



Barton
Malow
Design/Construction Services

WATERFORD SCHOOL DISTRICT
Waterford, Michigan

BID PACKAGE 17-5

Supplemental Cooling

PROJECT MANUAL
Book 2 of 2 – General Conditions

July 18, 2017

**SECTION 00010
PROJECT MANUAL
TABLE OF CONTENTS**

INTRODUCTORY INFORMATION – Issued in book form with drawings (not herein)

ISSUE DATE

00001	Project Manual Cover (<i>Cover Sheet</i>)	See Bid Package Materials
00010	Table of Contents	See Bid Package Materials
00030	Information and Identities	See Bid Package Materials

BIDDING REQUIREMENTS - Issued in book form with drawings (not herein)

00100	Advertisement to Bid	See Bid Package Materials
00200	Instructions to Bidders	See Bid Package Materials
00210	Description of Work/Special Provisions	See Bid Package Materials
00220	Work Scopes	See Bid Package Materials
00230	Schedule and Phasing	See Bid Package Materials
00400	Bid Proposal Form	See Bid Package Materials
00410	Familial Relationship Disclosure Form	See Bid Package Materials
00870	Labor Relations	See Bid Package Materials

CONTRACTING REQUIREMENTS – Included within the online portion of the project manual Book 2 of 2

ISSUE DATE

00500	Agreement Form (Contract)	<i>July 18, 2017</i>
00610	Bonds	<i>July 18, 2017</i>
00620	Insurance	<i>July 18, 2017</i>
00810	On-Site Project Safety and Loss Control Program	<i>July 18, 2017</i>
00840	Hazardous Materials	<i>July 18, 2017</i>
00880	Regulatory Requirements	<i>July 18, 2017</i>

DIVISION 1 GENERAL REQUIREMENTS – Included within the online portion of the project manual Book 2 of 2

01140	Use of Premises	<i>July 18, 2017</i>
01250	Changes in the Work	<i>July 18, 2017</i>
01290	Payment Procedures	<i>July 18, 2017</i>
01310	Meetings	<i>July 18, 2017</i>
01320	Communications	<i>July 18, 2017</i>
01330	Submittals	<i>July 18, 2017</i>
01360	Coordination (General)	<i>July 18, 2017</i>
01400	Quality Requirements	<i>July 18, 2017</i>
01450	Testing and Inspection Services	<i>July 18, 2017</i>
01500	Interim Life Safety Plan	<i>July 18, 2017</i>

01520	Temporary Construction	<i>July 18, 2017</i>
01530	Field Engineering and Layout	<i>July 18, 2017</i>
01540	Cutting and Patching	<i>July 18, 2017</i>
01550	Clean-up and Final Cleaning	<i>July 18, 2017</i>
01600	Forms	<i>July 18, 2017</i>
01630	Product Substitutions	<i>July 18, 2017</i>
01700	Contract Close-out	<i>July 18, 2017</i>
01720	Project Record Documents	<i>July 18, 2017</i>
01730	Operations and Maintenance Data	<i>July 18, 2017</i>
01740	Warrantees and Guarantees	<i>July 18, 2017</i>
01750	Systems Demonstration, Training and Start-up	<i>July 18, 2017</i>

Additional Items: A-232 PDF file separate from this manual due to licensing of AIA software.

SECTION 00500
AGREEMENT

1 AGREEMENT FORM

1.01 The form of Agreement that will be used for Work under this Bid Package shall be AIA Document A132 – 2009 Standard Form of Agreement Between Owner and Contractor. The above Agreement Form is available for inspection at or through CM.

2. GENERAL CONDITIONS OF THE CONTRACT

2.1. AIA, Document A232 - 2009 Edition, is bound within this Project Manual and is a part of the Contract Documents. **This will be provided on a separate PDF file separate from this book.**

3. SUPPLEMENTARY GENERAL CONDITIONS

3.1. There are no supplementary general conditions for this project.

END OF SECTION 00500

SECTION 00610
BONDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contract Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.
- B. Specific attention is directed to the requirements described in Section 00200 Instructions to Bidders regarding preparing a Bid Security to be delivered at time of bid.

PART 2 - BOND REQUIREMENTS

2.01 PERFORMANCE BONDS AND PAYMENT BONDS

- A. Owner will require Contractor to furnish a Performance Bond and a Payment Bond, in amounts equal to the Agreement price, by a qualified surety naming both the Owner and Barton Malow as Obligees. All sureties providing bonds on this Project must be listed in the Department of Treasury's Circular 570, entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" with the bond amounts less than or equal to the underwriting limitation indicated in the Circular, and/or must have an A.M. Best rating of A - or better. Bonds shall be duly executed by the Contractor, as principal, and by a surety that is licensed in the state in which the Work is to be performed.
- B. The Contractor shall deliver the required bonds to Barton Malow Company prior to execution of the Agreement. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder, at a minimum, shall submit evidence to the satisfaction of Barton Malow Company that such bonds will be furnished prior to commencement of on site Work. In no event may the Contractor commence on-site Work without the required bonds properly issued and delivered.
- C. Performance Bond and Payment Bond unmodified form A312 must be used for this Project.
- D. The Bidder's proposed surety must be acceptable to the Owner and Barton Malow Company. If, at any time, after acceptance of the Contractor's bonds, the surety fails to meet the criteria stated in Paragraph 2.01A. above, the Contractor must, as a precondition to continuing Work and receiving further payments, replace the bonds with bonds from a surety that meets the stated criteria.
- E. The Performance and Payment Bond penal sums (i.e., the Agreement price) must be listed as a separate line item in the schedule of values described in Section 01290 Payment Procedures in the Project Manual.
- F. In the event of a Change Order to the Agreement that increases the Agreement price, the penal sum of any required Performance and Payment Bonds shall also be increased so that each penal sum equals the adjusted Agreement price, or such other percentage of the Agreement price listed in the Project Manual - Section 00200 -Instructions to Bidders. Barton Malow Company or Owner shall have the right to request submission of bond riders, issued by the original qualified surety, evidencing that such increase to the penal sum of the bonds has been accomplished. Notwithstanding the foregoing, in the next pay application after the Agreement price has been increased by twenty-five percent (25%) or more, as a condition precedent to payment, Contractor shall deliver a bond rider issued by the original qualified surety evidencing that the appropriate increase in penal sums has been accomplished. See Project Manual Section 01290 - Payment Procedures.

END OF SECTION 00610

SECTION 00620
INSURANCE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contract Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.
- B. A sample of the Certificate of Insurance (ACORD) form is in Section 01600 Forms.

1.02 STANDARD INSURANCE REQUIREMENTS

- 1. Barton Malow Company Contractor Insurance Requirements for Agency Work, PRO 15.14, shall govern this Project. A copy of these Insurance Requirements is attached in this Section, immediately following this page.

END OF SECTION 00620

SECTION 00810
ON-SITE PROJECT SAFETY AND LOSS CONTROL PROGRAM

1 CONTRACTOR'S SAFETY REQUIREMENTS

- 1.01 Contractor shall abide by the Barton Malow safety manual that is incorporated following this section.
- 1.02 Generally the contractor shall:
 - 1.02.1 be responsible for its own Safety Program for Work on this Project that is at least as stringent as the requirements set forth in this section of the Project Manual.
 - 1.02.2 provide a safe workplace and shall otherwise take all precautions for the safety of Subordinate Parties and persons and property in or near the premises where Work is being performed.
 - 1.02.3 comply with all applicable federal, state and local laws, rules and regulations, including, but not limited to, applicable provisions of the Occupational Safety and Health Act ("OSHA") and/or the governing state law.
 - 1.02.4 comply with all requirements stated in the Site Specific Safety Instructions (SSSI) form or elsewhere in the Contract Documents.
 - 1.02.5 ensure that its employees understand and comply with applicable safety and health programs, rules, and regulations.
 - 1.02.6 assign an individual to act as Safety Representative who will have the responsibility of resolving safety matters, and acting as a liaison among Contractor, CM and the Owner. The Safety Representative must be a person who is capable of identifying existing and predictable hazards in surroundings that are unsanitary, hazardous or dangerous to employees, and has the authority to take prompt corrective measures to eliminate them. The Safety Representative must meet the standards for a Competent Person under applicable law when required (scaffolding, confined spaces, etc.) and be on site full time. The Safety Representative or an alternate must attend periodic safety meetings as directed by CM.
 - 1.02.7 through its site supervisors and/or Safety Representative, attend a pre-construction meeting where planning for safe execution of the project will be addressed.
 - 1.02.8 be fully responsible for all Hazardous Materials it creates or releases in connection with, or brings to, the Project. Contractor shall immediately report to CM any Hazardous Materials that it discovers or which are released at the Project.
 - 1.02.9 provide minimum training for on-site employees which shall include basic safety orientation, task-specific safety instruction, weekly Tool Box Talks, and other periodic safety meetings and document all such training.
 - 1.02.10 self-inspect its areas of control to assure compliance with the safety requirements.
 - 1.02.11 require and enforce that all of its on-site employees of either Contractor or its Subordinate Parties are required to report any unsafe act or condition and any work-related injuries or illness immediately to their supervisor. If the act or condition can be safely and easily corrected, the employee or supervisor shall make the correction.
 - 1.02.12 notify CM immediately of all injuries requiring clinical attention and all property damage potentially in excess of \$1,000.
 - 1.02.13 have emergency procedures to deal with the immediate removal and treatment, if necessary, of any employee who may be injured or become ill. Also keep on the Project site a first-aid kit supplied according to current regulations, and shall have on-site a person trained to administer first aid.
 - 1.02.14 inform CM immediately of the arrival of any federal or state inspector or compliance officer prior to touring the site. Any reports, citations, or other documents related to the inspection shall be provided promptly to CM.

- 1.02.15 have a written Substance Abuse Policy. The use or possession of illegal drugs or the use of alcohol while performing Work on the Project at any time during working hours are strictly prohibited and may lead to immediate removal from the Project.
 - 1.02.16 be responsible for payment of all safety-related citations, fines and/or claims arising out of or relating to its Work levied against the Owner, Architect, CM, or their employees or affiliates.
 - 1.02.17 submit monthly its hours worked and incident rates for the Project if required by CMat any time.
- 1.03 Additional CM Requirements
- 1.03.1 Work crews shall conduct a Job Hazard Analysis (JHA) discussion to plan for safe performance before beginning any work task. Contractor is encouraged to prepare a written record of each JHA.
 - 1.03.2 All workers, management, and visitors shall wear approved hard hats while on site, outside the trailers. Cowboy-style hard hats are prohibited. Hardhats must not be removed to use welding shields. Welding shields must attach to hardhats or be hand held.
 - 1.03.3 Sleeved shirts (minimum of four inches), long pants, and durable work boots are required minimum clothing.
 - 1.03.4 Personal cell phones are not to be used on construction sites except to report an emergency or on approved break time. Use of business cell phones must not interfere with jobsite safety. The use of camera features on cell phones is strictly prohibited.
 - 1.03.5 Personal radios or music players with earphones are not permitted.
 - 1.03.6 All persons working at elevations of six feet or greater must have 100% continuous fall protection. Engineering controls are preferred, but personal fall arrest systems are also permissible. An exception is permitted for safe use of ladders up to 24 feet long.
 - 1.03.7 Contractor is responsible to repair or restore any barricade that it modifies or removes.
 - 1.03.8 Class III (household) stepladders are prohibited; metal ladders are strongly discouraged.
 - 1.03.9 All scaffolds must be checked daily and before each use for safety compliance. Scaffolds shall never be left in an unsafe condition and must be removed/disabled immediately if not to be used again.
 - 1.03.10 All persons operating cranes must be certified as crane operators by the National Commission on the Certification of Crane Operators (NCCCO). Daily crane inspection reports must be prepared by the operator and kept with the crane, available for inspection.
 - 1.03.11 Riding the headache ball is prohibited.
 - 1.03.12 All dozers, loaders, tractors and end loader backhoes must have functioning backup alarms.
 - 1.03.13 All equipment must be kept at least 15 feet from energized power lines.
 - 1.03.14 Electrical, pneumatic, and other energy systems that could be accidentally energized or started up while work is in process must be locked out (not merely tagged out).
 - 1.03.15 Only fire retardant materials may be used to build shanties or other temporary enclosures inside of buildings finished or under construction. Shanties shall be continually policed by their occupants to prevent the accumulation of waste or other combustibles.
 - 1.03.16 Engineering controls must be used to restrain silica dust per applicable law.

2 CONTRACTOR’S SAFETY SUBMITTALS

2.01 Contractor shall provide copies of the following written safety submittals to CM at the times indicated:

<p>A. Contractor shall provide copies of the following written safety submittals to Barton Malow Company at the times indicated:</p>	
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Submittal	Timing
Contractor Safety Certificate, Barton Malow form SAF 6.3.3.3	Before on-site work begins
Site-specific Safety Program, including substance abuse policy, hazard communication program, and Material Safety Data Sheets (MSDS)	Before on-site work begins
Tool Box Talk Reports	Weekly
Incident Reports (near-miss, property damage, injury, etc.)	Within 24 hours of incident
Hours worked and incident rates	Monthly
Contractor Work Hours Self Reporting Form*	Monthly

*All contractors are required to complete and submit a “Contractor Work Hours Self Report Form” on the first of every month to report their work hours for the previous month. Failure to complete and submit the form will result in a delay in payment processing. Those working zero hours for a particular month are still required to submit a form. Forms are no longer needed once the final pay application has been submitted.

- 2.02 CM’s receipt of the Safety Program or other submittals from Contractor does not constitute approval of the Program or permission to deviate from the requirements of the Contract Documents and applicable law.
- 2.03 Contractor will allow inspection of, and CM may request copies of, any and all safety-related documents and records in its possession relating to the Project.

3 CM RIGHTS

- 3.01 **Safety Hazard Notifications** may be issued to the Contractor when an unsafe act or condition is reported or observed. CM shall not be required to supervise the abatement or associated reprimand of unsafe acts or conditions within a Contractor’s scope of work as this is solely the responsibility of Contractor. Nevertheless, CM has the right, but not the obligation, to require Contractor to cease or abate any unsafe practice or activity it notices, at Contractor’s sole expense.
- 3.02 Contractor’s failure to comply with the contract safety requirements will be considered a default of the Agreement, and may result in remedial action including, but not limited to, withholding of payment of any sums due or termination.
- 3.03 CM’s failure to require the submission of any form, documentation, or any other act required under this Section shall not relieve the Contractor from any of its safety obligations.
- 3.04 Nothing in this Section or in this Agreement makes CM responsible or liable for protecting Contractor’s employees and other Subordinate Parties or assuring or providing for their safety or preventing accidents or property damage.
- 3.05 All requirements referenced in this Section are binding on Contractor and all of its Subordinate Parties, even where such requirements may exceed the standards of applicable law.
- 3.06 All contractors are to abide by the safety manual that is incorporated following this section.

END OF SECTION 00810

BARTON MALOW SAFETY MANUAL



***Zero Tolerance for
Unsafe Acts or Conditions***

TABLE OF CONTENTS

1.	<u>INTRODUCTION</u>	1
1.1	<u>President's Message</u>	1
1.2	<u>Scope and Use of the Manual</u>	1
1.3	<u>Definitions</u>	2
1.4	<u>Disclaimer</u>	3
2.	<u>CORPORATE SAFETY PROGRAM</u>	3
2.1	<u>General</u>	3
2.2	<u>Corporate Safety Administration</u>	5
2.3	<u>Hazard Communication</u>	6
2.4	<u>Safety Bulletin Board</u>	7
2.5	<u>Safety Training</u>	7
2.6	<u>Vehicles</u>	8
2.7	<u>Emergency Action Plan</u>	8
2.8	<u>Substance Abuse</u>	9
2.9	<u>Violence and Weapons</u>	11
2.10	<u>Security</u>	11
2.11	<u>Communicable Diseases</u>	12
2.12	<u>Common Hazards</u>	12
3.	<u>JOBSITE SAFETY ADMINISTRATION</u>	13
3.1	<u>Project Safety Responsibilities</u>	13
3.2	<u>Project Start Up</u>	15
3.3	<u>Safety Requirements for Contractors</u>	17
3.4	<u>Project Safety Orientation and Training</u>	18
3.5	<u>Project Safety Compliance</u>	20
3.6	<u>Outside Inspections</u>	21
3.7	<u>Incident Response</u>	21
3.8	<u>Discipline</u>	23
3.9	<u>Project Closeout</u>	25
4.	<u>JOBSITE SAFETY PRACTICES</u>	25
4.1	<u>Pre Task Plan and Job Hazard Analysis</u>	25
4.2	<u>Clothing and Behavior</u>	26
4.3	<u>Personal Protective Equipment (PPE)</u>	27
4.4	<u>Weather</u>	29
4.5	<u>Lifting and Ergonomic Injuries</u>	31
4.6	<u>Housekeeping and Sanitation</u>	32
4.7	<u>General Protection of Persons and Property</u>	34
4.8	<u>Demolition and Disposal</u>	35
4.9	<u>Tools</u>	35
4.10	<u>Heavy Equipment</u>	36
4.11	<u>Fire</u>	36
4.12	<u>Fall Protection</u>	39
4.13	<u>Elevated Work (Ladders, Scaffolds, etc.)</u>	41
4.14	<u>Electrical Hazards and Energy Lockout/Tag-Out</u>	44

4.15. Underground Work	45
4.16. Cranes and Rigging	46
4.17. Concrete and Resteel	48
4.18. Interiors	49
4.19. Steel Erection	49
4.20. Confined Space Entry	50
4.21. Hazardous Materials – General	51
4.22. Specific Environmental Hazards	54
4.23. Stretch & Flex Program	58

5. APPENDIX – SUPPLEMENTARY INFORMATION

5.2.7.2	Supplementary Information on Emergency Action Plan
5.2.7.2.A	Hurricane Preparedness Plan
5.2.8.2.2	Supplementary Information on Substance Abuse Testing
5.2.10.2	Supplementary Information on Jobsite Security
5.2.11.2	Supplementary Information on Blood-borne Pathogens
5.3.1.5	Typical Duties of Safety Representative
5.3.4.1	Employee Project Safety Orientation
5.3.4.5	Guidance for Toolbox Talks
5.3.5.4	Supplementary Information on Project Safety Compliance
5.3.7.2	Guidance for Conducting an Incident Investigation
5.3.7.3	Basic First Aid Techniques
5.3.7.6	Executive Safety Review Procedures
5.4.4.3.1	After a Hurricane or Flood: Cleanup of Flood Water
5.4.4.3.2	Food and Water Safety During Hurricanes, Power Outages, and Floods
5.4.4.3.3	Protect Yourself From Mold
5.4.6.5	Minimum Illumination Standards
5.4.7.4	Stormwater Management
5.4.9.2	Tool Safety
5.4.10	Heavy Equipment
5.4.11.3	Flammable Liquids, Gases, and Tanks
5.4.11.4.4	Hot Work Permit
5.4.11.4.3	Training and Duties of Fire Watch Personnel
5.4.11.5.8	Fire Extinguishers
5.4.12.2.3	Supplementary Information on Fall Protection
5.4.14.1.11	Power Line Clearance Dimensions
5.4.14.3.5	Lockout/tag-out Procedures
5.4.15.2.13	Supplementary Information on Underground Safety
5.4.16.1.12	Supplementary Information on Crane Safety
5.4.16.5.13	Supplementary Information on Rigging Safety
5.4.17.1	Supplementary Information on Concrete and Resteel Safety
5.4.20.2	Confined Space Program
5.4.22.3.3	Respiratory Protection Program
5.4.23.1	Stretch and Flex Leaders Guide

6. SAFETY FORMS

- 6.2.3.4 [Hazard Communication Program](#)
- 6.2.5.1 [Employee Safety Orientation Record](#)
- 6.2.5.1.1.a [Barton Malow Safety Guide](#)
- 6.2.5.1.1.b [Barton Malow Safety Guide \(Spanish\)](#)
- 6.2.8.2.1 [Substance Abuse Testing Consent](#)
- 6.3.2.1 [Site-Specific Safety Information \(SSSI\)](#)
- 6.3.2.1 Site Specific Safety Information (SSSI – Spanish)
- 6.3.3.3 [Contractor Safety Certificate](#)
- 6.3.4.5 [Tool Box Talk Record](#)
- 6.3.5.1 [Weekly Safety Inspection Checklist](#)
- 6.3.5.2 [Safety Hazard Notification](#)
- 6.3.6.2 [Outside Inspection Record](#)
- 6.3.7.1.6 [Medical Care Authorization](#)
- 6.3.7.2.1 [Witness Report](#)
- 6.3.7.2.4 [Incident Investigation Report](#)
- 6.4.1.2.3.5 [Pre Task Plan](#)
- 6.4.10.1 [Equipment Inspection](#)
- 6.4.14.1 [Shutdown Procedures for All Utilities](#)
- 6.4.19.1 [Notification of Steel Erection](#)

BARTON MALOW SAFETY MANUAL

1. INTRODUCTION

1.1 President's Message

Each day Barton Malow builds people, projects and communities with the goal of sending every worker home unharmed and satisfied with a job well done.

Building safe without exception is our commitment and it's embedded in our values of Integrity, Partnership and Empowerment. Together we work each day to provide a safer work environment through pre-task planning, workforce engagement, and standards that go above and beyond OSHA requirements.

I urge every individual on a Barton Malow jobsite to be vigilant when it comes to safe work practices. Together we will deliver results through safe practices without exception.

Thank you for your commitment to zero lost time incidents, zero recordables, zero first-aid incidents.

Thank you,
Ryan Maibach

1.2 Scope and Use of the Manual

1.2.1 The purpose of this Safety Manual is to document the principal features of the Company's Safety Program, including important safety, health, and environmental requirements that apply to all Barton Malow employees. These requirements also apply, where appropriate, to our affiliates, and joint ventures that have adopted Barton Malow's Safety Program.

1.2.2 References to sections of this Safety Manual are identified by the first three letters, "SAF," followed by the section number. For example, this section would be cited as SAF 1.2.2. SAF 1, Introduction, contains introductory material including definitions. SAF 2, Corporate Safety Program, describes policies that apply to all work locations, including offices. SAF 3, Jobsite Safety Administration, explains how to administer safety at a construction project jobsite. SAF 4, Jobsite Safety Practices, details safe methods for performing construction work.

1.2.3 SAF 5, Supplementary Information, contains materials provided for reference purposes with detail beyond the scope of the base Manual. These materials are cited as SAF 5.x, with x being the section number of the base Manual to which the supplementary information relates. SAF 6, Safety Forms, is cited as SAF 6.y, with y being the base Manual section number to which the form relates. There is an electronic link in the Manual whenever Supplementary Information or Safety Forms are cited.

1.2.4 The safety requirements binding on Contractors under Barton Malow's oversight (including subcontractors at any tier) are ultimately determined by the applicable laws and contract terms. While this Manual does not directly govern the actions of Contractors, it is nevertheless pertinent to Contractor safety for the following reasons:

- .1 This Manual defines procedures for Barton Malow to administer safety at multi-employer jobsites where both Barton Malow and Contractor employees are present. See SAF 3, Jobsite Safety Administration.
- .2 This Manual defines how Barton Malow employees shall determine the safety requirements that will be incorporated into the contractual terms binding on Contractors. See SAF 3.3, Safety Requirements for Contractors.
- .3 The safety practices described in SAF 4, Jobsite Safety Practices, and elsewhere in the Manual are often identical to or derived from safety requirements imposed by law on Barton Malow and Contractors alike.
- .4 Barton Malow may elect to incorporate portions of this Manual into site-specific requirements adopted for a given project. See SAF 3.2.1, Site Specific Safety Information (SSSI).
- .5 Barton Malow requires Contractors to comply with the practices in this Manual. Such requirements are binding on Contractors to the extent consistent with the laws and contract provisions that apply.

1.2.5 The policies in this Manual are general in nature and are not to be considered all-inclusive. Some operations may require additional procedures and some procedures may not apply. The Safety Department Leader has the authority to approve variances or changes in procedures where appropriate.

1.2.6 Suggestions for improvements to this Manual should be submitted either through a Zapp form or through direct comment to the Safety Department.

1.3. Definitions

- .1 Additional definitions are found throughout this Manual in the sections to which they apply.
- .2 “Barton Malow” or the “Company” means Barton Malow Company, including its groups and subsidiaries and, where applicable, its affiliates.
- .3 “Competent Person” is defined by federal law to mean “one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.” See SAF 2.1.4, Legal Framework. For certain types of hazards (excavation, scaffolding, confined space, etc.), the Competent Person may need to have specific training in, and be knowledgeable about, those particular hazards. See SAF 3.4.4, Specialized Training.
- .4 “Construction” is used in the broad sense to include new construction, demolition, renovation, maintenance, or other field work.
- .5 “Contractor” means a trade contractor or subcontractor for whose safety performance Barton Malow is contractually responsible to the Owner. The definition extends to the Contractor’s employees and subcontractors (and their employees) at any tier. Barton Malow’s communication and enforcement, except in case of emergency or imminent hazard, are normally handled through the first tier.
- .6 “Employee” means an employee of Barton Malow or, as the context may indicate, an employee of a Contractor. The term also includes contract personnel who are functioning as employees.
- .7 “Incident” includes any work-related accident (death, bodily injury, illness, property damage, or fire) plus any episode in which an accident was narrowly avoided (e.g., crane tipping over or dropping a load).
- .8 “Jobsite” refers to a location where construction is taking place.

- .9 “Management” refers to the Company’s management, including its officer- and director-level employees and, as appropriate in context, jobsite management.
- .10 “Safety” includes protection of people from death, bodily injury, illness, or adverse health, and protection of property from loss, damage, or environmental impact.
- .11 “Safety Department Leader” means the highest ranking Safety Professional in the Company’s Safety Department.
- .12 “Safety Professional” means an employee of the Company who works full time or substantially full time on safety related matters.
- .13 “Safety Program” means the program generally defined in this Manual for promoting and assuring appropriate safety, health, and loss control throughout the Company, including jobsites and other work locations.
- .14 “Safety Representative” means an employee of the Company who has the most active day-to-day responsibility for safety at a given jobsite. See SAF 3.1.5, Safety Representative.
- .15 “Shall” does not mean that a practice or procedure is merely optional. If this Manual states that something “shall” be done, it means that it is the policy and expectation of Barton Malow that it will be done unless a legitimate exception is legally permitted and authorized in accordance with this Manual.
- .16 “Supervisor” means a higher-level employee in the organization to whom the employee in question reports, directly or indirectly.

1.4 Disclaimer

Nothing in this Manual creates or alters any legal standard or requirement with respect to safety or the standard of care. Nothing in this Manual is intended to increase or does increase the liability of the Company for injuries, illness, accidents, or other safety or health-related conditions. Situations not addressed in this Manual shall be handled through safe practices in accordance with all applicable laws and other applicable Company policies. Nothing in this Manual relieves Contractors of their own safety responsibilities. See SAF 3.3, Safety Requirements for Contractors.

2. CORPORATE SAFETY PROGRAM

2.1 General

2.1.1 Safety Culture

No injury or incident is acceptable. Our expectation is that all workers, regardless of employer, complete their work without injury or illness. Pre-work planning, Communication and Implementation are key factors in incident free performance.

We must have zero tolerance for unsafe acts or conditions. “Zero tolerance” means that if any of us encounters an unsafe situation, something appropriate should be done. Depending on the circumstances, that “something” could be stopping work until a safe plan is developed, correcting the problem ourselves, or notifying someone else who is better situated to take appropriate and timely action. In the most serious cases, zero tolerance could lead to the conclusion that a worker and/or supervisor should be disciplined or even terminated. If a task represents a potential safety or health threat, every effort shall be made to plan a safe way to do it. The task must not be done unless a safe method is planned and used. Working safely reduces injuries, increases production and quality, achieves efficiency, improves customer

satisfaction, and is smart business. Health and safety standards shall never be compromised, even if it might seem that doing so could save time or money or create other perceived benefits.

2.1.2 General Duties of Employees

All Barton Malow employees, including office staff, management, and supervisors, must comply with the requirements of this Manual and all applicable laws and contract requirements relating to health and safety. Failure to do so warrants disciplinary action and possibly discharge. Safety performance is a basis for employee evaluation, and working safely is a condition of employment. In the event of inconsistency among this Manual, contract requirements, and/or applicable law, the most strict standard and safest course shall be followed. All employees are responsible to be familiar with the portions of this Manual that pertain to their work. All supervisors are responsible to assure that their subordinate employees have adequate orientation, training, and supervision to carry out their work in accordance with this Manual.

2.1.3 Safety Accountability

Every employee is responsible and accountable for his or her own health and safety plus the protection of fellow employees, third parties, and property. No employee shall attempt to work under conditions that appear to be unsafe. If an employee observes any practice or condition which threatens health or safety, the employee must inform a supervisor or manager, and management must take adequate precautions. Any work-related incident (death, injury, illness, property damage, or potentially serious “near miss”) must be reported immediately to a supervisor and to the Safety Department. It is forbidden to retaliate against an employee who reports a safety incident or an unsafe practice or condition. However, an employee who submits a report knowing it to be false is subject to appropriate discipline.

2.1.4 Legal Framework

In the United States, workplace safety is generally regulated by the federal Department of Labor and its Occupational Safety and Health Administration (OSHA). The OSHA construction standard is found at 29 CFR Part 1926 [LINK](#). Many of the safety practices described in this Manual are based on OSHA part 1926. There are numerous other federal regulations that may affect safety, including regulations promulgated by OSHA or other federal agencies (e.g., Environmental Protection Agency). Many states, have regulations that may substitute for and/or supplement OSHA requirements. Hazardous conditions or practices not covered in a more specific standard may be covered under Section 5(a)(1), the “General Duty Clause” of the federal Occupational Safety and Health Act of 1970, which requires each employer to furnish to each employee a place of employment which is “free from recognized hazards that are causing or are likely to cause death or serious physical harm” to the employees.

2.1.5 Financial Impact

Safety is essential to the Company’s financial success:

- .1 When we protect people and property from harm, we protect our bottom line. Each incident often has substantial indirect financial impact on the workers, project and company.
- .2 Owners expect and demand safety from the builders they hire;
- .3 When pre-planning is done, Safety, Quality and Productivity all improve;
- .4 Injuries reduce available employee talent, our most precious resource;
- .5 Injuries detract from the morale and productivity of uninjured fellow employees;
- .6 Property damage is costly to repair;
- .7 Workers’ Compensation losses detract from our profitability and drive up our Experience Modification Rating (EMR), which causes higher insurance costs;

- .8 General Liability litigation is costly and also drives up insurance costs; and
- .9 Higher insurance costs hurt competitiveness.

2.2 Corporate Safety Administration

2.2.1 Safety Department

The Safety Department is a function within the Company's Legal, Safety and Risk Management Department. The function is headed by the Safety Department Leader, who reports to the Company's executive management and is ultimately accountable to the President of Barton Malow. The Safety Department is responsible, in cooperation with project operations, to:

- .1 Oversee and administer the Barton Malow Safety Program, including prevention of occupational accidents, deaths, injuries, illnesses, property damage, and related financial losses;
- .2 Monitor safety and health compliance and results;
- .3 Serve as a technical resource on safety matters;
- .4 Investigate major incidents and recommend corrective action;
- .5 Participate in Incident Reviews, SAF 3.7.6;
- .6 Interface with safety organizations and regulators;
- .7 Coordinate safety orientation and training of Barton Malow employees;
- .8 Assist in management of workers' compensation claims; and
- .9 Champion continuous improvement of the Safety Program and results.

2.2.2 Safety Professionals

In addition to the Safety Department Leader, the Company employs various Safety Professionals who are assigned to specific groups or projects. The Safety Professionals report to the Regional Safety Director, and they have a secondary reporting relationship to the operational leadership of the group or project to which they are assigned. That secondary relationship is never permitted to interfere with the reporting of unsafe conditions, practices or the sound administration of the Safety Program.

2.2.3 Responsibility for Enforcement

The primary responsibility for implementing and enforcing this Safety Program at a jobsite rests with the Barton Malow employees having operational leadership of the project, including the project officer, general manager, project director, project manager, and superintendent. See SAF 3.1, Project Safety Responsibilities. The Safety Professionals have responsibility to assist and support the operational leadership, and they have shared responsibility to enforce the Safety Program. The leadership of a group, department, or project is free to establish safety requirements more strict than this Manual, provided the requirements are coordinated with the Safety Department Leader and do not violate any law or contract.

2.2.4 Safety Steering Team

The Safety Steering Team is comprised of members of the safety department, project delivery personnel and Corporate and Regional Leaders. Meetings are held on a weekly, monthly and quarterly basis depending on the group. The purpose of the Safety Steering Team is to continuously improve the Company's safety culture by developing comprehensive safety programs, implementing training and education programs, measuring safety statistics and performance, and benchmarking against best industry practices. The Safety Steering Team is accountable to the Safety Leadership Group, which is coordinated by the Executive Vice

President responsible for the Safety Department and includes as additional members the Safety Department Leader plus select operational officers of the Company.

2.2.5 Crisis Management

Serious safety incidents have the potential to present a crisis from the standpoint of employee relations, customer relations, public relations, regulatory enforcement, and legal liability. As a result, serious safety incidents shall trigger implementation of the [Company's Crisis Management Plan](#).

2.2.6 Safety Standard

- .1 Lead by example: Zero Tolerance for Unsafe Acts or Conditions
- .2 Work towards a best-in-class safety culture that includes education, mentoring, empowerment, and accountability
- .3 STOP any work at any time that you feel is unsafe
- .4 Work with subcontractors that share our pursuit of excellent safety performance Manage every incident performance.
- .5 "Build it Safe...No Exceptions"
- .6 Achieve completion by all operations and safety personnel of Company approved safety training programs. See SAF 2.5, Safety Training
- .7 Operate with zero incidents.

2.3 Hazard Communication

2.3.1 The Company's hazard communication program provides guidelines to inform employees effectively of hazards associated with material they may come in contact with while working. The Safety Department Leader is the Company's hazard communication coordinator.

2.3.2 Unless otherwise designated, the Safety Representative for a jobsite serves as the site hazard communication coordinator. The site hazard communication coordinator is responsible to:

- .1 Keep up-to-date with and ensure compliance with hazard communication regulations (federal, state, and local).
- .2 Manage and document the site hazard communication training program.
- .3 Coordinate emergency procedures with the local fire department as well as other agencies.
- .4 Post required hazard communication notices.
- .5 Implement and document the hazard communication training of supervisors and employees.
- .6 Provide a central location(s) for the storage of binders of Material Safety Data Sheets (MSDS) and maintain a binder containing the MSDS for every hazardous material used on the jobsite. There should preferably be a separate binder for each Contractor, including Barton Malow.

2.3.3 Basic Labeling and Coding

All incoming containers shall be properly labeled with: identity, hazard warning, and name and address of responsible party. Pipes and hoses shall be color-coded at access points as follows:

- .1 OXYGEN – GREEN
- .2 ACETYLENE – ORANGE
- .3 NATURAL GAS – BLUE

2.3.4 Employee Awareness

Employees shall receive training about the hazardous materials to which they may be exposed and orientation about the general features of the hazard communication program, including where the MSDS forms will be located on the jobsite. SAF 6.2.3.4, a [Hazard Communication Program Booklet](#) published by Krames, is available to help with this orientation.

2.4 Safety Bulletin Board

2.4.1 Barton Malow Company should comply with all workers' compensation statutes, OSHA regulations, and other federal, state or local posting requirements. Typically these provide that certain notices, signs, or posters be displayed in a place where employees can readily see them or where notices to employees are customarily posted.

Each jobsite and other place of work shall post all legally required notices, including but not limited to those relating to safety and employment. The bulletin board containing the postings shall be located in a conspicuous place. Spanish language notices shall be included as appropriate. Refer to the [Postings](#) site under the Project Start-up page on the BMC Intranet to download required workplace posters.

2.4.2 Multiple project areas (based on project layout) must post Emergency response information, including evacuation routes, sheltering areas, access routes, phone numbers, spill response, identification of jobsite safety personnel, etc. The first page of SAF 6.3.2.1, [Site-Specific Safety Information \(SSSI\)](#), may be helpful for this purpose.

2.4.3 Additional items to be posted include:

- Topical Safety & Health posters (home and at work)
- Recall notices
- Minutes of safety meetings
- Information on Incidents and Safety Alerts
- Hazard communication information.

Note: regulatory postings noted in 2.4.1 are only required in one area as described above.

