos, lead, or other matter, and all other means necessary.
 - 3. Prior to Substantial Completion and to final completion of the Contract, the Contractor shall remove all spots, stains, dirt and dust from all surfaces, including areas within other buildings and any portion of property of others, which were the result of the work of this Project to the satisfaction of the Owner.
 - 4. Any damage to the present quarters or equipment of the Owner caused by the Contractor or his Subcontractors shall be corrected by the Contractor, as directed by the Architect, at the expense of the Contractor.
- K. As a condition of Architect's certification for Substantial Completion, restore site areas and areas off the site damaged by work under this Contract to their condition existing at the start of the work unless otherwise directed by the Owner.

1.07 OWNER'S PARTIAL OCCUPANCY OR USE

- A. If the building or any portion thereof is occupied or used by the Owner, such occupancy or use shall be predicated upon the following conditions.
 - 1. Unless otherwise set forth in the separate agreement if the area occupied or used by the Owner is totally enclosed and separated from areas occupied by the General Contractor and is equipped with doors with locks, the Owner will be responsible for the security of the area. If the area so occupied or used is not totally enclosed and/or separated from areas occupied by the General Contractor, the General Contractor will be responsible for the security of the area.

2. The General Contractor will not be required to pay maintenance costs on the portion of the building occupied under this agreement, nor shall he be responsible for wear and tear or damage resulting from such occupancy.
3. The General Contractor will not be required to furnish heat, light, or water used in the building or portion of building so occupied, without proper remuneration therefore.
4. In case of partial occupancy or use prior to the substantial completion date, the Owner shall secure endorsement from the insurance carrier and consent of the Surety permitting such occupancy or use during the remaining period of construction.
5. In case of partial occupancy or use after the substantial completion date, the General Contractor shall extend all necessary insurance coverage until Final Acceptance of the project. Owner's use and occupancy prior to Final Acceptance shall not relieve the General Contractor of his responsibility to maintain the insurance coverage required by the Contract Documents.
6. In case of any such partial occupancy or use, the periods of guarantees called for by the Contract Documents shall not commence until Substantial Completion of all work of the Contract.
7. Partial utilization or occupation of portions of the Project does not constitute Substantial Completion.
8. The Contractor shall make all arrangements with, and coordinate all construction schedules with the Owner or the Owner's designated agent at all times during the course of the work.

1.08 EXAMINATION OF SITE

- A. Prior to bidding the General Contractor and each of the Filed Subcontractors shall carefully examine the site and the Contract Documents to ensure their knowledge of conditions and requirements affecting the work. No claim for extra compensation or extension of time will be allowed for General Contractor's or Filed Subcontractor's failure to comply with this requirement nor will any condition at the site, whether or not in agreement with conditions shown or called for on the Contract Documents, be allowed as a basis or such claims, except as otherwise specifically provided for.

1.09 DISCOVERY

- A. If during the demolition, excavation, disposal, or other work, articles of unusual value, or of historical or archaeological significance are encountered the ownership of such articles is retained by the Owner, and information regarding their discovery shall be immediately furnished to the Architect. If the nature of the article is such that the work cannot proceed without danger of damaging same, work in that area shall be immediately discontinued until the Architect has decided the proper procedure to be followed. Any time lost thereby shall be a condition for which the time of the Contract may be extended. All costs incurred after discovery in the salvaging of such articles shall be borne by the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 11 00

01 12 00 RESPONSIBILITY CLARIFICATIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for the clarification of General Contractor and Filed Sub-Bidder responsibilities for Division 01 – General Requirements, to reduce disputes between the General Contractor and Filed Sub-Bidders.
- B. The General Requirements (Division 01) contain requirements which apply to the entire Contract.
 - 1. Division 01 General Requirements exist as a separate Division in the specifications to reduce repetition of requirements in each and every specification Section.
 - 2. By definition, the word "general" means involving, applicable to, or affecting the whole. Division 01 Sections that expand on certain broad provisions in the General Conditions of the Contract govern the execution of the Work of all Sections of the specifications. The Division 01 concept is based on the Construction Specifications Institute (CSI) principal of stating information only once and in the right place. Division 01 is the proper location for detailed specification of administrative and procedural requirements that are applicable to all subsequent Sections in Divisions 02 through 33. Without Division 01, these requirements would have to be repeated throughout the specifications.

1.02 GENERAL CONTRACTOR AND FILED SUB-BIDDER RESPONSIBILITIES

- A. Filed Sub-Bidder Responsibility for General Requirements: Since Division 01 General requirements apply to the entire Contract, each Filed Sub-Bidder shall comply with Division 01 General Requirements. The following clarifications shall be used to resolve disputes between the General Contractor and Filed Sub-Bidders as related to the responsibility for General Requirements.
- B. Section 01 11 00 SUMMARY OF WORK: There is only one Contractor, the General Contractor (GC).
 - 1. The General Contractor is fully responsible for all Work of the Contract including:
 - a. Work assigned by the Contract Documents to Filed Sub-Bidders.
 - b. Work not assigned by the Contract Documents to Filed Sub-Bidders.
 - c. Work subcontracted by the GC to non-Filed Sub-Bidders.
 - d. Work which is not subcontracted by the GC.
 - 2. Although separate Sections of Contract Specifications have been prepared for each Filed Sub-Bid as required by the General Laws Chapter 149 Section 44F (1), the General Contractor (GC) is responsible for subcontracting the Contract. The GC shall:
 - a. Provide work clearly assigned to the GC in Filed Sub-Bid specifications.
 - b. Study all Contract Documents including Filed Sub-Bid specifications.
 - c. Integrate and coordinate Filed Sub-Bidders' work with the GC's work.
 - d. Integrate and coordinate Filed Sub-Bidders' work with work of other subcontracts.
 - e. Ensure all work of the Contract is performed and no work is omitted.
 - 3. Work of the Contract which is claimed by any Filed Sub-Bidder to be not included in any Filed Sub-Bidders work shall be the General Contractors work included in the Contract Amount and performed by the General Contractor.
 - 4. Each Filed Sub-Bidder is the subject of imperative sentences in their specification Sections except for work clearly assigned to the GC in Filed Sub-Bid specifications.
 - 5. Filed Sub-Bidders shall not subcontract work except as allowed by Paragraph E on the Form of Sub-Bid.

- C. Section 01 11 00 SUMMARY OF WORK: Occupancy requirements- Each Filed Sub-Bidder shall follow the accommodations, restrictions, special work hours and days, and directions of the General Contractor at no increase in their subcontract amounts and at no increased cost to the Owner.
 - 1. Each Filed Sub-Bidder shall provide "Work Plan" information requested by the GC.
 - 2. The GC shall provide all work related to temporary partitions and temporary exterior assemblies.
 - 3. Each Filed Sub-Bidder shall pay all costs and damages related to unintentional service interruptions they cause.
 - 4. Each Filed Sub-Bidder worker shall wear identification badges issued by the GC.
- D. Section 01 60 00 PRODUCT REQUIREMENTS: Each Filed Sub-Bidder shall provide all information and requirements related to their proposed substitutions as specified and as additionally requested by the GC.
- E. Section 01 29 00 PAYMENT PROCEDURES: Each Filed Sub-Bidder shall provide cost information, cost substantiation, and all other price and payment information related to their subcontract as specified and as additionally requested by the GC.
- F. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION: Each Filed Sub-Bidder shall attend meetings as directed by the GC. The GC shall provide Project photographs.
- G. Section 01 33 00 SUBMITTAL PROCEDURES: Each Filed Sub-Bidder shall prepare and provide all submittals required by their specification sections and as additionally requested by the GC.
- H. Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS: Each Filed Sub-Bidder shall comply with the GC's Safety Plan and shall provide Accident Report information requested by the GC.
- I. Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS: Each Filed Sub-Bidder shall comply with the Owner's and the GC's security procedures including amendments.
- J. Section 01 45 00 QUALITY CONTROL: Each Filed Sub-Bidder shall arrange, provide, and pay for all tests and inspections required in their specification sections. Each Filed Sub-Bidder shall pay all costs related to failed tests and inspections when failure is their fault.
- K. Section 01 45 00 QUALITY CONTROL: Each Filed Sub-Bidder shall provide all In Place Samples required in their specification sections.
- L. Section 01 73 00 EXECUTION: Since the General Contractor is ultimately responsible for all work of the Contract, the General Contractor is ultimately responsible for all remedial work and shall coordinate and manage all remedial work. Each Filed Sub-Bidder shall pay for all remedial work required due to their error.
- M. Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS: The General Contractor shall provide all temporary facilities and controls, except each Filed Sub-Bidder shall:
 - 1. Provide hoses to reach temporary water system.
 - 2. Provide up to 100 feet of extension cord per tool.
 - 3. Provide and pay for electric power exceeding available temporary power system capacity.
 - a. The GC shall provide temporary power not less than 120 Volts AC, 30 Amps per tool.
 - b. The GC shall provide temporary power covering the area extending to 25 feet outside the building footprint measured using the Filed Sub-Bidders' 100 foot power cords.
 - 4. Provide temporary storage trailers, if permitted by the General Contractor.

- a. GC may limit or prohibit temporary storage trailers due to site space constraints.
 5. Locate and relocate their temporary storage trailers as directed by GC.
 6. Provide all equipment and tools related to their work.
 7. Provide all hoisting, rigging, unloading, and handling related to their work.
 8. Provide all temporary storage and protection during temporary storage related to their work.
 9. Provide ladders, scaffolding, staging for their work up to and including 8 feet high worker standing level measured from floor or, if no floor, average grade to worker standing level.
 - a. For worker standing level above 8 feet, the GC provides the entire ladder, scaffold, or stage including the lower 8 feet.
 - b. GC is not required to provide motorized scaffolds or man lifts for Filed Sub-Bidders.
 10. Comply with GC's security procedures.
 11. Provide all fire watch details by Belmont Fire Department related to their work.
 12. Place all their waste and packaging in GC's dumpsters as directed by GC.
 13. Sort waste into separate dumpsters for waste management as directed by GC.
 14. Load dumpsters in a reasonable manner to minimize the waste volume.
 - a. GC shall pay trucking and disposal costs.
 15. Be solely responsible for hazardous waste, special regulated waste, and special disposal resulting from their work or from their actions.
 16. Clean their work immediately after installation.
 17. Provide final cleaning required in their specification sections.
- N. Section 01 60 00 PRODUCT REQUIREMENTS: Each Filed Sub-Bidder shall comply with specified requirements related to their work.
- O. Section 01 60 00 PRODUCT REQUIREMENTS: Each Filed Sub-Bidder shall provide all fasteners and specified testing of fasteners related to their work.
- P. Section 01 73 00 EXECUTION: The General Contractor shall provide the master layout for the entire Contract including, without limitation, bench marks, temporary working points, elevations, structure, partitions, and openings. Each Filed Sub-Bidder shall layout their work from the General Contractor's master layout.
- Q. Section 01 73 00 EXECUTION: For "Remedial Work To Correct Errors", each Filed Sub-Bidder shall pay for all cutting related to remedial work caused by the Filed Sub-Bidder's errors. For cutting not related to "Remedial Work to Correct Errors", each Filed Sub-Bidder shall provide cutting for all openings for their work up to and including 6 inches in diameter and 6 inches in length for rectangular openings. To be acceptable, holes provided by Filed Sub-Bidders shall be accurately and properly located, truly necessary, and complying with Section 01 73 28 Cutting Requirements. Each Filed Sub-Bidder shall pay for remedial work to correct their unacceptable holes.
- R. Section 01 73 00 EXECUTION: Each Filed Sub-Bidder shall provide protection required in the Filed Sub-Bidder's specification sections.
- S. Section 01 77 00 CLOSEOUT REQUIREMENTS: Each Filed Sub-Bidder shall:
1. Provide marked-up "in progress" record drawings related to their work each week.
 2. Provide copy ready, final "Record Documents in Binders" related to their work.
 3. Provide "Building Mounted Charts and Data" related to their work.
 4. Provide Owner Training related to their work.
 5. Provide a "Preliminary Punch List" of incomplete and nonconforming items related to their work.
 6. Provide the accurate value of each of their punch list items with substantiation.
 7. Complete incomplete items.
 8. Remediate nonconforming work.

9. Pay for additional service costs and re inspection fees related to their failure to properly and timely complete their punch list items.
- T. Section 01 77 00 CLOSEOUT REQUIREMENTS: Each Filed Sub-Bidder shall provide warranties required by their specification sections.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 12 00

01 22 00 UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section covers those items for which indefinite quantities can be expected and, therefore, pre-agreed prices per unit of work are established as means to determine adjustments to the Contract Price after actual quantities are determined.

1.02 RELATED DOCUMENTS

- A. Refer to GENERAL CONDITIONS for limitations.
- B. Examine Contract Documents for requirements that affect work of this Section.

1.03 ADDITIONAL REQUIREMENTS

- A. Should additional items of work to those listed herein occur, with a need for adjustments to the contract price, the supplemental unit prices for such categories of work shall be as published in the current issue on the date of contract award of Means Cost Data published by R.S. Means Co., Inc.
- B. The Owner may choose not to approve any or all unit prices prior to Award of the Contract if it deems the Unit Price unreasonable. In this case, the change order process described in Article 12 of the General Conditions, and other Sections, will be used for Work described in the Unit Price Schedule, when any change of the base contract scope is required.
- C. Stated unit prices shall cover all costs, and the prices given shall represent the exact amount per unit to be paid the Contractor (in the case of additions or increases) or to be refunded the Owner (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, compensation insurance or other direct or indirect expenses of Contractor or Subcontractors. Except as otherwise provided in the Contract, there shall be no adjustment for inflation or other indirect cause in unit prices.
- D. No allowance will be made for any increased expenses, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor resulting either directly or indirectly from the adjustment of work scope throughout the use of unit prices, or from elimination or complete omission of items, or from unbalanced allocation among the contract items of overhead expense on the part of the Contractor and subsequent loss of reimbursement therefore, or from any other cause.
- E. Prior to commencing removal of materials or placement of materials or other work set forth in the schedule of unit prices as unit price items, the Contractor shall notify the Architect and Construction Manager in sufficient time to permit proper measurements to be taken on behalf of the Owner. Only quantities which have been approved in writing by the Architect will be considered in the determination of adjustment to the Contract Sum on the unit price basis.
- F. Performance of work which is not required under the Contract Documents or which is not authorized by change order or other directive of the Architect, whether or not such work items are set forth hereunder as a unit price item, shall not be considered cause for any extra payment on account of the Contract. The Contractor will be held fully responsible for such unauthorized work, including the performance of all corrective measures required.

- G. General bidders and each sub-bidder shall provide only one number in the Bid Forms. The same number will be used for additive unit prices and deductive unit prices.
- H. Refer to individual Specification Sections for further description of construction activities requiring the establishment of unit prices.

1.04 QUANTITIES AND COST ADJUSTMENTS

- A. Refer to individual Specification Sections for methods of measurement and payment for unit prices. As soon as the work involved in each unit cost item has been completed, submit documentation to establish the actual quantities provided. Submit to the Architect for review and issuance of Change Order.
- B. Change Order amount for each unit cost item will be based on actual quantities multiplied by the unit cost. This unit cost includes all mark-ups applicable taxes, overhead, and profit as described below.

1.05 UNIT PRICES

- A. 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 Owner, the below unit prices shall, at the option of the Owner, be the basis of payment to the Contractor or credit to the Owner, 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 additions or increases) or to be refunded the Owner (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, or other direct or indirect expenses of the Contractor or Subcontractors. No additional adjustments will be allowed without the prior written approval of the Owner.

<u>Item Description</u>	<u>Quantity to Include in Base Bid</u>	<u>Unit</u>
1. Replacement of slate shingles in addition to those shown on drawings, including the removal of existing shingles and installation of new underlayment and shingles.		
a. Monson slate: for the replacement of all broken or missing slate and any other areas designated by the Architect.	500 SF (5 squares) + 100 SF (1 square) of attic stock	SF
b. Unfading Red slate: for the replacement of all broken or missing slate and any other areas designated by the Architect.	300 SF (3 squares) + 100 SF (1 square) of attic stock	SF
2. Sheathing: Replace wood board roof sheathing, including removal of existing.	350 SF	SF
3. Gutters: Replacement of copper gutters, matching and connecting to existing gutters / downspouts.	50 LF	LF
4. Valleys: Replacement of copper valleys, including removal and reinstallation of adjacent slates.	20 LF	LF
5. Hips: Replacement of copper hips	20 LF	LF

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- B. The above unit prices shall include all labor, materials, dewatering, shoring, removal, 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 and Section 01 26 00, CONTRACT MODIFICATION PROCEDURES.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 22 00

01 26 00 CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements required for handling Contract Modifications including, but not limited to:
 - 1. Preliminary procedures.
 - 2. Documentation of proposals and claims.
 - 3. Preparation of Change Orders.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. GENERAL CONDITIONS and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS: Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material basis, and Contractor's claims for additional costs.
 - 2. Section 01 33 00, SUBMITTAL PROCEDURES.
 - 3. Section 01 60 00, PRODUCT REQUIREMENTS; Substitutions.
 - 4. Section 01 77 00, CLOSEOUT REQUIREMENTS.

1.03 DEFINITIONS

- A. Change Order: See the GENERAL CONDITIONS.
- B. Construction Change Authorization: A written order to the Contractor, signed by Owner and Architect which amends the Contract Documents as described, and authorizes Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Architect's Supplemental Instructions: A written order, instructions, or interpretations, signed by Architect making minor changes in the Work not involving a change in Contract Sum or Contract Time.
- D. Proposal Request: A request to the Contractor, signed by the Architect, for submission of an itemized quotation for changes in the Contract Sum or Contract Time. This is not a Change Order or a direction to proceed with the Work.

1.04 PRELIMINARY PROCEDURES

- A. Architect may initiate change by submitting a Proposal Request to Contractor. Request will include:
 - 1. Detailed description of the Change, Products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. The projected time span for making the change, and a specific statement as to whether overtime work is, or is not, authorized.
 - 4. A specific period of time during which the requested price will be considered valid.
 - 5. Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.

- B. Contractor may initiate changes by submitting a written notice to Architect, containing:
 - 1. Description of the proposed changes.
 - 2. Statement of the reason for making the changes.
 - 3. State of the effect on the Contract Sum and the Contract Time.
 - 4. Statement of the effect on the work of separate contractors.
 - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.05 CONSTRUCTION CHANGE AUTHORIZATION

- A. In lieu of Proposal Request, Architect may issue a Construction Change Authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe change in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. Architect will sign and date the Construction Change Authorization and send it to the Owner for authorization for the Contractor to proceed with the changes.
- D. Once authorized by the Owner, the Architect will send the Construction Change Authorization to the Contractor. Contractor shall sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow Architect to evaluate the quotation.
- B. Provide additional data in detail as acceptable to Architect to support time and cost computations including, but not limited to:
 - 1. Labor required.
 - 2. Equipment required.
 - 3. Products required.
 - a. Recommended source of purchase and unit cost.
 - b. Quantities required.
 - 4. Credit for work deleted from Contract, similarly documented.
 - 5. Overhead and profit.
 - 6. Justification for any change in Contract Time.
- C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information:
 - 1. Name of the Owner's authorized agent who ordered the work, and date of the order.
 - 2. Dates and times work was performed, and by whom.
 - 3. Time record, summary of hours worked, and hourly rates paid.
 - 4. Receipts and invoices for:
 - a. Equipment used, listing dates and times of use.
 - b. Products used, listing quantities.
 - c. Subcontracts.
- D. Document requests for substitutions for Products as specified in Section 01 60 00, PRODUCT REQUIREMENTS.

1.07 PREPARATION OF CHANGE ORDERS

- A. Architect will prepare each Change Order.
- B. Form: Change Order, AIA Document G701.
- C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of the Change Orders will be based on either:
 - 1. Architect's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
 - 2. Contractor's Proposal for a change, as recommended by Architect.
- B. Owner and Architect will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.

1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. Architect's definition of the scope of the required changes.
 - 2. Contractor's Proposal for a change, as recommended by Architect.
 - 3. Survey of completed Work.
- B. The amounts of the unit prices to be:
 - 1. Those stated in the Agreement.
 - 2. Those mutually agreed upon between Owner and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the Work:
 - 1. Owner and Architect will sign and date the Change Order as authorization for Contractor to proceed with the changes.
 - 2. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.
- D. When quantities of the items cannot be determined prior to start of the Work:
 - 1. Architect and Owner will issue a Construction Change Authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
 - 2. At completion of the change, Architect will determine the cost of such work based on the unit prices and quantities used.
 - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
 - 3. Architect will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
 - 4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

- A. Architect and Owner will issue a Construction Change Authorization directing Contractor to proceed with the changes. Verification of labor, material, and equipment must be

submitted to the Owner's representative on a daily basis for signature. Failure on the part of the Contractor to procure a signature shall be cause for non-payment.

- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. Architect will determine the allowable cost of such work, as provided in the GENERAL CONDITIONS and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS.
- D. Architect will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. Owner and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Progress Schedule to reflect each change in Contract Time.
 - 1. Revise subschedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under Change Order, enter pertinent changes in Record Documents.

END OF SECTION – 01 26 00

01 29 00 PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment, and supplements provisions of Article 9, Payments and Completion, of the General Conditions of the Contract, as amended.

1.02 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule, list of Subcontracts and Submittal Schedule.
1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. Schedule of alternates.
 - e. List of products.
 - f. List of principal suppliers and fabricators.
 - g. Schedule of submittals.
 2. Submit the Schedule of Values to the Architect at the earliest possible date but no later than ten (10) days before the date scheduled for submittal of the initial Applications for Payment.
 3. Subschedules: Where Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.
- B. Format and Content Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section. For major trades with total line items exceeding \$25,000, provide a separate, back up breakdown of each such trade with line items for identifiable units of work within such trade each of which has a value not exceeding \$25,000.
1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section.
 - b. Description of Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - h. Percentage of Contract Sum to nearest one hundredth percent, adjusted to total 100 percent.
 - i. Phase Area.
 3. Provide a breakdown of the Contract Sum by Phase Area and in such detail as the Architect or Owner may require to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project

Manual table of contents. Break principal subcontract amounts down into several line items.

4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Application for Payment may include materials or equipment, purchased or fabricated and stored, but not installed.
 - a. Differentiate between items stored on site and items stored off site. Include requirements for insurance and bonded warehousing, if required.
6. Provide separate line items on the Schedule of Values for initial cost of the materials, for all subsequent stages of completion, and for total installed value of that part of the Work.
7. Unit Price Work: Show the line item value of unit cost allowances, as a product of the unit multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.
8. Temporary facilities, clean up and other major cost items and correction of existing conditions are not direct cost of actual work in place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at the Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Application for Payment when Change Orders result in a change in the Contract Sum.
10. Cash Flow Projections: Contractor shall provide Cash Flow Projections at the Initial Application for Payment and at each subsequent Application for Payment in a form acceptable to the Owner including in tabular and graphic form. Include construction costs and soft cost projections (provided by the Owner).

1.03 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
 1. The initial Application for Payment, the Application for Payment at time of Substantial Completion and the final Application for Payment involve additional requirements.
- B. Payment Application Times: Each progress payment date is indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form of Applications for Payment.
- D. Application Preparation: Complete every entry on the form. Include notarization and execution of person authorized to sign legal documents on behalf of the Contractor. The Architect will reject incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Update schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued prior to the of the construction period covered by the application.
- E. Transmittal: Submit 5 signed and notarized original copies of each Application for Payment to the Architect by a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Architect.

- F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from every entity who is lawfully entitled to file a mechanics lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Delays: Submit each Application for Payment with the Contractor's waiver of mechanics lien for the period of construction covered by the application.
 - a. Submit final Applications for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.
- G. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following prerequisites to processing-
1. List of subcontractors, approved.
 2. List of principal suppliers and fabricators, approved.
 3. Schedule of Values including Cash Flow projections, approved.
 4. Contractor's Construction Schedule, approved.
 5. Schedule of unit prices, approved.
 6. Submittal Schedule, approved.
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from governing authorities for performance of the Work.
 11. Initial progress report.
 12. Certificates of insurance and insurance policies.
 13. Performance and payment bonds.
 14. Data needed to acquire the Owner's insurance.
 15. Initial settlement survey and damage report, if required.
 16. Certificates of Insurance.
 17. Bonds.
 18. Material Status Reports.
 19. Notarized Progress Report Statement from the Contractor's project manager stating that the work is on schedule, and that Contractor will meet the Substantial Completion date for the Work, and the Substantial Completion dates for every portion thereof as established under Construction Phasing Schedule Section
 20. Safety plan
 21. Construction progress photographs and video tapes.
- H. Monthly Application for Payment Administrative actions and submittals, that must precede or coincide with submittal of the periodic Application for Payment, include the following.
1. Waivers of Liens.
 2. As built Record documents, required documents and submittal records on site.
 3. Contractor's construction schedule, updated, with corrective action plan as applicable including 30 day look ahead schedule.
 4. Material Status Report.
 5. Stored Materials forms.
 6. Submittal Schedule and submittal status reports.
 7. Monthly Progress report, and Notarized Progress Report Statement from the Contractor's manager stating that the work is on schedule, and that Contractor will meet the Substantial Completion date for the Work, and the Substantial

- Completion dates for every portion established under Construction Phasing Schedule Section.
8. Construction progress photographs and video tapes.
 9. Change Order Log, including potential change orders.
 10. Schedule of Values, including Cash Flow Projections
 11. Safety Performance Update
 12. Quality control Update
 13. Environmental compliance Summary
 14. Summary of commissioning activities
 15. Summary of MBE/ WBE activities
 16. Proof of Payment for Police and Fire Watch Details
- I. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
1. This application shall reflect Certificates of Partial Substantial Completion issued previous to Owner occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals.
 - b. Warranties (guarantees) and maintenance agreements.
 - c. Approved Test/adjust/balance records.
 - d. Maintenance instructions.
 - e. Meter readings.
 - f. Startup performance reports.
 - g. Changeover information related to Owner's occupancy, use, operation, and main
 - h. Final cleaning.
 - i. Application for reduction of retainage and consent of surety.
 - j. Advice on shifting insurance coverages.
 - k. Final progress photographs.
 - l. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
 - m. Waivers of liens.
- J. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following-
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Ensure that unsettled claims will be settled.
 4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
 5. Transmittal of required Project construction records to the Owner.
 6. Certified property survey.
 7. Proof that taxes, fees, and similar obligations were paid.
 8. Removal of temporary facilities and services.
 9. Removal of surplus materials, rubbish, and similar elements.
 10. Change of door locks to Owner's access.
 11. Consent of Surety to final payment

1.04 WAGE RATE REPORTING

- A. Contractor and all sub-contractors shall submit to the Owner wage rate information on a weekly basis for each worker engaged on the Project, in both Federal and State formats, demonstrating compliance with both federal and State wage rate requirements.
1. At the beginning of each workers' employment, submit a worker information sheet stating the worker's full name, worker ID (last 4 digits of social security number), race/ ethnicity, male/ female, work classification, and eligibility to work including a

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criminal record check and their compliance with the OSHA approved safety and health training requirement.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 29 00

01 31 00 PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Requests for Interpretation (RFIs).
- B. Related Sections:
 - 1. Section 01 31 13 PROJECT COORDINATION
 - 2. Section 01 31 19 PROJECT MEETINGS
 - 3. Section 01 32 16.19 CPM SCHEDULE for preparing and submitting Contractor's construction schedule.
 - 4. Section 01 32 26 CONSTRUCTION PROGRESS REPORTING for preparing and submitting daily construction reports, material location reports, site condition reports, and special reports.
 - 5. Section 01 73 00 EXECUTION for procedures for coordinating general installation and field engineering services, including establishment of benchmarks and control points.
 - 6. Section 01 77 00 CLOSEOUT REQUIREMENTS for coordinating closeout of the Contract.

1.02 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking an interpretation or clarification of the Contract Documents.

1.03 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site, including key personnel assignments of Filed Sub-Bid subcontractors. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office, on Project Web site, and by each temporary telephone. Keep list current at all times.

1.04 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.05 REQUESTS FOR INTERPRETATION (RFIS)

- A. Immediately on discovery of the need for additional interpretation of the Contract Documents, Contractor shall prepare and submit an RFI to the Architect through online Project Management Software (Procore or equal).
1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.

13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: RFIs shall be submitted electronically via online Project Management software.
 1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Software log with not less than the following:
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
 1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 31 00

01 31 13 PROJECT COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies supervisory and administrative requirements for coordination of Work, including, but not limited to:
 - 1. Coordination of work of employees and subcontractors.
 - 2. Coordination with local agencies and utilities.
 - 3. Coordination drawings.
 - 4. Expedition of work to assure compliance with schedules.
 - 5. Coordination of Work with that of other contractors and work by Owner.
 - 6. Compliance with orders and instructions of Architect or Owner.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. GENERAL CONDITIONS and Document 00 7300, MODIFICATIONS TO GENERAL CONDITIONS; Authority and Responsibilities of the Contractor.
 - 2. Section 01 73 29, CUTTING AND PATCHING.
 - 3. Section 01 31 19, PROJECT MEETINGS.
 - 4. Section 01 33 00, SUBMITTAL PROCEDURES.
 - 5. Section 01 50 00, TEMPORARY FACILITIES AND CONTROLS.
 - 6. Section 01 77 00, CLOSEOUT REQUIREMENTS.

1.03 COORDINATION BY CONTRACTOR

- A. Coordinate the Work of the Contract, including mechanical and electrical work, and other subcontractors. Anticipate areas where the installation of mechanical and electrical work will be restricted, congested, or difficult. Consult various affected subcontractors.
- B. The General Contractor shall be responsible for the coordination of all mechanical and electrical work. He shall be responsible to anticipate areas where the installation of mechanical and electrical work will be restricted, congested or difficult for other reasons, consulting the various affected subcontractors, and shall submit to the Architect Coordination Drawings of these areas as specified under Article 1.05 below. Failure to anticipate "problem" areas and to submit coordination drawings of same shall be construed as acceptance of the conditions, and all necessary re-working and/or relocation of the installed mechanical and electrical elements resulting from failure to provide sufficient spaces, clearances, etc., shall be provided without additional cost to Owner.
- C. Coordination Drawings are for the General Contractor's and the various Subcontractors use during construction and shall not be construed as replacing any Shop Drawings or Record Drawings required elsewhere in the Contract Drawings. Architect's review of any submitted Coordination Drawings shall not relieve General Contractor from his overall responsibility for the coordination of all work of the Contract.

1.04 COORDINATION WITH LOCAL AGENCIES

- A. Contractor shall notify the appropriate Town officials in advance if there is ever a need to transport any hazardous waste or materials encountered during construction.

- B. Construction conditions and liability considerations permitting, the Contractor shall provide a reasonable schedule of tours of the construction site to residents or officials of the Town.

1.05 COORDINATION DRAWINGS

- A. General: Submit coordination drawings for areas where close and careful coordination of trades is required. The Contractor shall be fully responsible for coordinating trades, coordinating construction sequence and schedules, and coordinating actual installed location and interface of work. Coordination Drawings to include, but are not necessarily limited to:
1. Structure.
 2. Partition/room layout.
 3. Ceiling layout and heights.
 4. Light fixtures.
 5. Access panels.
 6. Sheet metal, heating, coils, boxes, grilles, diffusers, and similar items.
 7. All heating piping and valves.
 8. Smoke and fire dampers.
 9. Soil waste and vent piping.
 10. Major water.
 11. Roof drain piping.
 12. Major electrical conduit runs, panel boards, feeder conduit and racks of branch conduit.
 13. Above ceiling miscellaneous metal.
 14. Sprinkler piping and heads.
 15. All equipment, including items in the Contract as well as OFCI and OFI items.
 16. Equipment located above finished ceiling requiring access for maintenance and service. In locations where acoustical lay-in ceilings occur, indicate areas in which the required access area may be greater than the suspended grid system.
 17. Existing condition, including but not limited to mechanical, plumbing, fire protection, and electrical items.
 18. Seismic restraints.
- B. Timing: Prior to fabricating materials or beginning work, supervise and direct the creation of one complete set of Coordination Drawings showing complete coordination and integration of work, including, but not limited to, structural, architectural, mechanical, plumbing, fire protection, elevators, and electrical disciplines.
- C. Intent: Coordination Drawings are for the Contractor's use during construction and are not be construed as replacing Shop Drawings or Record Drawings. Architect's review of submitted Coordination Drawings shall not relieve Contractor from his overall responsibility for the coordination of work of the Contract.
- D. Base Sheets: Architect will provide CAD files for use by the Contractor for the development of building coordination drawing "base sheets" upon signed receipt of Architect's disclaimer form. General Contractor shall be responsible to prepare and provide one accurately scaled set of building coordination drawing "base sheets" on digital media, showing all architectural and structural work. Base sheets shall be at an appropriate scale; congested areas and sections through vertical shafts shall be at a larger scale.
1. Highlight all fire rated and smoke partitions.
 2. Indicate horizontal and vertical dimensions to avoid interference with structural framing, ceilings, partitions, and other services.
 3. Indicate elevations relative to finish floor for bottom of ductwork and piping and conduit (6 inches and greater in diameter).
 4. Indicate the main paths for the installation, or removal of, equipment from mechanical and electrical rooms.

- E. HVAC: Contractor shall circulate Coordination Drawing base sheets to HVAC subcontractor and require HVAC subcontractor to accurately and neatly show actual size and location of HVAC equipment and work. HVAC subcontractor shall note apparent conflicts, suggest alternate solutions, and return Coordination Drawings to Contractor.
- F. Plumbing: Contractor shall circulate Coordination Drawings to plumbing subcontractor and require plumbing subcontractor to accurately and neatly show actual size and location of all plumbing equipment and work. Plumbing subcontractor shall note apparent conflicts, suggest alternate solutions, and return the Coordination Drawings to the Contractor.
- G. Electrical: Contractor shall circulate Coordination Drawings to electrical subcontractor and require electrical subcontractor to accurately and neatly show actual size and location of electrical equipment and work. Electrical subcontractor shall note apparent conflicts, suggest alternate solutions, and return Coordination Drawings to Contractor.
- H. Fire Protection: Contractor shall circulate Coordination Drawings to fire protection subcontractor and require fire protection subcontractor to accurately and neatly show actual size and location of fire protection equipment and work. Fire protection subcontractor shall note any apparent conflicts, suggest alternate solutions, and return Coordination Drawings to the Contractor.
- I. Other Subcontractors: The Contractor shall circulate Coordination Drawings to other subcontractors whose work might conflict with other work. Require these subcontractors to accurately and neatly show actual size and location of their equipment and work. These subcontractors shall note apparent conflicts, suggest alternate solutions, and return Coordination Drawings to the Contractor.
- J. Contractor Review and Submission: Contractor shall carefully review, modify and approve Coordination Drawings in cooperation with subcontractors to assure conflicts are resolved before work in field is begun and to ensure location of work exposed to view is as indicated or as approved by Architect. Contractor shall stamp, sign, and submit Coordination Drawing originals to Architect for review and approval following specified procedures and policies for "Submittals". Do not commence work in these areas until Coordination Drawings have been received and reviewed by Architect.

1.06 EXISTING UTILITIES

- A. Contractor shall notify public and private utility companies as required by law in advance of construction so that existing utilities may be accurately located and identified by the appropriate agency or utility.
- B. Give advance notice to public and private utility companies as required by law, and provide proper disposition, subject to Architect approval of existing pipe lines, conduits, sewers, drains, poles, wiring, and other utilities that interfere with work, whether or not they are specifically indicated on Drawings. The Contractor shall immediately notify Architect and appropriate authorities when coming across an unknown utility line, and await decision as to how to dispose of same. When an existing utility line must be cut and plugged or capped, moved, or relocated, or has become damaged, Contractor shall notify Architect and utility company involved, and assure protection, support, or moving of utilities to adjust them to new work. Contractor shall be responsible for damage caused to existing, active utilities under work of this Contract, whether or not such utilities are indicated on Drawings, including resultant damages or injuries to persons or properties.
- C. Contractor shall comply with the requirements of the Commonwealth of Massachusetts Statute - Chapter 82, Section 40, for excavations in public and private property. Compliance shall include the following:

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1. The Contractor shall notify public utility companies writing at least 72 hours (excluding Saturdays, Sundays, and legal holidays) but not more than 30 days before excavation of areas where underground utility plant (pipes, cables, manholes, etc.) exist.
 2. The Contractor shall be responsible for providing the Utility Companies with a schedule of his activities in areas where utilities exist.
 3. The Contractor shall immediately notify utility companies of any damage to their utilities resulting from construction operations.
- D. The Contractor shall notify DIGSAFE at 1-800-344-7233 at least 72 hours before digging, trenching, blasting, demolishing, boring, backfilling, grading, landscaping or other earth moving operations of any public ways, rights of way and easements.
- E. Belmont Light Requirements: Belmont Light has specific requirements for trenching and backfilling provided by other(s) than Belmont Light, in a private development or private land.
1. No trenching shall be started until an on-site meeting has been held between the excavating contractor and Belmont Light personnel. Prior to the meeting, the excavating contractor must notify Dig Safe of the proposed work. The following shall be resolved at the meeting:
 - a. Whether the excavating contractor must supply sand to pad the trench bottom and cover the pipe. If required, the trench must be padded with 6" of sand and then covered with sand sufficient to provide six (6) inches of cover above pipe.
 - b. The route of the trench.
 - c. Minimum footage of the trench to be opened before Belmont Light shall move in crews to start installing the gas pipe.
 - d. Minimum notice required for Belmont Light to start installing pipe.
 2. Prior to scheduling crews, the excavating contractor shall inform Belmont Light of the Dig Safe number and notification and Belmont Light Distribution personnel shall inspect and approve the trench.
 3. Once Belmont Light has installed the gas pipe, the Contractor shall be responsible for maintaining surface (valve) boxes, mains and services and shall be billed for additional work on same by Belmont Light.
 4. If this work is to take place outside of the normal construction season (mid-March-November), off-site tie-ins on the city streets shall be done subject to Belmont Light crew availability, Engineering Department approval, and the issuance of required permits.
- F. All plumbing, heating and electrical work, installation of equipment, and other similar work shall be carried out in such a manner as to avoid any interference with maintaining building systems operation. Where piping connections or other work specified in the Contract necessitate an interruption of any service, the General Contractor shall first make the necessary arrangement for each interruption of service with the Owner, and shall notify the Owner's Representative at least forty eight hours in advance of his intent to connect, disconnect, turn on, or turn off, any utility services of the Owner's systems. It is expected that such interruptions will occur only during periods of low loads and the General Contractor shall include in his proposal all costs including premium time for such work.
- G. Modifications or extensions of the Owner's existing utility service systems, if called for, will be done under the direct observation of the Owner's Representative. All tests in connection with this work shall be witnessed by authorized personnel of the General Contractor and the Owner's Representative.