2.5 Safety Training

2.5.1 New Employee Safety Orientation-

All trade and non-trade employees of Barton Malow, upon beginning employment, shall receive a safety orientation. The orientation shall cover the following:

- .1 Basic safety rules, such as covered by:
 - a. SAF 6.2.5.1.1.a, [Barton Malow Safety Guide](#), or
 - b. SAF 6.2.5.1.1.b, [Barton Malow Safety Guide \(Spanish version\)](#).
- .2 Hazards specific to the place of work or duties of the employee.
- .3 Emergency Action Plan (see SAF 2.7, Emergency Action Plan).
- .4 Expectation of discipline for noncompliance (see SAF 3.8, Discipline).

2.5.2 Operations Employees - Minimum Standards

- .1 Standard Safety Training means any one of the following:
 - a. PureSafety, 18 modules;
 - b. OSHA 30-hour training; or
 - c. OSHA 10-hour training.

- .2 Supplemental Safety Training means any safety training class offered by Barton Malow University or otherwise approved by the Safety Department Leader.
- .3 Operational Employees
 - a. Defined to include all Barton Malow jobsite staff who works in the construction area, plus supervisors and other management above them in the chain of project reporting or safety reporting. Craft workers below the foreman level are not covered unless required by the responsible general manager.
 - b. Shall complete Standard Safety Training no later than six months after start of employment.
 - c. Shall complete at least two hours of Supplemental Safety Training every two years thereafter.
- .4 Supervisory Jobsite Employees
 - a. Defined to include all Barton Malow Safety Professionals and Safety Representatives, plus any other Superintendents and Project Managers who work substantially full time at construction sites.
 - b. Shall complete OSHA 30-hour training no later than one year after start of employment and every 5 years after initial completion.
 - c. Shall complete at least eight hours of Supplemental Safety Training every year thereafter.
 - d. Each project shall have one individual who has completed awareness training on the DOT Hazardous Material requirements of 49CFR.

2.5.3 Specialized Safety Training

Employees shall receive any specialized safety training appropriate for the hazards that are foreseeable in the course of their work. See SAF 3.4.4, Specialized Training.

2.5.4 Training Records

Records of completed training are maintained under the authority of the Human Resources Department. Employees shall ensure that Human Resources receive confirmation for training they have completed, even if not offered through the Company. For OSHA 10 and 30 hour training, Human Resources will maintain an electronic copy of the student's completion card.

2.6 Vehicles

When using vehicles for Company business or when using Company vehicles for any purpose, employees shall obey all traffic and legal regulations and act responsibly. Employees involved in a traffic incident involving a Company vehicle or while driving on Company business (if there is an injury or the possibility of a claim) must report the incident to Steve Fooy, Company Fleet Manager within 24 hours. Seatbelts are to be used by all occupants. No one may operate a vehicle while under the influence of alcohol, illegal drugs, or unauthorized controlled substances. Cell phone use while driving is discouraged, hands free communication is required. Text messaging, use of email, or other significant distractions while driving are prohibited. Defensive driving is strongly recommended, including keeping the eyes moving to check from side to side and frequently checking mirrors. For further information about Company vehicles, see the [Vehicle Policy](#). See also SAF 4.10, Heavy Equipment.

2.7 Emergency Action Plan

2.7.1 Each Barton Malow place of work, including jobsites, shall develop and implement an Emergency Action Plan. The Emergency Action Plan describes the responsibilities of the employees and the Emergency Response Team. In case of an emergency situation, the highest ranking management person has the final authority to coordinate procedures and

amend, modify, or supersede any provisions of the Emergency Action Plan to ensure employee safety.

2.7.2 The Emergency Action Plan shall detail the protocol for responding to medical, fire, utility, tornado, earthquake, severe weather, bomb threat, or other emergencies or major disasters. It shall also detail protocol for responding to other types of emergencies as applicable associated with working from heights, confined spaces, excavations, etc. This plan complements the Barton Malow Crisis Management Plan. The Emergency Action Plan shall be reviewed and updated periodically. See SAF 5.2.7.2, [Supplementary Information on Emergency Action Plan](#). For projects in coastal areas that could be subject to hurricanes and other climatic events, the Emergency Action Plan should be supplemented to include [the Hurricane Preparedness Plan](#) (SAF 5.2.7.2.A.)

2.7.3 Every employee on site shall be properly trained in the basic Emergency Action Plan. This training shall occur during the initial safety orientation training. Every employee shall be able to:

- .1 Recognize an emergency situation
- .2 Know how to call for and initiate emergency services
- .3 Recognize signals to seek shelter or evacuate
- .4 Know where to seek shelter
- .5 Know the designated gathering point
- .6 Know basic fire safety

2.7.4 Designated First Aid/CPR Provider

Barton Malow shall assign a person at each jobsite to administer first aid/CPR. Unless otherwise designated, the Safety Representative has this responsibility. The first aid provider shall maintain a current first aid/CPR certification, including initial training and annual refresher training. Each contractor on site must comply with this requirement.

2.7.5 Emergency Response Team (ERT)

The Emergency Action Plan shall establish an ERT consisting of designated employees, including members of management. The ERT shall know the Emergency Action Plan and have other necessary training to respond appropriately to an emergency. Members of the ERT shall:

- .1 Understand the Emergency Action Plan
- .2 Have current first aid/CPR training (to be arranged as necessary)
- .3 Help communicate the emergency action plan
- .4 Assess all emergencies
- .5 Initiate warning signals as needed – evacuate or seek shelter
- .6 Assign duties to Contractor, field, and management personnel
- .7 Take any action necessary to protect human life and property
- .8 Invite local Emergency Services to review the project site at least twice during active construction; once at initial mobilization and again about midpoint in construction.
- .9 Hold emergency drills to evaluate the effectiveness of the written Emergency Action Plan. The plan will be revised if problem areas are identified.

2.8 Substance Abuse

2.8.1 Zero Tolerance

Our goal is to have a drug-free workplace. To this end, Barton Malow has a zero tolerance substance abuse program.

2.8.2 Substance Abuse Screening

- .1 All candidates for employment at Barton Malow will undergo pre-hire substance abuse screening through urine testing, upon receipt of SAF 6.2.8.2.1, [Substance Abuse Testing Consent](#). Barton Malow employees may also be required to submit to substance abuse testing when directed by their supervisor with concurrence from the Safety Department Leader or an officer of the Company on the basis of reasonable suspicion. Except where prohibited by the applicable labor agreement, testing may be required after involvement in a work-related incident. Additional substance abuse testing requirements may apply to Barton Malow trade employees when so provided in the applicable labor agreement or, if there is no applicable agreement, at the discretion of management.
- .2 All specimens will be collected, promptly after the request is made, at the jobsite or a local clinic designated by the Safety Department. The site or clinic will then forward the specimen to the Company's designated lab for evaluation. See SAF 5.2.8.2.2, [Supplementary Information on Substance Abuse Testing](#).
- .3 Persons who refuse or fail a required substance abuse test will not begin or continue employment with Barton Malow.
- .4 Union employees covered by an alternative drug screening program (e.g., MUST) or a labor agreement that is inconsistent with the above shall comply with the applicable program or agreement.

2.8.3 Alcohol

Alcohol shall not be used on the job or in a manner that interferes with safety or job performance. Working with a breath alcohol concentration of .02 percent or greater is prohibited and will result in the workers immediate removal and subsequent disciplinary action. Legal use of alcohol in moderation during bona fide business meals or receptions away from the jobsite is acceptable.

Employees have a duty to report anyone using alcohol in violation of the policy. Failure to do so is subject to our discipline policy.

2.8.4 Drugs

Employees may not purchase, sell, possess, use, or be under the influence of any illegal drug during any working period (including breaks for lunch, coffee, etc.) and regardless of location. Illegal drugs include controlled substances for which lawful authority has not been obtained. Legal drugs (prescription or over the counter) shall not be used in a manner that interferes with safety or job performance. Employees have a duty to report anyone using drugs in violation of the policy.

2.8.5 Smoking

Smoking is discouraged. Smoking inside any Barton Malow office or trailer is prohibited. Many project sites now prohibit smoking except for designated areas. Violation of the smoking policy will result in disciplinary action up to and including permanent removal.

2.8.6 Role of Supervisors

Supervisors play an integral role in preventing drug and alcohol problems in the workplace. They shall observe employee behavior for signs of substance abuse. Warning signs may include: increased absenteeism, long lunches, decrease in work quantity or quality, frequent trips to the rest room, sloppy appearance, on-the-job injuries, difficulty in following instructions, and repeated errors. Supervisors have a legitimate right to initiate corrective action with an employee whose performance begins to decline. However, attempts to diagnose or treat

alcohol or drug abuse shall be handled by a professional, not by the supervisor. Fellow employees who may have substance abuse problems shall be encouraged to seek help voluntarily.

2.8.7 Enforcement

The Company may, from time to time and without prior warning, conduct searches of persons, personal effects, vehicles, lockers, desks, and construction areas. Any illegal drug- or alcohol-related items discovered through such searches may result in reasonable suspicion testing. Any illegal drug obtained as a result of such search may be turned over to the law enforcement authorities.

2.8.8 Violations

Violations of this substance abuse policy by Barton Malow employees are grounds for immediate suspension from work and/or other appropriate discipline. Use of illegal drugs normally leads to termination of employment.

2.8.9 Contractors

All Contractors are required to have an appropriate substance abuse program. Substance abuse screening of Contractor employees is strongly recommended, and projects shall consider requiring it when permitted by applicable contracts. The use of alcohol or illegal drugs by a jobsite Contractor employee during any working period (including breaks and lunch) is grounds for immediate removal from the project.

2.9 Violence and Weapons

2.9.1 Barton Malow is committed to maintaining a workplace free from threats or acts of intimidation and violence. A professional demeanor shall be maintained at all times. Any reported incident shall be thoroughly investigated. If an employee is observed in violation of this policy, termination of employment may result.

- .1 Intimidation: A physical or verbal act toward another person, the result of which causes that person to reasonably fear for his or her safety or the safety of others.
- .2 Threat of violence: A physical or verbal act that threatens bodily harm to another person or damage to the property of another.
- .3 Act of violence: A physical act, whether or not it causes actual bodily harm to another person or damage to the property of another.

2.9.2 Firearms, ammunition, or other weapons at a Barton Malow workplace, including a jobsite or a parking lot, are prohibited. Knives are permitted for legitimate construction purposes. Use of explosives for construction requires approval of the Safety Representative. Any exception to this policy requires approval of the Executive Vice President. Any employee violating this policy may be immediately removed pending an investigation.

2.10 Security

2.10.1 Barton Malow takes positive measures to provide for the security of employees, materials, and equipment at all locations. Security is of primary importance to employee morale, profitability, and clients. Supervisors are accountable for implementing suitable measures to prevent theft and vandalism. All employees are expected to help in assuring that

adequate measures are taken and enforced in an effort to secure their surroundings. Employees have a duty to report anyone suspected of theft or other criminal activity.

2.10.2 Project sites shall implement measures to protect the safety of all persons, including those representing Barton Malow, the Owner, Contractors, suppliers, and consultants, as well as visitors, bystanders, and members of the public. Proper measures for control of site access shall be implemented, including enforcement of appropriate clothing and Personal Protective Equipment (PPE) requirements for visitors. A Visitor Consent and Release Form and Visitor Log can be maintained at the jobsite. See SAF 5.2.10.2, [Supplementary Information on Jobsite Security](#).

2.11 Communicable Diseases

2.11.1 Barton Malow recognizes the need to protect employees against such health hazards as Acquired Immunodeficiency Syndrome (AIDS), Human Immunodeficiency Virus (HIV), and Hepatitis B Virus (HBV). Anyone who performs work where there could be an exposure to blood, body fluids, or other potentially infectious materials is to receive “First Responders Training” through the American Red Cross or other equivalent training.

2.11.2 Everyone shall assume that all human blood and specified human body fluids are infectious for AIDS, HIV, HBV, and other blood-borne pathogens. Consider all body fluids, especially those that are difficult to identify, as potentially infectious. Blood means human blood, blood products or blood components. Other potentially infectious materials include the following:

- .1 Human body fluids: semen, vaginal secretions, saliva, or any body fluid visibly contaminated with blood or in situations where it is difficult or impossible to differentiate between body fluids.
- .2 Any tissue or organ (other than intact skin) from a human (living or dead).

See SAF 5.2.11.2, [Supplementary Information on Blood-borne Pathogens](#).

2.12 Common Hazards

2.12.1 Construction jobsites are unique, dynamic work environments. However, there are certain hazards and safety concerns common to many or all sites:

- .1 Slip, trip, and fall hazards shall be carefully managed. Walkways, parking lots, heavily traveled paths, and work areas including platforms shall be free from ice, snow, water, oil, and debris.
- .2 Back strains can result from lifting boxes or other objects. See SAF 4.5.1, Lifting.
- .3 Repetitive motion injuries such as carpal tunnel syndrome may occur from keyboard use or other office activities if proper ergonomic practices are not followed. See SAF 4.5.2, Repetitive Motion.
- .4 Appropriate care shall be taken to assure the safety of individuals having special vulnerabilities or health needs, including persons with disabilities and pregnant women.
- .5 Employees who have issues that could affect safety for themselves or others shall notify their supervisor. Examples include: dizziness, trouble breathing, bad back, fainting spells, or drowsiness from medication.

2.12.2 Barton Malow also strongly encourages its employees to take care to remain safe at home and in other non-work settings.

3. JOBSITE SAFETY ADMINISTRATION

3.1 Project Safety Responsibilities

3.1.1 All Jobsite Employees

- .1 Stop and correct any unsafe acts or conditions. Lead with the “Zero Tolerance for Unsafe Acts” philosophy to achieve zero incidents
- .2 Take responsibility for your own safety and for others around you
- .3 Promote “Safety, Quality, Productivity” in all of our work efforts
- .4 Report all incidents, injuries, unsafe conditions and violations to your supervisor immediately
- .5 All employees who are visiting the jobsite shall give appropriate attention to the safety of the work. Officers, directors, and other management employees shall provide a sound example, including compliance with all applicable requirements for hardhats, eye protection, footwear, and other requirements.

See SAF 2.1.2, General Duties of Employees, and SAF 2.1.3, Safety Accountability.

3.1.2 President

- .1 Knowledge of current safety performance and recent incidents
- .2 Hold Senior Leadership accountable to support the “Zero Tolerance for Unsafe Acts” philosophy and the goal for zero incidents
- .3 Hold Senior Leadership responsible for promoting “Safety, Quality, Productivity” in all of our work efforts
- .4 Contact injured employees post incident to express concern for their wellbeing.

3.1.3 Officer

- .1 You are expected to have an overall understanding & support of the safety performance and recent incidents or trends related to work within your respective area of leadership with focus on your projects
- .2 Support the Director of Safety in the successful management of the Barton Malow Safety Program with the appropriate tools and resources
- .3 Hold Project Staff and Subcontractors accountable for successful adherence to corporate and site specific safety policies so that every worker leaves the site each day the same way they arrived
- .4 Project visibility and presence
- .5 Participation in Project Safety Performance Reviews – Monthly
- .6 Active participant in all Incident Reviews
- .7 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .8 Promote “Safety, Quality, Productivity” in all of our work efforts.

3.1.4 Director

- .1 Responsible for developing site safety plan and requirements beginning at Preconstruction through completion of Project Start Up
- .2 Monitor and ensure accountability of Project Staff and Subcontractors to the adherence of established Safety Plan
- .3 Involvement and understanding of your Project Safety Performance

- .4 Active participant in all Incident Reviews
- .5 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .6 Promote “Safety, Quality, Productivity” in all of our work efforts.

3.1.5 Project Manger

- .1 You are directly responsible for site safety
- .2 You are expected to manage the development of a successful site specific safety plan
- .3 You are responsible to enforce the corporate and site specific safety policies so that every worker leaves the site each day the same way they arrived
- .4 Set direction so that the project team is clear on roles and responsibilities – you can delegate but you cannot shed responsibility
- .5 Set clear understanding of Barton Malow Core Purpose as it relates to safety
- .6 Active participant in all Incident Reviews
- .7 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .8 Promote “Safety, Quality, Productivity” in all of our work efforts.

3.1.6 Superintendent

- .1 You are responsible to implement the corporate and site specific safety policies so that every worker leaves the site each day the same way they arrived
- .2 Hold all project personnel; including Subcontractors, to the philosophy that Safety, Quality, and Productivity are integral to our success
- .3 Lead by example and enforce site specific safety plan
- .4 Active participant in all Incident Reviews
- .5 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .6 Promote “Safety, Quality, Productivity” in all of our work efforts.

3.1.7 Project Engineer

- .1 Support the safety efforts of Project Manager, Superintendent, and Project Safety Representative
- .2 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .3 Promote “Safety, Quality, Productivity” in all of our work efforts.

3.1.8 Project Safety Representative

- .1 You are expected to monitor the adherence to corporate and site specific safety policies as an additional resource to the project team
- .2 Correct any unsafe acts or conditions observed immediately or as soon as possible
 - .2.1 Those that cannot be resolved at the supervisory level will be reported to an elevated level of management
- .3 Motivate personnel to carry out the safety program by instruction, example, leadership, and sincerity
- .4 Investigate incidents and all unplanned occurrences and document / report out appropriately
- .5 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit of zero incidents
- .6 Promote “Safety, Quality, Productivity” in all of our work efforts

See SAF 5.3.1.5, [Typical Duties of Safety Representative](#).

Note: If there is not a dedicated Project Safety Representative the above responsibilities are assumed by the Superintendent

3.1.9 Director of Safety

- .1 Overall understanding of Regional Safety Performance
- .2 Communicate success, strengths, improvements, and initiatives
- .3 Effectively builds and manages a team of Safety Professionals to act in carrying out, supporting, and influencing One Barton Malow Safety Program
- .4 Manage communication of safety related information
- .5 Manage training requirements
- .6 Create, manage, and explain implementation of initiatives that will improve safety within the organization
- .7 Evaluate, review, and supplement (as necessary) Standard Operating Practices
- .8 Active participant in all Incident Reviews
- .9 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .10 Promote “Safety, Quality, Productivity” in all of our work efforts.

3.1.10 Corporate Safety Leader

Provide overall corporate direction

- .1 Evaluate, review, and supplement (as necessary) Standard Operating Practices
- .2 Active participant in all Incident Reviews
- .3 Stop and correct any unsafe acts or conditions as immediate as possible and lead with the “Zero Tolerance for Unsafe Acts” philosophy with the pursuit for zero incidents
- .4 Promote “Safety, Quality, Productivity” in all of our work efforts
- .5 Lead workers compensation program.

3.2 Project Start Up

3.2.1 Site-Specific Safety Information (SSSI)

The project manager is responsible to determine what safety requirements above and beyond the requirements of this Manual shall be implemented for the project. Consideration shall be given to special safety requirements resulting from Owner requirements, conditions at the site, insurance programs, and other factors. The project manager shall incorporate any such requirements into form SAF 6.3.2.1, [Site-Specific Safety Information \(SSSI\)](#). This SSSI form shall be incorporated into the project manual and, if no project manual is used, be provided to each prospective bidder. In any event, the SSSI shall be: (a) appropriately communicated to all Barton Malow personnel to whom it may apply; and (b) incorporated by reference into the contracts for all Contractors at the jobsite. For small projects self-performed by Barton Malow, involving little or no work by Contractors, use of the SSSI form is optional, but planning for site-specific conditions shall occur nevertheless. See SAF 4.1.2, Job Hazard Analysis.

3.2.2 Site-Specific Safety Plan

The Site-Specific Safety Plan for a Barton Malow project consists of:

- .1 This Manual, along with
- .2 The completed SSSI form, SAF 6.3.2.1 [Site-Specific Safety Information \(SSSI\)](#).

Both items shall be printed out and kept readily available at the jobsite in their latest version. The Site-Specific Safety Plan may serve as the jobsite's accident prevention plan, which is required by law in some jurisdictions.

3.2.3 Implementation of Corporate Programs

The project manager is responsible to ensure that the following corporate safety programs and requirements are appropriately implemented at the jobsite:

- .1 Hazard Communication, SAF 2.3.
- .2 Postings, see SAF 2.4.
- .3 Emergency Action Plan, see SAF 2.7.
- .4 Substance Abuse, SAF 2.8.
- .5 Security, see SAF 2.10.

3.2.4 Recordkeeping

3.2.4.1 Safety documentation shall be filed and maintained at each jobsite in accordance with standard Barton Malow file system requirements in the Operations Manual, [PSI 11, Project Filing System](#). Store files electronically or in hard copy.

3.2.4.2 The following safety documentation shall be maintained at each jobsite:

- .1 A completed form SAF 6.3.2.1, [Site-Specific Safety Information \(SSSI\)](#).
- .2 Completed forms SAF 6.3.3.3, [Contractor Safety Certificate](#).
- .3 Records of [Pre Task Plan](#), form SAF 6.4.1.2.3.5., Job Hazard Analysis or other daily safety planning.
- .4 Pre-construction safety meeting minutes.
- .5 Safety meeting minutes.
- .6 MSDS for all products used for self-performed work and Contractor work.
- .7 Safety orientation records for self-performed work (unless kept at the main office).
- .8 Safety training records including Tool Box Talks for self-performed and Contractor work.
- .9 Safety inspection records for self-performed and Contractor work and corporate safety audits.
- .10 Inspection reports by government agencies (OSHA, EPA, etc.), Owner's representatives, and insurance companies.
- .11 Annual and periodic equipment inspection reports.
- .12 Incident reports for both Barton Malow and Contractor activities, see SAF 3.7, Incident Response.
- .13 Disciplinary action reports, see SAF 3.8, Discipline.
- .14 Job hazard notifications and corrective action reports, see SAF 3.5, Project Safety Compliance.
- .15 Crime reports.
- .16 General safety correspondence/notes.
- .17 Industrial hygiene sampling records and environmental reports; note special archiving requirements for these records per SAF 3.9.2.
- .18 [Superintendent Daily \(CON 14.3\)](#) documenting the actual hours worked and incidents, as needed.

3.2.5 Positive Safety Motivation

The project manager shall consider appropriate methods of positively motivating Company employees and Contractors to follow safe practices. Methods may include communicating leadership commitment to safety, recognizing safe behaviors, and celebrating or rewarding successful results.

3.3 Safety Requirements for Contractors

3.3.1 Bidders on Barton Malow projects (prospective subcontractors as well as other trade Contractors the Company will manage) normally shall be prequalified in accordance with the Company's Corporate Procurement System (CPS). A portion of this prequalification includes receipt and evaluation of the Contractor's past safety performance: EMR history OSHA 300A reports. Contractors with insufficient safety results will be conditionally prequalified. [See PRO 3.6, item 5](#). If the Contractor is conditionally approved, a Risk Mitigation Plan ([PRO 15-22](#)) will need to be submitted and approved prior to contract awards over 300,000. This plan will require the following 3 attachments: 1) OSHA 300 Logs, 2) Corrective Action Plan and 3) Site Specific Safety plan.

3.3.2 Prior to bidding, prospective Contractors shall be notified of the project safety requirements. Typically this is done by furnishing to bidders a project manual that includes [Section 00810](#) and a completed form SAF 6.3.2.1, [Site-Specific Safety Information \(SSSI\)](#). These define, respectively, the general and site-specific safety requirements for the Contractor. In any event, both section 00810 and the SSSI shall be incorporated by reference into the subcontract or trade contract that is issued to the successful bidder.

3.3.3 In some situations, a project manual is not used. In such cases, the project manager shall assure that the successful bidder will be obligated to meet the safety requirements for the project. One way of doing so is to send the prospective bidder section 00810 and the SSSI as project requirements even if the rest of the project manual will not be used. If this approach is not workable, contact the Legal Department for assistance before bids are taken. In any event, each Contractor (first tier only) shall sign form SAF 6.3.3.3, [Contractor Safety Certificate](#), before beginning work.

3.3.4 The Safety Program requires that Contractors follow all applicable safety and health regulations and any additional safety requirements noted in Section 00810, the SSSI form, or elsewhere in the Contract Documents. Each Contractor remains responsible for the safety of its own employees and operations, maintaining a safe work area, and implementing its own site-specific safety programs. Neither this Manual nor any action or omission by Barton Malow relieves the Contractors of such responsibilities. Except as otherwise noted, Barton Malow employees may assume that the safety practices detailed in SAF 4, Jobsite Safety Practices, will be consistent with requirements that are imposed on the Contractor by contract or by applicable law (see SAF 1.2.4). Any questions in that regard shall be directed to the Safety Department.

3.3.5 Contractors are required to provide various written safety submittals, including:

- .1 Signed form SAF 6.3.3.3, [Contractor Safety Certificate](#) (before work begins).
- .2 Site-Specific Safety Program, Contractor's form, including substance abuse policy, hazard communication program, and Material Safety Data Sheets (before work begins); Barton Malow need not review or approve this Program, because the Contractor will have certified in form SAF 6.3.3.3, [Contractor Safety Certificate](#) that the Program meets the necessary requirements. Even so, it is helpful to receive this information in the event of Contractor deficiencies, outside inspections, accidents, or other safety incidents.
- .3 Form 6.3.4.5 (or equivalent), [Tool Box Talk Record](#) (weekly).
- .4 [OSHA form 301](#) or equivalent (within 24 hours of incident).
- .5 Monthly Report of hours worked and incident rates

3.3.6 Safety planning shall occur before any Contractor sets foot on site. Most jobsites involve multiple Contractors and/or subcontractors. Effective communication and coordination help minimize risks associated with the presence of multiple employers at the same jobsite.

3.3.7 A pre-construction safety discussion shall be held with each Contractor before it begins work at the jobsite. Ideally, this shall be part of the Contractor's Pre-Construction Meeting, see Operations Manual, [CON 4.02](#), Conduct Trade/Subcontractor Kick-off Meeting. The purpose of the safety discussion is to reinforce Barton Malow's expectations, establish incident response and Emergency Action Plan protocol, communicate the discipline program, and promote required safety pre-planning. [See CON 4.01](#), Contractor's Pre-Construction Meeting Agenda. A key requirement of the safety discussion is to review with the Contractor form SAF 6.3.3.3, [Contractor Safety Certificate](#); if not already done, get it signed.

3.4 Project Safety Orientation and Training

3.4.1 Employee Safety Orientation

A project safety orientation shall be conducted for every employee working on the jobsite. The Barton Malow Safety Representative or another appropriate individual conducts this orientation to ensure that every employee has a basic understanding of: the jobsite safety requirements, hazards particular to the site, the Pre-Task Plan or other pre-work safety planning, the Emergency Action Plan, and the discipline program, see SAF 5.3.4.1, [Employee Project Safety Orientation](#). These orientations shall be documented, preferably on form SAF 6.2.5.1, [Employee Safety Orientation Record](#). It is recommended that a Barton Malow safety orientation sticker, which can be affixed to the hardhat, be issued to each employee.

3.4.2 Contractor Employee Safety Orientation

In addition, each Contractor shall conduct safety orientations for its own employees. These shall address trade-specific requirements, hazards specific to the work and the site, the Emergency Action Plan, and Pre Task Safety Planning. Orientation documentation shall be provided to the Project Safety Representative.

3.4.3 General Training Standards

Barton Malow and each Contractor are required to meet or exceed all applicable legal requirements for safety training and/or certification. At a minimum, Supervisors shall:

- 1) Initially train employees on how to perform assigned job tasks safely.
- 2) Carefully review with each employee the specific safety rules, policies, and procedures that are applicable and that are described in the applicable Safety Program.
- 3) Give employees verbal instructions and specific directions on how to do the work safely.
- 4) Observe employees performing the work. If necessary, provide a demonstration using safe work practices or remedial instruction to correct training deficiencies before an employee is permitted to do the work without supervision.
- 5) Review safe work practices with employees before permitting the performance of new, non-routine, or specialized procedures.
- 6) Provide safe operating instructions on seldom-used or new equipment before employees use the equipment.
- 7) Provide retraining periodically on safety rules, policies, and procedures.
- 8) Provide notice or retraining when changes are made to safety procedures.
- 9) Retrain individual employees after a work-related injury caused by an unsafe act or work practice.
- 10) Retrain individual employees observed displaying unsafe practices, acts, or behaviors.

3.4.4 Specialized Training

The Company and all Contractors shall comply with any specialized training, certification, or notification required by contract, policy, or applicable law. Examples of training that may be required by law include the following:

- .1 Asbestos – awareness training if asbestos may be encountered; if employees will be exposed to asbestos concentrations at or above the Permissible Exposure Limit (PEL), further training may be required; see SAF 4.22.1, Asbestos.
- .2 Blood Borne Pathogens – for employees who may be exposed to blood or other pathogenic fluids or tissues, including first responders, employees giving first aid or CPR trainees; see SAF 2.11, Communicable Diseases.
- .3 Competent Persons – when the law requires involvement of a Competent Person or qualified person, that individual shall have the requisite training to function as such; see SAF 1.3.3 (definition of Competent Person).
- .4 Confined Spaces – for employees entering the spaces or standing watch; see SAF 4.20, Confined Space Entry.
- .5 Cranes – operators shall have National Commission on the Certification of Crane Operators certification or other accepted certification and associated training; see SAF 4.16.2.1.
- .6 Emergency Action – for employees to understand evacuation procedures and any duties they may have. See SAF 2.7, Emergency Action Plan.
- .7 Energy – for employees to be aware of energized electrical power circuits, other hazardous energy, and proper procedures; see SAF 4.14, Electrical Hazards and Energy Lockout/Tag-Out.
- .8 Fall Protection – for employees who may be exposed to fall hazards; see SAF 4.12, Fall Protection.
- .9 Fire – for awareness of pertinent information in the fire prevention plan; see SAF 4.11, Fire.

- .10 Hazard Communication – for employees using, disposing of, or potentially exposed to hazardous materials, to understand the hazards and approved safe practices; see SAF 2.3, Hazard Communication, and SAF 4.21, Hazardous Materials - General.
- .11 Heavy Equipment – for operators of construction vehicles, man-lifts, etc.; see SAF 4.10, Heavy Equipment, and 4.13, Elevated Work.
- .12 Ladders – for safe use; see SAF 4.13, Elevated Work.
- .13 Lead – for employees subject to lead exposure. see SAF 4.22.4, Lead.
- .14 PPE – for employees to understand the need and proper use of any required PPE applicable to them, including gloves, respirators high visibility clothing and hearing protection; see SAF 4.3, Personal Protective Equipment (PPE).
- .15 Rigging – for employees using rigging equipment; see SAF 4.16, Cranes and Rigging.
- .16 Scaffolding – for employees working on, erecting, disassembling, moving, operating, repairing, altering, or inspecting a scaffold; see SAF 4.13, Elevated Work.
- .17 Stormwater Management – a trained and certified stormwater operator may be required for any site where soil is being disturbed in an area larger than one acre; see SAF 4.7.4.
- .18 Tools – for employees using certain tools with dangerous characteristics, including powder-actuated tools; see SAF 4.9, Tools.
- .19 Trenching and Underground – for employees to be prepared for hazards including atmospheres, flooding, cave-in, etc.; see SAF 4.15, Underground Work.
- .20 Welding and Cutting – for employees to be trained on fire, heat, and electrical hazards.

3.4.5 Periodic Meetings

A weekly project wide safety meeting will be held. During this meeting both project specific and/or general safety items will be discussed. Document the meeting on the Superintendent Daily. A project wide sign in sheet is optional. Participation is mandatory.

Each self-performed trade and Contractor on a project shall have brief safety meetings (“Tool Box Talks”) at least weekly. These are an industry practice consisting of a 5-10 minute meeting to discuss required safety training, hazards on the job, emergency plans, etc., see SAF 5.3.4.5, [Guidance for Toolbox Talks](#). Document them, preferably on form SAF 6.3.4.5, [Tool Box Talk Record](#). It is also good practice to hold monthly safety-specific meetings at the jobsite with management personnel and craft supervisors. These meetings shall identify injury trends, desirable or undesirable work practices, site hazards, safety compliance, etc. The weekly Tool Box Talks and monthly safety meetings help promote good communication and a positive safety culture.

3.4.6 Languages

Orientation, training, and notification shall be understandable to the employees. When appropriate, Spanish or other foreign languages shall be used in lieu of or in addition to English. Crews that do not speak English shall have bilingual supervision.

3.5 Project Safety Compliance

3.5.1 The project Safety Representative shall assure that safety deficiencies are reported, corrected, and documented in a timely, thorough, and consistent manner. The required steps include the following:

- .1 Regularly review the safety of the jobsite, including both Barton Malow operations and Contractor operations. Although the Safety Representative shall always be alert to jobsite conditions, a safety-specific walk-through review of the jobsite shall occur at least

weekly. Form SAF 6.3.5.1, [Weekly Safety Inspection Checklist](#), is required for this purpose.

- .2 Document safety deficiencies that are identified through the review or through other means (e.g., outside inspections or reports of accidents) and implement corrective measures. Use form SAF 6.3.5.2, [Safety Hazard Notification](#) to document significant or repeat issues.
- .3 In the event of an accident or other incident, handle per SAF 3.7, Incident Response. Notify the Safety Department and the project manager of all incidents.
- .4 Ensure Contractors correct, report, and document noted deficiencies. See SAF 5.3.5.4, [Supplementary Information on Project Safety Compliance](#).

3.6 Outside Inspections

3.6.1 Safety inspections may be conducted by outside parties, including the Owner, insurance carriers, OSHA, or other regulators. It is the Safety Representative's responsibility to ensure proper procedures are followed and documentation completed for each type of review. If at all possible, notify the Safety Department Leader (or other Safety Professional) and the project manager at the start of the inspection.

3.6.2 Provide appropriate cooperation with OSHA representatives and other third party inspectors who have legitimate authority to conduct a safety review. [Document inspections on form SAF 6.3.6.2, Outside Inspection Record](#). General guidelines are as follows:

- .1 Verify that the safety inspector has proper identification and signs the visitor log.
- .2 Confirm the reason and authority to conduct the inspection.
- .3 Notify Contractors and make the jobsite available to the inspector.
- .4 Accompany inspector at all times.
- .5 Document what happened and was observed during the inspection.
- .6 Correct deficiencies as required.
- .7 Notify Safety Department Leader and project manager regarding results; in the case of major issues, provide immediate notification.

3.7 Incident Response

3.7.1 Immediate Response

The immediate response to an accident or other incident on a Barton Malow jobsite or involving a Barton Malow employee shall include the following:

- .1 In an emergency, call 911 or the appropriate emergency phone number and follow the Emergency Action Plan; see SAF 2.7.
- .2 Administer first aid as may be appropriate to injured persons. See SAF 5.3.7.3, [Basic First Aid Techniques](#).
- .3 Report the incident immediately to the Barton Malow project Safety Representative or, if that representative is not available, another appropriate supervisor.
- .4 If there may be continuing danger, stop any affected work until the danger is removed or corrected.
- .5 Arrange ambulance transport for seriously ill or injured persons; otherwise, take injured Barton Malow employees to the designated clinic or emergency center. Subcontractors must take injured employees to their designated clinic or emergency center. Regardless of apparent severity, workers are prohibited from driving themselves to the medical facility..

- .6 Authorization for treatment of work related injuries should be obtained from the Safety Department. If timely response cannot be obtained, the Safety Representative, project manager, or superintendent are authorized to approve treatment. See form SAF 6.3.7.1.6, [Medical Care Authorization](#).
- .7 Secure area until Safety Representative and project superintendent authorize the site to be cleaned up or disturbed in any way.
- .8 For any incident, the Safety Representative or another appropriate individual shall notify the Safety Department and project manager by phone or in person as soon as practicable, hopefully no more than an hour after the incident occurs.
- .9 Consider whether to implement the corporate Crisis Management Plan. See SAF 2.2.5, Crisis Management.

3.7.2 Initial Investigation and Report

A full investigation shall be conducted for all incidents. The investigation shall determine the root cause of the incident, all corrective actions needed, and verification that corrective actions were taken. Document the investigation by completing all of form SAF 6.3.7.2.4, [Incident Investigation Report](#). Submit the completed form to the Safety Department within 24 hours of the incident; if additional time is needed, coordinate with the Regional Director of Safety, or Safety Department Leader. See SAF 5.3.7.5, Investigation. Promptly after the Immediate Response items from SAF 3.7.1 have been addressed, the Safety Representative shall conduct an investigation and report, as follows:

- .1 Obtain witness statements (including the involved party) using form SAF 6.3.7.2.1, [Witness Report](#).
- .2 Take photographs and document using CON 16.01, Photographic Form.
- .3 If the accident is the result of an unsafe act or work condition, consider issuing disciplinary action or a safety hazard notification to the employee or Contractor in violation; see form SAF 6.3.5.2, [Safety Hazard Notification](#).
- .4 Complete a Barton Malow Incident Investigation Report form SAF 6.3.7.2.4, and forward it by email, fax, or hand delivery to the Safety Department within 24 hours of the incident. Include appropriate attachments (witness reports, photographic reports, etc.).
- .5 For incidents involving Contractors or their personnel, also obtain an incident report from the Contractor and forward a copy promptly to Barton Malow's Safety Department.
Note: The Contractor Incident report is in addition to the Barton Malow Incident report.

3.7.3 First Aid

See SAF 5.3.7.3, [Basic First Aid Techniques](#). Injuries shall be addressed through first aid, without other medical or clinical care, when appropriate. If there is doubt whether first aid will suffice, the proper care, health, and safety of the injured person is the paramount concern. Injuries handled only with first aid may not be reportable to OSHA. First aid, whether performed on site or at a clinic, is typically defined as follows:

- .1 Non-prescription medication at non-prescription strength;
- .2 Administering tetanus immunizations;
- .3 Cleaning, flushing, or soaking wounds on the skin surface;
- .4 Wound coverings, such as bandages, Band Aids, gauze pads, etc., or using SteriStrips or butterfly bandages;
- .5 Hot or cold therapy;
- .6 Elastic bandage, wraps, back belts, etc. (if no splint is used);
- .7 Temporary immobilization devices while transporting an injured party (splints, slings, neck collars, or back boards);
- .8 Drilling a fingernail or toenail to relieve pressure, or draining fluids from blisters;

- .9 Eye patches;
- .10 Simple irrigations or a cotton swab to remove foreign bodies not embedded in or adhered to the eye;
- .11 Irrigation, tweezers, cotton swab, or other simple means to remove splinters or foreign material from areas other than the eyes;
- .12 Finger guards;
- .13 Massages; or
- .14 Drinking fluids to relieve heat stress.

3.7.4 Return to Work

The Company requires return to work, even with restricted work duties if necessary, as soon as medically permissible. Employees shall return to work the same day if their condition allows. Contact the Regional Director of Safety or the Safety Department Leader immediately if a Barton Malow employee needs offsite medical treatment.

3.7.5 Incident Review Process

Process by which major incidents are investigated and evaluated, with supervision and involvement by executive management, to determine the root cause and implement appropriate measures to minimize the chance of future incidents. Barton Malow requires an Incident Review of all recordable injuries to Barton Malow employees as well as other incidents of sufficient seriousness in the judgment of the Safety Department Leader, or Regional Safety Director. See SAF 5.3.7.6, Incident Review Process.

3.7.6 Workers' Compensation

Barton Malow employees who suffer work related illnesses or injuries may be entitled to workers' compensation benefits. Injured employees should contact the Safety Department for assistance in determining benefit eligibility.

3.8 Discipline

3.8.1 Safety violations typically merit appropriate discipline. The extent of discipline depends on the seriousness and frequency of violations. Barton Malow management has sole discretion to determine whether a violation occurred. A violation does not have to be observed directly to be a basis for discipline provided there is reasonable basis to determine that a violation occurred.

3.8.2 Barton Malow management also determines what discipline is appropriate after considering the facts relating to a violation. Violations by Barton Malow employees may lead to suspension or termination from working for the Company. Violations by Contractors or Contractor employees may lead to suspension or termination from working on Barton Malow projects. General guidelines on the extent of discipline are provided below; these are subject to modification in a given case at the sole discretion of Barton Malow management. Barton Malow reserves the right to summarily remove employees at management's discretion.

3.8.2.1 Discipline of Employees

- .1 Class 1 Violation (serious or life threatening)
A Class 1 violation could potentially cause death, serious injury, or property damage. Examples include: no fall protection, unauthorized entry into a confined space, working in an unprotected trench, working under a suspended load, etc.

- a. The first substantiated Class 1 violation shall result in suspension from work without pay for three consecutive workdays and safety orientation retraining. After being cited with a Class 1 offense, the employee has one year before the Class 1 violation is cleared from his or her record.
 - b. The second substantiated Class 1 violation within the same one-year period shall result in suspension from work without pay for a minimum of 30 calendar days. The employee and his or her supervisor shall meet with Barton Malow management to discuss reinstatement.
 - c. The third substantiated Class 1 violation within a one year period shall result in termination.
- .2 Class 2 Violation (less serious or non-life threatening offense)
A Class 2 violation would not potentially cause death, serious injury, or property damage. Examples would include: not wearing a hardhat (no serious overhead hazards), safety glasses, etc.
- a. The first substantiated Class 2 violation shall result in either an informal verbal violation or a formal written violation.
 - b. After being formally cited (written violation) with a Class 2 violation, the employee has one year before the Class 2 violation is cleared from his or her record.
 - c. The second substantiated written Class 2 violation within one calendar year shall result in mandatory safety orientation retraining.
 - d. The third substantiated written Class 2 violation within one calendar year shall result in suspension from work without pay for three consecutive scheduled workdays and safety orientation retraining.
 - e. The fourth substantiated written Class 2 violation within one calendar year period shall result in termination or at least suspension from work without pay for six consecutive scheduled workdays (and discussion with management prior to reinstatement).
- .3 Any Barton Malow employee or Contractor employee who is terminated from the project shall not be permitted to return to the same project for another Contractor or to a different Barton Malow project.
- .4 An employee observed in violation of a safety requirement who then refuses to comply immediately may be suspended without pay pending further investigation.
- .5 An employee who violates safety requirements may be charged with a violation regardless of whether his or her action was intentional. It is the employee's obligation to know the pertinent safety requirements. It is the Contractor's responsibility to respond to its employees' requests for information and/or equipment to work safely. Employees shall never put themselves in an unsafe work situation.
- .6 Discipline of union employees shall comply with applicable labor agreements and preferably be coordinated with the union.

3.8.2.2 Discipline of Supervisors

Supervisors, including trade foremen, must take responsibility for enforcing the safety requirements. Each supervisor shall administer disciplinary actions to subordinate employees as required. Depending on the circumstances, violations by subordinate personnel may justify issuing a violation against the supervisor as well. For example, a supervisor who observes a violation and does not attempt to rectify it may also be cited for a violation.

3.8.2.3 Discipline of Contractors

A written notification on form SAF 6.3.5.2, [Safety Hazard Notification](#), may be issued against a Contractor that is not complying with project safety requirements or applicable law, or does not appropriately manage safety of its employees. This notification may be based on any of the following:

- .1 One or more serious violations or incidents.
- .2 Excessive frequency of less serious violations and/or incidents.
- .3 Failure to cooperate with the Safety Program.

Barton Malow shall review the violating Contractor's safety program and meet with the Contractor's management, including an officer of the Contractor. The meeting shall determine the measures that will be required for the Contractor to continue to work on site. Depending on the seriousness, appropriate contractual remedies may include notice of contractual default, withholding payment, suspension of work, requiring a change of Contractor personnel, or termination of the Contractor.

3.9 Project Closeout

3.9.1 The project safety records described in SAF 3.2.4, Recordkeeping, shall be properly archived in accordance with Barton Malow policy. See Operations Manual [CON 38](#), Archiving Documents and Records.

3.9.2 Industrial hygiene reports (air, water, noise, etc.), documentation of exposures to hazardous materials (lead, cadmium, asbestos, silica, etc.), environmental audits or surveys, records of disposal of hazardous and non-hazardous materials, and medical surveillance records/assessments shall be designated for at least 50-year retention. Archiving of these records is to be coordinated with the Safety Department.

4. JOBSITE SAFETY PRACTICES

4.1 Pre Task Plan and Job Hazard Analysis

4.1.1 Planning for Safety

To achieve a safe work environment, three conditions are critical. Employees shall have the right:

- .1 Attitude/culture;
- .2 Knowledge/training; and
- .3 Equipment/environment.

Work by Barton Malow and all Contractors shall be preceded by planning which assures these three ingredients are present.

4.1.2 Plan of the Day meetings

The project team will designate a daily meeting time where the next work period work operations will be reviewed. Each contractor who will be performing work will have a foreman or superintendent attend the meeting. Each contractor will review their upcoming work operations with the group to identify key safety factors, areas of coordination or interference, or other points needing clarification. A copy of the Pre Task Plan/JHA for the upcoming work will be provided in advance to the project team.

4.1.2.1 PTP and JHA are terms for the process of pre-planning to achieve safe construction and error free work. Sometimes other terms, such as Pre-Task Assessment is used instead.

4.1.2.2 The planning process is important because:

- .1 It identifies and mitigates potential hazards
- .2 It promotes productivity and error-free, safe work
- .3 It bridges communication gaps
- .4 It promotes involvement and buy-in from the employees conducting the tasks

4.1.2.3 The steps of the PTP or JHA are as follows:

- .1 The supervisor shall lead the project work team in conducting a comprehensive evaluation of the work steps involved in performing a task.
- .2 The potential hazards associated with each work step and each work environment is identified.
- .3 The necessary safety measures to mitigate the potential hazards are clearly defined, including standard safety practices and any site-specific or Owner-required policies.
- .4 Participants ensure that necessary training, programs, and equipment are in place, including the designation of a Competent Person where required.
- .5 Participants document the PTP or JHA, such as on form SAF 6.4.1.2.3.5, [Pre Task Plan](#).
- .6 The work steps, hazards and controls are discussed with all involved workers during a huddle led by the crew leader or crew member. A huddle will be held 3 times per shift to review the PTP/JHA: once prior to the start of shift, once after midday break (typically lunch) and the third time to close out the shift (huddle Post Work Review).

4.1.2.4 Barton Malow and each Contractor are required to follow the PTP or JHA process.

4.1.2.5 Supervisors shall determine when to perform a PTP or JHA. Some crews make effective use of the process at the start of each day and may even use it multiple times during a day as activities change. At a minimum, PTP or JHA shall occur before any major change in work activity or the start of any task that causes frequent injuries or has the potential to cause serious injury or property damage.

4.1.2.6 On small projects, when no form SAF 6.3.2.1, Site-Specific Safety Information (SSSI), is used, the PTP or JHA process is used to identify and safely address those hazards specific to the particular jobsite. See SAF 6.3.2.1, [Site-Specific Safety Information \(SSSI\)](#).

4.2 Clothing and Behavior

4.2.1 Clothing

All employees working on a Barton Malow jobsite shall wear long pants, a shirt with a minimum 4" sleeve, and appropriate work boots. Shirts and pants cannot be rolled up to circumvent the requirements. Prohibited clothing includes: shorts, sleeveless shirts, bare mid-section, tennis shoes, and sandals. ANSI rated Protective (Safety)-toe work boots are highly recommended and may be required for specific projects or work operations. Loose jewelry shall not be worn when working near equipment or moving parts.

4.2.2 Hair

Employees with long hair shall take care around machinery and equipment to avoid an entanglement hazard. Facial hair, even 24-hour growth, shall not be allowed if it may interfere with the proper seal of a respirator.

4.2.3 Behavior

Good order and discipline are required at all times. Fighting, horseplay, hazing, running, gambling, graffiti, and vandalism are not allowed. Violence, weapons, alcohol, and illegal drugs are prohibited per corporate policy; see SAF 2.8, Substance Abuse, and SAF 2.9 Violence and Weapons.

4.2.4 Radios

Music or radio programs are not permitted.

4.2.5 Cell Phones

Cell phone use can distract from working safely and productively. The following policy applies to all Barton Malow and contractor employees:

- .1 Personal cell phones are not to be used on construction sites except:
 - a. to report an emergency; or
 - b. on approved break time.
- .2 Use of business cell phones shall not interfere with jobsite safety. Personal calls shall be kept to a minimum.
- .3 Use of cell phones while driving a vehicle is discouraged.
- .4 Use of cell phones while operating equipment is prohibited.

4.3 Personal Protective Equipment (PPE)

4.3.1 Hardhats

All employees must wear approved hardhats on jobsites at all times. Cowboy style hardhats are prohibited. Hardhats shall not be removed to use welding shields; the shields shall attach to the hardhats or be hand held.

- .1 Hardhats are not required in the trailer or outside the construction area. Employees working in occupied, substantially completed facilities are not required to wear hardhats unless actually performing punch list or other trade work, provided no work from ladders, scaffolds, lifts, or other overhead hazards are present.
- .2 Hardhat requirements are fully applicable to Contractors, vendors, and visitors.

4.3.2 Eye Protection

4.3.2.1 Barton Malow requires 100% eye protection for all project visitors and workers. All Project personnel including visitors shall wear American National Standard Institute (ANSI) certified safety glasses while supervising, observing, or engaging in construction activities at a jobsite. (Look for the "Z87.1" rating etched on the glass or on the frame to verify ANSI certification). **Note: The use of prescription glasses that do not comply with ANSI Z87.1 does not satisfy this requirement.**

Employees inside the trailer or otherwise outside of the construction work area are generally not required to wear eye protection

4.3.2.2 Contractor employees shall, at a minimum, wear approved eye protection if they are performing or in proximity to a Hazardous Activity as defined in SAF 4.3.2.2.1.

4.3.3 Gloves

Protective work gloves will be worn while performing all construction work on the project site. When not working, gloves must be immediately available for use when needed, i.e., kept on your person. The specific type of glove is dependent upon the work task (see chart for some examples). In general, the wearing of cut resistant style gloves is preferred. If the glove use creates an additional hazard due to a particular work task, for example working near rotating

equipment, gloves will not be worn for that specific task. Pre Task planning will document glove use.

WORK GLOVE SELECTION	
Exposure	Hand Protection
General Maintenance, Operation, Material Handling and Housekeeping Tasks	Appropriate work gloves are required. ANSI/ENN rated level 1 cut resistant work gloves are preferred. Equivalent protection may be provided by leather work gloves
Potential cut exposure, razor knife use, sheet metal work or other exposure to sharp edges,	360 degree Level 2 or higher cut resistant. Where there is potential exposure to the arm above the cuff of the glove also use cut resistant sleeves.
Temperature Extremes	Nomex or Lined Kevlar
Chemicals	Review "Material Safety Data Sheet" for appropriate glove selection.
Bodily Fluids	Nitrille or Latex
Welding and Burning Operations	Regular welding gloves
Electrical work	Energized electrical work is prohibited. If site specific exception is granted, appropriate glove use is covered by the appropriate safety regulations.

4.3.4 Hearing Protection

Hearing protection such as earplugs or protective earmuffs shall be worn if the employee is exposed to loud noises that could cause hearing damage. These include jackhammers, track dozers, concrete crushers, and similar noisy equipment. A rule of thumb is that when you must raise your voice to be heard by a person nearby, you need hearing protection.

4.3.5 High Visibility Clothing

High visibility clothing consisting of a short or long sleeve shirt, coat, vest or other equivalent garment will be worn at all times. Workers exposed to vehicle traffic or heavy equipment operation shall wear ANSI rated high visibility clothing as require by OSHA, DOT or other appropriate regulatory agency.

4.3.6 Fall Protection

Continuous fall protection is required at heights of 6' and greater; guardrails, harnesses, lanyards, and other fall-arresting PPE may be required. See SAF 4.12, Fall Protection.

4.3.7 Life Preservers

Work over or near water may require life preservers and/or other rescue equipment, including a boat.

4.3.8 Respirators and Environmental Gear

If hazardous materials or dangerous atmospheres are present, respirators, "moon suits," or other PPE may be required. See SAF 4.20, Confined Space Entry, SAF 4.21, Hazardous Materials – General, and SAF 4.22, Specific Environmental Hazards. Examples of work-related exposures that are likely to require respiratory protection include:

- .1 Dry grinding, chipping, drilling, or cutting concrete/masonry block;
- .2 Sanding drywall joints;
- .3 Applying/handling caustic materials.

4.3.9 Visitors

Site visitors who enter the construction area will:

- .1 Sign the visitor log
- .2 Receive a visitor orientation
- .3 Wear all required project personal protective equipment including but not limited to; ANSI approved safety glasses, work boots, high visibility clothing and hardhat.

NOTE: Project teams may make exceptions to the PPE requirements for guided construction area tours during nonworking hours.

4.4 Weather

4.4.1 Frostbite

4.4.1.1 Cause and Symptoms

Frostbite occurs when the skin is insufficiently protected from cold weather elements. Hands, feet, ears, and face are often the first to be affected. Depending on the temperature and wind chill, frostbite can occur either quickly or over an extended period of time. Symptoms of frostbite include white skin and limited circulation. In serious cases, blisters will form but the victim will not feel pain.

4.4.1.2 Prevention

Remember to dress for the job. If you are working an inside job and then have to work outside, remember to bring extra clothing – perhaps a warmer jacket, gloves, coveralls, head covering, and warmer boots. Other suggestions:

- .1 Dress in layers.
- .2 Wear wool or water repellent clothes.
- .3 Cover exposed skin.
- .4 Do not wear tight boots or clothing.
- .5 Keep spare clothing available in your vehicle.

4.4.1.3 First Aid for Frostbite

- .1 Get out of the cold and into a warm location.
- .2 Remove any wet clothing.
- .3 The frozen area may be immersed in warm water but never use hot water.
- .4 Alternatively, add extra clothing or use a blanket to cover the frozen area.
- .5 Warm area for approximately 30 minutes or until good color has returned.
- .6 If the condition does not improve seek professional medical attention.

4.4.2 Heat Illnesses

4.4.2.1 Types and Symptoms

Heat related illnesses include: heat rash, cramps, swelling, fainting, exhaustion, and heat stroke. General symptoms include fatigue, headaches, nausea, cramps, rashes, unsteadiness, and weak, rapid pulse. Fainting, convulsions, and/or elevated body temperature may indicate a person is in serious danger; the person shall be cooled immediately.

4.4.2.2 Prevention

- .1 Drink plenty of water or electrolyte drinks (e.g., Gatorade) and avoid caffeine.
- .2 Eat fruits and vegetables to replace nutrients.
- .3 Have proper supplies and equipment to help stay cool.
- .4 Spray water over the body to cool skin.
- .5 Alternate work and rest periods.
- .6 If possible, heavy work should be scheduled during cooler parts of the day.
- .7 Know the warning signs of dehydration and heat-related illness.
- .8 Wear clothing that is light-colored, lightweight, single-layer, and absorbent, allowing evaporation of perspiration.
- .9 Educate employees to recognize warning signs.
- .10 Closely observe individuals at greater risk (not accustomed to working in heat, prior history of heat illness, out of shape, overweight, sick, or diabetic).

4.4.3 Storms and Other Severe Weather

If weather conditions threaten to make the work environment unsafe, the following procedures shall be followed:

- .1 The Safety Representative shall monitor conditions by radio, internet, and/or direct observation.
- .2 The Safety Representative may recommend that the project manager order a work stoppage.

- .3 If warranted, evacuate the site or take other protective measures in accordance with the Emergency Action Plan.

For more information, please see:

[5.4.4.3.1 After a Hurricane or Flood: Cleanup of Flood Water](#)

[5.4.4.3.2 Food and Water Safety During Hurricanes, Power Outages, and Floods](#)

[5.4.4.3.3 Protect Yourself From Mold](#)

4.5 Lifting and Ergonomic Injuries

4.5.1 Lifting

Injuries associated with lifting and carrying building materials, tools, and equipment are very prevalent in the construction industry. Proper lifting techniques are important in preventing injuries to the back and other types of sprains or strains. Lifting guidelines:

- .1 Promote proper lifting and carrying techniques; consider implementing a back injury prevention program, including stretching before work begins.
- .2 Use of mechanical means to lift heavy objects is generally preferred over lifting by hand.
- .3 The right way to lift is easiest and safest. Crouch or squat with the feet close to the object to be lifted, secure good footing, take a firm grip, bend the knees, keep the back vertical, and lift by bending at the knees and using the leg and thigh muscles. If the back must be bent, keep it at least 45° above horizontal.
- .4 Employees shall not attempt to lift beyond their capacity. Caution shall be taken when lifting or pulling in an awkward position.
- .5 Employees shall avoid twisting or excessive bending when lifting or setting down loads.
- .6 When performing a task that requires repetitive lifting, the load shall be positioned to limit bending and twisting. The use of lift tables, pallets, and mechanical devices shall be used in these instances.
- .7 An employee shall obtain assistance when lifting heavy objects by hand or with power equipment.
- .8 When two or more persons carry a heavy object that is to be lowered, there shall be a prearranged signal for releasing the load.
- .9 When two or more persons are carrying an object, each employee, if possible, should face the direction in which the object is being carried.

4.5.2 Repetitive Motion

Other forms of “ergonomic” injury can result from chronic repetitive motion and static and constrained postures in some types of work. For example, the introduction of modern office technology was designed to reduce physical labor, but computers and optical scanners have sometimes generated new sources of muscular stress that cause injury. Ergonomic problems can also result during construction from some types of repetitive functions, particularly when combined with tool and other equipment manipulation, and from improperly bending, twisting, pushing, pulling, and lifting objects of various weights. General guidelines:

- .1 When moving a load horizontally, employees shall push the load rather than pull it.
- .2 When using such tools as screwdrivers and wrenches, employees shall avoid using their wrists in a bent (flexed), extended, or twisted position for long periods of time. Employees shall maintain their wrists in a neutral (straight) position.
- .3 When gripping, grasping, or lifting an object such as a pipe or board, the whole hand and all the fingers shall be used. Gripping, grasping, and lifting with just the thumb and index finger shall be avoided.

- .4 When using a keyboard, attempt to keep the forearm, wrist, and hand aligned straight. Working for long periods with the wrist in a bent (flexed) position (up, down, or to either side) could cause injury.

4.6 Housekeeping and Sanitation

4.6.1 Materials Storage and Walkways

- .1 Available material, equipment, concrete forms, pipe, etc. are to be orderly, stacked out of walkways, and from in front of doors, stairways, and ladders.
- .2 All materials stored in tiers shall be secured to prevent sliding or collapse.
- .3 Aisles and passageways shall be kept clear of tools, building material, debris, equipment, etc.
- .4 Storage of materials (especially flammable liquids and combustible material) shall not obstruct exits.
- .5 Materials shall be stored with due regard to their fire characteristics.
- .6 Weeds and grass in outside storage areas shall be kept under control.
- .7 Paths to and from the work areas shall be kept free of snow, ice, and heavy mud.

4.6.2 Scrap and Trash

- .1 Work areas shall be cleaned as the work progresses and/or is completed, but at least daily.
- .2 Trash barrels and 55-gallon drums shall be available on site. Proper rigging and lifting practices shall be used to hoist barrels. Never hoist them using non-manufactured holes cut in the sides.
- .3 Trash such as drinking cups, cans, and scraps from lunch are not to be thrown down, but disposed of properly.
- .4 Areas around saws or other woodworking equipment shall be kept clean and free of excess scrap, chips, and sawdust.
- .5 To minimize tripping and fire hazards, scrap materials and rubbish that accumulate from work shall be picked up and discarded.

4.6.3 Miscellaneous

- .1 Leads, hoses, and extension cords shall be hung up with a nonconductive material, off all floors, stairways, and walkways when possible.
- .2 Oil, grease, and other such liquid spills shall be cleaned up immediately and not left unattended.
- .3 Where such items as protruding rebar and anchor bolts create an impalement hazard or tripping hazard they shall be properly protected with wood or steel plate caps and conspicuously marked.
- .4 Pull protruding nails from scrap lumber immediately or bend the nails and dispose of the scrap.
- .5 For chemical spills or other releases of hazardous materials, see SAF 4.21, Hazardous Materials - General.

4.6.4 Disposal Chutes

When materials are dropped more than 20' to any exterior point of a building or structure, an enclosed chute shall be used. When debris is dropped through holes in the floor without the use of chutes, that area where the material is dropped shall be enclosed with barricades not

less than 36" or more than 42" high and not less than 6' back from the projected edges of the opening above. Warning signs of the hazard of falling material shall be posted at each level.

4.6.5 Illumination

- .1 Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be adequately lighted. See SAF 5.4.6.5, [Minimum Illumination Standards](#).
- .2 Except where bulbs are deeply recessed in the reflector, bulbs on temporary lights shall be equipped with guards. Temporary lights shall not be suspended by their electric cords unless designed for that type of use.

4.6.6 Drinking Water

- .1 An adequate supply of drinking water shall be provided on all projects. Drinking water shall be secured from sources free of contamination in accordance with, or approved by, local, state, or federal health authorities. It shall be dispensed by means which will prevent contamination between source and consumer.
- .2 Drinking water containers shall be cleaned daily with a non-toxic cleaner and disinfectant.
- .3 Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. A good approach is for the containers to be taped to prevent opening and marked with the date they were filled to ensure a clean, fresh water supply. Do not dip cups or ladles into containers.
- .4 Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not be used for any other purpose.
- .5 A common drinking cup is prohibited.
- .6 Where single service cups (used once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

4.6.7 Non-Potable Water

Outlets for non-potable water, such as for industrial or firefighting purposes only, shall be identified by signs to clearly indicate that the water is unsafe and is not to be used for drinking or washing purposes. There shall be no cross-connection, open or potential, between a system furnishing drinking water and a system furnishing non-potable water.

4.6.8 Washing Facilities

To minimize risks of disease, employees shall be encouraged to wash their hands if feasible before breaks, lunch, and going home. Projects engaged in activities where employees are exposed to sludge, chemicals, or other harmful contaminants shall provide adequate washing facilities onsite. It is recommended to provide hand washing facilities adjacent to toilet facilities.

4.6.9 Toilets at Jobsites

Maintain toilet facilities and dispose of sewage in accordance with appropriate sanitation and public health practices and applicable laws. If a jobsite has fewer than 20 employees, one toilet is required; for 20 or more, have one toilet and one urinal per 40 employees; for 200 or more, have one toilet and one urinal per 50 employees.

4.7 General Protection of Persons and Property

4.7.1 Take appropriate precautionary measures to protect other persons from injury and to protect property, including newly installed materials and equipment, from damage in connection with the work. Precautionary measures include barricades, fences, guards, decking, planking, etc. Furnish appropriate protection, including overhead, for walks, driveways, and other areas subject to pedestrian or vehicle traffic. When street closure or traffic diversion is necessary, coordinate with local authorities and comply with uniform traffic control standards. Provide warning devices such as lights, danger signs, horns, bells, and flags at temporary structures, pits, trenches, and other obstructions.

4.7.2 Barricades may be used to warn of hazards or limit access to an area. Yellow caution tape indicates a lower hazard; persons entering shall use caution. Red danger tape indicates

an imminent danger and unauthorized persons shall not enter. Rigid barricades such as sawhorses, snow fencing, concrete barriers, etc. may provide better protection than caution tape. Rigid barricades are more suitable when the barricade will be needed more than 48 hours. The person who erects the barricade is responsible to maintain it while the hazard is present and take it down when no longer needed. Persons modifying or removing barricades are responsible for repairing or restoring them.

4.7.3 Be sure that construction operations do not damage facilities on the jobsite or adjacent properties. Protect items of historical, cultural, and/or archaeological significance. Protect the environment as appropriate including plants, animals, endangered species, and habitats, and comply with all laws governing air and water pollution.

4.7.4 Work disturbing soil or vegetation often requires compliance with federal or state stormwater management requirements, including erosion and sedimentation control and a certified stormwater operator on the jobsite. See SAF 5.4.7.4, Stormwater Management.

4.8 Demolition and Disposal

4.8.1 Before starting demolition, a Competent Person shall conduct a survey to determine the exact scope of work and the methods to accomplish it safely. The presence of asbestos, polychlorinated biphenyls (PCB's), lead paint, chemicals, oils, or other hazardous materials shall be determined and addressed. Utilities shall be identified and shut off or otherwise controlled. Measures shall be taken to prevent the premature collapse of any portion of the structure. Risks to non-project personnel and adjacent structures shall be evaluated. Broken glass, dust, rubble, and other debris shall be properly controlled. Explosives shall be used only with the utmost care under the supervision of a Competent Person.

4.8.2 Practice good housekeeping to minimize the generation of waste. Lawful and appropriate arrangements shall be made for disposal of surplus or spoil materials, demolition products, or other wastes. Disposal of hazardous or contaminated materials shall be as lawfully directed by the Owner. Do not accept another party's hazardous, contaminated, or unidentified materials for disposal (including those of the Owner) except with proper Barton Malow risk management approval. Maintain records of waste hauling and disposal, including legally required manifests for hazardous materials. See SAF 3.9.2, which describes special archiving requirements for these records. Do not dump wastes onto or into the ground or into any body of water. Follow proper practice when disposing of waste paint, solvents, oils, filters, batteries, and containers.

4.9 Tools

4.9.1 General principles for safe use of hand tools and power tools are as follows:

- .1 Use the proper tool for the job.
- .2 Use tools only for their intended purpose.
- .3 Follow the correct manufacturer's procedures.
- .4 Maintain tools in good condition. Damaged or defective tools shall be tagged to prevent their use and removed from service for repair or disposal.
- .5 Tools or equipment, including safety equipment, shall be properly inspected and calibrated as required.
- .6 Do not remove the guard from any tool.
- .7 Electric tools shall be grounded or double insulated; avoid overloads.

- .8 Tools shall not be left lying around where they may cause a person to trip or stumble.
- .9 Tie-off and secure tools when working above the ground or near openings or gratings through which tools or parts could fall.
- .10 Tools that need to be raised or lowered from one elevation to another shall be placed in approved tool buckets or firmly attached to hand lines.
- .11 Tools shall not be thrown from place to place or from person to person.
- .12 Tools with sharp edges shall be stored and handled so that they will not cause injury or damage. They shall not be carried in pockets. Cutting tools (such as saws, wood chisels, drawknives, or axes) shall be kept in suitable guards or in special compartments.
- .13 Powder-actuated tools shall be used only by qualified operators wearing eye protection. Used cartridges shall be picked up, checked for misfired or unused shots, and discarded in an appropriate container.

4.9.2 For guidance on other specific types of tools (hand, power, pneumatic, and compressed air tools, plus saws, grinding and sanding tools, and lasers), see SAF 5.4.9.2, [Tool Safety](#).

4.10 Heavy Equipment

- .1 All equipment on a jobsite shall be in good working order and inspected as required by law, see SAF 5.4.10, [Heavy Equipment](#). Inspections shall be properly documented on form SAF 6.4.10.1, [Equipment Inspection](#), or equivalent.
- .2 Only trained and qualified employees shall be allowed to operate moving equipment such as fork trucks, cranes, excavators, bulldozers, aerial lifts, etc. Crane operators must be certified by the National Commission on Certification of Crane Operators. See SAF 4.16.2, Crane Operators.
- .3 The operator is responsible for the safe operation of the equipment at all times.
- .4 Only authorized persons shall be permitted in the cab or on the equipment.
- .5 Follow operating and maintenance procedures as specified by the manufacturer.
- .6 All dozers, loaders, tractors, end loader backhoes, and other equipment with an obstructed rear view shall have functioning backup alarms.
- .7 Rollover protective structures shall be used for all material handling equipment.
- .8 Operators shall inspect the equipment and the area where work is to be performed before each shift.
- .9 Equipment in operation shall be attended at all times.
- .10 Helpers shall remain in sight of or in communication with the equipment operator.
- .11 Riding on loads, fenders, running boards, sideboards, and gates, or with legs dangling over the ends or sides of trucks is prohibited.
- .12 Never lubricate, fuel, adjust, or repair equipment while it is running or in motion.
- .13 Exhaust fumes shall not be discharged near fresh air intakes.
- .14 Only qualified and authorized personnel shall conduct repairs, adjustments, modifications, assembly, or dismantling.
- .15 Fire extinguishers (at least 10-lb ABC-type) shall be mounted on the equipment.
- .16 See also SAF 4.16, Cranes and Rigging.

4.11 Fire

4.11.1 General

Before work at the jobsite begins, the Safety Representative shall assess the fire hazards and initiate an appropriate fire protection program. This program shall include training and

education on firefighting equipment, hazard identification, and emergency response. See SAF 2.7, Emergency Action Plan.

4.11.2 Fire Prevention

- .1 Clean up trash and follow other good housekeeping practices; see SAF 4.6, Housekeeping and Sanitation.
- .2 Follow good electrical practices; see SAF 4.14, Electrical Hazards and Energy Lockout/Tag-Out.
- .3 Open flames are strongly discouraged. If necessary, have fire extinguishers readily available. Open burning of trash is prohibited.
- .4 Tarps and blankets shall be made of fire retardant materials where practicable.
- .5 Heaters such as salamanders, Redi-heaters, or space heaters shall be UL-approved. Keep heaters away from combustible material and at least 50' from flammable liquids and gases.
- .6 Only fire retardant materials may be used to build shanties or other temporary enclosures inside of buildings finished or under construction. Shanties shall be kept free of debris.
- .7 Maintain access to buildings and hydrants.

4.11.3 Flammable liquids

- .1 Where possible, keep flammable liquids in original containers.
- .2 All containers shall be properly labeled and isolated.
- .3 Handle 1-5 gallon quantities in approved safety cans having a spring-loaded self-closing lid and a flame arrestor.
- .4 Large quantities (25 gallons and up) shall be stored using a fire-rated storage cabinet or other approved method.
- .5 Smoking or open flames are not allowed within 50' of a fuel storage or refueling area.
- .6 See SAF 5.4.11.3, [Flammable Liquids, Gases, and Tanks](#).

4.11.4 Hot Work

- .1 A Hot Work Permit program shall be implemented for any work involving burning, welding, torch cutting, or other operations that may produce a fire hazard.
- .2 Hot Work Permits shall be provided by the Safety Representative or other designated individual.
- .3 The person completing the Hot Work Permit shall confirm that proper fire hazard prevention measures have been taken, including:
 - a. Removal of combustible materials and flammable liquids and gases.
 - b. One 2A,10BC fire extinguisher in immediate area.
 - c. Implementation of confined space procedures if applicable.
 - d. Fire watch in place; see SAF 5.4.11.4.3 [Training and Duties of Fire Watch Personnel](#).
- .4 The [Hot Work Permit](#), see SAF 5.4.11.4.4, is valid only for the date and shift on which it was issued.

4.11.5 Fire Extinguishers

- .1 Fire extinguishers shall be conspicuously located and readily accessible and operable at all times. They shall be mounted in accordance with applicable requirements.
- .2 A fire extinguisher shall be provided for each 3,000 square feet of protected building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 linear feet.

- .3 In multi-story buildings, at least one fire extinguisher shall be located adjacent to each stairway.
- .4 A 20-lb ABC-type fire extinguisher is recommended minimum equipment for most construction purposes.
- .5 An inspection of each fire extinguisher shall be performed and documented monthly. A more in-depth inspection shall be done annually.
- .6 Persons expected to use fire extinguishers shall have appropriate training.
- .7 Report any discharges of fire extinguishers.
- .8 See SAF 5.4.11.5.8, [Fire Extinguishers](#).

4.11.6 Sprinklers

If the building includes the installation of automatic sprinkler protection, the dry standpipe installation shall closely follow the construction and be placed in service as soon as feasible following completion of each story.

4.12 Fall Protection

4.12.1 General Rule

Barton Malow requires 100% continuous fall protection for all employees potentially exposed to a fall hazard at heights 6' and greater, measured from the sole of their feet to the ground or next lower level. This rule is fully applicable to Contractors (including subcontractors) at any tier.

Examples of situations in which the rule applies are:

- .1 Walking and working surfaces
- .2 Sides and edges, including leading edges
- .3 Holes, gaps, or voids (2" or more in smallest dimension)
- .4 Roofs(no monitoring system allowed)
- .5 Hoist areas and elevator or mechanical shafts
- .6 Formwork and reinforcing steel
- .7 Ramps, runways, and other walkways
- .8 Excavations (if hidden by vegetation or next to a walkway)
- .9 Wall openings
- .10 Scaffolds and boom-supported aerial work platforms
- .11 Ladders, unless shorter than 24' and no other hazards present
- .12 Precast or steel erection (no monitoring system allowed)

4.12.2 Methods of Fall Protection

- .1 Fall protection should preferably be accomplished with physical barriers such as guardrail systems, hole covers, or other engineering controls. See SAF 4.12.4, Physical Barriers – General, SAF 4.12.5, Floor Hole Covers, and SAF 4.12.6, Guardrails.
- .2 Personal fall arrest systems are permissible if engineering controls are not practicable. See SAF 4.12.7, Personal Fall Arrest Systems.
- .3 For other methods of fall protection (e.g., warning line systems, fall restraint systems, positioning device systems, and safety nets) and guidance on applying fall protection to special situations, such as wall openings and runways, see SAF 5.4.12.2.3, [Supplementary Information on Fall Protection](#).

4.12.3 Planning for Fall Protection

The Safety Representative shall require that each task involving working at heights is thoroughly planned by the Contractor involved, and the associated fall hazards are identified and controlled or eliminated before work begins. See SAF 4.1, Planning and Job Hazard Analysis. Barton Malow and Contractors shall train their respective employees in fall protection safety and maintain records of the training. Additional planning and training shall be done if necessary as the work changes.