1.07 CUTTING AND PATCHING

- A. The General Contractor shall do, or assign to the appropriate trade, all cutting, fitting, or patching as specified in Section 01 7300, EXECUTION. Certain portions of this work, such as cutting, coring, drilling, etc., may be specified to be provided under various trade Sections of the Specifications.
- B. The General Contractor shall provide all sheeting, shoring, bracing, underpinning, reinforcement and other temporary supports as may be required to maintain the integrity of, and prevent damage to, any structure or finish to be subjected to cutting work, and shall patch to restore to sufficient final strength, and acceptable appearance, subject to Architect's approval.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 31 13

01 31 19 PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for Project Meetings, including but not limited to:
 - 1. Pre-Construction Meeting.
 - 2. Pre-Installation Conference.
 - 3. Progress Meetings.
 - 4. Coordination Meetings.
 - 5. Special Meetings.
- B. Representatives of contractors, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. Architect and Owner will attend meetings to ascertain that Work is expedited consistent with Contract Documents and Construction Schedules.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. Section 01 33 00, SUBMITTAL PROCEDURES.
 - 2. Section 01 77 00, CLOSEOUT REQUIREMENTS.

1.03 PROJECT MEETINGS, GENERAL

- A. Agendas: Contractor shall prepare agendas for Project Meetings. Distribute copies to parties in attendance.
- B. Meeting Notices: Contractor shall prepare and distribute written notices of Project Meetings four working days in advance of each meeting.
- C. Arrangements: Contractor shall make physical arrangements for Project Meetings, including but not limited to:
 - 1. Arranging space and seating.
 - 2. Ordering refreshments, lunches, etc.
- D. Architect shall preside at Project Meetings.
- E. Minutes: Architect shall record minutes of Project Meetings, including significant procedures and decisions.
- F. Distribution of Minutes: Architect shall reproduce and distribute copies of Project Meeting minutes after each meeting to participants of meeting, and to parties affected by decisions made at meetings within seven (7) calendar days following the meeting.

1.04 PRE-CONSTRUCTION MEETING

- A. Schedule within 15 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties, designated by the Owner.

- C. Attendance: Require and notify the following to attend:
 - 1. Owner's Representative.
 - 2. Architect and his Professional Consultants.
 - 3. Resident Project Representative.
 - 4. Contractor's Superintendent.
 - 5. Major Subcontractors.
 - 6. Major suppliers.
 - 7. Others as directed by the Architect.

- D. Suggested Agenda:
 - 1. Discussion of major subcontractors and suppliers.
 - 2. Projected Construction Progress Schedules.
 - 3. Critical work sequencing.
 - 4. Major equipment deliveries and priorities.
 - 5. Project Coordination, including designation of responsible personnel.
 - 6. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal Requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Application for Payment.
 - 7. Adequacy of distribution of Contract Documents.
 - 8. Procedures for maintaining Record Documents.
 - 9. Use of premises:
 - a. Office, work, and storage areas.
 - b. Owner's requirements.
 - 10. Construction facilities, controls, and construction aids.
 - 11. Temporary utilities.
 - 12. Safety and first-aid procedures.
 - 13. Security procedures.
 - 14. Housekeeping procedures.

1.05 PRE-INSTALLATION CONFERENCES

- A. Conduct pre-installation conferences at site prior to construction activities which require coordination. Installers, manufacturer's representatives, and fabricators of materials or systems affected shall be required to attend. Advise Architect of scheduled meeting dates.

- B. Do not allow affected work to proceed if the conference cannot be successfully concluded. Initiate actions necessary to resolve impediments to performance of the work and reconvene the conference at the earliest feasible date.

1.06 PROGRESS MEETINGS

- A. Schedule regular weekly meetings, at regularly scheduled day and time.

- B. Hold called meetings as required by progress of the Work.

- C. Location of the meetings: Project field office of Contractor.

- D. Attendance: Require and notify the following to attend:
 - 1. Owner's Representative, Architect, and his professional consultants as needed.
 - 2. Subcontractors, as appropriate to the agenda.
 - 3. Suppliers, as appropriate to the agenda.

- E. Suggested Agenda:

1. Review and approval of minutes of previous meeting.
2. Review of Work progress since previous meeting.
3. Field observations, problems, conflicts.
4. Problems which impede Construction Progress Schedule.
5. Review of off-site fabrication, and delivery schedules.
6. Corrective measures and procedures to regain projected schedule.
7. Revisions to Construction Progress Schedule.
8. Progress schedule during succeeding work period.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Maintenance of quality standards.
12. Pending changes and substitutions.
13. Outstanding RFI's.
14. Review proposed changes for:
 - a. Effect on Construction Progress Schedule and on completion date.
 - b. Effect on other contracts of the Project.
15. Other business.

1.07 COORDINATION MEETINGS

- A. Conduct Coordination Meetings as necessary to properly coordinate the trades. Require representation of parties involved in coordination or planning of activities involved.

1.08 SPECIAL MEETINGS

- A. Conduct Special Meetings as required throughout the course of the Work. Special meeting issues may include, but are not limited to:
 1. Safety issues.
 2. Labor issues.
 3. Special schedule issues.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 31 19

01 32 16 CPM SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for the critical path method (CPM) of scheduling and reporting progress of the Work.
 - 1. Refer to the General Conditions and the Agreement for definitions and specific dates of Contract Time.
- B. Requirements Included:
 - 1. General.
 - 2. Description.
 - 3. Computer Scheduling System.
 - 4. Qualifications of Personnel.
 - 5. Preparation Guidelines for CPM Schedules.
 - 6. Submittal and Review Process.
 - 7. Maintenance and Update of the CPM Schedule.
 - 8. Project Schedule Revisions.
 - 9. CPM Schedule Recovery.
 - 10. Time Impact Analysis for Changes, Delays and Contractor Requests.
 - 11. Payment.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
 - 1. Section 01 31 19, PROJECT MEETINGS; Requirements for submitting and distributing meeting and conference minutes.
 - 2. Section 01 33 00, SUBMITTAL PROCEDURES; Requirements for submitting the Preliminary Construction Schedule; requirements for submitting the Submittal Schedule.
 - 3. Section 01 45 29, TESTING LABORATORY SERVICES; Requirements for submitting inspection and test reports.
 - 4. Section 01 50 00, TEMPORARY FACILITIES AND CONTROLS; Requirements for submitting the list of products.

1.03 GENERAL

- A. The Contractor's attention is specifically directed to the fact that submission and acceptance of the CPM Schedule as well as CPM Schedule progress updates are required for the Owner to certify the approximate amount of Work performed by the Contractor.
- B. Neither the review nor acceptance of the Contractor's CPM Schedule or other data submitted by the Contractor pursuant to this Section, nor any other action on the part of the Owner under this section shall in any way be deemed as a representation by the Owner that the Contractor can or will be permitted to follow a particular schedule or sequence of operations or that, by following any such schedule or sequence, he can or will complete the Work by the time(s) required by the Contract or by any other time(s). Nor shall the acceptance of any CPM Schedule or other such data relieve the Contractor of his obligation to complete the Work by the time(s) required in the Contract, even though such CPM Schedule approved may be inconsistent with such completion.

- C. Any acceptance under this Section shall be construed merely to mean that the Owner knew of no good reason at that time to object thereto. No review or acceptance or any other action under this Section shall limit, affect or impair the Contractor's obligation to perform all the Work by time(s) required by the Contract and in accordance with all other provisions of the contract.
- D. The performance of the Work by the time(s) required in the Contract after taking into account extensions to which the Contractor may be entitled under the Article 1.10 herein - "Time Impact Analysis for Changes, Delays and Contractor Requests", may require the use by the Contractor of overtime labor, additional shifts or additional plant and equipment and/or other measures. In any event, the Contractor shall anticipate, avoid and mitigate the effects of all delays, whether or not such delays involve Activities with positive float. The Owner shall have the right at any time when in its judgment the Work is not proceeding in accordance with the CPM Schedule or at any time when it is likely that the Work might not be completed by the time(s) required in the Contract, to order the Contractor without additional compensation, to employ additional shifts, to increase the number of men employed, to use additional plant or equipment, or to take such steps as may be necessary or required to assure the completion of the various operations within the time(s) allotted therefore in the approved CPM Schedule or by the aforesaid completion time(s).
- E. No action on the part of the Contractor pursuant to this Section shall be construed as a request for an extension of the time(s) for completion required by the Contract. A request for an extension of time shall be deemed made only if it complies with the requirements of Division 1 of these specifications. No extension of the time(s) for completion shall be inferred because of any action, failure to act, or statement on behalf of the Owner pursuant to this Section.

1.04 DESCRIPTION

- A. The Contractor shall at his own expense prepare, maintain and update detailed Critical Path Method (CPM) Resource-Loaded Progress Schedules (hereinafter "CPM Schedule") as described in this Section. CPM Schedules shall be prepared in such a manner as to permit the orderly planning, organization, execution of the work, and be sufficiently detailed to accurately depict all the Work required by the Contract. The CPM Schedules shall be updated and revised if necessary, no less than once a month during the course of the Work and shall accurately reflect and report the actual performance and progress of the Work.

1.05 COMPUTER SCHEDULING SYSTEM

- A. The Contractor shall utilize a computer scheduling system that is capable of complying with the resource requirements of these specifications and designed specifically for the production of CPM schedule computer reports which will validate the detailed logic networks and provide the required schedule analysis and supporting documentation for progress payments.

1.06 QUALIFICATIONS OF PERSONNEL

- A. The Contractor will engage, at the Contractor's own expense, a qualified CPM Scheduling Consultant (hereinafter "Scheduling Consultant"), approved by the Owner, to assist in the preparation and production of the CPM Schedule. The Contractor may perform these services with the Contractor's own organization if the qualifications of assigned staff are approved by the Owner.
- B. The Scheduling Consultant, or the Contractor's assigned staff, shall meet the following criteria:

1. Has at least one full time employee skilled in the application of computerized CPM network techniques to construction projects of the magnitude and complexity of this project.
 2. Has available computer equipment and software for the production of the required CPM network and reports.
- C. Prior to engaging a Scheduling Consultant or commencing the performance of the Work required under this Section with the Contractor's own staff, the Contractor shall submit to the Owner for acceptance:
1. The name and address of the proposed Scheduling Consultant, if used.
 2. Information sufficient to show that the proposed Scheduling Consultant, or the Contractor's own organization, has staff and computer facilities meeting the criteria specified in this Section.
 3. A list of prior projects for which the proposed Scheduling Consultant, the Scheduling Consultant's organization or the Contractor's staff has performed services similar to those required under this Contract.

1.07 PREPARATION GUIDELINES FOR CPM SCHEDULES

- A. The CPM Schedule shall represent a practical plan to complete the Work within the required time(s) for completion, as defined in the Contract Documents.
1. A CPM Schedule showing completions later than those specified will not be accepted.
 2. Schedules found to be impractical by the Owner, at its sole discretion, shall be revised and resubmitted by the Contractor.
- B. The CPM Schedule shall show the sequence and interdependence of submittals, material procurement and construction activities and shall specifically include as a minimum:
1. The start and completion of all items of the Work, their major components and milestone completion dates, if any.
 2. Submittals and material procurement activities including, but not limited to:
 - a. Shop Drawings, Catalog Cuts & Samples
 - b. Steps required to obtain necessary permits
 - c. Inspections/Surveys
 - d. Safety Plans
 - e. Temporary Facilities and Utilities
 - f. Project Record Documents
 - g. Operations & Maintenance Manuals
- C. These activities in the CPM Schedule shall indicate the following:
- 1)
 - 1) Time of submittals, review and acceptance by the Owner.
 - 2) Time of fabrication and delivery of manufactured products.
 - 3) The relationship between procurement and construction activities.
 2. Activities for the preparation and submission of as-built documentation.
 3. Activities relating to the start-up and testing of equipment and/or systems for completion of punch list items and training of personnel.
 4. All the relationships to Work of other Contractors or to the operation of the Airport which affect the Work to be performed under this Contract.
- D. The CPM Schedule shall:
1. Be sufficiently detailed to assure adequate planning, execution and progress evaluation of the Work within Contract time(s) for completion. Activities shall generally range in duration from 3 to 15 working days or as deemed reasonable by the Owner, based on complexity and criticality of the tasks involved. An exception will be made for procurement items which may have a duration which starts with the approval of shop drawings and ends with delivery of the item to the construction site.

2. Allow for monitoring and evaluation of progress in performance of the Work.
 3. If the CPM submittal shall be in the form of Precedence Diagramming Method (PDM), the only PDM activity dependency that shall be allowed is Finish to Start lag= 0.
 - a. No matter the method or form of the CPM, the activities shown shall include all of the following:
 - 1) Activity identifier - Maximum length of 8 characters.
 - 2) Concise description of the work.
 - 3) Duration in workdays.
 - 4) The dollar value of each activity in the schedule for cash flow purposes.
 - 5) Resources for each activity to include:
 - i) Average labor crew size estimated to install material.
 - ii) Major equipment needed to support installation.
 - 6) Responsibility Code; identifying who performs the Work by trade.
 - 7) Other codes as designated by the Owner.
 - 8) Include milestone activities as designated by the Owner.
 - b. The network diagram shall show continuous flow from left to right.
 4. Identify Work days per week and shifts per day that the Contractor intends to perform Work.
 5. Include time for the Owner to review submittals or inspect the Work.
 6. Identify activities constituting the controlling operations or Critical Path.
- E. The CPM Schedule shall constitute the representation that:
1. The Contractor and Subcontractors plan to execute the Work in the sequence indicated.
 2. The Contractor has distributed the CPM Schedule to his subcontractors for their review and comment. It shall be the Contractor's responsibility to obtain each Subcontractor's written approval and/or concurrence with the CPM Schedule. If a Subcontract has not been awarded for a certain portion of the Work when the Contract progress schedule is submitted, the Contractor will modify the CPM data to reflect any changes resulting from the new subcontractual arrangement through the procedure outlined herein, "PROJECT SCHEDULE REVISIONS".
 3. All elements of Work required for the performance of the Contract shall be included. Failure by the Contractor to include any element of Work required for performance of the Contract shall not excuse the Contractor from completing all Work in accordance with specified milestones.
 4. Seasonal weather conditions shall be considered and included in the planning and scheduling of all Work influenced by high and low ambient temperatures and/or precipitation to ensure completion of all Work in accordance will specified milestones. Seasonal weather conditions shall be determined by an assessment of average historic climatic conditions based upon the preceding 10 years records published for the National Oceanic and Atmospheric (NOAA) meteorological weather station located at Logan International Airport.
 5. The Contractor has inspected the Project site and has considered the Work of other Contractors.
 6. The Contractor has incorporated any other special conditions in planning the Work such as specified non-work periods, etc.

1.08 SUBMITTAL AND REVIEW PROCESS

- A. Within 14 calendar days from Contractor's Notice to Proceed (NTP), the Contractor shall submit to the Owner for acceptance an interim CPM Schedule covering the first 90 calendar days after NTP. The schedule shall be loaded with resources.
- B. The CPM Schedule for the entire duration of the Project, with full resource loading, is due 45 calendar days after NTP. The Architect may withhold all or a portion of the progress

payments until the Contractor submits a complete CPM Schedule acceptable to the Architect.

- C. For the CPM Schedule submittals and each of the Schedule Update submittals, the Contractor shall provide the following:
1. Schedule Reports (three copies of each) - includes detailed activity information relating to early start, early finish, late start, late finish, total float, original duration, remaining duration, actual start, actual finish, percent completion, and resource usage.
 - a. Activity Report - all activities sorted by activity identifier.
 - b. Critical Path Report - activities with percent complete less than 100%, sorted by Total Float, then by Early Start.
 - c. Early Start Report - all activities sorted by Actual/Early Start.
 2. Cash Flow - all activities, using the Early Start schedule, by month.
 3. Graphic Displays one each of the Complete Project Schedule - including time display from the beginning to the completion of the Work
 - a. Network Diagram - all activities on a time scaled diagram displaying each activity number, description and Total Float.
 - b. Summary Bar Chart
 4. Computer Files - one copy of all CPM schedules in an electronic readable format. Each Schedule Update, Schedule Revision or Time Impact Analysis must be an individual data file to allow Target data comparisons with other CPM submittals
- D. The Owner will review the Contractor's interim CPM Schedule and complete CPM Schedule and Schedule Update submittals and return them to the Contractor with comments or acceptance within 7 calendar days. If not accepted by the Owner, the Contractor shall revise Schedules in accordance with the Owner's comments, and resubmit for the Owner's acceptance, within 7 calendar days of the receipt by the Contractor of the Owner's comments. Until such time as the Owner grants acceptance, the Contractor shall resubmit these Schedules by the same time frames and in the same format as required in this paragraph for the initial resubmission.
- E. The Contractor shall certify that both the CPM Schedule and schedule update submittals correctly represent the sequence, means, methods, techniques and procedures in which he plans to execute the Work, and the actual execution of the Work.
- F. At the discretion of the Owner, the Contractor's applications for payment may either be withheld or modified due to the Contractor's failure to submit acceptable CPM Schedules within the stated number of calendar days from NTP and the acceptance thereof by the Owner.
- G. Format for Submittals: Submit required submittals in the following formats:
1. PDF electronic file.
 2. Two paper copies.
- H. Startup construction schedule.
1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- I. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.

3. Total Float Report: List of all activities sorted in ascending order of total float.
 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- J. Updating Reports: Submit with Applications for Payment.
- K. Qualification Data: For scheduling consultant.

1.09 MAINTENANCE AND UPDATE OF THE CPM SCHEDULE

- A. At each weekly construction meeting, the Contractor shall update the Owner, Architect, and others as deemed necessary, of the current progress and anticipated progress over the next 3 weeks. The focus of the meeting is to assess Project status and develop solutions to items hindering progress. The attendees shall review:
1. Progress during the period.
 2. Progress scheduled during the next period, as forecasted and as originally planned.
 3. Anticipated problems and proposed solutions.
 4. Discussion of each one of the logic revisions covering the impact on the schedule.
 5. Analysis and discussion of alternative methods to mitigate accumulated delays.
- B. At the weekly construction meetings, the Contractor shall submit to the Architect for review a detailed 3 week look ahead Bar Chart Progress Schedule from the current CPM Schedule.
- C. The Contractor will prepare meeting notes summarizing schedule status, problems hindering progress and actions to be taken to maintain planned progress (action item list designating action, person responsible, and date action to be taken).
- D. At monthly intervals, the Contractor shall submit, based on the schedule status information discussed and accepted at the weekly construction meetings, an updated CPM schedule. Reported progress for each affected activity will include:
- Actual Start Date
Actual Finish Date (for completed activities)
Remaining Duration (for activities in progress)
Percent Complete
Calculations for the updated schedule must be based on retained logic.
Each Schedule Update submission will include all materials as described herein.
- E. As frequently as deemed necessary, the Architect may require, at no additional cost to the Owner, the Contractor to expand in further detail any part of the Schedule Update CPM Schedule in order to explain and demonstrate the construction sequence forecasted therein. This expanded Schedule shall be in sufficient detail and shall comply with the following requirements:
1. Be in CPM format
 2. Identify the Work being performed
 3. Be submitted within 15 calendar days from receipt of the Owner's request

In order to complement the information provided in these expanded/detail schedules the Contractor may also be requested to prepare and submit marked-up drawings such as cross sections, profiles and plan views of the area under analysis.

1.10 PROJECT SCHEDULE REVISIONS

- A. Updating the CPM Schedule to reflect actual progress made to the date of a Schedule Update shall not be considered revisions to the CPM Schedule. All other changes, including but not limited to, the following shall be considered CPM Schedule Revisions:
 - 1. Adding and/or deleting activity relationships.
 - 2. Adding and/or deleting activities.
 - 3. Changes to original durations.
 - 4. Changes to Contract Milestone dates.
 - 5. Performance of Work out of sequence.
- B. If, as a result of the monthly CPM Schedule Update, it appears the CPM Schedule no longer represents the actual prosecution and progress of the Work the Architect will request, and the Contractor shall submit, a revision to the CPM Schedule.
- C. Before any revisions are incorporated into the CPM Schedule, the Contractor shall present, and the Architect must accept, the revisions.

1.11 CPM SCHEDULE RECOVERY

- A. Whenever the Contractor fails to achieve a Milestone established in the Contract Schedule, or the Contractor's progress is not commensurate with that required to adhere to that Contract Time or Milestone(s), the Contractor shall promptly undertake appropriate action at no additional cost to the Owner to recover the CPM Schedule.
- B. The Contractor shall submit with the next Application for Payment (following recognition of the problem) a written recovery statement including a CPM recovery schedule to the Architect describing the cause for the slippage and the actions planned by the Contractor to recover the CPM Schedule within the shortest reasonable time.
- C. Appropriate recovery actions may include, but not be limited to, assignment of additional labor, subcontractors or equipment, shift or overtime work, expediting of submittal or deliveries, or any combination of them. Overlapping of activities or sequencing changes to increase Activity concurrence shall be deemed appropriate only if properly substantiated in the submittal.
- D. The Contractor's refusal, failure or neglect to take appropriate recovery action or to submit a written recovery statement shall constitute reasonable evidence that the Contractor is not prosecuting the Work, or separable part, with the diligence that will insure its completion within the applicable Contract Time and shall constitute sufficient basis for the Architect to recommend to withhold any payment otherwise due, or identify and order alternate recovery actions on the basis of the information in the Contract CPM Schedule.

1.12 TIME IMPACT ANALYSIS FOR CHANGES, DELAYS AND CONTRACTOR REQUESTS

- A. When changes are initiated or delays are experienced, or the Contractor desires to revise the CPM Schedule, the Contractor shall submit to the Architect a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request on any Milestone. Each Time Impact Analysis shall include Fragmentary Network (Network Analysis) demonstrating how the Contractor proposes to incorporate the change, delay or Contractor request into the CPM Schedule. The Time Impact Analysis shall demonstrate the time impact to each and every affected Activity in the CPM Schedule utilizing the most recent CPM Schedule Update as the basis for the Analysis. The date of the most recent CPM Schedule Update shall be a date prior to the date the change is given to the Contractor, the date the delay occurred or the date the Contractor submits a request for a change. The event time used in the Time Impact Analysis shall be included in the most recent CPM Schedule Update or as adjusted by mutual agreement. The Time Impact

Analysis shall include a computer diskette which shall contain the details of the change including, but not limited to, added, changed or deleted data for Activities, logic restraints, resources or costs.

- B. Activity delays shall not necessarily mean that an extension of any Milestone is warranted or due the Contractor. A change or delay may not affect existing critical Activities or cause non-critical Activities to become critical. A change or delay may result in only absorbing a part of the available total float that may exist within an Activity chain of the Network, thereby not causing any effect on any Milestone.
- C. Total float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, for each and every activity in the CPM Schedule. Float is not for the exclusive use or benefit of either the Owner or the Contractor.
- D. Four copies of each Time Impact Analysis shall be submitted within 10 calendar days after the commencement of a delay or the notice of direction for a change is given to the Contractor.
- E. In cases where the Contractor does not submit a Time Impact Analysis within 10 calendar days, the Contractor agrees that the particular change, delay or Contractor request does not require an extension of time to a Milestone and the Contractor hereby waives its right to subsequently request a time extension.
- F. Acceptance or rejection of each Time Impact Analysis by the Owner shall be made within 10 calendar days after receipt unless subsequent meetings and negotiations are necessary. Upon acceptance, a copy of the Time Impact Analysis signed by the Owner shall be returned to the Contractor, and incorporated into the CPM Schedule at the next monthly CPM Schedule Update. The Time Impact Analysis shall be incorporated into and attached to any relevant Change Order(s).

1.13 PAYMENT

- A. No separate payment will be made for Work under this section. The cost of Work described in this section shall be included in the Contract price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 32 16

01 32 26 CONSTRUCTION PROGRESS REPORTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. The Owner's Project Manager shall provide daily construction reports including count of all personnel at project site.
 - 2. The Owner's Project Manager shall provide material location reports.
 - 3. The Owner's Project Manager shall provide site condition reports.
 - 4. The Owner's Project Manager shall provide special reports.
 - 5. The General Contractor shall provide affirmation of Purchase Orders.
 - 6. The Owner's Project Manager shall provide work documentation, periodic site observations.
 - 7. The General Contractor shall provide work documentation, construction progress photographs.
- B. Related Requirements:
 - 1. Section 01 31 19 PROJECT MEETINGS
 - 2. Section 01 33 00 SUBMITTAL PROCEDURES for submitting reports.
 - 3. Section 01 32 16 CPM SCHEDULE
 - 4. Section 01 45 00 QUALITY CONTROL for submitting a schedule of tests and inspections.

1.02 INFORMATIONAL SUBMITTALS

- A. Informational reports that shall be provided by the Owner's Project Manager:
 - 1. Daily Construction Reports: Submit at weekly intervals.
 - 2. Material Location Reports: Submit at monthly intervals.
 - 3. Site Condition Reports: Submit at time of discovery of differing conditions.
 - 4. Special Reports: Submit at time of unusual event.

PART 2 - PRODUCTS

2.01 REPORTS

- A. Daily Construction Reports: The Owner's Project Manager shall prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.
 - 4. Equipment at Project site.
 - 5. Material deliveries.
 - 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 - 7. Accidents.
 - 8. Meetings and significant decisions.
 - 9. Unusual events (see special reports).
 - 10. Stoppages, delays, shortages, and losses.
 - 11. Meter readings and similar recordings.
 - 12. Emergency procedures.
 - 13. Orders and requests of authorities having jurisdiction.
 - 14. Change Orders received and implemented.

15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial completions and occupancies.
 19. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, the Owner's Project Manager shall prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Included with list shall be a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site, indicating the following categories for stored materials:
1. Material stored prior to previous report and remaining in storage.
 2. Material stored prior to previous report and since removed from storage and installed.
 3. Material stored following previous report and remaining in storage.
- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, the Owner's Project Manager shall prepare and submit a detailed report. The report shall include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.02 SPECIAL REPORTS

- A. The Owner's Project Manager shall submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, the Owner's Project Manager shall prepare and submit a special report. The report shall list chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

2.03 AFFIRMATION OF PURCHASE ORDERS

- A. Several items specified in individual specification sections are products requiring (long lead time. To ensure smooth progress of the Project without unwarranted delays, and to confirm compliance with the Contract Documents, the Contractor shall furnish affirmation of purchase orders for those items indicated in the individual specification sections as being long lead Items.
- B. Affirmation of purchase orders made by the Contractor or subcontractors shall be submitted to the Architect within 7 calendar days from date of Notice to Proceed, or Date of Agreement whichever is earlier.
- C. Affirmation shall include cover letter to Architect naming the purchased products, anticipated date of delivery, and referencing applicable specification section. Attach to letter, copy of Bill of Sale, or other term of receipt, indicating payment or down payment for each of the indicated products. Bill of Sale shall clearly show date of purchase, product Identification, quantities ordered and amount paid.
1. In lieu of Bill of Sale. Contractor may obtain from vendor a notarized letter on the vendor's letterhead. Vendor's letter shall certify placement of order and identify date of purchases products and quantity purchased.

2.04 WORK DOCUMENTATION - PERIODIC SITE OBSERVATIONS

- A. The Owner's Project Manager shall observe and maintain a record of tests, recording the following:
 - 1. Specification section number, product(s), and name of subcontractor or installer.
 - 2. Name of testing agency and name of Inspector.
 - 3. Name of manufacturer's representative present.
 - 4. Date, time and duration of tests.
 - 5. Type of test and results.
 - 6. Retesting required.
- B. The Owner's Project Manager shall observe startup and adjustments; record time and date of equipment start-up and results.
- C. The Owner's Project Manager shall observe equipment demonstrations to Owner; record times and additional information required for operation and maintenance manuals.
- D. The Owner's Project Manager shall assist Architect/Engineer with final inspections. Prepare list of items to be completed and corrected.

2.05 WORK DOCUMENTATION - CONSTRUCTION PROGRESS PHOTOGRAPHS

- A. The General Contractor shall furnish digital photographs of site and construction throughout the progress of Work, produced by an experienced photographer acceptable to Architect and Owner.
 - 1. Submittals:
 - a. Prints: 2 sets, monthly and at final project completion.
 - b. Discs: 2 copies. monthly and at final project completion.
- B. Views: Take photographs from differing directions indicating the relative progress of the Work. Take photographs monthly on date for Application of Payment. and at final completion.
 - 1. As a minimum each month during the Work, furnish the following number of views (as appropriate to Work being performed) and additional views as directed by the Clerk of the Works.
 - a. Views of site construction: 2
 - b. Exterior views of building: 2
 - c. Interior views: 5, each floor.
 - 2. Take additional photographs for the following major portions of work:
 - a. Start and completion of site preparation.
 - b. Completion of hazardous material abatement.
 - c. Completion of excavations, prior to form work or footings.
 - d. Completion of demolition.
 - e. Completion of foundations.
 - f. Each stage of completion of structural framing.
 - g. Enclosure of building.
 - h. Provide 3 roof top photographs each month during roofing work, plus another 3 at completion of roofing and flashing work.
- C. Prints: Furnish glossy color prints, 8 by 10 inch size mounted on 8-1/2 by 11 inch soft card stock, with left edge binding margin for three hole punch. Identify each print on the back with the following information:
 - 1. Project identification.
 - 2. Date and time of exposure, and orientation of views.
 - 3. Photographer's name, address, and phone number.
 - 4. Negative exposure number.

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- D. Discs: Identify each disc on the back with the following information:
1. Project identification.
 2. Date and time of exposure, and orientation of views.
 3. Photographer's name, address, and phone number.
- E. Prints: If requested, shall be furnished at prevailing commercial rates.

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 32 26

01 33 00 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of Work, including, but not limited to:
 - 1. Construction progress schedules.
 - 2. Schedule of values.
 - 3. Submittal schedule.
 - 4. Shop drawings.
 - 5. Product data.
 - 6. Samples.
 - 7. Daily construction reports.
 - 8. Construction photographs and video.
- B. Administrative Submittals: Refer to requirements specified in other Division 1 Specification Sections, and other Contract Documents, for administrative submittals, including, but not limited to:
 - 1. Permits.
 - 2. Applications for payment.
 - 3. Performance and payment bonds.
 - 4. Insurance certificates.
 - 5. List of subcontractors.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
 - 1. Section 01 11 00, SUMMARY OF WORK.
 - 2. Section 01 31 13, PROJECT COORDINATION; Coordination drawings.
 - 3. Section 01 71 23, FIELD ENGINEERING; Survey and layout data submittals.
 - 4. Section 01 45 29, TESTING LABORATORY SERVICES; Test reports.
 - 5. Section 01 60 00, PRODUCT REQUIREMENTS; Manufacturer's instructions.
 - 6. Section 01 60 00, PRODUCT REQUIREMENTS; Contractor's list of Products.
 - 7. Section 01 73 00, CLOSEOUT REQUIREMENTS; Closeout submittals.

1.03 SUBMITTAL PROCEDURES

- A. Submittals shall be provided and tracked by means of an online Project Management software (Procore, or equal) at no additional cost to Owner. Physical samples shall be provided as indicated below and tracked by means of Project Management software. Project Management software shall automatically distribute submittals and submittal reviews to Owner, Architect, and others deemed necessary.
- B. Coordination of Submittals: Coordinate preparation and processing of submittals with related construction activities. Transmit submittals sufficiently in advance of performance of Work to avoid delays. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related pertinent activities that require sequential activity.
 - 1. Architect may reject, or withhold action on submittals requiring coordination with other submittals until related submittals are received.

- C. Processing of Submittals: Allow sufficient review time to ensure installation will not be delayed because of time required to process submittals. Minimum processing times are as follows:
1. Review by Architect's Office Only: Allow ten business days for review and processing
 2. Review by Architect and Consultant: Allow ten business days for review and processing of submittals by Architect, and an additional five business days for review by each consultant.
 3. Reprocessing of Submittals: For submittals not approved initially, allow ten business days for review and reprocessing of submittals by Architect, and an additional five business days for review by each consultant.
 4. No extension of Contract Time will be authorized due to failure to transmit submittals sufficiently in advance of scheduled performance of Work.
- D. Submittals, general:
1. Source: Submittals received from sources other than Contractor will be returned without action.
 2. Deviations from Contract Documents: When products, materials, or systems submitted deviate from Contract Documents, record deviations clearly on transmittal form, or separate attached sheet.
- E. Contractor's Preparation and Submission of Electronic Submittals: Submit each submittal via Project Management software. Identify each submittal by Specification Section number and title, date of submittal, number of submittal, name and address of Architect, name and Address of Contractor, name and address of subcontractor and/or supplier, name of manufacturer, Drawing number and detail reference.
1. Contractor's Review and Action Stamp: Provide a cover page for Contractor's review and action stamp. Digitally stamp and sign each submittal to show Contractor's review and approval prior to transmittal to Architect. Submittals not signed and stamped by Contractor will be returned without action.
 2. Architect's Review and Action Stamp: Architect shall provide a separate cover page indicating action taken.
 3. Modify and customize submittals as required to show interface with adjacent work and attachment to building.
- F. Contractor's Preparation and Transmittal of Physical Submittals: Deliver each submittal by hand or with a delivery service to Architect at no additional cost to Owner. Include with each submission a Transmittal Form, indicating Project Name, Architect Project Manager's name, Architect's Project Number, Specification Section number and title, date of submittal, number of submittal, name and Address of Contractor, name and address of subcontractor and/or supplier, name of manufacturer, Drawing number and detail reference. Concurrent with submission of physical sample, provide electronic submittal through Project Management software as outlined above, including digital images of physical submittals. The Contractor bears the sole responsibility for ensuring submittals arrive at Architect's office.
1. Contractor's Review and Action Stamp: Provide a cover page for Contractor's review and action stamp. Stamp and sign each submittal to show Contractor's review and approval prior to transmittal to Architect. Submittals not signed and stamped by Contractor will be returned without action.
 2. Architect's Review and Action Stamp: Architect shall provide a separate cover page indicating action taken. Where appropriate, Architect's review shall be returned through Project Management software.
 3. Modify and customize submittals as required to show interface with adjacent work and attachment to building.
- G. Comply with progress schedule for submittals related to Work progress.

- H. After Architect reviews submittal, revise and resubmit as required. Identify changes made since previous submittal. Changes not marked will be treated as having not been made, even if change is consistent with Contract Documents.
- I. Project Management software shall be setup to distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report inability to comply with provisions.
- J. Substitutions: Refer to Section 01 60 00, PRODUCT REQUIREMENTS.

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Prepare Construction Progress Schedules. Comply with requirements specified in Section 01 32 16.19 CPM SCHEDULE.

1.05 SUBMITTAL SCHEDULE

- A. Timing: Prepare and issue complete Submittal Schedule no later than ten (10) working days after Architect accepts Construction Progress Schedule.
- B. Preparation: Coordinate Submittal Schedule with Construction Progress Schedule, and Schedule of Values.
- C. Content of Submittal Schedule: Prepare schedule in order by Specification Section. Provide the following information for each submittal:
 - 1. Scheduled date of initial submittal.
 - 2. Specification Section number.
 - 3. Submittal type.
 - 4. Name of subcontractor or supplier.
- D. Distribution: Provide digital schedule, plus print and distribute Submittal Schedule to Architect, Owner, subcontractors, and other parties affected. Post copies in field office.
- E. Revisions: Update and reissue Submittal Schedule monthly in conjunction with Application for Payment.

1.06 SHOP DRAWINGS

- A. Provide accurately prepared, large scale and detailed shop drawings prepared specifically for this Project on reproducible sheets. Show adjacent conditions and related work. Show accurate field dimensions where appropriate. Identify materials and products shown. Note special coordination required. Standard information prepared without specific reference to Project is not considered shop drawings.
- B. Shop drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings.
- C. Show every component of fabricated item, notes regarding manufacturing process, coatings and finishes, identifying numbers conforming to Contract Documents (i.e. stair numbers, door numbers, etc.), dimensions, and appropriate trade names. Show anchorage and fastening details, including type, size and spacing. Show material gage and thickness. Indicate welding details and joint types.
- D. Shop Drawing Sheet Size: Except for templates, patterns, and other full-size drawings, submit shop drawings electronically on sheets at least 8-1/2 in. x 11 in., but no larger than 30 in. x 42 in. Coordinate with architect regarding electronic submittals.

- E. Submittal Quantities: Submit shop drawings in following quantities:
 - 1. Owner's Project Manager: For all approved shop drawings, one blackline print of each submittal directly to the Owner's Project Manager's office.

1.07 PRODUCT DATA

- A. Definition: Product data includes manufacturer's standard published literature, such as installation instructions, catalog cuts, color charts, rough-in diagrams, and wiring diagrams. When product data must be prepared specifically because standard published data is not suitable for use, submit as shop drawing.
- B. Preparation: Mark each copy of product data to show applicable choices and options. Where published product data includes information on several products and choices, mark copies to clearly indicate information applicable to this Project.
- C. Do not submit product data until compliance with requirements of Contract Documents has been confirmed.
- D. Submittal Quantities: Submit product data in following quantities:
 - 1. Owner's Project Manager: For all approved product data, submit one copy of each submittal directly to the Owner's Project Manager's office.
- E. Installer Copy: Verify that installer of Work possesses a current copy of Architect-approved product data prior to installation.

1.08 SAMPLES

- A. Submit samples identical with materials and products to be installed. Where indicated, prepare samples to match Architect's sample. Label sample with description, source, manufacturer's name, and catalog number. Submit samples along with certifications that products comply with referenced standards.
- B. Architect Review: Architect will review samples for confirmation of visual intent, color, pattern, texture, and type. Architect will not test samples for compliance with other specified requirements, which shall remain exclusive responsibility of Contractor.
- C. Submittal Quantities: When variation in color, pattern, or texture can be expected in finish work, submit multiple samples (minimum of three) to show approximate limits of variations. Submit samples in following quantities:
 - 1. Initial Selection: For initial selection of color, texture, and pattern, submit one full set of manufacturer's available samples.
 - 2. Verification Samples: Submit three sets of samples selected. One set will be returned to Contractor for use at Project Site for quality control comparisons.
- D. Distribution: Distribute additional sets of approved samples to subcontractors, suppliers, installers, and others required for proper performance of Work. Indicate distribution on transmittal forms.

1.09 DAILY CONSTRUCTION REPORTS

- A. Prepare Daily Construction Reports in coordination with Owner's Project Manager. Comply with requirements specified in Section 01 32 26 CONSTRUCTION PROGRESS REPORTING.

1.10 CONSTRUCTION VIDEO AND PHOTOGRAPHS

- A. Employ a competent professional videographer to take construction record video of entire Project, including all interior and exterior spaces, to show existing conditions before starting Work. Take video in sufficient detail to record accurately the physical conditions at the start of construction.
- B. General: In coordination with Owner's Project Manager, employ competent photographer to take construction record photographs during the course of Work. Comply with requirements specified in Section 01 32 26 CONSTRUCTION PROGRESS REPORTING.

1.11 SCHEDULE OF VALUES

- A. Timing: Submit Schedule of Values allocated to the various portions of the Work within ten (10) working days after award of Contract. Submit separate Schedule of Values for each different phase. Comply with requirements specified in Section 01 29 00 PAYMENT PROCEDURES.
- B. When requested by Architect, submit substantiating data supporting the values submitted.
- C. Intent: Unless objections are stated by Architect, the Schedule of Values will be used as the basis for the Contractor's Applications for Payment.
- D. Form and Content of Schedule of Values: Type schedule on 8-1/2 in. x 11 in. white paper. Contractor's standard forms and automated printout will be considered for approval by Architect upon Contractor's request. Identify schedule with title of Project and location, Architect's project number, name and address of Architect, name and address of Contractor, Contract designation, and date of submission.
 - 1. Line Item Categories: Follow the Table of Contents of Project Manual for major category items. Further sub-divide the major categories into smaller portions of the work as approved by Owner and Architect.
 - 2. List installed value of component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- E. Sub-Values: For each major line item, list sub-values of major products or operations under the item.
- F. Overhead and Profit: For the various portions of the Work, include a directly proportional amount of the Contractor's overhead and profit.
- G. Stored Material: For items on which progress payments will be requested for stored materials, break down the value into the following sub-values:
 - 1. The cost of material, delivered and unloaded at Project Site, with taxes paid.
 - 2. Installation cost including overhead and profit.
- H. The sum of all values listed in the schedule shall equal the total Contract Sum.

1.12 ARCHITECT'S ACTION

- A. General: Architect will review submittals, stamp and indicate action, and return to Contractor. Architect will review submittals for conformance with design intent only. Architect's review and approval of submittals shall be held to limitations stated in the Conditions of the Contract. In no case shall approval or acceptance by Architect be interpreted as release of Contractor of responsibility to fulfill requirements of Contract Documents. No acceptance or approval of submittals, nor any indication or note marked by Architect on submittals, shall constitute authorization for increase in Contract Sum.

- B. Action Stamp: Architect will stamp each submittal with an action stamp. Stamp sample is indicated below:

	No Exception Taken		Revise and Resubmit
	Approved as Noted		Not Approved

Corrections or comments made on the submittals during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of the general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating their work with that of all other trades and performing all work in a safe and satisfactory manner. Material Safety Data Sheets are received for informational purposes only and there is no action taken on said sheets.

- C. Other Action: Submittal for information or record purposes will be returned with no action marked.
- D. Required Resubmittals: Make corrections or changes to submittals required by Architect and resubmit until approved. Revise initial shop drawings or product data, and resubmit as specified for initial submittal. Indicate changes made other than those requested by Architect. Submit new samples as required for initial submittal.

1.13 REPETITIVE REVIEW

- A. Shop Drawings, Product Data and Samples submitted for each item will be reviewed no more than two times at Owner's expense. Submittals failing to comply with Contract requirements will be reviewed at times convenient to the Architect and its consultants and at the Contractor's expense, based upon a flat rate of \$75 per hour, not to exceed \$600.00 for each subsequent resubmittal. Contractor shall reimburse Owner for such additional submittal reviews monthly, and the Owner reserves the right to deduct said reimbursement from Contractor's periodic application for payment and the Contract Sum.

1.14 DISTRIBUTION BY CONTRACTOR

- A. Distribution: When submittal is marked "NO EXCEPTION TAKEN", or "APPROVED AS NOTED", make prints and copies and distribute to Owner, subcontractors, suppliers, fabricators, and other parties requiring information from submittal for proper coordination and performance of Work. Print copies of shop drawings from approved reproducible only.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 33 00

01 35 16 ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Coordinate Work and schedule elements of alterations and renovation work by procedures and methods that expedite completion of the Work.
- B. In addition to demolition specified in Section 02 41 19, SELECTIVE BUILDING DEMOLITION, and indicated on Drawings, cut, move and remove miscellaneous existing work as necessary to provide access and to allow alterations and new work to proceed. Include but do not limit work to:
 - 1. Repair and removal of hazardous and unsanitary conditions and materials.
 - 2. Removal of abandoned items and items that serve no useful purpose, such as abandoned piping, conduit and wiring.
 - 3. Removal of unsuitable and extraneous materials not otherwise marked for salvage, such as abandoned furnishings and equipment, and debris such as rotted wood, rusted metals and deteriorated concrete.
 - 4. Cleaning of surfaces, and removal of surface finishes as needed to install new work and finishes.
- C. Patching, repair, and refinishing existing work intended for reuse, to specified condition for each material, with suitable transition to adjacent new items of construction.

1.02 ALTERATIONS, CUTTING AND PROTECTION

- A. Ensure that work is performed by workers qualified for each condition and material encountered.
- B. Cutting of existing construction required to install equipment under various Sections shall be done by coring or sawing method under Section appropriate to materials and construction.
- C. Cut and remove minimum materials necessary and avoid damage to adjacent work intended for reuse.
- D. Cut finish surfaces such as masonry, tile, plaster and metals by methods that terminate surfaces in a straight line at natural points of division.
- E. Cutting and patching work shall comply with requirements of Section 01 73 00, EXECUTION.
- F. Protect existing finishes, equipment, and adjacent work scheduled to remain from damage from weather and extremes of temperature.
 - 1. Maintain existing interior work above 60° F.
 - 2. Provide weather protection, waterproofing, heat and humidity control as necessary to prevent damage to remaining existing work and to new work.
- G. Provide temporary enclosures to separate work areas from existing building and from areas occupied by Owner, and to provide weather protection.
- H. Discovery of construction, furnishings, and articles with historic or private value shall remain in possession of Owner.
 - 1. Promptly notify Architect.
 - 2. Protect discovery from damage from weather conditions and construction operations.

3. Architect will promptly transmit Owner's decision for disposition of discovery.
4. Store items to be retained by Owner in safe, dry place on site. Dispose of items which Owner releases to Contractor's disposition.

PART 2 - PRODUCTS

2.01 SALVAGED MATERIALS FOR REUSE

- A. Salvage sufficient quantities of cut and removed materials to replace damaged work of existing construction when material is not readily obtainable on current markets.
 1. Store salvaged items in dry, secure place on site.
 2. Items not required for use in repair of existing work shall remain Owner's property.
 3. Do not incorporate salvaged or used materials in new construction without Architect's approval.

2.02 PATCHING, EXTENDING, AND MATCHING

- A. Provide same products or types of construction as those in existing structure, as needed to patch, extend, and match existing work.
- B. Generally, Contract Documents do not define products or standards of workmanship present in existing construction; determine products and workmanship by inspection and testing. Architect will judge workmanship and materials against existing as a sample of comparison.
- C. Provide products, finishes, and types of construction for patching, extending and matching shall be performed as necessary to make work complete and consistent to identical standards of quality.

PART 3 - EXECUTION

3.01 PERFORMANCE

- A. Patching of existing construction to accommodate work of various Sections shall be performed under Sections that specify methods and materials similar to adjacent existing construction, in the following areas:
 1. Holes adjacent to penetrations for electrical conduit, plumbing pipes and ductwork where exposed to view.
 2. Holes adjacent to penetrations through fire walls for electrical conduit, plumbing pipes and ductwork through fire walls as required by code.
 3. Areas adjacent to installation of new doors and windows and other framed wall and partition penetrations.
 4. Removal and patching of damaged material where indicated.
- B. Patch areas exposed to view after removal of existing construction such as chalkboard, tackboard, chair rails, base, cove and intersecting walls as indicated.
- C. Patch and extend existing work using skilled workers who are capable of matching existing quality of workmanship. Quality of patched or extended work shall be equal to that specified for new work.

3.02 ADJUSTMENTS

- A. Where partitions are removed, patch floors, walls, and ceilings, with finish materials to match existing.

1. Where removal of partitions results in adjacent spaces becoming one, rework floors and ceilings to provide smooth planes without breaks, steps, or bulkheads. Where extreme change of plane of two inches or more occurs, request instructions from Architect as to method of making transition.
- B. Trim and refinish existing doors as necessary to clear new floors.

3.03 DAMAGED SURFACES

- A. Patch and replace parts of existing finished surface which is found to be damaged, lifted, discolored, or otherwise imperfect, with matching materials.
 1. Provide adequate support of substrate before patching finish.
 2. Refinish patched portions of painted and coated surfaces to produce uniform color and texture over entire surface.
 3. When existing surface finish cannot be matched, refinish entire surface to nearest intersections.

3.04 TRANSITION FROM EXISTING TO NEW WORK

- A. When new work abuts or finishes flush with existing work, make smooth transition. Patched work shall match existing adjacent work in texture and appearance so that patch or transition is not visible so from 5 ft. away. When patching in new masonry to existing masonry, tooth-in new masonry work.
- B. When finished surfaces are cut so that smooth transition with new work is not possible, terminate existing surface in a neat manner along straight line at natural line of division. Provide trim appropriate to finished surface.

3.05 CLEANING

- A. Perform periodic and final cleaning as specified in Section 01 77 00, CLOSEOUT REQUIREMENTS.
- B. At completion of work of each Section, clean area and prepare surfaces for work of other Sections.
- C. At completion of alterations work in each area, provide final cleaning and return space to condition suitable for use by Owner.

END OF SECTION – 01 35 16

01 42 00 REFERENCES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section identifies abbreviations and acronyms and includes definitions of words and phrases used in Contract Documents, definitions of standard Specification language, and explanation of Specification format and content.

1.02 QUALITY ASSURANCE

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents or applicable codes establish stricter standards.
- B. Publication Date: The publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS AND NAMES OF ORGANIZATIONS

- A. Obtain copies of referenced standards direct from publication source, when needed for proper performance of Work, or when required for submittal by Contract Documents. For abbreviations not listed, and for addresses and phone numbers, refer to the "Encyclopedia of Associations", published by Gale Research Co., Inc., available in most public libraries.

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials.
ACI	American Concrete Institute
ADC	Air Diffusion Council
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AI	Asphalt Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPA	American Sod Producers Association
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
CDA	Copper Development Association
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
EJMA	Expansion Joint Manufacturer's Association
FGMA	Flat Glass Marketing Association

Belmont Town Hall – Roof Repairs
Belmont, MA

FM	Factory Mutual System
FS	Federal Specification
GA	Gypsum Association
IEEE	Institute of Electrical and Electronics Engineers
IMIAC	International Masonry Industry-All Weather Council
ISA	International Society of Arboriculture
MDOT	Massachusetts Department of Transportation
MFMA	Maple Flooring Manufacturers Association
MIL	Military Specification
ML/SFA	Metal Lath/Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NCMA	National Concrete Masonry Association
NEBB	National Environmental Balancing Bureau
NEMA	National Electrical Manufacturers' Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSWMA	National Solid Waste Management Association
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PS	Product Standard
SCPI	Structural Clay Products Institute
SDI	Steel Deck Institute
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joint Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPRI	Single Ply Roofing Institute
SSPC	Steel Structures Painting Council
TAS	Technical Aid Series
TCA	Tile Council of America, Inc.
UL	Underwriters' Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau

- B. The following agencies and publications are included in the specifications for requirements relating to access:

ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Access Guidelines
MDPS	Commonwealth of Massachusetts Department of Public Safety; Rules and Regulations of the Architectural Barriers Board

1.04 DEFINITIONS

- A. General: Basic Contract definitions are included in Document 00 7200, GENERAL CONDITIONS.

- B. Indicated: The word "indicated" refers to graphic representations, notes or schedules on Drawings, Paragraphs or schedules in Specifications, and similar requirements in Contract Documents. Terms such as "shown", "noted", "scheduled", and "specified" are used to help locate a reference. No limitation on location is intended except as specifically noted.
- C. Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted", are hereby defined as "directed by Architect", "requested by Architect", "authorized by Architect", etc. No implied meaning shall be interpreted to extend the Architect's responsibility into the Contractor's area of construction supervision.
- D. Approve: The term "approved" when used in conjunction with the Architect's action on the Contractor's submittals, applications, and similar requests, is limited to the duties and responsibilities of the Architect as stated in GENERAL CONDITIONS and 00 7300, MODIFICATIONS TO GENERAL CONDITIONS. Such approval shall not release the Contractor from responsibility to fulfill Contract requirements unless otherwise provided in the Contract Documents.
- E. Furnish: Supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- F. Install: Operations at Project Site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- G. Provide: To furnish and install, complete and ready for intended use.
- H. Installer: The Contractor or entity engaged by the Contractor, either 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.

1.05 SPECIFICATION FORMAT AND CONTENT

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 33 Division format and Masterformat numbering system.
- B. Specification Content: These Specifications use certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - 1. Abbreviated Language: Language used in Contract Documents is abbreviated. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural, and plural words interpreted as singular where applicable.
 - 2. Imperative Language: In general, imperative language is used in the Specifications. Except where specifically indicated otherwise, the subject of imperative statements is the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities to be fulfilled indirectly by the Contractor, or others when so noted.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 42 00

01 45 00 QUALITY CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Requirements:
 - 1. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.02 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
 - 2. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having

jurisdiction, to establish product performance and compliance with specified requirements.

- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.03 1.03 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.04 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.05 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.

2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force resisting system quality-assurance plan prepared by Architect.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 1. Specification Section number and title.
 2. Entity responsible for performing tests and inspections.
 3. Description of test and inspection.
 4. Identification of applicable standards.
 5. Identification of test and inspection methods.
 6. Number of tests and inspections required.
 7. Time schedule or time span for tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.

1.06 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 20 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule. As a minimum, the quality control plan shall include the following:
 1. Contractor's commitment to quality and implementing and managing the QC program.
 2. Identification of the Contractor's onsite QC Manager, with name, qualifications, duties and responsibilities. The QC Manager shall have the authority to direct the removal and replacement of non-conforming work. The QC Manager shall be present for all QC meetings, inspections and tests during the project.
 3. Procedures for addressing and commenting QC with Contractor's staff, all subcontractors and suppliers, and Owner, Architect and Owner's representative.
 4. Procedures for review of submittals and submittal status, and documentation of same.
 5. Procedures for pre-installation meetings and documentation of same.
 6. Procedures for inspections of deliveries and documentation of same.
 7. Procedures for benchmark inspections, defined as initial installations, and documentation of same.
 8. Procedures for mockup inspections and documentation of same.
 9. Procedures for equipment in place, inspections and documentation of same.
 10. Procedures for inspections prior to closures of concealment and documentation of same.
 11. Procedures for start-up and commissioning and documentation of same.
 12. Procedures for turnover and documentation of same.
 13. Procedures for identifying, recording, tracking, correcting, and reporting items requiring rework, using a Rolling Completion list chronological item number, phase area, date listed, description, party responsible for correction, date notified, and date corrected.
 14. Procedures for testing and documentation of same.
 15. Procedures for corrective action on Architect's Field Reports and Testing Agency reports and documentation of same.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 1. Project quality-control manager shall not have other Project responsibilities.

- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 - 3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.07 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of technical representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.08 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection and similar quality-assurance service to Architect and Commissioning Authority with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - 6. Allow seven days for initial review and each re-review of each mockup.
 - 7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 8. Demolish and remove mockups when directed unless otherwise indicated.
- L. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

1.09 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Owner reserves the right to take samples at random, and perform tests on approved materials delivered to the Project Site to verify compliance of actual materials used on the Project with Contract requirements.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. Retesting/ Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- G. Testing Agency Responsibilities: Cooperate with Architect, Commissioning Authority, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect, Commissioning Authority, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- H. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- I. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- J. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Architect, Commissioning Authority, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect, Commissioning Authority, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and Commissioning Authority with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's, Commissioning Authority's, reference during normal working hours.

3.02 REPAIR AND PROTECTION

- A. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section 01 73 00 EXECUTION.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

PART 4 - PRODUCTS (NOT USED)

PART 5 - EXECUTION (NOT USED)

END OF SECTION – 01 45 00

01 45 29 TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for testing laboratory services required for the Project.

1.02 REQUIREMENTS

- A. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.
- B. In addition to the Contract's testing, the Owner reserves the right, at his sole discretion, to select and pay for the services of an Independent Testing Laboratory to perform specified services and testing as may be in the Owner's best interest.
- C. Contractor shall cooperate with the laboratory to facilitate the execution of its services.

1.03 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. Conditions of the Contract: Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities.
 - 2. Respective sections of specifications: Certification of products.

1.04 LABORATORY DUTIES

- A. Cooperate with Architect and Contractor; provide qualified personnel promptly on notice.
- B. Acquaint Owner, Architect, and Contractor's superintendent with testing procedures and with all special conditions encountered at the site.
- C. Inspections, sampling, and testing of materials and construction methods shall be as specified in individual technical specification sections.
 - 1. Comply with specified standards, ASTM, ANSI, and other recognized authorities.
 - 2. Conduct and interpret the tests and state in each report whether the test specimens comply with the requirements, and specifically state any deviations there from.
 - 3. Obtain Contractor's written acknowledgment of each inspection, sampling, and test made.
- D. Promptly notify Architect and Contractor of irregularities or deficiencies of Work or Products which are observed during performance of services.
- E. Promptly submit written report of each test and inspection; one copy each to Architect, Owner, Contractor, and one copy to Project Record Documents File. Each report shall include:
 - 1. Date issued.
 - 2. Project title and number.
 - 3. Testing laboratory name, address, and telephone number.
 - 4. Name and signature of laboratory inspector.
 - 5. Date and time of sampling or inspection.

6. Record of temperature and weather conditions.
7. Date of test.
8. Identification of Product and Specification section.
9. Location of sample or test in the Project.
10. Type of inspection or test.
11. Results of tests and compliance with Contract Documents.
12. Interpretation of test results, when requested by Architect.
13. Observations regarding compliance with Contract Documents.

F. Perform properly authorized additional services as required by the Owner.

1.05 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to:
1. Release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Approve or accept any portion of the Work, except as specifically authorized by the specifications.
 3. Perform any duties of the Contractor.

1.06 CONTRACTOR'S RESPONSIBILITIES

- A. Coordinate and cooperate with laboratory personnel, provide access to Work, and to Manufacturer's operations.
1. Monitor each inspection, sampling, and test.
 2. Provide Laboratory or Agency with written acknowledgment of each inspection, sampling, and test.
 3. Within 24 hours notify Architect and Owner in writing of reasons for not acknowledging Laboratory results.
- B. Secure and deliver to the Laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- C. Provide to the Laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory.
- D. Furnish copies of Product test reports as required.
- E. Furnish incidental labor and facilities:
1. To provide access to Work to be tested.
 2. To obtain and handle samples at the Project site or at the source of the Product to be tested.
 3. To facilitate inspections and tests.
 4. For storage and curing of test samples.
- F. Furnish verification of materials and equipment compliance with Contract Documents.
- G. Identify materials to be tested or inspected by Testing Laboratory or Agency.
- H. After determination of need for testing or inspecting by Owner, notify Laboratory sufficiently in advance, minimum five days, of operations to allow for its assignment of personnel and scheduling of tests.
1. When tests or inspections cannot be performed after such notice, reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor's negligence.
- I. Make arrangements with laboratory and pay for additional samples and tests required:
1. For the Contractor's convenience; or

2. When initial tests indicate Work does not comply with Contract Documents.

1.07 CONDUCT OF INSPECTIONS AND TESTS

- A. The Contractor shall notify the Owner, Architect, and Testing Laboratory a minimum of 72 hours before the performance of work to permit the proper conduct of Owner-authorized inspections and tests.
- B. Representatives of Testing Laboratory shall inspect the manufacture, assembly, and placement of materials as required and as authorized by the Owner, and shall report their findings to the Architect, Owner, and Contractor.
- C. Work shall be checked as it progresses, but failure to detect any defective work or materials shall in no way prevent later rejection when such defect is discovered nor shall it obligate the Owner to accept such work.

1.08 TESTS REQUIRED

- A. General Construction Tests: More detailed testing requirements are given in individual Specification Sections. The Owner shall retain the right to make any additional tests the Architect deems necessary or appropriate. The Contractor is responsible for providing his own tests to determine that materials meet specified requirements. The scope of tests required and paid for by the Owner (unless otherwise noted below) shall include as a minimum the following:
 1. Earthwork: Lab tests to determine suitability of all fill materials shall be paid for by Contractor. Owner reserves the right to retain and pay for his own testing for checking purposes.
 2. Earthwork: Proctor tests for compaction.
 3. Asphalt Concrete Paving: Field and lab tests for asphalt paving.
 4. Concrete Paving and General Concrete Work: Concrete mix design testing shall be paid for by Contractor. Owner reserves the right to retain and pay for his own testing for checking purposes
 5. Concrete Paving and General Concrete Work: Concrete test cylinders as specified in Section 03 30 00, CONCRETE.
 6. Masonry Mortar: Three cylinders tested for compressive strength at 10 days; ASTM C 91 tests.
 7. Metals: Strength; dimension; coating thickness; bolt torque; welding X-ray or ultrasonic tests.
 8. Wood: Moisture content; treatment retention; strength; dimension.
 9. Sealants: Chemical analysis; adhesive strength; compatibility with adjacent materials; elasticity.
 10. Paints and Finishes: Chemical analysis; coating thickness.
 11. Roofing: Flood test flat roofs.
 12. Asbestos Abatement Monitoring: Indoor Air Quality; other tests as specified in Section 02 8213, ASBESTOS ABATEMENT.
- B. Plumbing: Tests as required by Codes and Authorities Having Jurisdiction, with at least the following tests. Conform to requirements specified in individual Division 22 Specification Section. The test shall be performed and paid for by the subcontractor and witnessed by the Contractor and Owner's on site representative:
 1. Water supply piping hydrostatic pressure test.
 2. Sanitary piping test before fixture installation: Cap pipes and fill to highest point in system.
 3. Plumbing fixture operation.
- C. Fire Protection System: Tests as required by Codes and Authorities Having Jurisdiction, with at least the following tests. Conform to requirements specified in individual Division 21

Specification Section. The test shall be performed and paid for by the subcontractor and witnessed by the Contractor and Owner's on site representative:

1. Fire protection system flushed and pressure tested.
- D. HVAC Testing: Tests as required by Codes and Authorities Having Jurisdiction, with at least the following tests, conducted by an independent testing and balancing agency. Conform to requirements specified in individual Division 23 Specification Sections. The tests shall be performed and paid for by the subcontractor and witnessed by the Contractor and Owner's Representative. Adjustments shall be made by the subcontractor as directed by the Owner. At least the following tests will be performed:
1. Piping hydrostatic tests.
 2. Air and water balancing.
 3. Automatic Temperature control monitoring and testing.
 4. Boiler efficiency testing.
- E. Electrical Power System Testing: Tests as required by Codes and Authorities Having Jurisdiction, with at least the following tests. Conform to requirements specified in individual Division 26, 27, 28 Specification Sections. The tests shall be performed and paid for by the subcontractor and witnessed by the Contractor and Owner's on-site representative:
1. Polarity tests.
 2. Operation of all circuits.
 3. Testing of emergency system.
 4. Security systems.
 5. Grounding systems.
 6. Voice/Video/Data networking testing.
- F. Electrical Lighting System Testing: Tests as required by Codes and Authorities Having Jurisdiction. Conform to requirements specified in individual Division 26 Specification Section. At least the following tests shall be performed and paid for by the subcontractor:
1. Operation of every component of entire system.
- G. Fire Alarm System Testing: Tests as required by Codes and Authorities Having Jurisdiction, with at least the following tests. Conform to requirements specified in individual Division 26 Specification Section. The test shall be performed and paid for by the subcontractor and witnessed by the Contractor and Owner's on site representative:
1. All smoke and heat detectors.
 2. Proper operation as required by authorities having jurisdiction.
- H. Contractor's Responsibilities: The Contractor shall notify the Owner, Architect, and Testing Laboratory personnel at least 48 hours prior to performance of work requiring testing. The Contractor shall fully cooperate with testing agencies and permit free access to all areas at all times. The Contractor shall permit taking samples at any time during construction, either before or after installation. Prior to notice to proceed with construction, the Contractor shall submit a Testing Log of planned tests and scheduled test dates. Tests shall be numbered based on type of work, type of test, and sequence. The Testing Log shall be maintained by the Contractor in the field office and updated weekly.
1. Coordination: The Contractor shall coordinate all testing, including all testing and inspections to be paid for by the Owner. The Contractor will arrange testing and sampling performed by the Owner's testing agency and will have prepared test record forms. Upon receipt of test results, the Owner will distribute copies with test results as follows:
Contractor [2 copies].
Architect [2 copies].
- I. Follow-up and Corrective Action: The Contractor and the Owner will note the test record on the Testing Log to acknowledge test procedures and results. If follow-up or corrective

action is needed, the Contractor shall submit to the Owner two written copies of proposed follow-up or corrective plans and obtain the Owner's written approval before proceeding.

1. Cost of Testing: If tests indicate that materials or work do not comply with requirements, the Contractor shall pay for all retesting, and shall remove and replace non-complying work at no additional cost to the Owner.

J. Local Owner Inspections: The Contractor is also responsible for coordinating and cooperating with local requirements for inspections.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 45 29

01 50 00 TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies construction facilities and temporary controls, including, but not limiting to:
 - 1. Temporary utilities and weather protection.
 - 2. Temporary sanitary facilities.
 - 3. Temporary fire protection.
 - 4. Temporary staging and scaffolding.
 - 5. Temporary hoisting equipment and machinery.
 - 6. Temporary bracing, shoring, sheeting, tie-downs.
 - 7. Construction cleaning and temporary trash containers.
 - 8. Temporary stairs, ladders, ramps, platforms, etc.
 - 9. Temporary fencing, barriers, and partitions.
 - 10. Temporary protective night lighting.
 - 11. Watchmen, police details.
 - 12. Security.
 - 13. Noise, dust, and pollution control.
 - 14. Water control.
 - 15. Protection of new and existing construction.
 - 16. Temporary job signs.
 - 17. Temporary field offices.
 - 18. Temporary storage facilities.
 - 19. Enclosures.
 - 20. Temporary rodent and pest control.
 - 21. Parking facilities and control and construction deliveries.
 - 22. Drinking water.
 - 23. Drainage and sewerage.
 - 24. Temporary paving.
 - 25. Collection and disposal of waste.
 - 26. Maintenance of streets, walks, and grounds.
 - 27. Municipal police and fire department services.
 - 28. Moisture and Mold Control

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect the Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
 - 1. GENERAL CONDITIONS and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS; Conditions of the Contract.
 - 2. Section 01 11 00, SUMMARY OF WORK

1.03 SUBMITTALS

- A. Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen days of date established for Commencement of the Work.
- B. Shop Drawings: Submit shop drawings for all signage.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

- D. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

1.04 QUALITY ASSURANCE

- A. Comply with requirements of authorities having jurisdiction, codes, utility companies, OSHA, and industry standards including, but not limiting to:
 - 1. NFPA 241.
 - 2. NFPA 70.
 - 3. ANSI A10.
 - 4. NECA NJG-6.
- B. Electric Service: Temporary Electric Service will be taken from existing building service. Provide a check meter for each feeder
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test temporary utilities prior to use. Obtain required certifications and permits.

1.05 PROJECT CONDITIONS

- A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change from use of temporary service to use of permanent service.
- B. Conditions of Use: Maintain temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload temporary facilities. Do not allow hazardous, dangerous, or unsanitary conditions to develop on site.
- C. Maintain the continuity of all utility services at all times across all Phases of the Construction Project, unless otherwise directed by the Architect or Owner.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Lumber and Plywood: Provide materials that conform to requirements of Section 06 10 00, ROUGH CARPENTRY, and as follows:
 - 1. Signs and Directory Boards: Provide exterior grade, Medium Density Overlay (MDO) plywood, conforming to USDC PS1, of size and thickness indicated.
 - 2. Fences, Vision Barriers, and Safety Barriers: Provide exterior grade, C-D veneered plywood.

- C. Gypsum Wallboard: Provide gypsum wallboard and metal framing systems for temporary offices and partitions, conforming to Section 09 21 00, GYPSUM BOARD ASSEMBLIES.

2.02 TEMPORARY UTILITIES AND WEATHER PROTECTION

- A. Scope: Temporary utility and weather protection work includes, but is not limited to:
1. Temporary weather protection, enclosures, and covers
 2. Temporary heating.
 3. Water service and distribution.
 4. Electric power and light.
 5. Telephone service.
- B. As used in this Article, the following terms are used with the specific meanings given below.
1. Construction Electric: The furnishing, installing, maintenance, and removal of all wiring, fusing, switches, outlets, lamps and accessory electrical devices required to furnish lighting and power needed by all construction trades prior to the time such required lighting and power can be furnished through the permanent electrical distribution system. Include also electrical service and facilities at temporary field office and protective night lighting.
 2. Construction Heating and Ventilating: The furnishing, installing, operation, maintenance, and removal of all heating devices and all ventilating devices required to provide proper temperature and/or ventilation conditions for all construction activities prior to the time that the permanent heating and ventilating system can be used for that purpose. Include also heating and ventilating of temporary field office.
 3. Construction Water: The furnishing, installing, maintenance, and removal of all water piping, valving, hose bibs, etc. required for all construction trades prior to the time when such requirements can be satisfied by utilizing the permanent supply piping.
 4. Interim Electric: The operation and maintenance of the permanent electrical system; from the end of the Construction Electric phase to the Date of Substantial Completion of the Work.
 5. Interim Heating and Ventilating: The operation and maintenance of the permanent heating and/or ventilating system from the end of the Construction Heating and Ventilating phase to the Date of Substantial Completion of the Work.
 6. Water Access Point: A point, within the Project area, at which water is available for use during the Construction Water phase.
 7. Weather Protection: The furnishing, installing, maintenance and removal of temporary closures, covers, shields and any other weather protection devices as required to protecting work in place and permitting construction to proceed during cold or inclement weather.
- C. Weather Protection Standard: The following weather protection standards pursuant to Chapter 597 of the Acts of 1980, modifying Sections 44F and G of Chapter 149 of the General Laws, are hereby incorporated into this specification, and shall be considered supplementary to the above temporary heating and temporary enclosure requirements. Under the provisions of Chapter 149, Section 44F (I) and Section 44G, Para. D, of the General Laws, General Contractors are required to provide weather protection to allow building construction to be carried on during the months of November through March. These standards do not require enclosures for heat for operations that are not economically feasible to protect in the judgment of the Awarding Authority; including for example, site work, excavation, pile driving, steel erection, erection of certain exterior panels, roofing and the like.
1. The General Contractor shall provide and install weather protection.
 2. Weather protection shall be provided during the months of November through March.

3. Temperature at the working surface shall be at least forty degrees Fahrenheit (40° F.). This provision does not supersede any specific greater requirements for methods of construction or curing of materials.
 4. Weather protection materials, equipment, and the installation thereof, shall comply with all safety rules and regulations including provisions for adequate ventilation and fire protection devices.
 5. At completion of work, the General Contractor shall remove temporary weather protection and restore all surfaces to first class condition.
 6. The General Contractor may choose, if the Awarding Authority approves, to use the permanent heating system for temporary heat after the building is enclosed and the system has been tested and is ready to operate.
 - a. The General Contractor shall thoroughly clean and restore to first class condition, acceptable to the Awarding Authority, all portions of the permanent heating system that are used for heating during construction,
 - b. Use of the permanent heating system for weather protection shall not affect any heating system guarantee that may be due to the Awarding Authority; such guarantee shall begin to run only when the Awarding Authority accepts the building.
 7. Reporting Requirements:
 - a. Within thirty calendar days after Contract award, the General Contractor shall submit in writing to the Awarding Authority for approval, three copies of its proposed plan for weather protection.
 - b. The General Contractor shall furnish and install accurate Fahrenheit thermometers at places designated by the Architect to determine whether the required temperature is being maintained. However, one additional accurate Fahrenheit thermometer shall be provided for every 2000 square feet of floor space where the work areas exceed 2000 square feet.
- D. Temporary Covers and Enclosures:
1. Except as otherwise specified herein below, all costs of closing openings in new construction and the exterior of the existing buildings where opened to the weather, including temporary covers and enclosures, shall be borne by the General Contractor. Enclosures must be built around various portions of the new construction and new exterior openings in the existing building as the work progresses if, and as necessary to totally insure against the intrusion of rain, snow, and other moisture which might damage the new or existing materials or finishes and as necessary to maintain the minimum temperatures specified.
 - a. Where roofs, exterior walls, windows, or other elements of new or existing buildings or structures providing weather protection are to be temporarily opened to the weather, they shall be fully enclosed or covered with securely attached and well-draining enclosures whenever inclement weather is at and or is threatening, to assure absolute weather protection. Any and all damage to the new or existing buildings or structures, including all materials and finishes thereon, caused by inadequate protection shall be made good by the General Contractor without further cost to Owner.
 2. All such weather tight enclosures shall provide a reasonable open area to permit drying of new, wet materials while at the same time making it possible to maintain the required interior temperatures. The General Contractor shall provide sufficient continuous ventilation until time that the "wet" work of the project has dried sufficiently to receive finished woodwork and other materials subject to moisture damage, at which time the ventilation shall be maintained at approximately the anticipated conditions of final use of the project.
 3. The permanent doors and frames shall not be used as temporary enclosures prior to time of delivery of finished woodwork or acoustical materials. Temporary wood or plywood doors with wood frames and proper hardware to make the doors self-closing shall be provided, instead, at the door openings.