4.12.4 Physical Barriers - General

- .1 Guardrails shall protect each exposed side.
- .2 The person creating a hole or edge is responsible to see that it is barricaded or covered.

- .3 Removable barriers shall be used when access to the hole or opening will be needed (e.g., hoist entrances).
- .4 Fall protection, such as a personal fall arrest system, is required when installing physical barriers.
- .5 Temporary/moveable barricades may be used on a limited basis, but they shall be positioned at least 6' back from the edge.

4.12.5 Floor Hole Covers

- .1 Covers shall be secured to prevent displacement.
- .2 Covers shall be conspicuously marked with "HOLE," "DO NOT REMOVE," or similar language.
- .3 Covers shall be capable of supporting at least twice the load that may be imposed by employees, materials, or vehicles.

4.12.6 Guardrails

- .1 Guardrail systems normally include top-rails and mid-rails supported by posts.
- .2 Nominal dimensions of top-rails and mid-rails shall be at least 2" x 4" (wood), 2" x 2" x 3/8" (angle steel), 1½" diameter (schedule 40 pipe), or 3/8" (wire rope cable). Wood mid-rails can be 1" x 6".
- .3 Posts typically are spaced no more than 8' on center.
- .4 Top-rails shall be 42" high (+/- 3"); when stilts are used, increase height accordingly.
- .5 Mid-rails shall be 21" high (+/- 3").
- .6 Guardrail systems shall withstand a 200-lb. force applied within 2" of the top edge, in any outward or downward direction, at any point. The top edge of the guardrail shall not deflect to a height less than 39".
- .7 Mid-rails shall withstand a 150-lb force.
- .8 Mid-rails may not be needed if there is appropriate use of mesh, screening, intermediate vertical members (no more than 19" on center), or a parapet wall (at least 21" high).
- .9 Cable top-rails shall be flagged at 6' intervals.
- .10 Guardrails shall not have jagged surfaces that could cause injury or overhangs that could snag clothing.
- .11 Toe boards are often used with guardrail systems. See SAF 4.12.8, Falling Objects.

4.12.7 Personal Fall Arrest Systems

- .1 Personal fall arrest systems may be used for fall protection when engineering controls are not practicable. A typical fall arrest system consists of a full-body harness, a lanyard (with shock absorber) or retractable lifeline, connectors, and approved anchorage points.
- .2 The system shall be designed to permit no more than 6' of vertical travel. Always maintain less than 6' of slack in the lanyard.
- .3 The free fall of an employee for even 6' generates tremendous force. Therefore anchorage points and all other elements of the system shall be properly engineered and implemented under the supervision of a Competent Person. In general, each element of the system shall withstand 5,000 pounds of force.
- .4 Anchorage points may be horizontal or vertical lifelines or fixed points. Connecting a lanyard to a guardrail is normally not acceptable.
- .5 A full body harness means straps secured around an employee to distribute fall arrest forces over the thighs, pelvis, waist, chest, and shoulders. Attachment by belt alone is not acceptable.

- .6 Select compatible snap hooks and use them as designed. Connect only one snap hook to a given connection ring. Do not connect snap hooks to ropes, webbing, or other snap hooks.
- .7 The attachment point of the body harness (usually a D-ring) shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.
- .8 Maintaining 100% continuous fall protection may require a double lanyard system. Under this system, employees move from point to point by detaching and reconnecting only one lanyard at a time so that continuous protection is assured.
- .9 Components shall be inspected prior to each use for wear, damage, and other deterioration. Defective components shall be removed from service.
- .10 Components subjected to impact loading shall be immediately removed from service and not used again.
- .11 Components shall be used only for employee protection and not to hoist materials.
- .12 The program shall include a plan for prompt rescue of employees in the event of a fall.

4.12.8 Falling Objects

Persons below a work area shall be protected from falling objects. Often protection is accomplished by installing toe boards; secure canopies are another option. Toe boards shall be at least 4" nominal height (or higher if items are piled above that level). The gap between the toe boards and the floor shall not exceed ¼". Toe boards shall withstand 50 pounds of force. Any openings shall not exceed 1". Mesh or screens that run from the top rail to the walking/working level can substitute for toe boards.

4.13 Elevated Work (Ladders, Scaffolds, etc.)

4.13.1 General

- .1 Elevated work shall comply with fall protection requirements. See SAF 4.12, Fall Protection.
- .2 Scaffolds, platforms, aerial lifts, ladders, or temporary floors shall be provided for elevated work.
- .3 Stair towers are preferred over gang ladders when access is required to elevated work areas.
- .4 A stairway or ladder shall be provided at all access points where there is a break in elevation of 19" or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.
- .5 Outriggers shall be extended on scaffolds and lifts when required.
- .6 Work platforms, scaffolds, etc. shall not be used in the vicinity of power lines unless they are rendered safe against accidental contact.
- .7 A Competent Person shall be assigned by Barton Malow or the Contractor, as applicable, for any work involving scaffolds or work platforms. The Competent Person is responsible for ensuring all employees are trained in the safe erection, use, and dismantlement of the scaffold or work platform as required by law. The Competent Person shall ensure that the scaffold or work platform has been inspected before use.

4.13.2 Ladders - General

- .1 Employees using ladders shall be trained in proper use.
- .2 Face the ladder and keep your body securely positioned, preferably with three-point contact at all times.
- .3 Do not enter a ladder from the side unless it is secured against side motion.

- .4 Materials shall be raised and lowered with a rope or mechanical lift, not carried up or down the ladder.
- .5 To avoid overreaching, use a ladder that is long enough and keep your belt buckle between the rails.
- .6 Only one employee at a time shall be on a ladder (except 2-way gang ladders).
- .7 Ladders shall not be used as work platforms if anything more than small hand tools or handling of light material is involved.
- .8 Fiberglass ladders are preferred. Wood ladders should be phased out. Metal ladders are strongly discouraged, particularly near electricity.
- .9 Do not position a ladder where an opening door might disturb it. Keep debris, materials, etc. away from the ladder base.

4.13.3 Stepladders

- .1 Do not stand on the top (cap) or on the highest step below the cap.
- .2 Use only in the locked open position.
- .3 Class III (household) stepladders are prohibited.

4.13.4 Straight Ladders

- .1 Assure that the ladder will not slip. Preferably secure both rails at the top. If the bottom of the ladder has the potential to slip, secure with non-skid feet, bracing, or other appropriate means.
- .2 Ladders shall reach at least 3' above the landing, unless the top is secure and a grab bar or other dismounting help is provided.
- .3 The base of the ladder shall be angled no less than one-fourth of its working length.
- .4 For ladders longer than 24', an approved cage, ladder-climbing device, or fall protection is required.

4.13.5 Ladder Inspection

Before each set-up, the employee shall inspect the ladder as follows (defective ladders shall be tagged and removed from service):

- .1 Rated capacity stenciled on one side.
- .2 Nuts are tightly secured to rods or bolts.
- .3 Support braces and other hardware undamaged.
- .4 Step ladder spreaders or locking devices in working order.
- .5 No structural damage.
- .6 Non-slip/safety feet in good condition.
- .7 No burrs or sharp edges.
- .8 Metal parts are lubricated.
- .9 Free of oil, grease, and other slip hazards.
- .10 Steps and rungs are free of damage, in place, and firmly attached.

4.13.6 Scaffolds - General

- .1 Scaffolds shall be erected as designed by the manufacturer under the direction of a Competent Person.
- .2 Scaffolds shall be plumb and level.
- .3 Scaffolds (other than suspended scaffolds) shall bear on base plates, mud sills or other adequate foundation.
- .4 Scaffolds typically shall be capable of supporting four times the maximum anticipated load.
- .5 Scaffolds shall be inspected daily and before each use for safety.

- .6 Access shall be by a built-in or clamp-on ladder, a straight ladder, or stairs.
- .7 Scaffolds shall never be left in an unsafe condition and shall be removed/disassembled immediately or marked if not to be used again.
- .8 A color tag system is recommended to help distinguish a complete scaffold that is safe from those that are incomplete and unsafe.
- .9 Lean-to and prop-scaffolds (*i.e.*, scaffolds attached to leaning poles or brackets) are prohibited.
- .10 Ladder jacks (*i.e.*, planks supported by two ladders) are prohibited.

4.13.7 Rolling Scaffolds

- .1 Use only on firm, level, clean surfaces.
- .2 Standard guardrail protection shall be on all four sides.
- .3 The height shall be no more than twice the width of the least dimension of the base if people are riding when it moves (if no one is riding, height can be up to four times the least dimension of the base).
- .4 Wheels and casters shall be securely locked when in use.
- .5 Stabilize the tower during movement.
- .6 No one shall ride the scaffold while it is moving unless:
 - a. The surface is continuously level and free of holes or obstructions;
 - b. The wheels have rubber tires or the equivalent;
 - c. Tools, materials, and debris are secured or removed;
 - d. A guardrail system is in place on all sides.

4.13.8 Stationary Scaffolds

- .1 The height shall be no more than four times the width (unless secured).
- .2 The platform shall be the full width of the scaffold.
- .3 It is preferred to have a gate through the guardrail.

4.13.9 Suspended Scaffolds and Hoists

- .1 Persons operating hoists or powered suspended scaffolds require proper training.
- .2 Suspended scaffolds and hoists shall be inspected and tested per applicable requirements.
- .3 Fall protection is required while working on suspended scaffolds. See SAF 4.12, Fall Protection.

4.13.10 Planking

Observe the following procedures for planking on scaffolds or work platforms:

- .1 Working levels shall be fully planked or decked.
- .2 Planking shall be either overlapped (minimum 12") or secured.
- .3 Planks shall normally extend over their end supports not less than 6" nor more than 12".

4.13.11 Aerial Lifts

- .1 Aerial work platforms or lifts (JLG's, scissor lifts, etc.) shall be operated, inspected, and maintained per the manufacturer's product manual. Operators shall have proper training.
- .2 Lifts shall be on firm, level surfaces.
- .3 Boom-supported platforms shall have alarms which activate when the base is out of level.
- .4 Fall protection secured to a manufacturer-approved anchorage point is required while working in a boom-supported lift.

- .5 Do not move the lift while a person is on the platform, except as allowed in the manufacturer's instructions.
- .6 Keep feet on the platform. Do not use ladders, etc. in conjunction with aerial lifts.
- .7 Crane-supported work platforms are discouraged and shall be used only after approval from the Safety Department Leader.

4.14 Electrical Hazards and Energy Lockout/Tag-Out

4.14.1 Electrical Hazards

- .1 Electrical work shall comply with the latest edition of the National Electrical Code, unless otherwise provided by law.
- .2 Qualified electricians shall perform electrical installations and maintenance.
- .3 Use the right size fuses.
- .4 All electric equipment and portable electric tools shall be grounded or double insulated.
- .5 Extension cords used with portable electric tools shall be the 3-wire type; shall be protected from damage; and shall not be fastened with staples, hung from nails, or suspended from wires. Worn or frayed cables shall not be used.
- .6 If using an extension cord or any temporary power source, Ground Fault Circuit Interrupters (GFCIs) shall be included in the circuit. Employees shall test GFCIs before they are used on a daily basis and, if there is a malfunction, shall report the problem to the supervisor.
- .7 Receptacles for attachment plugs shall be of approved, concealed contact type. Where different voltages, frequencies, or types of current are supplied, receptacles shall be of such designs that attachment plugs are not interchangeable.
- .8 Cable passing through work areas shall be covered or elevated at least 7' off the ground. Unprotected cables, extension cords, etc. shall never be run over by vehicles, heavy equipment, lifts, etc.
- .9 Boxes for disconnecting power shall be securely fastened to the surface upon which they are mounted and fitted with covers.
- .10 Employees shall not work near an energized power circuit unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it by effective insulation or other means. If that is not practicable, employees shall be trained in the recognition, avoidance, and control of the specific electrical hazards.
- .11 Where overhead power lines are encountered on a job site, and equipment has the potential to contact the lines, the safe minimum clearances shall be followed. The lines shall be either relocated in cooperation with the utility or the Owner, or safe clearance barriers shall be erected. See SAF 5.4.14.1.11, [Power Line Clearance Dimensions](#).

4.14.2 Energy Lockout/Tag-Out – General

A lockout/tag-out program shall be used to render inoperative electrical systems, pumps, pipelines, valves, machinery and all other such energy systems that may be accidentally energized or started up while employees are doing maintenance or repair or before the systems are mechanically ready and released for service. The Company shall issue locks and applicable tags to Barton Malow employees conducting lockout/tag-out. The Company shall also keep a log of all energy sources being locked out by Barton Malow employees. Contractors that may come in contact with an energized system requiring lockout/tag-out shall implement their own program. Where appropriate use SAF 6.4.14.1, [Shutdown Procedures for All Utilities](#).

4.14.3 Basics of Lockout/Tag-Out Program

- .1 The Contractor shall coordinate all energy lockouts with the project supervision and the Owner.
- .2 The Contractor shall train employees on lockout/tag-out procedures.
- .3 Each affected employee shall be assigned his/her own lock and danger tag. The employee shall lockout any system that he or she is working on.
- .4 For energy systems being worked on by multiple persons, multiple crafts, and/or multiple Contractors, a multi-lock clamp may be used. Each craft and/or Contractor shall use its own lock and tag.
- .5 See SAF 5.4.14.3.5, [Lockout/tag-out Procedures](#).

4.15 Underground Work

4.15.1 Underground Utilities

Prior to opening an excavation, underground installations (e.g., sewer, telephone, water, fuel, electric lines, etc.) must be located and protected from damage or displacement. Utility companies and other responsible authorities shall be contacted to locate and mark the locations and, if appropriate, direct or assist with protecting the underground installations. When operations approach the location of underground utilities, excavation shall progress with caution until the exact location of the utility is determined. Workers shall be protected from the utility, and the utility shall be protected from damage or displacement.

4.15.2 Trenching

- .1 A Competent Person shall be assigned by Barton Malow or the Contractor, as applicable. The Competent Person shall inspect each trench daily prior to employee entry and intermittently during the trenching operations (particularly after a rainstorm).
- .2 Employees required to enter the trench shall be trained in cave-in protective systems, proper access, and recognition of potential unsafe conditions.
- .3 Protective systems shall be used in all trenches unless: (a) the excavation is less than 5' deep and the Competent Person sees no indication of a potential cave-in, or (b) the excavation is entirely in solid rock. Protective systems may include approved methods of sloping, benching, or shoring, or use of trench boxes.
- .4 Support systems shall be designed by a registered professional engineer. Appropriate methods shall protect against cave-in or other hazards during installation and removal of support systems.
- .5 Spoil piles shall be kept a minimum of 2' back from trench edges.
- .6 Safe access/egress into and out of trenches shall be provided. Typically this involves at least two means of exit, including a ladder within 25' of any employees.
- .7 Provide for proper drainage and control of water. Employees shall not work in excavations in which there is accumulated water, or in which water is accumulating, unless the hazards are controlled.
- .8 Without proper engineering, do not: (a) undercut adjacent structures; (b) excavate below the level of an adjacent footing; or (c) slope soil more steeply than the angle of repose.
- .9 Excavations, test pits, and temporary holes shall be backfilled as soon as practicable.
- .10 If hazardous atmospheres are suspected, conduct air tests before each shift and maintain records of the testing.

- .11 Where excavations are suspected to contain hazardous materials or other contaminants, a qualified person shall establish the health and safety plan, including safe handling and disposal procedures. See SAF 4.21, Hazardous Materials - General.
- .12 If the excavation qualifies as a confined space, see SAF 4.20, Confined Space Entry.
- .13 See SAF 5.4.15.2.13, [Supplementary Information on Underground Safety](#).

4.15.3 Caissons

When it is necessary for an employee to work inside a caisson, a detailed safety plan shall be developed, including access, atmosphere testing, shielding, and training. Caissons deeper than 4' shall be treated as confined spaces. See SAF 4.20, Confined Space Entry.

4.16 Cranes and Rigging

4.16.1 Cranes - General

- .1 These procedures apply to cranes, derricks, moveable hoists, and other hoisting equipment as pertinent. See SAF 4.10, Heavy Equipment, for additional guidance.
- .2 Cranes shall be inspected annually by a Competent Person.
- .3 Cranes shall be inspected by the operator before each use and from time to time during use; all deficiencies shall be corrected before further use. The operator shall document daily inspections and keep these with the crane.
- .4 Stay within load limits specified by the manufacturer. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be conspicuously posted on the equipment.
- .5 Barricades shall protect the swing radius at the rear of a crane.
- .6 Spreader bars shall be labeled with the rated capacity.
- .7 Lower crane booms when appropriate due to high winds.
- .8 No one shall ride the hook, sling, load, boom, or headache ball.
- .9 The use of a crane to hoist employees on a personnel platform is normally prohibited. See SAF 4.13.11, Aerial Lifts.
- .10 Operators shall exercise extreme caution near energized lines or equipment. Be sure not to mistake high voltage lines for telephone lines. Keep equipment at least 15' away from all lines energized up to 50 kV, and farther as voltage increases. If operating closer than 15', implement special procedures including a close proximity permit system. Similar requirements apply for work near piping systems that contain hazardous materials.
- .11 When operating a crane near a radio, television, or microwave transmitter, the crane boom, load line, and load could become electrically charged. Personnel handling the loads could jump from the shock and possibly fall or drop loads. Handle this situation with a proper grounding or insulation method.
- .12 See SAF 5.4.16.1.12, [Supplementary Information on Crane Safety](#).

4.16.2 Crane Operators

- .1 All crane operators must be certified by the National Commission on Certification of Crane Operators (NCCCO), the Crane Institute Certification (CIC) program, the Operating Engineers Certification Program, or another certification program that is accredited by the National Commission on Certifying Agencies (NCCA) or the American National Standards Institute (ANSI). This rule applies to Contractors as well as Barton Malow employees. Exception: cranes mounted on delivery trucks that unload outside, onto the ground.

- .2 The supervisor shall ensure that crane operators meet legal and Owner requirements. After initial qualification, the supervisor shall closely monitor until the operator's capability is established.

4.16.3 Lift Procedures

- .1 Proper planning, including PTP OR JHA, is required before lifts. See SAF 4.1, Planning and Job Hazard Analysis. A prelift huddle discussion is required.
- .2 No load shall be lifted until its weight has been determined.
- .3 The lifting mechanism shall be level and firmly supported. The hoist line shall be centered.
- .4 For the first lift of each day, test the load and check the brakes.
- .5 Check and adjust the slings and bindings frequently.
- .6 Before leaving the controls, operators shall lower suspended loads, set brakes and locks, and turn off the power.
- .7 Tag lines shall be used when needed to control the load.
- .8 Loads shall not pass over personnel, and personnel shall not work under loads.
- .9 Critical Lifts are those involving more than 75% of the capacity of the crane, or other unusual hazards, such as lifting over occupied structures. Critical Lifts shall have a specific lift plan in writing. The lift plan will include a critical lift form movement diagram, crane inspection documentation and a copy of the operator's certification and medical card, unless already provided. A prelift safety meeting will be held with all parties involved or impacted by the critical lift.

4.16.4 Rigging – General

Barton Malow employees performing rigging work shall be well acquainted with at least the following sections of the Manual: SAF 4.5.1, Lifting; SAF 4.9, Tools; SAF 4.12, Fall Protection; SAF 4.13, Elevated Work.

4.16.5 Rigging Equipment

- .1 Slings, ropes, chains, and other rigging equipment shall be properly stored and maintained.
- .2 Employees who work with rigging equipment shall be trained in its proper use, storage, and maintenance.
- .3 Inspect equipment before each use. Safety of a chain, rope, or cable is only as good as the weakest section.
- .4 When tools or equipment are in need of further inspection or repair, they shall be tagged “Defective” and removed from service for repair or disposal.
- .5 Comply with the equipment’s rated capacity and prescribed safety factors.
- .6 Use hoisting ropes recommended by the manufacturer.
- .7 Shackle pins shall not be replaced with bolts or other non-approved devices.
- .8 Makeshift lifting devices (e.g., from bolts or resteel) shall not be used. Field-fabricated lifting devices shall have proper engineering documentation.
- .9 Slings shall not be shortened with knots, bolts, or other makeshift devices.
- .10 Slings shall be securely attached to the load by hooks (with retaining devices), shackles, or other positive latching devices.
- .11 Slings shall be padded or protected from the sharp edges of their loads.
- .12 Only hooks with approved retaining devices shall be used (exception: “shaking out” structural steel on the ground). Loads shall be securely seated in the saddle of the hook.
- .13 See SAF 5.4.16.5.13, [Supplementary Information on Rigging Safety](#).

4.17 Concrete and Resteel

4.17.1 Barton Malow employees performing concrete or resteel operations shall be well acquainted with at least the following sections of the Manual: SAF 4.12, Fall Protection; SAF 4.13, Elevated Work; and SAF 4.22.8, Silica. For more details, see the following sections and http://my.bartonmalow.com/forms_policies/Documents/Manuals/5.4.17.1Concrete_Resteel.doc.

4.17.2 Concrete

- .1 Powered and rotating concrete troweling machines that are manually guided shall be equipped with an automatic shutoff (“deadman”) operating control.
- .2 Formwork and shoring shall safely support all loads imposed during concrete placement. Drawings or plans of jack layout, formwork, shoring, working decks, and scaffolding systems shall be available at the jobsite.
- .3 Stripped materials shall be cleaned of nails and placed in neat piles immediately upon stripping.
- .4 Silica dust hazards (including operations to cut, grind or chip concrete) shall be managed by engineering controls and/or respirator use. See SAF 4.22.8, Silica.

4.17.3 Resteel

- .1 Vertically protruding resteel dowels shall be protected to eliminate the hazard of impalement. Use approved steel plate caps or wood covers.
- .2 Bundles shall be lifted with chokers, not by shipping wires.
- .3 Bundles shall be stored with walk paths between them.
- .4 If long bars are lifted by a team of employees, one person shall be designated as the signalman.
- .5 Plywood or equivalent shall be placed over resteel mats on main paths.
- .6 Oxygen and acetylene tanks shall be secured in welding carts.
- .7 A minimum of one 2A-10BC portable fire extinguisher shall be immediately available to the work area during any cutting, burning, or welding operation.
- .8 Tradesmen cutting resteel with torch or cut-off saw shall wear goggles or safety glasses with a face shield, plus cotton or wool clothing fully covering arms, torso, and legs.

4.18 Interiors

4.18.1 Barton Malow employees performing interior trades shall be well acquainted with at least the following sections of the Manual: SAF 4.3.4, Hearing Protection; SAF 4.5.1, Lifting; SAF 4.9, Tools; SAF 4.12, Fall protection; SAF 4.13, Elevated Work; SAF 4.22.8, Silica.

4.18.2 The following additional guidance applies to Barton Malow employees performing interior work:

- .1 Employees shall wear protective gloves for handling metal studs and corner beads.
- .2 Stilts are to be used only on clean floors and shall be no higher than 20" (or as otherwise permitted by conditions and applicable law).
- .3 Employees operating noisy tools such as powder-actuated tools, screw guns, and gasoline-operated cut-off saws shall wear hearing protection.

4.19 Steel Erection

4.19.1 Controlling Contractor Duties

If Barton Malow is General Contractor, Construction Manager, or Design Builder at a jobsite, it may be classified under OSHA regulations as a Controlling Contractor. A Controlling Contractor is required to provide the steel erection Contractor with an adequate lay down and set up area, good access, and properly designed and installed anchor bolts. Use form SAF 6.4.19.1, [Notification of Steel Erection](#), to document that requirements have been met.

4.19.2 Steel Erection Plan

Prior to the start of steel erection, the Contractor shall develop a steel erection plan. The plan shall cover all aspects of the process from unloading materials to installing permanent floors. Material handling, fall protection, rigging, and hoisting equipment shall be covered. Steel erection procedures shall follow the OSHA steel erection standard or state equivalent plus any supplemental requirements imposed by Barton Malow or otherwise by contract or law. The following requirements shall be incorporated into the plan:

- .1 100% continuous fall protection for exposures 6' or greater. See SAF 4.12, Fall Protection.
- .2 Permanent floors shall be installed so there is not more than four stories between the erection floor and the uppermost permanent floor, except when structural integrity is maintained by the design.

- .3 During skeleton steel erection, a tightly planked temporary floor shall be maintained within two stories or 30', whichever is less, below and directly under that portion of each tier of beams on which any work is being performed.
- .4 During skeleton steel erection, where the requirements of the preceding paragraph cannot be met, and where scaffolds are not used, a fall protection system shall be installed and maintained whenever the potential fall distance is 6' or more.
- .5 During structural steel assembly, a safety railing of wire rope (preferably 3/8") or equivalent, approximately 21" high for the mid-rail and 42" high for the top rail, supporting 200 pounds of force and deflecting no more than 3" at the midpoint, shall be installed around the perimeter of all buildings with temporary flooring. If used as an anchor point for tie-off, the wire rope shall be heavier gauge to meet fall protection requirements.
- .6 When placing structural members, the load shall not be released from the hoisting line until the member is secured by at least two bolts or the equivalent at each connection, drawn up wrench tight.

4.20 Confined Space Entry

4.20.1 Confined spaces include manholes, excavations, air handling units, storage tanks, bins, hoppers, chutes, process vessels, open containers more than 4' deep, etc. It may be hazardous or even deadly for employees to enter a confined space. An employee who is required to work in a confined space or other hazardous location shall be properly trained and equipped to perform work without risk of injury or illness.

4.20.2 Barton Malow has adopted a Permit Required Confined Space Program. Basic elements of the program are described here; see SAF 5.4.20.2, [Confined Space Program](#). For the purpose of this program, "confined space" is separated into two categories as follows:

4.20.2.1 Non-Permit Confined Space

This type of confined space:

- .1 Usually does not contain, or have the potential to contain, any hazards which are capable of causing death or serious physical harm;
- .2 Is large enough and so configured that an employee can bodily enter and perform work;
- .3 Has limited or restricted means for entry or exit such as tanks, vessels, silos, storage bins, hoppers, vaults, and pits; and
- .4 Is not designed for continuous employee occupancy.

4.20.2.2 Permit Required Confined Space

A Permit Required Confined Space (PRCS) meets the definition of a Non-Permit Confined Space and has one or more of the following characteristics:

- .1 Contains or has the potential to contain a hazardous atmosphere (from rusty tank solvents, flammable liquids, etc.);
- .2 Contains a material that has the potential for engulfing entrapment (e.g.: grain silo, excavation);
- .3 Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section (e.g., hoppers, bins, paint booths); and
- .4 Contains any other recognized serious safety or health hazard (e.g., welding, cutting, burning, electrical).

4.20.3 Exercise special safety and health precautions whenever an employee requires PRCS entry. Familiarity with PRCS definitions and procedures is required so that inadvertent access to a PRCS does not occur without the proper precautions. PRCS shall typically be marked as such; however, familiarity with the definition of a PRCS is necessary, in the event that a PRCS is not identified or marked.

4.20.4 All confined spaces meeting the PRCS criteria stated above shall be considered permit required, unless specified as a non-permit required confined space by the Safety Department or a Competent Person acting on behalf of the Owner.

4.20.5 Work in PRCS typically requires a monitoring employee who remains outside the confined space. Do not enter the combined space to attempt rescue except in accordance with an approved rescue plan.

4.21 Hazardous Materials – General

4.21.1 Hazardous Materials include:

- .1 Dangerous goods-articles or substances or products that are capable of posing a risk of health, safety, property or the environment when transported.
- .2 Asbestos Containing Material;
- .3 PCB's;
- .4 Lead, cadmium, mercury, or other heavy metals;
- .5 Petroleum or any explosive, flammable, combustible, or corrosive products;
- .6 Unsafe or unhealthy air quality in an enclosed area;
- .7 Soil, sediment, surface water or groundwater contaminated with petroleum products, metals, organics, or other pollutants;
- .8 Materials or environments contaminated with germs or other biological hazards;
- .9 Other materials subject to regulation as toxic or hazardous substances or wastes; and
- .10 Other chemicals, materials, or substances in any form for which reasonable precautions will be inadequate to prevent foreseeable bodily injury, disease, or death.

4.21.2 Typical Sources

Typical sources for Hazardous Materials include the following:

- .1 Underground
 - a. Buried wastes
 - b. Storage tanks
 - c. Leaking pipes or utility lines
 - d. Chemicals or fuels that were released into the soil
- .2 Above ground
 - a. Asbestos in floor or ceiling tile, insulation, plaster, wallboard, mastics, or roofing
 - b. PCB's in transformers, capacitors, or light ballasts
 - c. Chemicals in industrial process equipment or tanks
 - d. Lead in paint, pipes, solder, or flashings
- .3 Indoor Air Quality
 - a. Vapors from paints, adhesives, or curing compounds
 - b. Molds, fungi, or bacteria behind wallboard or in HVAC systems
 - c. Infectious organisms in a hospital environment

4.21.3 General Rule

Generally, Barton Malow does not contract for or perform work involving Hazardous Materials. This means that, unless authorized by the exceptions below (SAF 4.21.6, Conventional Construction Methods, or SAF 4.21.7, Approved Environmental Contracting), the Company does not:

- .1 Ship or arrange shipment of Dangerous or Hazardous Goods or Materials. The owner of the materials is responsible for arranging shipment in accordance with DOT and FAA requirements. If an exception is needed contact Mary Ann Canary, Assistant General Counsel.
- .2 Perform, subcontract, or manage the remediation, demolition, or removal of Hazardous Materials.
- .3 Perform, subcontract, or manage work involving exposure to Hazardous Materials.
- .4 Advise clients or hire consultants to advise clients on issues regarding Hazardous Materials.

4.21.4 Owner to Verify Clean Site

In light of SAF 4.21.3, General Rule, the Barton Malow project manager shall verify with the Owner that the project site is believed to have no Hazardous Materials. Where appropriate the project team shall request from the Owner written evidence, including environmental site assessments or records of previous remediation activities. Contact the Safety Department for help in evaluating this information.

4.21.5 Contract Language

Under SAF 4.21.3, General Rule, the contract shall include appropriate language giving the Owner full responsibility for Hazardous Materials at the project site (other than materials brought to the site by Barton Malow or persons for whom we are responsible). The contract language shall:

- .1 Entitle Barton Malow and its Contractors to stop work and withdraw if suspected hazardous materials are encountered
- .2 Require the Owner to investigate and remediate the Hazardous Materials
- .3 Entitle Barton Malow to time and money for the delay
- .4 Require the Owner to indemnify Barton Malow for any costs or liabilities associated with the Hazardous Materials, including cleanup costs and employee health effect

The Legal Department can assist in preparing appropriate contract terms.

4.21.6 Conventional Construction Methods

Use or handling of hazardous materials by Barton Malow or Contractors we are managing is authorized when use of such materials is a normal and well-accepted construction practice conducted in accordance with all applicable safety standards and laws (including MSDS, storage, handling, and other requirements – see SAF 2.3, Hazard Communication). Examples:

- .1 Petroleum-based fuels
- .2 Acetylene, propane, or other flammable substances for welding or cutting of metal
- .3 Powder-actuated tools
- .4 Paints, solvents, adhesives
- .5 Storm-water runoff management, including any required permits

4.21.7 Approved Environmental Contracting

Management of contractors or consultants in connection with work involving hazardous materials, or control of a jobsite where hazardous materials may be exposed, is approved only if:

- .1 The environmental risk is noted on the form PDV 2.1, Project Risk Assessment [LINK](#), and appropriate information regarding the risk is shared with the Legal, Safety and Risk Management Department;
- .2 Risk Approval is signed by the General Counsel; and
- .3 An appropriate project-specific environmental health and safety plan to address the environmental risk is implemented and followed.

4.21.8 Unexpected Hazardous Material

If hazardous material, or suspected hazardous material, is unexpectedly encountered at a jobsite, work in the affected area shall stop at once and everyone shall leave the area. The Owner and the Barton Malow Safety Department shall be notified promptly, with written confirmation to the Owner.

4.21.9 Exposure to Hazardous Material

If an employee or any other person is exposed to hazardous material at a Barton Malow jobsite, emergency medical attention shall be sought as required. The incident shall also be reported to the Safety Department without delay. Testing or treatment of the exposed persons may be directed. Records of hazardous material exposure require long-term archiving when the project is completed. See SAF 3.9, Project Closeout.

4.21.10 Spill Reporting

If a spill, release, or escape of a hazardous material (including any significant quantity of oil or fuel) occurs at a jobsite, the incident shall be reported to the Safety Department without delay. The employees' immediate response shall be to leave, not to attempt containment or clean up, unless they have been qualified to do so safely. In emergency situations, local safety authorities shall be contacted directly. Reporting of the incident to regulatory authorities may also be required. The Safety Department or the Legal Department can assist in determining reporting requirements.

4.21.11 Spill Control

Where potential for spills exist adequate spill control measures must be provided at the work location. Employees must be trained and equipped to control the chemical or substance involved. Regardless of who handles the spill, all spills must be reported as noted in 4.21.10.

4.22 Specific Environmental Hazards

4.22.1 Asbestos

- .1 Asbestos was commonly used in certain construction materials until approximately 1980. If asbestos fibers are contained so that they do not become airborne, the material is considered non-friable and of lower concern. If the asbestos is in a form where fibers may become airborne, it is known as friable asbestos. Exposure to friable asbestos can produce serious adverse health effects after a latency period that may last for decades. If any employee is exposed to friable asbestos, the incident shall be reported immediately to the Safety Department. Non-friable asbestos can become friable if it is disturbed or damaged through grinding, breaking, or other operations carried out without proper protections.
- .2 Before work begins in a structure constructed in 1980 or earlier, a determination shall be made whether Asbestos Containing Material (ACM) is present. ACM is material that contains at least 1% asbestos in any form. The determination shall be based on a proper asbestos survey or on documentation establishing that no survey is necessary.
- .3 Presumed Asbestos Containing Material (PACM) must be treated as ACM unless and until it can be proved otherwise. PACM covers the following materials if constructed/installed no later than 1980:
 - a. Thermal system insulation
 - b. Surfacing material (sprayed or troweled on)
 - c. Asphalt or vinyl flooring material
- .4 Asbestos may also be found in materials such as plaster, wallboard, mastics, or roofing.
- .5 A specific asbestos health and safety program shall be implemented, with approval from the Safety Department, if employees will be exposed to ACM or involved in activities related to the disturbance of ACM. This program may include employee training, sampling, air monitoring, respirator use, and/or medical monitoring.
- .6 Employees observing damaged or disturbed insulation or other material that may be asbestos shall halt work in the affected area, notify a supervisor, warn other workers in

the vicinity, and barricade the immediate area until a proper determination regarding the presence of ACM can be made.

4.22.2 Cadmium

- .1 Cadmium is a toxic metal commonly found in industrial workplaces, particularly where any ore is being processed or smelted. Even trace quantities in ore or smelter dust can be of concern.
- .2 Cadmium hazards are most likely to be encountered in the following industrial settings:
 - a. Using paint that contains cadmium or disturbing surfaces coated with such paint
 - b. Work involving cadmium-coated conduit or equipment
 - c. Cutting cadmium-plated steel
 - d. Welding or brazing involving cadmium materials
 - e. Demolition when cadmium is present
- .3 Any work involving potential exposure to cadmium shall involve a Competent Person plus a specific health and safety plan approved by the Safety Department.

4.22.3 Indoor Air Quality

- .1 Employees shall be alert to potential problems of indoor air quality. These problems may derive from, among other things, mold contamination (see SAF 4.22.5, Mold), paints, adhesives, and curing compounds.
- .2 In an occupied hospital environment the potential hazards are greater because: (a) germs and other biohazards may be present; and (b) persons with impaired immune systems are more susceptible to illness. In such cases, stringent infection control measures are needed and shall be coordinated with Barton Malow's Health Group. These would normally include maintaining negative air pressure in the construction area and processing discharged air through a HEPA filter.
- .3 Barton Malow may at times require employees to wear respirators due to particulates, gases, vapors, or similar respiratory hazards encountered during their work. For work requiring respirator protection, a respiratory protection program approved by the Safety Department shall be implemented. See SAF 5.4.22.3.3, [Respiratory Protection Program](#).

4.22.4 Lead

- .1 Lead is a potential health hazard whether in the form of metal lead or certain lead compounds. For example, employees could be exposed to lead in airborne dust when doing manual demolition of drywall covered with lead-based paint. Lead may also be present in pipes, solder, and flashing.
- .2 Employers shall not allow employees to be exposed to airborne lead in excess of defined legal limits. Certain activities are assumed by law to create exposure beyond such limits. These include the following when lead-based paint is involved:
 - a. Spray painting
 - b. Manual demolition, scraping, sanding, torch cutting, or welding involving painted surfaces (*e.g.*, drywall)
 - c. Heat gun use or power cleaning of painted surfaces
- .3 If presumed or actual exposure to lead is involved, there shall be a specific health and safety plan approved by the Safety Department, including involvement of a Competent Person. The plan may involve employee training, sampling, air monitoring, respirator use, and/or medical monitoring.

4.22.5 Mold

- .1 Molds are a category of fungus. In the presence of moisture, they can grow on many surfaces in a building including wood, fabric, carpeting, and adhesives. The key to

preventing mold growth is controlling moisture. Scientific information about the health effect of molds is incomplete, but certain varieties may be associated with allergic reactions or other health effects.

- .2 Examples of moisture problems that can lead to mold growth are:
 - a. Flooding;
 - b. Leaks in pipes, roof systems or curtain walls;
 - c. Spills from sinks, drinking fountains, etc.;
 - d. Condensation in high-humidity spaces or on cold surfaces;
 - e. Water trapped in HVAC systems or wall cavities;
 - f. Building materials that get wet during construction;
 - g. Missing or ineffective vapor barriers.
- .3 Construction operations shall take appropriate measures to inhibit the growth of molds. Inspect areas to be renovated in advance and document conditions. Keep interior building materials dry. Dry them thoroughly and promptly (within 48 hours) if they become wet. Fans or water vacuums can be helpful in accelerating drying. Discard certain materials, such as acoustic ceiling tiles, if they become wet. Do not allow water to collect in wall cavities, ductwork, etc. Install building envelope systems and vapor barriers correctly, per the manufacturer's recommendation and the plans and specifications.
- .4 Design work shall also consider the potential for mold. Building enclosure systems and HVAC systems should be designed not to trap water. Humidity should be kept low enough to avoid condensation, and cold surfaces (where condensation may occur) should be minimized. Make proper use of vapor barriers and thermal insulation, locating them appropriately and ensuring their uninterrupted integrity.
- .5 Identify a mold problem by considering the following factors:
 - a. Visual – is something growing on a building surface or material?
 - b. Smell – mold or mildew odor?
 - c. Moisture – is there condensation, leaking, flooding or other moisture that has not dried completely in less than 48 hours?
 - d. Symptoms – are employees or occupants complaining of health effects?
 - e. Concealed mold – growth can occur in building locations where the mold is not visible, such as: inside wall cavities, behind wall coverings, below flooring, above ceilings, and inside ductwork.
- .6 If there is a small amount of mold (approximately 10 sq. ft. or less), the employee can clean it with a detergent and then dry it thoroughly. It is recommended to use gloves and eye protection, and preferably a dust mask (N-95 respirator) that covers nose and mouth. See SAF 5.4.22.3.3, [Respiratory Protection Program](#). Correct the moisture problem that produced the mold growth or it will come back. If the mold problem is a larger area (approximately 10 sq. ft. or more) or there are reported health effects that may be mold-related, expert assistance is recommended. Pre-existing mold problems that did not result from Barton Malow operations shall be treated as an Owner responsibility. See SAF 4.21.5, Contract Language. If our construction operations may have caused a serious mold problem, contact the Safety Department.

4.22.6 Outdoor Air Quality

Operations shall comply with all applicable requirements related to outdoor air quality, including air pollution and dust control laws. Be aware of outdoor construction operations near a facility's air intake ducts. Also be aware of the effect of construction dust on the public or nearby facilities. For operations requiring respirator use, see SAF 5.4.22.3.3, [Respiratory Protection Program](#).

4.22.7 PCBs

Polychlorinated Biphenyls (PCBs) have been used as coolants and lubricants in transformers, capacitors, fluorescent light ballasts, and other electrical equipment. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. PCBs may be encountered in the workplace in old transformers, capacitors, fluorescent light ballasts, and hydraulic oils. If there is reason to believe PCBs may be present, contact the Safety Department for assistance.

4.22.8 Silica

- .1 Crystalline silica is found in common construction materials including concrete, masonry, and rock. When these materials are made into a fine dust and suspended in the air, breathing in these fine particles can produce silicosis or other lung damage or disease.
- .2 Operations that may produce airborne silica and related health concerns include:
 - a. Concrete or masonry operations (mixing, chipping, hammering, drilling, sawing, grinding, or demolishing).
 - b. Dry sweeping or pressurized air blowing of concrete or sand dust.
 - c. Rock operations (chipping, hammering, drilling, crushing, loading, hauling, and dumping).
 - d. Abrasive blasting with silica sand or black beauty.
- .3 Silica dust shall be controlled to reduce exposure to nearby workers. Options include use of wet methods to control dust, use of High Efficiency Filter exhausted equipment designed to capture silica dust at the point of operation or other accepted measures. Dry work methods (cutting, grinding, etc.) without an approved dust control measure is prohibited.
- .4 For employees with continued exposure to silica dust, a common dust mask is insufficient; they shall comply with the following:
 - a. Air monitoring shall be conducted to determine the required respiratory protection.
 - b. Respirators shall be used in accordance with a written respirator program, see SAF 5.4.22.3.3, [Respiratory Protection Program](#).
 - c. Half-face negative air pressure respirators shall be equipped with HEPA filters or N-100 cartridges.
 - d. Employees must be physically able to wear a respirator; medical evaluation is required, as well as a quantitative or qualitative fit test.
- .5 If employees breathe in silica dust, the Safety Department shall be notified. A medical examination may then be requested.

4.23 Stretch & Flex Program

4.23.1 Stretching

- .1 Increases flexibility, improves range of motion of your joints, improves circulation, promotes better posture, relieves stress and may prevent injury
- .2 All employees working on a Barton Malow job site will participate in the stretch & flex program, see SAF 5.4.23.1, [Stretch and Flex Leaders Guide](#).

Stretch and Flex will be performed at the start of the work shift. It can be performed in tandem with the morning huddle, tool box meeting or other meeting.

**SECTION 00840
HAZARDOUS MATERIALS**

1. DEFINITION OF HAZARDOUS MATERIALS

- 1.1. A “Hazardous Material”, as used in this Project Manual means asbestos; asbestos containing material; lead (including lead-based paint); PCB; molds; any other chemical, material, or substance subject to regulation as a hazardous material, hazardous substance, toxic substance, or otherwise, under applicable federal, state, or local law; and any other chemical, material, or substance that may have adverse effects on human health or the environment.

2. AWARENESS OF HAZARDOUS MATERIALS

- 2.1. Each Contractor shall be constantly aware of the possible discovery of Hazardous Materials. Should Contractor encounter any Hazardous Material or suspected Hazardous Material, the Contractor shall immediately stop Work in the area affected and report the condition to CM.
- 2.2. If the Contractor encounters any Hazardous Material or suspected Hazardous Material, the Contractor agrees to immediately initiate the required procedures of the Environmental Protection Agency (EPA), and/or state or local agencies having jurisdiction to protect any and all persons exposed to the affected areas or adjacent areas affected thereby
- 2.3. Contractor is fully responsible for all Hazardous Materials it creates or releases in connection with, or brings to, the Project
- 2.4. Each Contractor shall be responsible to bind ALL of its personnel and its Subordinate Parties to the provisions in the contract documents related to hazardous materials and to instruct each employee of its own duty to report any and all suspected Hazardous Materials and to comply with all applicable laws.
- 2.5. ABSOLUTELY NO MATERIAL SHALL BE BROUGHT ON OR TO THE PROJECT SITE THAT DOES NOT HAVE A MANUFACTURER'S LABEL STATING CONTENTS.
- 2.6. The Contractor shall comply with all applicable federal and state laws, rules, ordinances and regulations regarding transportation, storage, spills, releases and disposal of Hazardous Materials.
- 2.7. No asbestos or asbestos-containing material will be brought to the jobsite or incorporated into the Work by Contractor or its Subordinate Parties.

END OF SECTION 00840

**SECTION 00870
LABOR RELATIONS**

1. PREVAILING WAGES

- 1.1. In any Agreement entered into pursuant to this advertisement, the Contractor shall comply with the provisions of the PREVAILING WAGE LAW.
 - 1.1.1. The Contractor will pay the latest prevailing wages and fringe benefits for all Work as required by State of Michigan/Public Act 166 dated 1965 as amended. The prevailing wage and fringe benefit rates are included immediately behind this Section.
- 1.2. Additionally, **Contractor** is required to comply with all other provisions of the governing prevailing wage law, and shall ensure its Subordinate Parties' compliance therewith.
- 1.3. Allegations that individuals working on this Project are not receiving compensation required by law are considered seriously by the Owner and CM. In order to expedite the resolution of prevailing wage complaints related to this Project, the Owner and CM have determined that the Michigan Fair Contracting Center ("MFCC") is the organization best equipped to expedite the investigation of these matters. Any person or entity (the "Complainant") who reasonably believes that a particular contractor, subcontractor, sub-subcontractor, supplier or other person or entity providing labor, materials, goods or services on this Project (each, an "Employer") is not paying prevailing wages as required by applicable law may ask the MFCC to determine whether proper rates are being paid either by completing and submitting to MFCC a request for assistance (the "RFA") or by contacting MFCC by telephone at (734) 462-2330 or (877) 611-6322. The RFA can be downloaded electronically at <http://mifcc.org/Brochures/KnowYourRights.pdf> and delivered to MFCC by facsimile to (734) 462-2318 or by mail to P.O. Box 530492, Livonia, Michigan 48153-0492.
- 1.4. Each and every Employer who is subject to an audit by MFCC pursuant to any RFA shall cooperate and comply fully with all requests, requirements and inquiries of MFCC. If, after investigation, MFCC determines that a Complainant's allegations are meritorious and the Complainant, MFCC and the Employer are unable to resolve the dispute following MFCC's determination, then, under the direction and with the assistance of MFCC, the Complainant shall file a Prevailing Wage Complaint (the "PWC") with the State of Michigan Department of Labor and Economic Growth Wage and Hour Division (the "Wage and Hour Division"). The PWC can be downloaded electronically at <http://mifcc.org/Brochures/PrevailingWageComplaint.pdf> and delivered by facsimile to (517) 322-6352 or by mail to 7150 Harris Drive, P.O. Box 30476, Lansing, Michigan 48909-7076.
 - 1.4.1. Upon commencement of the audit from MFCC, the Owner and/or CM reserves the right to hold all payments, pending the conclusion of the audit. If the Wage and Hour Division determines that the Employer has violated any applicable prevailing wage law, then the Owner and/or Construction Manager shall automatically be entitled to and will (a) withhold from such Employer any and all payments due and owing until the Employer remedies any and all violations cited by the Wage and Hour Division, and (b) backcharge the Employer for all costs actually incurred in MFCC's audit of the Employer.
 - 1.4.2. The Owner and/or CM shall keep a hard copy of these requirements posted at the Project site at all times.
- 1.5. The Contractor shall be financially responsible for the payment of prevailing wages by all Subordinate Parties that are subject to the prevailing wage law for Work on the Project.
- 1.6. If there is a dispute between any Contractor and the unions, the Contractor will be required to meet with CM and the Union involved to try to resolve the issue.
- 1.7. Because Work on this Project is covered by the Michigan Prevailing Wage Act ("Act"), the Contractor and its subcontractors and other Subordinate Parties that are governed by the prevailing wage law shall pay all hours at the prevailing wage rates at the applicable hourly rate; no Work performed by or on behalf of the Contractor on this Project will be paid on a lump sum basis or a piece rate basis in violation of the Act.

- 1.8. The Contractor will pay its workers at wage and fringe benefit rates consistent with the Act regardless of whether the workers are classified as employees or independent contractors.
- 1.9. The Contractor shall not misclassify any work assignments, but shall in each and every case follow proper jurisdictional assignments in compliance with the Act.
- 1.10. The Contractor shall assure that any persons paid at apprentice rates under the Act are properly classified as apprentices by actual participation in a BAT certified program or as may otherwise be permitted by the Act.

END OF SECTION 00870

SECTION 00880
REGULATORY REQUIREMENTS

1. STANDARDS, CODES AND REGULATION

- 1.1. All Work is to comply with the rules and regulations of governing bodies having jurisdiction.
- 1.2. Standards, codes and regulations published by Manufacturer's associations, governmental agencies and other regulatory authorities form a part of these Specifications as minimum requirements. Such references include the latest issue and legal requirements in force.
- 1.3. Where differences occur between the Contract Documents and such standards, the strictest requirements shall take precedence.
- 1.4. Supply all materials and perform all Work in accordance with the Manufacturer's specifications and installation procedures, and in conformance with published Trade and Manufacturers' association standards, unless specifically noted otherwise in the Contract Documents.

2. PERMITS AND FEES

- 2.1. The Waterford School District will obtain and pay for the General Building Permit.
- 2.2. Other than the general building permit, Contractor shall provide and pay for all other permits, assessments, governmental fees, bonds, connection charges, licenses and inspection fees and any other charges necessary for the proper execution and completion of the Contractor's Work.
- 2.3. Contractor is to provide, pay for and coordinate all other permits, fees, inspections, and city, county, state, federal and governing authority approvals required for the successful completion of the Work contained within its respective Bid Category and deliver required certificates of inspection and approvals to CM.
- 2.4. This Project is under but not limited to the jurisdiction of the
 - MICHIGAN DEPARTMENT OF LABOR FOR MECHANICAL AND ELECTRICAL
 - STATE OF MICHIGAN FIRE MARSHAL DIVISION
 - MICHIGAN DEPARTMENT OF PUBLIC AND (COUNTY) DEPARTMENT OF PUBLIC HEALTH
 - Site water and sewer utilities are under the jurisdiction of the County authorities.
 - City of Waterford may also have specific requirements and it is up to the contractor to follow those requirements.

3. TAXES

- 3.1. This Project is subject to all applicable state Sales Tax and/or Use taxes, and Bidder must include such taxes in its Bid Proposal. All other taxes applicable to the project at the time of the bid are to be included in the bid amount and will be the responsibility of Bidder.

END OF SECTION 00880

**SECTION 01140
USE OF PREMISES**

1 RULES AND ENFORCEMENT:

- 1.1. Contractor and its Subordinate Parties shall be subject to rules and regulations for the conduct of the Work as stated herein and as the Owner or CM may establish.
- 1.2. Willful disregard of the following will be grounds for requiring the offending person(s) to be removed from the Project, and may subject the Contractor to termination under the Agreement.

2 USE OF PREMISES AND DELIVERIES

2.1. ACCESS TO WORK:

- 2.1.1. Before starting the Work, Contractor shall ascertain from CM what entrances, routes or roadways shall be used for access to the Work, and use only those designated for movement of personnel, materials and vehicles to and from the Project site.
- 2.1.2. Close coordination is required of Contractor with the Owner, CM, other contractors, the city and others having an interest in the Project to assure that Work on the site, access to and from the site and the general conduct of operations is maintained in a safe and efficient manner, and that disruption and inconvenience to existing streets and property is minimized.
- 2.1.3. Contractor is responsible to review the site and be familiar with all existing conditions within and around the Owner's property including local conditions and requirements.

2.2. ENTRANCES AND DRIVES

- 2.2.1. Specific entrances for material deliveries, equipment deliveries and worker access to the Project site will be as designated/directed by CM.
- 2.2.2. Selected entrances to the Project site will remain open for use during normal working hours.
- 2.2.3. At no time are vehicles to be parked, whether attended or not, in the Owner's entrances or drives.
- 2.2.4. Any material delivery which will tie up the Owner's entrances or drives shall be pre-scheduled with the Owner through CM.
- 2.2.5. Owner's deliveries and operations will take precedence over scheduling of construction deliveries.

2.3. ACCESS TO BUILDINGS:

- 2.3.1. Maintain free access to all buildings and areas of the site for designated vehicles, service vehicles and fire fighting equipment, and at no time shall block off or close roadways or fire lanes without providing auxiliary roadways and means of entrance acceptable to the Owner and CM.
- 2.3.2. Maintain a clean and safe passageway for the Owner's operations and personnel in existing areas, and maintain clearances adjacent to and in connection with the Work performed. Fire hydrants must remain accessible at all times.
- 2.3.3. Give the Owner and the local fire department at least forty-eight (48) hours notice of any such changes of routes.

2.4. SITE PARKING:

- 2.4.1. There is on-site parking for Contractors and their Subordinate Parties' employees.
- 2.4.2. Contractor, Subordinate Parties and their personnel will be allowed to park in the Owner's parking area. Each Contractor is responsible for providing transportation to and from the site, if required.
- 2.4.3. .

- 2.5. **LOADING OF STRUCTURE:** Each Contractor on behalf of itself and its Subordinate Parties shall not load or permit any part of a structure to be loaded with a weight that will endanger its safety.
- 2.6. **USE OF OWNER'S EQUIPMENT:** Contractors and their Subordinate Parties will not be allowed to use any Owner tools or equipment during the course of the Project.
- 2.7. **USE OF EXISTING ELEVATORS**
 - 2.7.1. Contractor may subject to the approval of CM and Owner/, use the existing elevator(s) designated by the Owner within the contract boundaries for movement of personnel and materials to a construction area.
 - 2.7.2. In those cases where an elevator is to be shared with Owner services, the Owner's employees and services take priority over construction activities.
 - 2.7.3. Contractor is responsible for proper conduct with regard to the use of the elevator. Any damage to the elevator due to oversize load, excess weight or other conditions is the individual Contractor's responsibility.
 - 2.7.4. Use of the elevator(s) at times other than normal working hours shall be coordinated with CM and Owner.
- 2.8. **USE OF EXISTING FACILITIES**
 - 2.8.1. Limit the usage of the occupied areas of the facility to that which is absolutely necessary for the installation of the Work. Parts of the facility not in the construction area are "off limits" unless a specific work task is being performed as designated by CM.
 - 2.8.2. Use of the Owner's cafeteria, parking, telephones, toilet facilities, tools, equipment, or any other item or facility belonging to the Owner is not allowed unless specifically authorized by Owner and CM.
 - 2.8.3. Restrict all Work activities associated within an area undergoing renovation to the boundaries indicated by the Contract Documents. Any means of access or egress from the stipulated boundaries shall be coordinated with CM and the Owner.
- 3 **WORK HOURS:**
 - 3.1. Normal working hours are; 7:00 AM to 3:30 PM., Monday through Friday.
 - 3.2. Work may be performed during the entire twenty-four (24) hours of any day of the week with the approval of CM and the Owner.
 - 3.3. Work operations shall comply with all applicable laws, ordinances, and regulations, and not create a public nuisance nor disturb the peace.
 - 3.4. Compensation to CM for supervisory staff due to abnormal working hours will be at the requesting Contractor's expense.
 - 3.5. Whenever Contractor intends to depart from normal work hours, it shall notify CM in writing at least forty-eight (48) hours in advance. Failure of Contractor to give such timely notice may result in CM directing the removal or uncovering of the Work performed during such abnormal hours at Contractor's expense. Special arrangements can be made for emergency work or shutdowns as may be required.
 - 3.6. Required off-hours work:
 - 3.6.1. Contractors may be requested to work split shifts, weekends, off peak Owner loading periods, etc., to accommodate Owner's utility and service requirements, such as, but not limited to, medical gas systems, electrical power, HVAC systems, storm and sanitary lines.
 - 3.6.2. All Work shall be bid on a straight time basis unless specifically noted in the bid documents.
- 4 **USE OF EXPLOSIVES:** Is NOT permitted.

- 5 DUST, DIRT, NOISE: Each Contractor shall effectively confine or eliminate dust, dirt and noise to the actual construction area and in compliance with all applicable laws, rules and regulations.
- 6 BEHAVIOR AND CONDUCT: The Owner and CM expect Contractors and their Subordinate Parties to exercise common sense and good judgment, and to conduct themselves in a manner which would be a credit to the Owner. Without limiting other applicable provisions of the Contract Documents, Contractor shall not engage in the following:
 - 6.1. Conduct that interferes with Work or work of others.
 - 6.2. Conduct that interferes with or is detrimental to student safety, well-being of the owner, their operations and/or good reputation.
 - 6.3. Unauthorized use of confidential information.
 - 6.4. Discourtesy toward Owner's staff, visitors and the general public (including abusive, vulgar or other language.)
 - 6.5. Soliciting, canvassing, posting, or distributing literature or materials for any purpose while on the job site.
 - 6.6. Disregard of safety, sanitation, or security laws, rules and regulations.
 - 6.7. Stealing.
 - 6.8. Gambling.
 - 6.9. Possession and/or use of narcotics or intoxicants.
 - 6.10. Threats or abuse of others.
 - 6.11. Disorderly conduct or fighting.
 - 6.12. Playing of loud music.
 - 6.13. Falsification of information.
 - 6.14. Unauthorized travel of Contractor's employees outside the designated project Work areas.
 - 6.15. Discriminating behavior.
 - 6.16. Possession and/or use of weapons or firearms.
 - 6.17. Sexual or Ethnic harassment.
 - 6.18. Smoking: Contractors and their Subordinate Parties shall be responsible for adhering to the smoking policies and regulations of the Owner and the Owner's facilities.
 - 6.19. The Contractor will not allow Any person convicted of Criminal Sexual Conduct and listed on the State of Michigan Website for Sexual Offenders will not be allowed on the project site. NO EXCEPTIONS for any reason. At any time during the bid frame or during the construction phase if the bidder is award the project.

The list of offenses includes:

- a. Accosting, enticing, or soliciting a child for immoral purposes.
- b. Involvement in child sexually abusive activity or material.
- c. A third or subsequent violation of any combination of engaging in obscene or indecent conduct in public, indecent exposure, or a local ordinance substantially corresponding to either offense.
- d. First, second, third, or fourth degree Criminal Sexual Conduct (CSC).

- e. Assault with intent to commit CSC.
- f. If the victim is less than 18 years of age, the crime of gross indecency (except for a juvenile disposition or adjudication), kidnapping, sodomy, or soliciting another for prostitution.
- g. Leading, enticing, or carrying away a child under 14 years of age.
- h. Pandering.
- i. Any other violation of a state law or local ordinance constituting a sexual offense against an individual less than 18 years of age.
- j. An offense committed by a sexually delinquent person.
- k. An attempt or conspiracy to commit one of the offenses listed above.

7 TEMPORARY PARTITIONS:

- 7.1. Partition construction shall provide a fire-resistant classification approved by the authorities having jurisdiction. Openings in such partitions shall be protected by fire doors consistent with the rating of the partition. Any trade creating penetrations through the temporary partitions shall fire stop openings to match the rating of the wall.

8 PROTECTION OF FACILITIES

- 8.1. Each Contractor on behalf of itself and its Subordinate Parties shall be responsible for all damage to the Project including the existing buildings and grounds arising or resulting from its operations under the Agreement. Repair or replacement of damaged items shall be to the satisfaction of the Owner and CM.
- 8.2. Each Contractor shall provide and maintain proper shoring and bracing for existing underground and aboveground utilities, foundations, structure and systems encountered during its Work and shall
 - 8.2.1. protect the project, or any part thereof, and surrounding areas from collapse or movement, or any other type of damage until such time as they are to be removed, incorporated into the new Work or can be properly supported or backfilled upon completion of new Work.
 - 8.2.2. limit disruptions to a maximum of four hours.
 - 8.2.3. prior to beginning any Work that may affect underground facilities, contact MISS DIG and utility companies for the location of all existing underground services.
 - 8.2.3.1. Provide, documentation of such contact to CM.
- 8.3. Utilities and/or other services which are shown, or not shown but encountered, shall be protected by the Contractor from any damage arising or resulting from Work, unless or until they are abandoned. If the utilities or services are damaged from Contractor's Work, Contractor shall immediately repair any damage and restore the utilities and services to an equal or better condition than that which existed prior to the damage. Contractor will be responsible for all liabilities, expenses, lawsuits or claims arising or resulting from such damage and will defend, hold harmless and indemnify Owner and CM from any claims or lawsuits or other expenses.
- 8.4. Each Contractor on behalf of itself and its Subordinate Parties shall be responsible for all damage to the Project and surrounding areas including the existing building and grounds arising out of or resulting from their performance of the Work. Repair or replacement of damaged items shall be to the satisfaction of the Owner and CM.
- 8.5. Preservation of existing trees and other vegetation on the site to the maximum extent possible is required.

- 8.5.1. Each Contractor must plan its Work and instruct its Subordinate Parties to conduct their operations to avoid damage to trees and vegetation (provide barriers as required.)
- 8.5.2. Indiscriminate driving about the site, disposing of waste, storage of materials upon or against trees or any other activity which is harmful to trees or vegetation will not be tolerated.
- 8.5.3. Any case of damage to any tree shall be reported to CM immediately so that professional repairs can be made. The cost of such required repairs or treatment shall be charged to the responsible Contractor.

9 OWNER'S OPERATIONS & INTERRUPTION OF OCCUPANCY /SEQUENCING

- 9.1. The Owner shall have the option to curtail or delay any activity that affects its operations. Should a Contractor be asked to stop its Work, the Contractor shall do so immediately and proceed with other activities with no additional cost to the Owner or CM.
- 9.2. The Owner may occupy the premises during the entire period of construction to conduct operations.
- 9.3. Each Contractor is responsible to plan, coordinate and execute its Work in such a manner that there will be no disruption of or the least disruption to the Owner's operations. If an interruption of operations is unavoidable, then this Work will be scheduled with the Owner through CM.
- 9.4. Contractors is responsible to provide temporary utilities and systems to maintain services to the facility while Work is being performed.
- 9.5. No interruptions to Owner's power, lighting, signal, or alarm circuits will be permitted without the express written permission of the Owner through CM. Arrangements for interruptions shall be made with the Owner at least forty-eight (48) hours prior to the interruption and shall be made at such time and duration as authorized by them. Temporary feeders, transformer jumpers, connections, circuits, etc., shall be used as required to accomplish the above at no additional cost to the Owner and CM.

10 MATERIAL STORAGE

- 10.1. Each Contractor shall provide suitable storage trailers on site as required. These are to be relocated and removed when directed by CM.
- 10.2. Storage of combustible materials within or adjacent to the building is prohibited.
- 10.3. All Contractors shall
 - 10.3.1. Stock the job with sufficient materials to maintain progress and schedule and without interfering with the Work or storage of others.
 - 10.3.2. Assume full responsibility for the protection and safekeeping of products under their control which are stored on the site.
 - 10.3.3. Move any stored products under their control, which interfere with operations of the Owner or separate contractors as directed by CM.
 - 10.3.4. Provide sufficient protection for its materials and equipment from damages by weather or construction work or other hazards.
 - 10.3.5. Remove all debris and leave the area in a clean and orderly condition during progress of Work and upon completion of the Work.
 - 10.3.6. Submit a receipt of shipment for all equipment stored on-site or off-site to CM. No materials or equipment shall be removed from the site without the permission of CM

END OF SECTION 01140

**SECTION 01250
CHANGES IN THE WORK**

1 SUMMARY

1.01 This section describes the following requirements including:

1.01.1 Types of Change Documentation

1.01.1.1 PCO – Potential Change Order

1.01.1.2 CO – Change Order

1.01.2 Compensation of Overhead and Profit for Changes in the Work

1.01.3 Itemization of Cost of Changed Work

1.02 This section is not intended to include RFI's, ASI's (Architects Supplemental Instructions), or other documents that clarify the work but have no substantive cost or schedule impact to the work.

2 TYPES OF CHANGE DOCUMENTATION

Changes to the work which may involve a change in the contract price or schedule will be accompanied by the Barton Malow form entitled "PCO- Quotation Only". In the event that the timing does not allow the For Quote Only process, then CM will issue its form entitled "PCO-Notice to Proceed."

2.1. PCO- NOTICE TO PROCEED AND FOR PCO- QUOTATION ONLY FORMS

2.1.1. A PCO- Notice to Proceed is used when Work must be performed with swiftness and authorization to proceed by Change Order is inappropriate due to time restrictions. In order for a PCO- Notice to Proceed to be valid, it must be signed by CM and Owner. The terms for establishing the additional cost and processing of the PCO- Notice to Proceed into a Change Order shall be identified prior to its release by CM.

2.1.2. If a change results in a change in cost, CM will issue a PCO with the supporting change documents.

2.1.3. Contractor shall prepare a detailed cost quotation for the PCO. This quotation shall include an itemized takeoff of labor, equipment and material with a unit cost for each item together with backup and breakdown documentations satisfactory to CM. The PCO must be returned as directed

2.1.4. Contractor shall sign and date the PCO and submit it with proper backup. The PCO will then be reviewed, evaluated, negotiated and then, when acceptable, processed

2.1.5. The PCO- Quotation Only is a document used for processing Contractor's quotations and is **not** a Change Order. Therefore, completion of the PCO- Quotation Only does **not** release the Work to begin.

2.1.6. PCO's will precede a Change Order. Contractors shall receive an approved PCO- Notice to Proceed or an executed Change Order before starting Work. Any changed Work performed by Contractor without a properly executed PCO- Notice to Proceed or a properly executed Change Order is at Contractor's sole risk and expense. **BILLINGS AGAINST CHANGES WILL NOT BE ACCEPTED AFTER A PCO- NOTICE TO PROCEED OR FOR QUOTE ONLY IS ISSUED, BUT ONLY AFTER A CHANGE ORDER HAS BEEN PROCESSED AND SIGNED BY ALL PARTIES.**

2.2. CHANGE ORDER

- 2.2.1. Change Orders will be issued by CM. CM will first issue the Change Order to the Contractor for signature. The Change Order will then be returned to CM. Once all appropriate signatures are secured, an executed copy will be sent to the Contractor.
- 2.2.2. Once the Change Order has been processed and signed by all parties, the Contractor may invoice for payment on the completed portion of Work.
- 2.2.3. Agreement on a Change Order shall constitute a final settlement of all matters relating to the changed Work that is the subject of the Change Order.

3. COMPENSATION OF OVERHEAD AND PROFIT FOR CHANGES IN THE WORK

3.1. CONTRACTOR'S OVERHEAD AND PROFIT

- 3.1.1. For changes resulting in increase of cost:
 - 3.1.1.1. Overhead and profit for the Contractor shall not exceed the following when change Work is performed by
 - 3.1.1.1.1. Contractor itself: fifteen percent (15%)
 - 3.1.1.1.2. Contractor subordinate party: five percent (5%)
 - 3.1.1.2. Overhead and profit for the subordinate party shall not exceed the following when change Work is performed by
 - 3.1.1.2.1. Subordinate party itself: fifteen percent (15%)
 - 3.1.1.2.2. Contractor to the subordinate party: five percent (5%)
- 3.1.2. For changes resulting in reduction of cost
 - 3.1.2.1. Deductive costs shall include commensurate deductive credits for overhead and profit based on the percentages stated above.
- 3.1.3. Contractor's and Subordinate Party's overhead and profit shall include cost (at the Project Site, home office and otherwise) of supervision, telephone, travel, copying, administrative services, office, power, light, tools, jobsite vehicles, and all other general expenses including bond premiums. In no event shall these items be charged as cost of the Changed Work.

4. ITEMIZATION OF COST OF CHANGED WORK

4.1. CORRELATION WITH CONTRACTOR'S SUBMITTALS

- 4.1.1. Contractors shall
 - 4.1.1.1. Revise the Schedule of Values and Request for Payment forms to record each Change Order as a separate item of Work, and to record the adjusted contract price.
 - 4.1.1.2. Revise the Construction Schedule to reflect each change in Contract Time approved by a Change Order.
 - 4.1.1.3. Revise sub-schedules to show changes for other items of Work affected by the changes.
 - 4.1.1.4. Enter and revise Record Documents to reflect changes

4.2. COST OF THE CHANGED WORK

4.2.1. The "Cost of the Changed Work" shall be approved by CM and shall mean the costs necessarily incurred by the Contractor in the proper performance of the Changed Work. Such rates shall not be higher than those customarily paid at the place of the Project. The Cost of the Changed Work shall only include those items set forth below:

WAGES OF LABOR	Wages of construction workers directly employed by Contractor to perform the construction of the changed Work at the site
PAYROLL MARKUP	The amount approved by CM and Owner which covers the costs paid by the Contractor for taxes, insurance, contributions, assessments, and benefits required by law or collective bargaining agreements and for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays vacations and pensions, provided that such costs are based on the wages and salaries of labor performing the changed Work.
COST OF EQUIPMENT, MATERIALS, AND SUPPLIES	Costs of materials, equipment and supplies to be incorporated into the changed Work less all savings, discounts, rebates and credits accruing to the Contractor.
RENTAL CHARGES FOR EQUIPMENT NOT OWNED BY CONTRACTOR	Rental charges for equipment not owned by Contractor that is necessary for completion of the Changed Work. Rates and quantities rented must be approved in advance by CM.
TAXES	Sales or use taxes imposed by a governmental authority which are directly attributable to the changed Work and for which the Contractor is liable.
SUBORDINATE PARTY COSTS	Payments made to the Contractors for proper execution of Changed Work, subject to the limits set forth above for overhead and profit.

4.2.2. In no event shall the Cost of Changed Work include:

- 4.2.2.1. Salaries or wages of persons other than those directly performing the changed Work, including Contractor's personnel stationed at the principal office;
- 4.2.2.2. Expenses of the Contractor's principal office and offices other than the site office, except as provided above;
- 4.2.2.3. Overhead and general expenses of any nature, except as set forth above;
- 4.2.2.4. Capital expenses of Contractor, including interest on the Contractor's capital employed for the Changed Work;
- 4.2.2.5. Rental costs for machinery or equipment, except as allowed above, or tools of any kind, unless specifically identified and approved in advance in writing by CM;
- 4.2.2.6. Costs due to the negligence or failure to perform of the Contractor or its Subordinate Parties;
- 4.2.2.7. Costs designated above as being included in Overhead and Profit
- 4.2.2.8. Any cost not specifically described above, or otherwise approved in advance and in writing by CM and Owner.
- 4.2.2.9.** Any bond premiums of portion of increased bond costs directly attributable to the changed Work.

4.3. QUOTATION FORMAT

Based on the above, the following formula will be utilized by all of the Contractors.

Number of PCO _____
 Date of PCO _____
 Description of Change _____

Cost of Changed Work

Labor:

Carpenter	(No. of Hrs. x Rate)	xxx.xx	
Labor	(No. of Hrs. x Rate)	xxx.xx	
Ironworker	(No. of Hrs. x Rate)	<u>xxx.xx</u>	
	Subtotal		xxx.xx
	OH&P @ 15%		xxx.xx

Equipment, Materials, Supplies:

Ace Hardware	xxx.xx		
Acme Products	xxx.xx		
Concrete Supplier		<u>xxx.xx</u>	
		xxx.xx	
	Subtotal		xxx.xx
	OH&P @ 15%		<u>xxx.xx</u>
	Subtotal (1)		xxx.xx

Contractor Costs

ABC Welding	xxx.xx		
XYZ Resteel		<u>xxx.xx</u>	
	Subtotal		xxx.xx
	OH&P @ 5%		<u>xxx.xx</u>
	Subtotal (2)		xxx.xx

TOTAL QUOTATION AMOUNT

Total Quotation (Subtotal 1 plus Subtotal 2) xxx.xx

END OF SECTION 01250

**SECTION 01290
PAYMENT PROCEDURES**

1. SUMMARY

1.1. This Section describes the following requirements including:

- 1.1.1. Schedule of Values
- 1.1.2. Application for Payment Process
- 1.1.3. Reduction of Retention
- 1.1.4. Payment for Materials Stored Off-site
- 1.1.5. Waivers of Lien and Sworn Statements

2. PAYMENT PROCEDURES

2.1. SCHEDULE OF VALUES

2.1.1. Once the Agreement is awarded, each Contractor must submit a Schedule of Values for its entire Work to CM for approval. This Schedule of Values must be submitted either within fifteen (15) days of award or fifteen (15) days prior to the first payment application deadline (per the Application for Payment Schedule), whichever comes first. The Schedule of Values must include labor and material line items for each portion of the Work (larger portions of Work such as concrete, curtainwall, drywall, mechanical, and electrical shall be broken down by elevation, floor, and areas appropriate), the Contractor shall separate bond costs, and general conditions line items as appropriate.

2.1.2. The Schedule of Values will be submitted in a format as prescribed by, and to the level of detail specified by, CM.

2.1.2.1. The sum of the parts of the Schedule of Values shall equal the contract price.

2.1.2.2. The minimum level of breakdown and order on the application for payment will be:

2.1.2.2.1. Bond costs, if applicable

2.1.2.2.2. General conditions line item(s)

2.1.2.2.3. Division 1 cost breakdown as required

2.1.2.2.4. Costs associated with preparation of closeout paperwork and documentation (1% of contract value)

2.1.2.2.5. Costs associated with preparation of start up paperwork and submittals (1% of contract value)

2.1.2.2.6. Costs associated with clean up (1% of contract value)

2.1.2.2.7. Major portions of the Work shall be broken down into labor and material line items for specific areas of the facility

2.1.2.2.8. A listing of approved and executed Change Orders to the Contract, if any, in sequential order. On any individual Change Order greater than \$25,000, the Change Order shall be broken out and detailed as directed by CM.