4. As parts of the temporary enclosures, the permanent doors, windows, and fixed glass may be used, provided sufficient ventilation area is available and that extreme care is taken to prevent damage to same. Where available ventilation area is limited, intake and discharge fans may be used to increase air movement through the construction areas. Before delivery of finished woodwork or other materials subject to moisture damage, the permanent windows, roof accessories, fixed glass, doors, and entrances must be in place. Sparkproof fans shall also be provided to remove toxic or obnoxious fumes from enclosed areas as may be required.
 5. Once temporary enclosures are in place, a temperature of at least 55 degrees F. shall be maintained within all interior work spaces. From time of delivery of first shipment of finished woodwork or other finished materials subject to moisture damage, a temperature of at least 60 degrees F. shall be maintained within all interior spaces. Temperatures shall be maintained at this level until time of substantial completion of the project or occupancy by the Owner, whichever is sooner, and shall not be discontinued until definite arrangements for same have been made by the Owner.
- E. Weather Protection by Subcontractors: The General Contractor shall provide at his own expense all Weather Protection as defined above except as follows.
1. Each Subcontractor shall pay for and be responsible for the weather protection of his tools, devices, equipment, appliances and appurtenances to be used in the accomplishment of his work and for the weather protection of materials furnished by him until such materials are incorporated as a physical part of the Project.
 2. Protection and heating of aggregates and water for concrete and mortars shall be the responsibility and at the expense of the respective Subcontractors furnishing concrete and mortars.
 3. Construction Water Facilities, furnished and installed by the Plumbing Subcontractor, shall be protected against freezing by such Subcontractor at his own expense.
 4. Hoses, piping and accessory devices installed and connected by others to the water facilities furnished by the Plumbing Subcontractor shall be protected against freezing by the installer, at his own expense.
- F. Construction Heating: The General Contractor shall provide at his own expense all Construction Heating and Ventilating, except that protection and heating of aggregates and water for concrete and mortars shall be the responsibility of the respective Subcontractors furnishing concrete and mortars. Portable heating units shall be of sufficient capacity and number and shall be so located that damage to any part of the project from low temperature will be prevented and that concrete, masonry, and other components requiring curing shall be properly cured. The General Contractor shall pay for all fuel and electrical energy required for Construction Heating and Ventilating.
1. Heaters for temporary heat shall be temporary steam generators, forced air heaters, or other type heaters located outside the building or vented to the outside of the building. Type(s) shall be such as to not damage or stain construction. Heaters must be UL approved.
 2. At no time will oil burning "salamander" type heaters be used, nor will non-vented, open flame heaters be used inside the building once "closed-in".
 3. Propane-type heaters shall not be used at any time within area of the building or near stockpiles of combustible materials.
- G. Interim Heating and Ventilating: The Heating and Ventilating Subcontractor shall be responsible for Interim Heating and Ventilating as defined above and further specified as follows.
1. Use of the new, permanent, heating and ventilating equipment may, at the Subcontractor's option, be used for Interim Heating and Ventilating.
 2. The permanent heating and ventilating system in a given area, including permanent wiring to a permanent power source, shall be completely installed as

- designed and shall have received all legally required inspections and approvals before the system may be used in such area.
3. Units of the permanent heating and ventilating system which are designed to be used with filters shall be equipped with proper filters before being placed in use for Interim Heating and Ventilating. Such units shall not be used without filters. Filters shall be cleaned or changed as required to maintain proper operation of the equipment.
 4. At the termination of the use of the permanent system for Interim Heating and Ventilating, the system shall be cleaned, equipped with new filters, new belts if required, and any damage repaired or replaced. This work shall be done by the Heating and Ventilating Subcontractor at his own expense.
 5. The General Contractor shall include an amount in his contract price to pay the Heating and Ventilating Subcontractor for costs of wages (regular and overtime), and contributions to health, welfare, and pension funds, for services of special attendant qualified to operate and maintain the permanent heating system for temporary heat during the Interim Heating and Ventilating period and until the system has been accepted by the Owner. This will require the General Contractor to estimate the total number of regular and overtime hours such attendance will require. The attendant shall be employed by the Heating and Ventilating Subcontractor at the rate established by the Department of Labor and Industries. Costs of insurance, taxes, travel allowance, and other services of the attendant shall be paid for by the Heating and Ventilating Subcontractor. The periods of operation shall be as directed by the General Contractor. Only one person shall be employed at any one time. The General Contractor reserves the right to shut down the temporary heat operations for any 8-hour period. The attendant shall be required to record his time by punching a time clock furnished and maintained by the Heating and Ventilating Subcontractor. The General Contractor shall pay only for the hours recorded by the time clock as evidenced by certified copies of weekly payrolls submitted by the Heating and Ventilating Subcontractor to the General Contractor.
 6. The General Contractor shall pay for all fuel and electrical energy required for Interim Heating and Ventilating. The Owner will pay all charges for water, fuel, and electrical energy used on the Project for operation of the permanent heating system after the Date of Substantial Completion of the Work.
- H. Construction Water: The Plumbing Subcontractor shall be responsible for and pay for all facilities for Construction Water as defined above and further specified as follows. The water used will be paid for by the General Contractor.
1. Except under unusual circumstances, when otherwise specified or approved by the Architect, all construction water shall be of potable quality.
 2. Construction water shall be piped from the source specified in the Contract Documents to one or more Access Points on the construction site as indicated on the Plumbing Drawings or called for in the Plumbing specifications. Existing plumbing facilities near the point of entry of the existing service line into the existing building may be used as the access point for connections to obtain temporary water for work on the existing building.
 3. Each Access Point shall be equipped with two 3/4 in. hose bibs, unless otherwise indicated on Drawings.
 4. The Plumbing Subcontractor shall pay for and be responsible for the protection of Construction Water which he installs, from freezing and other damage.
 5. The Plumbing Subcontractor shall provide temporary hose bibs on the permanent water piping for use by the General Contractor and all Subcontractors from the end of the Construction Water phase to the Date of Substantial Completion.
 6. The General Contractor shall pay all utility company charges for water used on the Project from the beginning of construction operations to the Date of Substantial Completion of the Work. The Owner will pay all utility company charges for water used on the Project after the Date of Substantial Completion of the Work if such water is drawn from the metered building water supply.

- I. Construction Electricity: The Electric Subcontractor shall pay for and be responsible for Construction Electric as defined above and further specified as follows.
1. The General Contractor shall pay for all electrical energy used on the Project from the beginning of construction operations to the Date of Substantial Completion of the Work. The Owner will pay for all electrical energy drawn from normal metered building supply used on the Project after the Date of Substantial Completion of the Work. The General Contractor shall install a separate meter for recording the Construction Electricity.
 2. The Construction Electricity will be required to be used between the hours of 7 a.m. and 5:30 p.m. No additional charge shall be made by the Electrical Subcontractor for switching the system on and off to meet this time requirement.
 3. Responsibility of compliance with local, state and national codes for installation of the Construction Electric service shall be borne by the Electrical Subcontractor.
 4. Replacement lamps shall be provided by the Electrical Subcontractor during the Construction Electric period. All lamps in permanent fixtures which have been used during the Interim Electric period shall be replaced with new lamps by the Electrical Subcontractor at his expense just prior to the Date of Substantial Completion.
 5. The following Construction Electricity shall be included by the Electrical Subcontractor in his subcontract price. This schedule will not necessarily provide for all requirements of the General Contractors or all Subcontractors. The General Contractor or any Subcontractor having requirements for power, lighting, or service other than those provided herein, shall make the necessary arrangements to obtain such power, lighting, or service at his own expense.
 - a. The Electrical Subcontractor shall obtain all necessary permits and shall connect to an existing electric service as a source for temporary electrical power, shall furnish and install the temporary electrical power and lighting systems, and shall pay for all labor, materials, and equipment required therefore. All such temporary electrical work shall meet the requirements of the Massachusetts Electrical Code and OSHA.
 - b. The Electrical Subcontractor shall furnish and install a feeder, or feeders, of sufficient capacity for the requirements of each floor. Temporary lighting shall be based on the following requirements:
 - 1) Rooms or spaces under 250 sq. ft.: Two (2) 100 watt lamps.
 - 2) Rooms or spaces over 250 sq. ft. and under 500 sq. ft.: Four (4) 100-watt lamps.
 - 3) Rooms or spaces 500 sq. ft. and over: Two (2) 200 watt lamps for spaces 500 sq. ft. to 1000 sq. ft. and two (2) 200-watt lamps for every 1000 sq. ft. or fraction thereof.
 - 4) Sufficient additional wiring outlets and lamps shall be installed to insure proper lighting in stairwells, corridors and passage areas.
 - 5) Temporary power, in addition to the lighting requirements, shall be provided throughout the building for electrically operated tools, based on a minimum of 0.50 watts per sq. ft.
 - 6) Outlets shall be located at convenient points so that extension cords of not over 50 feet in length will reach all work requiring light or power.
 - c. All necessary cables, load centers, switches and accessories required for the temporary light and power installation shall be provided and installed by the Electrical Subcontractor.
 - d. The Electrical Subcontractor shall furnish and install all lamps, both initial and replacement until the date of Substantial Completion.
 - e. Temporary light and power requirements herein required is for the use of all trades working at the site.
 - f. All Contractors and Subcontractors shall, individually, furnish all extension cords and lamps therefore, sockets, motors and accessories required for their work.

- g. The General Contractor, Separate Contractors, and other Subcontractors, shall reimburse the Electrical Subcontractor for the following:
 - 1) Any temporary wiring of a special nature, other than that specified above, required for their work.
 - 2) Any temporary wiring of construction offices and buildings used by them.
 - 3) Any temporary wiring for protective night lighting.
 - h. All temporary wiring, service equipment, and accessories thereto shall be removed by the Electrical Subcontractor when directed by the General Contractor.
 - i. The provisions of the Massachusetts Electric Code shall be strictly complied with respect to Article 305 of said code, and the following precautions shall be taken:
 - 1) Open conductors shall be fastened at ceiling height at minimum of 10 ft. intervals. Conductors may not be laid on the floor, and receptacles or fixed equipment circuits shall contain a separate equipment grounding conductor if run as open wiring. Receptacles shall be of the grounding type. Branch circuits, unless installed in a complete metallic conductor and receptacles electrically connected to the grounding conductor. No bare conductors nor earth returns shall be used for wiring of any temporary circuits. Grounding circuits shall never be interrupted.
 - 2) All 15 ampere and 20 ampere receptacle outlets on single phase circuits which are used for construction purposes shall have approved ground-fault circuit protection for personnel, as required by Article 210 of the Massachusetts Electrical Code.
- J. Interim Electricity: The Electrical Subcontractor shall be responsible for Interim Electricity as defined above and further specified as follows.
 - 1. The permanent electric power and lighting system in a given area shall be completely installed as designed before the system may be used in such area.
 - 2. At the termination of the use of the permanent electrical light and power system for interim electric, all panelboards shall be inspected and cleaned, and all permanent lighting fixtures which have been used shall be thoroughly cleaned and provided with new lamps, bulbs, fluorescent tubes, etc., to provide like-new performance.
- K. Where a distinction is made above between temporary services to be provided by a General Contractor and those to be provided by a Subcontractor, the purpose is only to clarify which costs are to be included by Subcontractors in their Subcontracts with the General Contractor. These distinctions have no bearing upon the Contract between the Owner and the General Contractor and do not limit in any way the General Contractor's responsibility to provide all such temporary services without additional cost to the Owner. For the sake of clarity in this section, the term General Contractor has been used for the person called the Contractor in other sections of the Specification, when the intent is that that person shall provide a service directly at his own expense rather than at the expense of one of the Subcontractors from whom the Owner has taken filed sub-bids.
- L. The temporary services described above may not be adequate to provide for all of the needs of the General Contractor or all Subcontractors, but are intended only to provide a basis for obtaining filed sub-bids. The General Contractor or any Subcontractor requiring additional temporary services for the proper execution of his work or because of climatic conditions shall arrange for and obtain such services at his own expense without further compensation by the Owner.

- M. The Contractor shall furnish, maintain and pay for complete telephone and internet services in the field offices, by Verizon or approved equal, with "Touch Tone" dialing service.
 - 1. All costs of internet, local and long distance telephone service, including installation and removal charges, shall be paid for by Contractor.

2.03 TEMPORARY SANITARY FACILITIES

- A. The General Contractor shall provide suitable toilet facilities for its staff, the Owner's Project Manager, and the Architect, and additional facilities for the workmen on the job, including personnel of Sub-contractors and Filed Sub-contractors.
- B. Provide chemical toilets where work is in progress and in quantity required by OSHA Code.
- C. Chemical toilets and their maintenance shall meet requirements of state and local health regulations and ordinances and shall be subject to the approval the Owner and Architect.
- D. Upon completion of new toilet facilities, the Owner may designate a specific toilet area to be used for the General Contractor and Sub-contractors engaged in the Work. However, General Contractor shall take responsibility for maintenance and cleaning of such areas and shall leave them in first class condition equal to the accepted conditions of toilet facilities not used for construction personnel.

2.04 TEMPORARY FIRE PROTECTION

- A. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas and conspicuously post signs to this effect.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
- B. The General Contractor shall take all necessary precautions for the prevention of fire during construction. He shall be responsible that the area within the contract limits is kept orderly and clean and that combustible rubbish is promptly removed from the site. Combustible materials shall be stored on the site in a manner and at locations approved by the Architect. The General Contractor shall comply with all suggestions regarding fire protection made by the insurance company with which the Owner maintains his fire insurance.
- C. The General Contractor shall provide and maintain in good working order, under all conditions, readily available to all portions of the site and work, suitable and adequate fire protection equipment and services. Such facilities shall include, but not be limited to, the furnishing and maintaining in good working order a minimum of two standard, Underwriter's Laboratories labeled, 2-1/2 gal. capacity fire extinguishers per floor.
- D. Smoking shall be prohibited on the premises and signs to this effect shall be posted conspicuously.
- E. Fires shall not be built on the premises.

- F. Strict safety precautions shall be observed when burning with a torch or using other open flames. Contractor shall provide adequate type and number of portable fire extinguishers so that wherever and whenever a torch or open flame is used, a fire watch armed with an appropriate fire extinguisher shall be used. Comply with requirements of Belmont Fire Department, obtain Hot Work Permit for each day as required, and pay all fees and charges including a firefighter detail.
- G. On each floor of each work area, near each stairway, in clear view, a Type A-B-C fire extinguisher shall be provided mounted on a red painted 2 ft. by 4 ft. plywood panel, clearly marked in white "Fire Extinguisher."

2.05 TEMPORARY STAGING AND SCAFFOLDING

- A. The General Contractor shall furnish, erect, and maintain in safe condition all exterior and interior staging and scaffolding required for his own use. Where staging and scaffolding over 8 ft. high is required, the Contractor shall provide the entire installation, including the first 8 ft., for the use of all Subcontractors on the project, as required to properly carry out and complete the work, except as may otherwise be specifically provided for in any of the trade sections of this Specification. This staging and scaffolding thus provided shall be without charge to the trades using same.
- B. Each of the Subcontractors shall furnish, erect, and maintain in safe condition all exterior and interior staging and scaffolding which does not exceed 8 ft. height for their own use.
- C. Staging and Scaffolding shall comply in all respects to the governing laws and codes.

2.06 TEMPORARY HOISTING EQUIPMENT AND MACHINERY

- A. The General Contractor shall furnish, install, operate, and maintain in safe condition all hoisting equipment and machinery required for his own use and for the use of all Subcontractors on the project to properly carry out and complete the work, except as may otherwise be specifically provided for in any of the trade sections of the Specifications.
- B. All hoisting thus provided shall be without charge to the trades using same.
- C. All hoisting equipment and machinery, and operation shall comply in all respects to the governing laws and codes.

2.07 TEMPORARY BRACING, SHORING, SHEETING, TIE-DOWN

- A. The General Contractor shall take all precautions to protect the Work against collapse or other damage by earth or construction loads, high winds, snow and rain loads, damage by adverse weather conditions or geological disturbances, or other cause, by temporary bracing, shoring, sheeting, guying, lacing, covering, weighting, and other reasonable and prudent means.

2.08 CONSTRUCTION CLEANING AND TEMPORARY TRASH CONTAINERS

- A. The General Contractor shall provide temporary dumpster type trash containers outside the building for use by all filed sub-bid and non-filed sub-bid trades, and shall have the containers replaced, hauled away, and the contents legally disposed of at sufficient intervals to maintain them at all times in sufficiently empty condition that they are continuously ready to receive trash and debris.

Excluded from these temporary trash containers shall be (1) all removed existing materials, trash, and debris resulting from demolition operations and (2) all removed materials

resulting from site work, including all excavated site materials, whether the work of these categories is by the General Contractor, Filed Sub-Bid Subcontractors, or Non Filed Sub-Bid Subcontractors.

- B. Waste materials and rubbish which might otherwise raise dust shall be sprinkled during handling and loading to minimize this effect. Debris shall be carried out of the structure in containers or dropped in fully enclosed chutes and shall not be passed through, or thrown from, windows or other wall openings, and in no case shall be permitted to drop freely therefrom.
- C. All waste materials and rubbish shall be disposed of legally, off the-site.

2.09 TEMPORARY STAIRS, LADDERS, RAMPS, PLATFORMS, ETC.

- A. The General Contractor shall provide and maintain all necessary temporary stairs, ladders, ramps, platforms, and other temporary construction required for the proper execution of the work, all of which shall comply with requirements of the governing laws and codes. The General Contractor shall also provide and maintain necessary temporary exit stairs at each phase to maintain means of egress for all occupants as required by the governing laws and codes and/or as required by local building officials.
- B. As soon as permanent stairs, ladders, ramps, platforms, etc. are erected, the General Contractor shall provide temporary protective wood treads and temporary handrails, or other protection acceptable to the Architect, before the stairs are permitted to be used.
- C. After door and fixed glass frames have been installed, the General Contractor shall provide all necessary protective covers and framing required to assure that such items will not be damaged as the work progresses.

2.10 TEMPORARY FENCING, BARRIERS, AND PARTITIONS

- A. Protection: The General Contractor shall be fully responsible for security of the work areas of the site and for patrolling and protecting the work under construction and his and the Owner's materials stored or otherwise located on the site.
- B. Temporary Construction Fencing: The General Contractor shall furnish and install temporary construction fencing around the project site, generally following the limit-of-work lines, for each of the construction phases, as indicated on the Drawings. Construction fence and gates shall be constructed of new materials and shall be minimum 8 ft. high of either plywood or chain link fence construction. If of chain link fence construction, materials and installation shall conform to "Galvanized Steel Chain Link Fence Fabric" and "Industrial Steel Specifications for Fence Posts, Gates and Accessories" by the Chain Link Fence Manufacturers Institute. Fabric shall be 11 gauge minimum by 2 in. maximum, line posts shall be 2-1/2 in. O.D., end and corner posts 3 in. O.D., and gate posts 4 in. O.D. Concrete footings 3 ft. deep shall be used at all end posts, corner posts, and gate posts. All line posts shall be driven. Top and bottom tension wires shall be used subject to Architect's approval. If of plywood, the fence shall be of exterior grade plywood, with at least C quality sanded veneer to outside, and with wood posts of not less than 4 in. by 4 in. nominal size located not farther than 8 ft. apart.
- C. Temporary Barricading: In addition, the General Contractor shall provide other temporary fencing, barricading, and overhead protection of substantial nature to protect workmen, other personnel, and the public against various hazards and attendant nuisances that come about as the work progresses such as, but not necessarily limited to, falling materials, dangerous excavations, dangerous projections or obstructions, stored or stock piled materials, etc. Comply fully with recommendations of the Association of General Contractors and provisions of the governing laws and codes.

Note: As part of requirement for overhead protection, include substantial, well-constructed, walkway covers sufficient to assure pedestrian safety, in accordance with recommendations of the Association of General Contractors and provisions of the governing laws and codes.

- D. In addition, The General Contractor shall provide all necessary protective barriers within the existing building as required to assure the safety of persons and property wherever work of this Contract is being carried out. Include substantial, well-constructed, protective barriers at all construction phase work-limit-lines separating Contract work areas from areas occupied by Owner. Also include flameproof dust-curtaining and block or filter mechanical return air systems in a safe manner, in cooperation with Mechanical trade, between areas where dust effusive work is being carried out and other interior areas of the new addition and existing building to prevent passage of dirt and dust. Barriers, curtaining, etc., must be self-supporting, and must not depend on building construction for primary structure or anchorage. Locations and quantities of barriers and dust curtaining shall at all times be subject to Owner's and Architect's approval, but such approval, or lack of inspection or approval, by the Owner or the Architect, shall not be construed as relieving the Contractor of any of his responsibilities under the Contract.

2.11 TEMPORARY PROTECTIVE NIGHT LIGHTING

- A. The General Contractor shall be responsible to arrange for adequate outdoor lighting to illuminate stagings, stockpiles, trenches, dangerous projections, excavations and the like as required to protect the safety of workmen, other personnel, and the public and as an aid in the protection against theft and vandalism.

2.12 SITE SECURITY, POLICE DETAILS

- A. The General Contractor shall ensure that the site is secured at night, and when the General Contractor's forces are not at the project site for the purpose of preventing illegal trespassing, unauthorized entry, theft, and vandalism at times when work is not in progress. Any loss or damage occurring as a result of not having watchmen on duty shall be borne by the General Contractor.
- B. Contractor shall provide the services of police details as necessary and as required by authorities having jurisdiction.

2.13 SECURITY

- A. The Contractor shall continuously maintain the security of each phase of the work being performed. The Contractor shall cooperate with the Owner in particularly sensitive areas where security and special safeguards are required. Contractor shall ensure that all windows, doors and other openings in buildings are tightly secured at the end of each work day.
- B. The Contractor shall be wholly responsible for protecting the work under construction and the materials stored on the site, and shall adequately protect the building against theft and vandalism and against fire, windstorm, rain, cold, and other hazards.

2.14 NOISE, DUST, AND POLLUTION CONTROL

- A. All work performed under the Contract shall conform to the requirements of Chapter III, Section 31C and Section 142D of the General Laws, Commonwealth of Massachusetts and Rules and Regulations adopted thereto by the Commonwealth of Massachusetts, Department of Public Health, and the requirements of local noise, dust, and pollution control laws, ordinances, and regulative agencies applicable to the work, and to more

stringent requirements of the Contract Documents, governing limitation of noise and environmental pollution.

1. Workers in dusty areas shall be equipped with protection and safety facilities in accordance with requirements of authorities having jurisdiction.
 2. Dust and other debris resulting from work with painted materials or hazardous material shall be lawfully disposed of, and all treatment of hazardous material shall conform to requirements of authorities having jurisdiction.
- B. Work performed under this Contract shall conform to the requirements of Chapter III, Section 31C and Section 142D of the General Laws, Commonwealth of Massachusetts and Rules and Regulations adopted thereto by the Commonwealth of Massachusetts Department of Public Health, and the requirements of local noise, dust, and pollution control laws, ordinances, and regulative agencies applicable to the Work, and to more stringent requirements of the Contract Documents, governing limitation of noise and environmental pollution.
- C. Dust: General Contractor shall provide adequate means for the purpose of preventing dust caused by construction operations from creating a hazard, nuisance, and from entering adjacent occupied areas throughout the period of the construction contract.
1. This provision does not supersede any specific requirements for methods of construction or applicable general conditions set forth in the Contract Articles with added regard to performance obligations of the General Contractor.
- D. Noise: Comply with requirements of authorities having jurisdiction. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.
1. Endeavor at all times to maintain as low a level of construction noise as practicable in order not to create a disturbance in the neighborhood in conformance to Belmont Noise Bylaw (<https://ecode360.com/27111830?highlight=noise#27111830>) requirements and other specified requirements.
 2. Execute construction work by methods and by use of equipment which will reduce excess noise.
 - a. Equip air compressors with silencers, and power equipment with mufflers.
 - b. Manage vehicular traffic and scheduling to reduce noise.
 - c. No heavy equipment may be started or Idled before 7A.M.
 3. Any high noise level operations intended to occur during early morning and evening hours or weekends shall be subject to review and approval by Owner prior to proceeding.
 4. Any complaints duly registered by Owner of unacceptable noise levels shall be cause for the use of special precautions and methods of operation by Contractor to reduce noise to acceptable levels, at no additional cost to Owner.
 - a. Owner will be the sole judge of the tolerability of noise levels.
- E. General Contractor shall institute all measures required to control the generation of dust and to contain contractor-generated dust, inside and outside the building and to the work areas. Provide substantial dust barriers to conduct dust-laden exhaust air away from occupied spaces so as to cause no nuisance, If necessary to limit objectionable levels of dust, provide dust trapping systems or filters. Provide equipment and air filtration systems to maintain work areas in building at negative pressure with respect to adjacent building areas. Use water fog and mist (riot spray or stream) to dampen dusty areas. Contain waste debris disposal operations in enclosures, chutes and covered containers.
1. If the spread of construction generated dust to neighboring property is found to be objectionable, Contractor shall increase efforts to contain construction dust until acceptable conditions are obtained to the satisfaction of the Architect, at no additional cost to the Owner.
 2. Provide workers in dusty areas with protection and safety facilities in accordance with requirements of authorities having jurisdiction.

3. Dust and other debris resulting from work with painted materials or hazardous material shall be lawfully disposed of, and treatment of hazardous material shall conform to requirements of authorities having jurisdiction.
4. Prevent dust from entering the ventilation systems by covering, sealing and protecting ductwork, diffusers, grilles, louvers and vents.
5. Protect, cover and seal fire detection and alarm components.
6. Protect, cover and seal light fixtures and lamps.
7. Use tools with directly attached vacuum hoses when engaging in activities that produce dust. Do not sweep using dust control products that contaminate floors with oil or other contamination detrimental to finish floor installation. Do not use compressed air to clean unless vacuums are being used simultaneously.
8. Limit dust to 150 micrograms of airborne, breathable particles per cubic meter of air.

2.15 WATER CONTROL

- A. The General Contractor be responsible for site drainage and snow removal within the Limit-of-Work lines and shall maintain such drainage and removal during the life of the Contract in a manner approved by the Owner and Architect, and so as not to adversely affect the adjacent areas.
- B. Legally remove by pumping, draining, or bailing any water which may accumulate or be found on the site within the contract limits where excavating and grading are to be done, whether from rain surface flow, springs, ground water, backing-up drains or sewers, or from any other cause, at all times, and under any and all circumstances and contingencies that may arise. Form all pump wells, sumps, dams, flumes or other necessary work to keep trenches and excavations entirely clear of water. The General Contractor shall have at all times upon the site, sufficient and satisfactory pumping machinery. Pump wells or well points and underdrains as may be required, shall be provided where needed to properly handle the water. The final trimming excavation shall not be done until de-watering means are in place and in operation.
- C. Water from trenches and excavations shall be disposed of in such manner as will not be a threat to public health nor cause damage to public or private property. It shall not be disposed of over surfaces of roads, walks, and streets, nor be permitted to cause any interference with the normal use of same.
- D. Removal of snow and ice from within the limit-of work lines at the site as required to maintain the continual progress of the work, including that required to keep work areas, access roads, storage areas, clear, free, and in use, and as required to prevent damage to existing construction and new work in place.

2.16 PROTECTION OF NEW AND EXISTING CONSTRUCTION

- A. The Contractor shall protect all new and existing finished surfaces against possible damage from operations under this Contract and shall restore or replace all surfaces that are damaged by operations under this Contract to the original condition, to the satisfaction of the Architect, at no additional expense to the Owner.
- B. When new finished flooring is completed in an area, it shall be protected by the Contractor from dirt and damage by covering with heavy paper or other approved covering. Protective covering shall be replaced if it becomes torn or otherwise damaged.
- C. The Contractor shall keep traffic on roofs to an absolute minimum and shall permit traffic only as required to complete the work under the contract. Protect roof surfaces to prevent damage, and repair or replace damaged roofing and substrates by any necessary means, in accordance with specifications and the requirements and

recommendations of the manufacturer of the affected roofing system, to the satisfaction of the Architect, at no additional cost to the Owner.

- D. The Contractor shall not load, or allow any part of the structure to be loaded, with a weight that will endanger its safety or the safety of personnel operating in or around the premises.

2.17 TEMPORARY JOB SIGNS

- A. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - 3. Provide temporary, directional signs for construction personnel and visitors.
 - 4. Maintain and touchup signs so they are legible at all times.
- B. The General Contractor shall erect, paint, and maintain one project sign with supports, giving the name of the project, the funding source, the name of the Owner, the Architect, the Architect's Consultants and the General Contractor, professionally lettered of a design subsequently to be submitted by the Architect. No other signs or advertising matter of any kind shall be allowed except with further approval of the Architect.
 - 1. Provide construction delivery control, traffic, and site exit and entrance signs. Provide all vehicular traffic, parking and pedestrian traffic control signs. Provide safety, warning and life safety egress signs.
 - 2. Advertising, election, and other non-required temporary signs are prohibited.
 - 3. Comply with local sign ordinances and requirements of authorities having jurisdiction prior to sign erection.
 - 4. Obtain and pay for all sign permits required by authorities having jurisdiction.
 - 5. Remove and dispose of temporary signs when directed by Owner. Deliver to the Owner any temporary sign identified.
- C. The sign shall be approximately 4 ft.-0 in. by 8 ft.-0 in., constructed of exterior Grade A exterior Plywood, contained in wood frame, and shall be mounted above ground on 4 in. by 4 in. wood posts as directed by the Architect.
 - 1. The sign shall be relocated as required as directed by the Architect.
- D. Construction Delivery, Traffic Control, and Site Entrance / Exit Signs:
 - 1. Provide at all site entrances and exits. Direct deliveries and construction traffic to construction entrances. Prohibit deliveries and construction traffic from Owner's entrances, drives and parking areas.
 - 2. Provide 30 by 30 inch aluminum sign panels with vinyl computer cut wording or silkscreen painted. Sign panels to have black text on yellow or orange back ground. Sign supports to be similar to "37024" Seton Identification Products, www.seton.com.
- E. Other Signs:
 - 1. Provide 12 by 18 inch aluminum signs with vinyl computer cut wording or silkscreen painted. Sign panels to have red and black text on white back ground, except standard highway sign colors for traffic. Sign supports to be similar to "37025" Seton Identification Products, www.seton.com.

2.18 TEMPORARY FIELD OFFICES

- A. The general Contractor shall maintain temporary field offices within the existing building. Provide separate lockable space, minimum 150 square feet, for sole use of the Owner.

- B. Availability: Provide office ready for occupancy within 15 days after date fixed in Notice to Proceed.
- C. Office Equipment and Supplies: Contractor shall provide, in good condition and working order, and maintain, as follows:
1. Two (2) metal desks with plastic laminate tops, 30 x 60 inches, pedestal style with two drawer letter hanging file on one side and three drawer pedestal on other side, pencil drawer center, pencil drawer and one pedestal lockable, with two keys.
 2. Two (2) cushioned office swivel chairs, fully adjustable, with arms and five caster base.
 3. One (1) four drawer letter size metal file cabinets, with metal hanging frame in each drawer and lockable, each with three keys.
 4. One (1) portable 30" hanging plan rack units, on casters, each with twelve sticks for 30" sheet size, each stick with three tightening knobs.
 5. One (1) waste baskets with plastic bag liners.
 6. One coat rack, consisting of wall mounted panel of six coat hooks spaced 6 inches apart, with hat shelf.
 7. Four (4) individual coat hooks located as directed.
 8. Plan table, minimum size 42" deep by 72" long, with sloped surface, raised lip at front (low) edge, height as directed.
 9. One cushioned swivel drafting stool with back, foot rest, fully adjustable, on base with five casters.
 10. Four (4) metal folding chairs, with cushioned seats.
 11. Full function copier/ fax/ scanner furnished with full documentation and manuals. Include maintenance and service agreement, including all required replacement parts, for duration of the Contract. Provide MSDS sheets for all copier supplies. Provide all necessary supplies for exclusive use of Owner and Architect including paper and ink/toner, for operation of copier.
 12. One combination water dispenser and refrigerator, with hot and cold spigots. One six gallon container of spring water delivered every two weeks, continuous stock of flat bottom cups.
 13. First class mercury thermometer, mounted outside in clear view from the interior window.
 14. One type ABC fire extinguisher, 20 lb, charged and inspected.
 15. Fully stocked first aid kit, with no items beyond expiration date, with supplies regular replenished and replaced before expiration dates.
 16. Dedicated telephone lines for phone, fax and internet service for the Owners Clerk of Works.
- D. In the General Contractor's office, or in an additional meeting room space provided by the General Contractor, shall be additionally provided a table seating for ten, and ten additional folding chairs for site meetings.
- E. The General Contractor shall maintain heat, light, air conditioning, and appropriate electrical power in each office. Telephone service, answering machine, internet and FAX facilities in each office shall be provided and paid for by the General Contractor.
- F. Provide the Owner's office with the latest edition of the following documents:
1. Massachusetts State Building Code (two copies).
 2. Means Construction Estimate Book including mechanical, electrical, and general building construction books (two copies).
 3. NFPA 13, 13A, 14, 14A, 20, 70 and 101 Standards.
 4. Complete set of Contract Documents, including Drawings and Specifications.
- G. The General Contractor shall provide cleaning services in each office at regular intervals, as required to maintain the spaces in clean, orderly condition.

- H. Prior to Substantial Completion, all temporary field office construction and facilities shall be removed by the General Contractor.

2.19 TEMPORARY STORAGE FACILITIES

- A. Space for storage of materials shall be confined to the project area limit-of-work lines designated for each Phase, at specific locations as directed or approved by the Architect.
- B. The General Contractor shall provide temporary storage sheds and other covered storage facilities for the storage of materials which are subject to damage by weather, as required.
 - 1. If additional storage is required, Contractor shall obtain and pay for the use of additional storage space, off the site. If payment for materials stored off site is to be requested in any application for periodic payment, storage shall be in a bonded warehouse or other property not owned or under other control of the Contractor or any Subcontractor or supplier, and acceptable evidence of title to the Owner and of adequate insurance shall be delivered with the application for payment.
- C. Prior to completion of construction, when required for the completion of site work, as directed or approved by the Architect, all temporary storage facilities and surplus materials shall be removed from the site.
- D. In the existing building while work therein is being carried on, the General Contractor may use interior areas within the limit-of-work lines for the storage of materials provided such storage, and the handling required thereby, does not damage or overload the new and existing building structure and finishes and that such storage does not interfere with the safe and expeditious performance of the work, nor will create a fire hazard.
- E. Storage of material within the new structure will be permitted only provided such storage, and the handling required thereby, does not damage or overload the building structure, does not damage other completed work and finishes, does not interfere with the safe and expeditious performance of the work, and does not cause a fire hazard.

2.20 ENCLOSURES

- A. Provide temporary, insulated, weather tight closures of openings in exterior surfaces for providing acceptable working conditions and protection for materials, allowing for heating during construction, and preventing entry of unauthorized persons. Provide doors with self-closing hardware and locks.
- B. All utilities including electric ducts, conduits, telephone lines, sprinklers, and other utilities shall be protected against damage from construction activity. The General Contractor shall be responsible for all damage to the utilities from construction and shall repair all such damage at no additional cost to Owner.

2.21 TEMPORARY RODENT AND PEST CONTROL

- A. Throughout work of the Contract, in all construction Phases, retain a local exterminator or pest control company holding a current license issued by Massachusetts Pesticide Board, and experienced in pest control procedures during construction operations, to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion of each construction Phase and on completion of the entire Work. Perform control operations lawfully, using environmentally safe materials.

- B. Use only rodenticides and pesticides which bear a Federal registration number of the US Environmental Protection Agency and are approved by Massachusetts regulators for the intended application. Contractor shall be liable for injury to persons or domestic animals in the use of toxic materials, and shall determine the appropriate materials from the available products for each type of pest and condition of the work. Application of each material shall strictly conform to recommendations and instructions of the manufacturer.
 - 1. Instruct all workers, subcontractors at all tiers, vendors, suppliers and delivery personnel, all personnel of the Owner, Architect, testing agencies, and all engineering consultants, in writing, concerning the proper sanitation procedures and material storage methods to ensure that rodents and pests are not harbored or attracted to work site or lay down areas.
 - 2. Post warnings and instructions in conspicuous locations throughout the site, acceptable to Owner, and at all storage areas and locations of treatments and toxin applications, as appropriate.
 - 3. Advise property owners and residents in the neighborhood of the site, in writing as approved by the Owner and Architect, of measures being taken to control rodents and pest, and of safety procedures for domestic pets at the beginning of each construction Phase and whenever changes in method or recommended safety precautions dictate, as acceptable to Owner and Architect.
- C. For each Construction Phase, submit a detailed plan for rodent and pest control, coordinated with Contractor's construction schedule, to Architect for information and comment Submit, at start of first construction Phase and whenever a change in products is proposed, complete Product Data sheet for all rodenticides and pesticides proposed for use, including manufacturer's product data, MSDS sheets, and application instructions to Architect for review. Include certifications that materials meet specified regulatory requirements.
- D. During construction, submit with Contractor's weekly report to Architect individual reports on activities, including location of sites treated, amounts and types of treatment.
- E. Treatment shall be performed at least weekly throughout the entire Project, including areas not within the current Phase Areas as appropriate to rid structures and adjacent areas of rodents and insect pests, and to prevent their migration to other properties around the Project Site. Renew toxic bait and other materials periodically as recommended by manufacturer.
- F. Remove rodent carcasses daily and dispose of properly according to law. Maintain refuse containers in first class condition, and replace immediately if damaged or otherwise rendered in unacceptable condition. Containers for this application shall be rodent resistant and clearly marked and reserved for this use, with warnings to all personnel that improper use shall result in dismissal. Clean and remove refuse from the work areas, other treated areas, and lay down areas daily. If Contractor fails to have the refuse removed daily, Owner will have the work done by others and deduct the cost of such operations from the Contract Sum.
- G. On completion of each construction Phase, and as a condition of Substantial Completion of such Phase, remove remaining exposed bait and other treatments completely, leaving no residue, and dispose of properly according to law. On Substantial Completion of the final construction Phase, remove all bait and treatments as for interim Phases, and remove all refuse containers, notices and other related facilities, and perform complete inspection of the entire Project to determine recommendations to the Owner of follow up and continuing pest control services.

2.22 PARKING CONTROL AND CONSTRUCTION DELIVERIES

- A. The Contractor shall control the use and parking of trucks and construction vehicles to prevent congestion in the vicinity of the Project, conforming to the requirements of

Construction Management/ Mitigation Plan prepared by the General Contractor and Phasing Plans in the Drawings. There shall be no idling of construction vehicles on the project site.

- B. General Contractor shall limit the use of the Site to construction vehicles and equipment. No workers' vehicle parking will be permitted on Site. Should on-street parking by workers become an issue, Contractor shall be responsible for making alternate arrangements with the workers.
- C. Workers' Parking: On-street parking shall not be permitted. All parking shall be on site, and shall conform to the aforementioned Construction Management / Mitigation Plan.

2.23 DRINKING WATER

- A. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking water, including paper cup supply.
 - 1. Where power is accessible, provide electric water coolers to maintain dispensed water at 45 to 55 deg F.

2.24 DRAINAGE AND SEWERAGE

- A. Sewers and Drainage: If sewers or drains are available, provide temporary connections to remove effluent that may be discharged lawfully. If sewers or drains are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully accessed for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
- B. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants which might clog sewers or pollute waterways before discharge.
 - 1. Connect temporary sewers or to the municipal system, as directed by sewer department officials.
 - 2. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following use, restore normal conditions promptly.
- C. Provide earthen embankments and similar barriers in and around excavations and subgrade construction sufficient to prevent flooding by runoff of storm water from heavy rains.