2.1.2.3. Schedule of Values items shall have a direct and understandable relation to the Project master construction schedule.

2.1.2.4. Overhead and profit shall be listed as a separate line item on the schedule of values.

2.1.3. The Schedule of Values, unless objected to by CM, Owner or Architect, shall be the basis for the Contractor's application for payments.

- 2.1.4. CM shall have the right to require the Contractor to alter the value or add/delete categories listed on the Schedule of Values at any time for the following reasons:
 - 2.1.4.1. The Schedule of Values appears to be incorrect or unbalanced.
 - 2.1.4.2. A revision of the Schedule of Values is required due to the Contractor revising the sequence of construction or assembly of building components that in turn invalidates the Schedule of Values.
 - 2.1.4.3. Change Orders are issued to the Contractor and shall be incorporated into the Schedule of Values as a separate line item at the bottom of the Schedule of Values.
- 2.1.5. The Contractor is required to correlate the documentation for payment of stored materials requested in the application for payment against the agreed upon breakdown of the Schedule of Values as described in Payment for Stored Materials. CM reserves the right to not process the application for payment if this correlation has not been submitted in conjunction with the application.

2.2. APPLICATION FOR PAYMENT PROCESS

2.2.1. Step 1: JOB-SITE INSPECTION - DRAFT PAYMENT REQUEST

- 2.2.1.1. The Contractor shall
 - 2.2.1.1.1. have a representative walk the Project site with CM's representative on or before the fifteenth (15th) of the month,
 - 2.2.1.1.2. invoice for Work from the fifteenth (15th) of last month to the fifteenth (15th) of the present month.
 - 2.2.1.1.3. submit during the review, the itemized rough draft of the Application and Certificate for Payment (AIA Documents G702 and G703 Continuation Sheet) identifying the Work completed, if any, during the current calendar month; shall review same with CM and obtain a preliminary approved copy of the draft for official submission
 - 2.2.1.1.4. Contractor's pay application shall only reflect Work completed through the date of submission. In no event will payments be authorized for forecasted Work.

NOTE: No payment shall be issued to a Contractor for materials stored off-site unless supported by proper documentation as required by CM (upon advance notification of such requests only) as described in Part 3 Payment for Stored Materials.

Step 2: PAYMENT REQUEST PREPARATION/SUBMISSION

- 2.2.1.2. With the information agreed upon in Step 1, the Contractor will prepare a formal application for payment request.
- 2.2.1.3. Three (3) originals of the request and three (3) originals of the sworn statements must be submitted to CM's Site office on or before the twentieth (20th) of the month.
- 2.2.1.4. Late or incomplete application packets will not be accepted.**
- 2.2.1.5. The payment request will be made on an Application and Certificate for Payment form (AIA documents G702 and G703).
- 2.2.1.6. Before submitting these documents to CM, each request for payment must be signed by a duly authorized agent of the Contractor and notarized.
- 2.2.1.7. The Contractor must include with each request for progress payment a waiver of lien for all previous payments, Contractor's sworn statement and any necessary backup data as described in Part 4, Waivers of Lien and Sworn Statements.

- 2.2.1.8. In addition, at submission of the final pay application Contractor shall provide unconditional final waivers of lien for all Subordinate Parties, as well as all close out documentation and all additional back up data described in Part 4, Waivers of Lien and Sworn Statements.
- 2.2.1.9. In requests for payment which follow the execution of a Change Order in excess of twenty-five percent (25%) of the Agreement price, Contractor must present a bond rider evidencing that the penal sum of any required payment and performance bonds have been increased to one hundred percent (100%) of the adjusted Agreement price, or such other percentage as set forth in Section 00200 of the Project Manual, Instructions to Bidders. Submission of the required back-up data is a condition precedent to payment.
- 2.2.2. Step 3: CHECK DISTRIBUTION
 - 2.2.2.1. CM will issue individual checks to each Contractor. The Contractor will receive the waiver of lien with the check and will be required to sign three (3) originals of the waiver upon receipt of the check each month (see Part 4).
 - 2.2.2.2. The Contractor shall provide all supporting documentation substantiating the Contractor's right to payment as the Owner, CM and the Architect may require.
 - 2.2.2.3. Payment will be made within 45-60 days. Please review the scope of the project for the possibility of barton malow "quick pay" being used on this project.
- 2.3. REDUCTION OF RETENTION
 - 2.3.1. Owner shall be entitled to withhold ten (10%) percent of each payment due to a Contractor until Substantial Completion of the Contractor's Work.
 - 2.3.2. The Contractor, when requesting a reduction of retention, shall submit to CM, an AIA G707, Consent of Surety to Reduction In or Partial Release of Retention form in Section 01600 Forms.
 - 2.3.3. Within thirty (30) days after Certificate of Substantial Completion has been issued for all portions of its Work, the Contractor's retention may be reduced to a sum as CM may determine is suitable to protect CM and the Owner for all incomplete Work and any unsettled claims.
 - 2.3.4. Notwithstanding the foregoing, payment of retention shall be subject to all other conditions precedent that applies to payment as set forth in the Contract Documents.
- 3. PAYMENT FOR MATERIALS STORED OFF-SITE
 - 3.1. PAYMENT FOR MATERIALS STORED OFF-SITE
 - 3.1.1. The Contractor, if intending to use an off-site storage area or facility for stored materials, shall submit a written request to the CM and obtain approval prior to submitting the first application for payment as described in Part 2 Applications for Payment.
 - 3.1.2. Payments will be made for materials properly stored off site.
 - 3.1.2.1. "Properly stored" shall mean in an insured warehouse with the Owner and CM being named as insureds, and all material identified as property of the Owner.
 - 3.1.2.2. The Contractor is responsible for all associated off site storage costs, transportation, insurance, including insurance coverage for stored material, while in transit, unless Contractor obtains written documentation that the material is covered during transit under a Builder's Risk Policy applicable to the Project.
 - 3.1.2.3. Contractor shall provide CM and the Owner verification in writing for all material so stored. Such materials shall be protected from diversion, destruction, theft, and damage to the satisfaction of CM, Owner and the Lender (if any), specifically marked for use on the Project, and segregated from other materials at the storage facility.

- 3.1.2.4. The Contractor bears all risk of loss to materials and equipment stored off site.
- 3.1.3. Contractor is to provide supporting documentation in the form of invoices, insurance policies, and any other pertinent documentation as requested by CM or Owner for items the items stored off-site. Documentation shall include the following:
 - 3.1.3.1. Detailed description of the material including quantities that will serve as a material description for the billing and as information to file a claim with an insurance company.
 - 3.1.3.1.1. Stored Materials - Each item must be identified as to manufacturer, model number, and serial number, if applicable, or other identifiers should be listed for each item. Each listing must be accompanied by invoices, shipping tickets, consent of surety, and any other applicable supporting documentation.
 - 3.1.3.1.2. Stored Manufactured Building Materials - Each item must be identified as to type, manufacturer's number or designation, and should also list the number of cartons and the contents therein storage. Each listing must also be accompanied by supporting documents including all invoices, shipping tickets and consent of surety.
 - 3.1.3.1.3. Stored Fabricated Materials - A listing specifying the number of pieces, items, and marks as may be applicable to the particular type of items. Photographs should accompany the request.
 - 3.1.3.2. Individual itemized costs of materials and the total cost value, which shall not exceed the Contractor's subcontractor or material supplier cost. The total cost value shall be supported by the Contractor's subcontractor or material supplier invoices for the stored material.
 - 3.1.3.3. Estimated cost value for those materials that are fabricated by the Contractor's subcontractor or material supplier.
 - 3.1.3.4. The location where the material is physically stored, including the warehouse address and storage location within the warehouse, such as bin number, aisle number or other designation. All material shall be segregated and marked.
 - 3.1.3.5. Copies of the insurance policies that cover the stored materials and that name CM and the Owner as insureds. The limit of the insurance policy shall be equal to or greater than the replacement value of the stored materials.
- 3.1.4. When Applications for Payment include products stored off the Project Site or stored on the Project Site but not incorporated in the Project, for which no previous payment has been requested, a complete description of such product shall be attached to the application.
- 3.1.5. Contractor shall submit a certificate of title listing the Owner's ownership in the off-site stored materials equal to the amount paid effective at the time funds are delivered.
- 3.1.6. If the size, quantity, and/or type of material or product is such that a bonded warehouse is deemed unsuitable, then, with CM's approval, the Contractor may elect to prepay its subcontractor or supplier for certain material and products which are to remain on and be stored on that subcontractor/supplier's premises until needed by the Project. In such event, the Contractor shall enter into a security agreement with the subcontractor/supplier under which the Contractor shall be granted a security interest in and to all such material and products fabricated and/or to be supplied by the subcontractor/supplier for this Project and stored on the subcontractor/supplier's premises. This Security Agreement shall be a part of the financing statement, which shall be presented to a filing officer for filing pursuant to the Uniform Commercial Code. All expenses incurred in obtaining this security agreement shall be at Contractor's sole cost and expenses, and shall not accrue to the Owner, CM, Architect, nor the Project. A copy of each and every security agreement shall be filed with CM with the first Application for Payment which requests payment for such material or products.

- 3.1.7. All payment requests for off-site stored materials must be accompanied using the "Payment Request for Stored Materials" and a "Subcontractor Affidavit for Stored Materials." Payment requests for stored materials not complying with the foregoing requirements will not be approved. Contractors are to notify the CM in ample time to conduct verification procedures.
- 3.1.8. Contractors may not apply the cost of materials stored off-site towards a reduction in the retention amount.
- 3.1.9. Representatives of CM and the Owner shall have the right to make inspections of the storage areas at any time.

4. WAIVERS OF LIEN AND SWORN STATEMENTS

4.1. WAIVERS OF LIEN

- 4.1.1. The Contractor's first Application for Payment will be based upon 100 percent of the value of Work installed. The first payment, amounting up to 90 percent of application, will be made to the Contractor without supporting documentation. Subsequent Applications for Payment must be accompanied by lien waivers from the Contractor, its Subordinate Parties or receipted invoices covering payment to the Contractor for previous calendar month period. Lien waivers must be unconditional and must show the amount paid.
- 4.1.2. An "Acknowledgment of Payment and Partial Unconditional Release" will be distributed with the check to each Contractor by CM for payment of the previous month's application. The Waiver of Lien is to be signed by an authorized representative of the Contractor. Under no circumstances will payment be released until the completed "Acknowledgment of Payment and Partial Unconditional Release" has been submitted and signed by the Contractor from the previous month.
- 4.1.3. Final payment will not be made until a "Final Release Subcontractor/Materialman has been submitted. This will also be distributed by the CM for Contractor signature and must be returned by the Contractor. The Final Release must be signed by an authorized representative of the Contractor and must be notarized.
- 4.1.4. Final unconditional waivers will be required for all of Contractor's Subordinate Parties listed on Contractor's sworn statement. These final waivers must be submitted along with the final release, before payment can be made.

4.2. SWORN STATEMENTS

- 4.2.1. The appropriate number of original "Sworn Statements" must be completed to the satisfaction of CM, signed and notarized by an authorized representative of the Contractor and submitted with the Contractor's Application for Payment, monthly to the CM.
- 4.2.2. The Contractor's Subcontractor's sworn statements, waivers and other supporting documentation will be required with each pay application.

END OF SECTION 01290

SECTION 01310 MEETINGS

1. GENERAL

1.1. DESCRIPTION OF REQUIREMENTS

- 1.1.1. The CM shall schedule, chair, and administer all periodic meetings throughout the progress of the work for the purpose of coordinating and expediting the Work. Such meetings shall be held at the job site bringing together responsible representatives of active Contractors for the purpose of planning, assessing progress and discussing problems of mutual concern. Each Contractor, and its Subordinate Parties' representative attending the meetings shall be authorized to act on behalf of and make decisions/commitments for the entity each represents, the decisions made at the meetings and each Contractor who should be in attendance will be held responsible for information and directions given at the meeting.
- 1.1.2. The CM will prepare and distribute the minutes of all meetings, if CM determines minutes are required. If the attendees do not object in writing to any part of the meetings within ten (10) days of distribution of the minutes, the minutes shall be accepted as written.
- 1.1.3. The scope of meetings include, but are not limited to:
 - 1.1.3.1. Preconstruction Meeting
 - 1.1.3.2. Job Progress/Coordination Meetings
 - 1.1.3.3. Other Meetings

2. TYPES OF MEETINGS

2.1. PRECONSTRUCTION MEETING (KICK-OFF)

- 2.1.1. A Preconstruction (kick-off) meeting will be conducted with representatives of all the Contractors within fifteen (15) days after the Agreement is awarded at the jobsite or as designated by the CM. The agenda may include:
 - 2.1.1.1. Discussion on major subcontracts and suppliers
 - 2.1.1.2. Major and/or critical work sequencing regarding the project schedule
 - 2.1.1.3. Project coordination and designation of responsible personnel
 - 2.1.1.4. Procedures and processing of field instructions, requests for proposal, submittals, change orders, applications for payment, etc.
 - 2.1.1.5. Quality assurance/control issues
 - 2.1.1.6. Adequacy of distribution of contract documents
 - 2.1.1.7. Procedures for maintaining record documents
 - 2.1.1.8. Use of premises, office, work and storage areas and other CM requirements
 - 2.1.1.9. Construction facilities/temporary utilities
 - 2.1.1.10. Safety and security procedures
 - 2.1.1.11. Other administrative procedures
 - 2.1.1.12. Review of Owner expectations]

2.2. JOB PROGRESS/COORDINATION MEETINGS

- 2.2.1. On-site project coordination/progress meetings will be held as appropriate throughout the life of the Project. The CM will set the agenda for the Project progress meeting. At a minimum, each Contractor shall be prepared to discuss the following:
 - 2.2.1.1. Actual vs. scheduled progress for the prior two-week period

- 2.2.1.2. Planned construction activities for the next four weeks
- 2.2.1.3. Problems with, revisions to and corrective measures and procedures to regain the construction schedule, if required
- 2.2.1.4. Review of off-site fabrication, delivery schedules
- 2.2.1.5. Document clarification requests
- 2.2.1.6. Coordination items with other Contractors
- 2.2.1.7. Changes in the work affecting cost and/or time
- 2.2.1.8. Submittals and shop drawings
- 2.2.1.9. Field observations, problems, conflicts
- 2.2.1.10. Quality control issues and non-conformance resolutions
- 2.2.1.11. Safety issues

2.3. OTHER MEETINGS

- 2.3.1.1. QUALITY ASSURANCE MEETINGS - CM may conduct quality assurance/quality control meetings as necessary during the progress of the Work. CM will set the agenda for the quality meeting.
- 2.3.2. SAFETY MEETINGS - Refer to Section 00810 Safety and Loss Control Program for more information.
- 2.3.3. INSPECTIONS TOURS - Formal inspections/tours may be made of the Project progress by the Owner, Architect, local, state or federal officials, insurance representatives, or others as the occasion warrants and as scheduled by CM. If requested by CM, each Contractor shall be prepared to show and explain Work throughout the building to the inspecting parties, in addition to providing Work in compliance with these inspections.
 - 2.3.3.1. CHANGE REQUEST MEETINGS - Upon issuance of a major Proposal Request (a.k.a. bulletin), CM may conduct a meeting as necessary with all significant Contractors to review its contents and determine cost, delivery and schedule impacts.

END OF SECTION 01310

**SECTION 01320
COMMUNICATIONS**

1. SUMMARY

1.1. This Section describes the following requirements including:

- 1.1.1. Meetings / Communications
- 1.1.2. Contractor Correspondence
- 1.1.3. Contractor's Daily Report
- 1.1.4. Request for Information (RFI)

2. METHODS OF COMMUNICATION

2.1. MEETINGS (previous Section 01310 – Meetings)

- 2.1.1. The CM shall schedule, chair, and administer all periodic meetings throughout the progress of the work for the purpose of coordinating and expediting the Work. Such meetings shall be held at the job site office bringing together responsible representatives of active Contractors for the purpose of planning, assessing progress and discussing problems of mutual concern. Each Contractor, and its Subordinate Parties' representative attending the meetings shall be authorized to act on behalf of and make decisions/commitments for the entity each represents, the decisions made at the meetings and each Contractor who should be in attendance will be held responsible for information and directions given at the meeting.
- 2.1.2. The CM will prepare and distribute the minutes of all meetings, if CM determines minutes are required. If the attendees do not object in writing to any part of the meetings within ten (10) days of distribution of the minutes, the minutes shall be accepted as written.
- 2.1.3. The scope of meetings include, but are not limited to:
 - 2.1.3.1. Preconstruction Meeting
 - 2.1.3.2. Job Progress/Coordination Meetings
 - 2.1.3.3. Other Meetings
 - 2.1.3.3.1. Quality Assurance
 - 2.1.3.3.2. Safety
 - 2.1.3.3.3. Inspection Tours
 - 2.1.3.3.4. Change Request

2.2. CONTRACTOR CORRESPONDENCE

- 2.2.1. All field and/or construction correspondence and/or communications must be directed through CM,. All correspondence should list the following as appropriate:
 - 2.2.1.1. Project Name: Waterford School District2013 Bond Issue
 - 2.2.1.2. CM Job#: _____ will be provided at pre-construction meeting
 - 2.2.1.3. Architect Job#: _____ will be provided at pre-construction meeting
 - 2.2.1.4. Contractor Contact Information
 - 2.2.1.5. Subject: clearly indicate subject matter of correspondence

2.3. CONTRACTOR'S DAILY REPORT

- 2.3.1. Each Contractor will prepare and distribute daily to CM a comprehensive daily report to include pre-task planning and maintain it during the entire project period. The daily report shall be

submitted to CM's superintendent by the end of the day for that day's Work. Each Contractor is responsible for specifically alerting CM to items which could result in claims or delays.

2.3.2. Each Contractor may provide its own daily report if it covers the same issues as addressed in CM's Contractor Daily Report / Pre-Task Plan form. The CM suggested report form will be provided to the Contractor and is in Section 01600 - Forms.

2.4. REQUEST FOR INFORMATION (RFI)

2.4.1. The Request for Information (RFI) is in Section 01600 Forms.

2.4.2. In the event that a clarification is required due to a question raised by the Contractor pertaining to the Contract Documents, the Contractor shall submit a Request for Information (RFI) to the CM, which will be forwarded to the Architect. The RFI should be sufficiently detailed to accurately describe the problem and provide a possible solution.

2.4.3. The Architect will return the RFI to CM as expeditiously as possible with its reply. In some instances, the Architect may issue its reply to the RFI on other documents, in which case, the RFI will simply reference these documents.

2.4.4. The RFI will be returned to the Contractor by CM. The Contractor is responsible to give proper notice as set forth in the Contract Documents if a response will cause the Contractor to incur additional expense or expend additional time which could impact the schedule. If extra work or an additional cost may exist due to the clarification, CM may issue a PCO- Quotation Only or PCO-Notice to Proceed to the Contractor.

END OF SECTION 01320

SECTION 01330
SUBMITTALS

1 SUMMARY

1.1. This Section describes the following requirements including:

- 1.1.1. Scope
- 1.1.2. Submittal Register
- 1.1.3. Submittal Requirements
- 1.1.4. Submittal Process and Responsibilities
- 1.1.5. Re-submission Requirements

2 SCOPE

- 2.01 Where requirements of this Section vary from the requirements of the General Conditions, this Section's requirements shall take precedence.
- 2.02 CM will prepare and submit a submittal register/schedule including close-out documentation for Contractor's use in preparing submittals required for the Project. Contractor's shall complete the submittal schedule/register showing the dates for submission, lead times required and their expected delivery dates to maintain and follow the construction schedule. Dates for submission noted by Contractor must assume re-submittals will be required. Submittals received on the date scheduled will be processed as specified. CM/Owner/Architect will not be held responsible for delays due to receiving submittals after the date indicated in the Contractor's submittal schedule.
- 2.03 Submittals shall be submitted based on each technical specification section. Submittals containing information about more than one specification section will be returned for re-submittal.
- 2.04 Contractor is responsible to provide all submittals required under the Contract Documents, whether or not listed in the submittal register.
- 2.05 Furnish approved copies of shop drawings, diagrams, templates, catalog cuts, technical data, etc. to others for the purposes of coordination of this Work.
- 2.06 Coordination: Each Contractor shall coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 2.06.1 The Contractor, by providing the submittal assures the product or system submitted is available and deliverable in accordance with the schedule requirements.
 - 2.06.2 Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2.06.3 Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - 2.06.4 CM reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 2.06.5 Coordinate each submittal as required with all trades and with all public agencies involved.
 - 2.06.6 Secure all necessary approvals from public agencies and others; signify by stamp or other means that all required approvals have been obtained.
 - 2.06.7 Material Compliance Certificate:
 - 2.06.7.1 Located at the jobsite are:
 - 2.06.7.1.1 Material Compliance Certificate
 - 2.06.7.1.2 Approved Submittal List for Material Compliance Certificate Use

- 2.06.7.2 Contractors may choose to complete the *Material Compliance Certificate* form which will serve as the Contractor's official submittal document and must meet all general submittal requirements. Only approved submittals listed on the *Approved Submittal List for Material Compliance Certificate Use*, prepared by CM, will be reviewed in this format.
- 2.06.7.3 Items available to utilize the Material Compliance Certificate can include a submittal that establishes a level of quality by complying with the manufacturer and manufacturer's designated identifier as called for in the Contract Documents. The Contractor is committed to using this exact specified component. This Certificate is contractually binding.
- 2.06.7.4 This form can be used for multiple submittal items. The Architect/Engineer will review and approve the Material Compliance Certificate in the same manner as a standard submittal.
- 2.06.7.5 In the event additional information would be required after submission and/or approval of the Material Compliance Certificate, the Contractor must provide this information promptly through the standard revision process.

3. SUBMITTAL REQUIREMENTS

3.1. GENERAL

- 3.1.1. Each submittal shall show Contractor's review stamp, with handwritten signature, certifying review of the submittal, verification of field measurements and compliance with the Contract Documents.
- 3.1.2. Each submittal shall be accompanied with a Submittal Transmittal Form. The following information shall be furnished by the Contractor on the submittal transmittal form:
 - 3.1.2.1. Original Date of submission and Revision Date(s).
 - 3.1.2.2. Project name and Architect's and the CM's project number
 - 3.1.2.3. Names of:
 - 3.1.2.3.1. Contractor
 - 3.1.2.3.2. Second-Tier Contractor (if applicable)
 - 3.1.2.3.3. Supplier
 - 3.1.2.3.4. Manufacturer
 - 3.1.2.4. Identification of product or material
 - 3.1.2.5. Technical Section number, clearly identified. On multiple submittals, a separate transmittal should be completed for each specification section on items being submitted.
 - 3.1.2.6. Reference to construction drawings by drawing number
 - 3.1.2.7. The quantity of each Shop Drawing, Product Data or Sample submitted
 - 3.1.2.8. Notification of deviations from Contract Documents
 - 3.1.2.9. For Shop Drawings, show relationship to adjacent structure or materials
 - 3.1.2.10. For Shop Drawings, show field dimensions, clearly stated as such.
 - 3.1.2.11. Applicable standards such as ASTM or Federal Specifications.
 - 3.1.2.12. Other pertinent data
 - 3.1.2.13. Submittals not so transmitted will be returned un-reviewed. Re-submissions shall be so noted on the transmittal.

3.1.3. Unless noted otherwise on the submittal, all submissions will be considered to be "as specified."

3.2. REQUIRED QUANTITIES OF SUBMITTALS (STANDARD PAPER REVIEW VERSION)

3.2.1. The following number of originals and copies will be required for each type of submittal:

Submittal Type	Submit	
1. Manufactures, suppliers, or Contractors shop drawings.	1 4	Reproducible sepia and sets of blue line prints copies.
2. Manufactures catalog sheets, product data, brochures, diagrams, schedules, performance charts, etc.	5	Copies
3. Samples	4	Samples (unless a specific number is required by specification.)
4. Certifications	5	Copies
5. Warrantees/Guarantees	2	Copies
6. Test Reports	5	Copies
7. Operating and Maintenance Manuals/Data	2	Copies

3.2.2. Following review by the Architect, documents will be distributed as follows:

- 3.2.2.1. One copy to be retained by the Architect
- 3.2.2.2. One copy to be sent to Owner/Architect
- 3.2.2.3. One copy each of original and reviewed submittal to be retained by CM
- 3.2.2.4. All remaining copies to be returned to Contractor

3.3. REQUIRED QUANTITIES OF SUBMITTALS (ELECTRONIC REVIEW VERSION)

3.3.2. The following number of originals and copies will be required for each type of submittal:

Submittal Type	Submit	
1. Manufactures, suppliers, or Contractors shop drawings.	1	Copy
2. Manufactures catalog sheets, product data, brochures, diagrams, schedules, performance charts, etc.	1	Copy
3. Samples	4	Samples (unless a specific number is required by specification.)
4. Certifications	1	Copy
5. Warrantees/Guarantees	1	Copy
6. Test Reports	1	Copy
7. Operating and Maintenance Manuals/Data	1	Copy

3. TYPES OF SUBMITTALS

4.1. SHOP DRAWINGS

- 4.1.1. Provide Shop Drawings as complete submittals (no partial sets) on original drawings or information prepared solely by the fabricator or supplier. In no instance shall the Contract Drawings be reproduced for Shop Drawing submittals.
- 4.1.2. Sheet sizes shall not exceed the size of the Contract Drawings or smaller than 8-1/2" X 11".
- 4.1.3. Each drawing shall have blank spaces large enough to accept three (3) 3" x 6" review stamps of the Contractor, the CM, and the Architect.

4.2. PRODUCT DATA

- 4.2.1. Modify Product Data sheets to delete information that is not applicable to the Project. Provide additional information if necessary to supplement standard information.
- 4.2.2. Product Data Sheets that are submitted with extraneous information not deleted and/or modified will be returned without review to the Contractor for re-submittal.

4.3. SAMPLES

- 4.3.1. Provide physical Samples to illustrate materials, equipment or workmanship, and to establish standards by which completed work may be judged as required by the technical section.
- 4.3.2. Provide Office Samples in sufficient size or as defined in the technical specifications and quantity to clearly illustrate full range of colors, textures, etc. available and the functional characteristics of the product or material.
- 4.3.3. Erect Field Samples or mock-ups as required by the technical sections and/or CM, at the Project site in a location designated by CM. Construct field samples complete, including Work of all trades required in finishing the Work. Provide Field Samples at the request of the Architect and/or CM where construction materials and/or methods deviate from the requirements of the intent of the Contract Documents or conventional construction practice.

4.4. CERTIFICATIONS

- 4.4.1. Certifications shall clearly identify the materials in reference and shall state that the material and the intended installation methods, where applicable, are in compliance with the Contract Documents for this project. Attach manufacturer's affidavits where applicable.

4.5. WARRANTEES/GUARANTEES

- 4.5.1. Provide warrantees and/or guarantees as required by the various technical sections and other Contract Documents on the Contractor's letterhead in accordance with the requirements of the documents.
- 4.5.2. Refer to Section 01700 for additional close-out information and requirements including the standard CM Contractor's Guarantee Form that must be signed, without modification, in order to receive final payment. A copy of this form is either found in Section 01600 or is available upon request.

4.6. OPERATING AND MAINTENANCE MANUALS

- 4.6.1. Provide operating and maintenance manuals/data as required by the various technical sections in accordance with the requirements of the documents.

5. SUBMITTAL PROCESS AND RESPONSIBILITIES

5.1. Contractor's RESPONSIBILITIES

- 5.1.1. After the CM's and Architect's review, within one (1) week of receipt, Contractor is to distribute copies of the reviewed submittal to any supplier/fabricators, second or lower tier Contractors or other Contractors that must coordinate with this work. Contractor must maintain one copy at the Project Site for reference use.

- 5.1.2. Do not begin Work which requires submittals until return of submittals with CM's and Architect's stamp and initials indicating review with direction to proceed from either CM or Architect..
 - 5.1.3. Contractor's responsibility for errors and omissions in submittals is not relieved by CM's or Architect's review of submittals.
 - 5.1.4. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by CM's or Architect's review of submittals unless CM and Architect give written acceptance of specific deviations.
- 5.2. CM'S RESPONSIBILITIES
- 5.2.1. CM's review is for general administrative purposes only and neither this review, nor any subsequent approval by CM of a submittal, shall relieve Contractor from its obligations to comply fully with the Contract Documents.
 - 5.2.2. CM will make changes or notations directly on the submittals, identify such review with its review stamp, sign and forward acceptable submittals to the Architect.
 - 5.2.3. After the Architect's review, CM will forward submittals to the Contractor and retain one copy.
- 5.3. ARCHITECT'S RESPONSIBILITIES
- 5.3.1. Architect will review submittals within two weeks after receipt, checking only for conformance with the design compliance of the Project and compliance with information given in the Contract Documents. If the submission is large and/or requires detailed or lengthy review by the Architect, additional time may be required.
 - 5.3.2. Architect will return to CM without review any submittals not bearing the Contractor's or CM's review stamp or not showing that it has been reviewed by the Contractor and CM.
 - 5.3.3. Architect will make changes or notations directly on the submittal, identify such review with its review stamp, obtain and record Architect file copy and return the submittal to CM.
- 5.4. RE-SUBMISSION REQUIREMENTS
- 5.4.1. For Shop Drawings: Review returned CM and/or Architect drawings and resubmit as specified. All changes made must be identified through bubbling or other approved method.
 - 5.4.2. For Product Data and Samples Resubmit new data and samples as required.

END OF SECTION 01330

**SECTION 01360
COORDINATION (GENERAL)**

1 COORDINATION OF WORK/COOPERATION

- 1.01 All Contractors are required to review, discuss and coordinate their Work with the Work of other contractors, Owner and CM with regard to sequence, timing, built-in Work and equipment, layout, location, compatibility of materials and sizes and required clearances prior to beginning the work to avoid construction delays which impact the Owner's occupancy of the facility.
- 1.02 Each Contractor
- 1.02.1 Coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
- 1.02.2 Make provisions to accommodate items scheduled for later installation.
- 1.02.3 Provide to all other trades all information (drawings, diagrams, templates, embedments, etc.) necessary for the coordination of the Work.
- 1.02.4 Layout and install its Work at such time and in such manner as not to delay or interfere with the carrying forward of the Work of others.
- 1.02.5 Verification and Acceptance of previous work
- 1.02.5.1 As Work under each Agreement commences, the condition of preceding Work under other agreements shall be verified and accepted by each subsequent Contractor when appropriate.
- 1.02.5.2 Report in a prompt manner any interferences, discrepancies or incompatibilities discovered to CM, whose decision as to the Contractor at fault and as to the manner in which the matter may be resolved, shall be binding and conclusive on Contractors involved. CM may direct layout/ location changes as required to make the entire work fit together. Reasonable changes of this nature will not entitle any Contractor to an increase in contract price.
- 1.02.5.3 Verification may, at CM's discretion, include a joint review by the subsequent Contractor, previous contractor(s), and CM to note any corrective Work required, similar items affecting the Work and particularly items which prevent acceptance by the subsequent contractors.
- 1.02.5.4 The verification review procedures and findings shall be submitted in writing by subsequent Contractors to the CM.
- 1.02.5.5 Any corrective work necessary to satisfy requirements of the Contract Documents shall be performed promptly by the previous Contractor to prevent delay to the work under the subsequent Contracts.
- 1.02.5.6 After corrective work is accomplished the subsequent Contractor shall furnish written acceptance of the work as noted above.
- 1.02.5.7 CM's participation in a joint review under this paragraph shall in no event be deemed to constitute approval of any layout or other Work that fails to comply with the **Contract Documents**.
- 1.02.6 Observation of the Work by others shall not relieve Contractor from its responsibility for coordination, supervision, or scheduling and direction of the Work.
- 1.02.7 Failure of a Contractor to notify others and CM of a potential interference, incompatibility, or discrepancy and any failure to coordinate Work with that of others prior to installation and/or fabrication shall be at the Contractor's risk.

END OF SECTION 01360

SECTION 01400
QUALITY REQUIREMENTS

1. DOCUMENT CONTROL PROCEDURE

- 1.1. Each Contractor is to provide CM its document control procedure to include drawing submittals and surveillance. In the absence of such a procedure, the Contractor will use the following procedure for document control.

“A log is maintained identifying the drawing revision status, issue date and distribution (internal and external). The transmittal issuing the changed documents will indicate what changes are made and indicate that the documents are approved for use. Contractor meetings include a review of approved drawings. The review is documented in the meeting minutes. Superintendent surveillance activities include monitoring Contractor drawing use.”

2. QUALITY CONTROL

- 2.1. Each Contractor is responsible to provide the Owner with a completed quality product for its Work. Each Contractor shall be responsible for any costs associated with re-testing and re-performing the Work as a result of the Contractor's poor performance or workmanship or other failure to comply with the Contract Documents.
- 2.2. All Work shall be done by persons qualified in their respective trades, and the workmanship shall be first-class in every respect. **Each Contractor is responsible for ensuring employees are appropriately trained.** All materials and equipment furnished shall be the best of their respective kinds for the intended use and unless otherwise specified, same shall be new and of the latest design.
- 2.3. The Contractor shall provide CM, Owner and Architect access to the Work in preparation and progress wherever the Work is located at all reasonable times.

Note: CM and the Architect will have the authority to reject Work that does not conform to the Contract Documents or may require special inspection or testing, whether or not such Work is to be then fabricated, installed or completed. The Architect shall make all decisions with respect to questions concerning the quality or fitness of materials, equipment and workmanship.

- 2.4. Failure by a Contractor to conduct its operations, means and methods and coordinate proper sequencing of the Work may cause the Division Public Schools to withhold payment or any other means deemed necessary to correct non-conforming Work.

3. NOTIFICATIONS AND CORRECTIONS OF NON-CONFORMANCE

- 3.1. CM and the Architect may conduct observations/evaluations of the Contractor's Work. CM and/or Architect's reviews do not relieve the Contractor from compliance with the Contract Documents or necessary corrections for deficiencies thereof. Contractors whose Work does not meet the standards set by the Contract Documents will be notified by representatives of the CM using a Corrective Action Report. The Contractor, upon receipt of the Corrective Action Report, shall complete and return the form and provide the corrective actions necessary in a timely manner as outlined.
- 3.2. The **Corrective Action Report (CAR) (CON 18.2)** is in Section 01600 Forms.

4. CONTRACTOR PERFORMANCE EVALUATION

- 4.1. CM will be evaluating Contractor's performance and will provide feedback during the life of the Project, on Contractor's performance, for the purpose of improving CM's Contractor selection process for future project endeavors.
- 4.2. This Contractor Performance Evaluation form is generated by the CPS Database.

END OF SECTION 01400

SECTION 01450
TESTING AND INSPECTION SERVICES

1. CONTRACTOR'S RESPONSIBILITIES

- 1.1. The testing firm will report directly to the Davision Public Schools. Copies of test and inspection reports will be furnished to the appropriate Contractors. The laboratory and its representatives will be instructed to promptly call to the attention of the Contractor any instance of non-compliance with the requirements of the Contract Documents. Failure to so notify the Contractor shall not relieve the Contractor of any of its responsibilities for compliance or making good workmanship or materials which are not in compliance with the requirements of the Contract Documents.
- 1.2. Each Contractor shall cooperate with the testing firm and provide labor to assist and lifts, ladders or other means to permit full access for testing firm and to assist with sample preparations where applicable.
- 1.3. The Contractor is responsible to pay the cost of additional testing in the event that additional testing of the Contractor's materials, installation, and other Work is required by the independent testing laboratory because of test results not in compliance with the Contract Documents and/or additional testing required as a result of Contractor's negligence or poor workmanship.

2. CONTRACTOR RESPONSIBILITIES

2.1. CONTRACTOR SHALL:

- 2.1.1. Notify CM sufficiently in advance of operations (24-hours minimum) to allow for laboratory assignment of personnel and scheduling of tests.
 - 2.1.1.1. When tests or inspections cannot be performed after such notice, reimburse Davision Public Schools for all expenses incurred arising out of or resulting from Contractor's negligence.
- 2.1.2. When the Contractor is providing the testing and prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered engineer and responsible officer. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards (NBS) during most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.

3. RE-TEST RESPONSIBILITY

- 3.1. Where the results of required inspections, tests, or similar services prove unsatisfactory and do not indicate compliance with the requirements of the Contract Documents, the re-tests shall be the responsibility of the Contractor regardless of whether the original test was the Contractor's responsibility.
- 3.2. Re-testing of Work revised or replaced by the Contractor is the Contractor's responsibility where required tests were performed on original Work. All costs and fees for re-testing shall be paid by the Contractor.
- 3.3. Schedule delays and costs which are the result of non-conforming work or remedy will be the responsibility of the offending Contractor.