2.25 TEMPORARY PAVING

- A. Construct and maintain temporary roads, walks and paving to support the indicated loading adequately to withstand exposure to traffic during the construction period. Locate temporary paving for roads, and parking where the same permanent facilities will be located. Review proposed to permanent paving with the Architect.
- B. Paving: Comply with applicable Specification Sections for construction and maintenance of temporary paving.
 - 1. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
 - 2. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
 - 3. Delay installation of the final course of permanent asphalt concrete paving until immediately before Substantial Completion. Coordinate with weather conditions to avoid unsatisfactory results.

4. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration, and supervision.
- C. On completion of work in site Phase Area where temporary paving has been installed, remove and properly dispose of temporary paving, and restore surface to original condition, or install indicated site development.

2.26 COLLECTION AND DISPOSAL OF WASTE

- A. Provide identifiable waste receptacles distributed conveniently around the site and throughout the buildings. Provide separate containers for combustible and non-combustible waste. Collect waste from construction areas and elsewhere daily: waste shall not be left in the buildings overnight, nor in open containers on the site. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully. Refer to Safety Requirements and Hazardous Materials Sections for additional requirements.
- B. Provide at least one metal rubbish chute serving each level in the current construction Phase. Chutes shall be reasonably dust tight, properly constructed and supported. Chutes shall have offset angled discharge to either a container or truck loading point, with adequate protection against release of debris and dust at the discharge. Locate chute at most remote practicable point from areas Occupied or in use by Owner and from properties of others. Institute dust control measures whenever chute is in use.
- C. Do not permit any material to be thrown or discharged from the windows or the roofs of the building.
- D. Packaging materials for all products, materials and equipment shall be promptly removed from the building on unpacking each item.
- E. Provide proper and lawful means of disposal of all wastes generated in the work. Waste water from cleaning operations, including cleaning of masonry, may contain material that may not be discharged into public sewers, and Contractor shall provide suitable means for holding, filtering and legally disposing of such waste water.

2.27 MAINTENANCE OF STREETS, WALKS, AND GROUNDS

- A. The Contractor shall maintain all access roads and walks in areas under his control clear of debris and obstructions during entire time of the Contract. He shall also be responsible for the repair of off-site Streets, curbs, sidewalks, poles, etc., where disturbed or damaged by operations under this Contract, and leave them in as good condition after completion of the work as before operations started. He shall immediately notify the proper authorities in case of damage to utilities, municipal property, or the Owner's property. Work in public ways shall conform to applicable provisions of the Contract Documents, or to higher requirements of local authorities having jurisdiction.
- B. The Contractor shall remove all snow and ice that may interfere with the work, damage the materials or finishes, adversely affect subsurfaces, impede workers, the public or in any way interfere with the normal progress of the work. Removal shall occur promptly so as to continuously leave roads and walks on the Site and immediately adjacent to the site safe for vehicular and pedestrian passage. Where necessary to maintain access or room for operations, Contractor shall haul snow and ice to a lawful disposal area off the site at no additional cost to the Owner.

- C. No unauthorized entry, passage through, or storage or disposal of materials shall be made upon any part of the site or adjoining property, outside the Contract-limit-lines.

2.28 MUNICIPAL POLICE AND FIRE DEPARTMENT SERVICES

- A. Make all necessary arrangements with the municipal police and fire departments in advance of time when regular off-duty, or reserve police officer or firefighters will be needed for traffic control or fire watch for operations of the Contract. Pay police officers (traffic detail) and firefighters (fire watch) at the prevailing wage rates of the municipality for such services. Extend Workers Compensation Insurance and Employer's Liability Insurance, required under the Contract, to cover police and firefighters used on the Project.
- B. Fire Watch: Provide and pay for a fire watch detail whenever onsite welding, torching, and "hot-work" is being performed. Fire watch shall be a Town of Belmont firefighter.

2.29 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - 1. Protect porous materials from water damage.
 - 2. Protect stored and installed material from flowing or standing water.
 - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 - 4. Remove standing water from decks.
 - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After Installation of weather barriers but before full enclosure and conditioning of building, when Installed materials are still subject to Infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - 2. Keep interior spaces reasonably clean and protected from water damage.
 - 3. Periodically collect and remove waste containing cellulose or other organic matter.
 - 4. Discard or replace water-damaged material.
 - 5. Do not install material that is wet.
 - 6. Discard, replace, or clean stored or installed material that begins to grow mold.
 - 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 - 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 - 2. Use permanent 1-IVAC system to control humidity.
 - 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum- based products that become wet during the course of construction and remain wet for 48 hours are considered defective.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours.

Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.

- c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

PART 3 - EXECUTION

3.01 MAINTENANCE, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit waste and abuse.
- B. Maintenance: Maintain temporary facilities in operating condition; repair damages immediately upon discovery. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour per day basis.
- C. Termination and Removal: Unless otherwise requested by Owner or Architect, remove each temporary facility when no longer useful, or when replaced by permanent facility. Clean and renovate permanent facilities that have been used during construction period, including:
 - 1. Replace air filters and clean inside of ductwork and housings.
 - 2. Replace worn parts.
 - 3. Replace lamps.

END OF SECTION – 01 50 00

01 60 00 PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for materials and equipment used for the Project.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. GENERAL CONDITIONS and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS.
 - 2. Section 01 11 00, SUMMARY OF WORK.
 - 3. Section 01 33 00, SUBMITTAL PROCEDURES
 - 4. Section 01 77 00, CLOSEOUT REQUIREMENTS

1.03 MATERIAL AND EQUIPMENT INCORPORATED INTO THE WORK

- A. Conform to applicable specifications and standards.
- B. Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect.
- C. Manufactured and Fabricated Products:
 - 1. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - 2. Manufacture like parts of duplicate units to standard size and gages, to be interchangeable.
 - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
 - 4. Products shall be suitable for service conditions.
 - 5. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
- D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
- E. No asbestos containing products or lead containing products shall be permitted on this Project.
- F. All finishes and materials used in this Project shall be low V.O.C.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.05 MANUFACTURERS' INSTRUCTIONS

- A. When work is specified to comply with manufacturers' instructions, submit copies of said instructions, as specified in Section 01 3300, SUBMITTAL PROCEDURES, distribute copies to persons involved, and maintain one set in field office.
- B. Perform work in accordance with details of instructions and specified requirements. Should a conflict exist between Specifications and manufacturer's instructions, consult with Architect.

1.06 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.
- B. Transport Products by methods to avoid Product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling or damage.
- D. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct, and products are undamaged.

1.07 STORAGE AND PROTECTION

- A. Store Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weather tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated Products, place on sloped supports above ground. Cover Products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to assure Products are undamaged and are maintained under required conditions.
- E. After installation, provide coverings to protect Products from damage from traffic and construction operations, remove when no longer needed.

1.08 PRODUCT OPTIONS

- A. Within 30 days after date of Contract, submit complete list of major Products proposed, with name of manufacturer, trade name, and model.
- B. Options:
 - 1. Products specified only by reference standard: Any Product meeting that standard.
 - 2. Products specified by naming several manufacturers: Products of any named manufacturer meeting Specifications.
 - 3. Products specified by naming one or more manufacturers and "or equal": Submit a request for substitution for any manufacturer not specifically named.

1.09 MATERIAL SUBSTITUTIONS

- A. Substitutions of products shall comply with requirements of Chapter 30, Section 39M of General Laws, and additional requirements and procedures specified herein.
- B. Where products or materials are specified by manufacturer's name, trade name or catalog reference, the words "or approved equal" shall be understood to follow unless there is a statement specifically indicating that no substitution will be allowed. An item shall be considered equal to the item so named or described if in the opinion of the Architect:
 - 1. It is at least equal in quality, durability, appearance, strength and design; including compliance with applicable specifications and compatibility with physical space allocations provided for the item;
 - 2. It performs at least equally the function imposed by the general design for the work;
 - 3. It conforms substantially, even with deviations to the detailed requirements for the item as indicated by the Contract Documents.
- C. Should the Contractor, after the award of the Contract, wish to use any products or materials other than those specified, he shall request written permission of the Architect using Substitution Request Form - **refer to Section 00 6325 Substitution Request Form**. The request shall name and adequately describe (including shop drawings) the proposed substitutions, furnish any information requested by the Architect, and state what difference, if any, will be made in the Contract price, including the cost of changes in the Work, for such substitutions should they be accepted. Upon receipt of complete information from the Contractor, the Architect will consider all aspects of the proposed substitution and advise the Contractor in writing approving or disapproving the substitution. The principal reasons for approval or disapproval of the substitution will be enumerated by the Architect. Disapproval of the substitution shall not be cause for an increase in Contract price or a delay in schedule.
- D. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds, in all respects, specified Product.
 - 2. Will provide the same warranty for substitution as for specified Product.
 - 3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
 - 4. Waives claims for additional costs which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- F. Architect will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION – 01 60 00

01 73 00 EXECUTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.
- B. Related Requirements:
 - 1. Division 1 Section 01 11 00 SUMMARY OF WORK for limits on use of Project site.
 - 2. Division 1 Section 01 33 00 SUBMITTAL PROCEDURES for submitting surveys.
 - 3. Division 1 Section 01 77 00 CLOSEOUT REQUIREMENTS for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 4. Division 2 Section 02 41 19 "Selective Building Demolition" for demolition and removal of selected portions of the building.
 - 5. Division 7 Section 07 84 13 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.02 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.03 INFORMATIONAL SUBMITTALS

- A. Make Submittals in accordance with Division 1 Section 01 3300 SUBMITTAL PROCEDURES.
- B. Qualification Data: For land surveyor.
- C. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- D. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 - 4. Dates: Indicate when cutting and patching will be performed.

5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- E. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- F. Certified Surveys: Submit two copies signed by land surveyor.
- G. Final Property Survey: Submit two copies showing the Work performed and record survey data.

1.04 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.
 - h. Fire-detection and -alarm systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's

aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.

- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.03 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - a. Make no changes or relocations without prior written notice to Architect.
 - b. Report to Architect when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
 - c. Require surveyor to replace Project control points which may be destroyed.
 - 1) Establish replacements based on original survey control.
 - 2) Establish limits on use of Project site.
 - 3) Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4) Inform installers of lines and levels to which they must comply.
 - 5) Check the location, level and plumb, of every major element as the Work progresses.
 - 6) Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7) Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.04 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site work.
- E. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.05 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.06 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section 01 11 00 SUMMARY OF WORK.

- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.07 CORING AND DRILLING

- A. Coring and drilling of holes incidental to work of individual sections shall be performed by the trade requiring the penetration, except as follows:
 - 1. Coring and drilling of holes greater than 8 inches in diameter in concrete deck and slabs, and walls scheduled to remain, shall be performed by the General Contractor.
 - 2. Coring drilling in wall and roof surfaces leading to or from the outside of the building shall be performed by the General Contractor.
 - 3. The General Contractor shall be responsible for coordination of all coring and drilling and resultant patches necessary for the completion of this Contract and for the quality and appearance of all patch Work in exposed-to-view finished materials.

3.08 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.09 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.10 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 1 Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section 01 45 00 QUALITY CONTROL

3.11 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION – 01 73 00

01 74 00 DUST CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 1 General Requirements, apply to the work of this Section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section.
- C. Related Work Specified Elsewhere:
 - 1. Section 01 73 00 – Execution
 - 2. Section 01 74 19 – Construction Waste Management and Disposal
 - 3. Section 02 41 19 – Selective Building Demolition

1.02 SCOPE OF WORK

- A. The Contractor shall furnish and install all necessary labor, materials, equipment services, tools and other incidentals necessary for the following:
 - 1. Employ dust control procedures as hereafter specified throughout all work of this contract.
 - 2. Provide all other labor and materials as may be reasonably inferred to be required to make the work of this Section complete.

1.03 SUBMITTALS

- A. General: Submit the following in accordance with the Conditions of the Contract and Division 1 Specification Sections.
 - 1. Submit product data for Cleaning Solution.

1.04 REQUIREMENTS AND RESTRICTIONS

- A. All Materials from Cleanup shall be legally disposed of.
- B. **NOTIFY ARCHITECT AND THE OWNER IMMEDIATELY IF HAZARDOUS MATERIAL IS FOUND DURING REMOVAL PROCESS. SECURE THE SITE AND LEAVE SUSPECT MATERIALS ALONE UNTIL OWNER'S CONSULTANT DETERMINES COURSE OF ACTION.**
 - 1. For new materials brought on to the site, it is the contractor's responsibility to have an independent testing agency test and advise on toxic content.

PART 2 - PRODUCTS

2.01 CLEANING SOLUTION

- A. Cleaning solution shall not contain trisodium phosphate (TSP).
- B. Approved manufacturers:
 - 1. Savogran TSP-PF
 - 2. Simple Green
 - 3. Ledizolv
 - 4. Or approved equal.

PART 3 - EXECUTION

3.01 PURPOSE

- A. The purpose of these procedures is to assure that dust and debris are limited to the work area.

3.02 WORK AREA PREPARATION

- A. Cover entrances to the work area with a single layer of 6 mil polyethylene sheets taped to the top and weighted at bottom.
- B. Place drop cloths of 6 mil polyethylene sheets adjacent to surfaces to be disturbed. The drop cloth shall be at least 5 feet wide. The same drop cloth may be used to wrap components to be removed.
- C. Protect The Awarding Authority's Property and occupant belongings in work areas by covering them with 6 mil polyethylene sheets secured with duct tape.

3.03 DUST CONTROL PROCEDURES

- A. Use wet methods when demolishing walls or other components that produce dust during demolition. Mist all surfaces to be disturbed with a fine spray of water.
- B. Use power tools where possible. Power tools shall be equipped with a HEPA vacuum capable of trapping and retaining 99.97% of all particles 0.3 micrometers in diameter or greater.
- C. Wrap all materials to be removed in 6 mil polyethylene bags tied with at least 5" long plastic ties. Alternatively, clean by wet methods or HEPA vacuum prior to transport from the work area.
- D. Avoid spreading dust and debris outside the work area.

3.04 CLEAN-UP PROCEDURES

- A. Remove all accumulations of waste before conducting clean-up procedures.
- B. Mist debris with water prior to sweeping (no dry sweeping) and utilize HEPA vacuums to clean all surfaces.
- C. Vacuum all floors, and surfaces that might accumulate dust.
- D. Wet mop entire area using approved cleaning solution.
- E. Legally dispose of materials from clean-up. Do not discard them in trash cans.

END OF SECTION – 01 74 00

01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 1 General Requirements, apply to the work of this Section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section.
- C. Related work specified elsewhere:
 - 1. Section 01 73 00 – Execution
 - 2. Section 01 74 00 – Dust Control
 - 3. MasterFormat™ Divisions 02-07

1.02 SCOPE OF WORK

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.03 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:
 - 1. Demolition Waste:
 - a. Concrete.

- b. Concrete reinforcing steel.
- c. Concrete masonry units.
- d. Plywood and oriented strand board.
- e. Structural and miscellaneous steel.
- f. Rough hardware.
- g. Piping.
- h. Supports and hangers.
- i. Valves.
- j. Sprinklers.
- k. Mechanical equipment.
- l. Electrical conduit.
- m. Copper wiring.
- n. Lighting fixtures.
- o. Lamps.
- p. Ballasts.
- q. Electrical devices.
- 2. Construction Waste:
 - a. Site-clearing waste.
 - b. Concrete masonry units
 - c. Lumber.
 - d. Wood sheet materials.
 - e. Wood trim.
 - f. Metals.
 - g. Insulation.
 - h. Gypsum wallboard and cement backerboard.
 - i. Piping.
 - j. Electrical conduit and wiring.
 - k. Packaging: Regardless of salvage/recycle goal indicated in paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.
- 3. All other readily recycled materials.

1.05 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

1.06 QUALITY ASSURANCE

- A. Waste reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
 - 1. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
 - 2. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
 - 3. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

4. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

3.02 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General:
 1. Recycle paper and beverage containers used by on-site workers.
 2. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by Owner and Contractor.
 3. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- B. Procedures:
 1. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - a. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 2. Inspect containers and bins for contamination and remove contaminated materials if found.
 3. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.
- C. Best Practices:
 1. Use industry standard best practices to manage products legally and appropriately, including batteries, fluorescent lamps, and other items requiring special attention.

3.03 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Burning: Do not burn waste materials.
 4. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION – 01 74 19

01 77 00 CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements during contract closeout, including, but not limited to:
 - 1. Punch list Requirements
 - 2. Substantial Completion.
 - 3. Final Acceptance.
 - 4. Record document submittal.
 - 5. Operating and maintenance data.
 - 6. Instruction of Owners personnel
 - 7. Warranties and bonds
 - 8. Materials and finishes manual
 - 9. Pest control inspection and report
 - 10. Final cleaning.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. GENERAL CONDITIONS, and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS; Fiscal provisions, legal submittals, and additional administrative requirements.
 - 2. Section 01 11 00, SUMMARY OF WORK; Owner occupancy.
 - 3. Respective Sections of Specifications: Closeout Submittals for work of the Section.

1.03 PUNCH LIST REQUIREMENTS

- A. Definitions:
 - 1. Contractor's Punch List: Complete list of incomplete and incorrect Work prepared by the Contractor prior to request of Architect's inspection for Certification of Substantial Completion. As a minimum the List shall include the following information for each work item:
 - a. Location identification organized by Building, Area, Room Number, or combination thereof as appropriate to project
 - b. Clear identification of each incomplete work item. including all subcontractor's work.
 - c. Estimated value of each incomplete work item.
 - d. A short statement of why work is not complete.
 - e. Identify subcontract responsibility, as appropriate to each item.
 - 2. Architect's Punch List: A list of Incomplete and incorrect Work prepared by the Architect, which modifies the Contractor's Punch List, following review and acceptance of the Contractor's Punch List.
- B. Pre-Closeout requirements: Prior to requesting initial Architect's inspection for Certification of Substantial Completion, submit to the Architect a full and complete list of all incomplete work items (Contractor's Punch List).
- C. Punch list procedures at Substantial Completion:
 - 1. Architect will review submitted Contractor's Punch List and determine whether it is suitable to proceed with the Substantial Completion Process.

- a. If the Architect determines that the amount of completed work is insufficient to be considered for Substantial Completion, the Architect will not proceed with the Punch lists process until sufficient completion of the Project is achieved.
 - b. The Architect will review the Contractors Punch List and if the Architect determines that it does not reflect proper identification of the incomplete and incorrect work, he/she will request revision and resubmission of the Contractor's Punch List.
 - c. If the Architect determines that the amount of work indicated on the Contractor's Punch List is excessive, the Architect will suspend its review until the scope of Work identified in the Contractor's Punch is reduced to a level satisfactory to the Architect.
 - d. When the Architect reviews and accepts the Contractor's Punch List as being an accurate reflection of incomplete and incorrect work; the Architect will prepare and issue to the Contractor the 'Architect's Punch List.'
 - 1) The Architect's Punch List will be based on the Contractor's Punch List with modifications and additions as may be required.
 - 2) The Architect's Punch List includes Work which must be completed and corrected prior to Final Completion.
 2. Upon receipt of the Architect's Punch List, the Contractor shall immediately distribute the list to all subcontractors.
- D. Completion of Punch List Work: Make reasonable efforts to ensure that all "Architect's Punch List" items are completed or corrected within 14 calendar days from the date of the Architect's Punch List" or within the Contract Time, whichever is earlier.
- E. Architect's Final Inspection and review of Punch List Work:
1. After Contractor certification that all punch list Work has been properly completed the Architect will then perform the Final Inspection.
 - a. Incomplete Items: If the Architect discovers any incomplete or incorrect "Architect's Punch List" items or any other deficiency in the work, the Architect will prepare a "Revised Punch List" which may also include other incomplete Contract requirements such as record documents, owner's operation and maintenance manuals, warranties, and other Contract requirements. Architect's site reviews of the Work for this "Revised Punch List" and any subsequent revised Punch Lists shall be performed as additional service to Owner and back-charged to the Contractor.
 - b. The Architect may assign a dollar value for each item of incomplete or incorrect work remaining.
- F. Additional Inspections and related additional services fee: The Architect and the Architect's consultants will provide two site inspections, one at Substantial Completion, and one to confirm that the "Architect's Punch List" has been completed.
1. Revised Punch List: If the Architect prepares and issues a "Revised Punch List" because of the Contractor's failure to complete the Work, then the Owner shall compensate the Architect and the Architect's consultants for their additional services and additional inspections. The payment for additional services and inspections will be back-charged to Contractor. The Owner will deduct the amount of the Architect's additional services fee from final payment to the Contractor by Change Order.

1.04 SUBSTANTIAL COMPLETION

- A. Prior to requesting inspection for certification of Substantial Completion, complete the following:

1. On Application for Payment, show 99% completion for portions of work claimed as substantially complete. Submit list of incomplete items (Punch List), value of incomplete work, and reasons work is not complete.
 2. Obtain evidence of compliance with requirements of governmental agencies having jurisdiction including, but not necessarily limited to:
 - a. Certificate of Final Inspections, "signed off" by authorities having jurisdiction.
 - b. Certificate of Occupancy.
 3. Submission of product and installation warranties, workmanship bonds, maintenance agreements, Installer certifications and similar documents specified in individual sections.
 4. Submission of approved test/adjust/balance reports.
 5. Submission of maintenance instructions.
 6. Deliver to Owner and obtain receipts for:
 - a. Operation and Maintenance Manuals for items so listed in individual Sections of the Specifications, and for other items when so directed by the Architect.
 - b. Project Record Documents (as-built), including reproducible prints and AutoCAD 2000 format drawings on discs.
 - c. Warranties and bonds specified In Individual Sections of the Specifications.
 - d. Spare parts and materials extra stock.
 - e. Pest Control Inspection Report.
 - f. List of subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights weekends, and holidays.
 7. Certify equipment and systems have been tested in presence of Owner's representative, and are operational.
 8. Change over permanent locks and transmit keys to the Owner.
 9. Remove temporary facilities and services that are no longer required.
 10. Remove mock-ups, field samples and similar items.
 11. Complete final cleaning, including repair and restoration, or replacement of damaged Work.
 12. Remove surplus materials, rubbish and similar elements.
 13. Application for reduction of retainage.
 14. Consent of Surety.
 15. Advise the Owner of the change-over in security provisions.
 16. Notification of shilling insurance coverage.
 17. Final progress photographs.
- B. Within reasonable time, Architect will inspect to determine status of completion.
- C. Should Architect determine Work is not substantially complete, he will promptly notify Contractor in writing, giving reasons therefore. The Architect's notification will be detailed or general as he deems appropriate to the actual status of completion observed.
- D. Contractor shall substantially complete work, and remedy any noted deficiencies, and send a second written notice of Substantial Completion. Architect will reinspect the Work.
- E. When Architect determines Work is Substantially Complete, he will prepare AIA Document G704, Certificate of Substantial Completion in accordance with the GENERAL CONDITIONS and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS.

1.05 FINAL ACCEPTANCE

- A. Prior to requesting final inspection for certification of Final Acceptance and final payment, complete the following:

1. Submission of final payment request with releases and supporting documentation.
 2. Completion of incomplete Work.
 3. Assurances that unsettled claims will be settled.
 4. Submission of updated final statement, including accounting for final additional changes to the Contract Sum. Show additional Contract Sum, additions and deductions, previous Change Orders, Total Adjusted Contract Sum, previous payments, and Contract Sum due.
 5. Submission of consent of surety to Final Payment.
 6. Submission of evidence of final, continuing insurance coverage complying with insurance requirements.
 7. Prove that taxes, fees, and similar obligations have been paid.
 8. Remove temporary facilities and services.
 - a. Owner's property, including damage done to landscaping, plants, trees, and grass, shall be restored to original condition prior to construction activities.
 9. Remove surplus materials, rubbish and similar elements.
 10. Certify Work has been inspected for compliance with Contract Documents.
 11. Certify Work has been completed in accordance with Contract Documents, and deficiencies listed with Certificate of Substantial Completion have been corrected.
 12. Certify Work is complete and ready for final inspection.
 13. Certify materials incorporated have no asbestos containing materials or lead.
 14. Acceptance of Work by the Owner.
- B. Architect will inspect to verify status of completion with reasonable promptness.
- C. Should Architect consider Work is incomplete or defective, he will promptly notify Contractor in writing, listing incomplete or defective work.
1. Contractor shall take immediate steps to remedy deficiencies and send a second written certification that Work is complete, and Architect will reinspect the work.
 2. When Architect finds Work is acceptable, he will consider closeout submittals.
 3. Reinspection Fees: Should Architect perform reinspections due to failure of Work to comply with claims made by the Contractor, Owner will compensate Architect for such additional services, and deduct the amount of such compensation from final payment to the Contractor.
- D. Application for Final Payment: Submit Application for Final Payment in accordance with procedures and requirements of the GENERAL CONDITIONS, and Document 00 73 00, MODIFICATIONS TO GENERAL CONDITIONS.
1. Architect will issue final Change Order, reflecting approved adjustments to the Contract Sum not previously made by Change Orders.

1.06 RECORD DOCUMENTS

- A. General: Maintain a complete set of Record Documents at the site. Do not use Record Documents for construction purposes. Provide access to Record Documents for Architect and Owner's reference. Generally, without limitation, Record Documents shall include the following:
1. Record Drawings: Maintain a clean set of Contract Drawings and shop drawings, updated weekly to show actual installation. Give particular attention to concealed items.
 - a. As-Built Drawings: As-built drawings shall be prepared in AutoCAD version 2000 format. Submit to Owner in electronic format designated by Owner; submit hard copies of AutoCAD files on 11x17 sheets.
 2. Record Project Manual: Maintain a clean Project Manual, including Addenda, Change Orders, Architect Field Orders, and other modifications, updated weekly to show changes in actual work performed. Give particular attention to substitutions, selection of options, and similar information.

3. Record Product Data: Maintain one copy of each approved Product Data submittal, updated weekly to show changes from products delivered, work performed, and from manufacturer's recommended installation instructions.
 4. Record Samples: Maintain one copy of each approved Sample submitted.
 5. Record Field Test Reports: Maintain one copy of each Field Test Report.
 6. Daily Progress Reports: Maintain one copy of each Daily Progress Report.
- B. Maintenance of Documents and Samples: Store documents and samples in Contractor's field office apart from documents used for construction. Provide files and racks for document storage. Provide locked cabinet or secure storage space for storage of samples. File documents and samples in accordance with CSI format. Maintain documents in clean, dry, legible condition and in good order. Do not use Record Documents for construction purposes. Make documents and samples available at all times for inspection by Architect. The fire protection, plumbing, mechanical and electrical trades shall be responsible to the Contractor to keep the record documents for their portions of the work marked currently to record all changes in the work made during construction.
- C. Recording: Label each document "PROJECT RECORD" in neat large printed letters. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- D. Drawings: Legibly update all Drawings to record actual construction, including the following:
1. Depths of various elements of foundation in relation to finish first floor datum.
 2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 4. Field changes of dimension and detail.
 5. Changes made by Field Order or Change Order.
 6. Details not in original Contract Documents.
 7. Final Site Survey.
- E. Specifications and Addenda: Legibly mark each Section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 2. Changes made by Field Order or by Change Order.
- F. Submittal: At Contract Closeout, deliver Record Documents to Architect. Accompany submittal with transmittal letter in duplicate, indicating the date, Project title and number, Contractor's name and address, title and number of Record Document, and signature of Contractor or his authorized representative.

1.07 OPERATING AND MAINTENANCE DATA

- A. General: Prepare and submit Operating and Maintenance Data as specified in this Section and referenced in other pertinent Sections of Specifications. Organize Operating and Maintenance Data into suitable sets, bound and indexed. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions.
 2. Spare parts list including prices and recommended quantities to be maintained in storage.
 3. Copies of warranties and bonds.
 4. Wiring diagrams.
 5. Inspection procedures.
 6. Approved Test Reports.

7. Operation (start-up, normal, emergency, sequences) and maintenance (routine, troubleshooting, disassembly, repair, alignment, adjusting, balancing, checking) procedures including servicing and lubricant schedule and list lubricants required.
 8. Valve charts and electric panel circuit directories.
 9. Product and Manufacturers Certificates.
 10. Manufacturer's printed operation and maintenance instructions.
 11. Control diagrams by control manufacturer as installed
- B. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.
- C. Preparation of data shall be done by personnel trained and experienced in maintenance and operation of described products.
- D. Format of Data: Prepare data in form of instructional manual for use by Owner's personnel. Format shall be 8-1/2 in. x 11 in., 20 pound minimum, white, typed pages. Text shall be manufacturer's printed data, or neatly typewritten. Drawings shall be bound with text, with reinforced punched binder tabs. Fold larger drawings to size of text pages. Provide fly-leaf for each separate product or each piece of operating equipment. Provide typed description of product and major component parts of equipment. Provide indexed tabs.
1. Binders: Provide commercial quality three-ring binders with durable and cleanable plastic covers, with maximum ring size of 1 inch. When multiple binders are used, correlate the data into related consistent groupings.
 2. Binder Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List title of Project, identity of separate structure as applicable, and identity of general subject matter covered in the manual.
- E. Content of Manual: Neatly typewritten table of contents for each volume, arranged in systematic order, indicating Contractor name and address, and a list of each product, indexed to content of the volume. Provide a separate list with each product, name, address, and telephone number of subcontractor or installer, and local source of supply for parts and replacement.
1. Provide in each volume a copy of each warranty, bond, and service contract issued.
- F. Submittal of Maintenance and Operating Manual: Submit two copies of preliminary draft of proposed formats and outlines of contents prior to start of Work.
1. Architect will review draft and return one copy with comments.
 2. Submit one copy of complete data in final form 15 days prior to final inspection or acceptance. Copy will be returned after final inspection or acceptance, with comments.
 3. Submit three copies of approved data in final form ten days after final inspection or acceptance.

1.08 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of products, equipment and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction.
1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.

1.09 WARRANTIES AND BONDS

- A. General: Assemble warranties, bonds, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Number of Original Signed Copies Required: Two each.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item including, product or work item, firm name, address, and telephone number.
- D. Information Required: Provide the date of beginning of warranty, bond, or service and maintenance contract, and duration of warranty, bond, or service and maintenance contract.
- E. Information for Owner's Personnel: Provide information on the proper procedures in case of failure. Indicate instances which might affect the validity of warranty or bond. Indicate Contractor, name of responsible principal, address, and telephone number.
- F. Form of Submittal: Prepare duplicate packets of 8-1/2 x 11 in., punched sheets for installation in standard three-ring binder. Fold larger sheets to fit into binders.
 - 1. Cover of Packet: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List the Project title and number, and name of Contractor.
 - 2. Binders: Bind into commercial quality, three-ring, with durable and cleanable plastic covers.
- G. Time of Submittals: For equipment or component parts of equipment put into service during progress of construction, submit documents within ten days after inspection and acceptance. Otherwise make submittals within ten days after Date of Substantial Completion, and prior to final request for payment.
 - 1. For items of work where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.10 MATERIALS AND FINISHES MANUAL

- A. Furnish bound and properly identified manuals for all materials and finishes prior to request for Substantial Completion review.
 - 1. Manuals shall be 8-1/2 by 11 inch pages and bound in three "D ring" capacity binders with durable plastic covers. Internally subdivide the binder contents with permanent page dividers and logically organized.
 - 2. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.
 - a. Arrange content by section number and systems, process flow, under section numbers and sequence as listed in the Table of Contents of this Project Manual.
 - b. Drawings: Preferable 11 inches in height bound in with text with reinforced punched binder tab. Fold drawings larger than 8-1/2 by 11 inches to size of text pages. Provide a drawing pocket for Drawings larger than 11 by 17 inches larger drawings; locate pocket inside rear cover or bound in with text.
- B. Manuals shall include the following:
 - 1. Product data, with catalog number, size, composition, and color and texture designations for all building products, applied materials, and finishes. Provide information for re-ordering custom manufactured products.

2. Instructions for care and maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
3. Moisture protection and weather exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for Inspections, maintenance, and repair.
4. Additional requirements: As specified in individual specification Sections.

1.11 PEST CONTROL AND INSPECTION REPORT

- A. Engage an experienced, licensed exterminator to make a final inspection and fully rid Project of rodents, insects, and other pests.
 1. Prepare and submit report, identify:
 - a. Area or areas which were treated.
 - b. Rodenticides used.
 - c. Manufacturer's data including MSDS, special precautions and applications instructions.
 - d. Pollution preventive measures employed.

1.12 FINAL CLEANING

- A. General: General cleaning during construction operations is specified as Work of Section 01 50 00, TEMPORARY FACILITIES AND CONTROLS.
- B. Employ professional, commercial cleaners for Final Cleaning. Clean each surface to the condition expected in a normal building cleaning and maintenance program. Comply with manufacturer's instructions and recommendations.
 1. Commercially clean entire building, including, but not limited to, walls, ceilings, floors, windows, fixtures, etc. All surfaces, whether new or existing, shall be cleaned to the satisfaction of the Architect and the Owner.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS

- A. General: Provide cleaning materials that will not create hazards to health nor property, and will not damage surfaces or finishes.
- B. Use cleaning materials and methods recommended by manufacturer of surface to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. Employ skilled workers for final cleaning.
- B. Clean and restore general work areas and all adjoining areas, and other work soiled or damaged during installation; replace work damaged beyond successful restoration. Where performance of subsequent work could result in damage to complete unit or element, provide protective covering and other provisions to minimize potential for damage.

- C. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- D. Complete the following cleaning operations prior to requesting inspection for Certification of Substantial Completion:
 - 1. Concrete and masonry shall be cleaned free of all foreign matter. If, in opinion of the Architect, further cleaning of specific areas is required they shall be scrubbed with water or other cleaning agents. Acid cleaners shall not be used, except as may otherwise specifically be permitted in the trade sections.
 - 2. Metal surfaces, hardware, fixtures, appliances, equipment, and similar items shall be cleaned free of all foreign matter and, if necessary, shall be lightly scrubbed at specific stains with clean water, mild soap, and soft rags, thoroughly rinsed and wiped with clean, soft white rags. Abrasive cleaners shall not be used.
 - 3. Architectural woodwork shall be thoroughly dusted and cleaned of all stains, spots, etc., using methods and cleaning agents which will not damage the various finishes.
 - 4. Glass, plastic glazing, and mirrors shall be thoroughly cleaned by professional window cleaners. All damaged, broken, or scratched items shall be replaced without costs to Owner, as described under the appropriate Trade Section(s).
 - 5. Ceramic tile, porcelain, and other surfaces with integral finishes, shall be washed with clean water, mild soap and soft rags, thoroughly rinsed, and then wiped with clean, soft white rags. Abrasive cleaners shall not be used.
 - 6. Resilient flooring shall be given final cleaning and buffing as specified under RESILIENT FLOORING Section.
 - 7. Carpeting shall be vacuum cleaned and shall have all spots and stains removed.
 - 8. Painted surfaces shall be cleaned free of all foreign matter, and if necessary, shall be lightly scrubbed at specific stains with clean water, mild soap, and soft rags, thoroughly rinsed, and wiped with clean, soft white rags.
 - 9. All advertising matter and temporary instructional material shall be removed from exposed surfaces throughout.
 - 10. Remove labels that are not permanent.
 - 11. Clean interior and exterior finishes to a clean, dust-free condition. Remove stains, films, and similar foreign substances.
 - 12. Vacuum and mop hard floor surfaces.
 - 13. Clean plumbing fixtures to a sanitary condition.
 - 14. Clean site areas of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; rake ground surfaces clean.
- E. Heating, Ventilating, and Air Conditioning Systems: Clean permanent filters and replace disposable filters if units are operated during construction. Do not operate heating, ventilating and air conditioning systems without filters specified in Division 23, HEATING, VENTILATING AND AIR CONDITIONING.
- F. Replace lamps in permanent light fixtures used during construction with lamps specified in Division 26, ELECTRICAL.
- G. Before final completion and Owner-occupancy, inspect sight-exposed interior and exterior surfaces and work areas to verify that Work is clean.

END OF SECTION – 01 77 00

02 41 00 SELECTIVE BUILDING DEMOLITION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 01 General Requirements, apply to the work of this section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section. Entire set of contract documents, including specifications, addenda, and drawings inclusive may contain work items that require demolition and removal.
- C. Related Work Specified Elsewhere:
 - 1. Section 01 73 00 – Execution
 - 2. Section 01 74 00 – Dust Control
 - 3. Section 01 74 19 – Construction Waste Management and Disposal

1.02 SCOPE OF WORK

- A. All work shall comply with the recommendations of the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- B. The Contractor shall furnish and install all necessary labor, materials, equipment, services, tools, and any other incidentals necessary for the following:
 - 1. Carefully remove materials as necessary for making repairs to the roof and inspecting underlayment.
 - a. Where damage is identified by inspection, remove damaged roofing underlayment and sheathing as necessary.
 - 2. Salvage all materials indicated to be reinstalled, including select slate roofing shingles and snow guards.
 - a. Store onsite in location approved by Owner and protect throughout construction until ready for reinstallation.
- C. Occupancy: the building shall remain powered and open to the Owner and the public through the duration of the project. The contractor shall install and maintain all measures required to protect the public from demolition activities. Coordinate all work with owner.
- D. All demolition, removal, and disposal Work shall be in compliance with the requirements of the Massachusetts State Building Code, all local and Federal regulations, and the current edition of ANSI.

1.03 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and Division 01 Specification Sections.
- B. Submit schedule indicating proposed methods and sequence of operation for demolition and removals to the Architect for review prior to commencement of Work. Include details for dust and noise control protection.