END OF SECTION 01450

SECTION 01500
INTERIM LIFE SAFETY PLAN

1. PURPOSE AND POLICY

- 1.1. **PURPOSE:** To provide interim life safety measures during a construction Project. To protect Owner personnel, visitors, students and property from fire and injury during remodeling or construction. This policy is used wholly or in conjunction with the safety program in the Project Manual.
- 1.2. **POLICY:** During a construction Project it shall be the responsibility of the Director of Facilities (or designee) and CM (through trade Contractors) to maintain compliance with the Life Safety Code NFPA Section 101. Compliance will be through the implementation of the following:

2. NOTIFICATIONS

- 2.1. Contractor shall communicate and coordinate through CM for all changes to Life Safety measures including changes to: egress, the fire suppression system, the fire alarm system or any other Life Safety related changes to the construction site.

3. INTERRUPTION OF EXIT - EGRESS CORRIDOR

- 3.1. Should construction of temporary structures for egress/exit be necessary:
 - 3.1.1. Contractor will review with and obtain approval from CM any changes to the means of egress. This review and approval shall include the Owner and Architect to confirm appropriate travel distances to exits are maintained/established.
 - 3.1.2. Contractor shall obtain approval from State Fire Marshal for any planned temporary exiting structure prior to construction/implementation.
 - 3.1.3. All Contractors shall be responsible for maintaining temporary egress/exits:
 - 3.1.3.1. Each Contractor is responsible to protect, kept free of restrictions or obstructions, and maintain in full use all entrances to and exits from existing buildings and the construction site at all times. The safety and well-being of all persons must be of prime concern.
 - 3.1.3.2. Contractor shall maintain and not disturb any temporary construction, including stairs, ramps, protected walkways, railings, lights and direction signage as required to maintain adequate exiting from the existing building.
- 3.2. Should an alternate egress route be necessary:
 - 3.2.1. Contractor shall submit the appropriate forms to CM so all affected departments will be notified. Contractor shall not begin any work associated with a change in egress until the Owner has verified its internal departments are notified and prepared for the change.
 - 3.2.2. Contractor shall install and maintain temporary exit signage and Contractor shall install and maintain temporary directional signage prior to starting Work associated with the change in egress..

4. INTERRUPTION OF THE SPRINKLER SYSTEM

- 4.1. Refer to the above matrix for advanced notification times and shut-down request distribution.
- 4.2. Priority will be given to localized interruption of these systems on first shift Monday through Friday when full staff is available when any shut down is necessary:
- 4.3. Contractor will provide an organized fire watch until the system is fully functional.

5. INTERRUPTION OF FIRE/SMOKE DETECTION AND ALARM SYSTEM

- 5.1. Refer to the above matrix for advanced notification times and shut-down request distribution.
- 5.2. Contractor shall maintain the operation of the total fire detection/alarm during the construction.

5.2.1. It is acceptable for the Contractor to place a thin plastic cover over the detector head during high dust producing activities with Contractor's prompt removal upon completion of the work.

5.2.2. At all other times the system will be returned to normal operating status.

5.3. Should the fire/smoke detectors and alarms systems be interrupted:

5.3.1. Contractor will provide an organized fire watch until the system is fully functional.

5.3.2. Temporary alarm pull stations will be established as a minimum should the interruption last more than twenty-four (24) hours.

6. CONSTRUCTION SITE MAINTENANCE

6.1. For interior construction. Contractor **shall:**

6.1.1. Refer to the above matrix for prior notifications.

6.1.2. Maintain existing Fire/Smoke Barriers and compartments.

6.1.3. Provide and maintain temporary partitions adjacent to functioning departments that are a UL rated 2-hour assembly and smoke/dust tight and non-combustible. Provide documentation of the UL rated assembly type to CM prior to constructing this Work.

6.1.4. Maintain temporary enclosures, fire-rated dust curtains, and all other necessary materials and equipment as required to prevent introduction of dust, dirt or debris into occupied portions of the building.

6.1.5. Coordinate locking of the construction area with CM and the Owner.

6.2. For exterior construction - Contractor shall:

6.2.1. Maintain site clearance for access to the external fire department connections.

7. REFERENCES

7.1. All current Life Safety codes

END OF SECTION 01500

SECTION 01520
TEMPORARY CONSTRUCTION

1 SUMMARY

1.01 This Section describes the following requirements including:

- 1.01.1 Project Signage
- 1.01.2 Snow Removal
- 1.01.3 Security
- 1.01.4 Temporary Field Office, Facilities and Parking
- 1.01.5 Temporary Fencing
- 1.01.6 Temporary Toilet Facilities
- 1.01.7 Drinking Water/Temporary Water
- 1.01.8 Roof Protection
- 1.01.9 Scaffolding
- 1.01.10 Water Control
- 1.01.11 Temporary Material Hoist/Elevator
- 1.01.12 Fire Precautions and Protection
- 1.01.13 Noxious Odors and Fumes
- 1.01.14 Temporary Stairs, Ladders, Ramps, Runways, and Barricades
- 1.01.15 Temporary Electrical Power and Light
- 1.01.16 Temporary Heating and Weather Protection
- 1.01.17 Temporary Enclosures

2 CONSTRUCTION FACILITIES

2.01 PROJECT SIGNAGE

2.01.1 The CM shall provide a project sign. No other signs or advertising shall be displayed on the premises without the approval of the Architect, Owner, and CM. This does not exclude the posting of required trade notice and cautionary signage by Contractors.

2.02 SNOW REMOVAL

2.02.1 Contractors performing Work under exposed conditions shall remove snow and ice for the protection and execution of their Work. Keeping public traffic areas and circulation routes free of snow shall be the responsibility of the CM/DESIGNATED CONTRACTOR.

2.03 SECURITY

2.03.1 The services of a security guards will not be provided by CM.

2.03.2 Each Contractor, at its own cost and expense, may provide security guard, protective service or other means of site security as it deems necessary.

2.03.3 Contractors shall advise CM of any theft or damage which might delay the execution of the Work and furnish the Owner and CM with a copy of any theft report filed with local, county or state agencies.

2.03.4 Neither CM nor Owner assumes any responsibility for loss, theft or damage to the Contractor's materials or for damage to Work in place before the completion of the construction. In the instance of any such loss, theft or damage, the Contractor shall be responsible to renew, restore or

remedy the Work, tools, equipment and construction in accordance with requirements of the Contract Documents without additional cost to CM.

- 2.03.5 CM is not responsible for damage, liability, theft, casualty or other hazard to the automobiles or other vehicles, nor to injury, including death, to occupants of automobiles or other vehicles on the Owner's property.
- 2.03.6 CM may establish additional security policies and procedures. All Contractors will be required to cooperate with CM in implementing these procedures.
- 2.03.7 Site-parked equipment, operable machinery and hazardous parts of the new construction subject to mischief and accidental operation shall be inaccessible, locked or otherwise made inoperable when left unattended.

2.04 TEMPORARY FIELD OFFICE, FACILITIES AND PARKING

- 2.04.1 The Owner may designate an area for construction trailers. Placement and scheduled duration shall be coordinated by CM. Each Contractor is responsible to verify that all field offices, trailers and storage sheds shall be in accordance with the local Fire Marshal having jurisdiction. Each Contractor shall arrange and pay for its own telephone hookup and use. Each Contractor shall arrange and pay for its own temporary electrical hook-up, water and toilets. The Owner shall pay for all power used for the Contractor's temporary field office and temporary electrical service. Construction personnel will be allowed to use the existing Owner parking facilities. Designated Contractors will be allowed to have on-site construction trailers. Construction trailers shall be limited to 10' x 30' or smaller.
- 2.04.2 Contractors shall maintain the use of designated space for offices and sheds. This includes removal of weeds, debris, trash and clean-up of the area after removal of such temporary structures.
- 2.04.3 Temporary field offices and sheds shall not be used for living quarters. .
- 2.04.4 Offices and sheds shall be of suitable design, maintenance and appearance, and meet the approval of CM and all applicable local codes and ordinances.
- 2.04.5 All temporary offices and sheds including foundations, must be removed within ten (10) days of written notice from CM including restoration of grade. Structures not removed in a timely manner will be removed by CM at Contractor's expense.
- 2.04.6 If a temporary office is built in the building, it must be fire treated in accordance with Section 01510, Fire Precautions and Protection.

2.05 TEMPORARY FENCING

- 2.05.1 The DESIGNATED CONTRACTOR may provide temporary fencing with gates for required access and remove same at the completion of the Project.
- 2.05.2 The Contractors shall repair or replace fencing damaged as a result of its operation. Contractors shall remove and replace fencing and gates required to provide access for oversized items.

2.06 TEMPORARY TOILET FACILITIES

- 2.06.1 The CM shall provide and maintain temporary toilet facilities for the construction of the Project. The use of the Owner's existing permanent facilities is as described in Section 01140 Use of Premises.
- 2.06.2 During renovation activities, CM may obtain, through the Owner, permission to use designated toilet facilities within the contract boundaries for construction use. The use of the Owner's existing permanent facilities outside the construction boundaries is strictly not allowed.

2.07 DRINKING WATER/TEMPORARY WATER

- 2.07.1 The Owner will pay for water used on this Project and the CM shall provide a source for drinking water. Each Contractor shall be responsible to provide containers, paper cups, ice, hoses, etc. for its needs.
- 2.07.2 Immediately after award of the Agreement, the designated contractor shall furnish, install, maintain and subsequently remove a temporary hookup to the Owner's potable water system where directed by CM for construction purposes. The Contractor shall provide all temporary piping and approved backflow prevention as necessary for distribution from the source. Distribution of temporary water will be paid for by Contractors requiring same. A minimum of two (2) hose bibs shall be provided by the Contractor as directed by CM.

2.08 ROOF PROTECTION

- 2.08.1 Contractors and their Subordinate Parties, shall be responsible for damages to roofing, sheet metal and roof structure while performing Work. The Roofing Contractor will perform the repair Work at the expense of the Contractor responsible for the damage.
- 2.08.2 All Contractors will protect adjacent existing roof surfaces while performing their Work. No construction materials will be allowed to be placed on existing roof surfaces without prior approval of the Owner through CM.

2.09 SCAFFOLDING

- 2.09.1 Each Contractor is responsible for providing and maintaining any and all ladders, scaffolds and other staging as required to complete its Work. All such ladders, scaffolds and staging equipment shall be erected, maintained and subsequently removed by each Contractor in accordance with all applicable safety laws, rules and regulations.

2.10 WATER CONTROL

- 2.10.1 All pumping, bailing or well point equipment necessary to keep excavations and trenches free from the accumulation of water during the entire excavating and backfilling progress of the Work shall be the responsibility of the Contractor performing said excavations and trenches due to its scope of Work.
- 2.10.2 Each Contractor shall be responsible for keeping the building at grade and below free from water from the time the building backfill is completed until the building is watertight.
- 2.10.3 Dispose of water in such a manner as will not endanger public health or cause damage or expense to public or private property. Abide by the requirements of any public agencies having jurisdiction.

2.11 TEMPORARY MATERIAL HOIST/ELEVATOR

- 2.11.1 Each Contractor is responsible for its own hoisting and material/ equipment movement costs as required to complete the Work under its Agreement.
- 2.11.2 Transportation of construction materials through the Owner's facility shall be accomplished in accordance with the requirements described in Section 01140 Use of Premises in such a manner so as to:
 - 2.11.2.1 Not damage any of the existing facility.
 - 2.11.2.2 Not impair the Owner's use of the facility.
 - 2.11.2.3 Not create any type of mess or additional cleaning requirements in Owner occupied areas.
- 2.11.3 The Owner's lifting equipment is not available for the unloading, conveying or installation of Contractor's materials.

3 FIRE PRECAUTIONS AND PROTECTION

- 3.01 All Contractors and their Subordinate Parties shall

- 3.01.1 Assume full responsibility and take all necessary precautions to guard against and eliminate all possible fire hazards and to prevent damage to any construction work, building materials, equipment, temporary field offices, storage sheds, and all other property, both public and private.
- 3.01.2 Conspicuously post the location of the nearest fire alarm pull box and the telephone number of the local fire department within the field offices and on the construction site adjacent to its Work
- 3.01.3 Take precautions to prevent fire hazards in accordance with all fire protection and prevention laws and codes. No open fires shall be permitted.
- 3.01.4 Shall not be permitted to perform welding, flame cutting, or other operations involving the use of flame, arcs, or sparking devices without submitting a Hot Work Permit to CM a minimum of 24 hours prior or without adequate protection and shielding. Hot Work Permits can be obtained through CM. All combustible and flammable material shall be removed from the immediate area of the hot work. Material shall be protected with a fire resistant tarpaulin to prevent sparks, flames, or hot metal from reaching materials.
 - 3.01.4.1 Only fire resistant tarpaulins shall be used on this Project.
- 3.01.5 Provide the necessary personnel and fire fighting equipment to effectively control incipient fires resulting from the hot work.
- 3.01.6 Provide its own fire extinguishers in the immediate area of the Work.
- 3.01.7 Review the entire Project at least once a week to make certain it has adhered to the conditions and requirements set forth herein.
- 3.01.8 Shall not bring into building at any one time more than a one day supply of flammable liquids such as oil, gasoline, paint or paint solvent
 - 3.01.8.1 All flammable liquids having a flash point of 110 degrees F or below, which must be brought into any building, shall be confined to Underwriter's Laboratories' labeled safety cans.
 - 3.01.8.2 The bulk supply of all flammable liquids shall be detached at least 75 feet from the building and from yard storage of building materials.
 - 3.01.8.3 Spigots on drums containing flammable liquids are prohibited on the project site. Drums are to be equipped with approved vent pumps.
- 3.01.9 Not store or leave overnight within the confines of the permanent building any combustible materials.
 - 3.01.9.1 This includes all internal combustion engines using gas or fuel oil.
 - 3.01.9.2 Hoisting of flammable or combustible materials to the roof shall only be in quantities as needed for immediate use
- 3.01.10 Agree that, in the event of fire, all its workers anywhere on site will assist in extinguishing the fire
- 3.01.11 Coordinate with the Owner and CM the permanent fire protection water supply, fire extinguishing equipment, shut down and tie-ins between new and existing fire protection systems shall be installed at the earliest possible date.
 - 3.01.11.1 As each sprinkler system is completed and placed in service, the control valve shall be sealed. Permission to break seals and close sprinkler valves shall be given only by CM with approval of the Owner.
- 3.01.12 Not place shanties of combustible construction inside of any structure.
 - 3.01.12.1 Such shanties shall be detached at least seventy-five (75) feet from the building or as directed by CM with approval of the Owner.
 - 3.01.12.2 Totally incombustible shanties may be, if approved in writing by CM, located inside of the structure

- 3.01.12.3 Use of only Underwriter's Laboratory approved heaters and/or stoves is permitted in field offices or storage sheds and they shall have fire resistive material underneath and at the sides near partitions and walls. Pipe sleeves and covering shall be used where stove pipe runs through walls or roof

3.02 FIRE EXTINGUISHERS

- 3.02.1 Fire extinguishers shall be "all purpose", and not a water type, to meet the approval of the Fire Underwriter's Laboratory, and will be inspected at regular intervals and recharged if necessary.
- 3.02.2 In areas of flammable liquids, asphalt or electrical hazards, extinguishers of the 15 lb. carbon dioxide type or 20 lb. dry chemical type shall be provided
- 3.02.3 CM will provide and maintain in working order at all times during construction not less than a fire extinguisher for each 3000 sq feet with travel distance not to exceed 100 feet.
- 3.02.4 All other required extinguishers shall be provided by the Contractor creating such hazard

3.03 NOXIOUS ODORS AND FUMES

- 3.03.1 Combustion engine equipment, tar kettles and any other items causing noxious odors or fumes, including diesel powered equipment, will NOT be allowed in the building or near air intake louvers or building entrances and exits. If intake louver locations are in doubt, consult with CM.

4 TEMPORARY STAIRS, LADDERS, RAMPS, RUNWAYS, AND BARRICADES

- 4.01 Each Contractor is to provide and maintain all necessary temporary stairs, ladders, ramps, and runways to facilitate conveyance of workers, materials, tools, and equipment for proper execution of its Work. All protection and safety barricades, devices, covers, and all other necessary items shall be provided by each Contractor as it relates to the safe conduct of its Work and protection of people and property in its Work area in accordance with applicable law.
- 4.02 Any Contractor or Subordinate Party performing excavation Work shall be responsible to furnish, install and maintain temporary barricades and/or fencing of all open excavations until such time as the backfilling is complete. Flasher lights shall be provided on barricades and fencing by the Contractor as requested by CM and in accordance with applicable law. As a minimum, all barricades across roads and walks shall have lights on them in working condition.
- 4.4. Each Contractor and its Subordinate Parties shall provide and maintain in good repair barricades, overhead protection, guard rails, etc., as required by law or necessary for the protection of the public and personnel engaged in the Work from hazards incidental to performance of the Work. Contractor shall do everything necessary to protect the Owner's employees, the public and workers from injuries and to protect vehicles and other property from damage.

5. TEMPORARY ELECTRICAL POWER AND LIGHT

5.1. Electrical Energy Costs

- 5.1.1. The Owner will pay for electrical energy to operate temporary electrical power and lighting for the duration of the project at designated locations. Temporary power will be provided free of charge.

5.2. Power Source

- 5.2.1. The Electrical Contractor shall provide, install, and pay for labor, equipment and materials required to make connections to the Owner's power source and to provide temporary electrical power and light distribution. The Electrical Contractor shall coordinate the location of the electrical power and lighting as directed by CM.
- 5.2.2. The Electrical Contractor will provide for each construction trailer(s) a 120/208 volt (or 120/240 volt), 100 ampere single phase power source to which the Contractor who occupies the trailer may connect. The cost of hook up and removal of temporary electrical service to trailer shall be each Contractor's responsibility.

- 5.2.3. Protection shall be provided for the power supply source complete with disconnect switch and other required electrical devices.
- 5.3. Rules and Regulations:
- 5.3.1. All temporary equipment and wiring for power, lighting and distribution requirements shall conform to OSHA/NFPA requirements and be in accordance with applicable provisions of governing laws, codes, and ordinances.
- 5.3.2. All temporary wiring and distribution equipment shall be maintained so as not to constitute a hazard to persons or property.
- 5.4. Temporary Power Distribution:
- 5.4.1. The Electrical Contractor will provide and maintain temporary power distribution as follows:
Construction power shall be 120/208 volts, 60 hertz, 3 phase, 4 wire plus ground, alternating current. Provide the following outlets together with feeders, grounding, protective devices and ground fault interrupting devices.
- 5.4.1.1. Power centers - on each floor of the new building, provide a minimum of two (2) power centers or not less than one (1) per 10,000 s.f. rated not less than 100 amperes at 120/208 volt, 3 phase, 4 wire plus ground. Within the remodeled areas, provide at least one (1) additional similarly rated power center. Locate the power centers such that each will serve approximately equal areas and as far as possible, each be in the center of the respective area served.
- 5.4.1.2. 120 volt duplex outlets - Provide weatherproof, G.F.I. protected, 20 ampere grounded outlets at a minimum rate equal to 1 - duplex outlet per 400 square feet. Outlets may be grouped in clusters of up to six duplex types with corresponding pro-rated increase in area served, provided that every portion of the construction and remodeled premises can be reached from the nearest outlet using a flexible cord no more than 50 feet in length.
- 5.4.2. As partitions are erected, locations of power distribution points shall be added or relocated.
- 5.4.3. Ground Fault Circuit Interrupter (GFCI) protection will be provided on all temporary power receptacles and, where possible, directly on the circuit breaker supplying temporary power as referenced in NEC 305-6(a).
- 5.4.4. The assured equipment grounding conductor program is only to be used on circuits greater than 20 amps as referenced in NEC 305-6(b).
- 5.5. Temporary Electrical Light Distribution:
- 5.5.1. The Electrical Contractor shall provide and maintain temporary electrical light distribution as follows:
- 5.5.1.1. Lighting shall be achieved using 120 volt guarded incandescent fixtures, or other suitable fixture types, to Federal or State OSHA required minimum levels of illumination.
- 5.5.1.2. 120 volt temporary lighting as required in interior work areas. In addition to these minimum requirements provide adequate security lighting at guarded entrances outside storage areas, parking areas, and in areas of Contractor's and Architect's field offices and sheds.
- 5.5.2. As partitions are erected or other interferences which hamper achieving the minimum levels of illumination, locations of lighting distribution points shall be added or relocated.
- 5.5.3. Task lighting in addition to OSHA required lighting shall be provided by each Contractor.
- 5.6. Temporary Power and Light for Special Conditions:

5.6.1. Special conditions for temporary electrical power and lighting required by others shall be provided as follows:

5.6.1.1. Each Contractor requiring service of capacity or characteristics other than specified must make arrangements with the Electrical Contractor and pay for their own installation, removal, and service.

5.6.1.2. Where 3 phase power is required, the Contractor must pick up service at the distribution panel located outside the building addition.

5.6.1.3. The necessary grounded portable cords, lamps, light-stands, and fuses from the distribution outlets to points of use shall be provided by each Contractor to suit its own requirements.

5.7. Servicing of Temporary Power and Lighting:

5.7.1. The Electrical Contractor shall be responsible for the following:

5.7.1.1. Servicing, repairing and rearrangement of service equipment, temporary power, temporary lighting , and re-lamping

5.7.1.2. Removal and disposal of temporary electrical power and lighting at completion of the Project or when so directed by CM and repair of damage caused by installation or removal.

5.8. Permanent Electrical Power and Lighting:

5.8.1. When permanent electrical power and lighting systems are in operating condition, they may be used for temporary power and lighting for construction purposes provided the Electrical Contractor:

5.8.1.1. Obtains the approval of the Architect and/or Owner through CM.

5.8.1.2. Assumes full responsibility for operation of the entire power and lighting systems.

5.8.1.3. Verifies that warranty dates are established prior to usage of equipment and lamps.

5.8.1.4. Pays costs for operation, maintenance, and restoration of the systems.

5.8.2. As permanent power and lighting becomes available, these systems will generally supplant the appropriate portions of the temporary installation.

6. TEMPORARY HEATING AND WEATHER PROTECTION

6.1. Temporary heating requirements during the course of construction shall be divided into two categories as follows:

6.1.1. Cold weather protection.

6.1.2. Temporary heating.

6.2. Cold Weather Protection:

6.2.1. Heating required during the construction period prior to enclosure of the building shall be classified as "cold weather protection."

6.2.2. Each Contractor shall provide temporary heating and protection, necessary to allow its Work to continue during cold weather to meet the project milestone dates prior to building enclosure, including:

6.2.2.1. The heating of materials (such as water and aggregate) as well as space heating for protection of newly placed or built construction at required temperatures (but not lower than 50 degrees F) and for the time specified.

6.2.2.2. Fire retardant tarpaulins and other materials used for temporary enclosures.

6.2.3. Masonry Contractor shall provide plan to allow Work to continue without regard to temperature.

- 6.2.4. Heat shall be provided by smokeless UL approved portable unit heaters, using fuel of types and kinds approved by Underwriter's Laboratories, Factory Mutual, and the Fire Marshal.
 - 6.2.4.1. The Contractor shall provide fuel, power, maintenance, and attendance required for operation of portable heaters.
 - 6.2.4.2. Interior or exterior surfaces damaged by the use of portable heating units shall be replaced with new materials at the responsible Contractor's expense.
- 6.2.5. It shall be the responsibility of each Contractor to protect its own Work.
- 6.3. Temporary Heating:
 - 6.3.1. Daily construction heat required after the building is enclosed shall be classified as "temporary heating" and will be the responsibility of the Owner to install and maintain.
 - 6.3.2. The building or buildings or any portions thereof shall be considered enclosed when in the opinion of CM:
 - 6.3.2.1. The exterior wall system and temporary interior wall enclosures are in place.
 - 6.3.2.2. Openings in exterior walls are covered to provide reasonable heat retention.
 - 6.3.2.3. The building is ready for interior drywall, masonry and plastering operations.
 - 6.3.2.4. The permanent roof is substantially installed.

The designated contractor shall provide and maintain the temporary interior wall enclosures. If the exterior wall system is not complete in time to provide building enclosure of a portion of the new structure as scheduled, the designated contractor shall provide and maintain temporary exterior wall enclosures of polyethylene and, in addition to exercising all other rights and remedies under the Contract Documents and law, CM shall be entitled to deduct the cost of such enclosures from the moneys due or to become due the Contractor(s) responsible for failure to meet said schedule.
 - 6.3.3. In areas of the building or buildings where Work is being conducted, the temperature shall be maintained as specified in the various sections of the specifications, but not less than 50 degrees F for interior rough-in and not less than 60 degrees F during finishes installation. The temperature shall not be allowed to reach a level that will cause damage to any portion of the Work, including materials stored in the building, which may be subject to damage by low temperatures.
 - 6.3.4. Until the permanent heating system, or suitable portion thereof, is in operating condition, provide sufficient and UL approved space heaters of suitable capacity to maintain required temperatures in areas where work is being conducted and materials are stored. Include all necessary maintenance, venting and attendance for this temporary heating to meet all applicable laws, rules and regulations.
 - 6.3.5. When the permanent heating system, or a suitable portion thereof, is in operating condition, the system may be used for temporary heating, provided the Electrical Contractor:
 - 6.3.5.1. Obtains approval from CM in writing for its use and any special provisions required for its temporary operation.
 - 6.3.5.2. Assumes full responsibility for the entire heating system until final acceptance of the system by the Owner.
 - 6.3.5.3. Uses supply only, not return if temporary heating utilizes the building's ductwork system.
 - 6.3.5.4. Pays all costs for maintenance, attendance and restoration to "like new" condition of the system including final cleaning of equipment and ductwork and all necessary touch-up painting.
 - 6.3.5.5. Turns over satisfactory evidence to CM showing the extended warranties from manufacturers and proper maintenance procedures.

- 6.3.5.6. Provides and maintains temporary filters, boxes and other parts used for the temporary condition and replaces same with the new permanent filters at time of occupancy consistent with the warranty provisions. The Electrical Contractor shall pay the cost of extending warranty and guarantee periods on any permanent equipment used prior to substantial completion.
- 6.3.6. Electrical power required for temporary heating will be furnished free of charge. The installation and service of the necessary temporary electrical feeders will also be the responsibility of the Electrical Contractor.
- 6.4. TEMPORARY ENCLOSURES
 - 6.4.1. Each Contractor as noted in the bid documents shall provide temporary (insulated) weather-tight closures of openings in exterior surfaces to provide acceptable working conditions and protection for materials, to allow for temporary heating, and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.
 - 6.4.2. Each Contractor as noted in the bid documents shall provide temporary roofing as required to provide and maintain a watertight enclosure during construction.
 - 6.4.3. Each Contractor as noted in the bid documents shall provide temporary partitions and ceilings as required to separate Work areas from Owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas and to prevent damage to Owner's facilities and equipment.

END OF SECTION 01520

SECTION 01530
FIELD ENGINEERING AND LAYOUT

- 1 LAYOUT OF THE WORK; Each Contractor shall
 - 1.01 employ a qualified engineer or registered surveyor to stake out and locate the construction and reference points as needed to properly locate the Work under its contract.
 - 1.1. be responsible for detailed and accurate layout of its own and its Subordinate Parties' Work to dimension from the principal lines.
 - 1.2. make provisions to preserve all control points, such as monuments, stakes, bench marks or other datum points and shall replace at its own cost any of these which might be lost or displaced through its neglect.
 - 1.3. examine the conditions under which the Work is to be installed, shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Any errors, inconsistencies, omissions, discrepancies or conditions detrimental to proper performance of the Work that are discovered shall be reported to CM at once. Contractors are not to proceed until the required corrections are accomplished.
2. Verification and Documentation
 - 2.1. The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by Architect or the work installed by other contractors, is not guaranteed by Owner or CM.
 - 2.2. In all cases of interconnection of its Work with existing or other Work, it shall verify all dimensions relating to such existing or other Work. Any errors due to the Contractor's failure to verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner or CM..
 - 2.3. As the Work progresses, the Contractor shall prepare lay out drawings showing the exact locations of Work under its Contract as a guide to all trades. Prior to any installation, the separate Contractors shall exchange layout drawings and coordinate the Work and be subject to verification by all subsequent Contractors.
 - 2.4. Each Contractor shall be responsible to take such field measurements as may be required to determine the size of ordered material. In the event "guaranteed dimensions" are required, the Contractor shall promptly advise other Contractors through CM by use of drawings, templates or mock-ups of the required conditions.
 - 2.5. All Work, and in particular, piping, ducts, conduit and similar items, shall be neatly and carefully laid out to provide the most useful space utilization and the most orderly appearance. Except as otherwise indicated or directed, piping and similar Work shall be installed as close to above ceiling floor slabs and walls as conditions reasonably permit, located to prevent interference with other Work or with the use of the spaces. . Before Contractor installs a valve in an exposed location, it must make all efforts to install it in an accessible, concealed location. Contractors shall carefully plan the layout and review any questionable installations with CM.
 - 2.6. The Owner or CM may utilize a registered land surveyor to verify alignment and layout of certain portions of the Work. If that Work is out of tolerance or incorrect, the installing Contractor will be responsible for prompt correction of the Work to comply with the Contract Documents, along with all expenses incurred by Owner or CM in such verification process, including, but not limited to, the cost for the surveying services, as well as the additional time expended by CM personnel at standard billing rates.

END OF SECTION 01530

SECTION 01540 CUTTING AND PATCHING

1 INSPECTION

- 1.01 Before cutting , examine surfaces to be cut, including elements subject to damage or movement during cutting and patching work. Report any unsatisfactory or questionable conditions to CM in writing.
- 1.02 Before proceeding, meet at the site with CM and the parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference, conflict and possible effects on the Owner's existing operations. Coordinate procedures, temporary support, methods of dust and water protection, etc. and resolve potential conflicts before proceeding.
- 1.03 When working in and around existing buildings, if any hazardous material is encountered or is suspected to be present, immediately notify CM and stop work in this area as described in Section 00840 Hazardous Materials until further direction is given by CM or the Owner.

2 PREPARATION

- 2.01 Provide adequate temporary support to assure the structural value and integrity of the affected portion of the work. Where specified or required, submit temporary support methodologies for approval.
- 2.02 Provide devices and methods to protect adjacent areas or other portions of the Project from damage including dust protection, water protection, and exposure.
- 2.03 Maintain excavations free of water.

3 EXECUTION

- 3.01 The use of gasoline powered equipment, jackhammers or power actuated tools and explosives is prohibited on this Project.
- 3.02 Each Contractor shall:
 - 3.02.1 On behalf of itself and its Subordinate Parties be responsible for the cutting of all holes and openings through existing walls, partitions, ceilings, floors and roofs as necessary for the installation of its Work. Holes and openings shall be neatly cut and of minimum size to allow the Work to be installed. Execute cutting and demolition by methods which will prevent damage to other Work, and will provide proper surfaces to receive installation of repairs.
 - 3.02.2 Execute work in such a manner as to minimize disruptions to or interference with the Owner's normal operations or functioning in the existing buildings and provide all means necessary to provide safety and convenience of those employed in and about the premises.
 - 3.02.3 Be responsible for patching of all holes and openings it makes. Fit work should be airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces. Patching is to match adjacent surfaces in materials and finish.
 - 3.02.4 Utilize only tradesmen skilled in the specific finish and material involved in making the patches. All patching is to be done in a neat and workmanlike manner to the satisfaction of CM. Defective Work shall be corrected at no cost to the Owner and CM.
 - 3.02.5 Do all necessary cutting and fitting required to make a satisfactory connection where new Work connects with existing so as to leave the entire Work in finished and workmanlike condition. Furnish all labor and materials to this end, whether or not shown or specified. All measurements must be verified at the site.
 - 3.02.6 Employ the original installer and fabricator, when possible, to perform cutting and patching for, weather-exposed or moisture-resistant elements, sight-exposed finished surfaces.
 - 3.02.7 Execute fitting and adjustment or products to provide a finished installation to comply with the specified products, functions, tolerances and finishes.

- 3.02.8 Restore Work which has been cut or removed and shall install new products to provide completed Work in accordance with the Contract Documents. Each Contractor will be responsible to pay the appropriate contractor as designated by CM for restoring any portion of the Project that is disturbed, including but not limited to, slabs, walls, ceilings, fire rated partitions, spray-on fireproofing, and finishes, to their original state as a result of Contractor's action.
- 3.02.9 Refinish entire surfaces as the Contractor's Work scope requires to provide an even finish to match adjacent surfaces and finishes, for continuous surfaces, refinish to nearest intersection, for an assembly, refinish the entire unit.
- 3.02.10 Be held responsible for reckless cutting of holes in slabs, walls or other finishes, or for scraping off areas of fireproofing larger or greater than that which is necessary for installation of its Work.
- 3.03 Removal and replacement of ceilings not scheduled to be replaced shall be the responsibility of the Contractor requiring access.

END OF SECTION 01540

**SECTION 01550
CLEAN-UP AND FINAL CLEANING**

A. SUMMARY

Execute final cleaning at completion of the Work, as required by this Section. For Contractor's daily clean-up, dust control and rubbish removal operations during construction, refer to Section 01520 Temporary Construction Controls.

a. DISPOSAL REQUIREMENTS

- i. Conduct final cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on Project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.

2 PART 2 - SITE CLEAN-UP/RUBBISH REMOVAL PROCEDURE

2.1. REQUIREMENTS

2.1.1. General, Contractor shall:

- 2.1.1.1. Be responsible for daily, weekly and final clean-up of its Work and the work of its Subordinate Parties as defined herein.
- 2.1.1.2. Comply with applicable labor agreements and jurisdictional rules in the hiring of laborers to perform its clean up obligations under the Contract Documents.
- 2.1.1.3. Control of dust generated by its operations on a daily basis.
- 2.1.1.4. Maintain roadways clear of all debris at all times.
- 2.1.1.5. Only use cleaning materials which will not create hazards to health or property and which will not damage surfaces. Only those cleaning materials and methods recommended by the manufacturer of the surface material to be cleaned shall be used.
- 2.1.1.6. Only use sweeping compounds that do not leave residue on concrete floor surfaces and that will not affect installation of finish flooring materials

2.1.2. Dumpsters:

- 2.1.2.1. The CM will provide and maintain the job site dumpsters, unless otherwise noted in the work scopes, for unidentifiable debris for use as specified below.
- 2.1.2.2. Each Contractor and its Subordinate Parties shall be responsible for daily clean-up, removal and placement in dumpsters of all debris and waste resulting from its operations.
- 2.1.2.3. No overfilling of dumpsters will be allowed. All adjacent areas are to be kept clean. Excavation, demolition, masonry, drywall and hazardous waste materials are NOT to be placed in CM's dumpster.
- 2.1.2.4. Each Contractor will be responsible for removing its own excavation, demolition, masonry, drywall and Hazardous Materials from the site in strict accordance with applicable laws and regulations regarding disposal.
- 2.1.2.5. Contractor shall indemnify, defend and hold harmless the Owner and CM from claims, damages, suits, costs, or expenses of any kind (including attorney's fees and costs) arising out of, resulting from or in connection with Contractor's misuse of dumpsters.