1.04 QUALITY ASSURANCE

- A. Comply with applicable codes, ordinances, rules, and regulations, including those for demolition, transportation, and disposal of debris.
- B. Arrange for, obtain permits and certificates for, and pay fees required for:
 - 1. Transportation and disposal of debris.
 - 2. Demolition.
 - 3. Utility severance or relocation, including removing meters and capping lines.
 - 4. Use or closing of streets, sidewalks, or other public places.

1.05 REFERENCES

- A. Slate Roofs: Design and Installation Manual, 2010 Edition.

1.06 CONDITION OF PREMISES

- A. The Contractor shall accept the existing conditions of the premises and shall clear the site, as specified. The Owner and Architect assume no responsibility for the condition or the contents of the building(s) on the premises covered by these Specifications, nor the continuance in the condition existing at the time of the Invitation for Bids or thereafter. All damage or loss, whether by reason of fire, theft, or by other casualty or happening, to the building covered by the Specifications shall be at the risk of the bidder from and after the date of award of Contract, and no such damage or loss shall relieve the successful bidder from any obligation under this Contract to complete all Work as herein provided.
- B. There is no guarantee by the Owner that the amount of material of value now existing in the portion of the building to be demolished will be present in the buildings when they are demolished. The Contractor shall have no claim against the Owner because of the absence of such materials.

1.07 PROTECTION

- A. Perform demolition in such manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures or interruption of use of such utilities; and to provide free passage to and from such adjacent areas of structures.
 - 1. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of all personnel during demolition and removal operations.
 - 2. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
 - 3. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. Do not use water if it results in hazardous or objectionable condition such as, but not limited to ice, flooding, or pollution. Vacuum and dust the work area daily. See section 01 74 00 – Dust Control.
 - 4. In addition to previously listed fire and safety rules to be observed in performance of work, include following:
 - a. No wall or part of wall shall be permitted to fall outwardly from structures.
 - b. Wherever a cutting torch or other equipment that might cause a fire is used, provide and maintain fire extinguishers nearby ready for immediate use. Instruct all possible users in use of fire extinguishers.
 - c. Keep hydrants clear and accessible at all times. Prohibit debris from accumulating within a radius of 15 feet of fire hydrants.
 - 5. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The contractor shall take all necessary precautions to avoid damages to existing items

to remain in place, to be reused, or to remain the property of the owner: any damaged items shall be repaired or replaced as approved by the owner. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal works. Repairs, reinforcement, or structural replacement must have a licensed structural engineer's approval.

1.08 REMOVALS

- A. Do not bring explosives to site or use explosives without written consent of authorities having jurisdiction.
- B. Removal, renting, transportation, storage and disposal of flammable, explosive, toxic, and corrosive substances, if any, shall be done in strict compliance with governing regulations before proceedings with building demolition.
- C. Demolish areas of the roof to the extents indicated on the drawings, and as required to fulfill the scope of new work. Use such methods as required to complete work within limitations of governing regulations. Fences and walls on or near property lines shall not be removed if these are used for protection or support of adjoining property. See drawings for extent of removals.
- D. Before demolition is commenced, the Owner's representative, along with the contractor, will inspect the building and the premises and identify equipment, materials, and items desired to be retained by the Owner. The contractor will remove such equipment, materials, and items either before demolition or during the process of the work and store and protect on the site in a location designated by the representative.
- E. Items of salvable value that are not desired to be retained by the Owner but are to become the property of the contractor may be removed from the structure as work progresses. Transport salvable items from site as they are removed. Storage or sale of removed items on site will not be permitted.
- F. Removals shall be to extents as shown on the Architectural Demo drawings and Structural drawings, or to required depths to complete new work.
- G. Protect materials and surfaces and structure, which are to remain, from damage; if damage occurs, repair or replacement shall be made by the contractor, to the satisfaction of the Architect, and at the expense of the contractor.
- H. **Identify which slate shingles must be replaced and which must be removed for work to occur but may be salvaged for reuse. Refer to Part 3 slate shingle removals.**

1.09 MAINTAINING TRAFFIC

- A. Do not close or obstruct streets, sidewalks, alleys, or passageways, unless there shall have been first obtained all necessary municipal or other local permits therefor. Store or place no materials whatsoever in streets, alleys, or passageways. Conduct operations as to interfere as little as possible with the use ordinarily made of any roads, streets, driveways, alleys, sidewalks, and other means of access and egress.

- B. The contractor shall provide, and maintain, at contractor's own expense, all lights, barriers, sidewalk sheds, and other items that are required by traffic regulations or local law.

1.10 PROTECTION OF ADJOINING PROPERTY

- A. The work of demolishing part of the building shall be carried on in a manner that will ensure adjacent property against any damage which might occur from falling debris or other cause and so as not to interfere with use of adjacent buildings and structures or the free and safe passage to and from the buildings and structures.
 - 1. Ensure building is protected from incidental damage resulting from removals, including protecting against adverse weather conditions, and any other damaging conditions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

3.01 PREPARATION

- A. Review all available reports (environmental, hazmat, geotechnical, etc.) and confirm that all required and/or recommended work has been completed as it pertains to any required work on this facility.
- B. Prior to commencing demolition Work:
 - 1. Visually inspect and photograph the adjacent areas, and all surfaces of adjacent structures and appurtenances of the surrounding properties. Record the existing conditions; submit all information, including overall and detailed high-resolution photographs, to the Architect and the Owner's Representative in an organized format:
 - a. Provide information in electronic format, using clearly labeled folders and photographs. Include a schedule listing each photograph stating location and direction of camera.
- C. The Contractor is responsible for confirming disposal of items removed with owner. If item has material value, or is potentially used for this project or others, owner may dictate contractor to save on site for future use.

3.02 DEMOLITION PROCEDURES

- A. See Section 01 74 19 – Construction Waste Management and Disposal for recycling and disposal requirements.
- B. Demolish and remove portions of buildings and structures, including all appurtenances related or connected thereto, as shown on drawings and as noted below:
 - 1. All items removed by the Contractor that are not indicated to be saved, shall become property of Contractor and shall be legally disposed of by him daily off the property to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the owner. In the event the Contractor fails to remove any item from the premises as set forth above, the Authority, at its option, may remove and store such item and charge the Contractor with the expense thereof.
- C. All the removed items shall be placed and arranged by the Contractor in a safe manner so as not to obstruct pedestrians or interfere with ingress and egress into and from the building. The Contractor must remove from the Project premises and legally dispose of all

debris or items removed, on the same day that they were removed. No removed item shall be permitted to remain outside the buildings or on the Project premises overnight. In the event the Contractor fails to remove any item from the premises as set forth above, the owner, at its option, may remove and store such item and charge the Contractor with the expense thereof.

- D. Protect and safeguard any existing equipment, appliances fittings, valves, etc. to remain.
- E. Removal of rubbish and debris through any public areas of building shall not be permitted.
- F. Window openings within the building shall not be used for removal purposes.
- G. Burning of wood or other debris will not be permitted on the job site.
- H. Promptly repair damaged surfaces caused by demolition operations at no additional cost to the owner.
- I. Protect building interior surfaces, materials, and equipment from the weather at all times. Erect and maintain waterproof closures at exterior openings. Prevent the spread of dust, fumes, and noise to other parts of the building as well as beyond the building enclosure.
- J. Review all Drawings and Specifications for additional removal requirements and for items to remain.

3.03 REMOVAL OF EXISTING SLATE SHINGLES

- A. After identifying slate shingles to be removed, remove shingles and associated underlayments down to the roof deck.
 - 1. Remove slate in a saw-tooth pattern where shown on drawings.
 - a. Reference pages 220-221 in Slate Roofs: Design and Installation Manual, 2010 Edition.
 - 2. Slate shall not be removed in continuous, horizontal courses, as this will require that every slate in the top course be secured with a single fastener when reinstalled (either with a nail-and-bib or a slate hook), which will cause the slates in this course to skew over time.
 - 3. Slate shingles to be disposed:
 - a. Pull/remove (do not drive-in) all slating nails and fasteners associated with existing underlayments.
 - 4. Slate shingles to be salvaged:
 - a. Carefully remove all slate shingles and associated underlayments down to the roof deck and salvage slate for reinstallation.
 - 1) Carefully remove existing slate shingles, one at a time, without breaking or cracking to the maximum extent possible.
 - 2) Salvage only sound slate – slate that rings true when tapped with one's knuckles, a slate hammer, or other metal object, with nail holes intact, and possessing whole corners. Properly dispose of slate that cannot be salvaged.
 - 3) Stack salvaged slate at grade, on edge, and cover to protect from the weather.
 - 4) Pull/remove (do not drive-in) all slating nails and fasteners associated with existing underlayments.
 - 5) Number the slates as they are removed so that they can be reinstalled in their original locations. Place the numbers on the back, unexposed, face of the slates.
 - 5. Remove existing underlayments to expose the roof deck. Clean and inspect the roof deck for deterioration and damage.

- a. Deck irregularities: Identify broken, warped, cracked, rotted, or otherwise deteriorated or irregular roof decking and framing that would make the substrate unsuitable as a substrate for new underlayments and new slate roofing.
 - b. Refer to Section 06 10 00 – Rough Carpentry for roof decking repair.
6. During the course of the Work, protect from damage all roofing, flashings, rainwater conduction systems, and other building and site elements scheduled to remain. Protect interior finishes and contents from moisture damage during the course of the Work.
7. Lower demolition debris to grade using enclosed chutes or other means. Plan method of removal from elevated heights. Remove in a controlled manner. Do not throw demolition debris off of the roof.
8. Clean work area and surrounding areas at grade to remove all slate chips, roofing nails, and other debris on a daily basis and at the end of project. The site shall be left clean.
9. Remove no more slate than can be reinstalled or made weathertight by the end of the day.

3.04 PRECAUTIONS

- A. The work of demolition shall be carried on in every respect in a thorough and workmanlike manner. The Contractor shall provide all materials, labor, and machinery necessary therefor, and shall place proper and sufficient guard and fences and warning signals by day and by night for the prevention of accidents. The Contractor will indemnify and save harmless the Owner, its departments, its officers, agents and servants and each of them against any and all suits and actions, claims and demands of every name and description brought against it, them, or any of them against and from all damage and costs to which it, they or any of them may be put by reason of injury to the person or property of another, resulting from negligence or carelessness in the performance of the Work, or in guarding the same, or from any improper or defective material or machinery, implements, or appliances used in the removal of said buildings.
- B. All reasonable precautions shall be taken against fire throughout all the Contractor's operations. The amount of inflammable material shall be reduced to a minimum consistent with the proper handling and storing of materials. Provisions shall be made for the extinguishing of fires, as required by the Fire Department. The Contractor shall not permit any fires to be built except as otherwise provided herein, or open salamanders to be used in any part of the Work, except those that may be required during winter weather in approved salamanders, and then only under the Contractor's continuous supervision.
- C. **NOTIFY THE ARCHITECT AND OWNER IMMEDIATELY IF HAZARDOUS MATERIAL IS FOUND DURING REMOVAL PROCESS. SECURE THE SITE AND LEAVE SUSPECT MATERIALS ALONE UNTIL OWNER'S CONSULTANT DETERMINES COURSE OF ACTION.**

3.05 CLEAN-UP

- A. On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to Architect and owner. Clean-up shall include off the property disposal of all items and materials not required to remain property of the Owner as well as all debris and rubbish resulting from demolition operations.

END OF SECTION – 02 41 19

06 10 00 ROUGH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 01 General Requirements, apply to the work of this Section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section.
- C. Related Work Specified Elsewhere:
 - 1. Section 01 22 00 – Unit Prices
 - 2. Section 02 41 19 – Selective Building Demolition
 - 3. Section 07 31 16 – Slate Shingles

1.02 SCOPE OF WORK

- A. All work shall comply with the recommendations of the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- B. The Contractor shall furnish and install all necessary labor, materials, equipment, services, tools and any other incidentals necessary for the following:
 - 1. Perform all rough carpentry work including but not limited to:
 - a. New framing, wood grounds, nailers, blocking, and other miscellaneous work as indicated in the drawings and specified herein.
 - b. Replacement of roof sheathing, matching species, profiles and dimensions, and finish.
 - c. Temporary protections
 - d. Rough hardware and necessary items.
 - 2. Additional scope of work is indicated on the Drawings. The Owner makes no representation of the exact quantities of work required. It shall be the responsibility of the Contractor to do all work within the designated areas to fulfill the requirements of these Specifications.

1.03 QUALITY ASSURANCE

- A. American Softwood Lumber Standard: Comply with PS-20, except as otherwise indicated.
- B. Plywood grading rules shall be in conformance with PS1 and American Plywood Association (APA).
- C. Factory-mark each piece of lumber and plywood with type, grade, mill and grading agency.
- D. Recycled Content Materials: Where recycled lumber materials are used for structural applications, include lumber certification and quality grading.

1.04 QUALIFICATIONS OF WORKMEN

- A. Provide sufficient journeymen carpenters and supervisors who shall be present at all times during execution of this portion of the work, and who shall be thoroughly familiar with the type of construction involved and the materials and techniques specified.

- B. In the acceptance or rejection of rough carpentry the Architect will make no allowance for lack of skill on the part of the workmen.

1.05 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and Division 01 Specification Sections.
- B. Shop Drawings:
 - 1. Wood framed assemblies
 - 2. Blocking locations, including:
 - a. Dimensions of sizes and locations.
 - b. Coordination of blocking with materials requiring blocking.
 - c. Coordination of blocking with adjacent materials.

PART 2 - PRODUCTS

2.01 PRODUCT DELIVERY, PROTECTION AND STORAGE

- A. Grade and trademark shall be required on each piece of lumber (or bundle); use only the recognized official marks of association under whose rules it is graded.
- B. All new rough framing lumber shall be delivered to the job site with a measured moisture content no greater than 19%. Plywood shall have a measured moisture content not greater than 12%.
- C. Store all materials in such a manner as to ensure proper ventilation and drainage, and to protect it against damage and the weather. Protect against contact with damp or wet surfaces.
- D. Keep all materials clearly identified with all grade marks legible. Keep all damaged material clearly identified as damaged, and store separately to prevent its inadvertent use.
- E. Do not allow damaged or non-complying materials to be installed.
- F. Use all means necessary to protect the installed work and materials of all other trades.

2.02 LUMBER

- A. All new lumber shall be the best of its respective kind, free from stain, rot, knots, or other imperfections impairing its strength, durability, and appearance when exposed.
- B. Provide lumber surfaced four sides dry, unless matching existing lumber.
- C. Blocking shall be furnished in the longest practicable length with respect to each intended use -- at least twelve (12) feet unless shorter lengths are required. Single length pieces shall be used whenever possible.
- D. Resource Management:
 - 1. Virgin Lumber: Lumber fabricated from old growth timber is not permitted.

2.03 SHEATHING

- A. Roof sheathing repairs:
 - 1. Provide plank sheathing to match the existing construction.

- a. Dimensions: Match existing; assume 1" nominal tongue and groove boards.
- b. Species: Match existing; assume spruce-pine-fir.

2.04 FASTENERS

- A. The Contractor shall provide all nails, spikes, screws, anchor and tie bolts, nuts, washers, anchors, joist hangers, manufactured metal connections, ties, and similar items. All shall be properly sized to rigidly secured members in place. All nails shall be common wire nails, galvanized, conforming to FS-FF-N-105. All steel shapes and connectors shall be ASTM A36 and bolts shall be unfinished ASTM A307, unless otherwise noted.
- B. Recycled Content: Fabricated from 100 percent re-melted steel.
- C. Bolts: Standard mild steel, square head machine bolts with square nuts and malleable iron or steel plate washers or carriage bolts with square nuts and cut washers.
- D. For exterior framings, all pressed metal fasteners, nails, screws, and otherwise manufactured metal fasteners shall be made from stainless steel.
- E. Screws for attaching wood blocking or plywood to wood shall be #10 flat head hot-dip galvanized wood screws spaced at 12" o.c. and of sufficient length to penetrate the substrate at least 1".
- F. Fasteners for attaching wood blocking or plywood to masonry shall be concrete masonry tapping screws (Phillips head flat) and of sufficient length to penetrate the substrate a minimum of 1-1/2".
- G. Powder-actuated type fasteners may not be used to fasten wood blocking or flashing.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.
- B. Verify to the Architect that rough carpentry work may be performed in strict accordance with the original design and pertinent codes and requirements.

3.02 WORKMANSHIP

- A. General: All rough carpentry shall produce joints true, tight, and well nailed, with all members assembled in accordance with the Drawings and with all pertinent codes and regulations.
- B. Set rough carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted

3.03 SELECTION OF LUMBER PIECES

- A. Carefully select all members. Select individual pieces so knots and obvious defects will not interfere with placing bolts or proper nailing or making connections.

- B. Cut out and discard all defects which will render a piece unable to serve its intended function. Lumber may be rejected by the Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, insect infestation, as well as for improper cutting and fitting.

3.04 SHIMMING

- A. Do not shim joints, short studs, trimmers, headers, lintels, or other framing components.

3.05 GENERAL FRAMING

- A. Set all horizontal or sloped members with crown up.
- B. Do not notch, bore, or cut members for pipes, ducts, conduits, or other reasons except as shown on the Drawings or as specifically approved in advance by the Architect.
- C. Make all bearings full unless otherwise indicated on the Drawings.
- D. Finish all bearing surfaces on which structural members are to rest so as to give sure and even support. Where framing members slope, cut or notch the ends as required to give a uniform bearing surface.
- E. Wood Grounds, Nailers, and Blocking:
 - 1. Provide wherever shown and where required for attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Nailers shall be continuous, unless otherwise noted and shall be neatly rabbeted, dadoed, or trimmed around obstructions. Coordinate location with other work involved.
 - 2. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown. Where possible, anchor to formwork before concrete placement.
- F. Treat field cuts and holes in members providing structural support in accordance with AWPA M4.

3.06 BLOCKING AND BRIDGING

- A. Install all blocking required to support all items of finish and to cut off all concealed draft openings.

3.07 FASTENING

- A. Refer to 780 CMR, Table 2304.9.1, Fastening Schedule, for minimum fastening requirements not directly shown on the drawings.
- B. Nailing:
 - 1. Use only common wire nails or spikes of the dimension shown on the Nailing Schedule, except where otherwise called for on the Drawings.
 - 2. For conditions not covered in Nailing Schedule, provide penetration into the piece receiving the point of not less than 1/2 the length of the nail or spike provided, however, that 16d nails may be used to connect two pieces of two inch nominal thickness.
 - 3. Do all nailing without splitting wood. Pre-bore as required. Replace all split members.

- C. Bolting: Drill holes 1/16 inch larger in diameter than the bolts used. Drill straight and true from one side only. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood; use washers under all nuts.
- D. Screws: For lag screws and wood screws, pre-bore holes the same diameter as root of thread; enlarge holes to shank diameter for length of shank. Screw, do not drive, all lag screws and wood screws.
- E. All blocking shall be fastened in compliance with the guidelines set-forth in the latest Factory Mutual publications.
- F. Fasteners for wood blocking shall be staggered and spaced twelve (12) inches on center. The staggered fastening pattern shall be increased within eight (8) feet from outside corners to six (6) inches on center. Smaller pieces of blocking, such as at penetrations, shall have a minimum of four fasteners per piece. A fastener shall be located no more than four inches from the end of each piece of blocking.
- G. Counter bore at all bolt heads, nuts, and washers as may be required to provide a flush surface for installation of new roofing materials.
- H. For building into masonry work or attaching to masonry work, furnish mason with anchors, bolts, wall plates, corrugated wall plugs, nailing blocks, etc., and all other rough hardware items which are required for the proper fastening and installation of the work or other items called for in this or other Sections. Detailed instructions with sketches, if necessary, shall be given to the mason showing location and other required details of such nailing device.

3.08 SITE ENVIRONMENTAL PROCEDURES

- A. Waste Management:
 - 1. See Section 01 74 19 – Construction Waste Management and Disposal.
 - 2. Select lumber sizes to minimize waste; reuse scrap lumber to the greatest extent possible. Clearly separate scrap lumber for use on site as accessory components, including shims, bracing, and blocking.
 - 3. Do not leave any wood, shavings, sawdust, etc. on the ground or buried under fill. Prevent sawdust and shavings from entering the storm drainage system.
 - 4. Do not send lumber treated with pentachlorophenol, CCA, or ACA to co-generation facilities, or "waste-to-energy" facilities.

3.09 PROTECTION

- A. Provide temporary and transparent plastic covered wood frames for exterior window louver openings, to protect the building interior until permanently enclosed. Coordinate requirements of the various trades during temporary heating periods.
- B. Provide and afford adequate temporary protection to existing finished work such as saddles, door frames, masonry work, entrances, etc., which may be damaged during the course of the work on this Project.
- C. Remove and install temporary protection and enclosures when need of same ceases or when they temporarily interfere with the progress of the work.

END OF SECTION – 06 10 00

07 31 26 SLATE SHINGLES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 01 General Requirements, apply to the work of this section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section.
- C. Related Work Specified Elsewhere:
 - 1. Section 02 41 19 – Selective Building Demolition
 - 2. Section 06 10 00 – Rough Carpentry
 - 3. Section 07 62 00 – Sheet Metal Flashing and Trim

1.02 SCOPE OF WORK

- A. The Contractor shall furnish and install all necessary labor, materials, equipment, services, tools and any other incidentals necessary for the following:
 - 1. Slate roofing on historic building requiring removal and reinstallation of slate roofs with a combination of both salvaged and new slate shingles.
 - a. Natural slate shingles.
 - b. Underlayment and ice dam protection at locations where roof sheathing is exposed.
 - c. Metal flashings and accessories, not specified in section 07 62 00 – *Sheet Metal Flashing and Trim*.
 - 2. Replacement of missing slate and broken slate.
 - a. In addition to cracked or otherwise clearly damaged slate shingles, broken slate is defined as slate shingles with missing exposed butt corners in excess of 1-1/2" on either vertical or horizontal leg.
- B. Salvage and reuse intact and serviceable existing slate materials whenever possible. Salvaged slate shall be sourced from the slate salvage market whenever possible to match the existing historic quarried slate. New slate being incorporated into existing slate roofs shall match existing as closely as possible. Use salvaged or new slate from the same quarry or manufacturer as the original, if possible.
- C. Vertical surfaces which project through the roof surface at a right angle to the slope of the roof shall have a cricket built into the roof to divert water away from the back of the vertical member.

1.03 REFERENCES

- A. National Slate Association – *Slate Roofs: Design and Installation Manual*, 2010
- B. ASTM International (ASTM):
 - 1. ASTM C120 – Flexure Testing of Slate (Breaking Load)
 - 2. ASTM C121 – Water Absorption of Slate
 - 3. ASTM C217 – Weather Resistance of Slate
 - 4. ASTM C406 – Standard Specification for Roofing Slate
 - 5. ASTM C1549 – Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer

6. ASTM D226 – Standard Specification for Asphalt Saturated Organic Felt Used in Roofing and Waterproofing
 7. ASTM D412 – Standard Test Method for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension
 8. ASTM D1970 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
 9. ASTM D3161 – Standard Test Method for Wind-Resistance of Steep Slope Roofing Products.
 10. ASTM D4586 – Standard Specification for Asphalt Roof Cement, Asbestos Free
 11. ASTM D4869 – Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing
 12. ASTM D6757 – Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing
 13. ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.
- C. National Roofing Contractors Association (NRCA) - Steep Roofing Manual
- D. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

1.04 SUBMITTALS

- A. General: Submit the following in accordance with the Conditions of the Contract and Division 01 specifications.
- B. Product Data
1. Underlayment(s) and underlayment fasteners. Product data for the roof underlayment must include the ASTM Standard to which it complies.
 2. Slate shingles and slating nails.
 3. ASTM C406 test results for specified slate (including ASTM C120, Flexure Testing of Slate (Breaking Load), ASTM C121, Water Absorption of Slate, and ASTM C217, Weather Resistance of Slate).
 - a. Testing must be conducted in accordance with the most recent version of these standards.
 - b. Test results must be less than 3-years old and be conducted on slate from the quarry from which the slate is to be obtained.
 - c. Certificate of Origin for each type of slate to be delivered to the job site, identifying the country in which the slate shingles were quarried.
 - 1) Letter of Confirmation that slate is North American slate.
- C. Samples
1. Provide six (6) slate shingles of each color and shape with nail holes, showing the full, natural range of color variation to be expected in the finished work, for review by the Architect and the Belmont Historic District Commission.
 2. Slating nails, showing the full range of sizes required.
 3. Slate hooks.
 4. Slate repair materials.
- D. Shop Drawings
1. Scaled drawings showing all shapes, sizes, and colors of slate for all patterns to be incorporated into the slate shingles, including method of attachment.
- E. Warranty: Sample warranty form.

1.05 QUALITY ASSURANCE

- A. Work of this Section shall comply with applicable standards indicated or implied.

- B. Provide products in each color from a single quarry during the course of the Work for consistency of quality and appearance.
- C. Slate roofing contractor shall be a member in good standing of the National Slate Association, www.slateassociation.org.
- D. Slate roofing contractor shall have at least 10 years' experience in the installation of new slate roofing/repair of existing slate roofing and shall have successfully completed at least three slate roofing projects within the past five years similar in scope and scale to the Project specified herein. Foreman or superintendent shall have similar experience and shall provide full-time supervision of installers.
- E. Perform work in accordance with *Slate Roofs: Design and Installation Manual* and *NRCA Roofing Manual: Steep-Slope Roof Systems*.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Ensure the availability of adequate off-loading equipment and manpower at the job site for the mode of delivery used, and storage space for the quantity of slate shingles to be received.
- B. Deliver slate shingles to project site in quarry crates/pallets with each labelled with the source, country of origin, size, quantity, and color contained in each pallet.
- C. Slate shingles shall be packaged on edge and separated by wood lath or other rigid material if rows are stacked vertically in the crate/pallet.
- D. During extended periods of storage on site, tarp or otherwise cover the pallets/crates to keep the shingles clean and prevent them from freezing together during cold weather.
- E. Do not store materials on roof decks in such a manner as to overstress and/or damage the deck and supporting structure. Avoid placing of loads at midspans of framing so that superimposed loads are well distributed.
- F. Store crates/pallets at site on a solid, level surface and handle shingles to prevent chipping breakage, soiling or other damage.
- G. Load slate shingles on the building in a manner to avoid damage to the roof deck, structural supporting members, staging and scaffolding.
- H. Store roll goods on-end in an upright position. Immediately before laying, store roofing felt for 24 hours in an area maintained at a temperature not lower than 50 degrees F.
- I. Store accessory materials including nails, slate hooks, underlayment, and ice dam protection membrane according to the manufacturer's recommended storage instructions.

1.07 PROJECT CONDITIONS

- A. Prior to beginning work, Contractor shall secure approval from the Owner [Design Professional] for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site and hours for construction activity.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists, and chutes for loading and unloading materials to and from the roof.

- B. Interior stairs or elevators may not be used for removing debris or delivering materials to the roof or ground.
- C. The buildings shall remain occupied during construction. During the full course of the Work, the Contractor shall ensure that all pedestrian access points, including all entrances, foot paths, sidewalks, emergency means of egress, and vehicle access routes, shall be protected and display clear signage where barricades and construction fencing are employed. Do not block fire exits or impede ADA access.
- D. If discrepancies are discovered between the existing conditions and those noted on the Drawings, immediately notify the Architect in writing and obtain written approval prior to commencing the Work. All necessary steps shall be taken to make the building watertight until the discrepancies are resolved.
- E. Proceed with the Work as weather conditions permit and/or as required by manufacturer's installation instructions or warranty requirements.
- F. Proceed with slate shingle roofing installation only after substrate construction, vent stacks, and other roof penetrations are complete, when substrate materials are dry, and weather conditions are appropriate.
- G. Establish units of work, including removal of existing materials, preparation of existing surfaces and application of underlayment, nailers, and related temporary and/or permanent flashing, as can be completed in one day.
- H. The Contractor shall ensure that work areas as well as the entire building are completely protected from water infiltration and remain watertight throughout the course of the project and water does not flow beneath any completed sections of the slate roof system.
- I. Provide temporary protection materials maintained on the site at all times for temporary roofing, flashing, and other protection when delays and/or changed weather conditions do not permit completion of each unit of work prior to the end of each working day.
- J. The Contractor shall be responsible for replacing all broken slates on the project, prior to project closeout. After project closeout, the slate repair responsibilities of the Contractor shall be as set forth in the project contract and warranty documents.
- K. All means of access required to perform the work of this Section shall be the responsibility of the contractor. All means of roof access shall fully comply with all local, state, and OSHA safety codes and requirements
- L. Remove and discard materials which have been used for temporary roofing, flashing and other protection.
- M. Do not install ice dam protection or underlayment at ambient or surface temperatures less than 40 degrees F or on wet or frozen substrate.

1.08 SEQUENCING/SCHEDULING

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Coordinate work of this Section with interfacing, adjoining, and related roofing work for proper sequencing of each installation.
- B. Do not disrupt activities in occupied spaces.
- C. When multiple trades are accessing the same work area, coordinate the work sequence so as not to hinder the project schedule or detract from the quality of the work.

1.09 EXTRA MATERIAL

- A. Provide an additional 3 percent of installed field, starter and hip and ridge slates of each color and shape used, but not more than one full crate/pallet in total, for Owner's use in future roof maintenance.
- B. Place extra material in storage in a location designated by the Owner.

1.10 WARRANTY

- A. Furnish a warranty against defects in material and workmanship of slate roof assembly, including related metal flashing for a period of 10 years from date of final acceptance of the work. Contractor shall inspect the repairs annually for the first 3 years of the warranty period, at year 5 and a final inspection at year 10. Inspections shall be from a remote access device such as a bucket lift or cherry picker and shall not include any foot traffic on the slates.
- B. Warranty shall only apply to repaired portions of roof.

PART 2 - PRODUCTS

2.01 SLATE SHINGLES

- A. Standard: New slate shall comply with ASTM C406, Standard Specification for Roofing Slate, Grade S-1; hard, dense, and sound natural stone, with chamfered edges. No broken or cracked slates will be accepted and exposed corners shall be full and no broken exposed corners exceeding 1" will be allowed. Broken covered corners shall not prevent the laying of a weathertight roof and the slate shall not be installed when either the base or leg of the right triangle broken off exceeds 2".
 - 1. Breakage of all kinds, including broken upper and lower corners exceeding the dimensions specified above, shall not exceed 1% in the shipment delivered to the site.
- B. Reclaimed/salvaged slate shall match the color, weathering characteristics, size, and shape of the existing slate; be sound, with whole or nearly whole corners; emit a ring when tapped indicative of the shingles being free from cracks and significant delamination; possess nail holes sufficiently whole so as to provide adequate nailing strength; and have an expected remaining service life equal to that of the existing slate.
- C. Color of Slate:
 - 1. To the greatest extent possible, salvage existing slate for reuse.
 - 2. Where additional slate is required, match existing slate for color.
 - a. Existing gray slate: Monson Slate
 - 1) All Monson slate repairs or replacement shall be performed "in kind" using only salvaged (or reclaimed) Monson slate of size(s) and coloration to match the existing, with no substitutions (i.e. new slate). Verification of slate size(s) is the responsibility of the contractor.
 - b. Existing red slate: Unfading Red
 - 1) All Unfading Red slate repairs or replacement shall be performed "in kind" using either new or salvaged (reclaimed) Unfading Red slate of size(s) and coloration to match the existing. All new Unfading Red slate shall be domestic in origin, i.e. Vermont or New York, with no substitutions. Verification of slate size(s) is the responsibility of the contractor.

- D. Shape of slate:
 - 1. Provide slates that match the existing slates shapes. Calculate the quantity of each type of shape (in applicable color) required prior to purchasing.
- E. Sizes and thicknesses:
 - 1. Provide slates that match the existing slates thickness, as applicable to each color, shape, and location upon the roof. Confirm thicknesses for starter, field, hip, and ridge slates prior to purchasing.
- F. Nail Holes
 - 1. Punch or drill two nail holes in each slate, located one-quarter to one-third down the slate length, measured from the head of the slate, and 1¼" to 1½" in from each side edge. Nail holes shall be located on the thinner end of the slate.
 - a. For slates more than ¾" thick or 20" long, provide 4 nail holes, with the additional nail holes approximately 2" above the regular nail holes.
 - b. Refer to the drawings for slates installed below existing courses, and provide requisite nail holes.
 - 2. Hip, ridge, and approach slates may be supplied unpunched. These slates shall be punched or drilled on site.
 - 3. Starter slates may be supplied punched or unpunched. If supplied unpunched, these slates shall be punched or drilled on site.
- G. Texture of Slate:
 - 1. Match existing to the greatest extent possible, for each color and shape.

2.02 SLATING NAILS

- A. Slating Nails shall be sharp-pointed with a 3/8-inch diameter flat head.
 - 1. Material: Solid copper
 - 2. Thickness/Shank Diameter: 11-gauge (.120")
 - a. 10-gauge nails will be permitted for areas where 11-gauge nails bend.
 - 3. Length: Of sufficient length to penetrate a minimum of 3/4-inch into sheathing.
 - a. Hip and Ridge Slates: Provide longer nails as required to penetrate sheathing.
 - 4. Shank: Smooth or annular ring

2.03 UNDERLAYMENTS

- A. Roofing Felt Underlayment: No. 30 unperforated asphalt-saturated organic felt, 36"-wide rolls complying with ASTM D226 Type II or ASTM D4869 Type IV.
 - 1. Products:
 - a. "Gorilla Guard Spec 30," Atlas Roofing Corporation, Atlanta, GA 30328, (800) 251-2852
 - b. "#30 ASTM," Warrior Roofing Manufacturing, Chambersburg, PA 17201, (717) 709-0323
 - c. "No. 30 ASTM" or "No. 30 UL," Tamko Building Products, Joplin, MO 64802, (800) 641-4691
 - d. Or approved equal.
 - 2. Underlayment Accessories
 - a. Corrosion resistant, large head fasteners of sufficient length to prevent wind event blow-off, or as recommended by underlayment manufacturer.
- B. High Temperature Grade Water Barrier Underlayment (for use at eaves, hips, valleys, and where indicated on drawings): Cold applied, self-adhering membrane composed of a high density, cross laminated polyethylene film coated on one side with a layer of butyl

rubber or high temperature asphalt adhesive. Provide primer when recommended by water barrier manufacturer.

1. Minimum Thickness: 30 mil.
2. Tensile Strength: ASTM D412 (Die C Modified); 250 psi.
3. Membrane Elongation: ASTM D412 (Die C Modified); 250%
4. Permeance (Max): ASTM E96; 0.05 Perms.
5. Acceptable Products:
 - a. Blueskin PE 200 HT, Henry.
 - b. Ultra, W.R. Grace Company.
 - c. CCW MiraDRI WIP 300 High Temperature, Carlisle Coatings and Waterproofing.
 - d. Or approved equal

2.04 ACCESSORIES

- A. Slate hooks for slate repair work, in addition to or in conjunction with the "Nail and Bib" method": For slates with a 3" headlap and measuring up to 3/4" thick, 3" long, 10-gauge, solid copper, Type 304 anodized (black) stainless steel with 3/8" hook or 3/4" hook.
 1. Custom slate hooks for headlaps greater than 3" shall be same material as specified above, fabricated to required length. Consult vendors for availability.
- B. Nail head covers (bibs) for slate repair work: 16 oz. or 20 oz. copper, Grade H00 (cold rolled), complying with ASTM B370, or lead coated copper complying with ASTM B101, Type 1, Class A. Bibs shall measure 3" to 4" wide by 8" long. Snip bibs along their long sides to form barbs and/or bend to a slightly concave or S-shape prior to insertion to help prevent the bibs from sliding out.
- C. Cants for starter course of slate shingles: Wood cants, standard 3/16"-1/4" thick plaster lath, tapered horse feather shims, or ripped rot-resistant lumber. Fabricate to height and width required to permit first and subsequent courses of slate to lie flat atop underlying courses.
 1. Where applicable, match existing thickness.
 2. Where shown in the Detail Drawings, brake inverted V-shaped cants directly into metal drip edge flashings and gutter liners located at the roof eaves. Fabricate cant to height required to permit first and subsequent courses of slate to lie flat atop underlying courses.
- D. Wire used for hanging slates to avoid nailing thru underlying flashings: 99.99% pure copper wire conforming to ASTM B3, 0.051" diameter, minimum. Maximum size of slates: 3/8" thick x 20" long.
- E. Sealant adhesive for use as adhesive dabs below hip and ridge slates: Exterior, non-sag, gun grade, single-component, sealant adhesive complying with ASTM C 920, Type S, Grade NS, Class 12.5, use group NT, I, M, and O, or approved alternate sealant adhesive. Color shall be manufacturer's standard color matching that of the slate as closely as possible.
 1. Or asphalt flashing cement for use as adhesive dabs below hip and ridge slates: Trowel grade cement containing non-asbestos stabilizers or fibers complying with ASTM D4586.
- F. Sealants: Refer to section 07 92 00 – *Joint Sealants*.
- G. Sealant for exposed nail heads (e.g., last ridge slate to be installed): Exterior, non-sag, gun grade, single-component, urethane sealant complying with ASTM C 920, Type S, Grade NS, Class 25, use group NT, M, A and O, or Design Professional approved alternate sealant. Color shall be manufacturer's standard color matching that of the slate as closely as possible.

- H. Wood Nailers: See section 06 10 00 – *Rough Carpentry*.

2.05 FLASHING MATERIALS

- A. See Section 07 62 00 – *Sheet Metal Flashing and Trim*, for flashings and gutters.

2.06 SLATER'S TOOLS (P.22-25)

- A. The following traditional slating tools shall be used for installation of the slate shingles:
1. Slate hammer for punching and nailing slate shingles.
 2. Ripper for removing slate shingles.
 3. Slate cutter or a slater's stake and slate hammer for trimming and cutting slate shingles.
 4. Steel punch or drill with masonry bit for forming holes in delicate or small pieces of slate.
- B. Slates trimmed or cut on site shall have a bevel-edge similar to that produced at the quarry. Note that a grinder or saw shall not be used for cutting/trimming field slates as they will not produce a beveled edge similar to that produced at the quarry.
- C. The use of nail guns for installing slate shingles shall not be permitted.

PART 3 - EXECUTION

3.01 PROTECTION OF ROOF SURFACES

- A. Use equipment (such as padded ridge ladders) and techniques to prevent damage to roof as a result of foot or material traffic. Contractor is responsible for controlling breakage of new or existing slate beyond what is indicated. Personnel who are working on the roof shall wear shoes which will not further damage slates.
- B. Under no circumstances shall any foot traffic be allowed on newly installed slates or existing slates to remain.

3.02 GENERAL

- A. Examine the roof deck and verify that it is satisfactory condition and ready to receive the new roof underlayment and slate shingle system.
1. Verify that the roof deck is well secured to the roof framing, free of warping or cupping, free of projecting fasteners, and the edges between boards are flush.
 2. Verify that the roof deck is clean, dry, and free of dew, frost, or other contaminants that might interfere with the laying or long-term durability of the slate roof system.
 3. Report deficiencies in the roof deck to the Architect prior to commencing work.
- B. Slating shall begin at the roof eave and progress toward the ridge/top of the roof slope.
- C. Sorting: Sort slate shingles for thickness prior to installation on the roof. Sort shingles by hand into three thicknesses to match existing thicknesses for courses closest to the ridge, in the "middle," and closest to the eave.
1. The goal is to create a roof of smooth, uniform appearance. Slate of different thicknesses shall not be used adjacent to each other.
 2. To the extent possible, transitions between the different thicknesses of slate should occur at hips, ridges, vertical walls, and other non-conspicuous locations, rather than in the field of the roof, to preclude obvious discontinuities in thickness.

- D. Blending: To help account for the natural variation in the coloration of the slate shingles, blend slates from several different pallets as it is brought to the roof surface to help provide for a more uniform overall appearance.
 - 1. Blending may occur prior to, or in association with sorting.
- E. Culling: No broken or cracked slate shall be used. Sound each slate for defects by tapping with a slate hammer or other metal object as it is being installed. Reject and dispose of all slates that do not emit a sharp, clear ring when tapped, or set aside for potential review by Supplier.
 - 1. Cull and discard, or set aside for potential review by Supplier, warped and cupped slate shingles, those that are out of square, those with knots, knurls, or cramps on their unexposed faces, and slates with visible inclusions of iron pyrite.
 - 2. Cull and discard, or set aside for potential review by Supplier, slates that are unusually thin or thick (i.e., slates that will be subject to breakage, cause excessive shadow lines, or cause the butt ends of overlying slates to stick up) as well as those with curvature or twist greater than 1/8" in 12" across the width of the slate.
- F. Nail holes made on site in slates shall be punched or drilled from the back of the slate to produce a small recess, or countersink, on the exposed face of the slate to accept the nail head.
 - 1. Drill nail holes in slates where a nail used to secure a clip, cleat, or lock strip associated with a flashing must pass through an underlying slate. Similarly, drill nail holes in slates that taper to a point or have a small nailing area, such as hip slates.
- G. Slates cut on site shall be cut from the back of the slate to maintain a beveled edge on the exposed face.
- H. Slate Order: As work progresses, check that the quantity of slate remaining on site is sufficient to complete the Project. Order additional quantities of slate in a timely manner, as required, so as not to delay final completion of the project and to allow proper blending of the slate.

3.03 REMOVAL OF EXISTING SLATE

- A. Refer to section 02 41 19 – *Selective Building Demolition*.

3.04 UNDERLAYMENT INSTALLATION

- A. To the extent possible that removed slate shingles allows the existing underlayment to be replaced:
 - 1. Verify that the roof deck is ready to accept the roof underlayment. Notify Design Professional in writing of any unsuitable conditions, such as voids, damage, or unsupported areas.
 - a. Mechanical fasteners used to secure the roof decking shall be set flush with the surface of the decking and fastened into solid blocking or framing members.
 - b. All surfaces shall be clean, dry, and free of oil, grease, dirt, frost, dew, and other contaminants that could cause damage to the roof underlayment.
 - c. Decking shall be smooth, planar, continuous, and have adjacent edges set flush.
 - 2. Ice Dam Protection Membrane: Install ice dam protection membrane at eaves, extending up slope at least 2 feet beyond interior side of exterior wall line, measured in a horizontal plane, or as indicated in the Detail Drawings.
 - a. Install ice dam protection membrane full length of valleys and in crickets as shown in the Detail Drawings, lapping bottom end on top of ice dam protection membrane installed at the roof eave.
 - b. Install ice dam protection membrane stripping along the top edge of metal gutter liners and crickets as shown in the Detail Drawings.

- c. At vertical walls, dormer cheek walls, party walls, chimneys, etc., extend ice dam protection membrane up the vertical surface 4 inches, minimum, or as shown in the Detail Drawings.
 - d. Prior to installation of ice dam protection membrane, vacuum roof deck to remove all dust and debris. Install ice dam protection membrane directly to the roof deck in accordance with membrane manufacturer's instructions. Lap sides 3-1/2", minimum, in direction to shed water. Lap ends 6" minimum. Roll all laps with roller.
 - 1) Prime roof deck as recommended by the ice dam protection membrane manufacturer if good adhesion is not obtained and when temperatures fall below 50 degrees Fahrenheit.
 - e. Cover ice dam protection membrane with roof underlayment as outlined below.
3. Felt underlayment
- a. Install double layer of specified felt underlayment in horizontal courses in shingle fashion to shed water, beginning at eave line and covering entire roof area. Install an 18" wide starter course of underlayment at the roof eave and completely cover with full-width first course. Install the second course such that it laps the first course 20". Install succeeding courses laid 17" to the weather (lapping previous courses 19", providing for a 2" headlap). Lap ends of felt 6", minimum. Stagger end laps of each layer a minimum of 6 feet. Secure felt along laps, ends, and in field of felt with specified fasteners as necessary to properly hold the felt in place and protect the building from water infiltration until covered with slate shingles. Fasteners placed along laps shall be spaced at no more than 36" on center.
 - b. Felt shall lap hips and ridges 12" to form double thickness.
 - c. At vertical walls, extend felt underlayment up the vertical surface 4" minimum, unless otherwise shown in the Detail Drawings.
 - d. Flash penetrations through the roof using specified ice dam protection membrane to provide for a secure and watertight assembly. Ensure ice dam protection membrane target flashing is large enough to permit top edge of metal flashing to be installed to be stripped-in with ice dam protection membrane (i.e., stripping to be centered on top edge of metal flashing and be installed directly to the metal flashing and directly to previously installed ice dam protection membrane).
 - e. At roof eaves, the first layer of felt underlayment shall lap below the metal drip edge and the second layer of felt shall lap on top of the metal drip edge. At rakes, both layers of felt underlayment shall extend below metal drip edge.
 - f. Cover roof underlayment with slate shingles as soon as possible. Remove and replace felts that have become wrinkled or damaged, or that have been exposed on the roof for more than 30 days. Maximum length of exposure for felts shall be 30 days.
4. Replace damaged roof underlayments immediately. Do not install slate shingles over damaged underlayment.
5. Upon completion roof underlayment shall be smooth and free of punctures, holes, gashes, wrinkles, deep scuffs, and other defects that could compromise the underlayment's ability to serve as a temporary roof and secondary water shedding membrane.

3.05 SLATE INSTALLATION

- A. Protection of Roof Surfaces
 - 1. The roof is to be properly staged to allow safe work surfaces, such as brackets and planks, that prevent unnecessary foot traffic on the slates.
 - 2. Where foot traffic is unavoidable, roof ladders, hook ladders, chicken ladders, foam pads, or other such devices shall be used to protect the slates.

3. Workers are to avoid walking on the slate surfaces during, and after, installation.

3.06 SLATE SHINGLE REPAIR

- A. Where existing slates are to be removed, salvaged, and reinstalled in conjunction with flashing repair and/or replacement work number the slates on their back sides such that they can be reinstalled in their original locations.
- B. Remove existing broken slates and associated slating nails using a slate ripper. If the head of a slate cannot be removed in this manner, carefully remove adjacent slates as required to provide a fragment-free and clear space for the replacement slate.
- C. Replacement slates fastening:
 1. Nail-and-Bib Method:
 - a. Slide replacement slate into position.
 - b. Punch or drill a nail-hole through the replacement slate about 1" below the butt of the slate two courses above. Locate this nail-hole in the bond line between the slates in the course immediately above.
 - c. Fasten the slate with a single copper slating nail placed in the nail hole.
 - d. Insert a copper sheet-metal bib under the course above to cover the head of the nail. Push the bib past the butt end of the slates in the course above such that the bottom edge of the bib is no longer exposed and the bib provides for the same headlap as the slate. Pre-bend and/or notch the edges of the bib to prevent it from sliding out.
 - e. For slates measuring $\frac{3}{4}$ " thick and 20" long (or larger), use two nails, with the second nail placed about 1" below the first.
 2. Slate Hook Method:
 - a. Install the slate hook prior to sliding the replacement slate into position.
 - b. Drive the slate hook into the roof deck through the joint between the slates in the course below with the hook aligned with the desired position of the butt of the replacement slate.
 - c. Slide the replacement slate up into position, past the hook, and then pull it back down to engage the butt end in the hook.
 - d. Do not use slate hooks when replacing multiple adjacent slates in the same course.
 - e. Do not use slate hooks for slates thicker than $\frac{3}{4}$ ".
 - f. Do not use standard slate hooks when the headlap is greater than 3" – custom slate hooks must be fabricated (see Part 2 of this Section).

3.07 SNOW GUARDS AND SNOW RAILS

- A. Remove and reinstall existing snow guards as required to complete work of this section.
- B. Replace any damaged snow guards with new snow guards matching design and color.

3.08 CLEAN-UP AND ADJUSTMENT

- A. Work areas shall be left neat and clean at the end of each work day.
- B. Remove debris from gutters and downspouts (if any) at the end of each work day and upon completion of the work to ensure unrestricted flow of water from the roof.
- C. Upon completion of work, remove all roofing equipment, excess material, and debris from all roof surfaces and grounds.
- D. While removing equipment, material, and debris from roof surfaces, inspect all work to ensure completeness, aesthetics, and undamaged workmanship. Broom clean slate

shingles as roof jacks and planks (or other means of access) are being removed from the roof.

- E. Dispose of debris in accordance with all local, state, and federal regulations or in the manner as stated elsewhere in the Contract Documents.
- F. Remedy any incomplete work and replace any damaged, broken, poorly lying, or otherwise offending roofing slates.
- G. Upon completion of clean up and adjustments, advise the Architect that the work is ready for final inspection and punch listing by the Architect.

END OF SECTION – 07 31 26

07 62 00 SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 01 – General Requirements, apply to the work of this Section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section.
- C. Related Work Specified Elsewhere:
 - 1. Section 01 22 00 – Unit Prices
 - 2. Section 07 31 26 – Slate Shingles
 - 3. Section 07 92 00 – Joint Sealants

1.02 SCOPE OF WORK

- A. All work shall comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- B. The Contractor shall furnish and install all necessary labor, materials, equipment, services, tools and any other incidentals necessary for the following:
 - 1. Contractor shall be responsible for repairing or replacing all damaged sheet metal flashing at slate roofing, masonry chimney step flashing, roof penetrations, valleys, hips, ridge caps, aprons drip edges, trim, and as shown on drawings, for a complete and thorough job.
 - a. Repairs will only be permitted if they return existing flashing to a like new condition.
 - 2. Replacing damaged gutters to match existing style / profile and material.
 - a. Assume all gutters are ogee profile.
 - 3. All other flashing work shown on drawings or required by building systems.

1.03 SUBMITTALS

- A. General: Submit the following in accordance with the Conditions of the Contract and Division 01 specifications.
- B. Submit manufacturer's specification data sheets for each product specified, including fasteners.
- C. Shop drawings:
 - 1. Include layout, profiles, methods of joining, and anchorage details, including major counterflashings, copings, and trim/fascia units. Provide layouts at 1/4 inch (1:50) scale and details at 3-inch (1:4) scale.
 - 2. Indicate material profile, jointing pattern, jointing details, fastening methods, flashing, terminations, and installation details.
 - 3. Indicate type, gauge, and finish of metal.
- D. Samples:
 - 1. Samples of the following flashing, sheet metal, and accessory items:
 - a. 6-inch (150 mm) or 12-inch (300 mm) square samples of specified sheet materials to be exposed as finished surfaces.

- b. 6-inch (150 mm) or 12-inch (300 mm) long samples of fabricated products exposed as finished work in each profile required. Provide complete with specified finish.

1.04 PROJECT CONDITIONS

- A. Work shall be performed only during dry weather and applied to dry surfaces with all materials entirely free of moisture.

1.05 CODES AND STANDARDS

- A. Except as modified by the requirements of other governing codes and by this specification, conform to the provisions and recommendations of the following codes and standards:
 - 1. Metal installation shall be in accordance with the Architectural Sheet Metal Manual published by the Sheet Metal and Air Conditioning Contractor National Association, Inc. (SMACNA)
 - 2. Underwriters Laboratories (UL)
 - 3. American Society for Testing and Materials (ASTM)

1.06 PERFORMANCE REQUIREMENTS

- A. System shall accommodate movement of components without buckling, failure of joint seals, undue stress on fasteners, or other detrimental effects when subjected to seasonal temperature changes and live loads.
- B. Installation Requirements: Fabricator is responsible for installing system, including anchorage to substrate and necessary modifications to meet specified and drawn requirements and maintain visual design concepts in accordance with Contract Documents and following installation methods as stipulated in the "Copper in Architecture" handbook published by the Copper Development Association (CDA).

1.07 QUALITY ASSURANCE

- A. Fabricator's Qualifications: Company specializing in copper flashing and trim work with five years' experience in similar size and type of installations.
- B. Installer: A firm with five years of successful experience with installation of copper flashing and trim work of type and scope equivalent to Work of this Section.
- C. Industry Standard: Except as otherwise shown or specified, comply with applicable recommendations and details of the "Copper in Architecture" handbook published by the Copper Development Association (CDA). Conform to dimensions and profiles shown.
- D. Maintain a full-time supervisor / foreman who is on the job-site at all times during installation. Foreman must have a minimum of five (5) years' experience with the installation of similar system to that specified.
- E. Source Limitation: Obtain components from a single manufacturer. Secondary products which cannot be supplied by the specified manufacturer shall be approved in writing by the primary manufacturer prior to bidding.
- F. Upon request fabricator / installer shall submit work experience and evidence of financial responsibility. The Owner's representative reserves the right to inspect fabrication facilities in determining qualifications.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Packing, Shipping, Handling, and Unloading: Protect finish metal faces.
- B. Acceptance at Site: Examine each component and accessory as delivered and confirm that material and finish is undamaged. Do not accept or install damaged materials.
- C. Storage and Protection:
 - 1. Stack pre-formed material to prevent twisting, bending, and abrasions.
 - 2. Provide ventilation.
 - 3. Prevent contact with materials which may cause discoloration or staining.

1.09 WARRANTY

- A. Furnish written guarantee, countersigned by contractor and installing subcontractor, that all sheet metal work is unconditionally guaranteed to be watertight and free of defects and faulty workmanship for a period of two years from date of completion of the work.
- B. Include coverage against leakage and damages to finishes.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Copper: ASTM B370; temper H00 (cold-rolled) except where temper 060 is required for forming
 - 1. Thickness: As indicated on drawings, if not noted 20 ounce

2.02 ACCESSORIES

- A. Solder: ASTM B32; Provide lead free alternative of similar or greater strength than 50-50 tin/lead solder.
- B. Flux: Muriatic acid neutralized with zinc or approved brand of soldering flux.
- C. Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- D. Bituminous Coating: SSPC - Paint 12, Cold-Applied Asphalt Mastic (Extra Thick Film), nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- E. Joint Sealant: One-part, copper compatible elastomeric polyurethane, polysulfide, butyl or silicone rubber sealant as tested by sealant manufacturer for copper substrates.
- F. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of and compatibility with flashing sheet.
- G. High Temperature Grade Water Barrier Underlayment (for use at eaves, hips, valleys, and where indicated on drawings): See section 07 31 26 – *Slate Shingles*.
- H. Roofing Felt Underlayment: See section 07 31 26 – *Slate Shingles*.
- I. Paper Slip Sheet: Minimum 4-lb. red rosin-sized building paper.

- J. Reglets: Units of type and profile indicated, compatible with copper, noncorrosive.
- K. Metal Accessories: Provide cleats, straps, anchoring devices, and similar accessory units as required for installation of work, noncorrosive, size and gauge required for performance.
- L. Roofing Cement: ASTM D2822, asphaltic.
- M. Rivets:
 - 1. Pop Rivets: 1/8-inch (3 mm) to 3/16-inch (4.5 mm) diameter, with solid brass mandrels.
 - 2. Provide solid copper rivet (tinner's rivets) where structural integrity of seam is required.

2.03 FABRICATION

- A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of Copper Development Association (CDA) "Copper in Architecture" handbook and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed copper work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
 - 1. Fabricate to allow for adjustments in field for proper anchoring and joining.
 - 2. Form sections true to shape, accurate in size, square, free from distortion and defects.
 - 3. Cleats: Fabricate cleats of same material as sheet, interlockable with sheet in accordance with CDA recommendations.
 - 4. Fabricate corners from one piece with minimum 18 inch (450 mm) long legs; solder for rigidity if required; seal non-soldered weather joints with sealant.
- B. Seams: Fabricate nonmoving seams with flat-lock seams where possible. Tin edges and cleats to be seamed, form seams, and solder. Where soldered flat-lock seams are not possible, use soldered riveted lap seams joints for additional strength.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1-inch (25 mm) deep, filled with mastic sealant (concealed within joints).
- D. Sealant Joints: Where movable, nonexpansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with CDA standards.
- E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- F. Solder
 - 1. Solder and seal metal joints except those indicated or required to be expansive type joints.
 - 2. Tin edges of copper sheets and cleats at soldered joints.
 - 3. After soldering, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda solution, and then flushing clear water rinse. Wipe and wash solder joints clean.

- G. Seams: Provide following seam types unless noted or detailed otherwise.
 - 1. Flat: Drive cleat
 - 2. Corner: Double lock corner
- H. Standing: Double lock standing lap seam.
- I. Copper Thickness: Comply with CDA recommendations for copper size and shape.
- J. Flashing and Counter Flashing:
 - 1. Fabricate as indicated on Drawings and in accordance with the CDA "Copper in Architecture" handbook.
 - 2. Match existing building standards; at a minimum:
 - a. Hem exposed flashings on underside 1/2 inch (13 mm); miter and seam corners.
 - b. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
 - c. Fabricate flashings to allow toe to extend minimum 2 inches (50 mm) over wall surfaces.
- K. Coping: Match existing building standards.
- L. Valley Flashing:
 - 1. Fabricate valley flashing according to details and specified requirements.
 - 2. Match existing building standards. At a minimum, fabricate metal flashings at open valleys with a minimum 1 inch (25 mm) high standing rib at center of valley to break force of water flow.

2.04 FINISHES

- A. Natural weathering mill finished copper. No applied finish.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. General: Examine conditions and proceed with work when substrates are ready.
- B. Confirm that substrate system is even, smooth, sound, clean, dry, and free from defects.

3.02 INSTALLATION

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with the "Copper in Architecture" handbook published by the Copper Development Association (CDA). Anchor units of work securely in place by methods indicated, providing for thermal expansion of units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
 - 1. Install units plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.
 - 2. Apply asphalt mastic on copper surfaces of units in contact with dissimilar metals.
 - 3. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
 - 4. Miter, lap seam and close corner joints with solder. Seal seams and joints watertight.
 - 5. Install expansion joints at frequency recommended by CDA. Do not fasten moving seams such that movement is restricted.

6. Coordinate with installation of roofing system and roof accessories.
- B. Underlayment: Where installation is to be directly on cementitious or wood substrates, install red rosin paper slip sheet over layer of asphalt saturated felt.
- C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- D. Counterflashing and Reglets:
 1. Fabricate counterflashings and reglets as 2 piece assemblies to permit installation of counterflashing after base flashings are in place.
 2. Fabricate reglets of same metal and thickness as counterflashings.
 3. Overlap roof base flashing 4 inches (100 mm) minimum.
 4. Install bottom edge tight against base flashing.
 5. Lap seam vertical joints 3 inches (75 mm) minimum and apply sealant.
- E. Install counterflashing in reglets, either by snap-in seal arrangement, lock seal in accordance with the "Copper in Architecture" handbook published by the Copper Development Association (CDA), or by soldering in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.
- F. Fasten flashing to curb nailers at maximum spacing of 3 inches (75 mm) O.C. Fabricate seams at joints between units with minimum 4-inch (100 mm) overlap, to form continuous, waterproof system in accordance with the "Copper in Architecture" handbook published by the Copper Development Association (CDA).
- G. Valley Flashing:
 1. Extend metal flashing a minimum of 12 inches (300 mm) onto roof deck on each side of valley.
 2. If valley length exceeds 12 feet (3600 mm), increase width of valley flashing by 1 inch (25 mm) on each side per 96 inches (2400 mm) of valley length.

3.03 CLEANING

- A. Remove protective film (if any) from exposed surfaces of copper promptly upon installation. Strip with care to avoid damage to finishes.
- B. Clean exposed copper surfaces, removing substances that might cause abnormal discoloration of metal.
- C. Upon completion of each area of soldering, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda solution, and then flushing with clear water rinse. Use special care to neutralize and clean crevices.
- D. Clean exposed metal surfaces of substances that would interfere with normal oxidation and weathering.

3.04 PROTECTION

- A. Advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION – 07 62 00

07 92 00 JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General, Bidding Documents, Contract Forms and Conditions of the Contract, and Division 01 – General Requirements, apply to the work of this Section.
- B. Examine all Drawings and all Sections of the Specifications for the requirements and provisions affecting the work of this Section.
- C. Related Work Specified Elsewhere:
 - 1. Section 01 73 29 – Cutting and Patching
 - 2. Section 07 31 26 – Slate Shingles
 - 3. Section 07 62 00 – Sheet Metal Flashing and Trim

1.02 DEFINITIONS

- A. The words "caulking," "sealant," and "sealing," shall be considered synonymous when used on Drawings or Specifications. It shall be understood that each word defines making a gap, joint, or seam, weathertight. Use of any of these words shall not be taken as defining type or quality of material used.

1.03 SCOPE OF WORK

- A. All work shall comply with the recommendations of the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- B. The Contractor shall furnish and install all necessary labor, materials, equipment, services, tools and any other incidentals necessary for the following:
 - 1. Exterior joint sealants and backer rods in vertical and horizontal surfaces; to provide weathertight assemblies and control anticipated structural and thermal movements between similar and dissimilar materials indicated.
 - 2. Interior joint sealants in vertical and horizontal surfaces, as required.
 - 3. Joints between dissimilar materials in new and existing construction.
 - 4. All other joints as indicated or required, not specified elsewhere.

1.04 REFERENCES

- A. The following standards shall apply to work of this section:
 - 1. American Architectural Manufacturer's Association (AAMA) 850 – Voluntary Specifications and Test Methods for Sealants.
 - 2. American Concrete Institute (ACI) 302.1R - Guide for Concrete Floor and Slab Construction.
 - 3. American Society for Testing and Materials (ASTM):
 - a. C 790 - Guide for Use of Latex Sealants.
 - b. C 804 - Practices for Use of Solvent-Release Type Sealants.
 - c. C 834 - Specification for Latex Sealing Compounds.
 - d. C 881 - Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
 - e. C 919 - Practices for Use of Sealants in Acoustical Applications.
 - f. C 920 - Specification for Elastomeric Joint Sealants.
 - g. C 1184 - Specification for Structural Sealants.
 - h. C 1193 - Standard Guide for Use of Joint Sealants.
 - 4. Federal Specifications (FS):

- a. SS-S-200E - Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold-Applied, for Portland Cement Pavement.
 - b. TT-S-001657 - Sealing Compound: Single Component, Butyl Rubber Based, Solvent Release Type (For Buildings and Other Types of Construction).
5. Sealant, Waterproofing and Restoration Institute (SWRI) - Sealant and Caulking Guide Specification.

1.05 SINGLE SOURCE RESPONSIBILITY

- A. Qualifications:
- 1. Manufacturer of sealants shall provide, if required by the Architect, a qualified technical representative who will visit the site for the purpose of advising the Contractor of the proper procedures and precautions for the use of the materials.
 - 2. Installer of sealants shall have a minimum of five (5) years of successful experience in the application of the type of materials specified in this Section and only skilled workmen shall be employed for the work.

1.06 QUALITY ASSURANCE

- A. Applicator: Firm specializing in installing sealants with minimum 5 years' experience in work of this Section.
- B. Perform work in accordance with SWRI Guide Specifications and ASTM C 1193.
- C. Manufacturer to instruct applicator in procedures for intersecting sealants.

1.07 SUBMITTALS

- A. General: Submit the following in accordance with Division 01 specifications.
- B. Product Data:
- 1. Copies of manufacturer's latest published literature and all manufacturer color charts for materials specified herein shall be submitted for approval, and approval obtained before materials are delivered to the site.
 - 2. Include sealants, primers, joint backup materials, bondbreakers, and accessories proposed for use.
- C. Samples: Submit manufacturer's full line of standard colors for selection.
- 1. Color samples for each sealant.
 - 2. 6 inch long joint backup samples.
- D. Applicator Qualifications: Written documentation of applicator's qualifications, including previous projects.
- E. Preconstruction compatibility and adhesion test as performed by the sealant manufacturer.

1.08 DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered to the site, in original unopened containers, clearly indicating manufacturer's name, brand name, and other identifying information and shall be free of foreign matter. All materials and/or equipment which have become damaged or otherwise unfit for use during delivery, or storage, shall be replaced at the expense of the Contractor.

1.09 PROJECT CONDITIONS

- A. Do not apply sealants at temperatures below 40 degrees F (4 degrees C) unless additional steps are taken to prevent freezing and frost buildup.

1.10 SEQUENCING

- A. Apply waterproofing, water repellents, and preservatives after application of sealants unless sealant manufacturer's approval is obtained prior to applying sealant.

1.11 WARRANTY

- A. The Contractor shall execute and deliver to the Owner before final payment is made, a written warranty in a satisfactory form, stating that all labor and materials furnished, and work performed by the Contractor are in accordance with the Contract Documents and authorized alterations and additions thereto; and that, should any defects develop during the warranty period, the Contractor shall upon written notice from the Architect or Owner, replace or satisfactorily repair such defects, including adjustments to adjacent work, as required; at the convenience of, and without expense to the Owner. Contractor shall warranty all labor for two (2) years from date of final acceptance. Provide twenty (20) year material warranty on silicone products and five (5) year warranty on urethane products."

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Approved manufacturers:
 - 1. Pecora Corporation (Basis of design)
 - 2. Tremco Incorporated
 - 3. Sika Corporation
 - 4. Or approved equal.

2.02 JOINT SEALANT MATERIALS

- A. Sealant Types
 - 1. Sealant No. 1:
 - a. For use at:
 - 1) Miscellaneous Exterior Sealant
 - 2) Stone to Stone
 - 3) Stone to Masonry
 - 4) Stone to Metal
 - 5) Masonry to Masonry
 - 6) Masonry to Metal
 - 7) Metal to Metal
 - 8) Type: Single component, ultra-low modulus, neutral moisture curing silicone sealant; ASTM Specification C 920, Type S, Grade NS, Class 100, Use NT, M, G, O and A.
 - 9) Movement Capability: 100 percent in extension and 50 percent in compression.
 - 10) Product: 890FTS (field tintable) (Basis of design)
 - 11) Color: As selected by Architect from manufacturer's standard colors.
 - i) Provide a different color at each condition and 2 colors for the different colored slate shingles.
 - 2. Sealant No. 2:
 - a. For use at:
 - 1) General Purpose Polyurethane Sealant

- 2) Stone to Wood
 - 3) Masonry to Wood
 - 4) Metal to Wood
 - b. Type: Hybrid STPU (silyl-terminated polyurethane)
 - c. Product: Dynatrol I-XL Hybrid (Basis of design)
 - d. Warranty: 10 years
 - e. Color: As selected by Architect from manufacturer's standard colors.
 - 1) Provide a different color at each condition.
- B. Conduct field adhesion test for approval by manufacturer's representative, when recommended, furnish primer.

2.03 ACCESSORIES

- A. Primers: As recommended by sealant manufacturer for project substrates. Representative substrate testing according to ASTM C-794 (adhesion), ASTM C-1087 (compatibility), ASTM 1248 (stain) provided by sealant manufacturer prior to sealant application.
- B. Joint Backup: As approved by sealant manufacturer.
 - 1. Non-staining, open-cell polyurethane, close-cell polyethylene, or soft, reticulated polyethylene.
 - a. Masonry Expansion and Control Joints: Closed cell neoprene sponge
 - 2. Combination Type Backup: When combination rod with open cell interior and continuous plastic skin is required, use Dual-Rod by HMC, Inc (Basis of design), or approved equal.
 - 3. Size closed cell joint backing for joint width plus 25 percent.
- C. Bondbreaker Tape: Manufacturer's recommended black polyethylene tape or approved equal.

2.04 MISCELLANEOUS MATERIALS

- A. Cleaners for nonporous surfaces: Provide non-staining chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.
- B. Masking Tape: Provide non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints

PART 3 - EXECUTION

3.01 GENERAL

- A. General
 - 1. Joint widths, as indicated on the Drawings, have been based upon the probable movement of the adjacent construction and the specified sealants. Therefore, the Contractor shall install all sealants at a temperature of between 45 deg. F. and 85 deg. F. Do not proceed with installation of sealants during inclement weather, or when the surfaces of the joints are damp or contain frost, dirt or any foreign substance.
- B. Sealant
 - 1. Sealant shall be backed to within one-half inch (1/2") of the surface with the specified backup materials before caulking unless otherwise indicated or as

recommended by the manufacturer. The caulking stop shall not project beyond the specified depth of the open space in any joint. The open depth of joints shall be solidly filled with caulking compound.

2. Finish sealants shall be consistent, smooth, free from sagging or roping, or other defects. Materials behind sealants shall not be visible or telegraph through finish surface in any way.
3. Sealant thickness, minimum width and surface contact to be per sealant manufacturer's recommendations

3.02 PREPARATION

- A. Prepare surfaces to receive sealants in accordance with manufacturer's instructions.
- B. Perform preparation as appropriate, in accordance with:
 1. ASTM C 804 for solvent release sealant.
 2. ASTM C 790 for latex base sealant.
 3. ASTM C 909 for acoustical sealant.
- C. Clean joints and surfaces to receive sealant of frost, dust, loose mortar, and other foreign materials.
- D. Clean ferrous metals of rust, mill scale and coatings by wire brush, grinding or sandblasting.
- E. Remove oil, grease and temporary protective coatings with cleaners approved by sealant manufacturer. Dry wipe immediately after cleaning with clean, dry cloth before solvent evaporates from surface.
- F. Abrade poured-in-place concrete surfaces to remove form release agents and chemical retarders which could interfere with sealant adhesion and performance.
- G. Brush or blow joints clean.
- H. Allow surfaces to dry completely before applying primer or sealant.
- I. Apply primer when recommended by sealant manufacturer.
- J. Sealant Dimensions:
 1. Size joints in accordance with sealant manufacturer's instructions.
 2. Minimum Joint Dimensions: 1/4 inch (6 mm) wide by 1/4 inch (6 mm) deep, except in metal-to-metal curtain wall applications when recommended by sealant manufacturer.
- K. Do not apply sealant until joints comply with manufacturer's requirements.

3.03 INSTALLATION QUALITY CONTROL

- A. Field Adhesion Test: The contractor shall obtain the sealant manufacturer's representative to perform field sealant adhesion pull test and submit written test results. Two (2) tests minimum for each substrate.

3.04 APPLICATION

- A. Apply sealants in accordance with manufacturer's instructions.
- B. Install joint backing with a blunt instrument; prevent puncturing of surface skin.
- C. Apply sealant with caulking gun, using proper nozzles.

- D. Use sufficient pressure to completely fill joints and ensure full contact of sealant to joint sides.
- E. After joints have been filled, tool to eliminate air pockets and voids. Dry tooling is required first; tooling agents such as xylol may be used to smooth joint if necessary. Avoid contamination of open joints below.
- F. Tool surface smooth, uniform, and free of ridges, wrinkles, sags, air pockets and embedded impurities.

3.05 SCHEDULE

- A. As appropriate for material types indicated in Article 2.02.

3.06 CLEANING AND PROTECTION

- A. Remove sealant from adjacent surfaces immediately.
- B. Upon completion of the work, all unused materials, containers, equipment, etc., shall be removed from the site. All floors, walls, and other adjacent surfaces that are stained or damaged by work of this Section, shall be repaired and all work and the adjacent surfaces shall be left in a clean and undamaged condition.

END OF SECTION – 07 92 00

APPENDIX 01

BELMONT TOWN HALL ROOF ASSESSMENT REPORT

For Reference Only. Contractors shall base bids and scope of work on relevant drawings and specification sections.

Belmont Town Hall Roof Assessment Report

Belmont Town Hall
455 Concord Avenue
Belmont, MA
02478
Date: 5.25.2021

The Belmont Town Hall is a masonry structure with a slate roof built in 1881 and has gone through several renovations. The town of Belmont observed, damage to the chimneys, damage to a roof spire, uplifting roof slate & a history of water intrusion in interior spaces of the building. The following is an assessment of the roof & brick chimneys outlining scope of work and recommendations.

The gray slate on the body of the roof are "Monson slate", originally from Monson Maine. Although Monson roofing slate have not been produced since 1968, they are one of only several North American slate types that have a service life in excess of 200 years. The "accent slate" are "Unfading Red " slate that are still available and quarried in a single quarry located in Hampton NY (on the Vermont border). Due to their density, these red slate also have an extensive service life. We could see in site inspections and in drone photography a "reasonable" amount of broken or missing slate of both types, which indicates a "routine maintenance" condition. We observed slate is fastened with copper nails, which is appropriate, in accordance with industry standards and will last for the life of the slate. What all this means is that the primary roof covering (the slate) are in serviceable condition with significant service life remaining. The slate requires routine maintenance only, not replacement. Although the Monson slate are no longer quarried, they are available in limited quantities on the "salvage" slate market.

Broken and Missing slate tiles were observed during site inspections.

Most often, water infiltration within the open roof areas is usually caused by cracked or broken slate which can be remediated by replacing them. All missing or broken slate should be replaced, this includes a slate that has in exposed butt corner in excess of 1-1/2" on either the vertical or horizontal leg.

There are areas of the roof where there are observable raised slate; this condition usually indicates a defect in the sheathing deck. It is recommended to be remediated, as the unsupported slate will eventually break under a live-load. This is typically repaired by removing the existing unsupported slate and "fairing" the wood deck to allow the slate to lie fully supported (usually the culprit is a protruding edge of a sheathing board).

During site visits we did not observe any active water infiltration.

If there is any active water infiltration in a certain area of the build the underlayment on the roof should be inspected above that area. This would require removing slate to inspect the underlayment in the event of active water infiltration documented in the large or "open" sections. Given the age of the roof, we can assume that the original (cellulose or asphalt impregnated sheet) underlayment is fully deteriorated if it was never replaced. So, we recommend avoiding removing the slate in the large roof "fields" just to replace the

underlayment, unless there is significant water infiltration caused by a lack of functioning underlayment. Most often, water infiltration within the open roof areas is usually caused by cracked or broken slate which can be remediated by replacing them.

Copper architectural details were visually inspected from the ground, on boom lift and by drone photography. Some spires, finials, hips, valleys, and secondary ridge caps have been "recently" replaced (noting the dark brown copper color and the absence of green patina). Except for the newer hip cap that is missing from one of the ridge spires, the more recent copper details appear to be in good condition. The older copper details (showing a light green patina) include the main crenelated ridge caps and several minor ridge spires. While the hue of the patina is an indication that those details may have limited-service life remaining, they appear to be currently intact and would be expensive to replace. This is consistent with the previous building renovations as noted on 1998 drawings issued by Court Street Architects. Intact self adhered membrane underlayment was observed near gutter line during physical inspection of slate roof from a boom lift, which is also consistent with previous renovation design documents.

Like the slate roof the chimneys will also require routine maintenance with spot repointing locations of missing mortar (being careful to match the existing mortar color and hardness) as well as replacement or rebuilding of each chimney head (a.k.a. wash or cap). The copper counterflashing of each chimney appears to be the same age as the more recent copper work and appears to be correctly installed. 3 chimneys are fully open to water intrusion at the top of the chimneys as caps are missing or partially removed. 2 chimneys will need a new (wash or cap). The 3rd chimney will need a special storm cap to allow for mechanical equipment exhaust fumes to escape as this chimney is serving as flue. It is also recommended to confirm the interior flue condition and part of this scope of work could be to install a B vent exhaust inside the existing chimney.