2.1.3. Daily Clean Up, Each Contractor shall:

- 2.1.3.1. Be responsible, DAILY for the clean -up, transport and removal from the site of identifiable debris including but not limited to, bulky debris, packaging, containers, unused materials and equipment, (i.e., masonry and concrete materials, drywall, steel, crates, carton, demolition debris, other packaging, and combustible items).
- 2.1.3.2. Leave no piles of debris in the building overnight. The cost of any overtime premium required to remove debris immediately at the end of each workday shall be included in the Contractor's Work.
- 2.1.3.3. handle materials in a controlled manner so that dust and other contaminants, do not affect the Owner's or other Contractor operations and equipment
- 2.1.3.4. Be responsible to leave its Work and work area in a clean condition. This includes, but is not limited to, removal of all grease, dust, dirt, stains, labels, fingerprints and other foreign matter.
- 2.1.4. Weekly Clean Up: Each Contractor shall:
 - 2.1.4.1. While on site, provide to CM one (1) person for each five tradesmen (or portion thereof) employed at the site, one day per week, for up to four (4) hours, for the exclusive purpose of performing overall project weekly clean-up of unidentifiable debris. The cost of this (these) person(s) shall be included in Contractor's Work.
 - 2.1.4.2. Include sweeping, loading and disposal of miscellaneous debris such as mud tracked through the building, drinking cups, bottles, lunch wrappers and other unidentifiable debris. Trash and debris from this operation shall be placed in the dumpster(s).
- 2.1.5. Final Clean Up:
 - 2.1.5.1. Final clean-up, will be done at a time designated by CM.
 - 2.1.5.2. Normally, Final Clean Up will occur before punchlist inspection or prior Owner Occupancy turnover.
 - 2.1.5.3. The Owner will employ an adequate number of personnel for final cleaning. Final Cleaning consists of the following Work:
 - 2.1.5.3.1. Removal of grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and all other foreign materials from sight-exposed interior and exterior surfaces.
 - 2.1.5.3.2. Vacuuming all carpets and spot cleaning any stains. Cleaning and waxing VCT floors.
 - 2.1.5.3.3. Washing and shining glazing and mirrors.
 - 2.1.5.3.4. Polishing glossy surfaces to a clear shine.
 - 2.1.5.3.5. Dusting cabinet work and removing foreign markings.
 - 2.1.5.3.6. Broom cleaning exterior paved surfaces and raking clean other surfaces of the grounds.
 - 2.1.5.4. The Contractor's duties for Final Cleaning are:
 - 2.1.5.4.1. Prior to final completion or Owner occupancy, whichever occurs first, conduct an inspection of sight-exposed interior and exterior surfaces, and all Work areas, to verify that the entire Work is left in a broom clean condition and that all Final Cleaning as set forth above has been performed.
 - 2.1.5.4.2. Tunnels and closed off spaces shall be cleaned of packing boxes, wood frame members and other waste materials used in the construction.

- 2.1.5.4.3. Temporary labels, stickers and similar items shall be removed from fixtures and equipment. Unless otherwise directed in the technical specifications, Contractors shall not remove permanent name plates, equipment model numbers, ratings, or other items intended to be permanently affixed to the fixture or equipment.
- 2.1.6. Use of Owner's Facilities: The Owner's facilities are not to be used by Contractor for the disposal of trash or debris from its Work.
- 2.1.7. Failure to perform Clean Up:
 - 2.1.7.1. If any Contractor or its Subordinate Parties fails to maintain a satisfactory clean-up program, CM will issue written notice, to the responsible Contractor, that the necessary clean-up must be performed within twenty-four (24) hours after the notice is given. The establishment of a definite deadline for the removal of debris and rubbish will supersede the necessity for any formal notification that such work must be done.
 - 2.1.7.2. If Contractor(s) fail to perform the clean-up, by the deadline, CM may perform clean-up on the Project and back charge the responsible Contractor(s) for the costs. If necessary in order to remove unidentifiable debris beyond what is removed during weekly clean up, CM will perform such clean-up and shall pro-rate the cost among the Contractors in its discretion, based on Contractor(s) type of work and manpower on site. Back charges may be deducted from the monthly invoices of the Contractor(s) and/or final payment.
- 2.1.8. Hazardous Materials: Contractors or Subordinate Parties shall dispose of Hazardous Materials in strict accordance with applicable federal, state, and local laws and regulations. Hazardous Materials may not be placed in dumpsters and/or containers not so designated for such placement.

END OF SECTION 01550

SECTION 01600 FORMS

1 USE OF FORMS

- 1.01 Upon award of the Agreement, the various forms described and referenced in the Project Manual will be provided by CM and therefore are not bound in the Project Manual. Copies of forms are available for inspection through CM.
- 1.02 Following is a list of the key forms:
- 00810 Safety and Loss Control Program
 - Trade Contractor Safety Certificate (SAF 6.3.3.3)
 - 01250 Changes in the Work
 - PCO- Notice to Proceed
 - PCO- Quotation Only
 - Change Order Form (CMS.9.1 or CMS.9.2)
 - 01290 Payment Procedures
 - Application and Certificate for Payment (CON.27.1) and Continuation Sheet (CON.27.2)
 - Consent of Surety to Reduction In or Partial Release of Retainage (CON.26.6)
 - Payment schedule (PSI.10.1)
 - Payment Request for Stored Materials Form (CON.26.5)
 - Acknowledgment of Payment and Partial Unconditional Release Form (CON.26.3)
 - Unconditional Final Release and Waiver Subcontractor/Materialman Form (CON.26.4)
 - Sworn Statement Form (CON.26.2)
 - 01320 Communications
 - Trade Contractors Daily/Pre-Task Plan (CON.14.4)
 - Request for Information Form (CON.25.2) (in company approved software, if necessary)
 - 01330 Submittals
 - BMC Submittal Transmittal Form (CON.9.6)
 - 01400 Quality Requirements
 - Corrective Action Report (CAR)/Notice of Non-Conformance (NCR) (CON.18.2)
 - 01700 Contract Close-out
 - Consent of Surety Company to Final Payment Form (CON.26. 7)
 - Consent of Surety to Reduction in or Partial Release of Retainage Form (CON.26.6)
 - Certificate of Contract Completion Form (CLO.7.5)
 - 01720 Project Record Documents
 - Closeout Submittal (CLO.7.2)
 - 01740 Warranties and Guarantees
 - Contractor's Guarantee (CLO.7.3)
 - 01750 Systems Demonstration, Training and Start-up

- Equipment/Systems Acceptance Form (CLO.2.1)
- Owner Training Register (CLO.2.2)

END OF SECTION 01600

**SECTION 01630
PRODUCT SUBSTITUTIONS**

1. WORK INCLUDED

1.1. Furnish and install Products specified, under options and conditions for substitutions stated in this Section.

2. BIDDER'S OPTIONS

- 2.1. For products that are specified only by reference standard, select Product meeting that is standard by any manufacturer.
- 2.2. For Products specified by naming several Products or manufacturers, select any one of products and manufacturers named which complies with Specifications.
- 2.3. For Products specified by naming several Products or manufacturers and stating "or equivalent", or "or equal", or "or Architect approved equivalent", or similar wording, submit a request as for substitutions, for any Product or manufacturer which is not specifically named for review and approval by the Architect.
- 2.4. For Products specified by naming only one Product and manufacturer, there is no option and no substitution will be allowed.

3. SUBSTITUTION PROCESS

3.1. SUBSTITUTIONS

- 3.1.1. Base Bid shall be in accordance with the Contract Documents.
- 3.1.2. Substitutions for products may be made during the bidding period by submitting completed Substitution Request Form and substantiating product data/literature a minimum of 7 Days prior to Bid date to CM who will then forward to the Architect.
 - 3.1.2.1. Architect will consider requests from the Bidder for substitution of products in place of those specified as set forth in this section.
 - 3.1.2.2. Those submitted the specified calendar days prior to Bid Date will be included in an addendum if acceptable.
 - 3.1.2.3. After the end of the bidding period, requests will be considered only in case of Product unavailability or other conditions beyond the control of Contractor.
 - 3.1.2.4. Bid Proposals shall not be based on assumed acceptance of any item which has not been approved by addendum.
- 3.1.3. Bidders are required to submit a separate Substitution Request Form for each proposed substitution. Each substitution request should be accompanied by the following supporting documentation:
 - 3.1.3.1. A full explanation of the proposed substitution.
 - 3.1.3.2. Complete data substantiating compliance of the proposed substitution with the requirements stated in the Contract Documents.
 - 3.1.3.2.1. Product identification, including the manufacturer's name and address.
 - 3.1.3.2.2. Manufacturer's literature; identifying:
 - 3.1.3.2.2.1. Product description and technical information.
 - 3.1.3.2.2.2. Reference standards.
 - 3.1.3.2.2.3. Performance and test data.
 - 3.1.3.2.2.4. Installation instructions, operating procedures and other like information.
 - 3.1.3.2.3. Samples, as applicable.

- 3.1.3.2.4. Names and addresses of similar projects on which product has been used, and date of each installation.
 - 3.1.3.3. Itemized comparison of the proposed substitution with the product specified, listing all significant variations.
 - 3.1.3.4. Data relating to changes in delivery or construction schedule.
 - 3.1.3.5. A list of all effects of the proposed substitution on separate contracts.
 - 3.1.3.6. Accurate cost data comparing the proposed substitution with the product specified.
 - 3.1.3.6.1. Amount of any net change to Contract Sum.
 - 3.1.3.7. Designation of required license fees or royalties.
 - 3.1.3.8. Designation of availability of maintenance services and sources of replacement materials.
 - 3.1.4. Substitutions will not be considered for acceptance when:
 - 3.1.4.1. They are indicated or implied on shop drawings or product data submittals without a formal request from Bidder.
 - 3.1.4.2. Acceptance will require substantial revision of Contract Documents.
 - 3.1.4.3. In judgment of Architect, do not include adequate information necessary for a complete evaluation.
 - 3.1.4.4. If requested after Contract Award directly by a subcontractor or supplier, except for special or unusual circumstances reviewed by the Contractor with CM.
 - 3.1.5. Substitute products shall not be ordered or installed without written acceptance of Architect.
 - 3.1.6. Architect will determine acceptability of proposed substitution.
- 3.2. **BIDDER'S REPRESENTATION**
 - 3.2.1. In making formal request for substitution the Bidder represents that:
 - 3.2.2. It has investigated the proposed product and has determined it is equivalent to or superior in all respects to the product specified.
 - 3.2.3. It will provide same warranties or bonds for the proposed substitution as required for the product specified.
 - 3.2.4. It will coordinate installation of the accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
 - 3.2.5. It waives all claims for additional costs caused by or arising from the substitution which may subsequently become apparent.
 - 3.2.6. Cost data is complete and includes related costs under its Agreement, but not:
 - 3.2.6.1. Costs under separate contracts.
 - 3.2.6.2. Architect's costs for redesign or revision of Contract Documents.
 - 3.2.7. Cost data need not be submitted, if request is for inclusion in an addendum. Requests after the Agreement is awarded shall contain a complete cost comparison.
 - 3.2.8. Any modifications necessary as a result of the use of an approved substitute shall be paid by the Contractor proposing the substitution.
 - 3.2.9. Any additional engineering costs required to be performed by the Architect to approve, implement or coordinate the substitution above reasonable review services, shall be paid by the Contractor proposing the substitution.

- 3.2.10. Under no circumstances will the Architect be required to prove that a product proposed for substitution is or is not equal to the quality of the product specified.

3.3. ARCHITECT'S DUTIES

- 3.3.1. Review requests for substitutions with reasonable promptness.
- 3.3.2. Coordinate review/approval of "Architect Approved" substitutions with the Owner prior to notifying the CM.
- 3.3.3. Issue a written instruction of decision to accept the substitution.
- 3.3.4. Substitution requests that are not approved will be returned to the party submitting the request with an explanation for the rejection.

3.4. SUBSTITUTION REQUEST FORM

- 3.4.1. The form is attached to this Section.
- 3.4.2. SUBSTITUTIONS WILL BE CONSIDERED ONLY WHEN THE ATTACHED FORM IS COMPLETED AND INCLUDED WITH THE SUBMITTAL WITH ALL BACKUP DATA.

SUBSTITUTION REQUEST FORM

TO: Barton Malow Company

We hereby submit for your consideration the following product instead of the specified item for the above Project:

DRAWING NO.: _____ **DRAWING NAME:** _____

SPEC. SECT.	SPEC. NAME	PARAGRAPH	SPECIFIED ITEM
_____	_____	_____	_____

Proposed Substitution:

Attached complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Submit with request all necessary samples and substantiating data to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance.

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted by:

Signature

Title

Firm

Address

Telephone

Date

Signature shall be by person having authority to legally bind his/her firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

For use by Architect	
____ Accepted	____ Accepted as noted
____ Not accepted	____ Received too late
____ Insufficient data received	
By: _____	
Date: _____	

For use by Owner	
____ Accepted	____ Accepted as noted
____ Not accepted	____ Received too late
____ Insufficient data received	
By: _____	
Date: _____	

Fill in blanks below (attach additional sheets as required):

- A. Does the Substitution affect dimensions shown on Drawings?
Yes _____ No _____ If yes, clearly indicate changes: _____

- B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?
Yes _____ No _____ If no, fully explain: _____

- C. What affect does substitution have on other contracts or other trades?

- D. What affect does substitution have on the delivery and construction schedule? _____

- E. Manufacturer's warranties of the proposed and specified items are: Same _____ Different _____
If different, explain on an attachment.

- F. Reason for Request: _____

- G. Itemized comparison of specified item(s) with the proposed substitution; list significant variations:

- H. Accurate cost data comparing proposed substitution with product specified:

- I. This substitution will amount to a credit or an extra cost to the Owner of:
_____ Dollars
(\$ _____)

END OF SECTION 01630

SECTION 01700 CONTRACT CLOSE-OUT

1. CLOSE-OUT PROCEDURE

1.1. The following procedure and forms will be used to sequentially progress through the contract close-out stage in a productive and timely manner.

1.1.1. PREPARATION FOR CONTRACT CLOSE-OUT

During the course of the Project, the Contractor will thoroughly review the Contract Documents as it relates to the requirements and obligations and gather and submit to CM the proper submittals, shop drawings, material certifications, waivers, certificates of insurance, bonds, and other contractual requirements impacting contract close-out.

1.1.2. INITIATING THE FINAL CLOSE-OUT PROCESS

When nearing 75% completion of the Work, the Contractor will review the status of the Close-Out process with CM. The Contractor's contractual responsibilities will be reviewed and outstanding close-out and other submittals identified.

1.1.3. OBTAINING THE CERTIFICATE OF SUBSTANTIAL COMPLETION

As the Contractor is nearing the completion of the Work and after concurrence with CM, it shall submit a written request for Substantial Completion, all required documentation as outlined, and a listing of all minor deficiencies yet to be completed.

The following documents are the minimum required at the time of request for Substantial Completion. Contractor shall also submit all additional documentation as required in the Contract Documents:

1.1.3.1. AIA G704 Certificate of Substantial Completion

1.1.3.2. As-built records

1.1.3.3. Operation and Maintenance Manuals

1.1.3.4. Keys, Maintenance Stock, and Spare Parts

1.1.3.5. Test and Start-up/Owner Training Sessions

1.1.3.6. Submission of Permits and Approvals (i.e. Fire Marshal, Department of Public Health Approvals, etc.)

1.1.3.7. Guarantee and Warranties

1.1.3.8. Punchlist (list of work to be completed or corrected)

Once CM has received all required documents they will be forwarded to the Architect and Owner. CM will review the Contractor's request for Substantial Completion; all above documentation, and list of deficiencies, add appropriate comments, and forward to the Architect and/or Owner for review. In conjunction with the Contractor, CM will establish a schedule for the completion of all listed items, which in no event shall exceed any time periods established in the Contract Documents for Final Completion.

When the Architect and Owner determine(s) that the Work is substantially complete, the Certificate of Substantial Completion shall be issued to the Contractor.

1.1.4. CONTRACTOR COMPLETES PUNCHLIST WORK

Each Contractor shall submit a letter certifying all punchlist items are completed, in a manner acceptable to the Owner, CM and the Architect.

1.1.5. FINAL INSPECTION NOTICE

Each Contractor is to forward **(written notice and accompanying documentation)** to CM that Work is ready for final inspection and acceptance. CM will forward written notice to the Architect if CM is in agreement that Work is complete. The Architect will perform a final inspection and sign off on the punchlist form if Work is in fact completed. If punchlist work is not found complete, the Contractor shall take action to remedy any insufficiencies and then shall re-submit the written notice and accompanying documentation that Work is ready for **final** inspection and acceptance. If CM and/or Architect are required to perform more than 2 site visits to determine Substantial or Final Completion of Contractor's Work, the costs for such additional inspections shall be charged to Contractor.

The following documents are the minimum required to complete final payment. Contractor shall also submit all additional documentation as required in the Contract Documents:

- 1.1.5.1. Final Payment Request (on G702 & G703).
- 1.1.5.2. Guarantees/Warranties (including subs and suppliers).
- 1.1.5.3. Final Sworn Statements (including subs and suppliers).
- 1.1.5.4. Acknowledgment of Payment and Partial Unconditional Release
- 1.1.5.5. Final Release Subcontractor/Materialman
- 1.1.5.6. Certified Payroll Report (projects governed by prevailing wage laws)
- 1.1.5.7. Verification of Rate Classification and Payment (Federal projects)
- 1.1.5.8. Consent of Surety Company to Final Payment (AIA G707)
- 1.1.5.9. Consent of Surety to Reduction or Partial Release of Retainage (AIA G707A)
- 1.1.5.10. Certificate of Substantial Completion (on G704).
- 1.1.5.11. Completion and acceptance of all punchlist Work.

Items 1.1.5.2 through 1.1.5.5 must always be submitted with the final request for payment.

1.1.6. REVIEW OF FINAL PAYMENT REQUEST

CM and the Architect will review the Contractor's final payment request and Close-Out file. CM reserves the right to withhold 200% of the estimated cost for each punchlist item not completed until complete. If all administrative documents are attached or have been submitted (i.e. guarantee, warranty, waiver of lien, etc.), all Work is complete, and all other responsibilities are met, the Project Team will forward the Contractor's Application for Final Payment to the Owner and payment shall be processed according to the Owner's regular procedures.

2. FINAL COMPLETION

- 2.1. To attain final completion, the Contractor shall complete activities pertaining to Substantial Completion, and complete Work on punch list items. Only then shall it issue written request to CM to conduct a site visit to determine Final Completion.
- 2.2. When Contractor considers the Work is finally complete, it shall submit written certification that:
 - 2.2.5. Contract Documents have been reviewed.
 - 2.2.6. Work has been inspected for compliance with Contract Documents.
 - 2.2.7. Work has been completed in accordance with Contract Documents.
 - 2.2.8. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 - 2.2.9. Work is completed and ready for final observation.
- 2.3. CM and/or Architect will make an observation to verify the status of completion with reasonable promptness after receipt of such certification.

- 2.4. Should CM and/or Architect consider that the Work is incomplete or defective:
 - 2.4.5. CM will promptly notify the Contractor in writing, listing the incomplete or defective Work.
 - 2.4.6. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to the CM that the Work is complete.
 - 2.4.7. CM and/or Architect will re-inspect the Work.
 - 2.5. When CM and/or Architect determines that the Work is acceptable under the Contract Documents, it shall request the Contractor to make close-out submittals.
3. CONTRACTOR'S CLOSE-OUT SUBMITTALS
- 3.1. Evidence of compliance with requirements of governing authorities (state, local or federal):
 - 3.1.5. Certificates of Inspection:
 - 3.1.5.1. Mechanical
 - 3.1.5.2. Electrical
 - 3.1.5.3. Others as required
 - 3.2. Project Record Documents: Refer to requirements of Section 01720.
 - 3.3. Operating and Maintenance Data, Instructions to Owner's Personnel: Refer to requirements of Section 01730.
 - 3.4. Warranties and Bonds: Refer to requirements of Individual Sections and Individual Technical Specifications and Section 01740.
 - 3.5. Spare Parts and Maintenance Materials: Refer to requirements of Individual Technical Specifications.
 - 3.6. Evidence of Payment and Release of Liens: Refer to requirements of General and Supplementary Conditions and Section 01290.

END OF SECTION 01700

**SECTION 01720
PROJECT RECORD DOCUMENTS**

1 SUMMARY

- 1.01 Each Contractor shall be responsible to maintain at the job site one copy of:
 - 1.01.1 Record Contract Drawings
 - 1.01.2 Record Project Manual
 - 1.01.3 Addenda
 - 1.01.4 Reviewed/Approved Shop Drawings
 - 1.01.5 Change Orders
 - 1.01.6 Other modifications to Contract
 - 1.01.7 Field test records
 - 1.01.8 Affidavits
- 1.02 Store documents apart from documents used for construction.
- 1.03 Maintain documents in clean, dry, legible condition.
- 1.04 Do not use project record documents for construction purposes.
- 1.05 Make documents available for inspection by the Owner, CM and the Architect.
- 1.06** Failure to maintain documents up-to-date will be cause for withholding payments to Contractor.
- 1.07 At the outset of the project, obtain from the Architect through the CM, at no charge to the Contractor, one complete set of Contract Documents including:
 - 1.07.1 Technical Specifications with all addenda.
 - 1.07.2 One complete set of prints of all Drawings.

2 RECORDING

- 2.01 Label each document "Project Record."
- 2.02 Keep record documents current.
- 2.03 Do not permanently conceal any work until required information has been recorded.
- 2.04 Contract Drawings:
 - 2.04.1 Contractor may at his option enter required information on a "working set" and then at completion of Project transfer the information to final submitted "Project Record" set.
 - 2.04.2 Contractor shall legibly mark to record actual construction:
 - 2.04.2.1 Depths of various elements of foundation in relation to survey data.
 - 2.04.2.2 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - 2.04.2.3 Location and depths of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - 2.04.2.4 Field changes of dimension and detail.
 - 2.04.2.5 Changes made by PCO- Notice to Proceed.

2.04.2.6 Details not on original Contract Drawings.

2.05 Technical Specifications and Addenda:

2.05.1 Contractor shall legibly mark up each section to record:

2.05.1.1 Manufacturer, trade name, catalog number and Supplier of each product and item of equipment actually installed.

2.05.1.2 Changes made by PCO- Notice to Proceed.

2.05.1.3 Other items not originally specified.

2.06 Conversion of Schematic Layouts:

2.06.1 Arrangement of conduits, circuits, piping, ducts and similar items are in most cases shown schematically on the Drawings.

2.06.2 Contractor shall legibly mark to record actual construction:

2.06.2.1 Dimensions accurate to within 1" of the center of items shown schematically.

2.06.2.2 Identify each item, for example, "cast iron drain", "galvanized water", etc.

2.06.2.3 Identify location of each item, for example, "under slab", "in ceiling plenum", "exposed", etc.

2.06.3 The Owner, Architect or CM may waive requirements of schematic layout conversion, when in their opinion, it serves no beneficial purpose. Do not, however, rely on waivers being issued except as specifically issued by the CM in written form.

3 SUBMITTAL

3.01 At completion of Project deliver, 2 sets of Record Documents, in a format acceptable to the Owner and the Architect, using the Final Document Submittal Form (in Section 01600 Forms), to CM prior to request for final payment.

3.02 Accompany submittal with transmittal letter, in duplicate, containing:

3.02.1 Date

3.02.2 Project title and number

3.02.3 Contractor's name and address

3.02.4 Title and number of each record document

3.02.5 Certification that each document as submitted is complete and accurate.

3.02.6 Signature of Contractor, or his authorized representative.

END OF SECTION 01720

**SECTION 01730
OPERATIONS AND MAINTENANCE DATA**

1. SCOPE

- 1.1. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.
- 1.2. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of the Technical Specifications.
- 1.3. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems in accordance with the requirements in Section 01750 Systems Demonstration, Training and Start-up.

2. QUALITY ASSURANCE

- 2.1. Preparation of data shall be done by personnel:
 - 2.1.1. Trained and experienced in maintenance and operation of described products.
 - 2.1.2. Familiar with requirements of this Section.
 - 2.1.3. Skilled as technical writer to the extent required to communicate essential data.
 - 2.1.4. Skilled as draftsman competent to prepare required drawings.

3. FORM OF SUBMITTALS

- 3.1. Prepare data in the form of an instructional manual for use by Owner's personnel.
- 3.2. Format:
 - 3.2.1. Size: 8-1/2" x 11"
 - 3.2.2. Paper: white, for typed pages.
 - 3.2.3. Text: Manufacturer's printed data, or neatly typewritten.
 - 3.2.4. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Fold larger drawings to size of text pages.
 - 3.2.5. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - c. Provide typed description of product, and major component parts of equipment.
 - d. Provide indexed tabs.
 - 3.2.6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS." list:
 - e. Title of Project
 - f. Identity of separate structures as applicable.
 - g. Identity of general subject matter covered in the manual.
- 3.3. Binders:
 - 3.3.1. Commercial quality three-ring binders with durable and cleanable plastic covers.
 - 3.3.2. Maximum ring size: 3"
 - 3.3.3. When multiple binders are used, correlate the data into related consistent groupings.

4. CONTENT OF MANUAL

- 4.1. Neatly typewritten table of contents for each volume, arranged in systematic order.

- 4.1.1. Contractor, name of responsible principal, address and telephone number.
 - 4.1.2. A list of each product required to be included, indexed to content of the volume.
 - 4.1.3. List with each product, name, address and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement.
 - 4.1.4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
 - 4.2. Product Data:
 - 4.2.1. Include only those sheets which are pertinent to the specific product.
 - 4.2.2. Annotate each sheet to:
 - e. Clearly identify specific product or part installed.
 - f. Clearly identify data applicable to installation.
 - g. Delete references to inapplicable information.
 - 4.3. Drawings:
 - 4.3.1. Supplement product data with drawings as necessary to clearly illustrate:
 - b. Relations of component parts or equipment and systems.
 - c. Control and flow diagrams.
 - 4.3.2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 - 4.3.3. Contractor may use Project Record Documents as maintenance drawings - coordinate with CM.
 - 4.4. Written text, as required to supplement product data for the particular installation:
 - 4.4.1. Organize in consistent format under separate headings for different procedures.
 - 4.4.2. Provide logical sequence of instructions for each procedure.
 - 4.5. Copy of each warranty, bond and service contract issued.
 - 4.5.1. Provide information sheet for Owner's personnel, give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds.
5. MANUAL REVIEW AND PREPARATION SCHEDULE
- 5.1. Submit two copies of preliminary draft of proposed formats and outlines of contents to CM prior to start of preparation.
 - 5.1.1. Architect will review draft and return one copy with comments.
 - 5.2. Submit 2 copy of completed data in final form to the CM at least one month before the end of the project, for Owner review.
 - 5.2.1. Copy will be returned after final inspection or acceptance, with comments.
 - 5.3. Submit copies of completed operation and maintenance manuals at least two (2) weeks before execution and have at hand for use in demonstrations and instructions.

- 5.4. Submit specified number of copies of approved data in final form to the CM ten (10) days after final inspection or acceptance.

6. PRODUCTS

6.1. MANUAL FOR MATERIALS AND FINISHES

- 6.1.1. Submit 2 copies of complete manual in final form.
- 6.1.2. Content, for architectural products, applied materials and finishes:
 - 6.1.2.1. Manufacturer's data, giving full information on products.
 - 6.1.2.1.1. Catalog number, size, and composition.
 - 6.1.2.1.2. Color and texture designations.
 - 6.1.2.1.3. Information required for reordering special-manufactured products.
 - 6.1.2.2. Instructions for care, maintenance and preventative maintenance.
 - 6.1.2.2.1. Manufacturer's recommendation for types of cleaning agents and methods.
 - 6.1.2.2.2. Cautions against cleaning agents and methods which are detrimental to product.
 - 6.1.2.2.3. Recommended schedule for cleaning and maintenance.
- 6.1.3. Content, for moisture-protection and weather-exposed products:
 - 6.1.3.1. Manufacturer's data, giving full information on products.
 - 6.1.3.1.1. Applicable standards.
 - 6.1.3.1.2. Chemical composition.
 - 6.1.3.1.3. Details of installation.
 - 6.1.3.2. Instructions for inspection, maintenance and repair.
- 6.1.4. Additional requirements for maintenance data: Reference sections of Technical Specifications.

6.2. MANUAL FOR EQUIPMENT AND SYSTEMS

- 6.2.1. Submit 2 copies of complete manual in final form.
- 6.2.2. Content, for each unit of equipment and system, as appropriate:
 - 6.2.2.1. Description of unit and component parts.
 - 6.2.2.1.1. Function, normal operating characteristics, and limiting conditions.
 - 6.2.2.1.2. Performance curves, engineering data and tests.
 - 6.2.2.1.3. Complete nomenclature and commercial number of replaceable parts.
 - 6.2.2.2. Operating procedures:
 - 6.2.2.2.1. Start-up, break-in, routine and normal operating instructions.
 - 6.2.2.2.2. Regulation, control, stopping, shutdown and emergency instructions.
 - 6.2.2.2.3. Summer and winter operating instructions.
 - 6.2.2.2.4. Special operating instructions.
 - 6.2.2.3. Maintenance and Preventative Maintenance Procedures:
 - 6.2.2.3.1. Routine operations.
 - 6.2.2.3.2. Guide to "trouble-shooting".

- 6.2.2.3.3. Disassembly, repair and re-assemble.
- 6.2.2.3.4. Alignment, adjusting and checking.
- 6.2.2.4. Servicing and lubrication schedule.
 - 6.2.2.4.1. List of lubricants required.
- 6.2.2.5. Manufacturer's printed operating and maintenance instructions.
- 6.2.2.6. Description of sequence of operation by control manufacturer.
- 6.2.2.7. Original manufacturer's parts, list, illustrations, assembly drawings and diagrams required for maintenance.
 - 6.2.2.7.1. Predicted life of parts subject to wear.
 - 6.2.2.7.2. Items recommended to be stocked as spare parts.
- 6.2.2.8. As-installed control diagrams by controls manufacturer.
- 6.2.2.9. Each Contractor's coordination drawings.
 - 6.2.2.9.1. As-installed color coded piping diagrams.
- 6.2.2.10. Charts of valve tag numbers, with location and function of each valve.
- 6.2.2.11. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- 6.2.2.12. Other data as required under pertinent sections of specifications.
- 6.2.3. Content, for each electric and electronic system, as appropriate:
 - 6.2.3.1. Description of system and component parts.
 - 6.2.3.1.1. Function, normal operating characteristics and limiting conditions.
 - 6.2.3.1.2. Performance curves, engineering data and tests.
 - 6.2.3.1.3. Complete nomenclature and commercial number of replaceable parts.
 - 6.2.3.2. Circuit directories of panel boards.
 - 6.2.3.2.1. Electrical service.
 - 6.2.3.2.2. Controls.
 - 6.2.3.2.3. Communications.
 - 6.2.3.3. As-installed color coded wiring diagrams.
 - 6.2.3.4. Operating procedures:
 - 6.2.3.4.1. Routine and normal operating instructions.
 - 6.2.3.4.2. Sequences required.
 - 6.2.3.4.3. Special operating instructions.
 - 6.2.3.5. Maintenance and preventative maintenance procedures:
 - 6.2.3.5.1. Routine operations.
 - 6.2.3.5.2. Guide to "trouble-shooting".
 - 6.2.3.5.3. Disassembly, repair and re-assemble.
 - 6.2.3.5.4. Adjustment and checking.
 - 6.2.3.6. Manufacturer's printed operating and maintenance instructions.

- 6.2.3.7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- 6.2.3.8. Other data as required under pertinent sections of specifications.
- 6.2.4. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- 6.2.5. Additional requirements for operating and maintenance data: Reference sections of Technical Specifications.

END OF SECTION 01730

SECTION 01740
WARRANTIES AND GUARANTEES

1 GENERAL

- 1.01 Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

2 WARRANTY REQUIREMENTS

- 2.01 Deliver all written warranties and guarantees required by the Contract Documents with the "Owner and CM" named as beneficiaries. All warranties shall include labor and materials, shall be signed by the manufacturer or subcontractor as the case may be, and countersigned by the Contractor. All written warranties shall be addressed to the Owner and delivered to CM upon completion of the Project, before or with the submission of Request for Final Payment.
- 2.02 In addition to all other warranties set forth in the Contract Documents or imposed by applicable law, Contractor warrants to Owner and CM that the Work will be free from defects and performed in strict conformity with the requirements of the Contract Documents. This warranty survives the termination of the Agreement and shall only be extinguished by limitation periods imposed by applicable law and shall not be limited by any other provisions contained in the Agreement, including any provisions or time periods related to Contractor's obligation to correct defective Work.
- 2.03 Contractor, upon signing the Agreement, shall obtain and forward to CM any and all Standard Product Warranties for products, materials and systems covered under its Agreement. The Manufacturer's warranties do NOT relieve the Contractor from its warranty obligations under the Contract Documents.
- 2.04 Special Warranties shall become effective on a date established by the Project Team. This date generally shall be the date of Final Completion of the Project or Substantial Completion of the Project or portions thereof as agreed upon by the Project Team. In the case of acceptance of a portion of the Work or Project, separate warranties shall be issued for those specific portions of the Project that were accepted, and shall be dated the date the specific portion was accepted. As additional Work is accepted, separate warranties for those specific portions of the Work shall be issued and properly dated. Issuance of warranties for a portion of the Work shall in no way become the basis for Application for Final Payment.
- 2.05 If for any reason, the Bidder cannot warrant any part of the Work using products, materials, or construction methods that have been specified or shown, it shall notify CM in writing at least ten (10) days before the bid submission date, giving reasons together with the names of products and data on substitutions it can guarantee. Should the Bidder fail to so notify CM within this time period, it will be bound to all warranties and guarantees as set forth in the Contract Documents.
- 2.06 Related Damages and Losses: In correcting Work that has been rejected as defective or otherwise failing to conform to the Contract Documents, whether before or after Substantial Completion, Contractor shall bear all related costs, including, but not necessarily limited to, the cost to correct the Work, the cost to correct all other Work that has been damaged by the defective or non-conforming Work, or that is damaged in the process of correcting the defective or nonconforming Work, and the cost of all additional testing and inspections and compensation for the Architect and/or CM's services and expenses made necessary thereby.
- 2.07 Reinstatement of Warranty: When Work covered by a warranty with a specific time period has failed and has been corrected by Contractor, the warranty shall be reinstated for a time period equal to the original warranty.
- 2.08 Express warranties are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available to the Owner or CM under the law. Express warranty periods shall not be interpreted as limitations on the time in which Owner or CM may enforce Contractor's duties and obligation or their rights and remedies under the Agreement and applicable law.

2.08.1 Rejection of Warranties: The Owner and CM reserve the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

2.09 Where the Contract Documents require a Special Warranty, or similar commitment on the Work or part of the Work, the Owner and CM reserve the right to refuse to accept the Work, until the Contractor presents evidence that the entities required to countersign such commitments are willing to do so.

3 SUBMITTALS

3.01 Submit 2 written warranties to the CM within fourteen (14) days of Substantial Completion using the form found in section 01600-Forms and organizing the warranty documents into an orderly sequence based on the table of contents of the Project Manual. If the project Team's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of CM.

3.02 When the Contract Documents require Contractor, or Contractor and a Subordinate Party to execute a Special Warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the CM for approval prior to final execution.

3.03 Forms for warranties are included in Section 01600-Forms. Prepare a written document utilizing the appropriate form, ready for execution by Contractor and its Subordinate Party(ies). Submit a draft to CM for approval prior to final execution.

END OF SECTION 01740

**SECTION 01750
SYSTEMS DEMONSTRATION, TRAINING AND START-UP**

2 GENERAL

2.01 COORDINATE Procedures for demonstration of equipment operation and instruction of Owner's personnel through CM.

3 QUALITY ASSURANCE

3.01 When specified in individual Sections, require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct Owner's personnel, and provide written report that demonstrations and instructions have been completed.

3.02 CM will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

4 SUBMITTALS

4.01 Submit preliminary schedule to CM for Architect's and Owner's approval, listing times and dates for demonstration of each item of equipment and each system, at least two (2) weeks prior to proposed dates.

4.02 Submit 2 original copies of reports within one week after completion of demonstrations, that demonstrations and instructions have been satisfactorily completed. Give time and date of each demonstration, and hours devoted to demonstration, with a list of persons present.

5 PREPARATION

5.01 Provide substantiating information that verifies equipment has been inspected and put into operation; testing, adjusting, and balancing has been performed; and equipment and systems are fully operational.

5.02 Submit copies of completed operation and maintenance manuals at least two (2) weeks before execution and have at hand for use in demonstrations and instructions.

5.03 CM will develop a schedule for the system demonstration, training, start-up and turn over of all systems and equipment.

6 DEMONSTRATION AND INSTRUCTIONS

6.01 Demonstrate operation and maintenance of equipment and systems to the Owner's, CM's and Architect's personnel two (2) weeks prior to date of final inspection. For equipment requiring seasonal operation, perform instructions for other seasons within six months. Contractor shall document the testing, equipment start-up and training sessions as required using the following forms in Section 01600 Forms:

6.01.1 Equipment/System Acceptance - This form will be completed for each piece of equipment or system for each contract that requires operational testing and/or training before acceptance. This will document the date of testing, the equipment tested, names of personnel which witnessed the testing and acceptance. Must video record all owner training for record.

6.01.2 Owner Training Register - This form will be completed for each contract that requires training to be provided to the Owner's personnel. This will document the date of training, type of training, names of the personnel trained and acceptance of the training.

6.02 The amount of time required for instruction on each item of equipment and system is that specified in individual sections or as mutually agreed upon between Contractor and CM.

6.03 Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.

6.04 Use operation and maintenance manuals as basis of instruction and review the contents of the manuals with personnel in full detail to explain all aspects of operations and maintenance.

6.05 Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions.

END OF SECTION 01750