During site inspection of attic space roof sheathing was verified as 1" thick wood tongue and groove sheathing in good condition and appears to be the original wood sheathing. There were signs of previous water intrusion on the sheathing and structural wood beams as water staining was observed on the wood. Copper roofing nails were observed fastened into the wood sheathing from the exterior. Active water intrusion was not observed. Wood and insulation were dry.

Structural Masonry wall in attic was had noticeable signs of previous water intrusion as some areas were completely white due to efflorescence. Wood beams and wood sheathing directly adjacent to this wall also had signs of water intrusion from the brick and efflorescence had been carried from the masonry to the wood. No active water intrusion was observed. Masonry was dry at the time of observation. Water intrusion from the open masonry chimneys and missing slate may be contributing the masonry wall condition.

A flat portion of roof where mechanical equipment is located has a single membrane roof that appears to be in good condition.

Previous water intrusion was observed in gypsum ceilings at top of stairwell. It was noted that previous water intrusion was observed in auditorium ceiling as well. We do not know of any active water intrusion in these areas.

Scope of Work & Recommendations:

1. Water intrusion testing of the roof should be performed by a 3rd party contractor.
2. Missing or broken slate should be replaced and match existing.
3. Slate that does not match the color of the existing slate should be removed and replaced with historic salvaged "Monson" and "Unfading Red".
4. In areas that have visible deflection in the roof & sheathing and areas where slate is lifting up, sheathing should be reinforced to allow the slate to be fully supported.
5. Chimney brick should be repaired as outlined.
6. Chimney caps should be replaced as outlined.
7. Restore roof spire that is missing copper hip.

8. If any active leaks appear under roof, underlayment should be exposed for inspection in those areas.
9. Construction / bidding documents should be prepared. It is recommended that the roof be repaired as soon as possible and before the winter weather approaches.

Attachments: Drawings & Site Photographs



Project Number
2105
Project Title
Belmont Town Hall
455 Concord Avenue
Belmont, MA 02478

Drawing Title
Attic Plan

Date/Issued for
05.25.21

Roof Assessment Report

NOT FOR CONSTRUCTION

Scale
As Noted

Drawn By
TGAS

Drawing Number

A-101



1



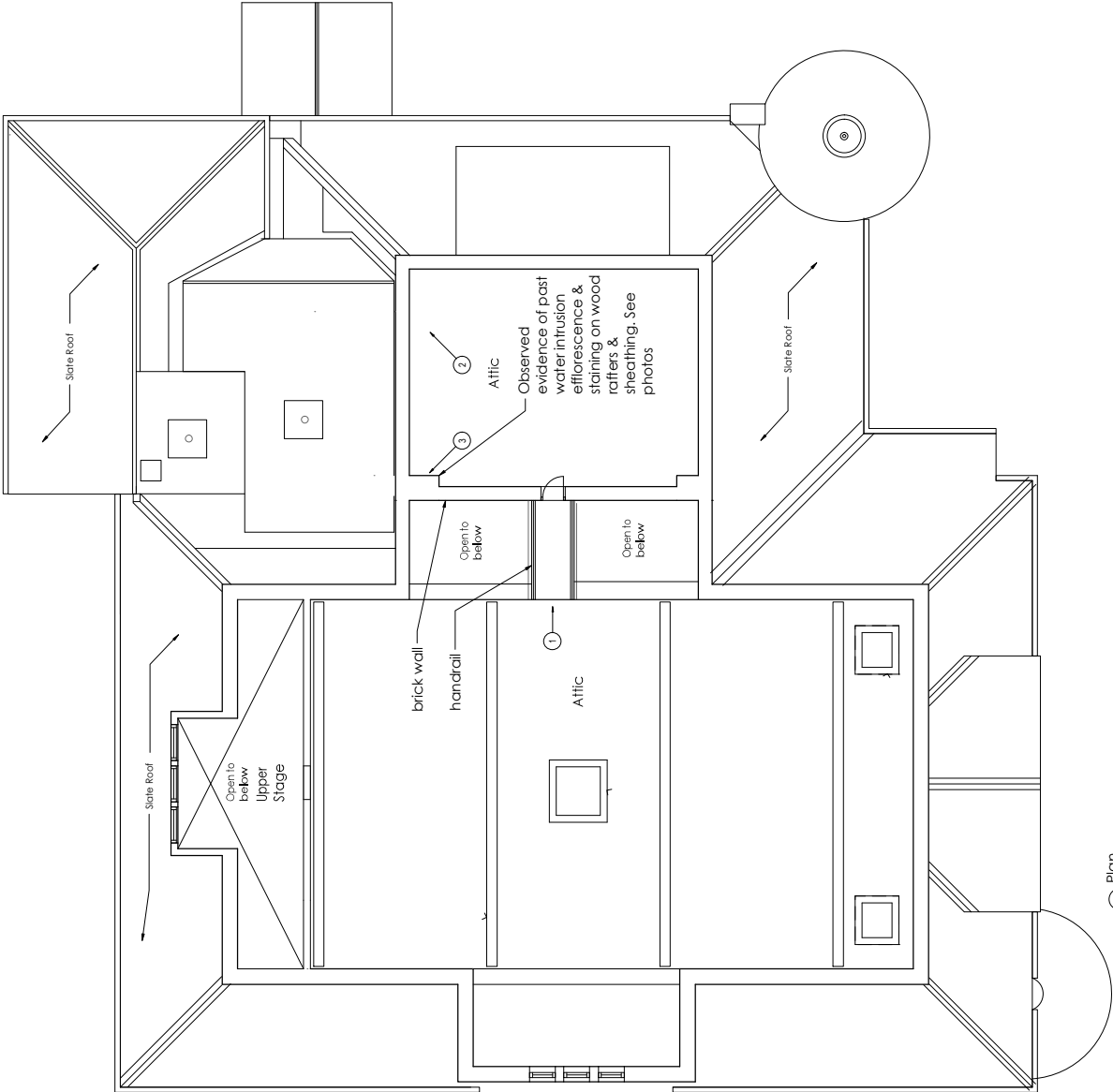
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3



4





Project Number
2105
Project Title
Belmont Town Hall
455 Concord Avenue
Belmont, MA 02478

Drawing Title
Attic Reflected
Ceiling Plan

Date/Issued for
05.25.21

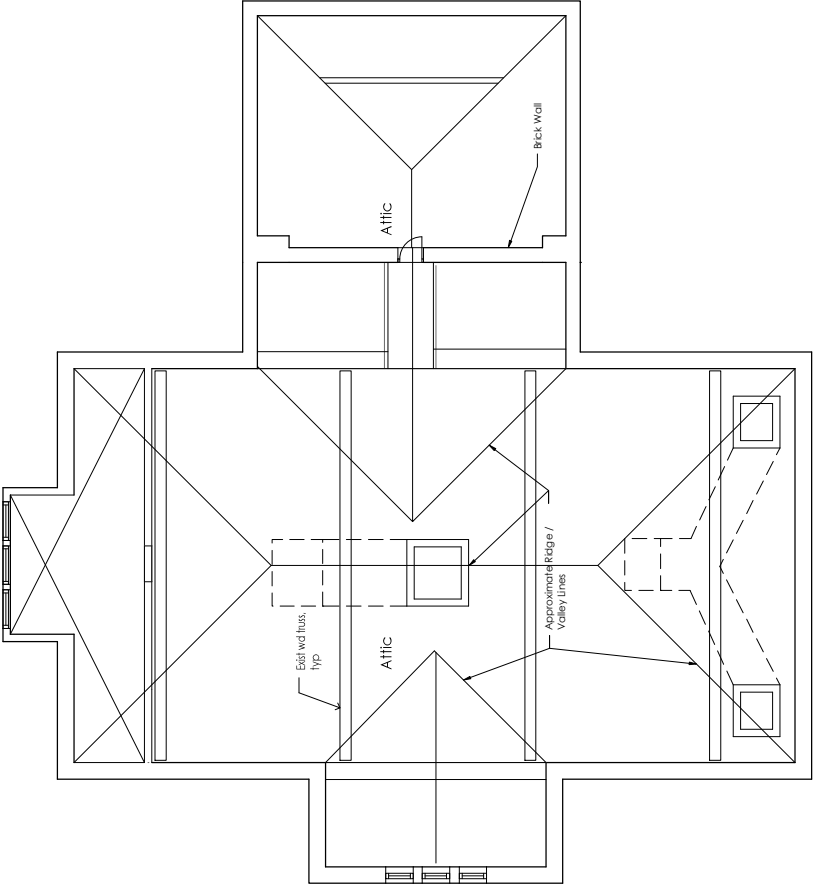
Roof Assessment Report
NOT FOR CONSTRUCTION

Scale
As Noted

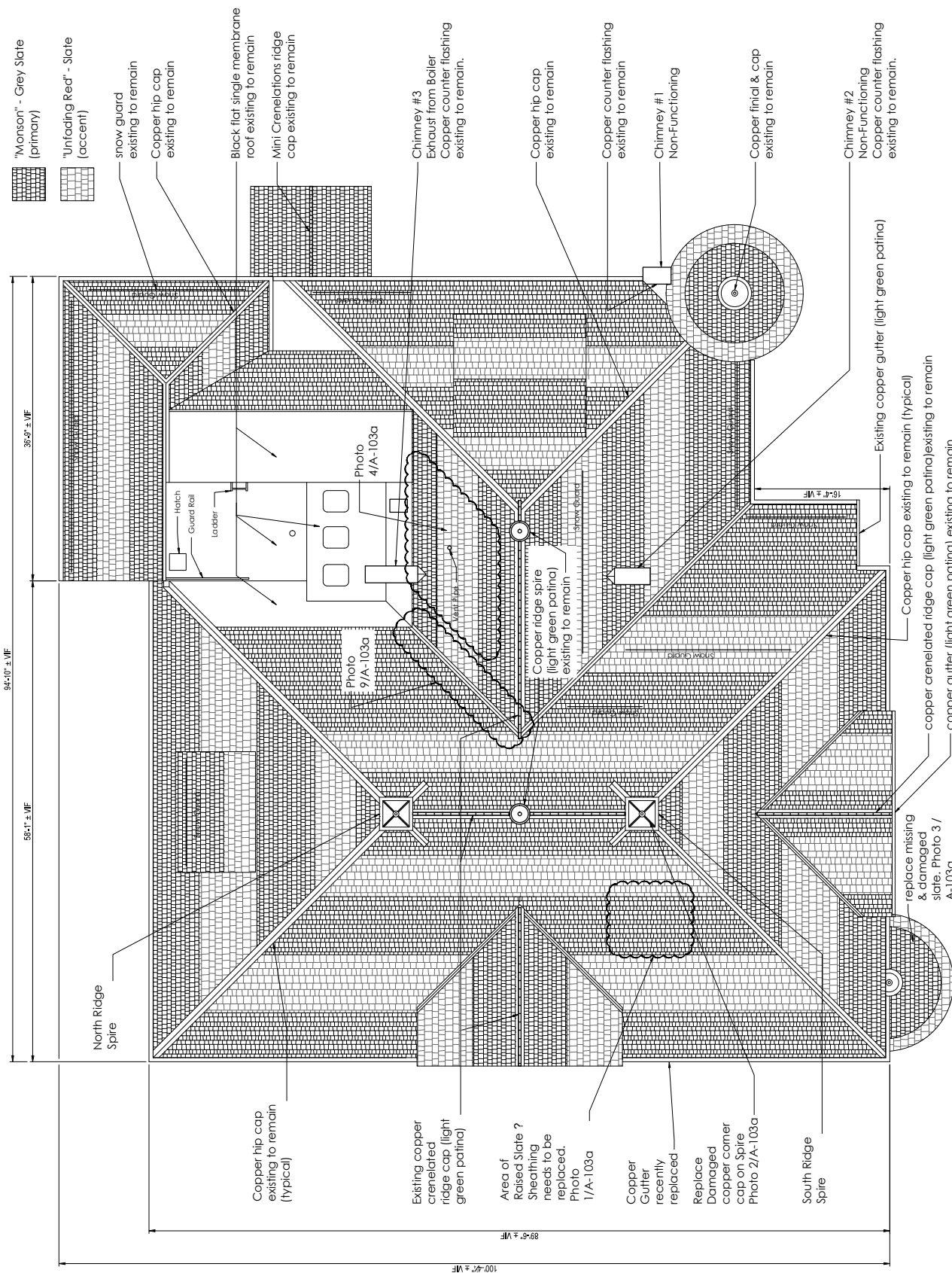
Drawn By
TGAS

Drawing Number

A-102



① Reflected Ceiling Plan 3/16/21/22



1 Roof Plan



Project Number
2105
Project Title
Belmont Town Hall
455 Concord Avenue
Belmont, MA 02478

Drawing Title
Roof Plan

Date/Issued for
05.25.21
Roof Assessment Report
NOT FOR CONSTRUCTION

Scale
As Noted
Drawn By
TGAS
Drawing Number

A-103



1. Raised Slate, Sheathing Damaged



2. Damaged Ridge on South Spire



3. Damaged & missing Slate



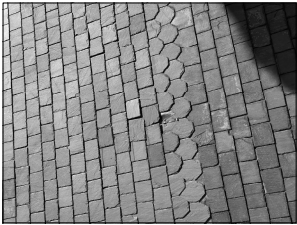
4. Deflection in Roof



5. Damaged, cracked and broken Slate



6. Typical Damaged Slate



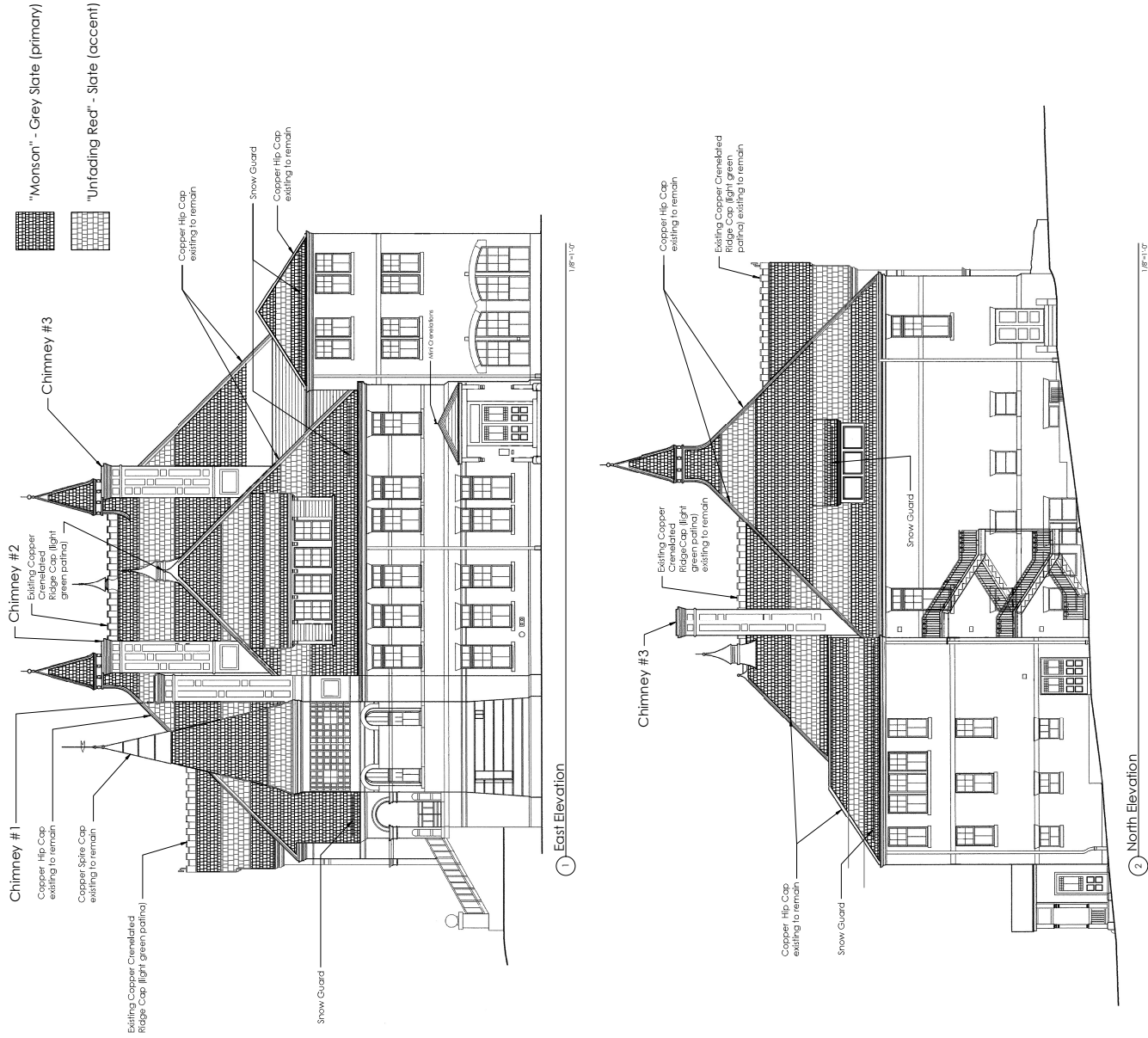
7. Typical damaged and Missing Slate



8. Damaged Slate & Mismatched Color



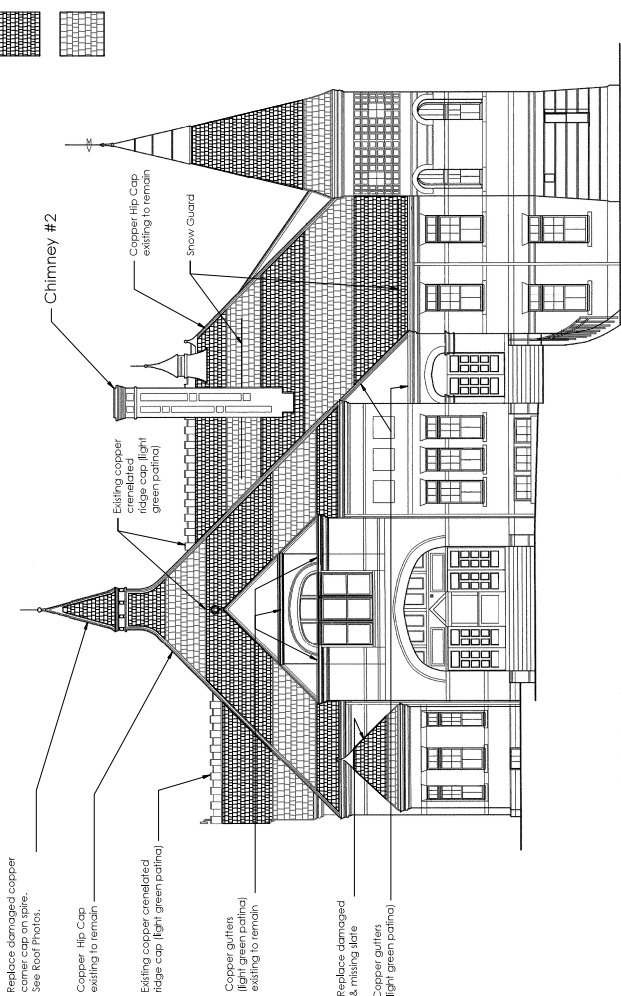
9. Valley Flashing



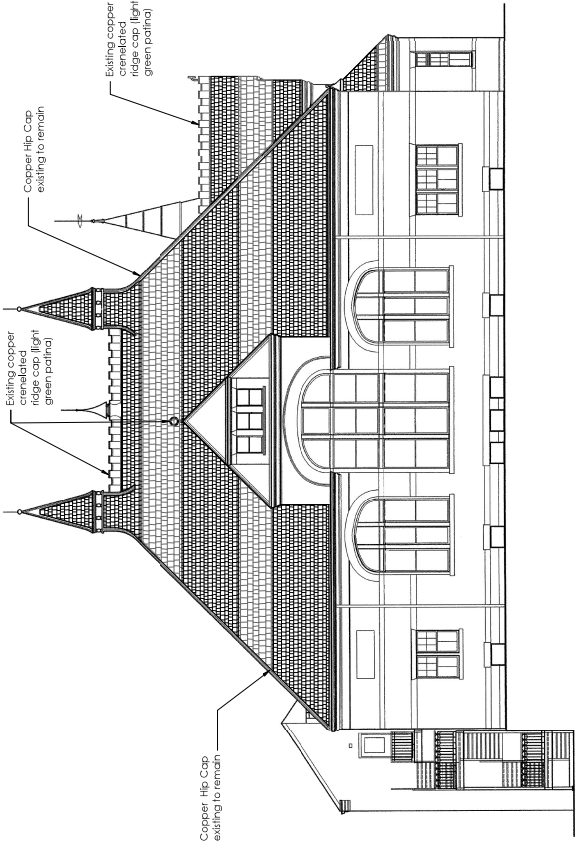
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"Monson" - Grey Slate (primary)
- 

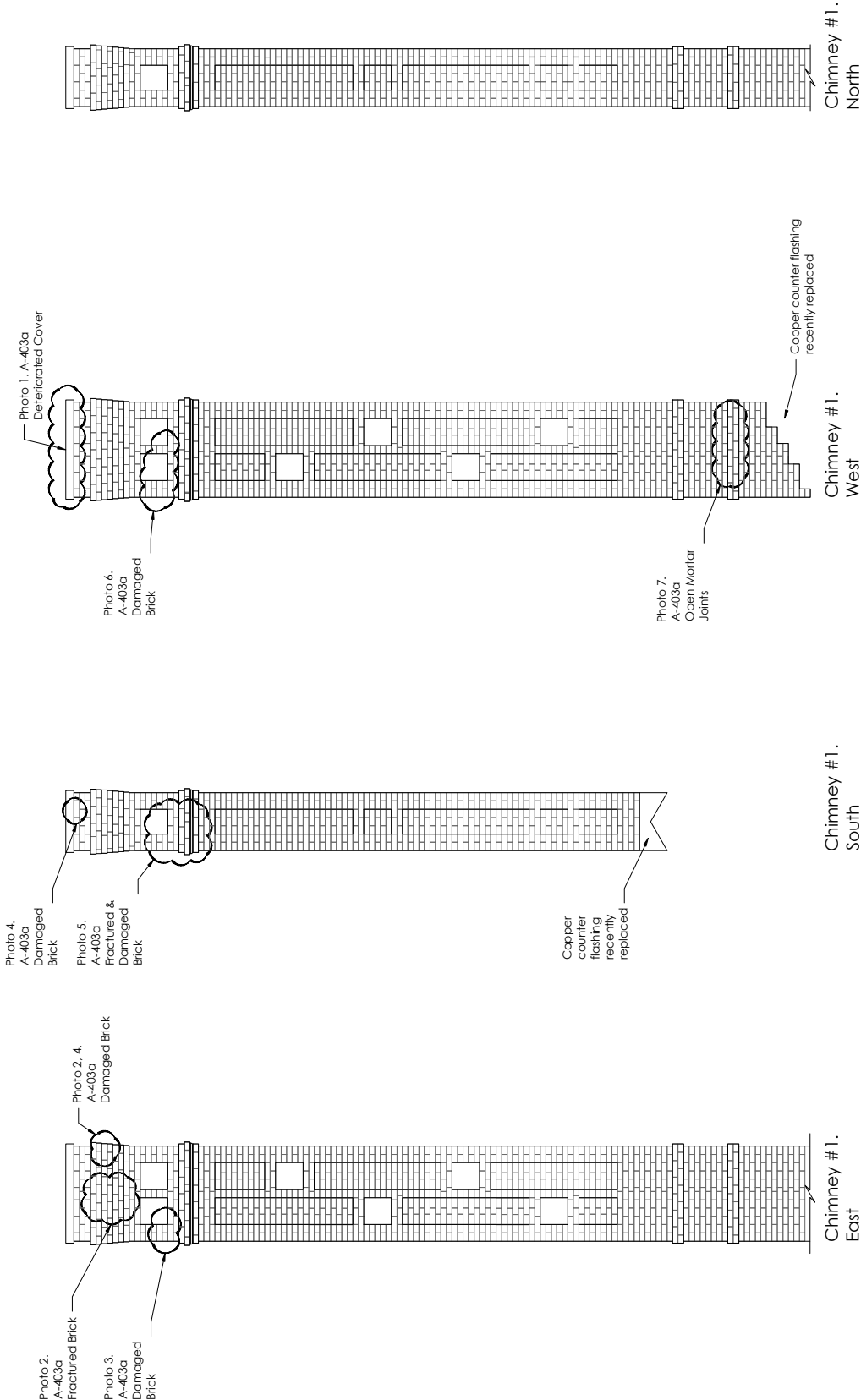
"Unfading Red" - Slate (accent)



1 South Elevation



2 West Elevation



1 Chimney #1 Elevations

1/2"=1'-0"

Project Number
2105
Project Title
Belmont Town Hall
455 Concord Avenue
Belmont, MA 02478

Drawing Title
Chimney #1
Elevations

Date/Issued for
05.25.21

Roof Assessment Report

NOT FOR CONSTRUCTION

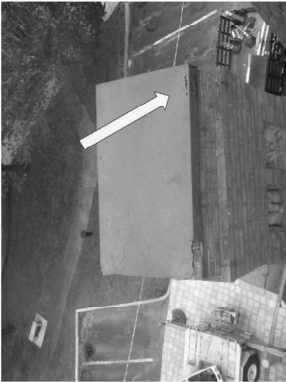
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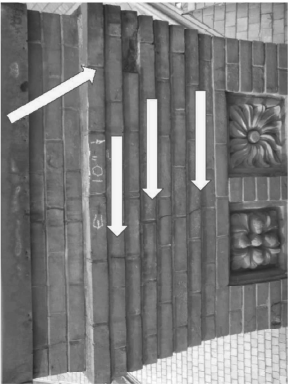
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A-403

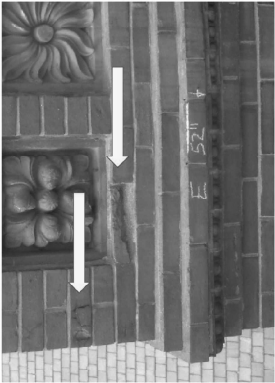
SMALL CHIMNEY



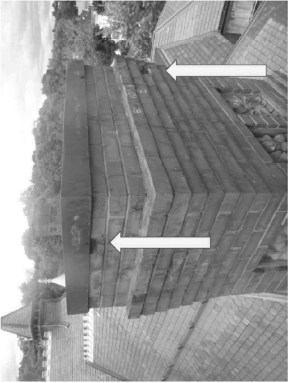
1. Deteriorated Cover



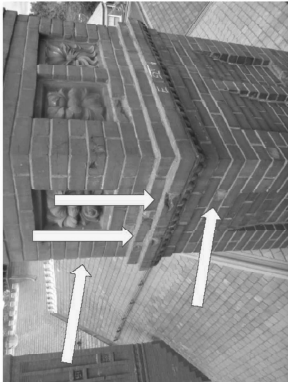
2. East Elevation. Fractured and damaged brick



3. East Elevation. Damaged brick 48" from top.



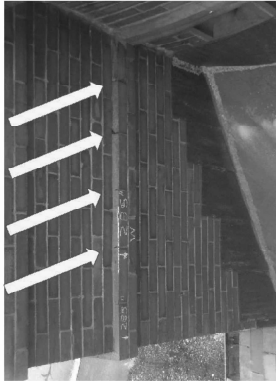
4. South Elevation. Damaged brick 6" from top.



5. South Elevation. Fractured and damaged brick 52" from top



6. West Elevation. Damaged brick 40" from top.



7. West Elevation. Open mortar joints 285" from top

Chimney #2.
Photo 1. A-404a
Fracture in Cap

Photo 4.
A-404a
Fracture
Brick

Photo 5.
A-404a
Open Mortar
Joints

Photo 2.
A-404a
Open mortar
Joint

Photo 3.
A-404a
Open Mortar
Joint

Copper counter flashing
recently replaced

Chimney #2.
Photo 6. A-404a
Fractures & Open
Mortar Joints

Photo 7.
A-404a
Open mortar
Joints

Photo 9.
A-404a
Open
Mortar
Joints

Copper counter flashing
recently replaced

Chimney #2.
West

Chimney #2.
South

Chimney #2.
East

Chimney #2.
North

1 Chimney #2 Elevations

1/2"=1'-0"

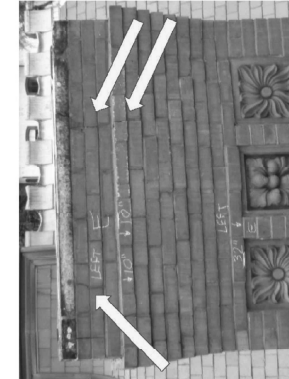
LEFT CHIMNEY



1. Fracture in Cap



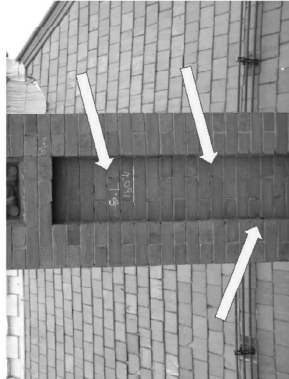
2. North Elevation. Open mortar joint



4. East Elevation. Fractured brick 10" from top



5. East Elevation. Open mortar joints 52" from top



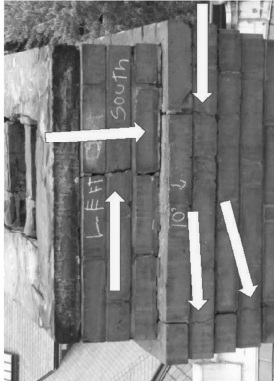
7. South Elevation. Open mortar joints 160" from top



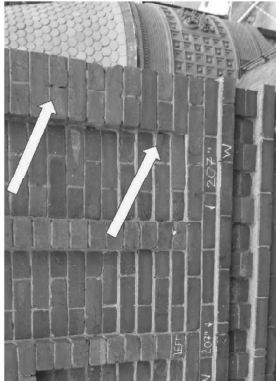
8. West Elevation. Open mortar joint 10" from top



3. North Elevation. Open mortar joint at base of chimney



6. South Elevation. Fractures and open mortar joints 10" from top



9. West Elevation. Open mortar joints 190" from top

Project Number
2105
Project Title
Belmont Town Hall
455 Concord Avenue
Belmont, MA 02478

Drawing Title
Chimney #3
Elevations

Date/Issued for
05/25/21

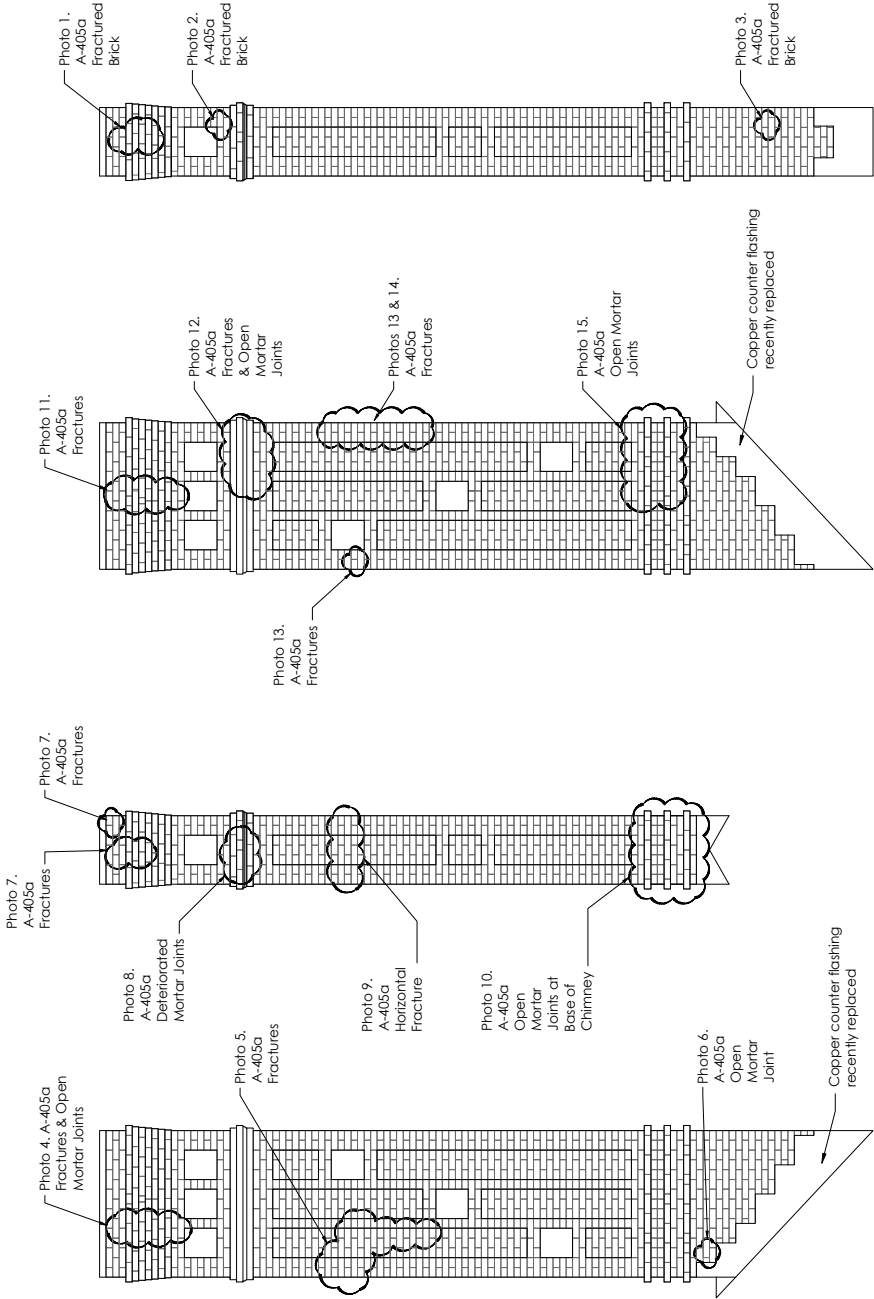
Roof Assessment Report

NOT FOR CONSTRUCTION

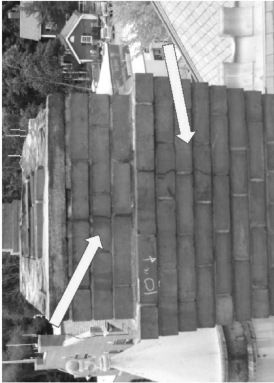
Scale
As Noted
Print 24x36

Drawn By
TGAS

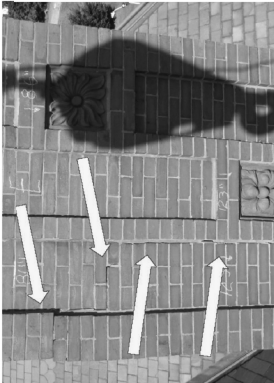
Drawing Number
A-405



Chimney #3. East
Chimney #3. South
Chimney #3. West
Chimney #3. North



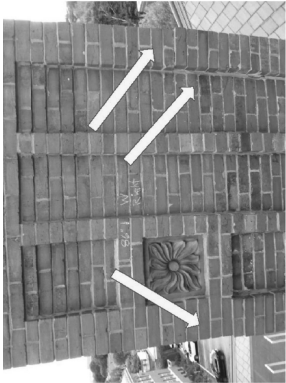
1. North Elevation. Fractures 10" from top



5. East Elevation. Fractures 90" 120" from top



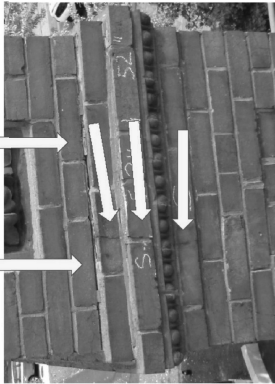
9. South Elevation. Horizontal fractures
100" from top



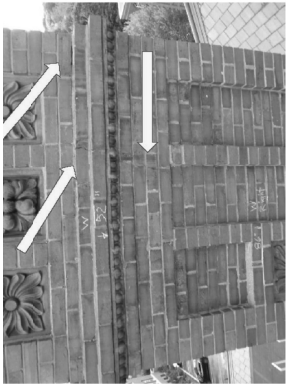
13. West Elevation. Fractures 96" from top



4. East Elevation. Fractures & open
mortar joints 10" from top



8. South Elevation. Deteriorated
mortar joints 50" from top



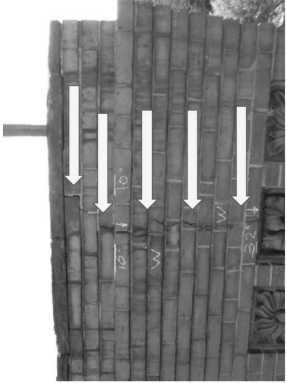
12. West Elevation. Fractures & open
mortar joint 52" from top



3. North Elevation. Fractures 255" from top



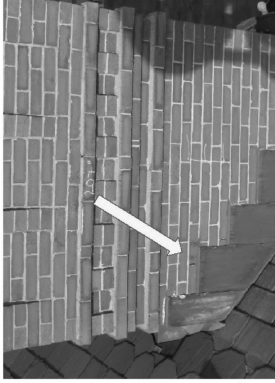
7. South Elevation. Fractures 10" from top



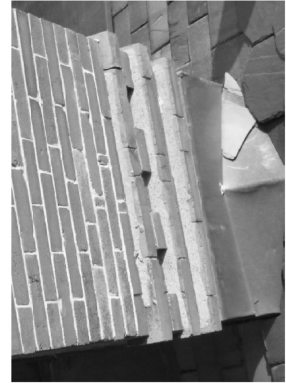
11. West Elevation. Fractures at top of chimney



2. North Elevation. Fractures 48" from top



6. East Elevation. Open mortar joints 228" from top



10. South Elevation. Open mortar at base of chimney